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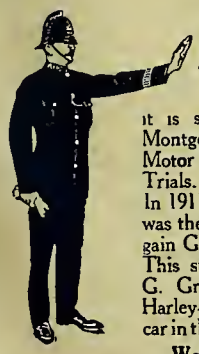

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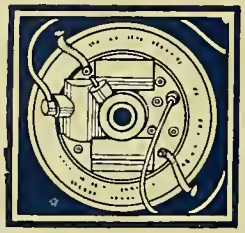

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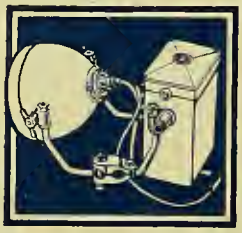

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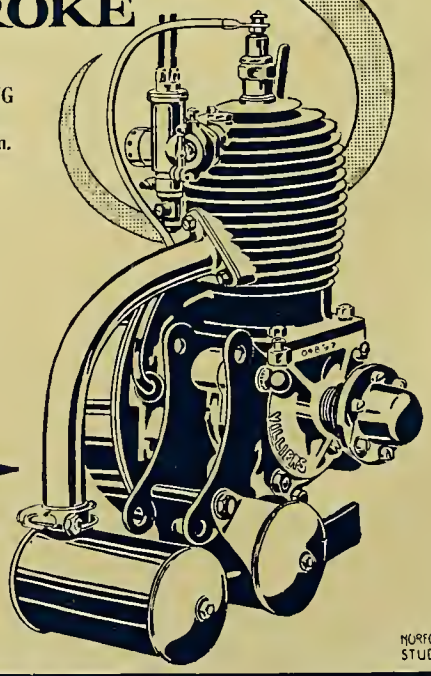

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The A.C.U. Six Days Trial.

ELSEWHERE in this issue will be found a review of the regulations governing the forthcoming annual A.C.U. Six Days Reliability Trial. It will be gathered that this year's trial will not be a repetition of the last event, which, in some quarters, was regarded as altogether too easy. The suggested inclusion of such hills as Rosedale Abbey Bank and Sir William Hill is a reversion to the old policy of the A.C.U., and those who have hitherto condemned the practice of including freak hills may not be pleased. Such critics, however, should not be too hasty in drawing conclusions, for the Auto Cycle Union, in acknowledging that last year's trial was too easy, has not fallen into the mistake of making this year's test too difficult.

No Penalty for Wheel Slip.

It has already been decided that gradient is no deterrent to present-day machines, and that failure on the part of any first-class motor cycle to climb the severest hills has been due chiefly to wheel slip. The regulations this year take this into consideration by not penalising those who come to a stop through this cause, provided a restart is made without stopping the engine. Competitors may even move their mounts to one side in order to obtain a better grip.

In framing this rule we doubt not that the Competitions Committee fully appreciated that the sidecars would be at a disadvantage compared to their solo contemporaries, since it is usually the sidecars which suffer most from wheel spin. The difficulties of moving a sidecar outfit sidewise without stopping the engine are many, and we suggest that the Union, in its final regulations, take this into consideration and permit the sidecars to be guided rearwards a certain number of feet on to a more favourable patch, instead of insisting on the rule, which reads:

> " . . . shall be allowed immediately to move his machine to another part of the road, not further up or lower down the hill than the point already reached . . . "

We commend the A.C.U. for the spirit behind the rule referred to, for it shows that at last it is appreciated that it is not just to penalise a machine which may fail to climb a hill through wheel spin. If it is finally decided to include any hills which are of the "freak" type, we suggest to the Union that it abides by that decision and not change the course at the last minute.

At the Discretion of the Judges.

We are sorry to see that marks in several of the tests will be deducted at the discretion of the judges. It is exceedingly difficult to provide for all eventualities by means of a table of penalties, but it should not be impossible. In the case of the final examination, it might mean a list of practically every part of a motor cycle, and where the brake test is concerned it should be possible to arrange a definite test on Brooklands.

The silence test is another matter, and it is reasonable to suppose that whatever marks are deducted under this heading will be the subject of discontent. The utilisation of noise-recording instruments has always been regarded with suspicion by the entrants, but only because the tests have been conducted *en route* and not under conditions uniform for all machines in the trial.

The question of silence—or rather noisiness—is a very important one, and the governing body has the backing of the general public and of all thinking motor cyclists in endeavouring to encourage the development of the comparatively silent machine. Therefore everything should be done to ensure a test which shall be free from the possibility of criticism and heart burning.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY "IXION"

Grease that Spare Piston.

A NUMBER of club knuts nowadays keep a spare piston for spring competitions, and it is usually of aluminium alloy. Indeed, one manufacturer actually sends out his sports model engine with a cast-iron piston installed and an alloy piston in reserve for special events. Aluminium acquires a dull finish on exposure to air. This dullness is due to oxidisation, and the oxide is an abrasive, calculated to destroy the fine polish of a good cylinder wall. Nobody would dream of putting a rusty cast-iron piston into an engine, but cases occur of riders fitting a badly oxidised aluminium piston; in fact, I have seen ungreased alloy pistons in a factory store bin. Moral, keep an idle aluminium piston as thoroughly greased as if it were of cast-iron.

Converted.

YESTERDAY I made two trips over a short piece of bad road. The first trip was on my own machine, which with 3in. tyres and a front rank spring fork is reputed to be one of the most comfortable machines on the road. The second trip was on an experimental spring frame, designed by a well-known motor cycle engineer. During the last year or two I have been tempted to waver in my ancient allegiance to spring frames. I had been veering round to the conclusion that the above lay-out afforded just about as much comfort as any commercial spring frame. The two rides, however, sent me scampering back to my old conviction. Comfortable as the Triumph fast roadster unquestionably is, compared to most existing machines it had very considerably the worse of this particular comparison. I was frequently out of the saddle, and if I attempted any mild speed I had to cling on by my eyebrows and teeth. On the new spring frame I was alike unconscious—so far as physical sensation goes—both of the road surface and of the fact that there was a spring frame beneath me. I rode as evenly as if I had been sitting on an ordinary frame over dead plumb asphalt. Presently the inventor did a stunt for my benefit. He took the worst bit at speed with his arms raised over his head, and bounced violently in the saddle as he came along. This frame embodies two notable departures from ordinary spring frame practice. In the first place its springs have far more movement than any marketed type. Secondly, no rebound is possible. The nett result is the most comfortable motor cycle travel I have ever experienced. All business-like factories are well ahead with their 1923 programme, so I can hold out no great hopes that readers will be able to try out this invention next year. But by 1924 I think the public can be guaranteed their opportunity. The frame is so good that it will probably be marketed as part of some famous machine. In the meantime its principles may perhaps be embodied in accessory fittings sold to improve one or two forks in common use. More anon.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

When the Rudge Goes "Fey."

THE occasional "mad moments" developed by Rudge engines continue to excite interest, and another correspondent writes excitedly to say that he has at last persuaded his engine to a permanent frenzy. In his case the erratic behaviour had nothing to do with the inlet valve spring identified by another consultant. His carburetter jet dated back to the era before manufacturers used the flowmeter, and its delivery orifice was far, far larger than the size stamped upon it. He chanced to try another jet, and instantaneously super-rudging became habitual. I do not myself see why an excessively large jet should produce in-and-out "revving" of the type described, unless spasmodic flooding also occurred.

For Export.

AN Australian rider who has owned thirty British machines and two Americans weighs in with a lively and libellous epistle, which I dare not reproduce. He is for the home-built stuff every time, but desires me to impress our manufacturers with the folly of exporting naked chains to countries where sandy roads abound. If the front wheel churns up a trail or abrasive dust for at least ten months in the year no uncovered chain will last long. For which reason he thinks it a pity that the chain-cum-belt drive is being so freely dropped, although he is ready to be convinced that fully encased chains are in theory practicable.

A Horrid Rumour.

TO the effect that in this year's A.C.U. Six Days every solo machine will carry an official A.C.U. observer, complete with notebook, audiometer, vibratograph, etc., *on the carrier*. Standard weight of said observers 13 stone. Any featherweight observers to carry shot in their pockets. On the best authority I beg to inform the public that this is a mere canard.

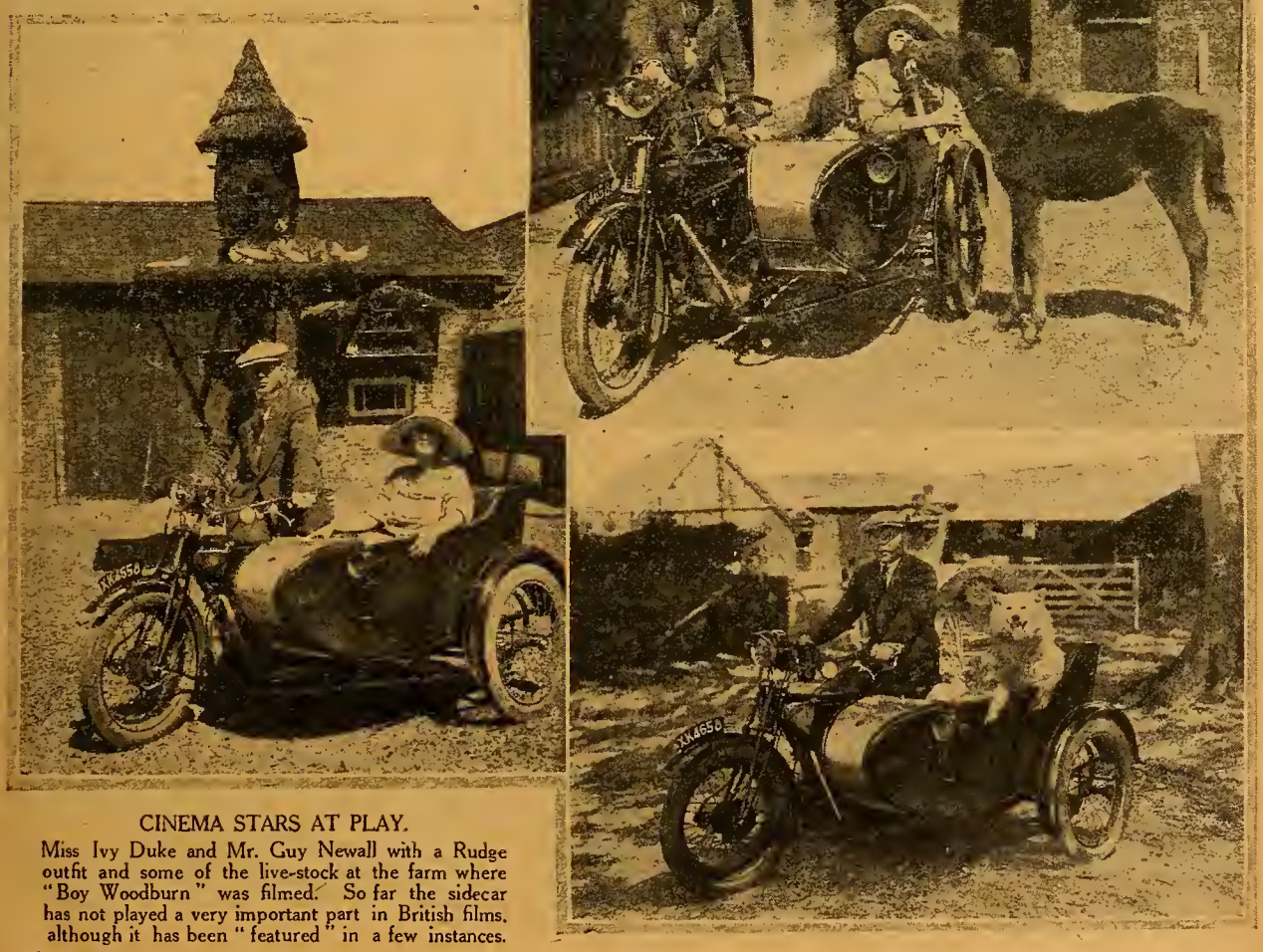
Occasional Comments.—

If it were Nearer!!!

THIS paragraph is intended to turn all organisers of freak trials green with envy. There lies before me a letter from a varlet who exported a G.N. to Australia to his great gratification. In the Benalla district of Victoria there is a location known as Gluepot Country. It consists of 35 miles of white clay melon hole swamp. A "melon hole" is a circular depression varying from 6ft. to 15ft. in diameter, and from 8in. to 2ft. in depth. The melon holes are irregularly disposed, with corresponding mounds interspersed. In dry weather the going is merely bumpy. The "road" consists of a fenced-off strip of melon-hole area, ten chains wide, over which carts zig-zag to pick out the line of least resistance. After a few inches of rain—3in. of rain, *i.e.*, 300 tons per acre is a mere refreshing shower in those latitudes—the entire area becomes submerged except for trees and fencing. Melon holes and mounds are levelled by a flood resembling dirty milk, through which the intrepid motor cyclist ploughs like a destroyer with "a bone in her teeth." The G.N. tackles this area quite merrily, though the average pace may sink as low as 2 m.p.h. Happy thought; why shouldn't the A.C.U. hold a colonial trial in the colonies? Some vexed questions might then be answered.

The Tapley Gradometer.

A YEAR has elapsed since I first fitted one of Mr. Tapley's gradometers to my motor cycle, and during that time it proved a never-failing source of interest on strange and uncharted roads. Tested against surveys, it has always proved accurate, and it provides certain information which a survey does not. Not being a surveyor, I am ignorant how these gentry lay off a twisty hill like Inverfarigaig Corkscrew; I imagine they take the total rise between two datum points. Anyhow, when we come to a hairpin of some acuteness, we know the grade on the inside of the elbow is often twice as stiff as that on the long sweep round. The Tapley measures this for you. My instrument has never given me any trouble, and was always steady, provided the machine could be driven at an even pace, devoid of marked ac- and de-celerations, though a sudden throttle opening made it as merry as a grig for the moment. (By the way, what *is* a "grig"?) But the inventor has recently had another brain wave, and nothing would please him but to have it back and bring it up to date, so that now it is even steadier.



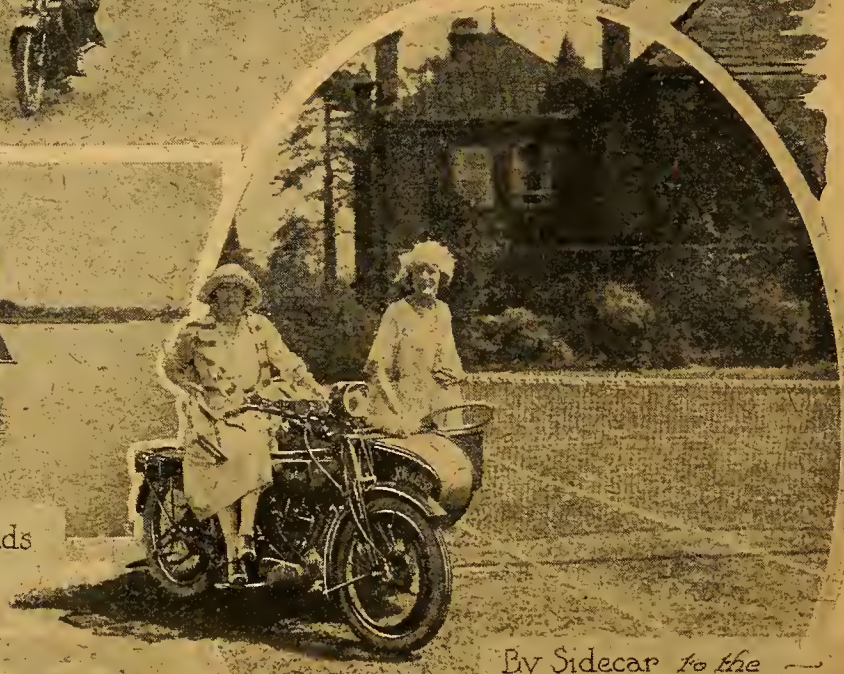
CINEMA STARS AT PLAY.

Miss Ivy Duke and Mr. Guy Newall with a Rudge outfit and some of the live-stock at the farm where "Boy Woodburn" was filmed. So far the sidecar has not played a very important part in British films, although it has been "featured" in a few instances.

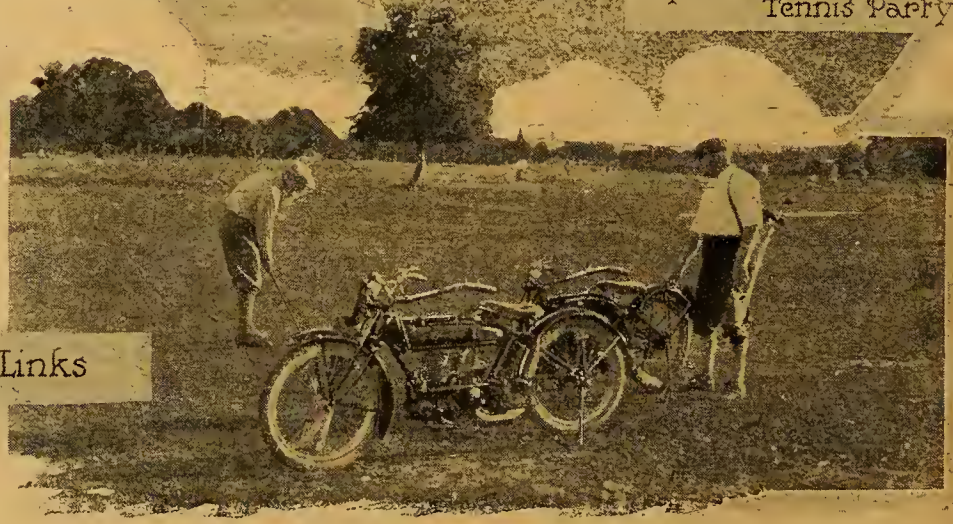
SUMMER PASTIMES and the MOTOR CYCLE

In the Thames Valley
HENLEY

Yachting on the Broads

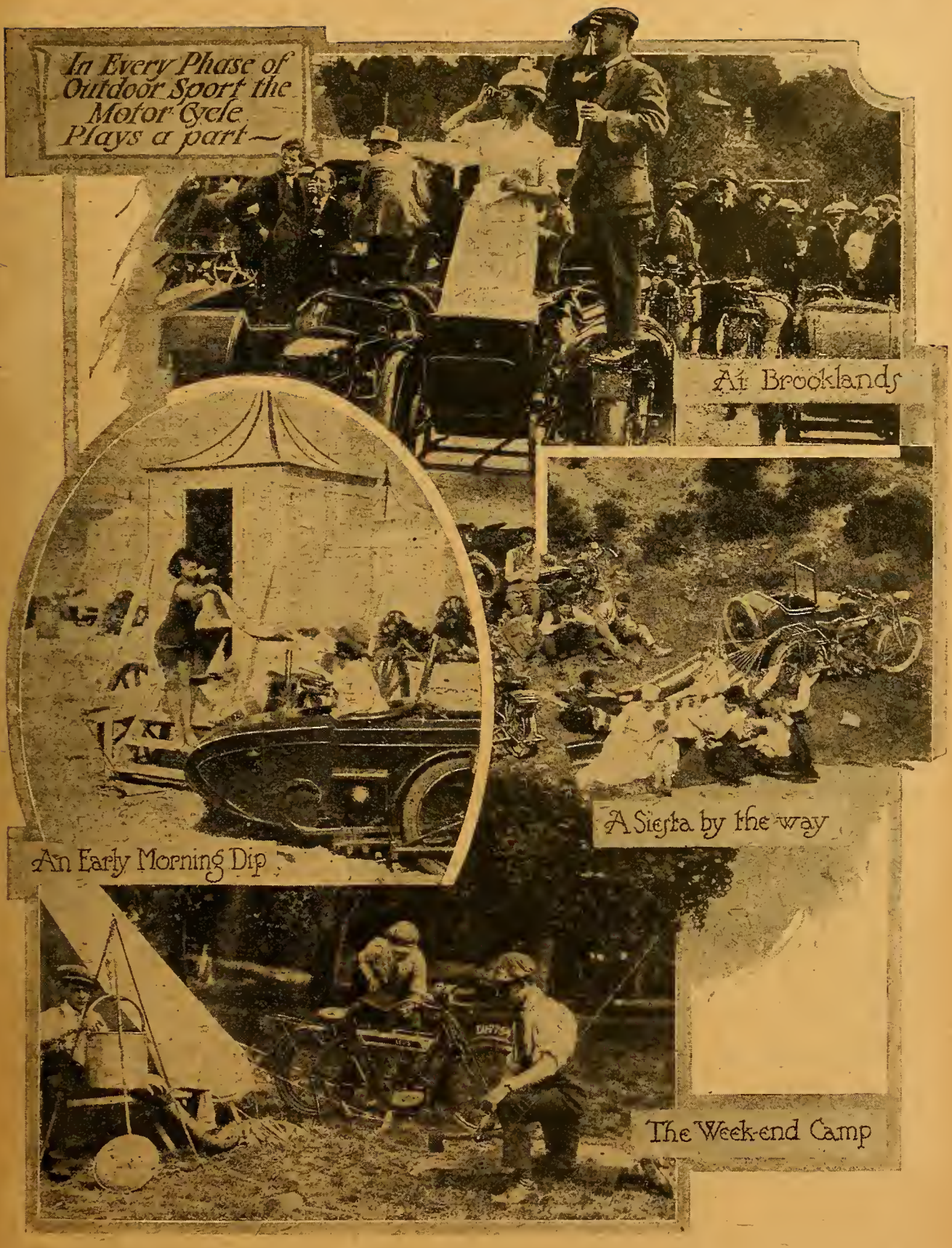


By Sidecar to the Tennis Party



On the Links

In Every Phase of Outdoor Sport the Motor Cycle Plays a part—



At Brooklands

A Siesta by the way

An Early Morning Dip

The Week-end Camp

WHERE TO TOUR

A Brief Survey of the Touring Grounds of Great Britain.

ONLY the motor cyclist who has spent many holidays on tour fully appreciates what Great Britain offers to those who will seek its beauties. In these pages the many touring grounds are briefly reviewed by members of *The Motor Cycle* staff, who are familiar with them.

Naturally, only an outline of the attractions of each district is possible, but this article should serve as a guide to all who are undecided as to the touring ground to explore.

NEAR MENAI BRIDGE ANGLESEY

BALLIG BRIDGE GLEN HELEN I.O.M.

THE WYE VALLEY.

Nowhere in the British Isles is there a parallel to the Wye Valley. The writer knows of only one district reminiscent of it, and that is the Niagara Gorge in America. Considering the really wonderful scenery available between Monmouth and Chepstow, and also its comparative nearness to the populous districts of mid-England, it is surprising that so few have "made the trip." It is impossible to describe it, just as it is impossible for the camera adequately to convey its beauty. It is remarkable, too, for the waters of millions of years have worn a deep gorge which so winds about that at Simons Yat it is possible to stand on a point of land and see the river hundreds of feet below, before and behind one and at one's side. If America had the Wye Valley, it would be as world famous as the Niagara Gorge.

INEXHAUSTIBLE NORTH WALES.

It has been said that a dozen holiday tours cannot exhaust North Wales. Certainly one should not hurry, for once west of Llandudno, Llangollen, Welshpool, or Newtown, every mile contains more than can be seen at 20 m.p.h.

Wales has several gateways, and the one which is most frequented—Chester—as charming as it is, is perhaps the least attractive. Llangollen is the proper front door to North Wales, and the stranger who wishes to make a reconnoitring tour in order to find its best districts can do no better than follow a route starting at Llangollen and including Corwen, Pentre Voelas, Bettwys-y-Coed, Llanrwst, Conway, along the coast road to Bangor (from where a side trip to Beaumaris in Anglesey can be taken), inland

Where to Tour.—
again *via* Bethesda to Capel Curig, Pen-y-gwrhyd, down the Pass of Llanberis to Carnarvon.

From this ancient town the comparatively little known peninsular of Carnarvon should be explored by taking the coast road to Llanaelhaiarn (near which is the now famous Screw Hill "discovered" by *The Motor Cycle* a year ago), on to Nevin and Aberdaron, where one may climb up on the moorland on the end of the land and look down upon Bardsey Island. From Aberdaron, the southern route should be taken through Abersoch, a peaceful little place miles away from railway stations and the world in general, then on to Pwllheli, Criccieth, and Tremadoc.

A Beautiful Pass.

From Tremadoc no one should miss the run up the beautiful Pass of Aberglaslyn to Beddgelert, which road, if continued, will bring the tourist again to Pen-y-gwrhyd, whence one may turn south again *via* Bettwys-y-Coed, Ffestiniog, Harlech, Barmouth, and Dolgelly, at which quaint old town the motor cyclist has the choice of three roads, the first leading him to Bala and back to Corwen, the second to Dinas Mawddwy and Welshpool, and the third round the coast to Aberystwyth.

Further south than Aberystwyth along the coast the motor cyclist need not trouble to go. If he wisbes to explore more of Wales, let him take the trip from the last mentioned resort across the hills *via* Devil's Bridge to Rhayader, New Radnor, and Leominster, or, having crossed the hills, turn off at Llangunig, and thence proceed *via* Llanidloes to Newtown.

If it is the peace of central Wales he wants, south of Rhayader lies Builth and the Valley of the Wye. Should he have become bored with main road, there is Bwlch-y-Groes between Dinas Mawddwy and Lake Bala, and, a little to the east of the famous test hill, there is Lake Vyrnwry.

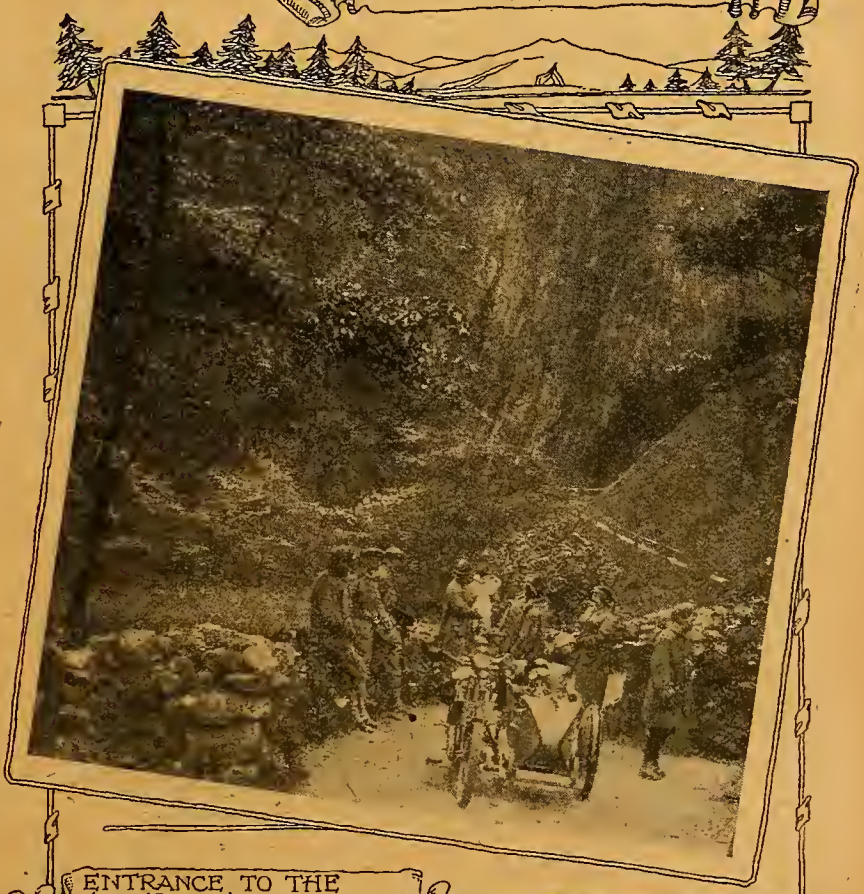
Yes, it is impossible to exhaust North Wales, for when one has covered it all, it is time to begin again.

THE EAST COAST.

The outstanding characteristics of the East Coast are, of course, its flat roads and its magnificent stretches of sand. But flat roads and sand alone are not sufficient to lure the motor cyclist from such beautiful hunting grounds as North Wales, the West Country, or the Lakes, should, of course, the choice of such centres be open to him. Norfolk, Lincoln, and Yorkshire, however, offer more than is realised by those who have not frequented these counties, and a tour, say, from Yarmouth to Whitby can be full to the brim with interest.

Lowestoft serves well as a starting point. From that town one can make it a leisurely jaunt or fast run, just as it suits him. After sipping the delights that Lowestoft and Yarmouth offer, Cromer may be visited. The road to this delightful little resort is lovely in its quaint East Anglian way; and so is the journey through poppyland from Cromer

FISHGUARD, OLD HARBOUR WALES



ENTRANCE TO THE CAVERN, NEAR CASTLETON PEAK DISTRICT

IN THE DUKERIES NOTTINGHAMSHIRE

IN A WARWICKSHIRE VILLAGE.—STONELEIGH

to Wells and Hunstanton. Sidecaring from Hunstanton, through Sandringham, and King's Lynn to Boston, can, under certain conditions, be ideal; it can also be a terrible business in the winter. But the road is worth taking for it has character and distinction. Boston, that quaint seaport dominated by a magnificent church which overlooks miles of fen country, should not be missed. To get a real taste of a typical Lincolnshire coast road, the route through Wainfleet to Skegness should be taken; having traversed this road the journey will not be forgotten. Skegness—so bracing—may form a stopping place for the night before going inland to Spilsby, Louth, and Grimsby. Whilst at Grimsby it is worth the effort to see the landing of the fish at dawn, and Immingham Docks are, too, worth a visit. If there is no desire for this kind of education at Grimsby, take the inland road to New Holland, where the ferry may be taken to Hull.

A Rocky Coast.

From Hull a fast run can be made through Beverley and Great Driffield to Bridlington, where a new type of coastal scenery begins. The charms of this seaside resort are fully known, and whether a prolonged stay is made here or at Scarborough, a few miles further north, one will be compensated. A visit should be made to the great promontory, Flamborough Head, and on no account should Filey Brig be missed. Leave the machine in the town, take a boat across the bay, and land on that curious rocky projection over which magnificent seas are nearly always running.

Scarborough is only five miles away, and the "Queen of the North" is a very apt title for this northerly watering place. Its situation is fine, the district lovely and diverse in its appeal; there are diamonds and rubies on the Spa, where mint rock and paper bags are taboo; there is an old castle, the rocky coast, and Hayburn Wyke—a little Paradise.

Up to now not a word about the machine has been mentioned, for any old 'bus can traverse thus far, or at least as far as Bridlington. Onwards from Bridlington to Filey, Scarborough and Whitby (the latter place must be included), greater care in driving will have to be exercised, there are hills, but nothing formidable. Whitby, where the coast route may end, is a quaint resort, and a paradise for artists and lovers of the old world, and there is a fashionable quarter, very attractive too, and very remote from the harbour end of the town. From Whitby it is an easy matter to reach Thirsk on the Great North Road, *viâ* Pickering and Helmsley. If this circular route has not absorbed all the days available, a run across the dales of Yorkshire to the lakes would give variety, or an alternative run would be to embrace the Derbyshire Dales on the way back to the south, if southward be the way home.

DERBYSHIRE DALES AND THE "DUKERIES."

Derbyshire's greatest lack, from a tourist's point of view, is imposing sheets of water. That is probably one reason why the county is not so fully explored

Where to Tour.—
as it might be by motor cyclists from the south. The area of the Peak District is compact, the roads are well graded, and the scenery varied. In fact, this diversity of landscape, beautiful even without the aid of lakes, is one of its chief attractions. Derbyshire is centrally situated, accommodation is easily obtained at such resorts as Buxton and Matlock, or at the numerous farmhouses to be found in the lovely dales. So easy of access are the beauty spots that even in one day much of it can be seen if a proper route be selected. Wild, rugged, and forbidding solitudes abound in the neighbourhood of Snake Inn and Allport Moor, which is near to the highest point of the Pennine Range. Yet round about Matlock, Bakewell, Baslow, Ashford, Tideswell, and Buxton there are dales which for sheer beauty and distinctiveness cannot be excelled anywhere. The ease with which attractive rides can be planned makes it almost superfluous to detail a route, but the following circular tour briefly detailed will serve for anyone wishing to enjoy some of the best scenery in one day.

Buxton, Tideswell, Ashford (*Monsal Dale*), Bakewell (*Hadden Hall*), Rowsley, Matlock, Kelstedge, Red Lion Inn, Baslow, Calver, Fox House Inn, Hathersage, Bamford, Ashopton, Allport Moor, Glossop, Hayfield, Chinley Head, Chapel-en-le-Frith, Dove Holes, Buxton (70 miles). If Derbyshire be approached from the north, east, or south, one would be well repaid by a visit to the "Dukeries," which are easily reached from Nottingham, Doncaster, or Newark.

It is a small district of rare beauty, with a character quite its own. Ollerton and Tuxford are good centres from which to reach this historic ground which Robin Hood, Friar Tuck, and Little John made famous. From Ollerton it is but a short run to Matlock, which makes an excellent centre for full exploration of the Derbyshire Dales.

THE WEST COUNTRY.

So far as the majority of motor cyclists is concerned, the West Country is that part of England between Bristol and Lynmouth. Quite a number of motor cyclists hurry through this section in order to reach places further afield, which is quite a mistake, and the tourist intending to "do" Devon and Cornwall should reserve time to visit the Cheddar Caves, and Gorge and Wells, to try Porlock, and to see Exmoor.

Bristol is well worth a day of any tourist's time. Not only has the city many interesting buildings and historic associations, but Clifton has attractions quite unique which stand out in the memory of the wayfarer.

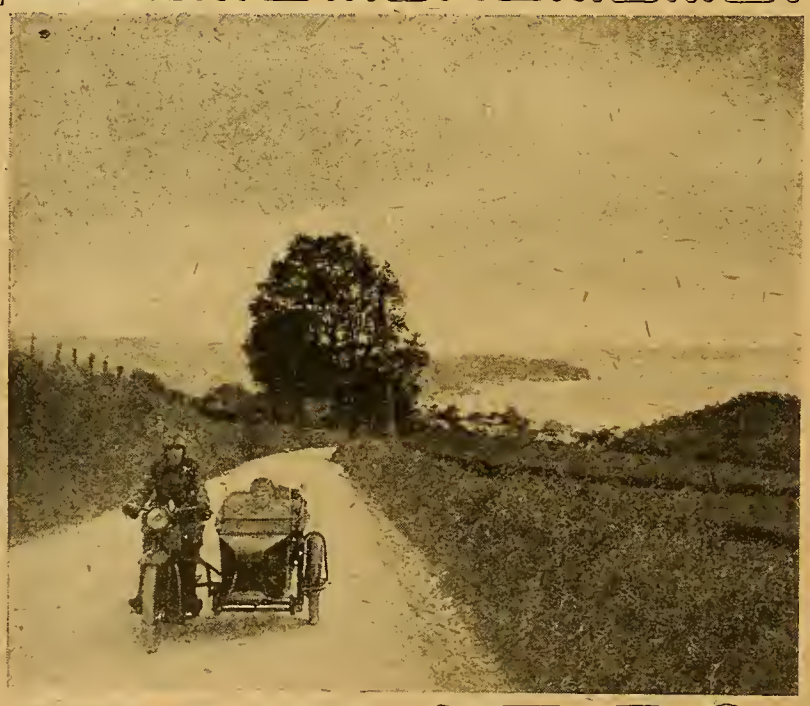
YORKSHIRE.

Yorkshire! Who can point to any one corner of the broad-acred county as the spot most fitted to represent its charms? In its boundaries the county possesses scenery of almost every description to be found in Great Britain; true the hill contours only occasionally assume a

ROBIN HOODS BAY
YORKSHIRE COAST

COWDALE
DERBYSHIRE

LYNMOUTH



BETWEEN TEIGNMOUTH & TORQUAY SOUTH DEVON

craggy outline, but there are high altitudes; wild, desolate uplands, moorland lakes and tarns, rugged valleys, fertile plains, mountain streams and placid rivers, sandy *littoral* and rocky coast.

With all these varieties of scenery there is little need to cross the Yorkshire borders, whatever type of country is wanted. Hill-climbing and the exploration of seldom-visited moorland byways can be had in the West Riding Dales (Wharfedale, Airedale, Wensleydale, Nidderdale, and the rest), easily accessible from Leeds or Bradford, and there are the inland resorts of Ilkley, Harrogate, or Knaresborough, all near "the dales." To the lover of wide, rolling pastoral lands, the central plain of York has its slow-moving rivers verging towards the Ouse; there are antiquities and historical associations innumerable, with stately cathedrals at York, Ripon, and Beverley. Facing eastward are Whitby, Scarborough, Bridlington, and Filey—incomparable coast resorts—and the artist-colonised fishing villages of Staithes and Runswick Bay. In the north-east are the Wolds, a moorland plateau fascinating to the lover of the wild life of the woods and dells.

A Powerful Machine Needed.

Motor cycles are immensely popular in Yorkshire, and ample garage facilities are available everywhere. Except on the central plain, a sturdy, powerful, and suitably geared mount is needed, for to the west and to the north-east single-figure main road gradients abound.

Probably the best way to "see Yorkshire" in a holiday tour is to commence, say, from Wetherby, on the North Road, proceed up Wharfedale to Otley, Ilkley, Bolton Abbey (*ruins, woodlands, etc.*), Grassington, Kettlewell (*near Park Rash, the famous freak hill*), Buckden, Cray Ghyll, and Kidstone Pass (*wild moorlands*), into Wensleydale. Here are Aysgarth (*falls*), Jervaulx (*abbey*), Masham, Ripon (*cathedral and Studley Royal park*). Crossing *viâ* Swaledale, eastwards to Thirsk, the Plain of York is crossed, and then up Sutton Bank to Helmsley. Pickering (*old market town*) marks the beginning of a wonderful twenty-mile run over moorland to Whitby; coast road to Scarborough, then inland *viâ* Staxton, Malton, York (*cathedral, ancient walled city, etc.*), Harrogate and Knaresborough (*inland spas*), and so back to Wetherby.

THE HIGHLANDS.

The average motor cyclist has not yet "discovered" Scotland, and even the Lowlanders of that country are inclined to confine their riding to the well-worn tracks in their own immediate vicinity. From this it will be inferred that the glories of the real Scotland are in the North—as, indeed, they are.

It is a wonderful country, scenically. But nine-tenths of the too-small number of motor cyclists who visit it at all depart after a few fragmentary glimpses on the borders of its inner paradise of beauty. There is, of course, some excuse for them. Suppose they are going north, with Inverness as their tentative destination. They meet in the neighbourhood of Moffat

Where to Tour.—
scenery which in any other country would be regarded as almost unrivalled for its magnificence; then, by way of Perth, they enter the Highlands at Dunkeld, through wooded hills flanked by mountains even grander, and passing world-famous Pitlochry and Blair Athol they cross the Grampians by a road like nothing they have seen before, enjoying an ever-changing vista of mountain, loch, and stream which seems to make hitherto unbelievable paintings come true.

At Inverness it is decided that Scotland can hold nothing finer than the area they have just traversed. Some return by the same route; others, more venturesome, follow the Caledonian Canal—less canal than loch—and reaching Oban marvel at the infinite variety of the west coast; or, it may be, they go by Deeside and Aberdeen, romantic enough in all truth. In no case, fine as their tours have been, have they seen the real Scotland.

The North West Coast.

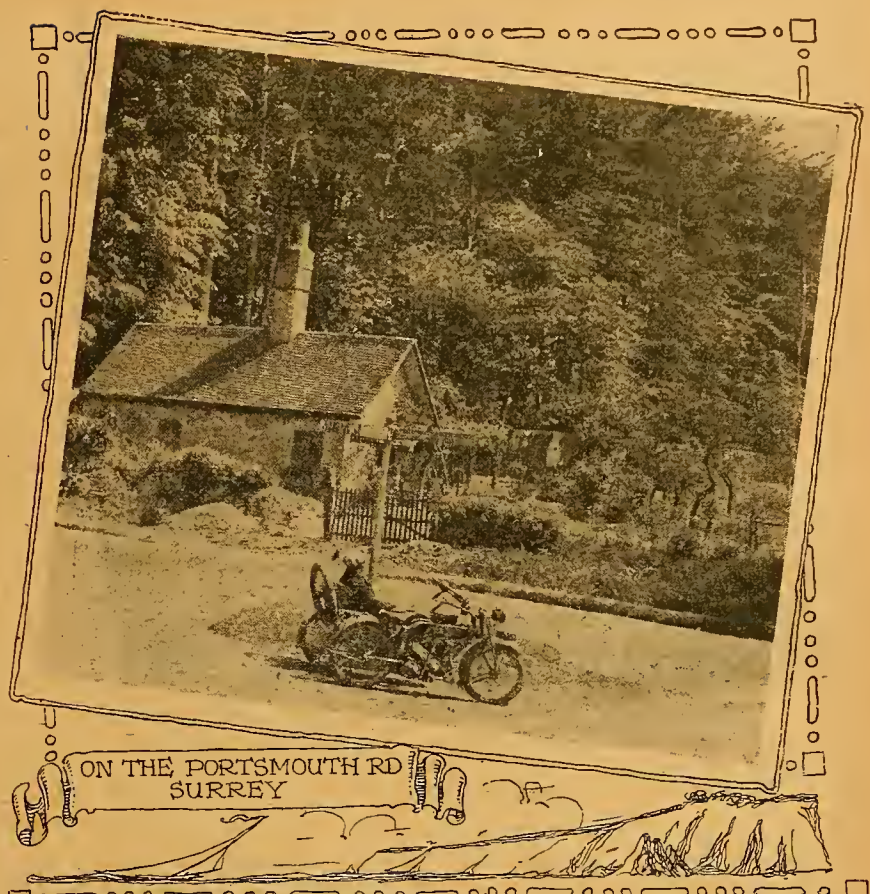
North of the Caledonian Canal and west of Inverness is the land where the zenith of scenic grandeur is reached. Gruinard Bay, Kyle of Lochalsh, Applecross, Loch Maree, Gairloch—what visions of majestic loveliness these names conjure up in the minds of those who have seen them! The pen fails one, and even the brush in a master's hand cannot exaggerate when attempting to portray a West Highland scene. Usually the artist fails as lamentably as the writer.

True, this locality is inaccessible, but the motor cyclist will find the trip well worth its difficulties, which are less to him than to almost any other traveller. There are no railways and few towns, but it may comfort him to know that the roads carry a regular service of Fords, and what a Ford can do——!

One must not forget, however, the other historic touring grounds of the country across the Tweed—perhaps less deserving of attention because they are better known—the Border towns and the Tweed itself, Loch Lomond and the Trossachs and the south-western corner and parts of Ayrshire Scotland is a country to which one can go again and again, and always find something new.

MID ENGLAND.

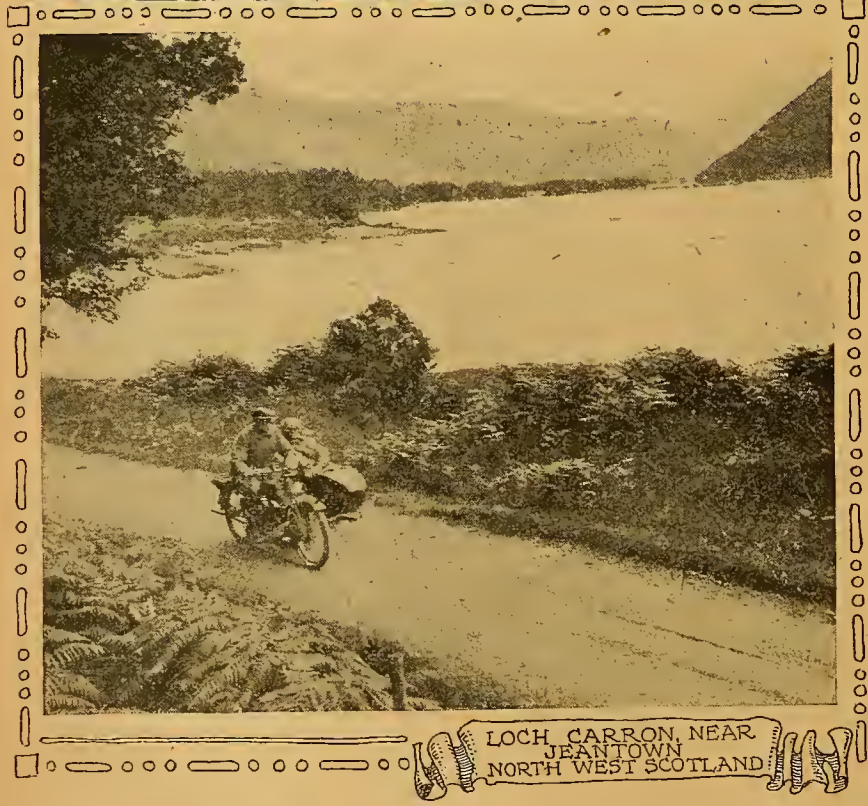
Those who admire park-like beauty can find such scenery in the Midland counties to their heart's content. Throughout this part of the world the smoke and grime of the big manufacturing towns are relieved by wonderful trees and rural scenery within a few minutes' ride of the busiest centres. Even the eighteen miles between such active industrial towns as Birmingham and Coventry is not devoid of actual beauty, and what could be more charming than a trip through the Cotswold Hills, with their quaint old-world villages nestling amongst the fruit-producing valleys. In the spring time the Vale of Evesham draws thousands of visitors for a sight of the orchards in bloom, and throughout the year the surrounding country is always beautiful. Those who prefer spacious views to pastoral sur-



ON THE PORTSMOUTH RD SURREY

CONISTON WATER LAKE DISTRICT

MAMRATACHAN, NEAR INVERNESS SCOTLAND



LOCH CARRON, NEAR JEANTOWN NORTH WEST SCOTLAND

roundings should visit the Cheltenham and Malvern districts, where from the tops of the neighbouring hills it is possible to obtain wonderful panoramic views of many counties. The roads on the whole are good, but it is amongst the lanes and by-roads that the most beautiful scenery is to be found. Anyone who has the time to wander amongst the Warwickshire lanes should not miss such an opportunity. One can hardly find a side road that is without some fresh attraction, and though, as might be expected, these lanes are twisty and require careful driving, the surfaces are usually remarkably good. The whole of the Midlands is full of historical interest, and such names as Edge Hill, Stratford-on-Avon, Kenilworth, Warwick, and many others, are attractions not only for their historical associations, but also for their beautiful surroundings. Perhaps the one feature which is lacking to make perfect much of the Midland scenery, is running water or a river of magnitude, but even this need is partly filled by small but beautiful lakes dotted about the numerous parks, while the Northern Midlands cannot be accused of lack of streams. There are some who consider that the Midlands are chiefly composed of mines and manufacturing towns, but the tourist in search of beauty should not be deterred by such imaginings. True it is that there are blots in the scenery in certain parts, but even the most thickly populated centres have the great advantage of being surrounded by most beautiful country.

SURREY.

Some have said that the Londoner's fate is a life 'midst smoke and traffic. Maybe! He has, however, if in the possession of a motor cycle, the choice of some of the most charming trips in the country.

An hour and a half's ride from Town, a pleasant jaunt to the vicinity of Shere, an antiquated little village nestling within the closely wooded hills skirting the famous Newlands Corner, provides an ideal afternoon's run.

The Embankment route, *viâ* Putney Bridge and Wimbledon Common, is probably the most advantageous way, since the only portion of the journey which is harassed by tramways is a mere 300 yards in Putney.

Quitting this latter place, the Portsmouth road *viâ* Kingston and Esher is, from the latter village, bordered by a rich fringe of trees.

Motor cyclists rendezvous.

Cobham, a village close to the famous Brooklands racing track, forms a centre from which many pleasant runs may be taken. An open throttle may be tried down the Fairmile stretch of tarred road *en route* for the motorists' *rendezvous*—the Wisley Hut. Here a small lake, reflecting the border willows hugging its banks, provides a shady and peaceful spot for a halt. Following a left fork a mile further on one sees the distant hills of pale purple contrasting with the green meadows of Clandon, whilst another view enchants by its picturesque cottage gardens focussed by a frame of dark woods in the background.

Where to Tour.—

The steep ascent to Newlands Corner brings reward to the heated engine at the summit, for here a halt is imperative. A miniature mountain land meets the eye. For miles the country is outspread like a relief map, whilst in colour an artist's inspiration. Many pictures have recorded this magnificent view. Below is located the village of Shere.

If equipped with a low gear ratio a small detour through the pine woods, entered from a fork road at the notorious Silent Pool in Shere, is well rewarded. Here is a region unspoilt by cultivation.

Many routes may be taken from Shere, all of which have their particular charm. Due west, narrow leafy lanes wind an irregular course *viâ* Albury and Shalford, to the old-fashioned town of Guildford, with its famous High Street, whilst further south, following the Godalming road, a circular tour *viâ* Horsham and the Dorking road embraces both highland and lowland. From Dorking a visit to Reigate and Redhill and thence along the top of the Westerham hills, gives a great variety of views.

Should one wish to explore the byways in this district many hills frequently used in official motor cycle trials would be encountered. East of Westerham, in the vicinity of Brasted and on the way to Sevenoaks, the range of hills lying south of the main road contains gradients of note. Tunbridge Wells, famous for its springs and curious rock formations on the Downs, should not be missed.

THE DUCHY OF CORNWALL.

The writer has not many favourable impressions of Cornwall as a touring ground, but it has sufficient charms to draw one, irrespective of its distance from the more populous districts. Looe, Fowey, Falmouth, Helston, Marazion, Penzance, St. Ives, Newquay, Padstow and Bude are all worth visiting. Those interested in the romance of the old smugglers will find material for their imagination in such places as Mullion and St. Ives. The fact that so many artists have used Cornwall for a background is sufficient guarantee that the amateur photographer will be rewarded for the trouble of taking his camera.

DARTMOOR AND SOUTH DEVON.

So famous is North Devon as a touring ground that very often the southern coast of this charming country is overlooked. Totally different in many respects from the resorts on the north coast, those facing the English Channel are well worth devoting a vacation for their exploration. Torquay is an excellent centre, but there are many who think that this famous watering place too "towny." For such tourists there are more restful places such as Paignton, Babbacombe, and Teignmouth.

Like Cornwall, the best of South Devon is on the edge as it were, that is, if we except Dartmoor, which provides a touring ground of its own, but nevertheless, one which no motor cyclist visiting the south coast should fail to see.

Taken on the whole, however, the roads to and from important points on the coast are monotonous, chiefly on account of the high hedges which line them. From Teignmouth and Shaldon, to within a mile or so of Torquay, there is an excellent coast road providing some splendid views, but on the main roads there is little to be seen excepting the dust of char-a-bancs.

On Dartmoor, however, totally different kinds of roads are found. Here there are no hedges to shut out the views and the vistas to be obtained on the moors are ample compensation for the low gear work necessary to reach them.

On the south coast, in addition to the places mentioned, there are Dartmouth, Kingswear, Brixham, Salcombe, and Plymouth, all offering a variety of interest unlike anything to be found at any other part of the coast, while Exmouth, Sidmouth, and Lyme Regis, eastward of Exeter, should not be missed.

THE COAST OF NORTH DEVON.

The north coast of Devon is so well known, by name at least, that it seems superfluous to mention this beautiful part of Western England. From the north east the first place of interest on the North Devon coast is Lynmouth, with Lynton at the top of the famous hill of the same name, and which has been made famous to motor cyclists by the London-Lands End trials. From Lynmouth to Lynton, also, is another longer road passing through the beautiful Watersmeet Valley, while further on the coast is the desolate Valley of the Rocks. Ilfracombe is well known as a resort, and a little further on there is Clovelly—one of the beauty spots of England made famous by picture postcards and calendar artists.

Needless to say, any motor cyclist visiting this part of the country needs plenty of power, and, what is more important, really efficient brakes.

LAKELAND AND NORTH LANCASHIRE.

No series of touring articles would be complete without some reference to the Lake Country of Cumberland, Westmorland, and North Lancashire, but so frequently has the district been dealt with in *The Motor Cycle*, both as a touring ground and as the scene of trials, that on this occasion only a passing reference will be made.

Although so hilly, the roads of the Lake District are mostly well-graded, and a medium powered machine with average gear ratios will allow most of the Lakeland area to be covered.

Those who have ever spent a holiday amid the Cumbrian mountains will feel the call to return; should they do so they should devote some time to the exploration of the lesser-known southern portion of the district, and on the northward journey detour into the uplands of North-East Lancashire. Following the Pennines up from Bolton and Preston, some fine moorland scenery is available.

PILLION RIDING AGAIN.

OUR attention has been called to a recent case at Denis Sheriff Court where a motor cyclist was fined £3 for having his rear number plate obscured whilst carrying a lady passenger whose dress hid the plate. The presiding Sheriff surely imposed an unnecessarily heavy fine for an offence of this character. It is not a legal offence to take a passenger on the carrier, and it seems hardly just that the Sheriff should impose a fine of £3 because in his opinion "it is a dangerous practice and one not to be encouraged by a lenient sentence."

There is no doubt a great deal of prejudice on the part of the non-motoring public concerning pillion riding, and as an example it may be cited that most insurance companies charge 50 per cent. extra when a solo machine is used with a pillion. At least one firm manufacturing pillion seats—the Tan-Sad works—has sufficient confidence in the safety of pillion riding, when proper equipment is provided, to issue a special policy for those fitting Tan-Sad seats and no extra charge is made for the privilege.

There is no lack of evidence to show that riders, who as a habit carry an extra passenger, are convinced that there is no danger in the practice, and a view often expressed is that greater care is exercised when a machine is used for pillion riding.

It would be interesting if insurance companies would issue a statement as to the number of accidents reported to their claims departments which have been due to the presence of a pillion passenger, and whether a proper pillion seat has been provided. We think that it would be found that in the great majority of cases in which a pillion rider is involved no provision has been made for the passenger's comfort. Riders who accommodate occasional and inexperienced companions merely by means of an unsecured cushion or a coat are in the minority, but it is due to them that pillion riding is regarded in some quarters as dangerous.

Runabout and Sidecar

Passages on the evergreen subject of Weather Protection and Comfort of Sidecars as compared with the cheap Runabout.

NOT because I was tired of the sidecar did I turn to the three-wheeler, and it was not because the three-wheeler was found unsatisfactory that a sidecar has once again been purchased. I wanted, for one thing, to find out if the three-wheeler possessed all the merits that are claimed on its behalf, and I have now definite opinions on its various advantages and drawbacks which prolonged ownership only can form.

To every sidecarist who has used an outfit for very many years there comes a period when he is attacked by *comfortitis*—a dread disease that must run its course. I was caught badly after a fortnight's sidecaring in Wales, where it rained every day, and where cold, icy winds caught and buffetted one on the passes. So I ordered a Morgan straightaway, hoping that the De Luxe model body would be bigger than the measurements. It wasn't. The boy was bigger than his measurements—most boys are in a car. So was I, and so was the passenger-in-chief. But we managed, with the aid of an auxiliary seat, to pack ourselves into the body very well.

And that first ride—how it rained—as if to demonstrate the absolute and irrefutable superiority of the little three-wheeler over our previous outfit—the rain poured in torrents for two solid hours.

"Never again the sidecar," quoth I, watching the water dance on the bonnet.

"Do mind my foot, Jacky," said the passenger-in-chief to the boy as he grazed his mother's ankle.

Then the conversation proceeded on lines more or less motorish. First the question of space, then the question of the driver's comfort.

Riding in a Vehicle.

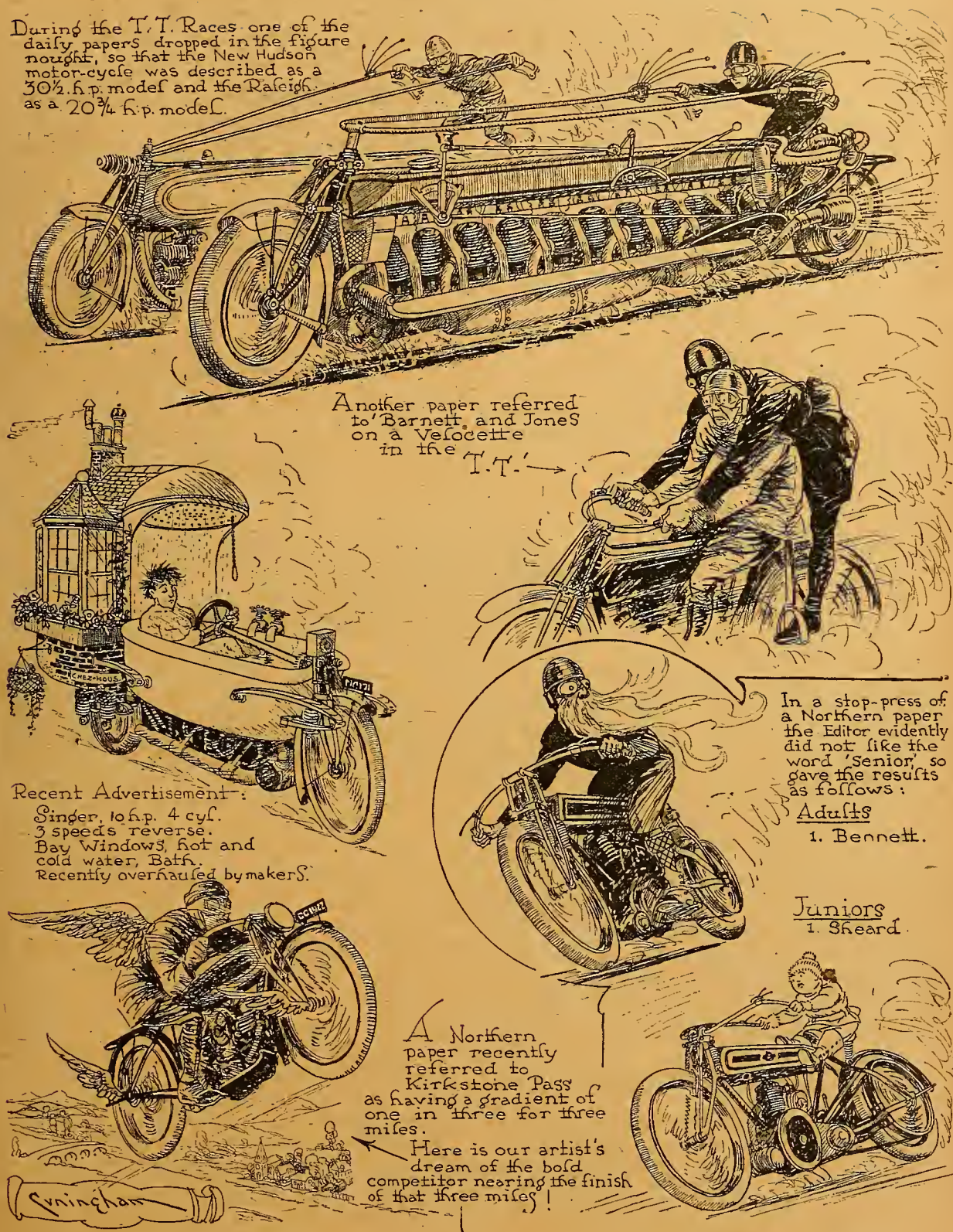
After the novelty of riding "in" instead of "on" a vehicle had worn off, other considerations made themselves manifest. For 500 miles the rear tyre, on which my eye was always focussed, played its part valiantly, then suddenly gave me taste of what I knew sooner or later I had to eat. But I can honestly say a puncture on a three-wheeler is no more trouble than on a sidecar, probably less, neither was I troubled with more punctures than I had been on my sidecars. Many miles of driving in every kind of weather convinced me that the three-wheeler possessed nearly all the merits that are claimed for it, and very few of the faults that detractors occasionally attribute to the machine. I found little difference in the mechanical wear and tear than in a powerful sidecar; the high-speed chain naturally does not last like the encased chains of a motor cycle, but both high- and low-speed chains are good for many thousands of miles. The controllability of the Morgan, and, in fact, all the three-wheelers I have handled, is good, but years of sidecaring have naturally produced a greater feeling of security when handling an outfit than when driving either four- or three-wheelers.

Pros and Cons.

To name three features I do not care about on the runabout: the starting arrangement, although excellent and efficient, is not comparable with the kick starter; the awkwardness of turning in a limited area—the sidecar is unquestionably more handy than any other motor vehicle on the road—that cannot be questioned; the use of a two-speed gear also seemed very strange after prolonged use of three speeds, especially on *long* gradients only just too steep for top gear. But in spite of all this and *plus* even the bogey of a skidding rear wheel—for it is only a bogey, though you do feel the rear wheel skid slightly—in spite of these little idiosyncrasies, the three-wheeler is a desirable little machine, and if I could afford it I would run both a sidecar and three-wheeler. But as I cannot do so I prefer the sidecar, because the problem of the extra passenger is so easily solved. As I write, the sun shines brilliantly; perhaps when the north-west wind blows rain, and the boy is at school, I'll sing another tale, for it cannot be denied that the runabout possesses attributes the sidecar can never hope to own; but then the sidecar, too, has attractions quite distinctive and peculiar to itself. No! when compared, there is no *better*.

A. F. J.

A BURLESQUE ON MOTOR CYCLES.


During the T.T. Races one of the daily papers dropped in the figure nought, so that the New Hudson motor-cycle was described as a 30½ h.p. model and the Raleigh as a 20¾ h.p. model.
Another paper referred to Barnett and Jones on a Velocette in the T.T.
Recent Advertisement:
Singer, 10 h.p. 4 cyl.
3 speeds reverse.
Bay Windows, hot and cold water, Bath.
Recently overhauled by makers.
In a stop-press of a Northern paper the Editor evidently did not like the word 'Senior,' so gave the results as follows:
Adults
1. Bennett.
Juniors
1. Sheard.
A Northern paper recently referred to Kirkstone Pass as having a gradient of one in three for three miles.
Here is our artist's dream of the bold competitor nearing the finish of that three miles!
Cuningham

Amusing mistakes are often made by those who are not conversant with the technicalities of motor cycling.

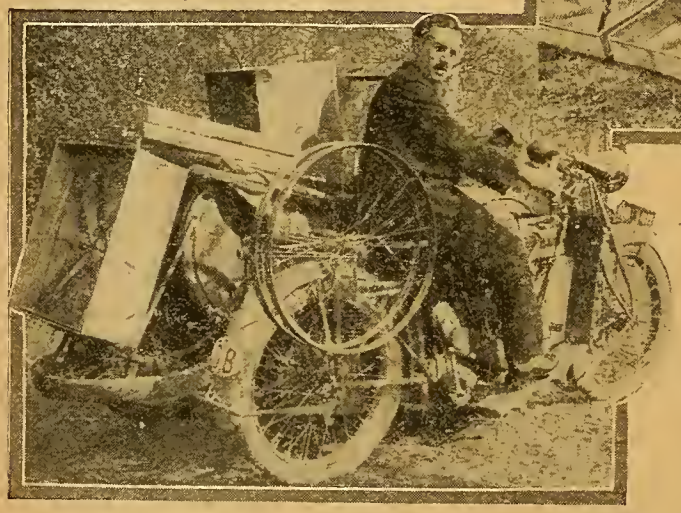
A PORTABLE FILM FACTORY.

How a Kinema Photographer Utilises a Sidecar Outfit for his Work in all Parts of the Country.

FROM time to time the motor cycle and sidecar has been set to perform most unusual work to satisfy its owner's whims and fancies, but never before has it been employed as a medium for the transport of a "film factory." The outfit used for this work was a Matchless with a family body, which provided ample room for the purpose. To be equipped with a capable machine and trustworthy is equivalent to possessing one's own train service. The owner and designer of this portable film factory is Mr. E. G. Tong, a kinema expert who has had the honour of transforming the Royal Ball Room at Sandringham into a kinema theatre, and providing a kinema entertainment for the Royal Family.

Transporting a Laboratory.

When the kinematographer has taken his picture he has to return to the laboratory to have the negative developed and printed. This often means a long train journey, causing much delay in the production of the films that are wanted for showing topical events and pictures of local interest in the provincial towns. Mr. Tong has overcome the annoying part of waiting by using an outfit capable of being easily transported, carrying the facilities to manufacture the pictures on the spot. It will mean that pictures can be taken and made ready for showing to the public within two hours after an event has happened.

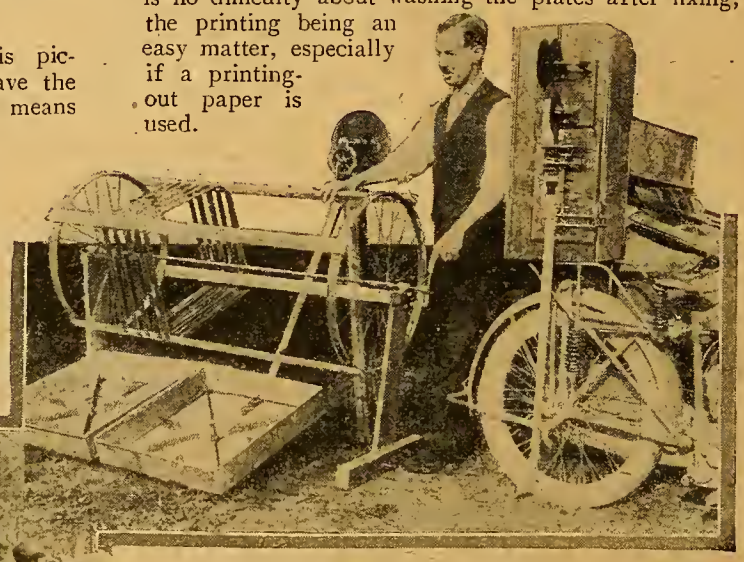


The whole of the apparatus, including developing, printing and drying arrangements, packed on a Matchless outfit.

The portable plant consists of a developing tank which fits comfortably on the luggage grid; the printer, which is shown on the carrier to give an idea of comparative size, and which travels in a box in the sidecar, and the drying drum which is made to wind the film round. This also stows away, the bicycle wheels on which it is based fitting snug to the carrier.

A Sidecar Darkroom.

Here is another note that will probably interest amateur photographers. When there is a hood and screen fitted to a sidecar, there is no need to seek chance darkrooms for the changing of plates or even for development, for with a very little trouble, and with very little extra fabric, the sidecar may be turned into a temporary darkroom. A piece of good ruby fabric folded double and pinned with drawing pins over the windscreen will provide all the safe working light that is required. By working near a stream there is no difficulty about washing the plates after fixing, the printing being an easy matter, especially if a printing-out paper is used.



Drying the film after its development in a portable tent, which, too, is part of the equipment. The "printer" is shown on the carrier. The negatives of both illustrations were developed out of doors.

POLICEMEN IN DISGUISE.

THAT an ordinary motor cyclist should be mistaken for a policeman is a contingency hardly possible in the British Isles, but in the United States motor cycles are not really popular; but as they have proved to be exceptionally useful to the various police forces, practically every city has its motor cycle policemen. Recently a private driver making his way through traffic found everything gave way for him, and, to his astonishment, he was suddenly called to arrest a man who was guilty of a misdemeanour on the highway. On another occasion a private motor cyclist was resting by his machine, and every passing car slowed up, mistaking him for a motor cycle policeman in disguise. Motor police are only just beginning to receive favourable consideration here; the Isle of Man is the latest locality to recognise their value and to recommend a mobile force.

The Beginners Mount

The light weight of the Hack demonstrated by a young owner of the fair sex.

This young lady keeps her Ner-a-Car in the entrance hall—but not everyone possesses such handy accommodation.

Notes on the Different Types of Motor Cycles available for every Purse and the Requirements of every Purchaser.

EVERY motor cyclist is looked upon by his non-motoring friends as an authority on all motor cycles and their accessories. Sometimes this blind confidence in the knowledge of the rider is well placed, but frequently he is far from competent to advise on the choice of a machine to meet the requirements of every man, woman and juvenile who may seek his advice.

Quite recently the writer overheard a young enthusiast suggesting to an elderly and corpulent uncle that he should purchase a certain well-known 70 m.p.h. mount.

This is just as ridiculous as the suggestion made by a successful racing man that his eighteen-year-old boy cousin should commence his motoring career on a scooter.

Everyone Catered for.

There are now on the market motor cycles suitable for the needs of every person who wishes to own a power-propelled machine, and it is in order to assist those readers who have friends seeking advice that this article has been prepared.

Keen motor cyclists naturally consider that every boy and girl should become a member of the motor cyclists' fraternity immediately they attain the age of fourteen—that is, when the law permits them to hold a driving licence.

In our issue of February 23rd this year we published an article by the Chairman of the Auto Cycle Union on motor cycles for boys and girls, and we were not surprised that it aroused the interest of many readers who agreed with Colonel Brereton. Others did not!

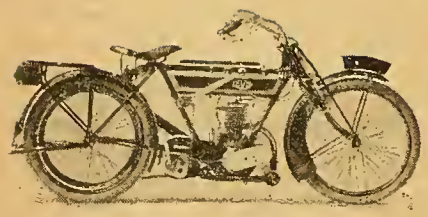
We think, however, that it was definitely settled at the time that age has little to do with the question of whether a person as young as fourteen shall be allowed to ride. Much depends upon the temperament of the juvenile. There are boys and girls of fourteen who are as clear-headed and as likely to be careful on the road as the majority of youths of eighteen to twenty—more so, in fact. The writer maintains that if the novitiate stages are passed before the rider reaches the so-called "mad" age of the early twenties there would be less thoughtless driving on the part of the younger generation in particular and motorists in general.

The Selection for Young People.

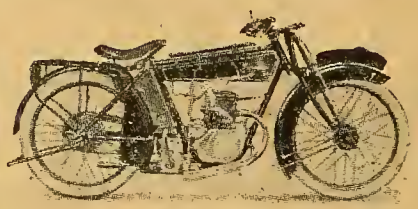
However, we will accept as granted that a schoolboy or schoolgirl is a person fit to ride, and as a large number of our readers have friends who are parents of boys and girls keen to own a motor cycle, we may start by discussing the types of machines best suited for our youngest friends.

Well-known miniatures of the seat scooter type: (Left) the Skootamota; (Centre) Unibus; (Right) Kenilworth.

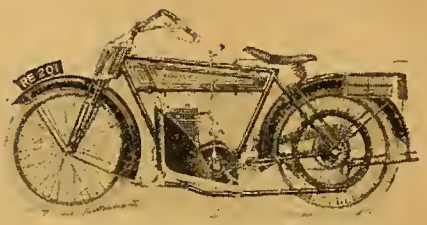
LIGHT TOURING TWO-STROKES WITH 24 in. WHEELS.



211 c.c. Levis.



220 c.c. Velocette.

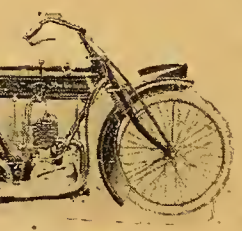


225 c.c. Royal Enfield.

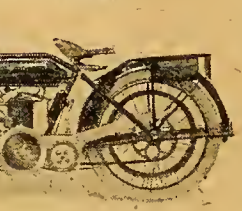
Very often the requirements of a schoolboy and a schoolgirl are regarded as identical. A little thought will show that this view is an erroneous one; the average boy and the average girl of school age have totally different temperaments, and it is obvious that what might be suitable for one might easily be unsuitable for the other.

As an example, we may accept as fact that almost any small lightweight motor cycle of the conventional type is suitable for a schoolboy, provided the question of size is considered. There are boys of fourteen who are physically equipped in height and muscle to handle the most powerful machines; therefore, in such cases a 26in. wheeled mount will meet the demands so far as size is concerned. On the other hand, the average schoolboy of fourteen or fifteen, being still in the growing stage, may be short in the leg; therefore, a 24in. wheeled machine will be preferable. This question of machine size is more important than is generally appreciated, for very few people feel confident on a machine on which it is impossible to sit astride with both feet firmly on the ground. There are not very many 24in. wheeled machines on the British market, and, on referring to *The Motor Cycle* Buyers' Guide published on April 6th this year, the reader will find the following motor cycles which are so equipped: Connaught, Levis, New Hudson, Radco, Royal Enfield, Triumph Junior, Velocette, and Verus.

Wheel size does not always govern saddle position, however; it does not necessarily follow that if a machine has 24in. wheels the riding position will be any more convenient for a short-legged rider than other machines which have 26in. wheels, but as a rule it may be accepted that the extra inch in the radius of a 26in. wheel machine will almost invariably increase the height of the saddle from the ground.



211 c.c. New Hudson



293 c.c. Connaught.

We will not enter into the question of whether the machine should be a four-stroke or a two-stroke. There is so little advantage in one type over the other. The novice need not consider it, and both have characteristics of their own.

The Schoolgirl's Machine.

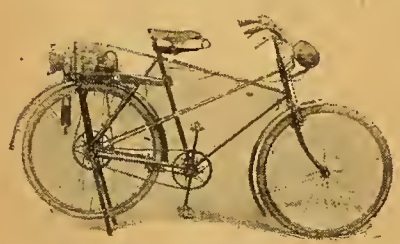
In deciding upon a motor cycle for a girl, other factors than height must be taken into consideration. The average boy is much stronger physically than his sister of the same age; therefore, to a girl light weight is as essential as the question of ease of handling when dismounted.

Hundreds of schoolgirls in this country are using both 26in. and 24in. wheeled machines of the same types used by boys, but most parents—especially if they are not motorists themselves—prefer their daughters to ride motor cycles designed expressly for ladies. Also many girls are not physically capable of handling a comparatively heavy machine.

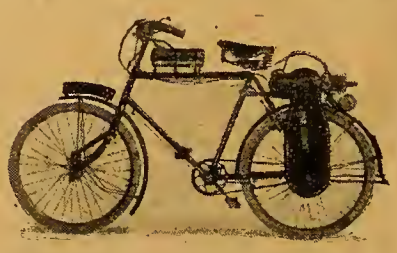
From the above it must not be assumed that to handle a motor cycle requires considerable effort, but first impressions with a parent count a great deal. Therefore, in recommending a machine to the parents of a delicately-constituted girl, a light machine with a low centre of gravity should be suggested.

There are many machines available fulfilling these needs. The photograph in the heading of this article shows a schoolgirl holding a little Hack in her arms; an ordinary lady's cycle could not be handled more easily. The Hack represents a type of motor cycle which is particularly adapted for schoolgirls and for ladies who desire a mechanically-propelled machine for shopping.

The same remarks apply to the Kenilworth, which may be regarded as suitable for any rider of the female sex, irrespective of age. Any lady who can handle an ordinary pedal cycle can in a few minutes become accustomed to riding such a machine as the Kenilworth. In fact, it is within our knowledge that a very large number of these little runabouts are in use in the hands of ladies who had given up pedal cycling owing



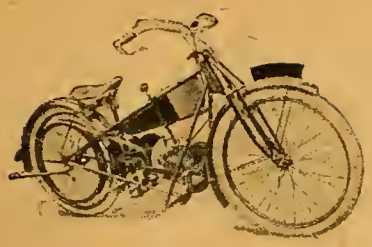
A motor-assisted bicycle—the 105 c.c. Motorped.



Another bicycle with an auxiliary engine—the 130 c.c. Young.

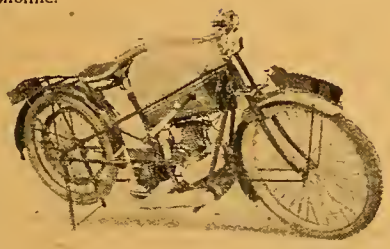
LIGHTER LIGHTWEIGHTS.

Examples of the several miniatures now on the market which, more or less, follow conventional motor cycle practice, yet weigh little more than a bicycle with auxiliary motor.

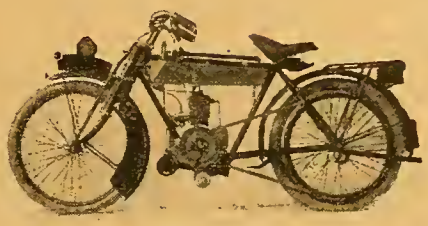


165 c.c. Economic.

124 c c. Kempton.



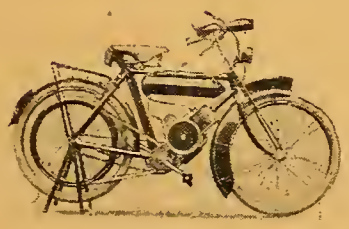
161 c.c. Grigg.



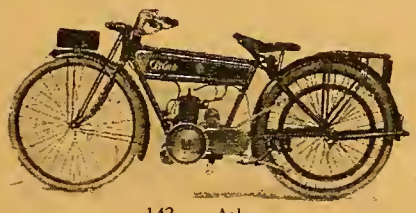
169 c.c. J.E.S.

to the effects of fatigue. These fully-developed "scooters" no doubt suffer from the premature exploitation which the stand-up type scooter received when first introduced, but, in considering them, one should remember that those on the market to-day have survived because they were the fittest, and are in every way practicable. Those which deserved adverse criticism disappeared from the market long ago.

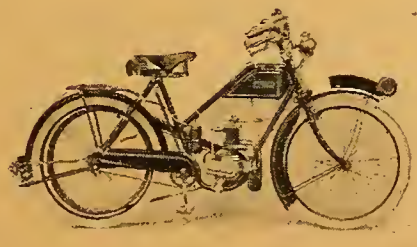
It may interest the motor cyclist who has not tried machines such as the Hack, Kenilworth, Skootamota, and Unibus, to know that these runabouts may be started at walking pace and are docile as any power-propelled vehicle is possible to be. It is undoubtedly the type which should be used by the girl, lady, or elderly gentleman who is nervous to make a start with a power-propelled vehicle.



105 c.c. Airolite.



142 c.c. Atlas.



170 c.c. McKenzie.

Lighter Lightweights.

There is another type which comes between the two types already discussed, and that is the form of motor cycle which is known as the motor-assisted bicycle. There are several in the market, of which the Young and Motorped are excellent examples. The power unit is light and small, and is intended to be attached to an ordinary pedal cycle and used for auxiliary work. Of recent years, however, this kind of machine has been developed into a miniature motor cycle, having a frame specially constructed for it. Some examples are illustrated.

Still another type has been introduced for those who require a light, easily handled machine of low power, a group in the long range of motor cycles represented by the J.E.S., Atlas, Economic, Grigg, and Kempton.

In a class by itself, perhaps, is the Ner-a-car, a machine unusual in its construction and capabilities, being designed with the avowed purpose of catering for those who require a motor cycle upon which they can ride without the need for special clothing. The Ner-a-car embodies all the mechanical elements of a motor cycle of conventional design, but instead of a tubular frame and spring forks a miniature chassis and special front wheel springing are embodied.

Of machines of the conventional type there is a very large number, and, since all British motor cycles are, to all intents and purposes, of equal merit in the matter of reliability, their differences lie in their designers' individual ideas of refinement and general design.

When one is choosing a machine for an acquaintance who is already a motor cyclist at heart, there is very little difficulty in suggesting the mount which will best suit him. The main point is usually the price, and if the young man has £75-£85 to spend, it becomes rather difficult to differentiate between such excellent machines as the 349 c.c. £68 Raleigh, the 499 c.c. £77 Rudge-Multi, and the 498 c.c. £85 Ariel. These three machines are typical examples of what is available at approximately the same figure, and one has to decide whether the potential rider requires (1) a kick-starter, as is fitted to the Raleigh, (2) a big machine with a reputation for speed but fitted with all-belt drive as the Rudge-Multi, or (3) such a machine as the Ariel without kick-starter, a full-powered mount shorn of some of the refinements of its more expensive sisters from the same factory.

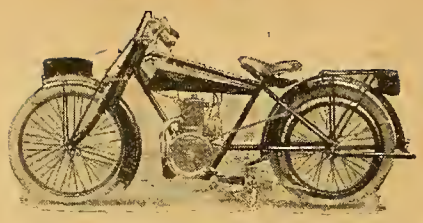
£100 to Spend.

When the £85 mark has been passed, and £100 is the figure, one is then able to ask those seeking advice whether they require a sidecar or a solo mount.

The Beginner's Mount.—
It is now possible to obtain sidecar outfits as low as £67 (the Sirrah two-stroke outfit), while among other sidecar machines available between this figure and £100 are the O.K., Ivy, Royal Ruby, Beardmore, Allon, Connaught, Hawker, Omega, and similar lightweight sidecar outfits. For £100 one may obtain a 654 c.c. Quadrant sidecar.

With £100 to spend, the young solo enthusiast will probably ask for a decision between such machines as the Scott, Humber, N.U.T., Triumph, and B.S.A., and the main point to decide will be whether a single-cylinder, a flat twin, or a V twin four-stroke or a two-cylinder two-stroke is the most suitable type of engine for the person concerned. But we need not go further than this, as any young motor cyclist with such machines in mind will have already his own definite opinions on their merits.

There is one point which often crops up from lady enquirers, and that is whether the Scott is suitable for their needs. Almost without exception the lady visitor to the Olympia Show falls in love with the Scott motor cycle because of its neat assembly and its open frame. The design of the Scott was not specially laid out for the next generation of lady motor cyclists. Therefore, it is quite an erroneous deduction that this open-frame mount is a lady's machine. The writer is of the opinion that, while there is a large number of ladies capable of running a Scott successfully, this machine is more suitable for an enthusiast of the sterner sex. In other words, on the point of weight, the Scott is in the same class as other machines of the same power.



An example of the simplest form of motor cycle—the two-stroke Calthorpe with single gear. The type may be procured at a popular price from nearly every manufacturer of two-strokes.

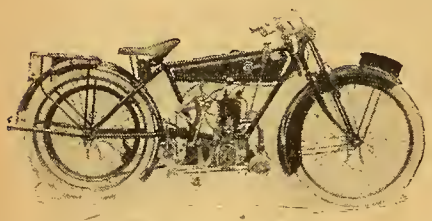
Sidecars.

When sidecar outfits are considered, although the choice is just as varied, the question of suitability does not enter so largely into calculation. So easily controlled are the majority of sidecars on the market to-day that the shortest man or woman can handle the largest machine. Therefore, such matters as saddle height, the disposition of weight, and the overall dimensions need not come into the question.

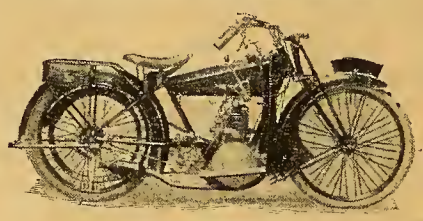
The recommendation of any particular sidecar outfit will be governed by two things only: price and the number of persons to be carried. As already mentioned, it is possible to obtain a sidecar outfit for £67, but obviously such a machine would be useless to a man who wished to accommodate his wife and a family of small children.

The small sidecar outfits previously mentioned under £100 in cost are suitable in every way for a rider and one passenger. When one young child has to be carried, a larger sidecar is necessary, and therefore increased horse-power to propel it. If there are two juvenile passengers, and one is over ten years of age, the pillion can be used to accommodate the elder child. Even if three adults are to be accommodated, machines of 4½ h.p. are quite suitable, but for

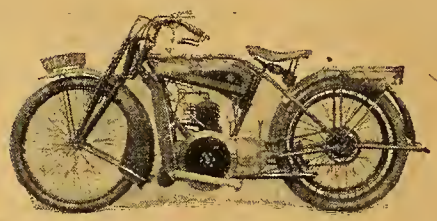
DUAL PURPOSE TWO STROKES—EQUALLY POPULAR AS SOLO AND SIDECAR MACHINES. Among other machines of this type are the Cedos and Sun-Vitesse.



292 c.c. O.K.-Junior.

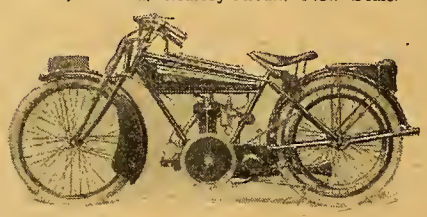


269 c.c. Allon.

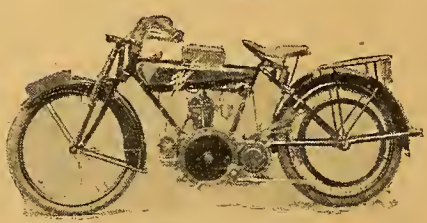


349 c.c. Ivy.

DUAL PURPOSE FOUR-STROKES. Other machines of this type are the Royal Ruby, Raleigh, Coventry Eagle, Cotton, Coulson, Diamond, Edmund, F.N., H.B., Invicta, Massey-Arran, New Scale.

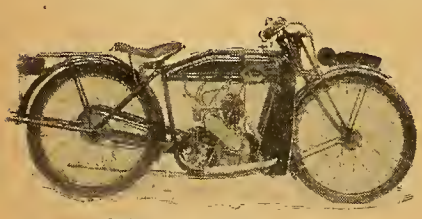


349 c.c. Hobart.

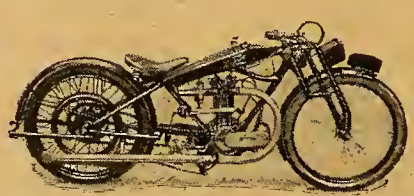


349 c.c. Verus.

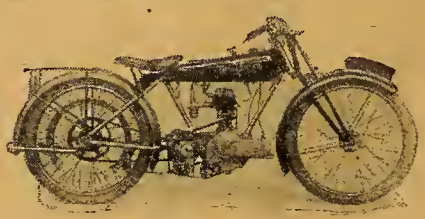
THREE SPORTING LIGHTWEIGHTS. The type is also epresented by the A.J.S., Coventry Eagle, and Massey-Arran.



346 c.c. New Imperial



349 c.c. o.h.v. Henderson



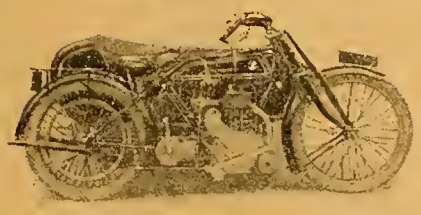
346 c.c. Francis-Barnett.

a double-seater sidecar with perhaps an extra passenger on the pillion, or for a man with a large family, a twin outfit from 7 h.p. to 8 h.p. should be considered.

In surveying the various motor cycles on the market no attempt has been made to include them all, neither does the writer suggest that one machine may be more efficient than another. Cost sometimes governs efficiency to a certain extent, but it may be taken as a general rule that increased cost represents extra refinement. In other words, there are no bad motor cycles—but some are a little better than others—and the improvement as a rule is confined to details and finish. The less important makers fit the same engines and gear boxes as many of their contemporaries with large outputs.

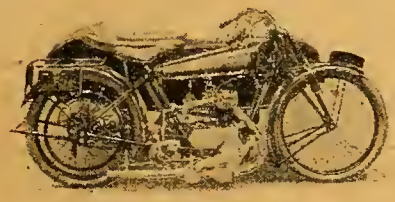
There are so many motor cycles available that there is no reason why anyone should ride a "misfit." There is such a wide selection in every group. In addition to the various types and machines mentioned in the foregoing, there are other groups which should be considered separately. The following may assist the reader to classify them mentally

REPRESENTATIVE MEDIUM SIZE DUAL PURPOSE MOUNTS.



650 c.c. Excelsior.

499 c.c. Rover.



654 c.c. Quadrant.

598 c.c. Beardmore Precision.

595 c.c. New Hudson.

555 c.c. P. and M.

Medium Size V Twins for Sidecar Work: A.J.S., B.S.A., Ariel, Omega, Rover, Excelsior, Zenith, Campion, James, Lea-Francis, Mohawk, P.V., Sirrah, Martinsyde.

Full-powered V Twin Sidecar Outfits: B.S.A., Ariel, Blackburne, Excelsior, Zenith, Campion, Hazlewood, Sunbeam, Rex-Acme, Indian, Harley-Davidson, Vindec, Matchless, Royal Enfield, Rudge, and New Imperial.

Single Cylinder Dual Purpose Mounts: Sunbeam, Triumph, Abingdon, Rover, Beardmore, P. & M., Rex-Acme, Rudge, Norton, James, Blackburne, Bradbury, Wolf, Hawker, Powell.

Medium Size Two-stroke Sidecars: Scott, Stanger, and Dunelt.

Fast V Twin Solo Machines: N.U.T., James, Martinsyde, Zenith, Indian.

Fast Flat Twin Solo Machines: Douglas, Humber, Brough, A.B.C., Wooler, Brough, Coventry Victor, Raleigh, Harley-Davidson, Zenith-Bradshaw.

Fast Single-cylinder Solo Machines: Norton, Triumph, Sunbeam, Rudge, Ariel, Rover.

Four-cylinder Sidecar Mounts: Henderson (U.S.A.), F.N. (Belgium).

SUMMER AND THE ROADS.

DESPITE the fact that road-repairing facilities and particularly the funds necessary for them, have not altogether kept pace with the development of motor traffic, we have at any rate one genuine cause for congratulation, and this is that the dust fiend, which created so much dissatisfaction in the early days, is now on most of our roads but a memory.

The employment of tar, whether as a top dressing to be brushed into a macadam surface or as a substance with which road metal can be coated all over before it is laid, has done much to prevent a condition of affairs that would have been intolerable had the old macadam or sand and gravel untreated surfaces been permitted to remain on thoroughfares subjected to heavy and continuous traffic. Last summer's drought, with which this summer seems desirous of competing, would in the old conditions have meant dust of a quantity and quality that would have made the roads practically impossible both for motorists and for the rest of the community.

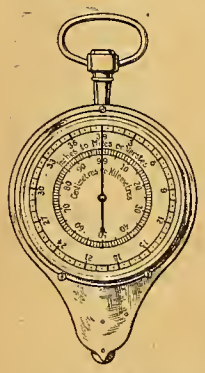
Whatever the effect of tar may be upon fish life, there is no doubt whatever that when spread upon a road surface it contributes in no small degree to the good health of the community at large, and the ever-increasing use of tar is one of the best pieces of evidence that the modern road surveyor, within the financial limits that restrict him, is making a real effort to adapt both himself and the surfaces under his control to modern requirements. In due course we may well find that bitumen and concrete will take the place, to some extent at any rate, of tar; but further experiments with concrete are needed.—*The Autocar.*

Secrets of the Map

Map Reading for the Motor Cyclist. Many Stories unfolded in unsuspected places.

EVERY road lover, and every motor cyclist must of necessity be one, should be an enthusiastic student of road maps.

Half the pleasure of ranging the countryside is to be derived from a knowledge of its geographical characteristics, its streams, rivers and hills—in short, the "lie of the land"—and of its villages, habitations, woods, prehistoric remains and historical associations.



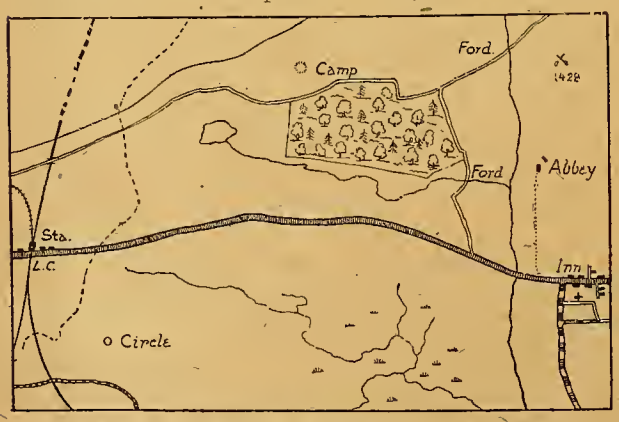
A map measurer for the accurate estimation of road distances.

All these things are told on a good contour road map.

No special knowledge of cartography is needed to follow with ease the signs used in maps, for they are to all intents and purposes self-explanatory.

Touring in an Armchair.

To a motor cyclist who tours extensively a full set of large scale maps to cover the whole of Great Britain is invaluable, although these may be supplemented by a small scale road guide or route book when actually travelling. Routes may be planned with a fair estimation of the type of roads to be traversed, the main gradients to be encountered, and the towns and "show places" likely to be visited.



A small section of country, the mapping of which is analysed in the accompanying text.

Quite apart from the actual use of the map in planning a tour, and its help as a guide, philosopher, and friend during the actual journey, no more delightful retrospective pleasure is to be had than that derived from browsing over the outspread sheets on a winter's evening, tracking the paths over which one has gone, noting the *détours* one might have made, learning new things of places one thought familiar, or plotting out new routes for forthcoming excursions.

Much information about a bit of coast-line is hidden in this simple representation of its features.

A useful accessory for use in conjunction with the maps is a map-measurer, a simple little apparatus obtainable from most optical or scientific instrument dealers. It is a small machine having a milled wheel which is traced along the road to be measured, the distance being recorded on a dial by a pointer driven by a reduction gear.

Geography and History in Symbols.

The type of rider who buys what is described as a "road map" can gain therefrom no more knowledge than the mere direction of the route from place to place. With the contour-coloured reduced ordnance maps he gets all the information he can need for his enjoyment of the district in which he is. Take the first of the diagrams illustrating this article.

A section of country of about eight square miles area is shown. Without any reference to the coloured

Secrets of the Map.—

contours which would be found on the actual map, it can be seen that this tract of country has a general slope from the top left corner, since the railway (*heavy black line*) passes through a tunnel (*line dotted with white*) there. The railway also goes under a by-road (*uncoloured double line*) and crosses a main road (*wide coloured line*) a little farther along by a level crossing (*L.C.*) at a station (*Sta.*), thus further indicating a downward fall of the land, confirmed in the bottom left corner by the line crossing above a third-rate road (*small coloured dots*). From the station a light railway, possibly a mineral line (*thin line with cross-bars*) branches away. Also in the top left corner some indication of the contour of the land is given by the course taken by a canal (*thin black line*), and probably following the foot of the hill, and most likely in a shallow valley, is the by-road which skirts a wood (*conventional trees*) and passes through a considerable watersplash (*ford*). On the lower side of the wood is a winding stream, the outlet of a small pond and tributary of the river of the first splash; this stream also provides a water-splash on a lane which enters the main road (*full coloured*) between station and the village, on the right. The village possesses the means of spiritual comfort (*cross*) and physical well-being (*inn*). Leading down the valley of the river from the end of the village is a second-class road (*long coloured dots*).

Below the main road is evidently a tract of swampy ground, for there is a meandering stream with many branches and the conventional signs for marshy land; this further confirms the general idea of the contour first obtained.

Places of Interest.

Evidently this district is rich in historical wealth. Above the wood a Roman strategical point is indicated (*camp*); at the head of the marshland are Druidical

A contoured map of a piece of country near the sea. A road which promises to be a freak gradient is shown.

or maybe prehistoric remains (*circle*). Over on the farther bank of the river a battle was fought in 1428 (*crossed swords and date*), while, always with an eye to pleasant location and fish on Fridays, the Cistercian monks erected a monastery opposite the confluence of the two streams (*abbey*); this is reached from the main road by a footpath (*thin dotted line*). A county boundary on the left (*heavy dotted line*) is the last sign needing explanation.

What a wealth of interest to explore in a rather sparsely filled map of eight square miles!

A Breath from the Ocean.

Let us prospect in our study the rocky promontory shown in the second map. This has its contour lines shown by light dotting. The cape has two fairly high headlands with a lower lying neck to the mainland. The sea is already making inroads there, and one day the cape may be two islands. Already two small islets have been left in the sea and there is a lighthouse (*L.H.*) on one. The coast line promises rugged scenery on the head, for the cliffs are steep or sheer (*shading*) and there is deep water at their base for the five-fathom line goes farther in towards the mainland. The low-tide line in the bay indicates the possibility of bathing from a sandy beach. Two submerged islets beyond the lower horn of the head come up to the five-fathom line — evidently a dangerous coast.

Freak Hill Hunting.

Freak hill hunters will find that contoured maps are invaluable. Take the third illustration. It represents three hills in a group, the summits being of rounded, slightly conical formation. To the left is another hump of lower altitude, and between the group and this a valley leads to the sea.

Down towards the sea the flanks of the group are steep and rocky, as the shading indicates. The bay is fairly wide, with a good beach and cliffs on the right. A road leads down to two houses by the sea. It has fierce hairpins and probably appalling gradients; moreover, it hangs on the edge of a ravine, the rocky side of which would suggest a loose surface. No doubt there are tilled lands and meadows in the bottom of the secluded valley.

Evidently this hill is worthy of exploration, and perhaps it may take all the skill of man and power of engine to re-climb it if the descent is made. Imagination constructs the scene as it might look from the sea, and pictures a fearsome climb.

Those who have seen the actual place say that the sketch is very like it; it is the Screw Hill, in Wales, which the writer has never seen only in the secrets of the map. WHARFEDALE.

—and what the map conveys to the studious observer forms the base of a rough sketch of the characteristics of the place, which is not belied by a visit to the actual spot.

Mrs. Hardee commencing the severe climb of Abriachan in this year's Scottish Six Days Trials.

Trials Reminiscences of a Lady Competitor.

By Mrs. MABEL HARDEE.

MY entry into the sport of motor cycling was caused entirely by envy. My husband, who at that time (1905) was the owner of a very early Quadrant, used to tell me such wonderful tales of where he had been with it that I worried him to get me one as well.

Ladies' motor cycles were few and far between in those days, but chance favoured me when Mrs. Kennard, of Market Harborough, wanted to sell her machine. This was fitted with a Motosacoche engine, round belt, and a carburetter that worked when it liked. It had fine pedalling gear, and needed it too.

At that time I used to read with awe in *The Motor Cycle* what wonderful things were being performed by Miss Hind and Mrs. Cooke, and wanted to do likewise, but I had not quite enough courage to enter the run to Harrogate organised by the Herts County Club. This event was for open-frame machines only, and I did not think my old mount good enough for such a long journey. As I had just become the proud possessor of a P. and M., however, I felt a bit sore about the "open frame" regulation.

Four entries, I believe, were received for this strenuous trial, and I heard afterwards from Miss Hammett that it was quite a sporting run. Miss Hind, I understand, did not care much for reliability trials, her great ambition being to win a hill climb.

Early Sidecar Experiences.

Before I owned a machine myself we had a Vindec Special, and my husband thought it was good enough to pull a sidecar. He arrived home one Whit-Monday with a terrible-looking basket affair, and tried to persuade me to sit in it, but I had watched his erratic course up the roads. Anyway, our old friend Mr. T. J. Ross was game enough to venture, but got tipped out twice for his bravery. I think this episode started him motor cycling, and he is now a consistent competitor in the trials.

Becoming quite confident with my P. and M., I often started off alone for Gloucestershire to visit friends. On one occasion I struck some bad weather on the western side of Oxford, so donned the various garments one always carried. I must have looked rather a freak, for, stopping in Northleach for petrol, I was much amused at being called a naughty boy.

Some time after this we heard that Rising Sun Hill was to be included in a one-day trial, so made up a

Through Feminine Goggles.—

party to test our ability on the then new hill. Knowing this district very well, I was sent on ahead. When I reached the hill I promptly turned sharp right. As the surface was of wet clay, I skidded round into the door of a large house, knocking the door down. The maid arrived, looking somewhat scared, and I heard a voice in the background asking what was the matter. The maid replied that it was a lady on a motor cycle. The voice replied: "Lady, indeed! no lady would ride such an invention of the devil!" They promptly 'phoned for a policeman, and, I believe, would have had me locked up if they could.

An Unofficial Event.

Keen rivalry has always existed between my husband and myself on the matter of hill-climbing, and this gave rise to much discussion. My P. and M. was no match for his T.T. Triumph, but I always had an option on a friend's T.T. Bradbury. This led to a very early morning event at Westerham Hill. The rival supporters turned up in great force, and it was with much pleasure some fifty minutes later that I entertained them all with the stake money.

The first machine owned by Mrs. Hardee was a 1905 Motosacoche with round belt drive. On the right is her husband with his Vindec Special.

An Early Trial.

I often smile over my first competition, which afterwards became known as the A.C.U. Fiasco Trial. Wherever one went, one found competitors wandering about, and it got dark before any of us reached Croydon, the start and finish. I struck Pebblecombe in the dark and heard Miss Hammett asking, in a surprised tone of voice, what I meant by failing. I think that was a habit of mine, for in the re-run I conked out on Sunrising Hill, this defeat being worse, for my husband was a spectator.

After a little persuasion I was allowed to ride in the 1912 A.C.U. Six Days Trials, which started from Taunton. Before the event we went on a trip to Porlock to try our luck. When I saw the first bend on Porlock I nearly fell off, and promptly decided to go home, but after lunch it did not seem quite so steep.

Porlock in 1912.

The surface then could not be compared to what it is now, for it was quite a foot deep in mud.

The first time I struggled up there in an actual competition I succumbed to my bad habit of putting my foot down, which incidentally lost me my gold in the 1914 "Scottish."

We (Miss Hammett and I were always first off) started on the last day's run at 5 a.m. in the rain, but I got to the second bend before I struck a boulder, for this was before the road was widened, and came off. It was a terrible job to get going again, and when at last I succeeded I turned right round on the way down again.

During our stay in Taunton I heard Miss Hammett excitedly call me to look at the *Daily Mirror* poster, which read, "Women in a Motor Cycle Trial." It *was* rather embarrassing the way we two got "mobbed"; it was nearly as bad in this year's Scottish when we arrived at Aberdeen!

A mount on which Mrs. Hardee made good performances in the 1913 trials—the 496 c.c. P. and M.

My great ambition in 1912 was to climb Beggars Roost, but when we arrived there in the trial I had a bad attack of nerves. To my surprise and relief I got up, but my better half was not so lucky. I was told that his first question, even before he picked up his machine, was, "Did my wife get up?" He did not look exactly pleased when we met at lunch time. He will deny this, of course.

Through Feminine Goggles.—

I entered most of the trials after this, but the outstanding one was for the Colmore Cup. I think it was the most awful course and weather I had so far experienced. I have never been keen to try my luck there again. At that time we had a big Indian sidecar, and the most enjoyable ride I have ever had was when I took it out solo. It was a struggle to get on and off, but it was worth it, if only to slow up and hear my husband tinkling along on my old P. and M. I might add that he did not let me have it again without a sidecar.

John o' Groats.

I was awfully keen to ride in a Scottish Six Days event, and got Miss Hammett to persuade my husband to let me ride. He was sorry he did when I arrived home with a nice-looking black eye! That was a fine year, for the weather was exceptionally good, and we went to John o' Groats, where we were given twenty minutes extra to have a look round. I remember Mrs. Baxter wanted Rose Hammett and myself to sign the visitors' book together. Doing so, I looked up the "End-to-Enders" comments, which were distinctly amusing (especially those of the late Ivan Hart-Davies).

I had bad luck with tyres then (1913), but as I was riding near Gordon Fletcher this did not bother me much. He was a confirmed practical joker. Riding along from Glenelg, I had a feeling that my engine was seizing. I supplied more oil and then went on again. This happened several times, and Gordon Fletcher remarked that we were quite 40 miles from a railway. I think my face must have been a study until it dawned on me that he had been acting as a drag by hanging on to the carrier.

First Lady to Secure a Scottish "Gold."

I well remember congratulating Mrs. Baxter on being the lucky one to get the first Scottish gold (I have verified this in my record book). Miss Hind got a silver in 1912. I was determined to have another shot, so entered again in 1914, but lost my gold through putting my foot down on two hills. I thought this was pretty hard luck after finishing such a severe course.

In 1914 we took delivery of our first Matchless sidecar, and I soon got the hang of sidecar driving, and persuaded my husband to be my passenger in the Birmingham passenger machine trial, where I met Mrs. Riley, who was then doing great things with her Enfield. I never have received the gold medal I was awarded in that event, and have often wondered why.

Soon after this I had an urgent message to see my aunt, who was very ill, and going there I think I had all the trouble that ever happened to a machine. I lost the compression tap, and gave it up after getting well stung with nettles looking for it. Luckily I found a long screw in the toolbag, which just fitted! Then the chain broke and tore up my "posh" dress guards. There was I in the dusk between Witney and Northleach cutting the chain case off the machine with a jack knife and King Dick. I was jolly glad when I heard another motor cycle popping along. The usual offer forthcoming, I replied, "Yes, please, if you know anything about chains." The answer was, "I've had a Scott."

That was rather unkind, as just lately I have ridden a Scott rather a lot, and think it is the most fascinating of machines; certainly in 2,000 miles I had no chain or any other trouble at all.

An occasion which gives me great amusement is when a letter appears in *The Motor Cycle* from a lady motor cyclist asking why she is not allowed to ride in a London-Exeter or London-Edinburgh run. Well, the average lady never bothers to enter any event that specially caters for her. For example, I failed to get six ladies to form a team for the Surbiton inter-team trial in 1921, although I knew Mrs. Baxter had a record entry of seven for a Liverpool trial, when I think two finished—I was not one of them. Mrs. Baxter, in my opinion, is the finest lady solo rider I have ever seen, for the way she handled her big open-framed Rex in the 1913 Scottish trials filled me with admiration.

An Ill Omen.

The first prize I ever secured in the Woolwich club I dropped after it had been presented, and amidst cheers was told I should never win another. The prediction has been falsified, but it has taken me some years to do it, for a club event is the hardest of all to win. I think the Woolwich club has a record number of the earliest motor cyclists on its books, and I know I was highly pleased when Mr. Collier, senior, insisted that I should become a member. For then, as now, ladies are not exactly welcomed in the motor cycle clubs!

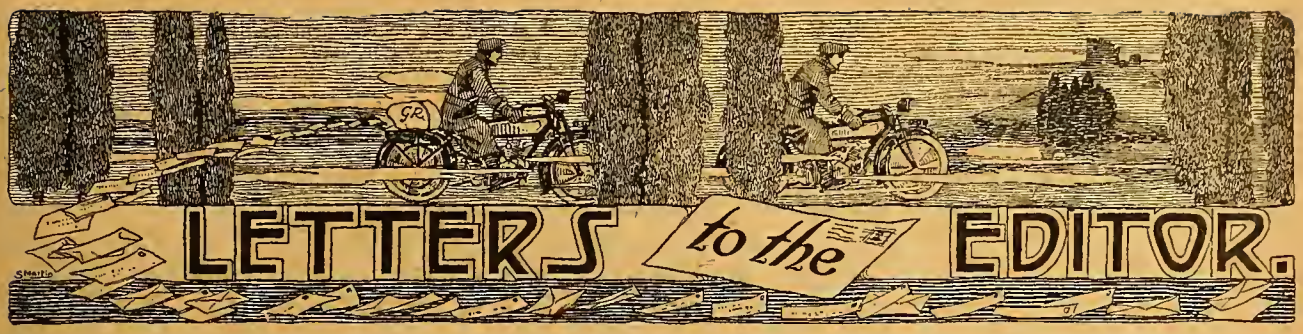
Whilst I was in hospital during a severe illness the nurse seemed very interested in the fact that I motor cycled, and it did not require much persuasion to get her to try driving. She was so enthusiastic that we lent her our Matchless, and often used to meet her driving in Greenwich Park with never less than three up. She finally bought a B.S.A., a choice she never regretted.

This Year's Scottish Trials.

These notes would be incomplete without a mention of the 1922 Scottish Six Days Trials. It seems I am fated to get a silver medal when the thing I want most in the world is a Scottish gold. But, as Mrs. Bell, the A.J.S. rider, informed me at the finish, there is still another year. I think everyone was sorry to see Mrs. Janson pack up on the last day, for she is a real brick and a jolly good sportswoman. We should all have been disappointed also had Mrs. Knowles not gained a gold this year, for this lady is a wonderful rider on a solo machine.

I wonder whether Mrs. Knowles saw the funny side—when she suggested that I should have been warmer in breeches? I cannot picture myself thus clad. They are O.K. for a *petite* woman, but, as I pointed out, I weigh 14 stone.

By the way, I was so impressed with the splendid A.J.S. which Mrs. Knowles rode that we have chosen it as a fitting machine in which to start our one and only daughter on her motor cycling career.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

THE NAVAL OFFICERS' EVENT.

Sir,—The Arbuthnot Trophy Trial will soon be upon us again, and it is equally certain we shall have the same poor number of entries—a state of affairs which is unfortunately always due to the "exigencies of the Service," and is unavoidable under the present Trial regulations. The purpose of this letter is to suggest that the A.C.U. be approached with a view to opening up the entry to include retired officers of the Royal Navy and Royal Marines—officers who are still gazetted upon the Retired List. The entry list would unquestionably benefit appreciably, and I feel certain that no fear of "shamateur" entries need be entertained. The Trial would still remain the one genuine amateur event of the year.

O. C. H. GIDDY,
Lieut., R.N. (retired.)

INFLUENCE MACHINES FOR I.C. ENGINES.

Sir,—Mr. Lutman's suggestion of a Wimshurst or other static machine for producing high tension current suitable for ignition purposes is, on the face of it, quite feasible. Technically, his arrangement is quite efficient for producing a train of sparks, but he has not considered several important points. Firstly, the penetrating power of a static discharge is not as disruptive, and therefore not as penetrating, as the direct current spark from a magneto. Secondly, he states that a constant spart of ⅜in. may be obtained from 4in. plates. I would point out that no type of machine existing can produce a constant stream of sparks in the true sense of the word, and that the sparks of such a small machine are far from constant. That is to say that the time between each spark is very long compared with the time taken by the actual spark. The point I wish to bring out is, that there would be insufficient sparks to supply regularly the necessary tension for even firing on a high speed engine, unless an oversize machine were used with a very small parallel capacity. WALTER J. JOUGHIN.

Sir,—With reference to Mr. A. Lutman's remarks on "Influence Machines for I.C. Engines," and more particularly to the *diagram*.

Although a keen experimenter, I do *not* relish a tyre valve or other voluntary terminal directing a brush discharge on to my "reach-me-downs." Keep halos for the hereafter. Some criticisms are:

(1.) Size, weight, and *four-belt* drive. Compare (say) with the new M-L "circular" magneto.

(2.) A *wooden* box to retain air at 60 lb. pressure! Why not tyres of beaver board, or pistons made of pulp?

(3.) Why the jar condenser? (*vide* 1).

(4.) External contact box worked by a *slow cam*. What of backfires? How is the spark advanced?

(5.) Why not a multi-(3 or 5) plate machine in a metal box ebonite-lined, gear-driven by rawhide pinions?

Finally, a certain well-known nerve tonic may be excellent for its purpose (diagram bottom right-hand corner), but can hardly serve as well or as cheaply as, say, calcium chloride (anhydrous) as a drying agent. I shall retain my "effete" high-tension magneto for a while. LOSCH-BODGE.
Birkenhead.

THE SPORT AND THE MASSES.

Sir,—I was very glad to see your leader about the general apathy of the general public to the T.T. races. May I suggest the following as a reason?

The average county cricket ground, and all the important races such as the Derby and Ascot, are really nothing more nor less than glorified garden parties. The vast majority simply go to gossip with their neighbours without taking any interest in the sport at all. I should think this covers 80 per cent. of people. Of the remaining 20 per cent., about 18 per cent. go simply to see what money they can make, and the remaining 2 per cent. are the only ones really interested in the sport.

Well, motor cycle races are not, as yet, garden parties, and unless they become so they will never become as popular as they should do.

In conclusion, I think it is something to be thankful for to know that all who watch motor cycling are true sportsmen and nothing else. R. O. BINS.
Thanet.

Sir,—In reference to your interesting remarks, under the above heading, wherein you deplore the lack of interest taken by the general public in the Tourist Trophy Races as compared with the Derby or University boat race, etc., the reason is easy to understand. The latter are held within a stone throw of London, with every convenience and comfort for spending an enjoyable time witnessing two of the finest forms of sport.

Can the masses or non-motor cycling public be expected to feel the slightest enthusiasm respecting the T.T. races, when to reach the venue means, in most cases a long train journey, and the inevitable tedious and uncomfortable crossing to and from Douglas? How many of the thousands who annually attend the Derby or Grand National would do so if those races were held in the Isle of Man?

To popularise the T.T. races and bring them conspicuously before the public they should be held on the mainland, either in the north-west corner of Yorkshire or in Mid-Wales, localities sparsely populated, where ordinary road traffic could be suspended temporarily without causing any serious loss or inconvenience.

As I believe the districts mentioned have been under consideration, I need not dwell upon the subject, beyond expressing the hope that some time soon the T.T. will be held where the multitudes can flock to see it, without the penalty of a troublesome and expensive journey as at present. R. G. LINDSAY.

Sir,—Many keen motor cyclists must have disagreed with your editorial of last week, in which you express the hope that the daily press will take up the T.T. and boost it. I do not think you can be in close touch with the effusions that appear daily under the heading of motor cycle notes in various daily papers. The writers are often ignorant of their subject, generally inexperienced, and sometimes influenced by advertisements in their paper to give undue praise to certain makes. They have no knowledge of the respective values of trials, races, etc. W. B. TOBEY.

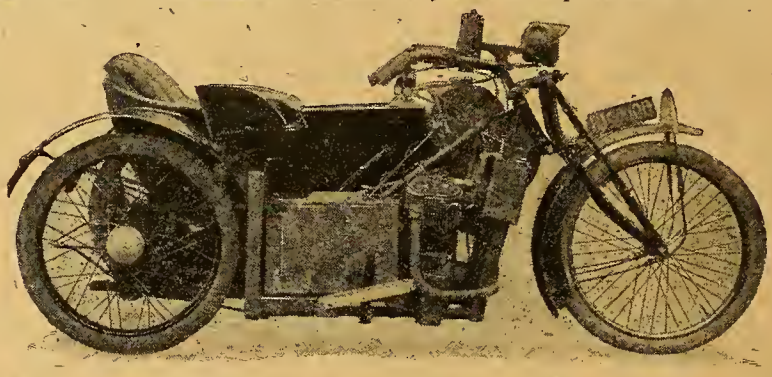
SHAFT DRIVES' UNPOPULARITY.

Sir,—In a recent issue of *The Motor Cycle* Mr. G. Kingdon stated that a shaft-driven spring frame outfit is never seen on the road. I would refer him to your issue of the 29th April, 1920, which illustrates my three-wheeler in combination form. This machine is exactly what he describes, *i.e.*, it is shaft driven by bevel wheels directly from the engine shaft on top gear and all the wheels are sprung. If Mr. Kingdon or any other reader is interested in this design I shall be pleased to show him the machine very shortly at my new motor cycle premises, No. 529, Croydon Road, Beckenham, Kent. It might interest him to know the secret of success lies in the design of the frame and support of the rear portion of the machine, which is covered by a patent.

This same machine has been running since March, 1920, and has been giving every satisfaction.

The photograph shows a few recent refinements which have been added. Its outstanding merits include high efficiency drive, transmission worry and maintenance nil, free access to driving wheel and tyre, complete springing of *everything* on the machine, and a first cost lower than any other machine of similar power now on the market.

W. H. WOOD, A.M.I.E.E.



A shaft-driven motor cycle of unusual design. Observe the unobstructed driving wheel. (See letter from Mr. W. H. Wood.)

GEAR RATIOS.

Sir,—Apparently a large number of riders are growing dissatisfied with the gear ratios provided for them by the manufacturers of their favourite machines. The complaint in most cases seems to be that the top gear is somewhat on the low side, and that subsequent drops in the gear box constitute too high a percentage of the top gear. This is probably readily accounted for by the modern reliability trial which is made exceptionally severe in order to eliminate all but the very best of outfits. Competition riders have found that they must have an exceedingly low bottom gear to surmount the various obstacles they encounter in these trials, and that once having dropped into bottom gear it is a somewhat difficult matter to engage one of the higher gears unless these are somewhat lower than those used by the average tourist. As a motor-cycle manufacturer does not know into whose hands his machine is likely to pass, having once disposed of it, he plays for safety; consequently the average machine is geared much lower than is necessary for the average rider.

If a larger number of gears than three is employed, the problem is considerably simplified. The top gear can be reasonably high, say 4½ in place of 5¼, the bottom gear may remain the same as in a competition engine, and having more steps at his disposal the gear designer may make his gear ratios somewhat closer together, with the result that if the machine can do, say, 45 m.p.h. on top gear, it is still capable of 30 m.p.h. on its next speed, 20 on the second speed, and about 13 or 14 on bottom gear, if a four-speed outfit is used.

It goes without saying that with a box of this description a higher *average* speed is possible without having to travel excessively fast at any time. In fact, the rider has the advantage of what is known as a close-ratio three-speed box with the added advantage of a lower emergency bottom gear.

I. COHEN,
for John Jardine, Ltd.

Sir,—In reply to the Manager of Martinsydes, Ltd., I beg to remind him that a 499 c.c. Rudge and sidecar secured a gold medal in the Scottish Six Days' Trials with a low gear of 12 to 1; also there are hundreds (probably thousands) of Enfields running about with only two speeds—5 and 9 to 1. (The ratios are approximate.) Where, then, does the absurd ratio of 17½ to 1 come in?

Our manufacturers do not realise that the average tourist (who is in majority) does *not* want to climb freak hills; he has too much respect for his tyres and transmission for that.

D. HURREN.

INCORRECT GEAR CHANGE INSTRUCTIONS.

Sir,—I should like to comment on the crude instructions on gear changing given in many makers' instruction books. The makers of a certain very attractive sports model recommend changing with the exhaust-valve lifter, yet later they say "one sees constantly riders, who, by their harsh control of their mounts, are stamped as either novices or the utterly careless." Then again, "It is not necessary to declutch when changing gear. It is sufficient to raise the exhaust."

Really one begins to ask oneself if there is any defence for this kind of treatment with a machine with a good clutch, I should very much like to hear it. One sees enough of this changing of the "lift-the-exhaust-and-slam-it-in" type to make a policeman weep.

UG CHUGALUG.
Chatham.

PENALIZING THE PRIVATE OWNER.

Sir,—In the report of the results of the recent London to Edinburgh trial it is stated that the two riders who completed the course on Hawker machines were disqualified because the award was advertised before the committee meeting, and the existence of such a rule, applied in such a manner, has caused me seriously to consider whether it is worth while for a private rider to enter such a trial.

I have studied the advertisements, but have failed to discover that any private owners advertised the result of the trial. It appears, however, that the *makers* of the Hawker machine placed an advertisement last week in one case, stating "2 entered, 2 gold medals awarded," whereas the other ran, "2 entered, 2 finished." This slight difference of wording may be the result of a printer's error, in which case I am of opinion that the disqualification should be withdrawn forthwith. Even if the advertisement, which is apparently the cause of the disqualification, was correctly printed, I cannot see the justice of penalising a private rider simply because he happened to be riding a particular make of machine, the makers of which placed an advertisement claiming an award which, at that time, had not been made.

Surrey. X.H. 1792.

PISTON CLEARANCE.

Sir,—A little enlightenment might be beneficial to your correspondent signing himself "Amused" in your issue of the 15th inst.

The really amusing part would appear to lie in the fact that this correspondent, whoever he may be, had nothing whatsoever to do with the design or manufacture of the piston in question, and which is now being used as standard in the G.R.I. engine.

It is possible that he may have dealt in some way with the original low compression pistons with concave crown. The pistons now standardised and used in the London-Land's End Trial have a domed crown, and give a compression ratio of 6.5 to 1.

The facts are as stated by "Ixion," except that the clearance error emanated from the grinding rather than the turning shop.

L. W. NEILSON,
for G.R.I. Motors, Ltd.

MISREPRESENTATION OF DATES.

Sir,—The following recent experience of an attempt to purchase a second-hand machine is not without interest. The first advertisement answered was for a 1915 model. Reference to the maker elicited the fact that it was made in 1914. The next two machines seen were called 1917 and 1919 by the sellers, but proved on inquiry at the maker's to be only 1913 and 1915 respectively. In all cases the machines were of the same make. The prospective buyer, who is still without a cycle, was put to quite unnecessary expense in travelling to see these machines, and in wiring the makers for confirmation of date, while the latter, of course, were also put to a certain amount of unnecessary work in looking up old records. ETAPLES.

London.

SKIDS IN THE 200 MILE SIDECAR RACE.

Sir,—I have read your leading article, "Sidecar Skids," in last week's issue of *The Motor Cycle*, but I would draw to your attention the fact that you are incorrect in stating in the last sentence that the "regulations of the 200 mile races apparently took no cognizance of this type of sidecar chassis."

The committee took the matter to which you refer, *viz.*, enclosed sidecar axles, thoroughly into consideration, but it was considered that it would be unfair if some riders had to carry a skid whilst others need not do so, and it was for this reason that it was compulsory for every sidecar to have such a fitment added to his sidecar chassis.

The remark you make regarding stub axles on cars is quite another question. You are, of course, referring to front wheels of cars, whereas the sidecar wheel takes the place of one of the back wheels of a car, because it carries most of the weight, but the back wheel of most cars is not carried by the axle, but by the axle casing, and it is merely turned or driven by the shaft or what might be termed in this instance, the stub axle.

The committee also had in mind in stipulating a skid, the fact that numbers of sidecar machines which are used on Brooklands have been used for some considerable time, and the condition of the steel on the stub axle is unknown. The writer has had some experience in this direction, having had a fractured stub axle at high speed on Brooklands, and he is well able to judge the effect, and it was considered that with so many machines on the track a fracture would be serious, not only to the rider and his passenger, but to following machines. OSBORNE DE LISSA,

One of the Committee of the Ealing and District M.C.C.

HARDENING FOR AMATEURS.

Sir,—No doubt to the average motor cyclist, "Road Rider's" article on "Hardening and Softening" (I should prefer "Hardening and Annealing") will be most interesting, but does the author really expect even an amateur to believe that a man is fool enough to attempt to file a piece of hardened steel, over which the file simply slips?

His method of case-hardening will also convey a wrong impression to the "green one."

It *is* possible to case-harden in an open hearth as suggested, but it is insufficient to get the part red hot, cover with case-hardening compound, and then quench. The depth of the case on a case-hardened part depends upon the time that the treated parts are in contact with the necessary heat; therefore this open-hearth treatment demands that the parts shall be first heated to a dull red, dipped in the compound, and placed in the fire to allow the compound to burn in; after this process has been repeated two or three times, the part may then be quenched in water.

J. FAULKNER

MOTOR CYCLE REMINISCENCES.

Sir,—I have recently made a profitable investment through the medium of your columns, and should like to recommend it to other readers of "our" paper—excuse the possessive, but I am sure all motor cyclists feel a kind of proprietary interest in the "Blue 'Un"—I refer to "Motor Cycle Reminiscences," by "Ixion."

The above has provided me with sundry priceless half-hours of unrestrained mirth, the more so since I am more or less a contemporary of the author; I began, as he says he did, with the front-drive "Werner" over 20 years ago, and can feelingly follow him as he traces the evolution of the motor cycle through all its many vicissitudes up to its present stage of perfection, and I would strongly recommend all motor cyclists, both the novice and the veteran, to buy a copy of the book, both from a point of view of interest in the sport, and the amusement it will provide.

While "reminiscing" with the author it occurred to me that there must be many hundreds of "veteran" riders ("veteran" rather from the length of their association with the sport than from anno domini), to whom some kind of annual reunion for the purposes of interesting discussion on all matters relating to motor cycling, combined with some slight attention to the needs of the "inner man," would be exceedingly welcome. An annual dinner suggests itself as the easiest medium, and I suggest that some other "old-timers" might care to state their views through the medium of your correspondence columns. F.N. 2861.

Westward Ho!

SUMMARY OF CORRESPONDENCE.

Two lady readers wish to convey their grateful appreciation to unknown Good Samaritans who have helped them on the road. In one case thanks are due to the owner of a Sunbeam outfit registered "C.D. 5406" (?) who towed a Douglas outfit to Midhurst on the 17th ult. In the other Miss Betty Holmes was helped from Leadburn Moor to Edinburgh by a change of mounts after a fall, late at night, caused by a broken frame. Her benefactor, who also went away before she had time to thank him, rode a machine bearing "M.S. 3473" (-6, or 8?).

According to Mr. C. L. Field the road from Corwen to Cerrig-y-Druidon is to be avoided. Attention is also called, by Mr. E. R. Wilson, to the state of the Bala-Festiniog road.

The owner of the car, who conveyed Mr. W. W. Scott to the Flint Cottage Hospital after an accident at Holywell Hill Climb, is thanked by the unfortunate gentleman in question; also other helpers.

"M.D. 7507" wishes to thank the Triumph rider who came to his assistance after a spill, in the village of Shere, "directly attributable to the atrocious state of the roads."

Hardy flexible sidecar couplings are favourably commented upon by "Algy" (Coventry).

Mr. A. Walker wishes to thank "U. 8637"—a Scott rider—who towed him from Harewood to Leeds.

Noticing that many dealers are in the habit of advertising "7-9 (clutch model, road racing, and two-speed) Indians" as of post 1914 manufacture, "Enin-Neves" warns readers that, of course, these models were not marketed after 1914.

Service at the start of the London-Edinburgh run on the part of the Lucas Electrical Co. is praised by "W.P.E.W."

Books & Maps for Motor Cyclists.

Issued in conjunction with *The Motor Cycle*.

"MOTOR CYCLES AND HOW TO MANAGE THEM."
The standard handbook on the motor cycle.
Price net, 2/6. By post, 2/10.

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With 32 pages of Road Maps. Price net, 2/6. By post, 2/10.

Obtainable by post (remittance with order) from ILIFFE & SONS Ltd., Dorset House, Tudor Street, London, E.C.4, or of leading Booksellers and Railway Bookstalls.

CURRENT COAT

Times to Light Lamps.

July 6th	.. ..	10.16 p.m.
„ 8th	.. ..	10.16 „
„ 10th	.. ..	10.14 „
„ 12th	.. ..	10.12 „

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

One Thousand or Ten Thousand Miles?

How far will an air-cooled engine run satisfactorily without decarbonisation?

The Pathfinder.

Mr. T. W. Loughborough, the secretary of the Auto Cycle Union, will shortly be making a tour of the Six Days Course.

Gas for Lamps.

Nearly 800 tons of calcium carbide were imported into this country during May. All of it is not used in motor cycle lamps, however.

Fifteen Shillings for Noise.

Jersey is the latest place to be concerned about noisy motor cycles. The Chief Constable has issued a warning, together with the notification, that any offender will be fined 15s.

The Perils of the Road.

A correspondent advises that a police trap is frequently in operation over the road from Pinner to Rickmansworth in the region of the railway arch, entering Northwood. The charge, he explains is usually one of "riding to the public danger."

The A.C.U. Six Days.

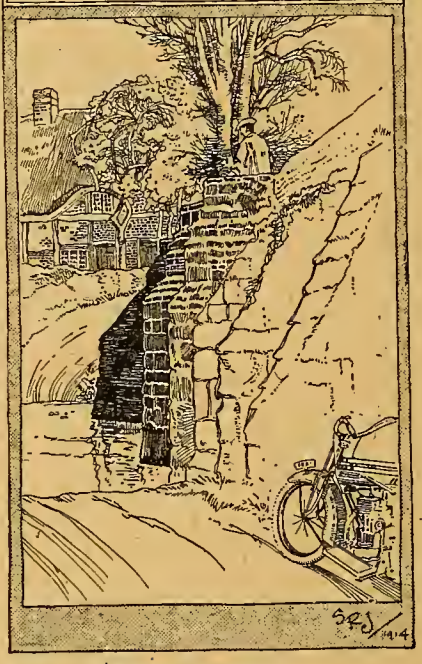
The annual Six Days Reliability Trials of the Auto Cycle Union, arranged for Monday, August 21st to Saturday, August 26th, will start from York, the stopping places on the other days being Buxton, Shrewsbury, Llandrindod, Gloucester, and Brooklands respectively.

Clyno Appointments.

Mr. G. E. Stanley, the record-breaking star, has been appointed works director of the new Clyno Co., while his old colleague, Mr. J. Cocker, will be in charge of the sales department. Mr. Frank Smith has now the controlling interest in the firm. Does this portend the re-entry of this well-known trio into the competition world?

Hills in the A.C.U. Big Event.

Some interesting country, as well as local tit-bits in the shape of hill-climbs, will be embraced in the A.C.U. Six Days Trial. Notable among these are Rosedale Abbey Bank (the hill that was avoided two years ago at the last moment), Sir William Hill, the Sheffielders' delight, and Bwlch-y-groes (between Dinas and Bala), one of the fairest and most difficult tests in the country.



Sidecar Lighting in France.

Originally, the sidecar outfit was left out altogether from the *Code de la Route*, but the latest regulations, which will come into force on January 1st, 1923, will entail a sidecar outfit carrying two white lights facing front and a red lamp at the rear.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Special Features.

WHERE TO TOUR.
THE BEGINNER'S MOUNT.
RUNABOUT AND SIDECAR.
SECRETS OF THE MAP.
A.C.U. "SIX DAYS" REGULATIONS.

400-Mile Point to Point Race.

A 400-mile inter-state race in South Africa is described on page 32.

Barcelona Exhibition.

Quite a large number of British motor cycle accessories were directly represented at the recent exhibition in Spain.

Still Difficult.

Bwlch-y-groes again proved itself a useful test hill in the Midland Centre Trial, and will do so once more in the A.C.U. Six Days.

Crash Helmets in the I.O.M.

Crash helmets were not compulsory in the car T.T. races, and all sorts of headgear, except bowlers and silk hats, were used by the drivers.

Solid Tyres on Utility Machines.

A small runabout two-stroke car is now being placed on the market; it is the product of a large concern, but is by no means cheap as compared with a sidecar outfit. The most surprising thing in its design is the fitting of solid tyres, which a flexible springing system permits.

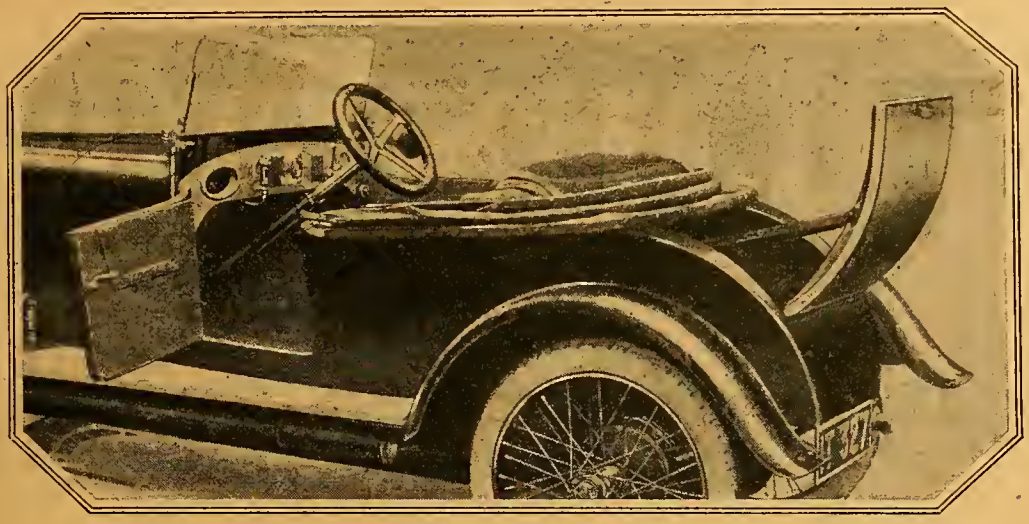
Looting a Burnt Machine.

Like robbing a blind man was the conduct of some unknown looters who removed the magneto, carburetter, carrier, Tan Sad, both wheels, etc., from a reader's old Bradbury, with Scott sidecar, left on the roadside at Little John's Well in Yorkshire, after a fire. The erstwhile owner, Mr. A. W. Downs, 14, Regent Street, Bingley, who could ill-afford the loss, asks us to appeal to the delinquents through the columns of *The Motor Cycle*.

A Day in the Country for East End Children.

An appeal is made to sidecar owners to assist in a good cause. Mr. Otto Thomas, of Byways, Harpenden, will be entertaining a party of children from Bow on Saturday, July 15th. Last year about 80 were conveyed out. This year it is hoped to increase the number, which is really only limited by the means of transport. The party will leave Bow at 9 a.m. and commence the return journey from Harpenden at about 6 p.m.

Will sidecar owners willing to help kindly write at once to Mr. A. J. M. Ivison, 8, Gate Street, Kingsway, London, W.C.2, who has undertaken to organise the transport of the children.



A handsome & roomy car

Beautifully finished in every detail, the G.N. is a handsome and roomy car, fast and a fine hill-climber.

Backed by twelve years' experience, the G.N. is free from faults due to hasty design—its engine, for instance, is famous for its reliability and perfect cooling, it is

guaranteed to do 50 miles to the gallon

Thousands of G.N.'s are in use all over the world, giving fine service in every climate.

Every feature of the G.N., by the strenuous tests of racing and touring competitions, is developed to a fine pitch before it is adopted: all weak points are eliminated.

The G.N. has won the leading awards in all the competitions of the year.

The Touring G.N., equipped with special all-weather hood, adjustable wind-screen, electric lighting installation with dynamo, batteries, switchboard and ammeter, two head-lamps mounted on the wings, with double filaments for bright and dim, tail-lamp, speedometer, with total and trip recorder, detachable wheels, spare wheel and tyre, pump, horn, jack, tools, etc.

Price **£225**

With all-weather body - - - - - - - **£250**

Deferred payments will be arranged by any G.N. agent or by our West End Showrooms.

PREMIER AWARDS IN THE GREATEST EVENTS OF 1922.

"The Essex." The only Gold Medal.
"The General Efficiency." The Westall Cup for all-round best performance.
The Kop Hill Climb. "Motor Owner" Cup for best performance of all classes.
The Land's End. The Pettyt Cup for a very fine performance.

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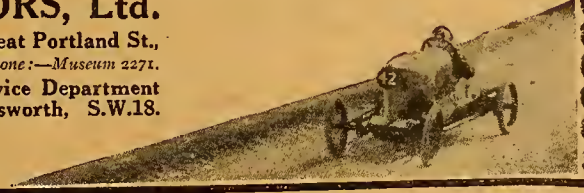
Showrooms at 222 Great Portland St., London, W.1. *Telephone:—Museum 2271.*
Head Office and Service Department at East Hill, Wandsworth, S.W.18.

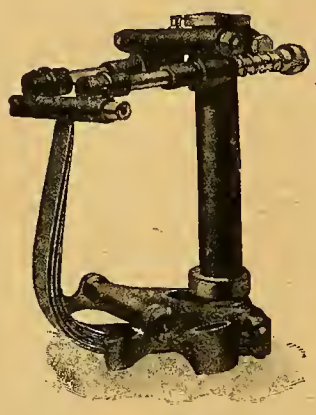


DUNELT

500 c.c. 2-STROKE

12 Important "DUNELT" features

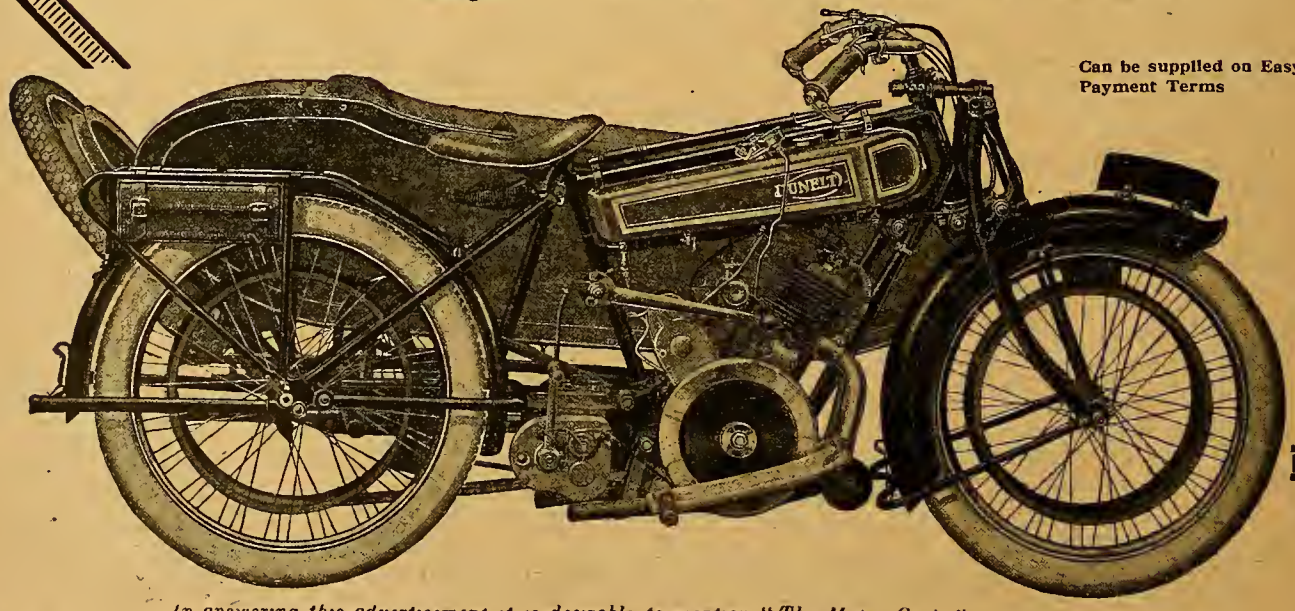
—and 12 sound reasons why you should carefully consider the advantages offered by this distinctive and proved "highest efficiency" machine before deciding upon your outfit.



Front Spring Fork.

1. ENGINE. Of great simplicity, power and efficiency. Only THREE moving parts, therefore possibility of trouble is reduced to a minimum.
2. No valves to grind in when decarbonising.
3. No valve springs, tappets, or cams.
4. TRUNCATED PISTON. An exclusive feature. Gives complete scavenging in combustion chamber and internal cooling of the piston.
5. Solid drop-forged Crankshaft and Connecting Rod.
6. All important parts made of specially selected steel.
7. Roller and Ball Bearings throughout.
8. FRAME. Long wheel base giving great comfort to the rider. The loop frame renders it almost unbreakable.
9. FRONT FORK. An exclusive feature. Specially designed for the Dunelt, effectively absorbs all road shocks.

Can be supplied on Easy Payment Terms



In answering this advertisement it is desirable to mention "The Motor Cycle."

New Pavement Rule.

On Saturday the new pavement rule came into being in London, where pedestrians were reminded in a hundred different ways to "walk on the left."

The Grand Prix.

The Grand Prix, France's premier motor cycle event, takes place on Wednesday next at Strasbourg, and will be described and illustrated by members of *The Motor Cycle* staff in the following week's issue.

Castor and Castrol.

Whenever castor oil is mentioned as a lubricant, quite a number of motor cyclists appear to conclude that Castrol is referred to. Several members of *The Motor Cycle* staff regularly use Wakefield Castrol R lubricating oil, which is particularly suitable for highly efficient engines with aluminium pistons.

As You Were.

At a meeting of stewards and judges held at the A.C.U. last week to decide the winner of the 600 c.c. class in the 200 miles sidecar race, Tucker's disqualification was maintained, and E. A. Bridgman (499 Indian) was officially awarded first place.

Shaft *v.* Chain.

In our correspondence pages this week the question of the relative efficiency of shaft and chain drive is again discussed by a reader, whose shaft-driven machine is illustrated.

Whatever theoretical advantage one system may have over the other, it is practically certain that a shaft would not stand up to the enormous strains imposed by an engine such as O'Donovan's record-breaking Norton, on which Renolds chains are used.

Ladies in Colonial Type Trials.

Our leaderette last week on ladies in colonial type trials has brought a crop of letters protesting against our view that such events are not suitable for the fair sex. The majority of our correspondents, however, appear to have misunderstood us. We clearly referred to colonial type trials, in which some "man handling" of the machines is almost inevitable.

A Scottish Speed Record?

In the speed trials of the Aberdeen and District M.C., a report of which appeared in the June 29th issue of *The Motor Cycle*, it was announced that A. Brown (490 Norton) covered the half-mile course in 21⅔s., at a speed of 84 m.p.h. The club is anxious to know whether this constitutes a Scottish record, and would welcome any communications on the subject.

A.C.U. SIX DAYS TRIAL REGULATIONS.

York, Buxton, Shrewsbury, Llandrindod Wells, Gloucester and Brooklands to be Stopping Places. No Penalties for Wheel Spin.

REGULATIONS for the big official trial are now before the manufacturers, and while the actual route has not yet been worked out in detail, it is clear that this year's event will provide features which will test every quality of the modern motor cycle.

Starting from York on Monday, August 21st, the first day, in all probability, will include the ascent of the two most difficult hills in the trial. These are Rosedale Abbey Bank and Sir William Hill, both of which have in the past formed the subject of controversy.

Monday night is to be spent at Buxton, and the second day is to include the ascent of Bwlch-y-groes, which, as a fair and gruelling test for air-cooled engines, is still without a peer south of the Caledonian Canal.

Shrewsbury is to be the stopping place on the Tuesday night. Nothing has been definitely settled as regards the test hills in this neighbourhood, but as the next night's halting place is Llandrindod Wells, it will be seen that a return is made into that part of Wales which was covered in the big trial of 1919.

On the Thursday night Gloucester is to be reached, which suggests more hills in Mid and South Wales, while as a straightaway run to Brooklands is to be made on Friday possibly Birdlip will be included.

No Consumption Tests.

Owing to technical difficulties, petrol and oil consumption will not be recorded, the trial consisting of tests for :

(1.) Reliability.
(2.) Hill-climbing.
(3.) Speed (on Brooklands).
(4.) Silence.
(5.) Braking.

The two last-mentioned tests have been modified inasmuch as the standard of merit to be obtained for silence and brakes is reduced to 75 per cent. as compared with the 90 per cent. that was required last year.

Classification.

The motor cycles eligible for entry are divided into three general sections, each being sub-divided into classes, and as the regulations embody the classification rules of the F.I.C.M. (*Federation Internationale des Clubs Motocyclistes*), minimum weights and tyre sizes are insisted upon as follows :

Class.	c.c.	Min. weight. Kilogs.	Min. dia. of tyres.
Motor Bicycles.			
A.	250	60 (132 lb.)	50 mm. (2in.)
B.	350	75 (165 lb.)	55 mm. (2¼in.)
C.	500	85 (187 lb.)	60 mm. (2⅜in.)
D.	750	100 (220 lb.)	65 mm. (2½in.)
E.	1,000	120 (264 lb.)	75 mm. (3in.)
Sidecars.			
B/S.	350	115 (253½ lb.)	55 mm. (2¼in.)
F.	600	125 (275 lb.)	65 mm. (2½in.)
G.	1,000	160 (352 lb.)	75 mm. (3in.)
Cycle Cars (3 or 4 Wheels).			
°J.1.	750	250 (550 lb.)	75 mm. (3in.)
J.2.	750	250 (550 lb.)	75 mm. (3in.)
°H.1.	1,100	250 (550 lb.)	75 mm. (3in.)
H.2.	1,100	250 (550 lb.)	75 mm. (3in.)

° Single seaters.

Equipment.

We would remind entrants that the regulations call for, among other items, (1) two efficient brakes working independently; (2) mudguards which project beyond the tyre at least 10 mm. each side and embrace at least 120° of the front wheel, and 180° of the rear wheel; (3) front and rear stands.

The marks which will be credited at the commencement of the trial will be as follows :

General Reliability (100).—Any competitor more than 10 minutes early or late will be penalised 2 marks per minute or part of a minute. Competitors in classes A, B/S, and F, will be allowed 12 minutes each way. In any one day the maximum loss of marks due to deviation from schedule will be limited to 50.

Hill Climbing (100).—5 marks will be deducted for one or more stops on any one hill. *A competitor whose machine has been stopped owing to wheel slip will be allowed to move it on to another part of the road, and if he restarts without delay and completes the ascent he will not be deemed to have stopped, provided his engine has been kept running.*

Silence (40).—Up to 40 marks may be deducted, according to the degree of noisiness, however caused. The test will be conducted aurally during the trial.

Brakes (40).—As in the case of silence, this test will be conducted by observation during the trial, and the marks will be deducted at the discretion of the judges.

Speed (100).—25 laps of Brooklands. 10 marks will be deducted for failure to reach the minimum rates of speed, plus 1 mark for every full m.p.h. below. One mark will be awarded for every full m.p.h. above the schedule speeds, which are as below :

	m.p.h.		m.p.h.
250 c.c. solo	30	350 c.c. sidecars	25
350 c.c. solo	35	600 c.c. sidecars	32
500 c.c. solo	40	1,000 c.c. sidecars	38
750 c.c. solo	44	1,100 c.c. cycle cars	38
1,000 c.c. solo	48		

Final Examination (100).—At completion of the speed test, competitors will proceed to the foot of Brooklands test hill, stop, restart, and ascend the hill to the examination sheds. Marks will be deducted at the discretion of the judges if any vital part of engine, transmission, or frame is found broken, or if any undue wear or tear is discovered in the steering, valve tappets, cycle parts, controls, engine reciprocating parts, or crankshaft bearings.

Awards.

To obtain a gold medal, a competitor must not have lost more than 10% of the marks allotted him under each of the tests for reliability, hill-climbing, speed and final examination, and not more than 25% in the silence and brake tests.

Silver medals will be awarded to those who do not lose more than 20% and 50% respectively, and bronze medals 25% and 50% respectively.

Entries, which close at ordinary fees on Saturday next, the 8th, are limited to 150 competitors.

RACING ACROSS COUNTRY.

Durban to Johannesburg. South Africa's Biggest Motor Cycle Event. Four Hundred Miles of Veldt and Mountain. Two Day Race won by a British Machine.

THE most important and strenuous event in the South African motor cycle community is the annual race between the coast at Durban and the gold city, a distance of 396½ miles.

Except for the last 30 miles the whole distance is over typical Colonial roads with surfacing from vile to execrable, several small rivers and streams have to be driveu through or waded through, and many long and steep hills are included. Other than about three miles when passing through towns, the first 240 miles is continuously up and down, culminating in the ascent of Laings Nek at the side of the famous Majuba Mountain.

Starting on the outskirts of Durban, the road goes through Maritzburg (51 miles), Estcourt (111 miles), Ladysmith (150 miles), to Newcastle (212 miles), where the first night is spent, all machines being locked up in official control. The second day is via Charlestown (244 miles), Volksrust (248 miles), Standerton (300 miles), Balfour (350 miles), Heidelberg (366 miles) to the finishing point 4½ miles from Johannesburg Town Hall.

Historical.

First organised by the Rand M.C.C. in 1913, there were that year 66 entrants, of whom 20 finished; the same number survived the course out of 92 entries in 1914. The great war suspended activity until 1919 when but 13 finished, and the ratio of successes to entrants was worse in 1920, when eight men only qualified for prizes. The last two sets of figures indicate better than columns of description the tremendous difficulties of the course and the great physical strain on the drivers. In 1921 the number of finishers rose to 19.

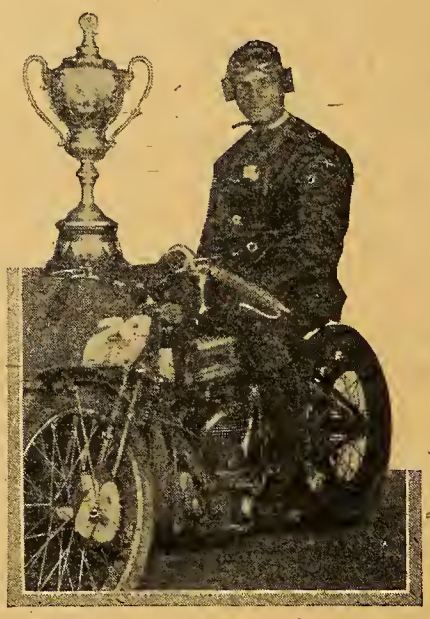
British riders will perhaps be able to obtain a better idea of road conditions in South Africa by a knowledge of the average speeds each year, start to finish, *i.e.*, total elapsed riding time. 1913 (554 c.c. Bradbury), 27.22 m.p.h.; 1914 (499 c.c. Rudge), 34.95 m.p.h.; 1919 (350 c.c. Douglas), 31.10 m.p.h.; 1920 (494 c.c. Douglas), 17.04 m.p.h.; 1921 (989 c.c. Harley-Davidson), 35.87 m.p.h. It will thus be seen that with nearly double the cubic capacity in 1921, but one more mile per hour average was obtained against the average of the winner in 1914.

Handicapping on Capacity.

The event has always been run on handicap terms arranged on a basis of engine capacity, and known performances of entrants. Such a system is not satisfactory, and some day it might be possible to divide the race into classes, each class starting level, but as there exists a perpetual floating trophy (which cost £125) for the annual winner, the better system is not yet favoured.

Organised Assistance.

The conditions under which the race is run have varied. In 1913 and 1914



C. H. Young (499 c.c. Triumph), winner of the Trophy in the 1922 Durban-Johannesburg race at an average speed of 39½ m.p.h. for nearly 400 miles of rough riding.

riders were prohibited from receiving assistance of any kind, and had to carry all spares and replacements with them. In 1919, 1920, and 1921, outside assistance was allowed and drivers could obtain spares anywhere. This year new parts, tyres, etc., were still procurable from anywhere, but outside assistance was prohibited, and all repairs had to be effected on the road. It is obvious that those trade firms with the longest pockets and best resources are able to secure advantages for riders of their machines that are not available to the small firms.

In addition to gold medals to the first five men, cash prizes are given, the winner taking £100, 2nd man £50, 3rd man £25, 4th man £15, 5th man £10, 6th man £5, 7th man £2 10s., and first unplaced novice £5. Further, all finishing inside two hours after the winner receive gold medals.

Enormous Organisations Involved.

The organisation is a huge task involving some four months' prior work; first to obtain official sanction—road racing is prohibited unless so sanctioned—and thereafter to fix up petrol stations, controls, and a small army of honorary officials. Drivers have a clear run through on the first day and part of the second day; when passing from Natal across the border into Transvaal, road gates are encountered to the number of 52, all of which should be opened and closed individually by each driver in strict compliance with the law. But to avoid this fearsome handicap each gate is guarded separately, and the guards, of course, have to be paid; three fast cars continuously patrol this section to make certain that all gates are kept open with guards ready to close them against straying cattle and sheep.

Police render assistance from end to end of the 396½ miles in respect of the few towns and villages passed through by keeping a clear course. So great is public interest that it is quite usual for parties to drive distances of 50 miles just to witness the occasional passage of a competitor. A public holiday being always selected for the last day, sporting Johannesburg turns out by the mass to be at the finishing line, or as near as is permitted; some 10,000 spectators were strung along the road this year for the last three miles.

The 1922 Event.

For 1922 the entries totalled exactly 50, made up of 40 from Johannesburg, 9 from Natal, and 1 from so far afield as Port Elizabeth, 800 miles away.

They may conveniently be summarised as follows: One 225 c.c. Velocette, one 225 c.c. Triumph, one 269 c.c. Sun, one 348 c.c. Hilda (local assembly), three 349 c.c. A.J.S., three 348 c.c. Douglas, one 490 c.c. Norton, one 495 c.c. Hilda, one 498 c.c. P. and M., one 499 c.c. Brough, one 499 c.c. Rudge, one 499 c.c. Dunelt, one 532 c.c. Scott, one 554 c.c. Bradbury, one 550 c.c. Sunbeam, two 492 c.c. Sunbeam, three 496 c.c. Douglas, one 770 c.c. B.S.A., three 557 c.c. B.S.A., three 499 c.c. Triumph, three 550 c.c. Triumph, one 596 c.c. Indian, six 998 c.c. Indian, two 998 c.c. Excelsior, and eight 989 c.c. Harley-Davidson. Handicap limit was 5h. 20m. for the Velocette down to five men on scratch.

Early Start on First Day.

In dull weather the limit man went off promptly at 7 a.m. on May 30th, the remainder following at five minutes' intervals in pairs, quite irrespective of handicaps, to enable the scratch men to reach Newcastle well before the afternoon; the correct adjustments were made next morning, so that the first man to finish would be the winner. The 54 miles to Maritzburg is possibly the most trying of the whole distance, well over 3,000 feet above sea level being climbed in 42 miles, dropping the next 12 miles to about 2,000 feet with numerous short steep hills abounding in acute turns. Out of 44 starters 42 were timed into Maritzburg between 8.45 a.m. and 3.23 p.m., Percy Flook (348 Douglas) reaching there in the van. Fastest net times were: Young (499 Triumph), 1h. 5m.; Long (998 Excelsior), 1h. 6m.; Thomas (492 Sunbeam), 1h. 9m.; P. Flook (348 Douglas), 1h. 11m.; Berry (550 Triumph), 1h. 11m.; Cohen (550 Triumph), 1h. 12m.; De Kok (998 Excelsior), 1h. 12m., for 54 miles.

Immediately outside Maritzburg is a five miles hill, most of the gradient 1

Racing Across Country.—

in 7 and 1 in 8, and the hitherto fair surface deteriorates, becoming very bad to Estcourt (111 miles). Best net times: Long, 2h. 32m.; Young 2h. 33m.; Hodgkinson (557 B.S.A.), 2h. 38m.; Cohen, 2h. 44m.; De Kok, 2h. 45m.; Berry, 2h. 47s.; Wilson (998 Indian), 2h. 47m.; Moulder (492 Sunbeam), 2h. 49m.; Thomas, 2h. 49m. On this section Loader (989 Harley) was run into by a passing car, fortunately without much damage to man or machine, and he was able to continue. Young had to stop and take out his back wheel, partly buckled by hitting big stones. Flook in his usual sporting spirit came to a dead stop when about to pass Young to see if he was hurt.

At Ladysmith (150 miles) the time-keepers booked through 37 men with best net times as follows: Borland (989 Harley), 3h. 33m.; Young, 3h. 36m.; Long, 3h. 40m.; Hodgkinson, 4h. 1m.; Moulder, 4h. 4m.; Murray (989 Harley), 4h. 4m.; Wilson, 4h. 6m.; P. Flook, 4h. 8m.; Thomas, 4h. 9m.

Boulders, Streams and Sand.

Ten miles outside Ladysmith came the worst stretch on the course up over the Biggarsberg range of hills—an outlying spur of the Drakensberg mountains—with several narrow streams to wade through all paved with rough boulders; at the summit was a long run down to Newcastle with at least 20 miles of continuous deep sand to negotiate. There were many mishaps hereabout, A. V. Baker (499 Triumph) skidding in the sand at high speed and badly hurting his shoulder, but he managed to ride in and then retired.

No fewer than 35 survived to Newcastle (212 miles), the eight best net times being Long (998 Excelsior), 5h. 28m.; Ressel (770 B.S.A. twin), 5h. 32m.; Young (499 Triumph), 5h. 50m.; Moulder (492 Sunbeam), 5h. 55m.; Murray (989 Harley), 5h. 59m.; Thomas (492 Sunbeam), 6h. 9m.; Van Bergen (490 Norton), 6h. 11m.; H. Scott (349 A.J.S.), 6h. 12m. All arrivals had some trouble, such as Long (broken saddle), Scott (broken handle-bar), Percy Flook (back wheel cones jammed), Zurcher (Douglas, chain snapped), Hildebrandt (burst tyre causing complete somersault), Loader (collision), etc.

Handicaps Operated on Second Day.

All arrivals the preceding afternoon re-started, but not one went off at the exact minute, every man spending time in adjustments or repairs after machines were released from the lock-up. H. Scott was timed off at 7.0 a.m., and the remainder according to the adjusted handicaps mentioned in earlier paragraphs. Long, one of the scratch men, had picked up so much on Scott that it seemed a foregone conclusion that, barring accidents, he must win. With 184 miles to cover Long had to reduce Scott by only 1h. 41m.; Young, the much fancied man on the first day, had a start of Long by but 38m. Moreover, the riders were now within easy distance of much better roads so far as concerned the big powered mounts.

For the first 30 miles out of Newcastle the route was amongst winding hills, criss-cross up and down with a final terror at Laings Nek, always inches carpeted in loose stones for the mile steep pitch that finishes the seven mile climb from Ingogo village, bringing the competitors to 5,500 feet above sea level, remaining approximately that height to the end across what is known as "high veld." Open rolling country much like the Wiltshire Downs in England is the characteristic feature; there is not a single steep hill, and although mostly of rough surface, the long straight stretches provide plenty of opportunity to those who thoroughly know the course.

Scott wasted little time. At Standerton, 96½ miles from the finish, the leaders and times of passing were: Scott, 9.39; Young, 10.10; Moulder, 10.15; Booth (Triumph Junior), 10.31, D. Scott (A.J.S.), 10.34; Cohen, 10.53; Dessels, 10.55; P. Flook 10.56; Long, 10.57. H. Scott was thus leading Young by 31 minutes, and the huge crowd at the half-mile level stretch at the finish were kept on the strain of interest by telephone messages giving the times at intervening points.

A Popular Win.

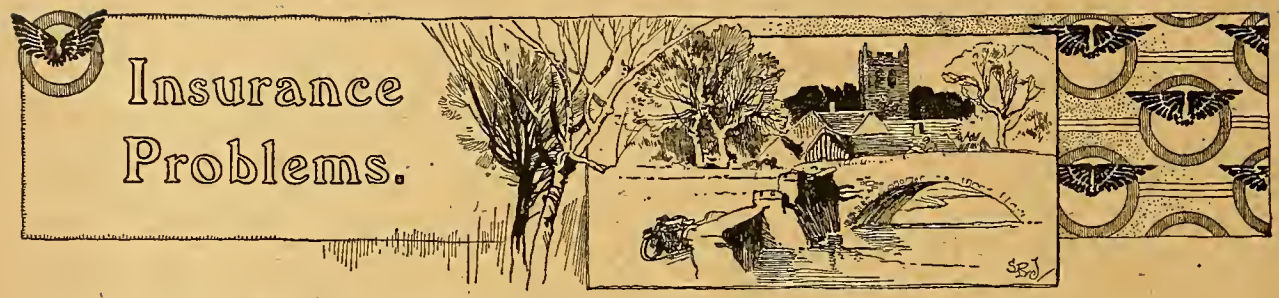
At Balfour, 41 miles to go, H. Scott held the lead by less than two minutes, and five miles further Young at last wrested the front position from Scott, and, riding his 499 c.c. Triumph all out along the last 27 miles of really good road, he was a popular winner, beating the race record created last year by the late Robert Blackburn. H. Scott (349 A.J.S.) followed 13 minutes later, so it will be realised that Young achieved a magnificent performance. Long (998 Excelsior) arrived at 1.3 p.m., 48 minutes after Young; when the full times were worked out it was seen that Long was the fastest in the race, and created a still better record, *viz.*, 9h. 46m. 23s., compared with Young's 10h. 1m. 32s.

In 1919, when the race was run in two days from Johannesburg to Durban, Young ran second to the winner (Percy Flook). He has only once previously been placed first in important events in South Africa, nearly always coming to grief with broken handle-bars, as was the case in 1919. He lives at Durban, and is a prominent member of the Natal M.C.C. H. Scott hails from Johannesburg; he gained fourth place in the 1919 race. A. Long is connected with the trade in Johannesburg, and it may be recalled that in 1920 and 1921, when a scratch sidecar race was run in conjunction with the "Schlesinger" trophy solo handicap events, he won on each occasion on an Excelsior, in 1920 by a bare five seconds, and in 1921 by twelve minutes, net time 11h. 26m. Results:

		Handicap. h. m.	Nett Time. h. m. s.
1.	C. H. Young (499 Triumph)	1 0	10 1 32
2.	H. Scott (349 A.J.S.) ..	2 25	11 37 50
3.	A. Long (998 Excelsior)	Scratch.	9 46 23
4.	T. Dessels (499 Rudge) ..	1 20	11 20 37
5.	L. Cohen (550 Triumph) ..	1 0	12 0 19
6.	V. Ressel (770 B.S.A.) ..	40	10 50 18
7.	L. Van Bergen (490 Norton)	1 20	11 35 36
8.	E. Murray (989 Harley)	Scratch.	10 20 0
9.	F. Zurcher (349 Douglas)	2 25	12 49 43
10.	P. Flook (348 Douglas) ..	2 25	12 55 51
11.	S. De Kok (998 Excelsior)	20	11 12 27
12.	J. Hodgkinson (557 B.S.A.)	1 0	11 57 31
13.	G. Kilroe (557 B.S.A.) ..	1 10	12 15 0
14.	D. Brink (268 A.J.S.) ..	3 40	15 1 3
15.	J. Booth (225 Triumph) ..	5 0	16 16 57
16.	W. Thomas (492 Sunbeam)	1 20	12 47 11
17.	T. Nicholl (998 Indian)	Scratch.	11 29 33
18.	W. Wilson (998 Indian)	Scratch.	11 46 42
19.	D. Scott (349 A.J.S.) ..	2 45	14 38 6
20.	G. Taylor (557 B.S.A.) ..	1 0	12 55 41

The team prize for first three machines of one make goes to the Triumph, *viz.*, Young 1, Cohen 5, Booth 15, total 21 points. In addition to above list, nine men finished inside the time limit of five hours after the winner. A protest has been raised against the second man, H. Scott, for taking his machine into a garage; the above placings after Young, therefore are subject to the result of investigation.

In past races C. H. Young has been dogged by a series of handle-bar breakages; this year he took the precaution of reinforcing the bars as indicated in this picture of successful rider and mount (right) along with J. R. Bery, another of the Triumph team.



A New Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this new feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enables "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Pillion Riding—Extra Charges.

Messrs. Saxessories, Coventry, writing on the subject of pillion riding insurance, consider that the extra charges for pillion riding are unfair. Their statement expresses the opinion of many of our readers, and although no definite question is asked, we publish it together with a comment as forming an interesting view on the subject. They say:

"We have contended for some time past that the 50% extra insurance for pillion riding is excessive, and more especially so when properly designed pillion seats are used.

"Pillion riding is practically as safe as solo riding, because greater care is exercised, but we can go a step farther and say this is correct if the pillion rider rides astride and is provided with hand grips and footrests. We consider these two essential to safety, as the pillion rider has then no inducement to clutch the driver under any circumstances, nor to upset the driver's balance by leg movement.

"We have recently asked all the tariff insurance companies to consider the question of a reduction of insurance premiums when pillion seats filling the above conditions are used, but so far without success.

"We can also confirm that non-tariff companies' premiums, including the extra for pillion riding, are in some cases less than tariff companies' basis premiums without pillion riding."

There can be no arguing the fact that pillion riding does provide an extra hazard from the insurance standpoint, and not the least contributory feature is that, an accident being imminent, the driver sees the circumstances in one way and the pillion rider in another. For example, there are passengers who in a tight corner suddenly decide that they are more competent to control the machine than the driver, and then act accordingly!

It is, of course, the aim of pillion seat makers so to devise the attachment that the risk is minimised as much as possible, and, having regard to the great favour which is shown towards pillion riding by the motor cyclist, it is to be hoped that such additional risk as is involved by pillion riding will eventually by these means be eliminated. Insurance companies will not be unsympathetic when that time arrives, but meanwhile, the position being what it is, it has to be faced accordingly.

The "Comprehensive Policy."

My motor cycle is insured under what is known as a "Comprehensive Policy," writes C. W. Brockton, of Hull, but occasionally I use a friend's cycle, and I should be glad to know, in the event of my friend's machine being involved in an accident whilst I am riding it, whether my policy would cover such damage as might arise.

Also, what would be my position under my policy in the event of a third party claim being made against me under the same conditions?

The answer to the first part of this question is in the negative, but the question has considerable value in that it brings to light the question of cover in respect of an "extra rider." Most motor cycle owners take out a policy covering only whilst the machine is being ridden by the owner, and whilst this is a condition likely to be maintained throughout the currency of the policy, there is always the danger of an accident arising when a friend is allowed to drive the machine.

This aspect should be borne strongly in mind by all prospective insurers, and "extra rider" cover obtained if necessary.

The second part of the question is answered in the affirmative. Most policies now indemnify the owner of an insured cycle whilst driving "any other private cycle not being his own property" against all third party risks.

It will be appreciated that this question has been answered without our enquirer's policy before us, and the reply is consequently based on the form of cover granted by the majority of companies.

SUMMARY.

In addition to the queries dealt with above, we have received a number of letters asking for advice, replies to which are given below:

H.J.H. (Canterbury).—The Licences and General Insurance Co. is a company which can be recommended.

A.G. (Sheffield).—The General Accident, Fire, and Life Insurance Co. handling the Tan-Sad policy is a reputable one and reasonable and prompt in settling claims.

E.S.K. (Merton).—Of the two companies named, the Motor Union is to be preferred.

C.J.J. (Southampton).—The question of the responsibility involved by allowing a friend to ride your machine is dealt with on this page.

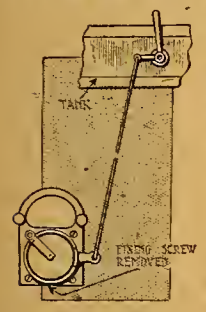
IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made Gadgets, with some Practical Hints on Work in the Garage.

Converting Fixed to Variable Timing.

ON no type of engine is variable ignition more desirable than on a small two-stroke, yet many of the cheaper models were and some are still marketed, with magnetos having a fixed firing point.

A Belfast rider of a 211 c.c. Levis (single gear) made a change over from fixed to variable ignition quite easily in this wise: On examining the E.I.C. magneto he found that the contact breaker cam ring was of the standard type with a slot underneath, which would permit movement if the extra stop screw fitted in the magneto end plate to fix the timing was removed (the screw to remove is the left-hand side one, *i.e.*, the one which prevents the ring moving in the same direction as the armature revolves). From the makers of the machine a control lever, rod, and tank button for the lever were obtained for about five shillings; the button was sweated to the side of the petrol tank (not a job for novice tinsmiths, by the way!) The blank timing lever on the contact breaker was drilled to take the end of the rod and the parts assembled. It was found that in town riding the machine became much more controllable and permitted better climbing and acceleration—the latter an asset under some circumstances in Belfast!

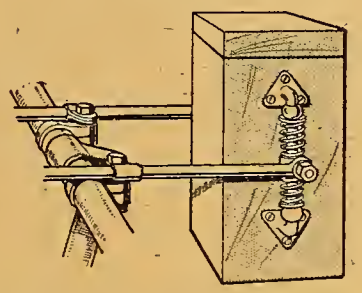


Method of fitting magneto control on a Levis.

Dual Lighting Arrangements.

WHEN the nights are so light that only occasional use is made of the lamp set, the advantages of electric equipment is undoubted. "H.W.C." (of Southampton) proposes a scheme whereby he retains the acetylene set for long distances and carries an accumulator for short about-town trips. A felt-lined wooden box houses the battery without shake, and this is carried on the generator bracket on the handle-bars. To minimise vibration spring mountings are provided; these are made up with small brass brackets, such as are obtainable at most furnishing ironmongers, two short rods, four springs, and two eye-bolts. The manner of their assembly is clearly shown in the sketch.

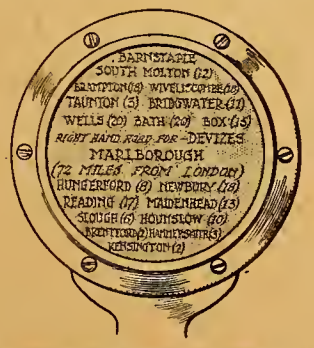
"H.W.C.'s" head lamp is fitted with a m.s.c. bulb-holder near the burner, but sufficiently below it to prevent the bulb being cracked by the heat of the gas flame; the acetylene generator is secured to the saddle tube. Both electric and acetylene tail lamps are carried.



Spring mounting of an accumulator box.

Compact Route Card Carrier.

THIS is not a competition route card carrier, but a little device used by Mr. M. Sykes, who recently had to journey from Barnstaple in Devon to London—a route with which he was unfamiliar. Not having a copy of *The Motor Cycle* Route Book (a serious omission) he obtained a route from a local lorry driver and inscribed this within a circle 3in. in diameter. This was fixed in a spare licence holder and secured on the handle-bars, and supplemented by sign-posts and calls to pedestrians in towns enabled a non-stop journey to be made.



Spare licence holder arranged as a route guide.

Substitute for Bowden Nipples.

HAVING broken some small tubular nipples in removing them from an old length of control wire, "E.A.M." of Coventry was at a loss for a method of refitting the wire until it occurred to him to bind the end with fine copper wire and solder it up. This tip is useful also in those cases when it is difficult to persuade a frayed or thick wire to pass through the hole of an ordinary nipple.

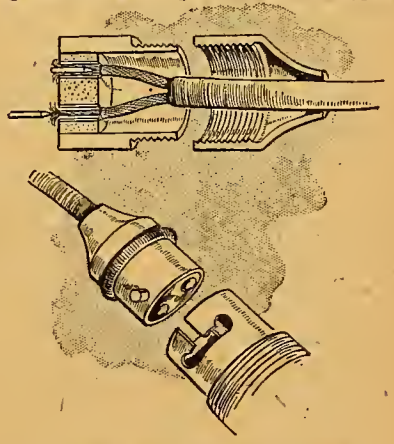
Electric Lighting Tips.

At this season people mostly forget their lighting sets, but it is a good plan to make alterations or new installations while the light is good rather than to leave such work for the darker evenings of autumn.

In the matter of fitting wires into bulb-holders, etc., words of wisdom are forwarded by F.E.D.H. of Dorking; he says:—

"The plugs used in many electric lighting sets have no provision for gripping the wire leads in the two brass terminal tubes. The wires may be soldered in, but an equally strong and much simpler method is to use gramophone needles. The needles are simply pushed in, the wires being thinned out or doubled until the needle fits really tight and flush with contact surface. The ends of the wires are then trimmed off."

A further suggestion from the same reader is that switches may be dispensed with altogether; bayonet catch joints are used. The L-shaped slot is converted into a T shape, the new arm being made slightly longer than the existing arm. A 90° turn of the plug switches the light on or off. Any lamp can be used alone, complicated wiring is avoided, and current can be economised. The slot is most easily made by drilling a hole and finishing with a small file.



Two useful hints for electrical fittings.

YORKSHIRE SPEED CHAMPIONSHIPS.

25-Mile Races on Saltburn Sands. Well-attended Event of Middlesbro' & District M.C.C.

EXCELLENT racing rewarded thousands of spectators at Saturday's speed trials on Saltburn Sands, arranged by the Middlesbrough and District M.C. on behalf of the Yorkshire Centre A.C.U.

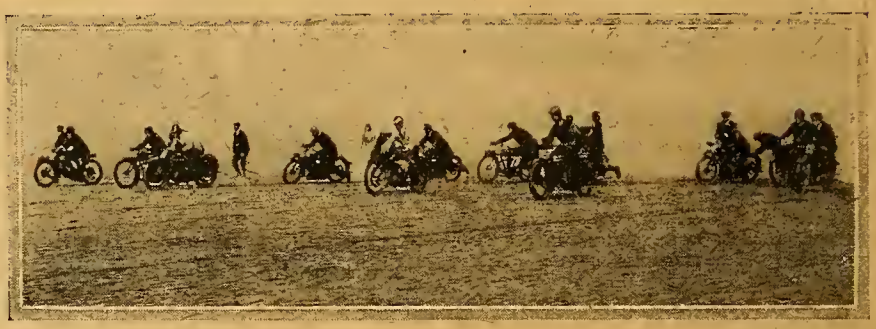
Three twenty-mile Yorkshire Championship races—for solo machines not exceeding 350 c.c., 600 c.c., and 1,000 c.c.—were naturally regarded as of first importance, but the many shorter distance events provided an equal amount of excitement.

Of last year's champions only F. W. Dixon (989 Harley-Davidson) was able to retain his title, the 1922 winners in the other classes being G. S. Boston (349 A.J.S.) and C. P. Wood (486 Scott Squirrel). Incidentally there were only three starters, all on Harley-Davidsons, in the 1,000 c.c. class.

The track was in poor condition and was very loose in parts, especially towards the finish. Several spills occurred, but apparently the only serious one was that of Mrs. M. C. Jennison, of Hull, the Velocette rider, who got up a speed wobble just before the finishing line and fell. Her crash helmet saved her life, for, as far as could be traced by the doctor on the course, she escaped with slight concussion, a badly lacerated jaw, and shock.

Short Radius Cornering.

The course was a mile long, with the outward and home tracks on opposite sides of the enclosure, making the turns at the end of each mile to have a radius of about 30 yards, which many men found quite insufficient to get round in, and many cases were witnessed of a man having a lead of 50 yards and more to the corner, then losing it through taking the corner too fast and very wide. Frank Dixon was one of these, while his better-known brother was "slower" but cut in very close.



Start of the 20 mile Yorkshire Championship for machines up to 600 c.c., which was won with some ease by C. P. Wood (486 c.c. Scott Squirrel).

The steadiest rider all round the course was C. P. Wood. He just sat low on his Scott as if he and the machine were carved out of stone and droned round the course like a big bee.

In the early events he seemed content to let Langman lead, but in the 20-mile Championship he set out to win, and the result was never in doubt; he shot past the post easily first in 23 mins. 28 3-5 secs., which, considering the 19 corners and 10 crossings of a watersplash, was a fine performance. His speed works out at 51 m.p.h.

When he won the equivalent 350 c.c. event G. S. Boston (349 A.J.S.) was only 16 3-5 secs. slower than Wood.

Generally speaking, the honours of the day were shared by Dixon and Wood, the former finishing so far ahead in the four miles unlimited sidecar event that he was able to park his outfit and become a spectator before the second man arrived!

Other riders to show up well included F. Reynard (Monopole), R. W. Loughton (Francis Barnett), H. Langman (Scott Squirrel), R. T. Cawthorne (Norton), F. Shepherd (Sheffield Henderson), and J. Joynson (Invicta).

The trials, which started about 1.30 p.m., did not finish until nearly 8 p.m., when the tide asserted its prior rights; but despite this a large portion of the crowd stayed throughout the whole programme.

HILL CLIMB IN EAST SOUTH WALES.

Open Event of the East South Wales Centre A.C.U. near Newport marred by Rain.

IT must have been disappointing to the organisers of an open hill-climb to have to run off this most popular event under such appalling weather conditions as were experienced at Catsash on Saturday last.

Indeed, so miserable was the state of the weather that it was fully thought that the event would surely be run off minus spectators.

However, these trials were not going to take place even during a deluge and be missed by the enthusiastic admirers of the sport in East South Wales.

Last year's successful meeting was too well remembered to deter these enthusiasts from attending, and to the surprise of the organisers the event, or, as aptly described by Mr. Ebblewhite, "the regatta," was witnessed by quite large numbers, who appeared to enjoy themselves thoroughly.

It must be borne in mind that South Wales to-day can boast of riders of no mean ability, whose performances are of sufficient merit to warrant a successful meeting, although, of course, the inclusion in the entries of that "wizard of the wheel," viz., George Dance, added greatly to the already interesting list of entries, which, by the way, was a record.

Unfortunately, after a few exhibitions of his wonderful skill (his "get aways" reminded one of the shooting of a rocket), Dance had the misfortune, immediately on the conclusion of Event 13, to miss his brake pedal, with the result that both rider and machine shot over a low bank, through a hedge, and landed in a cottage garden the other side.

He was taken to hospital, but, as officially announced later, was found to have escaped serious injury, no bones being broken, although he was badly shaken and had several bruises and nasty cuts about the face. He was, however, able to proceed later to Wolverhampton.

High Speeds Through the Rain.

Undoubtedly, had the Clerk of the Weather been a little more considerate some remarkable times would have been recorded, for riders and machines appeared to be in excellent fettle. As it was, the times put up by competitors were really excellent considering that practically every event was run in pouring rain, riders' faces being so bespattered by mud that it was remarkable they were able to see at all.

The organisation of the event was so good that it would be hard to find better than that witnessed on Saturday.

RESULTS

EVENT 7 (OPEN), UP TO 350 C.C.:
G. Dance (349 Sunbeam), 34½s.
C. Sgonina (349 A.J.S.), 36½s.
S. Tucker (346 New Imperial), 37½s.

EVENT 8 (MEMBERS), DITTO:
W. L. J. Davies (349 Cotton), 33s.
C. Sgonina (349 A.J.S.), 35½s.
F. J. Boshier Jones (349 A.J.S.), 39½s.

EVENT 9 (NOVICE MEMBERS), DITTO:
A. Bethell (349 Sheffield-Henderson), 38½s.
W. T. Timmins (349 Cotton), 47½s.
J. M. Marks (349 Douglas), 50½s.

EVENT 10 (OPEN), UP TO 500 C.C.:
G. Dance (499 Sunbeam), 29s.
C. Sgonina (498 Sgonina Special), 32½s.
J. Parker (492 Sunbeam), 33½s.

EVENT 11 (MEMBERS), DITTO:
I. Parker (492 Sunbeam), 33s.
V. Austice (494 Douglas), 33½s.
R. E. Eveson (490 Norton), 34½s.

Victor Anstice (494 c.c. Douglas) and B. J. Millard (492 c.c. Sunbeam) waiting in the rain for the signal to start.

EVENT 12 (NOVICE MEMBERS), DITTO:
M. R. Davies (499 Sunbeam), 35⅕s.
J. O. Parry (499 Sunbeam), 37⅕s.
S. H. Richards (494 Douglas), 38⅗s.

EVENT 13 (OPEN), UP TO 750 C.C.:
G. Dance (499 Sunbeam), 29⅖s.
I. Parker (492 Sunbeam), 33⅕s.
V. Anstice (494 Douglas), 33⅗s.

EVENT 14 (MEMBERS), DITTO:
I. Parker (492 Sunbeam), 33⅖s.
V. Anstice (494 Douglas), 33⅘s.
W. L. Davies (398 A.B.C.), 33⅕s.

EVENT 15 (NOVICE MEMBERS), DITTO:
M. R. Davies (499 Sunbeam), 35⅖s.
A. Bethell (349 Sheffield-Henderson), 37⅗s.
J. O. Parry (499 Sunbeam), 38⅗s.

EVENT 16 (OPEN), UNLIMITED:
G. W. Walker (490 Norton), 30⅖s.
I. Parker (492 Sunbeam), 33s.
V. Anstice (494 Douglas), 33⅕s.

EVENT 17 (MEMBERS), DITTO:
H. Davies (976 Brough Superior), 33s.
I. Parker (492 Sunbeam), 33⅖s.
V. Anstice (494 Douglas), 34⅕s.

EVENT 18 (NOVICE MEMBERS), DITTO:
A. Bethell (349 Sheffield-Henderson), 38⅗s.
J. O. Parry (499 Douglas), 39s.
M. R. Davies (346 New Imperial), 43s.

EVENT 4 (OPEN), P TO 300 C.C.:
W. L. J. Davies (249 Diamond), 40s.
H. Harris (249 New Imperial), 41s.
H. Church (249 Velocette), 41⅖s.

EVENT 5 (MEMBERS), DITTO:
W. L. J. Davies (249 Diamond), 40s.
H. Harris (249 New Imperial), 41⅗s.
M. R. Davies (249 New Imperial, 42⅖s.

EVENT 22 (OPEN), SIDECARS, UP TO 500 C.C.:
C. Sgonina (498 Sgonina Special), 35⅗s.
G. W. Walker (490 Norton sc.), 38⅕s.
S. L. Bailey (494 Douglas sc.), 43s.

EVENT 23 (MEMBERS), DITTO:
C. Sgonina (498 Sgonina Special sc.), 35⅕s.
W. L. J. Davies (349 Cotton sc.), 40s.
J. Marsh (499 Sunbeam sc.), 40⅖s.

EVENT 25 (OPEN), SIDECARS, UP TO 750 C.C.:
C. Sgonina (498 Sgonina Special sc.), 36⅕s.
S. L. Bailey (494 Douglas sc.), 39s.

EVENT 26 (MEMBERS), DITTO:
C. Sgonina (498 Sgonina Special sc.), 36⅕s.
S. L. Bailey (494 Douglas sc.), 38⅕s.
J. Marsh (499 Sunbeam sc.), 39⅕s.

EVENT 28 (OPEN), SIDECARS, UNLIMITED:
G. W. Walker (490 Norton sc.), 35⅗s.
C. Sgonina (498 Sgonina Special sc.), 37s.
S. L. Bailey (494 Douglas sc.), 38⅗s.

EVENT 29 (MEMBERS), DITTO:
C. Sgonina (498 Sgonina Special sc.), 37s.
G. W. Walker (490 Norton sc.), 37⅖s.
S. L. Bailey (494 Douglas sc.), 38⅗s.

EVENT 30 (NOVICE MEMBERS), DITTO:
W. H. Leman (978 B.A.T. sc.), 53⅘s.
E. J. L. Strong (989 Harley-Davidson sc.), 75s.

HIGH SPEEDS AT ANGEL BANK.

Rain Spoils Sutton Coldfield and North Birmingham Club's Hill-climb.

OWING to police restrictions the Sutton Coldfield and North Birmingham Automobile Club were forced to travel far afield to find a suitable spot for the first Midland Centre hill climb.

The hill finally selected was Angel Bank, near Cleobury Mortimer—a main road with a fine surface, and a maximum gradient of about 1 in 10. Though eminently suitable for a hill climb in most respects, it suffered from the disadvantage of having branch roads near the foot from which slow traffic emerged and held up the climb on several occasions.

These delays and a dull afternoon which later turned to heavy rain, rendered the event somewhat dreary.

Delays Due to Traffic.

In spite of the efforts of the organisers, combined with the untiring zeal of a very sporting police sergeant, and his subordinates, only 11 ascents were accomplished in the first sixty-five minutes. As a result of this it was decided that after the sidecar classes each man should only have one run at the hill, his time to stand for each class in which he was entered. This decision caused some grumbling.

A glance around the competing machines at the foot of the measured half-mile revealed one or two interesting features. H. W. Hassall rode an o.h.v. Norton, on which he acomplished the fastest time of the day (28 2-5sec.), beating George Brough, who was mounted on an experimental Brough Superior with the latest 976 c.c. J.A.P. side-by-side valve engine, having a very neat ribbed exhaust elbow on the rear cylinder, and a modified frame, by only 2-5sec. G. E. Cowley's 349 c.c. A.J.S. was of the 1921 T.T. o.h.v. type, though he was beaten on time by A. E. Phillips on a side-by-side valve sports model of the same make.

Star Performers.

Outstanding performances were few and far between, but those of H. W. Hassall (490 Norton), G. Brough (976 Brough Superior), F. Sisson (490 Norton), F. T. Hatton (494 and 749 Douglas), W. L. Handley (292 O.K. Junior), and W. S. Hawcatt (247 Levis), are worthy of special notice. Sidecar classes attracted no more than three entries in any one class (classes 1 and 2 were unsupported, and, therefore, abandoned). In Class 3, for sidecars up to 600 c.c. (open), F. Sisson (490 Norton) took the hill in fine style in 37 1-5s., easily beating the only other competitor, F. A. Watson (550 Sunbeam sc.), whose time was 52 2-5s.

Class 4, a similar event of private owners produced three entries: F. Sisson (490 Norton sc.), 36 4-5s.; V. H. Smith (490 Norton sc.), 47s.; F. A. Watson (550 Sunbeam sc.), 52 3-5s.

Class 5.—Sidecars, unlimited, open: F. Sisson (490 Norton sc.), 36 2-5s.; F. T. Hatton (749 Douglas sc.), 38s.

Class 6.—Sidecars unlimited, private owners: F. Sisson (490 Norton sc.), 36 1-5s.; V. H. Smith (490 Norton sc.), 44 4-5s.; F. A. Watson (550 Sunbeam sc.), 50 2-5s.

In Class 7 solos up to 250 c.c., open, Hawcatt (247 Levis) opened the event, and subsequently proved the winner. Next on time came another Levis, ridden by A. R. Edwards. Results:—W. S. Hawcatt (247 Levis), 38 1-5s.; A. R. Edwards (247 Levis), 44 2-5s.; R. C. Bennett (249 Federation), 48 2-5s.

Since practically all the entrants in Classes 8 and 9 had previously ascended the hill, they produced only one performance of interest, that of W. L. Handley, who made a magnificent climb on his 292 c.c. O.K. Junior. Class 8.—Solos up to 250 c.c., private owners:—(1) A. R. Edwards (247 Levis), 44 2-5s.; (2) R. C. Bennett (249 Federation), 48 2-5s.

Class 9.—Solos up to 350 c.c. Open:—W. L. Handley (292 O.K. Junior), 32 2-5s.; W. S. Hawcatt (247 Levis), 38 1-5s.; A. R. Edwards (247 Levis), 44 2-5s.

High Speeds at Angel Bank.—

Class 10.—Solos up to 350 c.c. Private owners :—(1) A. E. Phillips (349 A.J.S.), 42 2-5s.; (2) A. R. Edwards (247 Levis), 44 2-5s.; (3) G. E. Cowley (349 A.J.S.), 46 3-5s.

Class 11.—Solos up to 500 c.c. Open :—(1) W. H. Hassall (490 Norton), 28 2-5s. (fastest time of the day); (2) F. Sissons (490 Norton), 30s.; (3) F. Hatton (490 Douglas), 30 4-5s.

More high speeds were put up in Class 12, up to 500 c.c., for private owners, but nothing to lower the existing records. (1) F. Sisson (490 Norton), 30s.; (2) F. J. Adam (490 Norton), 32s.; (3) J. S. Bacon (499 Sunbeam), 33 4-5s.

Classes 13, 14, 15 and 16 produced only four fresh starters, and of these Hatton's 749 c.c. Douglas, and George Brough's 976 c.c. Brough Superior made very fine ascents.

Class 13.—Solos up to 750 c.c., open :—(1) H. W. Hassall (490 Norton), 28 2-5s.; (2) F. T. Hatton (749 Douglas), 29 3-5s.; (3) F. Sisson (490 Norton), 30s.

Class 14.—Solos up to 750 c.c. Private owners. Results as in Class 12.

Class 15.—Solos unlimited. Open :—(1) W. H. Hassall (490 Norton), 28 2-5s.; (2) G. Brough (976 Brough Superior), 28 4-5s.; (3) F. T. Hatton (749 Douglas), 29 3-5s.

Class 16.—Solos unlimited. Private owners :—(1) G. Brough (976 Brough Superior), 28 4-5s.; (2) F. Sisson (490 Norton), 30s.; (3) F. T. Adam (490 Norton), 32s.

Class 17 for cycle cars and light cars up to 1,100 c.c., open, produced three entries, H. F. S. Morgan winning very comfortably on time. (1) H. F. S. Morgan (976 Morgan), 50 2-5s.; (2) N. Norris (976 Morgan), 1m. 6 2-5s.; (3) F. H. Burcher (7 h.p. Wolseley), 1m. 58 2-5s.

Class 18, a similar event for private owners, produced only one entry, C. A. Potts (G.N. cycle car), who "walked over" in 1m. 12 2-5s.

Timing was carried out by telephone, and the officials worked hard under unfavourable circumstances. During the first few classes times were displayed on an official car, which traversed the hill between each class, but later, owing to rain and the difficulty of sorting out winners from previous classes, the practice became less regular. The results above are provisional, and special awards will be announced later.

TRAINS TO THE GRAND PRIX.

ALREADY there is a goodly number of motorists who will be journeying over to Strasbourg to witness the Grand Prix Race on Wednesday next; therefore the following train times, which the South Eastern and Chatham Railway have supplied, will be useful.

Passengers can leave London by the 8 p.m. service from Victoria, arriving in Paris at 5.25 a.m. the following morning, or if they wish to spend a night in Paris they can leave at 11 a.m. or 2 p.m., reaching Paris at 6.35 p.m. and 9.40 p.m. respectively. Return arrangements from Paris allow passengers making the 8.40 a.m. connection from the Gare du Nord to arrive in London at 3.55 p.m.

Visitors going from London on Sunday next (July 9) leave Victoria at 9.15 a.m.; arrive Gare du Nord, Paris, 4.35 p.m. Leave Gare de l'Est, Paris, at 5 p.m.; arrive Strasbourg at 12.29 a.m. (midnight).

The ordinary return ticket from London to Strasbourg via Ostend and Brussels is £9 9s. 2d. (first class) and £6 7s. 4d. (second class).

Accommodation is already said to be at a premium in the Strasbourg district.

CLUB NEWS.

Week-End Club Events.

July 8th.—North Western Centre A.C.U.—Speed Trials at Southport.
July 8th.—S.E. Centre A.C.U.—Reliability Trial.
July 8th.—North Wales M.C.C.—Week-end Tour.
July 8th.—Liverpool M.C.—Speed Trial.
July 8th.—Bristol M.C. and L.C.C. and Bath M.C.C.—Inter-club Trial.
July 8th.—Dumfries and District M.C.C.—One-day Reliability Trial for Irving Cup.
July 8th.—Bradford M.C.C.—Hill Climb.
July 8th.—Coventry Triangle M.C.—Run to Kenilworth.
July 8th.—Cumberland M.C.C.—Hill Climb.
July 8th.—Coventry and Warwickshire M.C.—One-day Trial.
July 8th.—Exeter M.C. and J.C.C.—Trial over Dartmoor for "Ford" Shield.
July 9th.—Coventry Triangle M.C.—Run to Stratford-on-Avon.
July 9th.—Bradford M.C.C.—Speed Trials.
July 9th.—York and District M.C.—Run.
July 9th.—Leeds Motor Union.—Run to Morecambe via Skipton.
July 9th.—Bridgnorth and District M.C.C.—Reliability Trial.
July 9th.—Sheffield M.C.C.—Run to Hayton (Ladies' Fishing Match).
July 9th.—Colne and District M.C.—Run to Bolton-by-Bowland.
July 9th.—Macclesfield and District M.C.—Reliability Run.
July 9th.—East London M.C.C.—Run to Mooiplaats.
July 9th.—Kelso and District M.C.C.—Social Run.
July 9th.—Newcastle and Northern M.C.C.—Picnic Run to Carter Bar.
July 12th. Leeds Motor Union.—Impromptu Run from City Square.
July 12th.—York and District M.C.C.—York Show.
July 12th.—Exeter M.C. and J.C.C.—Tiverton Inter-club Trial.
July 12th.—Reigate, Redhill and District M.C.C.—Reliability Trial.
July 13th.—Bulwell M.C.—Run to Shelford and East Bridgford.

Sheffield University M.C. and L.C.C.

A reliability trial was held to Scarborough and back recently, when the following awards were made: The Boothroyd Gold Medal, W. F. Castle (398 A.B.C.); special silver medal for carrying on in spite of difficulties, H. Woffenden (269 Royal Ruby); silver medals, G. F. Shama (499 Sunbeam), S. Newsom (499 Sunbeam), J. O. Schofield (269 Chater-Lea), D. A. Gratton (8 Talbot), and C. F. Boothroyd (8 Rover).

Essex M.C.

The annual club race meeting will be held this year on Saturday, July 22nd, at Brooklands, commencing at 2.30 p.m. The motor cycle races will be run in addition to six car races, and entries for the various events close at 5 p.m. on Thursday next, July 13th. All races are open to members of the club and members of the B.M.C.R.C. Further particulars and entry forms may be obtained from Mr. A. G. Reynolds, 95, Fillebrook Road, Leytonstone, E.

Bristol M.C. and L.C.C.

A well-organised programme suffered to a certain extent at the hands of the weather at the Clifton Zoo Gardens. Each event was, however, well supported. The results were as follows: Musical chairs for sidecars, 1, Miss Chidney (499 Wilkin sc.); 2, Miss Baxter (490 Norton sc.); sole, 1, O. Hopkins (499 Triumph), Tilting the ring, 1, F. Wiltshire (499 Rudge); 2, A. Dashfield (349 A.J.S.). Distance judging, 1, K. Woods (499 Wilkin); 2, H. T. Scamp (8 Morgan). Bun-biting, 1, E. G. Fery (G.N. cycle car); 2, C. W. Rankin (G.N. cycle car). Kicking the football, 1, K. Woods (499 Wilkin); 2, L. Smith (481 Scott-Squirrel). Riding the plank, 1, L. Smith (481 Scott-Squirrel). Slow race, 1, A. Dyer (348 Douglas).

Bradford M.C. and L.C.C.

The annual hill-climb for the "Dyson" shield will be held on Saturday, July 8th, at Tong Hill, commencing at 2.30 p.m. There will be classes for solo machines, sidecars, and cars. Entries (3s. 6d. each vehicle) should be sent to Mr. S. Haigh, Holme Bank, Cleckheaton. Speed trials will take place on the following day, July 9th, over a course measuring 586 yards, 2 feet, all flying start, and electric timing will be employed. Entries at the same fee as the hill-climb should be sent to Mr. A. R. Naylor, Beamsley Road, Frizingball, Bradford.

A general meeting of club members is being held this evening, July 6th, at 8 p.m., at Belle Vue Hotel, Bradford. The Bradford-London-Bradford run is to take place this year on July 29th-30th, full particulars of which are obtainable from Mr. T. G. Bullus (Tel. 4779 Bradford).

Honiton M.C. and J.C.C.

The opening test run held recently in connection with this club proved successful, the course including Marlpits Hill, a gradient of 1 in 5, across Farway Common. Considerable public interest was displayed in the event.

Ipswich and District M.C.C.

With regard to the joint speed trials which are being held between this club, the Norfolk M.C. and L.C.C., the Colchester and District M.C.C., and the Bury and District M.C.C., on Saturday, July 15th, full particulars are available from Mr. G. Bird, "Sandhurst," Friars Rd., Ipswich.

Harringay M.T.C.

This touring club, which was only formed this year, is proving successful. A number of useful runs have already been undertaken, and several events are at present being organised for the near future. Motor cyclists desirous of becoming members should apply to the hon. sec., Mr. E. T. Hepworth, at 4, Etherley Rd., Harringay, N.15.

Weston-super-Mare and District M.C.C.

The first reliability trial took place on June 24th, over a 76 mile course, starting from Weston-super-Mare at 2.30 p.m., and finishing at Saltford for tea. Owing to heavy rain, the going was difficult, and few awards were made. The winners of gold medals were W. Payne (490 Norton sc.) and J. Prnen (595 Douglas sc.). Silver medals, G. Fry (A.C. car) and J. Passey (G.N.).

Oxford M.C.

Of the eighteen starters in the map reading and reliability trial held recently in the Chiltern Hills, two only covered the entire course. Of these, L. A. Welch (292 O.K. Junior sc.) lost the way when nearing the finish, and checked in too late to qualify for an award, while a car competitor arrived in to time, but descended Whiteleaf Hill when he should have been climbing it. Thus no competitor qualified for an award.

Surrey M.C. and L.C.C.

The annual reliability trial from Guildford to Exeter and back took place on June 24th, when varied weather conditions were encountered. Five competitors made non-stop runs, and were within the margin of one minute allowed at all control points. The results, subject to confirmation by the committee, are: (1) T. H. Broadhurst (499 Sunbeam), Swain and Jones cup and gold medal; (2) H. C. Mansell (349 A.J.S.), silver medal; (3) C. J. Feeney (346 Francis-Barnett), bronze medal; (4) C. B. I'Anson (498 Zenith-Bradshaw), bronze medal; (5) L. J. Mitchell (G.N.), bronze medal and Feeney cup. Other bronze medallists were G. W. Relph (799 A.J.S. sc.), and Miss Bawers (550 Trinmph sc.). The speed trials arranged for July 15th have been cancelled, and a members' hill-climb substituted, the results of which will count in the aggregate marking for the Wilson challenge cup (four-wheeled cycle cars only).

Loughborough and District M.C.C.

The trial for the Will Chapman cup has been arranged to take place on July 16th over a course in the Charnwood Forest district. Full particulars of this event may be obtained from the hon. sec., Mr. C. R. Topping, at 64, Frederick Street, Loughborough.

Stamford M.C.C.

The speed trials held on Saturday, June 24th, over a half-mile course resulted in the following times being made in the various classes:—250 c.c. standing start (2 strokes only): (1) S. Sharpe (211 Levis), 46s.; (2) G. Faucourt (211 Levis), 47⅗s. Flying start: (1) S. Sharpe (211 Levis), 34⅖s.; (2) G. Faucourt (211 Levis), 36⅕s. 350 c.c. standing start: (1) E. W. Greenwood (349 A.J.S.), 36⅘s.; (2) J. North (225 Royal Ruby), 37s. Flying start: (1) J. North (225 Royal Ruby), 29s.; (2) E. W. Greenwood (349 A.J.S.), 29⅗s. 500 c.c. standing start: (1) O. F. Collier (499 Sunbeam), 32⅓s.; (2) W. Martin (499 Sunbeam), 32⅗s. Flying start: (1) A. J. Bosworth (496 Brough), 23½s. 750 c.c. standing start: (1) W. Martin (499 Sunbeam), 33s.; (2) A. J. Bosworth (496 Brough), 33⅓s. Flying start: (1) A. J. Bosworth (496 Brough), 24s.; (2) O. F. Collier (499 Sunbeam), 24⅓s.

Worcester and District M.C.C.

The third annual speed trials were held in conjunction with the Worcester M.C. on June 22nd, at Madresfield, Malvern. The trials took place over a measured half-mile of a mile long speedway lent by the Earl Beauchamp, K.G. A quarter of a mile was allowed for the flying start. Over 1,000 spectators were present, and fifty entries were received. Premier awards were the A.J.S. and the S.T.D. cups for the fastest motor cycle and car respectively, with first and second awards in each class. Results:

A.J.S. CUP: H. W. Hassell (490 Norton), 23s.

S.T.D. CUP: R. Mays (Bugatti), 25⅘s.

CLASS 1 (275 c.c.).—Expert: (1) W. L. Handley (249 O.K.), 28⅘s.; (2) B. Kershaw (249 New Imperial-Jap), 29⅘s. General: (1) W. L. Handley (249 O.K.), 28⅘s.; (2) O. Hayes (249 New Imperial-Jap), 31⅘s.

CLASS 2 (350 c.c.).—Expert: (1) W. L. Handley (249 O.K.), 26⅘s.; (2) E. Williams (349 A.J.S.), 28⅘s. General: (1) W. L. Handley (249 O.K.), 26⅘s.; (2) H. A. Bleckley (349 Sheffield-Henderson).

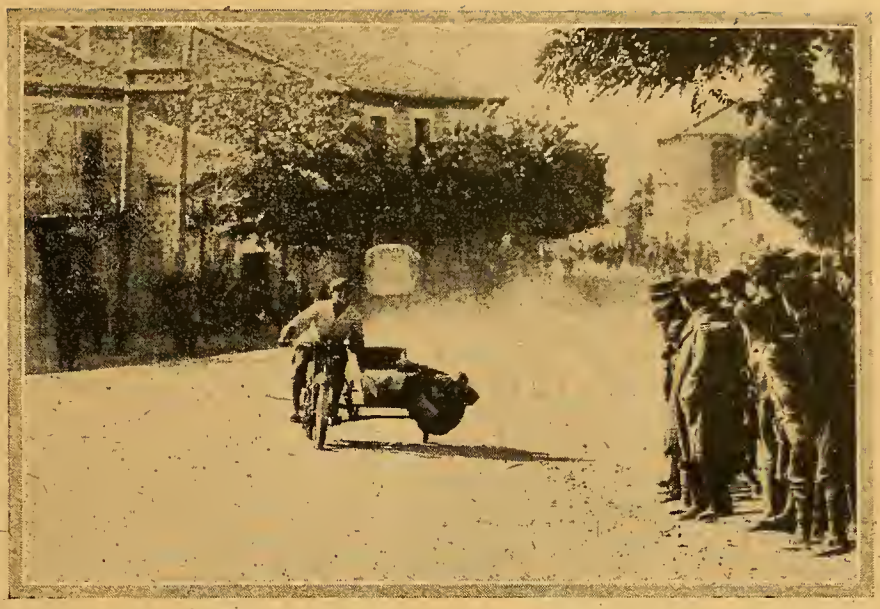
CLASS 3 (500 c.c.).—Expert: (1) H. W. Hassell (490 Norton), 23s.; (2) A. S. Bochler (494 Douglas), 23⅘s. General: (1) R. E. Eveson (490 Norton), 26⅘s.; (2) W. L. Handley (249 O.K.), 26⅘s.

CLASS 4 (750 c.c.).—Expert: (1) H. W. Hassell (490 Norton), 23s.; (2) S. Kochley (494 Douglas), 23⅘s. General: (1) R. E. Eveson (490 Norton), 23⅘s.; (2) W. L. Handley (249 O.K.), 26⅘s.

CLASS 5 (Unlimited c.c.).—Expert: (1) H. W. Hassell (490 Norton), 23s.; (2) A. S. Kochler (494 Douglas), 23⅘s. General: (1) R. E. Eveson (490 Norton) 26⅘s.; (2) W. L. Handley (249 O.K.) and C. Lewis (976 Zenith), 26⅘s.

SIDECAR CLASS (500 c.c.).—Expert: (1) R. Brown (499 Sunbeam sc.), 29½s.; (2) R. E. Eveson (490 Norton sc.), 31½s. General: (1) R. E. Eveson (490 Norton sc.), 31½s.; (2) W. B. Gibbs (494 Douglas), 33s.

SIDECAR CLASS (750 c.c.).—Expert: (1) R. Brown (499 Sunbeam sc.), 29½s.; (2) R. Brown (499 Sunbeam sc.), 29½s. This rider also won the general class in the same time.



ACROBATICS ON THE ROAD. Cornering with a sidecar at speed. Observe the position of the passenger to keep the wheel on the ground. An incident in the 12 hour motor races at Madrid.

Reigate, Redhill, and District M.C.C.

A petrol consumption test was held on June 25th with the following results. Solo class: 1, E. C. Gordon (499 o.h.v. Triumph); 2, G. W. Faulkner (499 Blackburoe). Sidecar class: 1, E. P. Duplock (976 Sunbeam sc.); 2, V. F. Long (976 Excelsior).

Macclesfield and District M.C.

July 9th has been chosen for the holding of the reliability run. Competitors will meet at Log Lane, Chester Road, Jordangate, at 1.30 p.m., and the course will measure approximately seventy miles, finishing at Harding's Farm, Kerridge. This event is open to all members of the Cheshire Centre A.C.U.

Exeter M.C. and J.C.C.

Members took part in a holiday camp during a recent week end at Newbridge, Holne Chase, near Ashburton. Twenty riders assembled at the rendezvous on Saturday, and twelve more followed on the next day. Despite a fair amount of rain, the enterprise proved a great success, and it is proposed to organise an event of a similar nature during August.

Bolton and District M.C.

A hill-climb has been arranged to take place on Wednesday, July 12th, over a private road situated on the outskirts of Bolton with a gradient of 1 in 12, an excellent surface, and measuring threequarters of a mile in length. Competitors assemble at 5.45 p.m. in Town Hall Square, Bolton. Entry forms, which may be obtained from Mr. H. Ward, 114, Dorset St., Bolton, must be returned by Saturday, July 8th.

Harrogate and District M.C.

The annual reliability trial for the "Muratti Trophy" was held on June 25th in heavy rain, which made the course very difficult. The results were as follows: 1, A. Baines (498 Zenith-Bradshaw), lost 14 marks; 2, T. F. Leak (349 Massey-Arran), lost 21 marks; 3, R. Eastwood (498 Zenith-Bradshaw), lost 36 marks. Sidecar machines: 1, W. Wells (499 Sunbeam sc.), lost 59 marks; 2, G. Appleyard (799 A.J.S. sc.), lost 94 marks. Several other riders finished, and the "Trophy" was awarded to A. Baines (498 Zenith-Bradshaw).

Northampton M.C.C.

The results of the recent 100 miles reliability trial are as follows: Silver trophy for the best performance of the day, J. B. Berry (499 o.h.v. Triumph). 250 c.c. Class: Silver medal, D. Coldham (225 Royal Enfield Sports). Unlimited c.c. Solo Class: Silver medals, J. B. Merry (499 o.h.v. Triumph); J. H. Bull (490 c.c. Norton). Sidecars: T. Allibaud (550 Triumph sc.). Light cars: H. Noel (9.5 Rhodes).

The club is holding a 120 miles general efficiency trial on July 23rd, particulars of which may be obtained from the hon. sec., Mr. G. Alderson, 50, Albany Road, Northampton.

Hawick and District M.C.

The open hill climb held on Saturday, June 24th, was a marked success in every way, and a heavy downpour of rain in the interval, although making the finish twenty minutes behind scheduled time did not materially affect the competitors. Results:—290 o.c. class (experts barred): (1) D. B. Calder (249 New Imperial); (2) A. F. Pollock (249 Francis-Barnett). 350 c.c. class: (1) J. Guthrie (349 A.J.S.); (2) A. Reid (348 H.B.). 600 c.c.: (1) W. Smith, Junr. (499 Sunbeam); (2) J. Guthrie (349 A.J.S.). Unlimited class: (1) W. Smith, Junr. (499 Sunbeam); (2) A. Reid (348 H.B.). Open classes:—290 c.c.: (1) J. A. Porter (249 New Gerrard); (2) D. B. Calder (249 New Imperial). 350 c.c.: (1) J. A. Porter (249 New Gerrard); (2) A. Reid (H.B.). 600 c.c.: (1) G. Black (490 Norton); (2) J. A. Porter (292 New Gerrard). Unlimited c.c.: (1) G. Black (490 Norton); (2) J. A. Porter (292 New Gerrard). 600 c.c. sidecars: (1) J. Beck (499 Sunbeam sc.); (2) W. Smith, Junr. (499 Sunbeam sc.). Unlimited c.c.: (1) J. R. Alexander (749 Douglas sc.); (2) J. Beck (499 Sunbeam sc.). Winners of the team prize were: (1) Edinburgh and District M.C.; (2) Kelso and District M.C.C.).

ENTHUSIASM IN SOUTH AFRICA As the biggest annual race in Africa the Durban-Johannesburg event is described elsewhere in this issue. A. Long (998 c.c. Excelsior), third in the race with best nett time, finishing in a shower braved by 10 000 spectators.

HOLIDAY WEAR for the PASSENGER

Clothes for the Woman Sidecar Passenger when Touring.

By Miss PEGGY FRASER.

IN deciding what clothes to take away in the sidecar on a holiday tour, it should be remembered that there is only room for absolute essentials. There are, however, things that, while they must of necessity spend most of their time packed away in their case, will be required to shake out all right at a moment's notice.

Be Prepared.

If one intends going to the theatre or a dance whilst away, due preparation must be made or the penalty paid of being unsuitably dressed, and I know of nothing more calculated to spoil one's enjoyment. Also, one must be equipped for rain and cold in case the weather is bad; it is surprising what a large amount of summer clothing one may carry in a small space.

In the first place, the lightest fibre suitcase should be procured—its appearance does not matter. A good leather suitcase is a dead weight empty, and quite impossible when full. The fibre case should be fitted with a waterproof cover and a slip-on moiré cover, and it will look far smarter than those of the leather type.

It is well to decide on a predominating colour for the outfit, so in this case we will take grey, as then one thing can be worn with another successfully.

In one of my drawings I have depicted a fitted case made on the same principle as a tool roll. In this one can place all toilet requisites. The outside is moiré silk, to match the colour of the suitcase, and it is lined with oiled silk or waterproof sheeting. One end is arranged to form a pocket with a secure flap, and this holds everything that is used with water—toothbrush, sponge, soap, etc. Before putting these things away they should be squeezed dry. A baby brush and comb will be found quite large enough for use and far easier to fit in the case, in which accommodation can be found for hairpins, scissors, pins, etc.

Regarding face creams, if the kind used is made up in tubes all the better—a greasy cream to remove the dust and a vanishing cream for day time. Powder is much better carried if it is in a block, but whether or not it can also be kept in its place, and so can the manicure things.

The case then rolls up, and is kept closed by a strap and an elastic band, and it takes up far less room than any box would occupy.

A Russian blouse of fine grey suède with pipings and appliqué of signal red kid. Below is a miniature "hold-all" for toilet requisites.

A pretty frock of knitted silk.

For evening wear dull oxidised silver lace or any material having a metal thread has the advantage of not creasing.

For the Russian blouse shown in the same drawing, fine grey suède is pressed into service, with pipings and appliqué of signal red kid and gun-metal buttons. This is to be worn under a coat of fur and with a checked shirt.

The sketch in the bottom left-hand corner shows a checked shirt worn with one's coat, grey suède Russian boots, and a crush cap of red suède trimmed with a bird entirely composed of beads, with a tail of coque feathers.

A cape is, I think, the smartest shape for a waterproof, and it can be slipped on with greater ease than a coat. Therefore, I have chosen a grey silk cloth mackintosh trimmed with white rubber, and a pull-on hat to match.

Evening Wear.

The difficulty of the evening frock—always a problem when one is touring on a sidecar—and "in between" frock is overcome by the new "costume blouse" idea. Up to this year the "costume blouse" has been called a tunic or overdress. The foundation, which is grey *crêpe de Chine* of soft silk, will do for both, and is made almost straight, slightly eased at a low waistline, and has shoulder strap supports.

The "in between" frock could be made of knitted silk of a fancy stitch and edged with a silk ball fringe.

For evening wear dull oxidised silver lace could be chosen, or any evening material that has a metal thread, as it will not crush. If red is preferred, an overdress of dull silver beads mounted on net would look equally charming, and has the same advantage of not crushing. The waist should be outlined by a floral wreath.

A checked skirt with grey fur coat, grey suède Russian boots, and suède cap.

A grey silk cloth cape trimmed with white rubber.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

WEIGHT OF SIDECAR BODY.

? Having nearly finished making a two-seater sidecar, I find that the size is:—Length 6ft., width 21in., and depth 22½in. All my friends tell me that it is much too heavy, so I should like you to inform me, if you can, the weight of a two-seater body. I have weighed my sidecar, and it is 91½lb., so if this is anything near the correct weight will you kindly let me know?—P. O. T.

There is no definite "correct" weight for a two-seater sidecar body, but there is no reason why one weighing 90lb. should not be satisfactory, providing the sidecar is attached to a really powerful machine and the body itself is mounted on a strong chassis.

A LEGAL POINT.

? In June I purchased an Enfield outfit which was new in March. I was introduced to the owner by a motor agent who had supplied the machine; the agent guaranteed (by word only) that the machine was in perfect order and that any defects found would be made good. When purchasing I enquired from the owner if the machine had been in any accident, and was told that it had not. After a few days I started to examine the outfit and discovered certain proof that it had been in a smash, for the frame is twisted, the gear damaged, footboard stays bent, and the head lamp bulged (this had been turned over to hide damaged part). I consider that the machine is mechanically ruined. I called the agent's attention to the matter, and he was surprised with the false impressions that had been given to him and promised to take the matter up. I was informed to-day that a meeting had taken place, and the former owner was to have called upon me on Saturday last, but he never turned up. Should I be safe in taking proceedings against him for the return of my money? Should I have to summon the agent as a witness of the guarantee he gave on owner's behalf, and secondly, as to the amount of damage that has been done?—F.W.

Apparently the agent was selling the Enfield outfit on behalf of the owner, and the latter and the agent admit to uttering the representations which you say they made when the machine was purchased. As you knew at the time of purchase who the owner was, you would be right in suing the owner. If the agent had been selling on behalf of an undisclosed owner you could then have sued the agent; or, on ascertaining who the owner was, you could then have sued the owner. The best plan is for you to return the machine to the agent, and then sue the owner for the return of the amount paid, and subpœna the agent as a witness.

Important Dates.

Sat., July 8th—M.C.C. Meeting at Brooklands.
Wed., July 12th—French Grand Prix.
Sat., July 15th—B.M.C.R.C. Members' Meeting at Brooklands.
Sun., July 23rd—Belgian Grand Prix.
Fri., July 28th, to Mon., July 30th—Anglo-Dutch Trial in Holland.
Sat., July 29th, North-Western Centre A.C.U. Open Hill Climb.
Thurs., Aug. 3rd, to Wed., Aug. 9th—International Six Days Trials.
Sat., Aug. 5th, and Mon., Aug. 7th—Irish Two-day Open Trial.
Mon., Aug. 7th—West S. Wales Centre A.C.U. Open Speed Trials at Pendine.
Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.
Sat., Aug. 12th—Motor Cycle Races in Phœnix Park, Dublin.
Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.
Sat., Sept. 16th—The Scott Trial.
Sat., Sept. 23rd—500 Mile Race at Brooklands.
Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

BLOW BACK WITH AUTOMATIC VALVE.

? On an Autowheel engine which drives my invalid's tricycle I have experienced blowing back at the carburettor *i.e.*, when the hand is placed about a foot from the intake, petrol is deposited thereon. My "Hints and Tips for Motor Cyclists" indicates that this is due to a weak inlet valve spring or to a very weak mixture. Well, the automatic inlet valve has been fitted with a new spring supplied by the manufacturer. The exhaust valve is also completely new, and both have been ground in by an "old hand," so I expect they are otherwise adjusted properly. The carburetter is automatic, so possibly the weak mixture diagnosis may be eliminated. The motor is going as fast as ever, say about 20 m.p.h., though it is perhaps not quite so powerful on hills, but not a great deal less. The exhaust note is not so clear as formerly, being rather "woolly," as I might describe it, although compression is very good. However, I wish to get rid of the "blowing back" for the sake of economy and not to run the risk of fire, and to hear the healthy bark of my "baby" engine again.—J.R.

From your description the engine appears to be in good order, and we can only suggest that you make quite sure that the exhaust valve tappet clearance is not excessive. A certain amount of blow-back is almost always present in the case of automatic inlet valve engines. Although it would not effect any actual improvement, some benefit might be obtained from the fitting of a long pipe on the air intake of the carburetter; this would catch the petrol blown back and so tend to improve the fuel consumption.

OVER GEARING.

? I am riding a 4¼ h.p. single-cylinder three-speed machine (solo only), and I am desirous of raising my gear to the utmost limit possible. For ordinary riding in towns or speeds up to 20 m.p.h. I would use second gear only and change into top when a fair and suitable speed has been reached to make a silent change. I am quite aware of the difficulties of town riding on high gear. At present the sprockets have teeth as follows:—Engine shaft, 16T, gear box 35 and 15, and back hub 35; and the ratios are 5.1, 8.1, and 13.2 to 1. I imagine that the 15-tooth sprocket would be the most suitable to change.—A. S. T.

We do not think that you would be satisfied with the machine after making the suggested change; in all probability the petrol consumption would be very much higher, and wear on the back tyre would no doubt be abnormal. Not knowing the machine you are using, we cannot tell you whether it would be more convenient to change the sprocket on the gear box or that on the engine shaft; it is much more usual to alter the latter. If, however, you decide that it will be easier to fit a larger sprocket on the gear

box we do not recommend you to gear the machine higher than 4 to 1. To do this you would need a 19T. sprocket.

TUNING FOR SPEED.

(1) What, in your opinion, is the best valve setting for pure speed work, for a 499 c.c. T.T. Rover? (2) What top gear ratios do you recommend for speed work on the flat?—B. M.

(1) Very largely the answer to your question depends upon experimenting with various settings. If you have facilities for procuring special cams you should aim at getting an early exhaust opening and a closing point about 5 degrees after top dead centre. The inlet valve should open on top dead centre or a little after, but it should commence to open before the exhaust valve is completely closed; the inlet may remain open until 15 to 20 degrees after bottom dead centre. (2) This, again, is a matter for experiment, and may vary from day to day according to the weather conditions, wind, gradients, etc. Probably about 4¼ to 1 would be most suitable.

TWO-SPEED SELECTIVE CHAIN GEAR.

(1) In the outside ball race of a 1917-18 P. and M. gear I find about three or four balls missing; or were they originally contained in a cage? (2) I cannot unscrew the inner race so as to get out the spindle with eccentric attached; is it a right- or left-hand thread? (3) Neither race, so far as I can see, has a cage or a full set of balls; should this be so?—J. B.

(1) The balls in the countershaft ball races were not caged. (2) It has a left-hand thread. (3) A full set of balls should be fitted; there is no need to fit caged balls.

READERS' REPLIES.

MISSING AT LOW SPEED.

In your issue of June 22nd you advise "S.G.O." that his magneto points should open to the extent of 4 mm. [Unfortunately, a decimal point was dropped; the correct setting is 0.4 mm.—ED.] May I also offer "F.W.E.," who complains of his front cylinder missing at low speed, some information that may assist him? I had the same trouble on a Douglas, and found that by taking off the contact-breaker cam for the front cylinder, and packing it with a piece of thin sheet brass, thereby causing the points to open the same amount at both breaks, I eliminated all misfiring at slow speeds. —T.T. ASPIRANT.

SIDECAR ON SOLO LIGHTWEIGHT.

One of your readers, "F.A.R.," asks the question as to whether it would be detrimental to a 350 c.c. 3-speed Douglas to attach a lightweight sidecar occasionally. Perhaps my own experience with one may interest both him and other readers of your paper. I purchased a 3-speed Douglas in January of this year, and had fitted to it a Watsonian aluminium sidecar—the latter weighs but 60lb. My speedometer (new with machine) to-day registers over 4,400 miles, and I roughly estimate that at least 2,000 of that total mileage have been covered with sidecar and passenger (10 stone). Riding with the sidecar, it is absolutely "child's play" to average 30-35 m.p.h.—hills, of course, included. And I am still looking for the gradient up which I cannot take my passenger. Some, perhaps many, may doubt the accuracy of my words, but I have ample proof with which to support them. I have taken the stiffest hill-climbs round and about Birmingham—and have not been let down on one occasion yet. And further, except once when climbing the Clent Hills, I have had no necessity whatsoever to use my first gear, nor has my throttle been more than three-parts open when doing 40 m.p.h. on the level road. And finally, I had my engine down only to-day, and apart from carbon deposit on cylinder heads and pistons, every part was in perfect order, and there was not the slightest indication of any play in the big-end bearings.—H. S.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned.

"H.E.T." (Hinkley).—398 c.c. ABC for solo purposes.

"A.E.L." (Cottingham).—247 c.c. Levis sports model: speed, overheating, m.p.g., etc.

"F.R.H." (R.N.).—349 c.c. Wooller and sidecar: comfort, speed, hill-climbing, overheating.

"W.G." (Milngavie).—Levis "Popular," fuel, belt, and tyre mileage; max. speed.

"F.C." (Mansfield).—499 c.c. Sunbeam (T.T.); 596 c.c Indian Scout: petrol consumption, speed, comfort.

"H.M." (Leeds).—749 c.c. Douglas and sidecar.

"F.G." (Staffs).—Grado pulley on 499 c.c. machine: efficiency in conjunction with light sidecar; belt slip.

"M.L.F." (Brixton).—1922 654 c.c. Quadrant and sidecar.

"S.E.R" (Cambridge).—348 c.c. Douglas: speed without special tuning; durability.

"F.W.F." (Chudleigh).—Behaviour of Scott Sociable on Dartmoor roads.

"E.R.W." (Manchester).—595 c.c. Douglas and sidecar. Burlington clutch conversion set.

SPARKLETS.

Revised Prices.

On and from July 1st, the prices of the "Schrader Universal" tyre pressure gauges will be appreciably reduced.

Australian Road Race.

First position and fastest time of the day was achieved by L. L. Brooks on a 349 c.c. A.J.S. fitted with a Cox "Atmos" carburetter, in the recent Kadina 100 miles road race in South Australia.

Road Laws.

A booklet entitled "The Roadmaker" is issued by The British Reinforced Concrete Engineering Co., Ltd., 1, Dickinson Street, Manchester; contained therein is an article on the Curiosities of Highway Legislation which makes quite good reading.

Home-constructed Machine.

Mention was made in the issue of June 22nd of a big twin, the J.F.P., built by Mr. T. F. Parkes. The correct name of the designer of this machine is Mr. J. F. Parker.

Gold in Place of Silver.

In the London-Land's End Trial this year, E. Foster (698 Raleigh) was credited with a silver medal. His protest, on the grounds of being baulked by another rider, has been allowed, and he has now been awarded a gold medal.

Two-Strokes at Brooklands.

It was stated in our issue of June 22nd that A. King Smith was riding a 348 c.c. Morris and sidecar in the 200 miles sidecar race at Brooklands on June 17th. His mount actually was a 247 c.c. standard sports model and sidecar, which makes the performance all the more creditable.

British Machines Abroad.

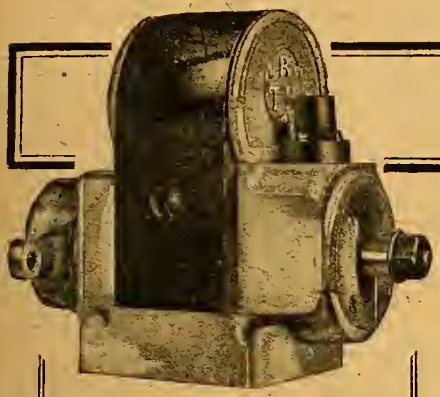
In the hill climb held recently at Solitude-Stuttgart, R. Mahlentili (499 o.hv. Triumph) was first, and made the fastest time of the day at a speed of over 56 m.p.h. on a difficult course. E. W. Howie, mounted on a similar machine, secured fourth place in this event.

Passenger Machine Power.

Is 500 c.c. sufficient for sidecar work? E. Arnold Wright, of Sherborne, informs us that he was riding a 499 c.c. Sunbeam and sidecar in the London-Edinburgh run this year, not a 770 c.c. outfit, and considers he had ample power for any emergency. The machine in question was fully equipped during the trial.

Mechanically Sealing Tubes.

Official trials under the auspices of the Royal Automobile Club have recently been carried out on the Jeff Patent Tube, which is similar to a standard tube with the exception that on the surface within the tube, beneath the tread of the tyre, there are super-imposed flaps of rubber, moistened with glycerine. The object of the trial was to test the ability of the device to hold air after intentional puncturing under varying conditions. After a 53-mile road test, with intentional nail punctures at intervals of 10, 20, and 30 miles, on a car fitted with 760×90 mm. tyres, the results were as follows: Pressure of front tyre under test, 28lb. per sq. in.; back tyre under test 13lb. per sq. in. This was after all nails had been withdrawn, and the car locked in the official garage during the night succeeding the trial. The pressures before the tests were respectively 55lb. and 60lb. per sq. in. Before locking up the car for the night the pressures were 30lb. and 45lb. per sq. in.



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B.T.H. Magneto Successes.

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They also helped create all the World's Records recently established by Sunbeam Racers.

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ENFIELD, 8 h.p. Comb., Magdyno lighting, 1921	£118 0
P. & M., 1917, Comb., electric, well equipped	£52 0
CALTHORPE, 1921, 2 speeds, 2-stroke. As new	£36 0
IVY, 1922, soiled only, 2 speeds, clutch, equipped	£47 10
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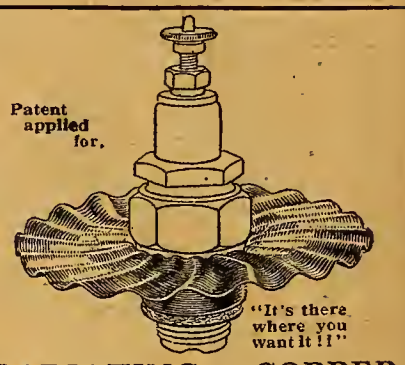

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LEWIS'S Triplex Goggles, genuine A B aviation masks, soft brown leather, lined Nutria fur, ideal for motor cyclists, brand new goods (not war stock); tinted or clear Triplex glass, 10/9, post free; listed at 42/-; R.A.F. Featherweight Patt., 9/6; tinted or clear glass. Trade supplied.—Below.

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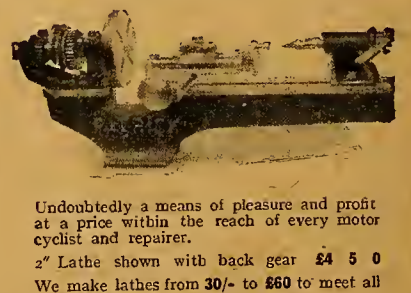

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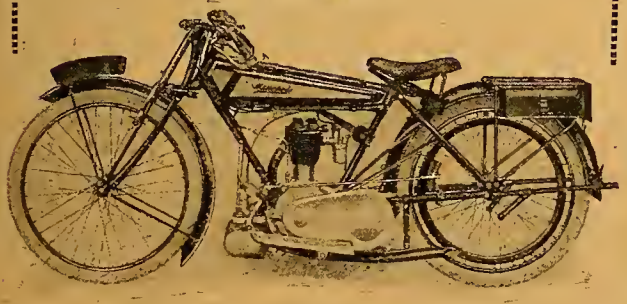

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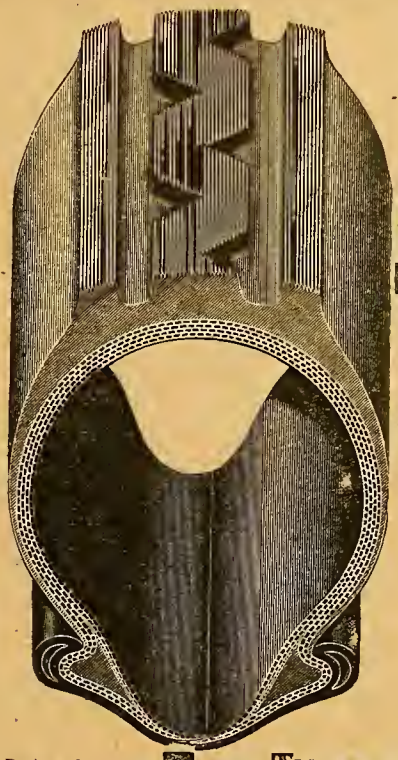

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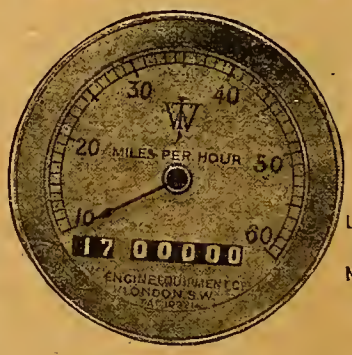

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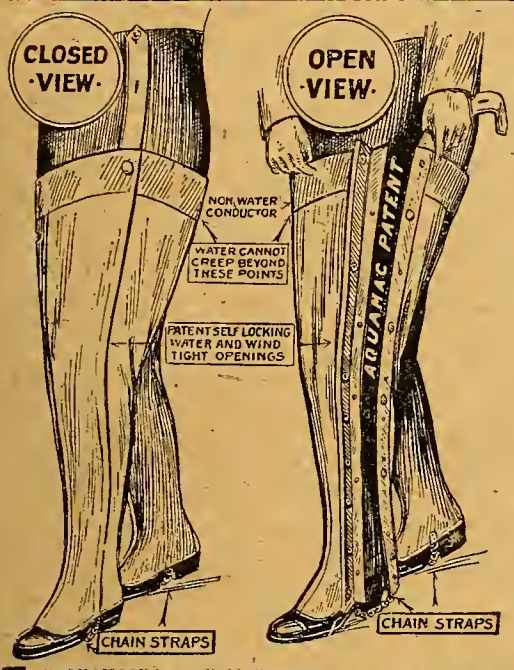

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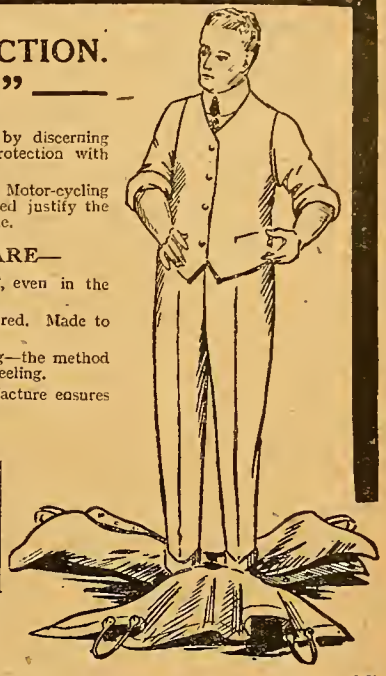

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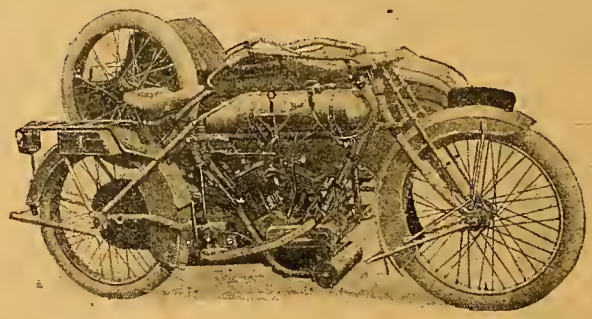

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21 Beardmore-Precision Combination, 2-stroke, perfect; £65, near offer.—Young, South Street, Heshrough. [7620

21 Beardmore-Precision 3h.p., 2-speed, kick start, spring frame, equipped, taxed; 48 gns.—284, h Lambeth Rd., Stockwell. [7971

ARDMORE-PRECISION.—1922 models for immediate delivery. Cash, exchange, or deferred ients.—Kays, 8, Bond St., Ealing. [4833

ARDMORE-PRECISION 1921 2-stroke Combination, spring frame, tax paid, fully equipped, and ratched; £75.—The Layton Garages, 30, Holywell Oxford. [7181

ARDMORE.—3½ h.p., 1921, all-chain drive, 2-speed, kickstart, electric lighting, trip speedometer, equipped, like new, tax paid, £65.—13, Brougham , Acton. [7569

ARDMORE-PRECISION, Combination, August, 1921, 3h.p., 2-stroke, licensed, mileage 500, accept offer over £50.—T. E. Taylor, Firth Street, lcrsfield. [7726

ARDMORE-PRECISION Combination, spring frame, 3½h.p., 2-stroke, 3in. tyres, variable jet, equipped, new August, 1921, done 1,700 miles, ed; £79.—Puddy, 24, Lancaster Rd., Stroud a, London. [8095

Blackburne.

20 3½h.p. 3-speed Blackburne; £65.—Ross, 86, High Rd., Lee, S.E. [7887

ACKBURNE Combination, countershaft, 3-speed; offers wanted.—Thompson, 12, Trinity Rd., Bal- [7921

20 Blackburne Combination, 8h.p., fully equipped, spare wheel, screen, new condition; £120, offers; inge w.c. Morgan, G.N.—Matthews, Bewley Cot- Clarence Rd., Fleet, Hants. [8012

IGHT and Wheatley, Blackburne Agents for Coulsdon and district. Spares in stock. 2¾h.p. S.V. l, 85gns.; 2¾h.p. O.V.H. model, 93gns.; 4h.p. 90gns.; 4¼h.p. Solo, 92gns.; Combination, ns.; Standard Combination, 145gns.—Below.

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AND New 1922 4h.p. Bradbury, best Lucas equipment; cost £115, accept £75.—24, Balliol North Kensington. [8192

ADBURY 1918 4h.p. Combination, kick start, fully equipped, as new; £75 or offer.—B. G., Romford Rd., Stratford. [8330

, or Nearest.—3½h.p. Bradbury sporting, good tyres, Bosch, Senspray, taxed; ride away.—181, on Rd., Burton-on-Trent. [8738

ADBURY 4h.p., 3-speed, new, lamps, horn, tax paid, ready to ride away; £87, or nearest offer.—y, R. W. Thomas, Dolgelly. [6676

ADBURY 6h.p. 1921 Twin, brand new, chain drive, 3 speeds, reduced price; £85; approval.—s and Co., 275, High St., Acton, London. [8460

. Bradbury, Millord sidecar, clutch, lamps, spares, tax, insurance; in excellent condition; purchased —Forster, Whitehill Terrace, Pelton Fell, co. am. [7574

ADBURY, 1922, 6h.p. Combination, lamps, horn, spare wheel; never ridden; listed £165; accept , or lightweight taken in part.—Hamling, 59, dos St., Hereford. [7599

p. Bradbury New 1922, all-chain, 3 speeds, kick starter and clutch, £92; also new 1922 2¾h.p., gear, etc., £60; easy terms and exchange.—hope's, 9, Shoe Lane, London. [8662

ADBURY combination, 6h.p., 3-speed, kickstarter, all chain, Easting, lamps, speedometer, spares, y, beautiful outfit, taxed; cost £182, sell £90.—w, Haddon House, Clarence Road, Fleet, Hants. [7501

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ADBURY Spare Parts. Lists free.—Agents, Bright and Hayles, 78, Church St., Camberwell. [8082

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21 3½h.p. Brough, perfect condition, long plated exhausts, Cowey, lamps, mileage low, fast; £145; nearest £90.—Errington, 174, Oakbrook Sheffield. [8066

OUGH 1920 5-6h.p. Model G Combination, electric lighting, full equipment; £87.—Elce, Ltd., 5, and 16, Bishopsgate Av., Camomile St., E.C.3. ne: Avenue 5548. [0065

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£20	**DIAMOND, 1921.** 2¾ b.p. J.A.P., 2-speed, K.S., clutch, Lucas accessories, tax paid, new condition	£3 2 9	£55
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£30	**A.B.C.** 3 h.p., 4-speed Combination, fully equipped, tax paid.....	£4 9 7	£80
£15	**BRADBURY,** 3½ b.p., and C.B. sidecar, N.S.U. 2-speed, equipped, tax paid	£1 15 10	£35
£40	**B.A.T.,** 6 b.p., New (shop-soiled) Combination, 3-speed, K.S., clutch	£10 6 1	£155
£30	**HARLEY-DAVIDSON, 1920.** 7-9 b.p., electrically equipped Combination, speedometer, screen, tax paid	£8 1 3	£120
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£35	**ZENITH** SPORTING COMBINATION. Fully equipped, Ace discs, absolutely as new	£7 19 5	£125
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BROUGH SUPERIOR in stock; models Mark 2, £125; Mark 1, £150. Cash, deferred, exchanges.—The Layton Garages, 30, Holywell St., Oxford. [7195

BROUGH SUPERIOR, 1922 models, 6.5h.p. M.A.G., £125; 8h.p. (side valve engine), £150; 8h.p. side valve combination, £180; demonstration model in stock; call for a trial run.—Storer and Tait, 20, Bourdon St., Bond St., W.1. 'Phone: Mayfair 625. [7368

MANCHESTER, Oldham, Bury, Stockport, Stalybridge, Roehdale, Huddersfield, etc., etc.—We are sole agents for Brough Superior.—Brough Superior Northern Services, 198, Manchester Rd., Oldham.

BROUGH SUPERIOR Northern Services.—As our name implies, we are Brough Superior specialists. All models in stock. Mark 1., 90×77½ mm., o.h.v., £160; Mark I. side valve, £150; Mark I. sporting combination, with screen, step, mat, and apron, £180; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. sporting combination, £150. Demonstration runs by appointment. Catalogues post free on request. We are the Brough Superior representatives for whole of Lancashire and Yorkshire (exception Leeds and Sheffield), and greater part of Cheshire and North Stafford. Showrooms, 198, Manchester Rd., Oldham.

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ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½ o.h.v., 3-speed, clutch, and kick starter, £160; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

Brown.

£14.—3½h.p. Brown, good running order.—8, Council Houses, Hatfield Peverel, Essex. [8205

B.S.A.

B.S.A.—New and second-hand models.—B.S.A. Specialists.

COUNTY Cycle and Motor Co., Broad St., Birmingham. [4678

B.S.A. 4¼h.p., all-chain, shop soiled; £100; sidecar, £20.—Wigfield, Goldthorpe, Yorks. [8125

1921 4¼h.p. B.S.A. Combination, chain drive, fully equipped, very low mileage; £115.—Below.

1918 B.S.A. Combination, 4¼h.p., 3-speed; a great bargain, £60.—Daw, 114, Brixton Hill. [8033

1916 B.S.A. Combination, splendid condition; £60, nearest.—92, Inderwick Rd., Crouch End. [7938

B.S.A. 1919, combination, 4¼h.p., 3-speed, perfect condition; £75.—Southon, 42, Lancaster Gate, W.2. [7510

NEW 1921 4¼h.p. B.S.A. Combination and accessories; £120.—Bounds Garage, 223, High Rd., Kilburn. [8488

B.S.A. 1922; £110; model H2; immediate delivery.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0878

4¼h.p. 1919-20 B.S.A. Combination, 3 speeds, free engine, kick start; £75.—Wauchope's, 9, Shoe Lane, London. [8663

B.S.A. 1922 model H2 and sidecar, shop soiled; £115.—County Cycle and Motor Co., 300, Broad St., Birmingham. [8432

3½h.p. B.S.A., splendid condition, lamps, horn, etc., tax paid; £32/10, or best offer.—99, Little Park St., Coventry. [8217

1921 4¼h.p. B.S.A. Combination, Easting, electric lights, perfect; £110, or exchange—Jack Pruen, Weston-super-Mare. [7772

£45.—1920 T.T. B.S.A., new, just uncrated; bargain.—W.J.C. Motor Exchange, Addison Av., Holland Park, W.11. [8471

1919 B.S.A. Combination, good as new, complete, with spares, Easting, tax paid; £80.—Musson, 102, Urban Rd., Doncaster. [7619

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Motor Cycles advertised by private owners are, when desired, marked (P)

MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. 4½h.p. Combination, 1920, speedometer, electric lamps, horn, good condition; 90gns.—Northwood Motor Works, Middlesex. [7606

4¼h.p. 1919 B.S.A., chain cum, 3-speed, tax paid, splendid condition. lamps; £65.—17, Quorn Avenue, Melton Mowbray. [7690

B.S.A., 4½h.p., Bosch, B. and B., lamps, horn, excellent condition, fast and reliable; £25.—Alpha House, Loughton. [7725

1919 B.S.A. 4¼h.p. Combination, fully equipped, tax paid December, numerous spares; bargain, £85.—32, Outram Rd., East Ham. [8525

1920 B.S.A. 4¼h.p. Combination, Easting, lamps, luggage grid, condition as new; £87.—14, Briscoe Lane, Newton Heath, Manchester. [8271

SPECIAL I.O.M. B.S.A. 3½h.p. O.H.V., guaranteed as new, exceptionnay fast; £85; good lightweight part.—Chaston, Blackwood, Mon. Tel.: 66. (D) [7537

B.S.A. Motor Cycles and Spares; trade supplied.—Battersea and District Agents, Owen Bros., 19, Battersea Rise, S.W. Phone: 1299 Battersea. [8051

B.S.A. 1920 Combination, 4¼h.p., 3-speed, kick start, lamps, screen, very little used, new condition; £85.—Bowen, Hawthorns, Eden Bridge. [7834

B.S.A. 4¼h.p. Combination, 1915, 3-speed, clutch, K.S., all accessories, perfect condition, tax paid; £80.—Hodgson, 97, Lower Richmond Rd., Putney. [7694

£45.—1916 4¼h.p. B.S.A. Combination, 3 speeds, clutch, K.S., Mills-Fulford coachbuilt sidecar, windscreen, equipped.—King, Egrove Farm, Oxford. [8261

B.S.A. 4½h.p., 3-speed, kick start, all-chain drive, fully equipped, £38: coachbuilt sidecar, £5.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [8392

1919 4¼h.p. B.S.A. Model K, with Canoelet D4 sidecar, all lamps, and tax paid, in very nice order; £72.—Heady, 17, Gold St., Saffron Walden, Essex. [8017

1921 B.S.A. H2 Henderson, Lightweight Sidecar, equipped, taxed, easting, speedometer, two 28 X 3 Dunlops; £120 or nearest.—Lowson, Westborough, Scarborough. [7568

1922 6h.p. B.S.A. Light Twin, detachable back wheel, never used, brand new; cash wanted, accept £115.—Heady, the Laundry, Gold St., Saffron Walden, Essex. [8022

B.S.A. 1921 Combination, splendid condition, Grindlay sidecar, Easting screen, lamps, horn, tools, etc., tax paid; £97/10.—Cope, 15, Upper Hagley Rd., Rd., Birmingham. [8424

PECKHAM.—B.S.A. 4½h.p., model K, combination, 3-speed, countershaft, kickstart, excellent condition; offers wanted; appointment.—Jewell, 6, Belleoden Road, Peckham, S.E. [7579

£45.—1916 4¼h.p. B.S.A., 3-speed gear box, K.S., lamp sets and horn, tax paid, new back tyre, in good order; £45.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [8026

B.S.A. 1921 4¼h.p. Model H2 Combination, with Lucas Magdynamo, lamps and horn, Cowey, Easting etc., perfect condition; £125.—Cox, Nurseries, Linslade, Leighton Buzzard. [4794

LATE 1920 B.S.A. Combination, as new, chain drive, hood, screen, lamps, etc.; £82, or exchange late solo and cash; after 6.—258A, Latimer Rd., Wormwood Scrubbs, W.10. [7819

B.S.A. Combination, 1921, 7h.p., Lucas Magdynamo, electric horn, speedometer, spare wheel, screen, 12 months' insurance; accept £135.—M. Hillier, 216, Portobello Rd., North Kensington. [7029

B.S.A. 4¼h.p. 1920 Combination, first-class condition, Cowey, lamps, horn, exceptional engine, commodious sidecar, screen, hood; £85.—Shackel, 100, Burnt Ash Rd., Lee, S.E.12. [7914

1915 B.S.A. 4h.p. Combination, 3 speeds, horn, lamps, numerous spares, in excellent running order, tax paid; £55; owner bought a car.—Brand Elmhurst, Amersham Hill, High Wycombe. [8309

6-7h.p. twin B.S.A. (1921 purchased Nov. 1920) Combination, electric lighting, accumulator, Easting windscreen, spare wheel, luggage grid, Tan-sad; cost over £240; offers.—Box 2259, c/o *The Motor Cycle*. [7675

1919 4¼h.p. B.S.A. Combination, 3-speed, kick starter, clutch, lamps, horn, windscreen, hood, luggage grid, speedometer, overhauled, re-enamelled, £72; any trial.—47, Hazel Rd., Kensal Rise, N.W.10. [7916

B.S.A. 1921 6-7h.p. Combination, fully equipped, dynamo lighting, perfect condition; £132, or exchange 4h.p. solo, not earlier than 1919.—Rhosha Motor Co., Triumph Sevice Agents, Romford. 'Phone: 584. [8384

1920 B.S.A. Combination, B.S.A. sidecar, splendid condition, tax paid, lavishly equipped, guaranteed perfect, brand new lamps, new Lucas horn; sacrifice 68gns.—Hough, 750, Holloway Rd., Highgate. [7767

B.S.A. (September, 1921) 6-7h.p. Twin, spare wheel, luggage grid, sprung footboards, Easting Royal, mileage under 2,000, perfect, unscratched, luxurious turnout; £150, or offer.—Richards, 15, Sutherland Place, Bayswater, W.2. [7808

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B.S.A.

4¼h.p. B.S.A. with No. 2 sidecar, an ideal combination; new outfit, but offered as slight shop-soiled at clearance price; £130. Convenient deferred payments.—Harrods Motor Sales Rooms, Brompton Rd., London. [7

1921 6-7h.p. B.S.A. Combination, equipped with lamps and horn, screen, etc., in very nice order and condition, tax paid 1922; £125. Convenient deferred payments.—Harrods Motor Sales Rooms, Brompton Rd., London, S.W.1. [7

B.S.A. New 1922 Combination, 4½h.p., all-chain solo, £110; 4¼h.p. chain-cum-belt, £107. S cars supplied to any model. Your old machine ta in exchange and treated as payment down, remain in 12 equal monthly payments or more.—Wauchop 9, Shoe Lane, London. 'Phone: Holborn 5777. [8

1920 4¼h.p. Model K. B.S.A. Combination, just h re-enamelled and plated and thoroughly o hauled, tyres as new, P. and H. large head lamp generator, Lucas No. 454 sidecar lamp and genera Stewart trip speedometer, Lucas horn, luggage g spare tube and belt, spare new plug and valve, t complete; 95 gns; any inspection.—5, Lloyds Rd., Cor Kettering. [7

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, B St., Ealing. [7

B.S.A. Spares can be had by return, post f from Jones Garage, B.S.A. Agents and Sp Service Depot, Broadway, Muswell Hill, N.10. [0

THE B.S.A. Specialists.—On the Spot.—Our sp service is unrivalled—give us a trial.—Con Cycle and Motor Co., Broad St., Birmingham. [4

GODFREYS', Ltd., 208, Great Portland St., Lond W.1.—Complete stock of all B.S.A. spare p always in stock. Write for free spare part list, sta year of manufacture. [0

Calthorpe.

1919 Calthorpe, 2-stroke, 2-speed, lamps; £4 33, Burdett St., Bow. [7

CALTHORPE 2-stroke, 1922, highest offer, call e ings or write.—Hall, 25, Emu Rd., Battersea [7

CALTHORPE-J.A.P. 1915, 2¾h.p., Enfield 2-sp lamps, etc.; £30.—9, Gipsy Hill, Upper N wood. [8

£17—Calthorpe, 2h.p., 2-speed, good condi and running order.—9, Chertsey Road, Ley stone. [7

1920 Calthorpe-Jap, perfect mechanical conditi £33.—26, Tulse Hill, Brixton. 'Phone: B ton 1292. [8

CALTHORPE 2¾h.p., 1915, 2-speed, J.A.P. eng good tyres, tools, etc., tax paid; £25—145, W more Rd, Bromley. [77

CALTHORPE 1922, all models; immediate deliv deferred payments, tuition free.—Motoria, Re Parade, North Finchley. [6

CALTHORPE, 1922, 4h.p. Combination, tax p lamps, complete, shop soiled; £115, exchang Motor Co., Ltd., Hereford. [7

1918 Calthorpe-Jap 2¾h.p., 2-speed, clutch, chanically perfect, condition as new, tax p lamps; £27.—1, Priory Rd., Kew Green. [8

CALTHORPE Precision, lightweight, 2¾, 2-sp footboards faultless, T.T. bars, new tyre, l equipped; £20.—43 Goddard Road, Beckenham. [7

CALTHORPE 2½h.p., 2-stroke, single speed, May, 1922, lamps, horn, licensed, £30; let only.—Pearse, Fire Station, Glamis Rd., Shadwell, [7

2½h.p. Calthorpe Motor Cycles.—New 1922 Mod £36; or £7 down and 12 monthly payme of £2/9/6.—Wauchope's, 9, Shoe Lane, London, E. [8

CALTHORPE 1921 2-stroke, 2-speed, clutch, sp did condition; £36.—Elce, Ltd., 13, 15, and Bishopsgate Av., Camomile St., E.C.3. 'Phone: Ave 5548. [0

25 GNS.—Calthorpe-Jap, 1915, 2½h.p., Enfield speed gear, aluminium footboards, accesso year's tax paid.—Delancey St. Garage, Camden To N.W.1. [8

CALTHORPE Lightweight 2h.p., 2-speed, conn shaft, new piston, belt, tube, overhauled, licen lamps, etc.; £24.—White, 17, Cholmondeley Av., H lesden, N.W.10. [7

CALTHORPE Combination, 4-5h.p. twin J.A Sturmey countershaft gears, hood, screen, sm 58 gns.; exchanges.—Peter Gordon, Ltd., 110, Up Richmond Rd., East Sheen. Photograph. [7

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1921 Cedos, 2-speed, 1922, 2½h.p. engine fitted, machine overhauled at works same t fully equipped, tax paid, like new, companion to one praised by Ixion; nearest £45, or offers.—2, H St., Saltley, Birmingham. [7

Chater-Lea.

1921 Chater-Lea, 2-stroke Villiers engine, equipped, licensed; £30.—37, Arlington Surbiton. [8

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Douglas.

20 3-speed Douglas, fully equipped and taxed, beautiful condition; £55, or offer.—James, c/o mores, 482, Harrow Rd., Paddington. [8715

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1922 Royal Enfield Combination, No. 190, magdyno, lamps, all complete; £150.—M.C. Dept., Juno Cycle and Motor Co., 248, Bishopsgate, London, E.C. [7556

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MOTOR CYCLES FOR SALE.

New Imperial.

NEW IMPERIAL, No. 3 model, in stock.—Wigfield, Goldthorpe, Yorks. [6187

NEW IMPERIAL 1918, 2¾h.p., 2-speed, in good condition; £35.—251, Archway Rd., Highgate. [7629

£25.—2¾h.p. New Imperial-Jap, 2-speed, fully equipped, taxed.—King, Egrove Farm, Oxford. [8257

2¾h.p. New Imperial, 2-speed, clutch, K.S.; £38. hargain.—Naish, Church Rd., Wheatley, Oxon. [7948

1913 New Imperial 2¾h.p., countershaft, 2-speeds, first-class condition; £35.—800, High Street, Bexley. [8560

1922 New Imperial 2¾h.p., chain drive, 3-speed, clutch, kick starter; £73.—Kays, 8, Bond St., Ealing. [8265

SHEFFIELD Agent for New Imperial Motor Cycles; all models in stock.—J. A. Stacey, Ecclesall Rd., Sheffield. [0813

1918 New Imperial 2¾h.p., fully equipped and taxed; £30.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [8713

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Japs, 1922, No. 3, £73; No. 2, £60; easy terms and exchange. [8687

NEW IMPERIAL 1922 2¾h.p. Sports Model, tax paid for 1922, equal to new; £75.—The Layton Garages, 30, Holywell St., Oxford. [7187

1922 New Imperial, new, unregistered, 2¾h.p. J.A.P., 3-speed; cost £63, must realise £57; soiled.—391, King St., Hammersmith. [8178

NEW IMPERIAL 6h.p. Combination, 1919, exceptional condition, Easting, all on, tax paid; £85, exchange.—Motor Co., Ltd. Hereford. [7601

2¾h.p. New Imperial-Jap, 2 speed, overhauled, with new parts, 40 m.p.h., economical, reliable, tax paid; £23.—337, King St., Hammersmith. [8103

1920-21 New Imperial-Jap, 2¾h.p., 2-speed, K.S. clutch, all on, splendid condition; insured £50; bargain 48gns.—147, High Street, Stoke Newington. [7642

NEW IMPERIAL-J.A.P., 1915, 2-spced, licensed good tyres, excellent condition throughout; bargain, £26.—130, Beulah Hill, Upper Norwood, S.E. [8113

NEW IMPERIAL, 2¾h.p., 2-speed, first-class condition, brand new tyres, lamps, horn, tool bags; sacrifice £30; seen Herts.—Box 2235, c/o *The Motor Cycle*. [7587

1920 2¾h.p. 2-speed New Imperial-Jap, in exceptionally nice condition, T.T. bars, long exhaust, very fast, tax paid; £35.—Whisstock and Liagley, Woodbridge. [8304

1919 2¾h.p. New Imperial-Jap, 2-speed, kick start, hand clutch, fully equipped, tax paid; £32/10.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [8393

40 GNS.—New Imperial, 1920, 2-speed, 2¼h.p. J.A.P., indistinguishable from new, tax paid for the year; any trial; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [8441

NEW IMPERIAL 1921 350 c.c. Super-Sports, J.A.P. engine, 3 speed, clutch and kick-starter, nice condition; £58.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [8607

NEW IMPERIAL 2¾h.p., Model No 3, 3-speed, K.S., all-chain drive; £73; immediate delivery. Cash! Exchanges! Easy payments!—P. J. Evans, John Bright St., Birmingham. [7853

1922 New Imperials in Stock.—No. 3, 2¾h.p., chain drive, £73; No. 3 with Maglita, £83; easy payments 4% extra; free delivery and tuition.—Premier Motor Co., Aston Rd., Birmingham. [5832

1920 New Imperial-Jap Combination, 8h.p., 3 speeds, clutch, and K.S., all lamps, horn, Easting screen; an exceptional bargain; tax paid; £85; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [8512

£75.—New Imperial 2¼h.p., actual 1921 I.O.M. machine, speedometer, lamp, etc., over £15 worth spare engine and bicycle parts, carefully used and in first-class order, extraordinarily efficient; close offer for quick sale.—Beacon, 36, Bassett Rd., North Kensington. [7994

Spare Parts

NEW IMPERIAL Spare Parts.—London stockist's, Rev, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

Norton.

PREMIER Motor Co. for 1922 Nortons.

NO. 9, 3½h.p., £80; 16H, 3 speed, £115; Big Four, 3-speed, £120; sidecars from £22; easy payments, 4 per cent. extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [0865

MOTOR CYCLES FOR SALE.

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

1922 3½h.p. 3-speed Norton, very fast, delivered May; £95; see Exchange column.—Cooper. [8333

NEW 1922 Big Four Norton, with Montgomery sidecar; £145, or exchange.—Jack Pruen, Weston-super-Mare. [7773

NORTONS.—All models from stock; supplied upon deferred payments; exchanges arranged.—King and Harper, Bridge St., Cambridge. [5817

F.O.C.H. have a 1922 Norton 16H Model, little used, excellent condition, licensed; bargain.—5, Heath St., Hampstead (nr. Tube). [7862

1921 Norton, 16H, as new, close ratio gears, Lucas lighting, Klaxon; write particulars; gift, £90; Kent.—Box 2297, c/o *The Motor Cycle*. [8138

NORTON 1921 Big Four 16H, lamps, speedometer, new tyres, Dec paid, 78 gns.; also 1919 model, 45 gns.—43, Turnham Green Ter., Chiswick. [7844

1922 Norton Big Four, Montgomery Sporting sidecar, screen, lamps, speedometer, mileage 4,000, perfect; £125.—Riddelsdell, Boxford, Suffolk. [8336

JULY, 1921, Sports Norton, lamps, horn, speedometer, adjustable tappets, tax, insurance; recently overhauled; nearest £85.—Aylwin, Wynnstay, Berkhamsted. [7577

1921 16H Norton and sporting Canoelet, Binks, Bonniksen, accessories, taxed year, mechanically perfect; £87, or near offer.—Ruscoe, Chestnuts, Wealdstone. [7798

£55.—December, 1920, 3½h.p. T.T. Norton, lamp sets and horn, tax paid, very fast, and in exceptionally good order and perfect; £55.—Heady, 17, Gold St., Saffron Walden, Essex. [8023

NORTON 1921 16H, taxed, speedometer, very fast, 78 gns.; 1920 Big 4, Magdyno, taxed, perfect order, 78 gns.; sports sidecar, new condition, £18.—Clark, 7, Exhibition Rd., S.W.7. [7362

NORTON.—New 1922 models; Big Four and De Luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115; exchange and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [8688

1921 Norton Combination 3½h.p., 3 speeds, Binks carburetter, fully equipped, little used, indistinguishable from new, smartest turnout on road; £110.—19, Wellington St., Moss Side, Manchester. [8385

1921 Norton (October) 3½h.p., 3-speed, 16 H, sidecar, extra heavy Dunlop tyres, dissolved acetylene Fallolite lamps, Bonniksen speedometer; cost price £155, sell £110.—6, Sandwell Mansions, West Hampstead. [8417

NORTON Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [7327

N.U.T.

1920 October, 3½h.p. N.U.T., Brooks' cantilever; genuine bargain at £75.—Boulton, Saffron Walden. [8181

1921 N.U.T. 3½ Twin, Magdyno, licensed, splendid condition; £87/10; entertain 1918 or 1919 Triumph part exchange.—Beasley, Cheddington, Leighton Buzzard. [8274

N.U.T., 1920, Magdyno, electric horn, speedometer, 11,000, recently decarbonised, bearings perfect, new Dunlop tyres, splendid condition; £80 or near offer; owner buying combination.—L. P. B., "Iona," Frances Road, Windsor. [7968

O.K.

LATE O.K.-Villiers, as new, lamps; £30.—P.D., 58, Woodfield Rd., Ealing. [8092

1921 O.K.-Villiers, 2-speed, kick start, clutch, little used; reasonable offer.—42, Perran Rd., Tulse Hill. [8210

1921 O.K. Junior, 2-speed, clutch, kick start, Lucas lamps, horn; £39.—Beesley, Warford St., Newtown, Manchester. [8040

O.K. Junior 2¾h.p., 1919, re-enamelled in makers' colours, engine overhauled, like new; £27/10.—433, High St., Winsford. [7848

O.K. Junior 4-stroke, 2-speed, lamps, etc., tax paid, excellent condition, must sell; offers.—42, Mulgrave Rd., Neasden, N.W.10. [7787

22 GNS.—1917 2¾h.p. O.K.-M.A.G., equipped, licensed, 2-speed; any trial; after 5 p.m.—53, Patchull Rd., Kentish Town. [8444

O.K.-VILLIERS (March, 1922), single speed, clutch, copper exhaust, new condition, all accessories; £38.—8, Horsford Rd., Brixton. [7960

1916 O.K., 2-speed, fitted with new 1922 2¾h.p. Orbit 2-stroke engine, new C.A.V. magneto, new mudguards, Amac carburetter, tyres good, frame requires enamelling, lamps, horn, licence paid for one year; 25 gns.—S. E. Porter and Co., Whitchurch, Salop. [6860

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Omega.

OMEGA-VILLIERS 2¾h.p., kick start, clutch, speed, late 1921; £46.—Dalby, Eastone, Kirmoorside. [83

1920 Omega 2¾h.p. J.A.P., 2 speeds, licens lamps, speedometer, perfect order; bargain, £—89, East Hill Wandsworth. [83

OMEGA—J.A.P., 2¾h.p., 2-speed, electric lighti engine perfect, tax paid; £40.—Summers, Goodmayes Lane, Goodmayes, E. [80

OMEGA-J.A.P. 1920 2¾h.p., 2 speed, K.S., clut fully equipped, lamps, horn, speedometer a licence, excellent condition; £40.—The Layton Garag 30, Holywell St., Oxford. [8

P. and M.

1919 P. and M., equipped, not W.D.; £40.—Ka 8, Bond St., Ealing. [82

P. and M. Combination, not W.D.; bargain, £28/ —Kays, 8, Bond St., Ealing. [82

3½h.p. 1919 P. and M. Solo, fully equipped; £55 Wauchope's, 9, Shoe Lane, London. [80

P. and M., renovated as new, 1921, kick start; £4 24 Browning Rd., Manor Park, E.12. [7

P. and M. Combination, all on, perfect conditi £62.—94, Aldborough Rd., Seven Kings. [8

£20.—1912 3½h.p. P. and M., 2 speeds, clutch, sp did running order.—King, Egrove, Oxford. [8

P. and M., 1918, fully equipped, good conditi £38.—38, Sherriff Rd., West Hampstead. [8

P. and M., R.A.F. machine, complete, in parts, £ —1 Springfield Park Crescent, Catford, S.E [8

P. and M. 1918, splendid condition; first £30 cures.—Miles, 11, Chichester Rd., West Kilbu N.W.6. [8

P. and M. Combination, excellent condition, just bushed; tax paid; £55.—11 Gheluvelt Ave Kidderminster. [7

1920 4h.p. P. and M., ratchet brake, new t engine, lamps, horn, tax paid; £55.—Kays Bond St., Ealing. [8

WAUCHOPE'S, 9, Shoe Lane, London, supply and M. motor cycles and combinations on change and easy terms. [8

3½h.p. P. and M. 1914, 2-speed, kick start, Bo complete, any trial; £35.—Crowther, 2, side, Newtown, Malvern. [8

£40.—P. and M. 1918 combination, fully equip good condition; machine solo, £32, sacrifi 143, Ravensbury Rd., Earlsfield, S.W. [8

P. and M., 1919, not W.D., electric and acetyl speedometer, tools, spares; excellent condit £42.—50, Chiswick Lane, Chiswick, W.4. [7

P. and M., 1920, smartly equipped, licensed, orig tyres and enamel unscratched; 50 gns.—Bunti Motor Exchange, Wealdstone, Middlesex. [8

P. and M. Combination, perfect condition and ap pearance, all on; tax paid for year; £55 for quick sa Naldrett, Hayes Rd., Slinfold, nr. Horsham. [7

1920-21 P. and M., fully equipped, licensed, in tinguishable from new, mileage 2,000; £5 37, Arlington Rd., Surbiton. 'Phone: Kingston 1 [8

P. and M. Combination, 1914, good condition perfect running order, fully licensed for 19 35 gns.; apply after 6 p.m.—30, Golders Gardens, don, N.W.11 [7

2 P. and M. Combinations, new £12 bodies, mi few parts, P. and M. chain cases, Lucas lar BB cord tyres, etc.; £30 each.—55, St. James Bermondsey. [7

P. and M. 1917 Combination, electric light speedometer, etc.; £52.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Pho Avenue 5548. [0

P. and M.—We have five of these combination stock at very low prices; list on request.—Ne ham Motor Co., 223, Hammersmith Rd., W.6. 'Pho Hammersmith 80. [8

P. and M. 1919, overhauled by makers last Janu new Milford sidecar, Bluemel's screen, lug carrier, tyre perfect, all on, licence paid; 60 gn 308, King's Rd., Chelsea, S.W. [8

P. and M. coachbuilt combination 1918, electric li ing, hood and screen, new tyres, new chains first-class condition, ride anywhere; £48.—A. S., Abbeville Rd., Clapham Park, S.W. [8

P. and M. 3½h.p. Combination, 1921, post-war m speedometer, windscreen, acetylene lighting, accessories, fully equipped, as new, best offer secur Melvill, 87, Alexandra Rd., Hornsey, N.8. [7

PHELON and Moore, Ltd., 4, Berners St., W.1, the following used machines, which have overhauled and carry our guarantee:—1919 Solo, 1920 Combination, £85; 1921 Combination, £ demonstration, 4-speed, 4½h.p., £115; all equipped.—Phelon and Moore, Ltd., 4, Berners London, W.1. [6

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and M.—All parts in stock for P. and M.'s; send stamp.—P. and M. Specialist, H. Beardwood, 147, ngton St., Liverpool. [0839

P. and S.

20 2½h.p. Pearson and Sopwith-Villiers 2-stroke engine, 2-speed, clutch and kick starter, acces-, including speedometer; £25.—King, 4, Willow , Short St., Cambridge. [8696

20-21 Pearson and Sopwith 2¾h.p., 2-speed, lighting set, horn, etc., a most beautiful run-little machine, and in splendid condition ghout; £32.—Will, 769, Romford Rd., Manor London, E. [8140

Peugeot.

h.p. Sports Peugeot, 1914, ride 40 miles to buyer; £25, offers.—Wheeler, Trinity, Cambridge. [7717

Pope.

18 Pope 7-9h.p. Sports Combination, clutch, K.S., guarantee 60 m.p.h.; £65; exchange.— nda St., Battersea. [8098

Premier.

h.p. Premier, good going order; £18.—Ross, 86, High Rd., Lee, S.E. [7888

EMIER 3½h.p., just overhauled, good running order, all on; £25.—Hayler, Barkfold, Kirdford, ex. [8312

h.p. Premier, all on, mechanically perfect, pull anything; £17 cash.—Collins, Clock Arcade, aton. [8008

3.—Premier, 2¼h.p., new cylinder, piston, lamps, horn, discs, good condition.—21, St. Saviour's Rd., ings. [7641

EMIER 1914 3½h.p., 3-speed and clutch, good condition; £25.—Longman Bros., 17, Bond St., ng. Tel.: 689. [7479

EMIER Twin 7-9h.p. Combination, countershaft, 2-speed, clutch, good order; £45.—32, Rutland West, Rutland Gate, S. Kensington. [8520

EMIER 2½h.p., fully equipped, tax paid, ready to ride away, excellent condition, overhauled; or offer.—2, Mascotte Rd., Putney, S.W.15. [8434

).—Premier, 1914, 3½h.p., countershaft, 3-speed, clutch and K.S., tax paid, trial, bargain; ex-ge Douglas or 2-stroke.—61, Grand Parade, ingay. [8046

15 3½h.p. Premier, coachbuilt sidecar, counter-shaft, 3-speed, clutch, K.S., tax paid, splendid ition; £45 or offer; exchange late model Douglas milar.—S. Tite, 113, Lavender Hill, S.W. [8106

EMIER 7-9h.p., 3-speed Combination, in new condition, new coachbuilt sidecar, Tan-Sad, and s, etc., guaranteed perfect; £120, or offer, bar-; insurance paid.—Box 2316, c/o *The Motor* e. [8699

are Parts.

EMIER.—All parts in stock. By return service. —Alf. Holland, Hearsall Lane Corner, Coventry. ne: 1945. [8280

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Priory.

IORY 1922 Models; wonderful value; 2¾h.p. J.A.P., 2-speed, K.S., 52 gns.; 2¾h.p. 2-stroke, ed, £38; write for specification.—R. B. Clark and 7, Exhibition Rd., S.W.7. [7365

P.V.

20 P.V., 2 str. spring frame, 2-speed, splendid condition; £35, or near.—Baker, 10, Guhyon , Herne Hill. [7919

Quadrant

IFFORD WILSON Company, 16 years' experience with Quadrants. [9925

20 4h.p. Quadrant, nice order; £55.—Ross, 86, High Rd., Lee, S.E. [7893

22 Quadrant 4½h.p. Combination; £100.— Agents for Cambridge, Wallis and Easton, 104, Rd., Cambridge. [0825

ANK WHITWORTH, Ltd., Distributors, 139, New St., Birmingham.—Quadrant £100 4½h.p. bination, delivery from stock. [0767

ADRANT 1920 4½h.p. Combination, Sturmey 3-speed, clutch, K.S., all-chain, Canoelet sidecar, ng, lamps and spares, excellent condition; £60. Hartley Rd., Leytonstone. [8519

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RADCO.—1922 Olympia Show model, tax paid; unridden; £50, or near offer.—192 Heath Rd., Twickenham. [7929

CLEARANCE of shop-soiled models; single speed, £32; 2-speed, £42; easy payments, 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [8615

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PREMIER Motor Co. for 1922 Raleighs.

IMMEDIATE delivery of 2¾h.p. 4-stroke lightweight, 2-speed, £68; 3-speed, £73; also 5-6h.p. flat twin, spring frame, detachable wheels, solo, £130; sidecar combination, £165; easy payments, 4 per cent. extra; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0866

1922 2¾h.p. Raleigh, actually in stock; £68.—Kays, 8, Bond St., Ealing. [8269

RALEIGH 2¾h.p., 2-speed, kick start, in stock, £68.—Clark, 7, Exhibition Rd., S.W.7. [1280

RALEIGHS.—All models; delivery now.—Barlow and Son, Monton, Eccles. Tel.: 160 Eccles. [3693

RALEIGH.—Immediate delivery of 1922 models. Cash, exchange, or deferred payments.—Kays, 8, Bond St., Ealing [4836

2¾h.p. Raleigh Sports, 3-speed; £73. Just arrived. Cash or generous easy payments.—Agent, Carmichael, High West St., Gateshead. [8062

1922 Raleigh 2¾h.p., 3-speed, kick starter, ridden once only; take £69; cost £73.—W. Ayers, Old Barracks, Kensington Palace. 'Phone: Park 86. [7824

RALEIGH Lightweights in stock for immediate delivery; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [8343

RALEIGHS, 2¾h.p. 1922 Sports or Tourist models, in stock, licensed; £68, or easy terms. Free delivery anywhere.—Talbot Garage, Market St., Stourbridge. [8048

IMMEDIATE Delivery Raleigh, all models in stock: 5-6h.p. £130, combination £165; 2¾h.p. £68, £73: 3h.p. combination, £103; cash or deferred payments 4% extra.—Mitchell Garage, Roundhay Rd., Leeds. [0890

NEW 1922 Raleigh 5-6h.p. Combination, spare wheel, Lucas electric lighting, Easting windscreen, registered and licence paid; purchaser, unable to take delivery, will forfeit £10 deposit paid to immediate cash buyer.—Box 2296, c/o *The Motor Cycle*. [8613

Ready.

READY 1922 2¾h.p., J.A.P. engine, Burman gear box, shop-soiled, unused; £55.—W. E. Line, 89, Gt. Portland St., W.1. [8636

Reading-Standard.

1916 7-9h.p. Reading-Standard Combination; bargain, £55.—Ross, 86, High Rd., Lee, S.E. [7892

SALE.—Reading-Standard combination, 1916, fully equipped; Cardiff district; £50.—Box 2317, c/o *The Motor Cycle*. [8700

READING-STANDARD 1921 Combination, plus 1 sidecar, hood, screen, many spares, dynamo, lovely outfit, taxed and insured; £100.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [8714

Rex.

£12.—Rex 5-6h.p., good running order.—26, St. George's Rd., Kilburn. After 6. [8164

REX-MINERVA, 2½h.p., new tyres, plating, and enamel; £16/10.—44, Penrith Rd., Thornton Heath. [7907

£24.—3½h.p. sporting Rex, in excellent condition, long exhaust, tax paid year.—201, Foleshill Rd., Coventry. [8742

1922 New Rex-Acme 2¾h.p. 3-speed Model; £66/10; easy terms and exchange.—Wauchope's, 9, Shoe Lane, London. [8672

REX Combination 6h.p., 2-speed, handle start, in perfect running order; £22/10.—S. E. Porter and Co., Whitchurch, Salop. [4798

REX 5-6h.p., Bosch, Binks, long exhaust, old machine, but in running order; £12.—W. Martin, 2, Madin St., Chesterfield. [7711

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Rex.

SOUTHPORT.—Rex-Blackburne 2¾h.p., 3-speed, all-chain, instant delivery; £78/10; exchanges.—Kents, 417, Lord St., Southport. [8325

Reynolds.

REYNOLDS, new February, tyres unscratched, Lucas lighting, perfect condition, licence paid, designer's own machine.—Apply Reynolds Jackson, Sarratt, Herts. [6250

Rover.

1920 3-speed Rover, speedometer and lamps; £60.—Ross, 86, High Rd., Lee, S.E. [7890

ROVER 1919 Combination, well equipped, taxed; £70.—Clark, 7, Exhibition Rd., S.W.7. [4614

1920 T.T. Rover, fully equipped, fast, perfect; £55.—Noble, School Lane, Ramsey, Hunts. [8386

£95.—1922 new 4h.p. Rover, all chain drive; cash or exchange.—Rose's Garage, Uxbridge. [8378

3½h.p. Road Racer Rover, with free engine, clutch; £37/10; easy terms.—Wauchope's, 9, Shoe Lane, London. [8671

ROVER 1920 3½h.p., T.T., Philipson, fast, reliable, condition perfect; £56.—Tinson, Ronalda, Station Rd., Netley. [5009

ROVER 1921 Combination, all-chain model, 3-speed, kick start, perfect, like new, all on; £85.—Parry, Sefton St., Putney. [8549

ROVER 8h.p., 1921, full equipment, small mileage, any trial; £155.—Hillier (side bell), 9, Wallingford Av., North Kensington. [8222

3½h.p. T.T. Rover, good condition, tax paid, all on; 28 gns.; seen Yonngs', Kilburn.—Garrett, 3, Richborough Rd., N.W.2. [8107

3½h.p. 3-speed Rover, perfect condition, new tyres, lamp, horn, etc., complete, tax paid; bargain, £35.—Batten Bros., Cullompton. [7782

1920 4h.p. Rover, 3-speeds, original tyres, small mileage, Montgomery sidecar, lamps, etc., licensed; £80.—Riddelsdell, Boxford, Suffolk. [8337

ROVER 5-6h.p. Combination 1919-20, electric, Cowey horn, windscreens, nearly new condition; £80.—73, Windermere Rd., South Ealing. [8059

ROVER 1920 3½h.p., 3-speed, clutch, kick starter, completely equipped and in excellent order; £60.—The Layton Garages, 30, Holywell St., Oxford. [7177

ROVER 1920 3½h.p. Combination, 3-speed clutch, K.S. all chain, Easting, £10 just spent on engine; £60.—St. Olafs, Adeline Rd., Bournemouth. (P) [8132

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T.D.C.

16 GNS.—Little Giant, 1920, T.D.C. engine, go condition throughout, bargain.—Rose's Gara Uxbridge, [8

Torpedo.

2½h.p. Torpedo, 2-stroke, tax paid, ride away; £ Saturday afternoon.—163, Beechcroft R Tooting. [83

£17/10.—Torpedo 2½h.p., late model, T.T. ba very smart machine, Lucas lamps, any trial Smith's 86, Chalk Farm Rd., N.W.3. [84

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57 GNS.—1918 renovated Triumph, countersha unridden, 3 months' guarantee; monthly pa ments arranged.—Effra Motor Works, 59-63, High S Clapham, S.W.4. 'Phone: Brixton 1115. [87

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3½h.p. Triumph-Precision; £12.—Ross, 86, Hi Rd., Lee, S.E. [78

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1916 Trimph and sidecar, tax paid; £55.—Ros 86, High Rd., Lee, S.E. [78

3½h.p. Triumph, complete, lamps and horn; £28. Cross, Agent, Rotherham. [85

£60.—Brand new Baby Triumph; cash or exchang —Rose's Garage, Uxbridge. [83

1920 Trimph Combination, Gloria sidecar; £75. Kays, 8, Bond St., Ealing. [82

NEW 4h.p. Triumph model H in stock.—Bound Garage, 223, High Rd., Kilburn. [84

TRIUMPH and Sidecar, clutch model, perfect order £35.—109, Beam St., Nantwich. [58

TRIUMPH 1914, 4h.p., in good running order; £3 —Greig, Brookhill Rd., New Barnet. [76

1919 Trimph Combination, tax paid; bargain £77.—Ross, 86, High Rd., Lee. [78

TRIUMPH 4h.p. Countershaft, perfect order, all on £50.—168, Wandsworth Rd., S.W.8. [81

TRIUMPH-RICARDO in stock; £120.—Premie Motor Co., Aston Rd., Birmiogham. [08

1918 Countershaft Triumphs, perfect, from £40.— 24, Balliol Rd., North Kensington. [81

1922 Triumphs in Stock; cash or exchange.—Daw Triumph Agent, 114, Brixton Hill. [80

1912 Triumph, single speed, drop frame and tank £22.—Box 2295, c/o *The Motor Cycle*. [80

TRIUMPH 3½h.p., clutch, accessories; £25, offers.— H.B. Motor Co., 209, Belsize Rd., Kilburn. [79

TRIUMPH 4h.p.; £57/10.—R. Toms, 307, Euston Rd N.W.1. 'Phone: Museum 8038 and 8039. [75

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TRIUMPHS.—Prompt delivery and service.—Barlow and Son, Monton, Eccles Tel.: 160 Eccles. [369

CROSS, Effingham Square, is Agent for the Trusty Triumph in Rotherham; all models from stock. [859

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TRIUMPH Sports Model, first-class condition, Tansad, ride away; £36.—86, Rhodes St., Holloway, N.7. [7794

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BARGAIN.—Triumph Combination, electric, tax, insurance; £72, offers.—21, Overhill Rd., East Dulwich. [7987

£48.—4h.p. Countershaft Triumph, 3 speeds, clutch, K.S., fully equippcd.—King, Egrove Farm, Oxford. [8255

BABY Triumph (1919, Jate), absolutely good and genuine; £35.—Purton, Coal Merchant, Rickmansworth. [8102

4 h.p. Triumph-Gloria Combination 1919, lamps, etc., tax paid; £76.—Deman, Kingsfield, Dartford, Kent. [8176

TRIUMPH 4h.p. 1920, accesseries, leg shields, tax paid; Suffolk; £80.—Box 2298, c/o *The Motor Cycle*. [8484

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1919 Countershaft Triumph Combination, in new condition; £70.—24, Balliol Rd., North Kensington. [8187

1919 GNS.—Triumph 3½h.p., thoroughly overhauled, excellent condition throughout.—Rose's Garage, Uxbridge. [8374

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TRIUMPH Lightweight, used 5 weeks only, licensed, horn, practically new; £45 lowest.—6, Brislec Av., Tynemouth. [8061

TRIUMPH 2-stroke, 1920, 2-speed, fully equipped; £37/10.—M. Hillier, 216, Portobello Rd., North Kensington. [7033

TRIUMPH 1913, 3½h.p., Philipson, all on, good running order; £25.—Talbot Garage, Market St., Stourbridge. [8049

TRIUMPH (Baby), accessories, new tyres, licensed, good condition; £27/10.—Box 2322, c/o *The Motor Cycle*. [8705

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TRIUMPH-GLORIA Combination, renovated as new, electric lamps, complete; £65.—120, Sutherland Rd., Croyden. [8403

TRIUMPH 4h.p. Combination, 1918, excellent condition; £70.—Brampton, 41, Milman Rd., Kensal Rise, N.W.6. [8523

TRIUMPH 1919, countershaft, lamps, etc., new T. 1922 gear box; £58.—Miles, 11, Chichester Rd., West Kilburn, N.W.6. [8551

SHEFFIELD Agent for Triumphs; all models in stock, for immediate delivery.—J. A. Stacey, Triumph Service Depot, 12, Ecclesall Rd., Sheffield. [0812

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TRIUMPH, 1920 3-speed, Sturmey-Archer, etc., lamps, horn, tools, etc., tax paid; £70.—145, Widmore Rd., Bromley. [7741

TRIUMPH, new Type H, just delivered; £105.—Rhosha Motor Co., Triumph Service Agents, Romford. 'Phone: 584. [8383

TRIUMPH, 1921, all chain, fully equipped, condition as new, insurance, tax paid; 83 gns.—38, Glebe Rd., Norwich. (D) [7306

TRIUMPH 3½h.p., clutch, splendid running, tax, accessories; bargain, £30, near offer.—141, Malvern Rd., Kilburn, N.W. [7735

1919 Junior Triumph, all on, excellent condition; £35; or exchange high power combination.—Williams, Roomfield, Todmorden. [8371

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TRIUMPH Junior, 1922, new, slightly shop-soiled, £58, or deferred payments arranged.—Motoria, Regent Parade, North Finchley. [6359

1918 Triumph Combination, coachbuilt sidecar, all on, excellent condition; what offers?—Morris's Garage, Rosenau Rd., Battersea. [7796

15 GNS.—T.T. Triumph, dropped frame, Bosch, re-enamelled, good tyres; any trial; after 5 p.m.—53, Patshull Rd., Kentish Town. [8443

TRIUMPH 1916 4h.p., excellent running order, accesseries; £45.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [8148

1918 Triumph Combination, fully equipped, tax paid; £60.—11, Blechynden Mews, Lancaster Rd., W.11. 'Phone: Park 3258. [8547

1918 Triumph, engine No. 59080, K.S., C.S., fully equipped; a bargain at £55.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [8722

TRIUMPH 1921 Combination, tax paid, beautifully equipped, unscratched; £82/10.—M. Hillier, 216, Portobello Rd., North Kensington. [7032

25 GNS.—Triumph 3½h.p. 1911, overhauled, lamps, splendid condition and appearance; bargain.—134, Earlsbrook Rd., Redhill. [8290

1917 Triumph Countershaft, excellent condition, lamps, Klaxon, long exhaust, aluminium discs; £45.—69, Kingston Rd., New Malden. [8223

1922 Triumph Combination, beautifully equipped, tax, insurance paid, business reasons; £120.—Compton, 22, Bloomfield Rd., Kingston. [7829

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

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TRIUMPH Combination, 1918, in splendid running order; £60, or near offer; seen and tried in London.—Write Box 2163, c/o *The Motor Cycle*. [6570

4 h.p. Triumph Countershaft Sporting Combination, late model, disc wheels, lamps, horn, tax, perfect; £62.—66, Marsham St., Westminster. [8531

TRIUMPH-GLORIA 1920, new condition, lamps, speedometer, Klaxon, spare tube, accessories; £95.—Vincent, 26, Princes Parade, Finchley. [8306

TRIUMPH 1920-21 4h.p. Gloria Combination, electric and acetylene lighting, Easting; registered; £128.—W. E. Line, 89, Gt. Portland St., W.1. [8631

1920 Triumph Combination, equipped every possible accessory, condition equal new throughout. £80.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [8574

TRIUMPH Model H, 3-speed, countershaft, fitted with new £24 sidecar, lamps, horn, etc., nice outfit; £73 lot.—391, King St., Hammersmith. [8177

1921 and 1916 Triumphs, solo or combination, in excellent order, guaranteed, choice of two.—Turner and Britton, 41-43, Winchester St., Salisbury. [7616

£45.—Triumph 4h.p., Sturmey countershaft gear box, overhauled, renovated, sidecar suitable same; £7/10; trial any time.—406, York Rd., Wandsworth. [8101

25 GNS.—Clutch Model Triumph, 1913, 3½h.p., Lucas lamps and horn; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station). [7358

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TRIUMPH 4h.p., 1920, Model H, countershaft, excellent condition, including accessories; £70; tax paid.—Eagles and Co., 275, High St., Acton, London. [8458

TRIUMPH 1922, model H., carrying full guarantee, brand new, owner unable to ride; what offers?—Motor Cyclist, 59, South Island Place, Clapham Rd., S.W.9. [8567

TRIUMPH, renovated, sporting, clutch model, accessories; sell £38; exchange for countershaft model, casb adjustment.—Allan, Gaysbam, The Drive, Snaresbrook. [7737

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SOUTHPORT.—1921 Triumph-Millford S.D. Combination, all-chain, electric lighting, splendid condition; 100 gns.; exchanges.—Kents, 417, Lord St., Southport. [8323

1914 Triumph, 4h.p., 3-speed, clutch, new coach-built sidecar, excellent conditon, all accessories; offers.—Harris, 109, Wilton Rd., S.W. Victoria 9422. [8170

1918 Countershaft Triumph, all on, overhauled; cost £15; tyres, tubes (oversize) new; spares; licensed; perfect; £56.—Templeman, 10, Park Rd., Peterborough. [8314

TRIUMPH 4h.p. 1914, 3-speed, Combination, Millford spring wheel bulbous back sidecar, accessories, excellent condition; £47.—72, Vallentin Rd., Walthamstow. [8029

TRIUMPH 1919, 3-speed, clutch, and kick start, speedometer, lamps, horn, spare valve, etc.; only wants seeing; £70, or near offer.—Stanbridge, Pipsden, Hawkhurst. [8123

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48 GNS.—Triumph 4h.p., countershaft, 1918, engine No. 54278, renovated, nearly new Dunlop tyres; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station). [7359

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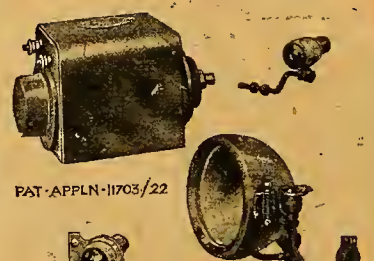

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1921 Triumph-Gloria Combination, as new, used week-ends only, fully equipped, luggage and petrol grids, new Royal Eastings, spares, insured, any trial; seen any time; £90.—Elt, Tinsmith, Lowesmoor, Worcester. 'Phone: 268. [7839

1921 Triumph-Gloria chain-drive Combination, Lucas electric lighting, Cameo screen, leg-shields, Bonniksen speedometer, perfect condition throughout, tax paid; £140.—Premier Motor Co., Aston Rd., Birmingham. [7361

TRIUMPH Countershaft, 1921½, Lucas lamps and horn, Cowey speedometer, Tan-Sad, tyres unpunctured, enamel and plating as new, mechanically perfect, tax 1922 and full insurance May, 1923; £90.—15, Avon Rd., Wood St., Walthamstow, E.17. [8011

TRIUMPH-GLORIA Combination, 1920, June, lamps, acetylene and electric, Klaxon, discs, sidecar chassis, mudguards re-enamelled, replated, engine overhauled, splendid condition; £95; after 6.—Harrison, Moorlands, Clifton Rd., Sutton Coldfield. [7822

4h.p. Triumph Combination, 1921, Gloria sidecar, Easting screen, Tan-Sad pillion seat, speedometer, electric lamps and accumulators, horn, etc.; tax paid 1922; £120. Convenient deferred payments.—Harrods Motor Sales Rooms, 118, Brompton Rd., London. [7942

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TRIUMPHS.—New 1922 4h.p. Combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D. all-chain, £115; Model H. chain-cum-belt, £105; Junior 2¼h.p., £65; also several second-hand Triumphs from £40; and one 3½h.p. o.h.v., done 500 miles, £115. Second-hand machines taken in exchange, remainder on easy terms. Value allowed on old machine accepted as first payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [8676

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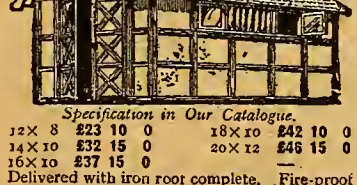

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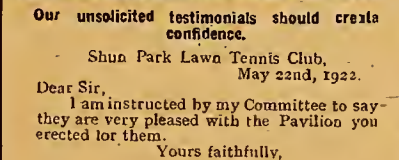

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Mr. C. G. Pullin,

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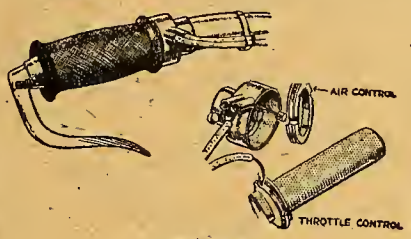

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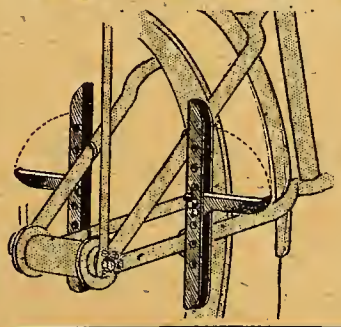

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Non-flam Shield.

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PALMER'S Garage, Tooting.—The pre-eminent place for disposiog of motor cycles.

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MODERN Solos and Combinations for cash, or in exchange.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3492

PRIVATE Owner, South East London, requires good Combination; reasonable price.—Box 2315, c/o *The Motor Cycle*. [8692

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SUNBEAM Motor Cycle and Sidecar, secondhand, for spot cash, modern.—Write full particulars, Box 2221, c/o *The Motor Cycle*. [7559

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KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2231

SCOOTER, Kingsbury, as new, perfect running machine; £15.—5, St. Peter's Rd., Hammersmith, W.6. [8719

A.B.C. Skootamota, new, unsoiled, latest model; £33, sacrifice.—Frank Whitworth 139, New St., Birmingham. [4658

TWO 1½h.p. A.B.C. Skootamotas, 1920 and 1921, in first-class condition, cost £55; will take £20, each on offer.—Bell, 37, Norfolk St., W.C.2. [8580

A.B.C. Skootamota, excellent condition, under 500 miles, any trial; motor cycle deposit system; £10/10.—King, 4, Willow Walk, Short St., Cambridge. [8697

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WALL Auto-Wheel, good condition; £6/10.—156, Windmill Rd., Gillingham, Kent. [7491

£15.—Young's Motor Attachment on gent's strong cycle, perfect.—King, Egrove, Oxford. [8254

SIMPLEX Power Unit, complete, never been used, cost £24; best offer.—Yardy, 417, Chatsworth Rd., Chesterfield. [7833

LADY-BACK Chater-Lea tandem, Walls' anto-wheel attachment; £20; seen by appointment.—Leeper, 17, Torbay Mansions, Willesden Lane, N.W. [7656

BARGAIN.—Latest pattern Simplex set, clutch, fitted 3-speed Triumph, as new, accessories, fully licensed; £20; appointment.—7a, Clarendon Rd., Southesa, Hants. [8251

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"BURLINGTON" No. 2 touring body complete with apron.

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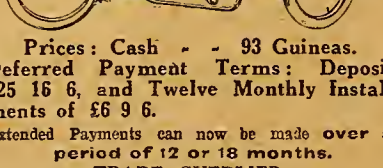
Trade supplied.



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Wires: Burlington Motors, Clapham.
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COUPE windscreen, combined windscreen, hood, apron, only screen with back protection, will completely enclose passenger, write for folder.—Below.

PHACE Screen, only efficient screen in existence for solo protection, equally effective for side passenger. See illustrations *The Motor Cycle*, June 1st (page lxx), June 8th (page 763); price 15/6, sent 7 days approval.—Below.

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RENNOC Sidecar Bodies, actual manufacturers, 35 models, also several clearance, cheap to clear.

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COLLINS and Son for coachbuilt bodies, all models in stock, from lightweights to 2-seater.—Below.

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£4/17/6.—250 Douglas type, bulbous backed, and locker under seat, brand new, bodies upholstered in rexine; £4/17/6 each; owing to contract, we have bought right, to sell right; they simply require a finishing coat to complete; photo sent on request and stamp. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [2590

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SANDUM (V-shaped) Wind Screen.—Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

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200 MILE Sidecar Race, Davidson first, riding Indian with Middleton spring wheel sidecar; Le Vack second, riding Zenith-Jap with Middleton spring wheel sidecar.

MIDDLETON'S undertake repairs of all kinds; trade inquiries invited.

MIDDLETON'S, London's oldest established sidecar makers, 27, Stroud Green Rd., Finsbury Park. 'Phone: Hornsey 1584. [0522

1921 Swan Sports fit Sunbeam, black or blue; cheap —Pinkhurst, Billingshurst. [665?

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RITUBE Chassis, constructed of steel lugs, straight steel tubes, with welded joints.

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DOUGLAS Sidecar Chassis, require repairing; 25/- each.—33, Hackford Rd., Brixton. [8568

AMBER.—Semi-sports Model, £17/10.—Bright and Hayles, 78, Church St., Camberwell.

AMBER.—Tandem Models; £25.—Bright and Hayles, 78, Church St., Camberwell, London. [8084

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IDECAR, equal new, 4 point Dunlop, suit 3½ to 6h.p.; £10.—76, Dalling Rd., Hammersmith. [7947

IGHTWEIGHT C.B. Sidecar, suit 2¾h.p., new; £12/10.—Crampton, 85, Paulet Rd., Camberwell. [8185

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UNHILL Sidecar, as new, cost £26; £24, or nearest offer.—22, Whittlegstall Rd., S.W.6. [7497

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OACHBUILT Sidecar Body, new, shop-soiled, upholstered rexine; £5.—187, King's Cross, Lon- [8319

OACHBUILT Sidecar, cost £20, bulbous, off B.S.A.; sacrifice, £12.—Parker, 57, North St., nford. [7578

OOTHS Blackpool Bargains.—Limited number, new coach bodies, full size, with locker, £5/17/6; ally £9/10.

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ANOELET Sporting Sidecar, perfect fitting, complete, good tyre; £6/10.—Carr, Silverdene, Llandod Wells. [8262

PECIALLY-BUILT Large 2-seater Sidecar, with hood, Easting, cost £45; offers.—Dakin, Hairsser, Matlock. [7528

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SPORTING Canoelet, excellent condition; £12; seen on Norton, fit Triumph, Sunbeam.—P.D., 58 Woodfield Rd., Ealing. [8092

SIDECAR, large, underslung, bulbous, back blue, as new throughout; 12gns.—12, Cornwall Mews Gloucester Rd., S.W.7. [8586

GREY Wicker Sidecar, with chassis and wheel, complete, in perfect condition; £6 or offer; week-ends. —23, Shirlock Rd., N.W.3. [8043

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SPORTING Canoelet, good condition, apron, windscreen, tyre, new, off Triumph; £11.—Henri Rotsnert, 43, Fitzroy St., W.1. [7712

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SIDECAR Chassis, several designs; trade supplied.—W. H. Rodham and Co., Manufacturers, Stratford St., Camp Hill, Birmingham. [6258

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EXTENDED Payments accepted for sidecars; models for all makes.—Send for catalogue, etc., Rideezi Sales, Ltd., 5, Victoria St., S.W.1. [0829

GLORIA, 1921, off Triumph, Cameo, electric light-quick, detachable fitting, cost over £40; accept £20.—3/197, Park Rd., Aston, Birmingham. [8151

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RENNOC Co. again ask you to send for their catalogue, the most comprehensive issued by any manufacturers.

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20 SIDECAR Chassis, Mills-Fulford, for P. and M., complete less tyre, £2/10; Douglas chassis for 4h.p., less tyre, £4.—272, Green St., Forest Gate. [5042

MONTGOMERY Sidecar for 7-9h.p. Harley, new condition, £12; Swan R34 for Zenith, as new, £15.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [8610

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COLLINS and Son will take your present sidecar in part payment of any model; a few second-hand sidecars in stock.—Collins and Son, rear of 84, High St., Putney, S.W. [6200

SIDECARS.—Scott, ex-W.D., £5; Canoelet, off B.S.A., £6; Millford chassis complete, £5; seen Saturday afternoon.—Kennard, 78, Yerbury Rd., Holloway, N.19. [7644

P. and M. Sidecars with new £12 bodies, chassis stoved enamelled, all fittings, take Dunlop tyre, £11/10; two second-hand, complete, £8; on approval against cash.—55, St. James Rd., Bermondsey. [7932

SIDECAR ATTACHMENTS.

SIDECAR.—Have a Hopley folding sidecar. Saves garage worry and expenses. Attached to motor will go through passage 28in. Tandem and single bodies fitted.—Hopley.

FOLDING Sidecar.—When ordering your motor specify a Hopley folder. Suits motors up to 10h.p. Can be changed from pleasure to commercial in few seconds. Detachable wheels can be fitted. Tested 7 years.—Hopley, Upper Highgate St., Birmingham. [0152

LANCASTER Sidecars.—Superb coachbuilt sidecars complete from 14 gns.; bodies only from 4 gns. A good selection in stock. Call and inspect.—The Lancaster Motor Co., 158, Norwood Rd., West Norwood, S.E.27. 'Phone: Streatham 2541. [3328

SPECIAL Purchase.—Manufacturers' stock to be cleared at unheard of prices (stock soiled). Complete sidecars with coachbuilt body, tyre and fittings, £11/10; coachbuilt bodies, £3/10; limited quantity; cannot be repeated.—Bastones, 228, Pentonville Rd., King's Cross, London, N.1. [7342

DORWAY Folding Sidecar, saves garage. When folded (10 seconds) combination passes through 28in. doorway. Ordinary unnoticeable appearance when open, no freakishness; demonstration any time. Send for full description.—Retail agents, Frank Whitworth, Ltd., 139, New St., Birmingham. [6064

PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0388

OLD Man Hep. has 1,000 Douglas underslung chassis, renovated and complete, to suit all makes of machines, for £5; or fitted with a brand new Douglas type hulbons backed body, for £10/10 (these bodies are upholstered with good quality Rexine, but require a last coat of paint); this has been left for travelling on rail; send for photo, enclosing stamp. We cannot be beaten for our prices. 'Phone: 1958 Brixton. (See Body column.)—19, Wilcox Rd., South Lambeth, London, S.W.8. [2591

RUNABOUTS AND CYCLE CARS.

MORGAN Runabouts.—Below.

MORGAN 1922 de Luxe, finished red, Anzani engine, air-cooled; £180.—Maudes'.—Below.

MORGAN 1922, Grand Prix, water-cooled, special overhead valve J.A.P. engine, finished dark red, disc wheels; £193/10.—Maudes'.—Below.

MORGAN 1922 Grand Prix, standard model, finished blue, acetylene equipment; £180.—Maudes'.—Below.

MORGAN 1922 Grand Prix, water-cooled Anzani engine, acetylene lighting, finished red; £185.—Maudes'.—Below.

MORGAN 1922 de Luxe model, Precision engine, air-cooled, acetylene lighting; £175.—Maudes'.—Below.

MORGAN 1922 Popular model, acetylene lighting, air-cooled, Precision; £150.—Maudes'.—Below.

MAUDES' Motor Mart have all these above models actually in stock at their London depot, 100, Great Portland St., London, W.1. Museum 7676. Motor cycles or the like accepted in part payment. [8450

MORGAN Runabouts, new Grand Prix and Popular models in stock.—Moss, Wem. [7390

BEDELIA.—The new 1922 model 8-10h.p., air-cooled or water-cooled to choice; immediate deliveries.

BEDELIA.—Air-cooled model £185, water-cooled model £195; side-by-side armchair seats, 3 speeds and reverse, 5 detachable wheels, hood, screen, lamps, tools, jack, and pump included; trial free.

BEDELIA.—Cash or easy terms. Your old car or motor cycle taken part payment.

BEDELIA.—Catalogue free from L. N. Palmer, sole concessionnaire for the British Empire, Palmer's Garage, Tooting. [8539

MORGAN 1921 de Luxe Model, w.c., M.A.G., Lucas dynamo lighting; £152/10.—Elce, Ltd. (below).

G.N. 1920 Standard Model, finished blue, dynamo lighting, spare wheel; £132/10—Elce, Ltd. (below).

CARDEN 1921 7h.p. 2-seater, electric lighting; £67/10.—Elce, Ltd. (below).

A.V. Monocar, 1920, 5h.p. J.A.P. engine; £67.—Elce, Ltd., 13, 15, and 16, Bishopsgate Av., Camomile St, E.C.3. 'Phone: Avenue 5548. [0073

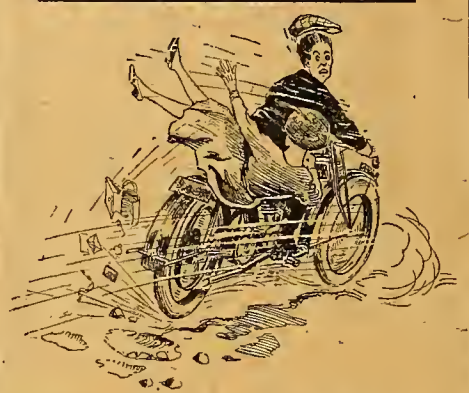
G.N., tonring model, immediate delivery; £225.—Ratcliffe Bros., 200, Great Portland St., W. [4396

MORGAN 8h.p., J.A.P., equipped, licensed; 50 gns., no offers.—35, Marlow Rd., Anerley, S.E.20. [8206

A.C. Sociable, 2-seater, wheel steering; £50, or nearest offer.—Clog Iron Works, Bamber's Yard, Preston. [8329

BLERIOT WHIPPET, 1920, electric lamps, excellent condition; £69.—10, Baronsmead Rd., Barnes. [8286

SIDECARS



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RUNABOUTS AND CYCLE CARS.

MORGAN, 10h.p. M.A.G. air-cooled disc, fully equipped; £186; immediate delivery.—Gibb Gloucester. [755

MORGAN, 10h.p., M.A.G., water-cooled, purple, full equipped; £193/10; delivery from stock.—Gibb Gloucester. [755

1921 Bleriot Whippet, dynamo lighting; £85; exchange combination.—24, Balliol Rd., North Kensington. [818

CARDENS, J.A.P. racing engine fitted, Mabon, £45 offers; exchange motor cycle.—Bell, 80, Cotteri Rd., Surbiton. [475

TAMPLIN, late 1920, perfect, drive 100 miles t purchaser; nearest £70.—Seen Longford an Hicks, Ross-on-Wye. [811

MORGAN.—New 1922 Models in stock.—Agents Birkenhead Motor Works, Old Bidston Rd Birkenhead. 'Phone: 2047. [238

A.V. Monocar 6h.p., specially equipped, tyres un punctured, and £25 cash, for best Morgan offered —76, Cromwell Rd., Luton. [825

BLERIOT WHIPPET, 1921, reverse, £50 extras £100; exchange late combination.—O.G., 59 Scholefield Rd., Upper Holloway. [858

1921 G.N., brand new, shop-soiled, dyoamo lighting speedometer; £180.—Shepherd and Co., Enfiel Highway. Tel.: Waltham Cross 31. [754

A.C. Humberette, in excellent condition; £70 modern lightweight or Trinmph part exchange —111 Morton Terrace, Gainsborough. [764

1921 Morgan de Luxe, M.A.G., water-cooled, speedo meter, small mileage; £140.—Hillier (side bell) 9, Wallingford Av., North Kensington. [822

MORGAN.—Late 1920, M.A.G., Grand Prix equipped and licensed, perfect; £132.—R. H Clark and Co., 7, Exhibition Rd., S.W.7. [860

A.C. Sociable, good condition and running order recently overhauled, lamps, speedometer, etc trial; £50.—64, Park Rd., Dulwich, S.E.21. [776

A.C. Sociable, hood, screen and speedometer, Bosch magneto, fine running order; £25, bargain.—Lambert Engineering Co., Northolt Rd., Harrow. [758

8h.p. Runabout, 2-seater, 3-wheeler, wheel steering chain drive, 3 speeds, hood, screen, lamps; £60 or nearest.—111, Green Walk, Crayford, Kent. [782

1922 Superb 3-wheeler, 8h.p. J.A.P., 3 speeds; ap trial; low mileage; nearest £95.—Wanted, light weight motor cycle.—121, Leicester Canseway, Cov entry. [874

1921-22 De Luxe Morgan 10h.p., water-cooled M.A.G. engine, every possible accessory, mileag 800; cost £215; accept £155.—24, Balliol Rd., North Kensington. [819

1920 Coventry Premier, spare wheel, tyres as new Watford speedometer, done up in yellow and black; a real bargain, £160, or best offer.—7, Moyer Rd., Leyton. [748

NEW and Second-hand Light Cars and Cycle Cars all makes; good selection in stock; cash, eas payments, or exchange.—Service Co., 292, High Hol born, W.C.1. [067

1921 Carden 2-seater, electric lighting, tyres perfect hood, screen, perfect order; £70; exchange —Homac's, 243, Lower Clapton Rd., N.E. 'Phone Dalston 2408. [851

2-SEATER Trumbull Light Car, detachable wheels, lat model, running order; £80; exchange combinatio or solo and cash.—4a, St. John's Wood Rd., Maida Vale London, N.W. [873

CARDEN 2-seater 1921, fully equipped, hood, screen lamps, tax paid; £77/10; ready to drive away motor cycle as part payment.—Wanchope's, 9, Sho Lane, London. [867

1920 8h.p. A.V. Monocar with dickey, speedometer electric lighting, Klaxon, guaranteed perfect con dition; £55.—86, Church Rd., Upper Norwood, S.E.19 'Phone: Sydenham 2363. [809

COVENTRY PREMIER 4-wheeler, dynamo, speedo meter, spare wheel, condition good throughout taxed for year; £165.—James, c/o Bradmores, 462 Harrow Rd., Paddington. [871

1920 G.N., standard model, dynamo lighting, spar detachable wheel, good tyres, taxed to Decem ber, owner bought 1922 G.N.; £110.—Olphert, 66 Church Rd., Barnes, S.W. [605

BAYLISS-THOMAS 1922 10h.p. Model, 4-cylinde water-cooled engine, 3 speeds, Magdyno; 30 gns.; immediate delivery.—Godfrey's, Ltd., 208, G Portland St., London, W.1. [073

1922 Morgan Popular, £150; Grand Prix, £180 8h.p. Rover, £220; in stock for immediate delivery easy payments only 4% extra.—The Premier Motor Co Aston Rd., Birmingham. [077

COVENTRY PREMIER, 1922, latest model, brand new, just arrived, trials and tuition free; £23 cash or easiest of easy payments.—Wilkins, Simpson opposite Olympia, London. [776

HUMBERETTE, w.c., 8h.p., 1914, 3-speed and re verse, licensed and insured for the year, spar tyres, etc., good condition; £75.—Longman Bros., 17 Bond St., Ealing. Tel.: 689. [862

RUNABOUTS AND CYCLE CARS.

6 GNS.; exchange, cash either way.—Buckingham 1914 streamline 2-seater, 8h.p. twin, water-pled, hood, screen, lamps.—Seabridge, Hansler Rd., st Dulwich. Sydenham 2452. [6941

1919 Morgan Runabout, Grand Prix Aero Model, M.A.G. engine, electric side lamps, acetylene ad, tax paid; £115.—W. T. Dunn, Ltd., 326, Euston l., N.W.1. 'Phone: Museum 5391. [8352

1921 Temperino 2-sealer, hood, screen, 5 wheels, acce-sories unregistered (demonstration model), scratched; £100; exchange electric Harley com-nation.—89, East Hill, Wandsworth. [8341

CYCLE Car, 3-wheeler, 2-seater, perfect order, £28; also new light car chassis, with springs, £3/10; other, with 4 wheels, £6; write appointment.—R. Hall, Hookman, Whetstone, London. [7632

NEW HUDSON 3-wheeler, 1922, tax paid, M.A.G. engine, dynamo lighting, spare wheel, electric and lh horns, hood and cover, screen, etc.; £190.—ner, "Carlton Dene," London Rd., Ewell, Surrey. [8638

A.C. Sociable by the A.C. Company, dependable runabout, take 2 persons anywhere, good condi-n and appearance, hood, screen, lamps, etc.; bar-in, £40; trial.—29, Alsop St., Upper Baker St., ndon, N.W. [8169

COVENTRY PREMIER 4-wheeled super runabout, 8h.p. water-cooled, spare wheel, dynamo, fully sured, etc.; £230. Motor cycles, etc., taken in part change; instalments if desired.—Frank Whitworth, d., 139, New St., Birmingham. [6063

h.p. Coulson 2-seater Cyclecar; brand new, beau-tifully equipped, windscreens, hood, Smiths, eedometer, clock, D.A. lighting; sacrifice for quick e, £95; absolute bargain; year licence.—27, Wandle l., Wandsworth Common, S.W.17. [8429

8 GNS.—A.V. Monocar, with dickey seat, J.A.P. engine, 2-speed gear, lighting set, Klaxon, adscreen, sporting appearance, painted red, black idguards, reliable, fast; exchange considered; £45 919) to £70 (1921).—A.V. Specialist, 103, Castle-u, Barnes. [8710

1916 Morgan, Grand Prix model, water-cooled J.A.P. Engine, hood screen, discs, all lamps, eedometer; mileage to date only 6,000; in excep-nal condition; £120.—Homac's, Morgan Service pot, 243, Lower Clapton Rd., N.E. 'Phone: Dal-n 2408. [8514

1916 Victor Cycle Car Chassis, 9h.p. Precision en-gine, W.C., V radiator, channel steel frame, 2 eels, reverse, wire wheels, cantilever springs, first-ss condition and good running order, including ge quantity spares; £30.—Oakhurst Lodge, Sylvan ll, Upper Norwood. [8099

1.N., December, 1921, model, detachable wheels, spare wheel, Ace polished aluminium discs, hood, een, speedometer, horn, maker's 6 months' guaran-, perfectly new; £165; maker's price, November, 21, £240; any trial given; room wanted.—Ridgway, oad St., Hanley, Staffs. [7611

MORGAN, C.P., 1914; £75. Morgan, G.P., 1917; £100. Morgan 1918 G.P., magneto; £115. stle 3, 1920; £110. G.W.K., £75. Bayard, £90. ro 1920, £85. De Marcay 1920, £110. Tamplin 19, £65. Warne 1914, £35. Ford 1917, English eater, £160. Reasonable exchanges, easy payments. Railton, Cobham, Water St., off Blackfriars St., nchester. [8433

Spare Parts

MORGAN.—All spares from stock.—Maudes', 100, Gt. Portland St., W.1. [8454

MORGAN Spare Parts Depot.—Spares for all models from stock; list free.—Elce, Ltd., 13, 15, and , Bishopsgate Av., Camomile St., E.C.3. 'Phone: enue 5548. [0074

MORGAN Service Depot.—Officially appointed by the Morgan Motor Co. Overhauls and repairs ecuted. Every conceivable spare in stock.—Homac's, 3, Lower Clapton Rd., N.E. 'Phone: Dalston 08. [8516

TAXI-COMBINATIONS AND CABS.

"COUNTY" 8h.p. B.S.A. Sidecar Taxis, as licensed throughout the country.—Write for full particu-s, County Cycle and Motor Co., "Originators," 0, Broad St., Birmingham. [5353

CARS FOR SALE.

LUMBER 2-seater, a.c., in running order; nearest offer, £45.—Gamble, 50, Victoria Rd., Margate. [8285

PREMIER Car, 2-seater, perfect running order; £85 or near offer.—109, Beam St., Nantwich. [5800

BABY Peugeot Car, 3 speeds and reverse, dynamo lighting; £70.—Box 2315, c/o *The Motor Cycle*. [8694

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St., ondon, W.1. [0350

WEST Norwood! 60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, est Norwood. [1932

1919 Charron Squad, 4-cyl. water-cooled engine, electric lighting; cost £150; accept £35.—Box 14, c/o *The Motor Cycle*. [8693

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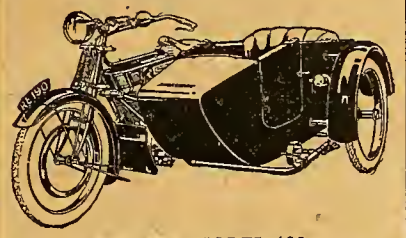
200, GT. PORTLAND ST., W

'Phone—Langham 1791.

Any make of machine can be supplied on our Payment out of Income Scheme. Write for full particulars, and state machine you are interested in.



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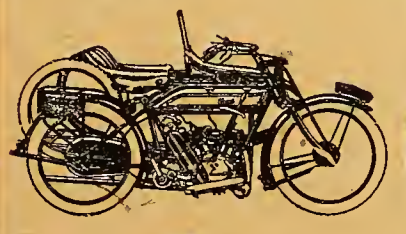

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2¾ h.p.	2-speed	Solo	. .	£68
2¾ ,,	3 ,,	,,	. .	£73
3 ,,	2 ,,	,,	. .	£73
3 ,,	3 ,,	,,	. .	£78
3 ,,	3 ,,	comb	. .	£103
5–6 ,,	3 ,,	solo	. .	£130
5–6 ,,	3 ,,	comb	. .	£165

TRADE SUPPLIED

CARS FOR SALE.

PALMER'S Garage, Tooting.—£35 down and 12 monthly payments £5 secures smart 12-15h.p Panhard landaulet.

PALMER'S Garage, Tooting.—£25 down and 12 monthly payments £5 secures 12-16h.p. Swift limousine, seats 5 inside.

PALMER'S Garage, Tooting.—£25 down and 12 monthly payments £5 secures 2-ton Karrier lorry chassis, new tyres.

PALMER'S Garage, Tooting.—£125 down and 12 monthly payments £10 secures modern 15.9h.p. Swift touring car, dynamo lighting.

PALMER'S Garage, Tooting.—£20 down and 12 monthly payments £5 secures 12-14h.p. Fiat light van.

PALMER'S Garage, Tooting.—£40 down and 12 monthly payments £5 secures 20h.p. Studebaker landaulet, dynamo lihgting, self-starter.

PALMER'S Garage, Tooting.—£50 down and 12 monthly payments £8/10 secures Piccard-Pictet ¾ landaulet dynamo lighting.

PALMER'S Garage Tooting.—£25 down and 6 monthly payments £5 secures excellent Renault taxicab.

PALMER'S Garage, Tooting.—£150 cash secures modern 15.9h.p. Napier covered van.

PALMER'S Garage, Tooting.—£150 cash secures 1914 Unic 2-seater dickey, 4 speeds, dynamo lighting, extra smart.

PALMER'S Garage, Tooting.—£90 cash secures modern 10-12h.p. Belsize light 4-seater, 4-cyl. bloc engine, gate change.

PALMER'S Garage, Tooting.—£60 cash secures 8h.p. Humberette light 2-seater, equipped.

PALMER'S Garage, Tooting.—£40 down and 12 monthly payments £10 secures 30h.p. Berliet touring car, small six.

PALMER'S Garage, Tooting.—£75 down and 12 monthly payments £10 secures 16-20h.p. modern Wolseley touring car.

PALMER'S Garage, Tooting.—£30 down and 12 monthly payments £8 secures excellent Sheffield-Simplex ¾ landaulet.

PALMER'S Garage, Tooting.—£40 down and 12 monthly payments £5 secures 15h.p. Maxwell sporting 2-seater, disc wheels.

PALMER'S Garage, 187, High St., Tooting, will accept your old car or motor cycle as part payment for any car in stock. For cash price deduct 10 per cent. from above totals. [8538

ROVER Cars.—The famous 8h.p. model in stock, £220; for immediate delivery.—Eagles and Co., 275, High St., Acton, London. [0761

COVENTRY PREMIER, 1922, 4-wheel model: £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

HAND 10h.p., 4-cylinder, water-cooled, dynamo lighting and starter, double dicker; £300.—Ratcliffe Bros., 200, Great Portland St., W. [4398

ROVER, 1922, brand new 8h.p., trials and tuition free; £220 cash, or easiest of easy payments.—Wilkins, Simpson, opposite Olympia, London. [7759

CALCOTT 11.9h.p. 1920 2-seater, double dickey, lighting and starting, tax paid, good condition; £320.—Kersey, Gt. Central St., Marylebone. [8581

SUNBEAM 14-18h.p. 3-seater, spare wheel, good tyres, hood, screen, lamps, speedometer, splendid order, tax paid; £95.—23, Sydney Rd., Enfield. [7769

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash, deferred payments 4% extra.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0729

£35.—2-seater Darracq 1912 10h.p., hood, screen, Stewart horn, lamp, smart, good order; bargain.—W.J.C. Motor Exchange, Addison Av., Holland Park, W.11. [8474

8-10h.p. Clyde 2-seater Car, White-Poppe engine, hood, Stepney, recently overhauled, repainted, perfect order, photo; £60.—Johnson, 65, Princess Rd., Leicester. [8369

ROVER 1922 Model de Luxe 8h.p., brand new, trials and tuition free; £245 cash, or easiest of easy payments.—Wilkins, Simpson, opposite Olympia, London. [7760

HALIFAX.—1922 B.S.A., Calthorpe, Coventry Premier, Lagonda, and Rhode. Latest models. Cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [8649

2-SEATER Belsize, 1913, first-class running order, owner driven; £85; a bargain, as owner is buying larger car.—Write "E.G.," c/o Charles Barker and Sons, Ltd., 31, Budge Row, E.C.4. [7731

G.N., 1922, Touring, £225; All-Weather, £250; fully equipped; inspection and trial invited. Deferred payments arranged. From Agents and Showrooms, 222, Gt. Portland St. Museum 2271. [1629

BEDFORD Buick 15h.p., interior drive, 3-speed, reverse, electric light, upholstered Bedford cord, excellent condition, perfect; £95; exchange electric Harley combination.—89, East Hill, Wandsworth. [8342

OCCASIONAL COMMENTS.

By IXION.

Proportionate Lubrication—As It Was.

SO long as I oiled by drip feed or hand pump, my varying of the oil supply was necessarily rather casual. Like most men, I worked chiefly by mileage. I saw that the pump was emptied every five, seven or ten miles according to the size of the engine and its load, working by the speedometer, the milestones, or my knowledge of the route, as the case might be. Every now and then I found myself in exceptionally severe country, and injected an extra pumpful now and then by pure guesswork, as the gradients impressed me or I chanced to notice a hottish smell from the engine or heard a conk when the engine picked up on top gear. I always knew that this rule-of-thumb system was wasteful. Accurate it could never be, for the data were too slender. Niggardly I would not let it be; it is cheaper and easier to decarbonise than to fit new bearings.

And As It Is.

NOWADAYS I use a mechanical pump, which automatically varies the feed of oil in relation to engine speed. There is also a rough variation in relation to engine load, since a heavy load compels a change of gear, and a gear change makes the revs. tower at once. So simple a fitting does not, of course, result in absolutely accurate lubrication. There is a maximum-minimum adjustment lever on the pump. I set this to the best of my judgment for normal running, and I reset it for abnormal running, e.g. when I climb Tornapress or indulge in an early morning scrap. But there is a giant advance towards accuracy. I notice two particular novelties since I fitted the mechanical pump. The first is that in genuinely hard work a tank of oil lasts ever so much longer than it used to do. After all, few men are precise enough to watch a speedometer closely all day long. Some riders don't carry a speedometer at all. Some roads have no milestones. Lots of our mileage is done without route cards. Under all these circumstances I have evidently given my engine 50 per cent. more oil than it actually required, as a cheap form of mechanical insurance. Secondly, I notice that when my pump is correctly set for normal running at easy touring speeds, the ration is absurdly large for local pottering. Living in the country, I do a good deal of lane work at perhaps 15 m.p.h., the surface and corners forbidding a more popular pace. At the touring setting of the pump, the engine smokes furiously under these conditions.

The Defects of a Mechanical Pump.

I SHALL never go back to the drip or the hand pump, but my ideal is still to seek. In the first place, I want a mechanical pump incorporated with my engines, and situated where it is proof against accidental blows. Secondly, I shall not rest fully satisfied with a pump which makes demands on my intelligence so often as the current type. My riding may be divided under four heads:—

(1) Local pottering at under legal limit.
(2) Easy touring at an average of 20-25 m.p.h.
(3) "Scrapping."
(4) Heavy climbing.

The obvious solution is that the pump adjuster should be coupled up to the throttle, so that whenever the throttle is opened beyond a certain degree (say, that opening which gives 15 m.p.h. on the level), the throttle should "pick up" the pump lever, and increase the feed, a spring returning the pump lever as the throttle is shut down. I can easily fix this up on my own mounts, but I fancy the trade will be reluctant to market it, for fear of duffer owners muddling the adjustments.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Occasional Comments.—

Variation with Engine Speed.

IT may prove—when we all possess more experience in handling such pumps—that a feed which varies with engine speed fills the bill. Such a principle was hopeless in the days of single gears, for an engine speed of so many r.p.m. might imply either easy running on the flat with a shut throttle or slow slogging up a hill on full throttle. To-day the gearbox eases that special difficulty. But there is still a considerable difference between 2,000 r.p.m. on the flat on top (say, a 40 m.p.h. wind, and 2,000 r.p.m. uphill on bottom (say, a 10 m.p.h. wind). It is really rather ungrateful of me to raise the point; you see, the mechanical pump has relieved me of so much worry that I fall to wondering whether the *entire* burden of lubrication will ever be completely removed from my lazy shoulders. Till then, *hoch* the mechanical pump! I have every reason to know that this item of specification has done much to make the American machines popular, and I advise British makers to consider the point very closely.

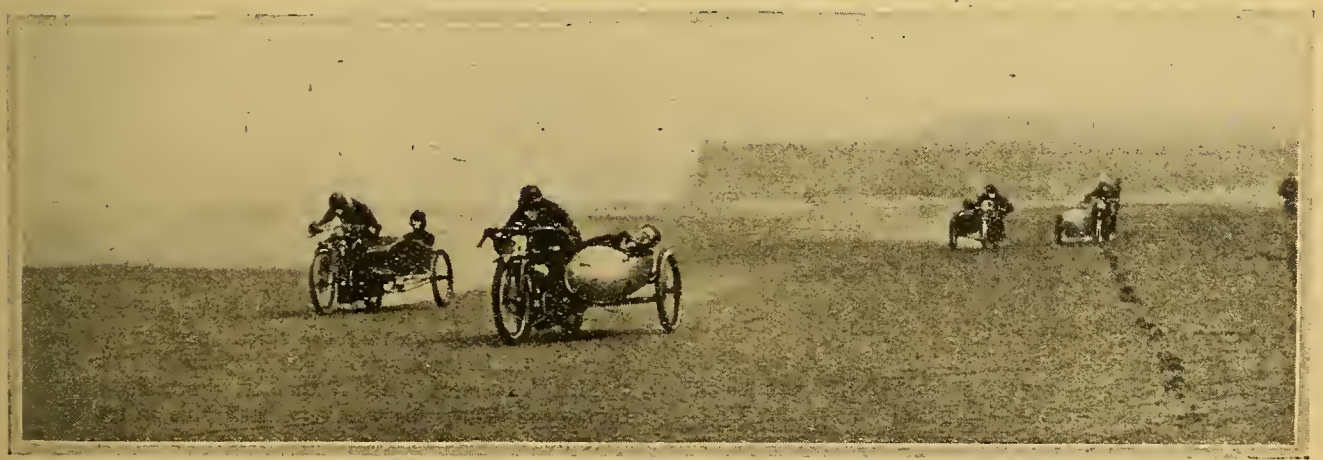
Still Scooting.

BEHIND the scenes the featherweight utility machine for inexpert riders is still quietly developing. At the moment *de luxe* specifications (like the Harper runabout) and hybrid layouts (like the Ner-a-car) enjoy most of the limelight. But *pukka* scooters are still being ridden, and *pukka* scooters are still being made. Naturally, their great asset is extreme lightness. There are people to whom even a 150lb. motor bicycle seems prohibitively weighty, and there can be no doubt at all that if ever a 75lb. machine can be designed to give really good service, it will eventually become a best seller. Oddly enough, people who have never cycled or who have only cycled do not object to the queer steering which a tiny front wheel involves; and this hoodoo is objected to by pure motorcyclists, and apparently by nobody else; I presume that we drive the little ones too fast. The average scooterist without previous motor cycle experience seldom complains of anything except unreliability; and by "unreliability" they generally mean those occasional petty ailments which a motorcyclist takes as part of the day's work—a punctured tyre, a choked jet, and a sooted plug. Nevertheless, the scooter designer is rather up against it when he is asked to provide a plug that can't soot, a jet that can't choke, and a tyre that can't puncture within a weight limit of 75lb. or so. I believe that some day we may see a super-miniature selling in thousands; but as yet they can hardly satisfy people who obstinately refuse to study the elements of their simple mechanism.

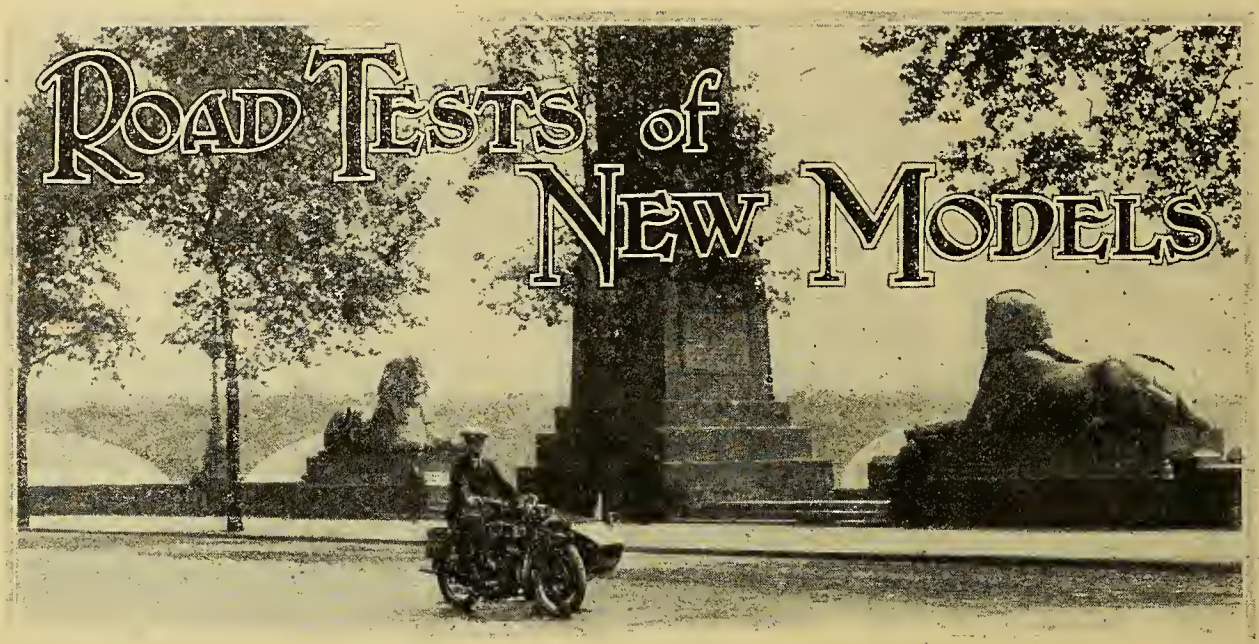
Less Noise, Please.

I HAVE never seen eye to eye with those who hold that a motor cycle should proceed with the inaudible twitter of a Rolls-Royce. But I fully sympathise with the many people who complain of the awful row which many modern machines create. It is only necessary to sleep at any house adjacent to a main road to recognise what an intolerable clatter many current engines make. The sharp crack of the modern machine with high compression and overlap valve timing is one of the most penetrating sounds known to man. Occurring at irregular intervals in sudden crescendos and diminuendos, it is well calculated to banish sleep for the moment; and after all a considerable percentage of the population find sleep hard to woo. Baby two-strokes are among the principal offenders. No real nuisance exists by day; but a night in one of the front bedrooms of the King's Head at Coventry or of any other roadside hotel, will convince any doubter that neither a hard day's work nor a soft pillow will seal the ears against the occasional passage of a 1922 motor-cycle. On Dr. Low's audiometer our exhausts may seem trivial compared to the noise of shunting at a railway station, or of a tram bumping over worn rails. But actually our exhausts are just about the most disturbing sounds in the nocturnal orchestra. I have no great sympathy with penalties inflicted for driving noisy machines in daytime; but I am on the side of the magistrates every time a rider is punished for making night hideous.

YORKSHIRE CENTRE A.C.U. SPEED CHAMPIONSHIPS.



A keen contest on the sand at Saltburn—C. N. Sadler (490 c.c. Norton sidecar) hard pressed by C. P. Wood (532 c.c. Scott Squirrel sidecar). The latter won at a speed of 45 m.p.h.



555 c.c. Four-Speed P. & M. Sidecar and Solo.

SPECIFICATION.

ENGINE: P. & M. single cylinder, side-by-side valves, 81 × 100 mm. = 555 c.c. (rated at 4½ h.p.)
CARBURETTER: B. & B.
MAGNETO: E.I.C.
TRANSMISSION: ⅞ × ¼ in. chains, enclosed.
GEARS: P. & M. four-speed (P. & M. two-speed selective clutch gear combined with two-speed gear box) and kick-starter.
LUBRICATION: "Best" mechanical pump.
TYRES: 26 × 2½ in.
FRAME: Rigid.
FORKS: P. & M.
BRAKES: Front, dummy belt rim; rear, contracting band, pedal operated with ratchet hand lever.
SIDECAR: P. & M.
PRICE: Sidecar outfit, £150, completely equipped (acetylene).

ALTHOUGH their old type "3½ h.p." model was always extremely popular as a sidecar machine, the makers of the P. & M. recognised some time ago that the most sensible way of ensuring it full capability for such work was to fit a four-speed gear box. For 1922 they went a step further and increased the engine capacity to 555 c.c.; and recent experiences on the road prove that the resultant product more than justifies what are in the nature of big departures for a firm which so long remained faithful to its initial designs.

The control of the four-speed 1922 555 c.c. P. & M. is such that even an experienced motor cyclist has to accustom himself to it. Once the handling of the four-speed lever is understood, however, gear changing is delightfully simple, since the declutching of the drive is effected automatically with each change of ratio.

Practical Detail Fittings.

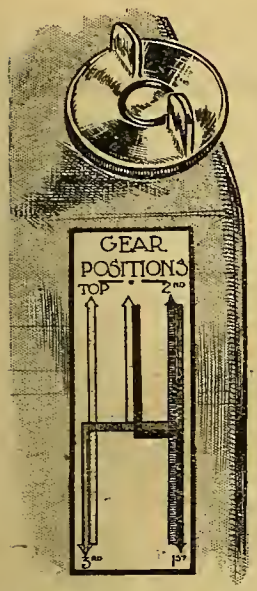
Amongst the features which characterise the new model may be mentioned the front forks, the kick-starter, the large capacity petrol tank, the Best mechanical oiling system, and the ratchet hand brake—all of which are distinctly advantageous. The standard sidecar is both comfortable and ornamental, being well upholstered and providing ample passenger and locker accommodation. The chassis, although rather narrow in track, is strongly built.

On the first machine we tried—the sidecar model—no trouble of any sort was experienced beyond a slight difficulty in starting. In this connection may be mentioned the improved type of kick-starter, which is built on a principle entirely different from the old pattern. It is possible to get a reasonably good "swing" on the engine, and it is quite efficient, but it would be better, perhaps, if the actual pedal were made on a slightly larger scale, so as to enable the foot to obtain a more secure purchase.

During the course of several hundred miles, some under none too easy conditions, the engine itself appeared to be ultra-reliable and amply powerful. The mechanical oiling system, too, worked with absolute regularity and efficiency.

By taking advantage of the gears, the 555 c.c. P. & M. will equal the performance of most 750 c.c. sidecars. For the most part the ratios are sensible, but it seemed to us that the third speed was lower than should be necessary. The drop from "top" to "third" is more marked than is desirable with a four-speed gear; this was very noticeable in traffic.

It would be something in the nature of a revelation to meet, within fifty miles of London, anyhow, the hill that the outfit would not take on bottom, or even second gear with some ease.



A transfer diagram on the tank acts as a guide to the gear positions, since there is no gate for the lever. The central position is for starting.

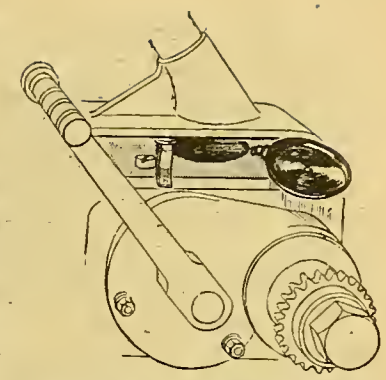
Locking the Brake.

The ratchet hand-brake lever, situated on the right-hand side of the tank and to the rear of the change speed control, is a very convenient accessory, but one must remember to release it before starting! It acts by locking the foot brake. One point, perhaps unimportant, but nevertheless demonstrating that attention to detail which marks the P. & M. throughout, is the design of the petrol and oil tank filler caps. These are of a sensibly large size, and are fitted with wing pieces on the upper surfaces for easy and rapid removal; they are of the "pickle jar" lid type, with screw-expanded leather washers, and effectively prevent any leakage. In fact, during our trial, a point was made of filling up the tank to full capacity in order to test this feature, and the result was extremely satisfactory.

The riding position proved to be well planned, and long-distance journeys were undertaken without experiencing strain. The springing of the Brooks cantilever saddle deserves a good proportion of praise for this quality, but thanks are also due to the general responsiveness of the front forks: very little road shock is transmitted to the handle-bars. On an average road the outfit may be steered easily with one finger, and at times it is possible to drive "hands off." However, when cornering sharply in either direction, we noticed an inclination to proceed crabwise.

Footboard Comfort.

While it must be confessed that the rider has no desire to execute step dances on motor cycle footboards, greater freedom and consequently greater comfort on long journeys might be obtained from larger footrests.



An inspection cover similar to a contact breaker cap is provided on the top of the P. & M. gear box.

As a Solo Mount.

Later we tried another machine of the same type solo. Perhaps the point that rendered it so attractive was its excellent balance, coupled with the improved saddle springing.

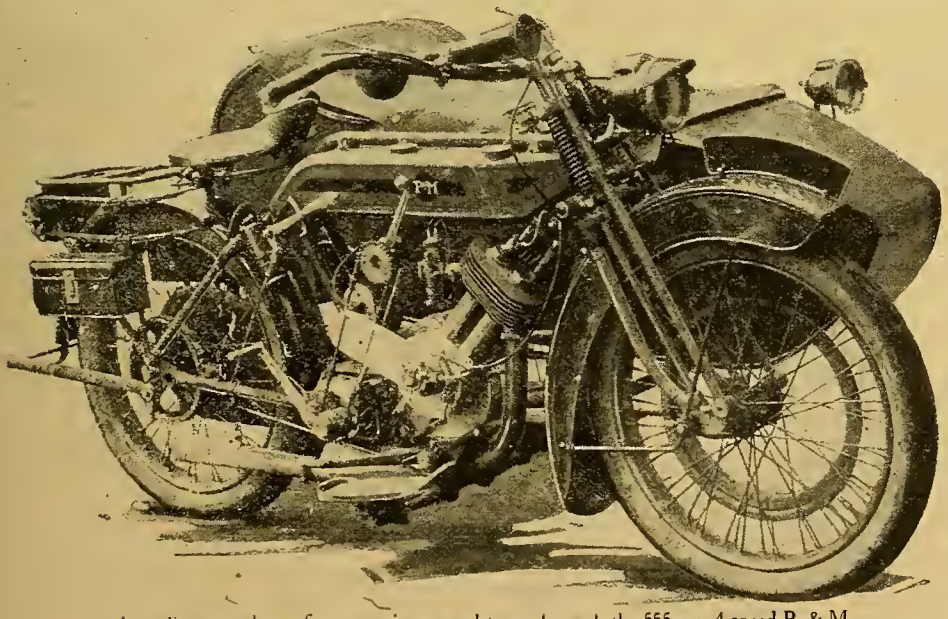
On the average road the absence of any shock or "bumping" is a pleasing feature, and even on wavy and rough surfaces the machine rides very comfortably. Our particular mount happened to be geared for sidecar work, and had about 2,000 miles to its credit before being handed over to us, but, nevertheless, the speed attainable—just 50 m.p.h.—was quite satisfactory, and the acceleration good. The engine itself kept remarkably cool, and was agreeably free from oil around the crank case and timing cover, and the driving chains operated without noise.

Caused by Touring Bars.

Perhaps caused by touring type handle-bars, the same apparent lack of weight on the front wheel was observable when riding solo as with the sidecar outfit. There was a tendency, slight but undeniable, when travelling at speed, for the front wheel to wander a trifle.

Although any rational speed can be obtained when desired, the P. & M. solo is remarkably docile and easy to handle in the thickest traffic. In the busiest parts of London, both on dry roads and on grease, the machine behaved very well indeed, the lively acceleration and carefully constructed brakes contributing largely towards this.

Kop Hill, the scene of the downfall of many excellent machines at various times, was tackled comfortably on "top," despite a loose surface and a rather "spongy" back tyre.

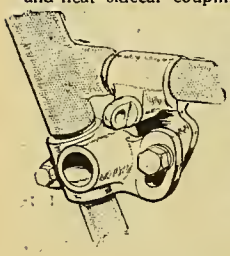


A medium weight outfit, possessing a good turn of speed, the 555 c.c. 4-speed P. & M.

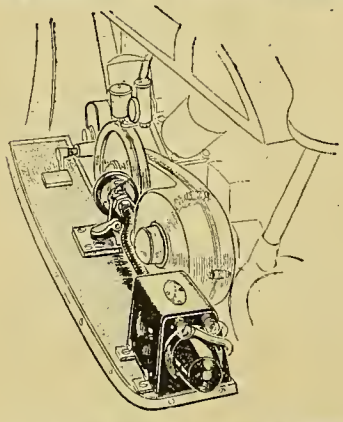
AMONG THE ACCESSORIES

New Sidecar Coupling.

Adjustable to suit any machine, an ingenious and neat sidecar coupling has been devised by Arden and Smith, of Ladywell Walk, Pershore Street, Birmingham. The clips to which the connection is attached grip the lower tank rail and front down tube, making an extremely rigid joint.



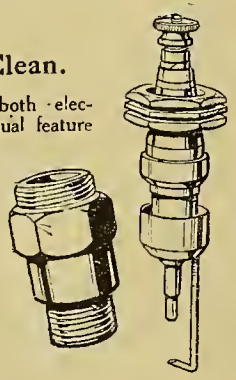
Adaptable Electric Lighting.



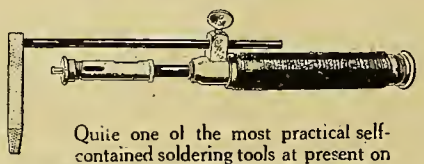
Friction drive from, for instance, an outside flywheel allows the Vale dynamo lighting set to be fitted with a minimum of trouble. Complete with accumulator and well-built head and tail lamps, it is marketed at £12 7s. 6d. by the Vale Engineering Syndicate, 8–11, Brown's Buildings St. Mary Axe. London E.C. 3.

Easy to Clean.

Detachability of both electrodes is the unusual feature of the Sygil plug, which has mica insulation and easily made joints (H. Hainsworth, Ltd. Well Lane. Batley, Leeds.)



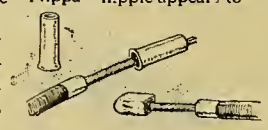
Soldering—Anywhere.



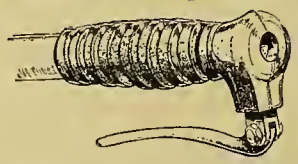
Quite one of the most practical self-contained soldering tools at present on the market is the Wilesmith device. Sold at 10s., it carries sufficient petrol for 20 minutes' soldering and has a convenient, insulated handle (A. J. Wilesmith & Co., High St. Alcester.)

Solderless Bowden Nipples.

Simply a little lead sleeve which doubles the wire up, the "Nippa" nipple appears to provide a very secure fixing for Bowden controls. 12 for 5s. (S. Bottomly, Park Lane. Reigate.)

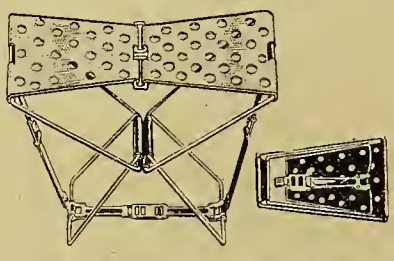


Easily Fixed Rubber Grips.



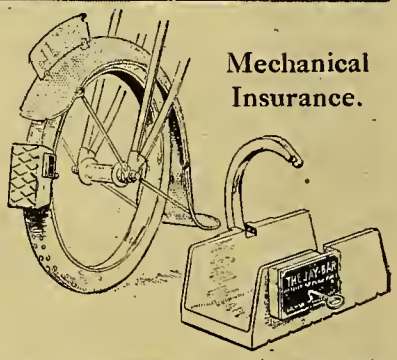
Lloyd "Shock-stop" rubber handle-bar grips may be slipped over inverted control levers without removing them. 5s. per pair. (T. Lloyd, 12, Bridge St., Manchester.)

Metal Folding Seat.



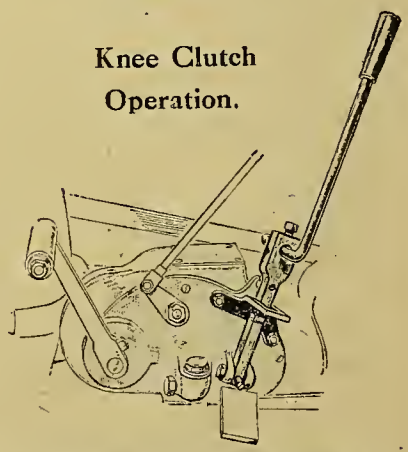
Strong and light, the Grigg folding seat should be of great use for picnics, or as an extra sidecar seat. It folds up into such a small space that it can easily be carried in a sidecar pocket. 10s. 6d. (The Grigg Motor & Engineering Co., Ltd., Winchester Works Winchester Road, Twickenham. Surrey.)

Mechanical Insurance.



Short of changing a wheel the motor cycle thief would find some difficulty in making away with a Jay-Bar locked machine. 15s. 6d. (The Jay-Bar Manufacturing Co. 14-16, Maidenhead Court, Aldersgate Street London, E.C.1.)

Knee Clutch Operation.



Worked by side-ways pressure, this clutch control is made for 1921 type B.S.A. gear boxes; the handle-bar control is retained. (W. B. Corah The Garage, Staple Hall. Northfield, Birmingham, and The County Cycle and Motor Co. Broad Street. Birmingham.)

Useful Extras for the Pillionist.

7s. 6d. invested in a pair of Eversure footrests ensures a good return in comfort and safety for the pillion passenger (A. J. Dawson Ltd. Coventry.)

ACTIVITY OF THE CLUBS.

(1) An exciting moment at the Yorkshire Speed Championships held on Saltburn sands. R. T. Cawthorne (490 c.c. Norton sidecar), H. Langman (532 c.c. Scott sidecar), C. P. Wood (532 c.c. Scott sidecar) rounding a corner together. (2) Scottish inter-club team trial. The start for Amulree. (3) R. Brown (799 c.c. A.J.S.) rounding the last bend on Amulree. (4) Austin Light Car and Motor Cycle Club Charity Gymkhana. The "pig to market" race. (5) A speed impression of C. P. Wood (486 c.c. Scott Squirrel) on the sands at Saltburn, and (6) the sporting spirit of the Yorkshireman is exemplified by the crowd that gathered there.

LADIES IN COLONIAL TYPE TRIALS.

Well-known Lady Competitor Defends her Sex. Other Opinions.

We were constrained to remark recently on the unsuitability of certain ultra-severe colonial type trials for lady motor cyclists. Perhaps, naturally, the ladies have taken up arms without much ado, and force us to confess that there are many women who so thoroughly enjoy a sporting trial that their very enthusiasm ensures that they gain a thorough knowledge of handling a two-wheeler on rough going. In some cases these ladies have been noted to shine more brilliantly than so-called expert trade riders of the opposite sex, making up in "pluck" what they may lack in sheer physical strength. Mrs. Janson is one of these, and her views on the question, stated in the accompanying article, are evidently shared by others. It must be emphasised that our original remarks referred only to the most difficult moorland trials, and that perhaps we omitted to call due attention to the fact that comparatively few male motor cyclists are fully qualified to take part in such events.

I REMEMBER reading, not very long ago, an article in *The Motor Cycle*, by "Road Rider," in which he said that his mental state on going North for the Scottish Six Days Trials resembled that of a very young rabbit about to cross the Portsmouth Road for the first time in its life. This description pleased me greatly, chiefly because it struck me as being in reality far more applicable to myself than to the well-tried "Road Rider," who must, at any rate, have known what was in front of him, whereas the rabbit and I had this in common, that we were both venturing forth into the unknown with beating hearts and our eyes starting out of our heads with fright.

But my state of mind on that occasion was joyful anticipation compared with my feelings when invited by the Editor to write an article in reply to the one which appeared in *The Motor Cycle* of June 29th. entitled "Ladies in Colonial Type Trials."

In spite of the abject terror which overwhelms me at the thought of "seeing myself in print" for the first time, I cannot refuse his invitation, because all my fighting instincts were roused by the article in question, not only on my own behalf, but also on behalf of all the other women who ride in competitions, many of whom are both infinitely more experienced and more efficient than I.

Advantage of the Lightweight.

Personally I have always been of the opinion that if a woman enters for open trials she should be able to control and handle her machine at least as efficiently as the average male rider, otherwise she is apt to become a nuisance, and is certainly better employed elsewhere. For this reason I have so far chosen my mounts from among the lightweights, because, much as I should like to feel six or eight horses beneath me, I am by no means sure that I should be able to set them on their feet again if they did happen to fall with me. Moreover, my experience of the spirit of camaraderie which exists among competition riders is such that I feel convinced that if one of my fellow-competitors saw me lying prone beneath a large and heavy motor cycle he would at once get off and come to my assistance, even in a non-stop section; and if this ever happened I should be so overcome with grief and shame that I should hie me to my home and to the humble and arduous push bike.

Fortunately for me, however, that moment has not yet arrived, as I can lift my latest mount, the 247 c.c. Levis, clear of the ground by my own unaided efforts.

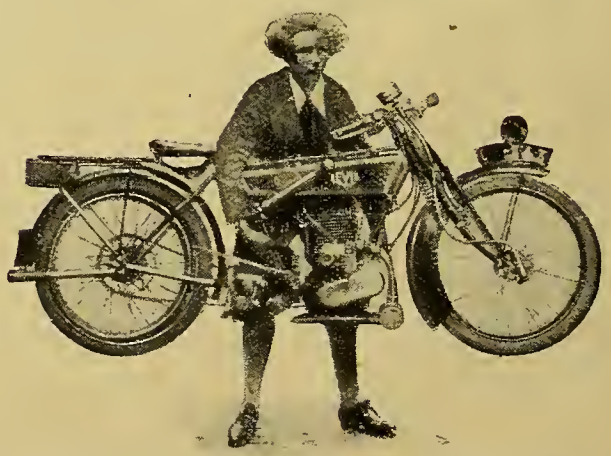
Talking of the Levis, how does the Butterfield firm do it? My little machine is a perfect wonder; it will do 54 m.p.h., anything between 35 and 45 m.p.h. up most main road hills; it is a dream for fast cornering, and is delightful to handle over treacherous surfaces. It has done about 2,000 miles of real heart-breaking work for me now, and has so far given me no trouble. Moreover, there is nothing "special" about it; it is just a standard model.

Stability.

At this juncture I feel that it behoves me to bestow a word of well-earned praise on its present stable companion, the Ner-a-car, otherwise the latter may do what it has never done before and throw me off the next time I ride it over an "observed section." There is no need for me to boast that I can carry it under one arm, because it is too stable to make it necessary.

To return to what was originally intended to be the subject of this article. I am afraid I do not agree that "in open trials of the rougher variety her (the lady rider's) presence is seldom of value from a propaganda point of view." My experience is that to the average member of the public, *i.e.*, to the potential buyer, the fact that a machine can be handled by a woman under severe trials conditions is a sure proof that the said machine must be supremely efficient in every way and capable of being handled by himself to perfection.

(MRS.) G. M. JANSON.



That a lady has no real difficulty in "holding-up" a motor cycle is demonstrated by this picture of Mrs. Janson and her Levis

WHAT OTHERS THINK.

MRS. JANSON is by no means alone in her belief. Several other views on the subject are appended, including an interesting letter from Mrs. O. M. Knowles, another well-known and successful rider of solo machines in all kinds of trials.

Further opinions on the subject are invited from our readers.

Club Trials too Easy.

Sir,—I am not at all sure that the article in your issue last week with the above title was not written as a bait to try and raise our hackles. In any case, I should like to put in a word in favour of my own sex.

Perhaps, from a trade point of view, it may be inadvisable for a firm to enter a machine ridden by a lady in a colonial trial; but what about the private owner who enters for the sport of the thing? For my own part, I am not interested in the "propaganda point of view," and am quite indifferent whether or no the public is edified by my antics "amidst rocks and boulders." I ride solely because a really difficult trial gives me the same pleasure as a stiff day across country on a horse at the tail of hounds. Should we confine ourselves to our own club events, we might find our only "sporting" rides a fifty or sixty mile reliability trial, riding to split seconds on a main road. As to your writer's complaint that a lady caused six other competitors to be baulked on an observed section in a recent trial before she was able to remove her machine after a fall, are ladies the only people who ever offend in this respect? Of course not. In nearly every big trial something of the same nature occurs, and the offender is a man, and if this happens on an observed section the observer is there to register a baulk. I consider everything possible should be done to encourage the lady rider to compete in trials and demonstrate to her sisters that a motor cycle is no more difficult than a car.

(Mrs.) OLIVE M. KNOWLES.

In the Limelight.

Sir,—There are many ladies who do infinitely better than the majority of males over stiff reliability courses, but, unfortunately, there are usually few who enter, as in the Scottish Six Days, and therefore they are very much in the limelight; but many men—not novices—do even worse than the ladies, and no mention is made of them.

This is quite contrary to your favourable criticism of a run early this season when you advised *mere males* to *look* to their laurels.

A B.S.A. RIDER.

Men Sometimes Need Help.

Sir,—A point you have not taken into consideration is that quite a large number of men in trials have baulked their fellow competitors and fallen off in such a manner that they have needed assistance to manage their unmanageable machines.

Considering how few ladies ride in trials, and all of them in the limelight, I think they deserve the highest praise for their efforts, and not adverse criticisms calculated to discourage them and others of their sex who contemplate competing.

SILENCER.

Wallasey.

ONE PASSENGER PER 100 c.c.

A DECADE ago, to attach a sidecar to a 500 c.c. machine was regarded as cruelty to motor cycles, but the general adoption of change-speed gears extended the range of usefulness of this then popular size of engine. Since those days the single-cylinder machine of 500 c.c. and over has developed into the family sidecar of which so many thousands are to be seen on the road.

Economy is the keynote of motor cycling, and as engine efficiency has so greatly increased of recent years it is not surprising that the 350 c.c. type has secured a foothold in the category of practicable sidecar outfits. The term "practicability," however, is very broad and may be interpreted very differently by various persons.

By some it is considered reasonable to expect an engine to be capable of propelling one passenger per horse-power, or, in other words, one person per 100 c.c. capacity. Quite recently I saw a 124 c.c. Skootamota with a miniature sidecar attached, and as the passenger was very young indeed he or she can be regarded as a quarter of an adult. Thus the Skootamota as a passenger machine gave a performance of 100 c.c. per passenger.

A Family Outfit of 225 c.c.

For several years an employee of the James Co. has used a 225 c.c. James lightweight and sidecar as a family outfit, carrying his wife and child, *plus* luggage, on really serious tours. Here again we have 100 c.c. per passenger, counting the juvenile member of the party as one-quarter adult.

Quite a number of 350 c.c. machines are in use as sidecar mounts, but few riders care to carry three adults and a child. It is done, nevertheless, and on a recent Sunday I saw on the Portsmouth Road a Beardmore Precision sidecar with this load, which the machine was arranged to carry, a pillion seat being fitted for the third adult, and a hammock for the child.

On several other occasions I have seen 350 c.c. machines with similar loads, but have always considered that the owners have been inviting trouble, for while *modern engines may be capable of a load equal to one passenger per* 100 *c.c., the frames of all lightweight motor cycles fitted with* 350 *c.c. engines are not made for such loads.* Anyone contemplating using a motor cycle of this size with a sidecar should ascertain whether the frame is suitable for sidecar work.

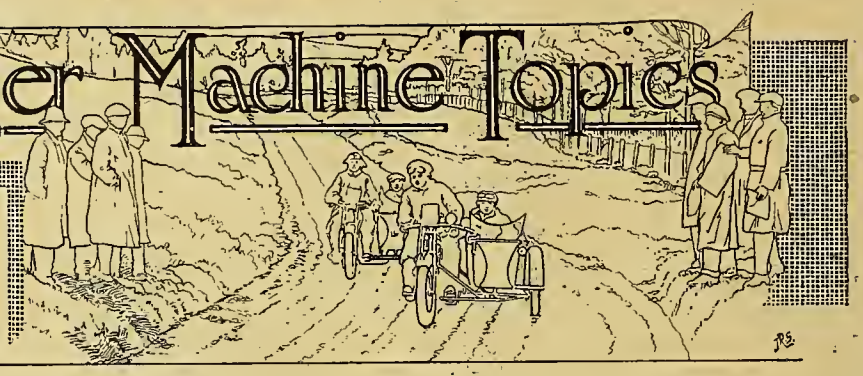
Reverting to the question of 100 c.c. per passenger, when we reach the 500 c.c. class one would not think of regularly carrying five adults while the big twins of 1,000 c.c. are never called upon to propel a load equal to ten persons.

175 c.c. per Passenger.

A little consideration will show that 100 c.c. per passenger is rating even modern engines and frames too high, and 175 c.c. is nearer the line which may be regarded as satisfactory. If we accept this, then no machine under 350 c.c. should carry more than two persons, and even at this a load of over five adults for a big twin of 1,000 c.c. seems too high.

It is difficult to make a rule which applies to every size of engine, for it will be appreciated that, while 350 c.c. sidecars are to-day giving every satisfaction with two persons, as are 550 c.c. machines with three adults, when we double the load we come back to where we were ten years ago and re-commence to ill-treat the motor cycle. The inference to be drawn is that the smaller engines have developed considerably more than the larger, and especially the largest, types.

Passenger Machine Topics



The Pleasures of Buying.

By "FRIAR JOHN."

Capabilities of the Lightweight Sidecar and the Powerful Twin Outfit.

BUYING the first motor cycle is, for the boy in his teens, a great adventure. The excitement of that walk with pater down the enchanted aisles at Olympia, glowing in the knowledge that the edict has gone forth in his favour and that a cheque will be forthcoming at the critical moment, can only happen once in a lifetime. Those are champagne days of existence, full of fizz, with life in front as a great adventure.

There is a gap of many years between that picture and the picture of the married man scanning the sidecars with an eye to accommodating an extra child or two. Still, that is good fun, too; perhaps not such a heady occupation, but one fraught with great possibilities and interest. With the family man, then, I am most concerned: besides, he will be far more willing to take a hint, if the hint be worth taking, than the youth would be. For, of course, in these days no one, if he is wise, advises youth.

Selecting an outfit is no light affair; it is an undertaking to be approached in the right spirit, just the same as when one selects his wines, or the new roses for autumn planting, or even his wife; to get the most enjoyment, that is, out of the affair.

Price is the ruling factor in all purchases. We are, nearly all of us, bound down to a limit, and the adjustment of our desires to that arbitrary sum is the very deuce at times. We would all have the fastest, most comfortable, most fully equipped outfit on the road if we could afford it; because one cannot, one gets the nearest to the ideal, which may be a single-geared, two-stroke sidecar outfit.

I HAVE more than once been asked whether it is better policy to buy new or second-hand. Obviously that question cannot be answered briefly; it depends on one's views. If there is a family to accommodate and the price limit is £60, a new outfit is impossible, whereas it is quite possible to pick up a second-hand outfit for that amount capable of taking a family comfortably—a child on the carrier and one in the sidecar.

A 2¾ h.p. two-stroke outfit can be bought for £75, and one which will prove quite a serious proposition for touring. A few years ago few would attempt to tour in Wales with a light two-stroke sidecar carrying passenger and luggage. But I would not hesitate doing so myself, providing I had a sporting passenger—a passenger who did not require a score of dresses and other paraphernalia piled on the grid.

Awhile ago I tried out a 2½ h.p. Verus outfit for many miles, and was astonished at the high average road speed that could be maintained on the machine with a fairly heavy passenger. I was accompanied by a 1919 A.J.S., the driver of which did not cut down his speed to accommodate me. Certainly this type of mount is admirable for the man who prefers to start motoring with a new machine, yet whose limit is about £70.

THE advantage of the little two-stroke sidecar (on a 4,800 mile season's running) over the big twin is almost 1½d. a mile, counting every cost, and including depreciation and loss of interest. Two-stroke two-speed outfits can be bought at £70 upwards, but they are not meant to accommodate extra passengers. The fitting of a screen, too, should be done with care, as wind resistance is a greater factor against successful work with low-powered machines than is mere weight. In a few years' time, perhaps, 250 c.c. may do as much as 500 c.c. of to-day, but a lightweight is to be treated as the baby it is—a lusty one, truly, when it can average 50 m.p.h. in the T.T., but still an infant and not to be abused. The 350 c.c. two- and four-stroke sidecar outfits are not built to accommodate families; neither the frame of the cycle nor the chassis of these small outfits will sustain abuse for long, but those of over 499 c.c. are case-hardened to abuse. Veterans of this capacity, even ten or twelve years old, still plod along the highway carrying their forty stone of humanity. Old Bradburys issued from the Mint half a score years ago, old Triumphs, ancient Rexes or Humbers with the epicyclic hub gears, their clutches slipping on every hill, and many other makes (all juveniles together ten years or so ago), still are to be seen in the most outlandish places. So it is evident that the modern 500 c.c. type must be capable of almost anything that is required of it.

IN the 499 c.c. size one may spend anything from £100 to £160 for an outfit without accessories. Every type, too, is offered: four-stroke single and twin, two-stroke air-cooled and water-cooled, flat-twin

Passenger Machine Topics.—

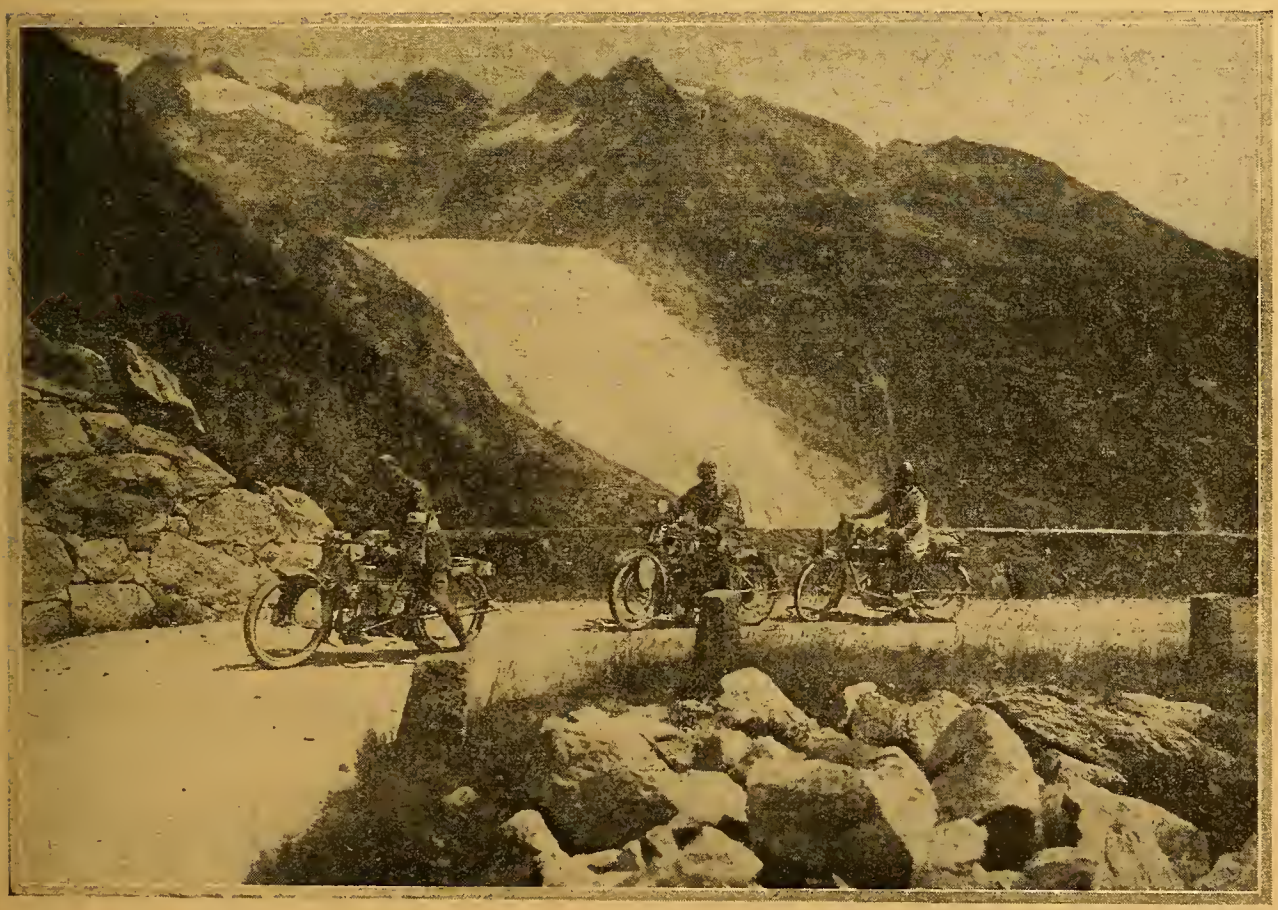
o.h.v. and side-by-side valves. An amazing range of sidecars also is presented by makers to-day.

500 c.c types cost ¾d. a mile less to run than the powerful twin on a 4,800 mileage per year, reckoning depreciation and loss of interest.

Several makers, recognising the popularity of the single cylinder of moderate capacity, have concentrated their efforts in producing a complete outfit to sell in the neighbourhood of £100. These machines are of a type which has long ago proved its suitability for hard passenger service.

WHAT an array of fine outfits there are from which to select when there is no price limit, especially if the question of accommodating extra passengers has not to be considered. This being the case, one can select the fleetest machine and a low sporting body—a body comfortable but offering little wind resistance—and what satisfaction there is in being able to show a clean pair of heels to anything on the road except big cars or "sports solos." To cruise along an ordinary highway at thirty or so with just a whiff of gas, to open out on the open, level road and to take fairly steep inclines at the run without a thought of changing down—these are some of the joys of touring with a powerful twin.

MORE often than not the man who purchases a high-powered outfit has the problem of passenger-carrying to consider—sometimes two, often three, occasionally four extra passengers have to be accommodated. It is a matter of personal opinion and fancy whether the carrier is utilised to accommodate one child, or a double-seated sidecar is obtained. I prefer to take the extra passenger in the sidecar. In fact, if I had to accommodate two children I should endeavour to find a sidecar that would enable me to do so. I have not been confronted with the problem of fitting three children and an adult into an outfit, but this is done frequently and satisfactorily. The various ways and means of accommodating children are many—too many to discuss in this short article. One might suggest this or that to a man seeking advice on this particular subject, then receive a direct contradiction to the advice. For instance, I may suggest to the man who wishes to travel cheaply, yet to accommodate five children and his wife, that he purchases a 10 h.p. machine and taxi-sidecar. The probability is that I receive a retort of this sort: "I have a 3½ h.p. outfit on which I take my family of five children and wife at a total cost of 1½d. a mile. You cannot have had actual experience with five children, or you would not have suggested an expensive outfit such as you have done."



A striking scene on the Col du Grimsel showing the magnificent Glacier du Rhone in the background. This route will be traversed by competitors in the International Six Days Trials, details of which are given on page 56.

SPEED TRIALS ON WESTCLIFF "PROM."

Eastern Centre A.C.U. Open Event Abandoned half-way through owing to rain.

Two-stroke *v.* four-stroke. R. O. Clark (486 c.c. Scott) and E. A. Marshall (496 c.c. Matchless) in the class for solo machines not exceeding 750 c.c.

IT requires very little to amuse the British public on holiday, which is perhaps why such a huge crowd of spectators was attracted on Wednesday of last week to the Eastern Centre A.C.U. open speed trials on Westcliff Promenade.

As a spectacle the meeting was nothing above the average event of its kind—which is not saying much—and even to the motoring enthusiast it suffered from the prevalent malady of the Essex clubs—multiplicity of classes.

Granted that, until a leaden sky fulfilled its ominous promise at about four o'clock, the affair was being run off with considerable expedition, twenty-five distinct motor cycle classes—each sub-divided into four (members, open, time, formula) for the purposes of results—seems to savour too much of providing prizes for everybody. Additionally, by making matters complicated to follow, it robs interest when there is not over-much to start with.

Unfought Duels.

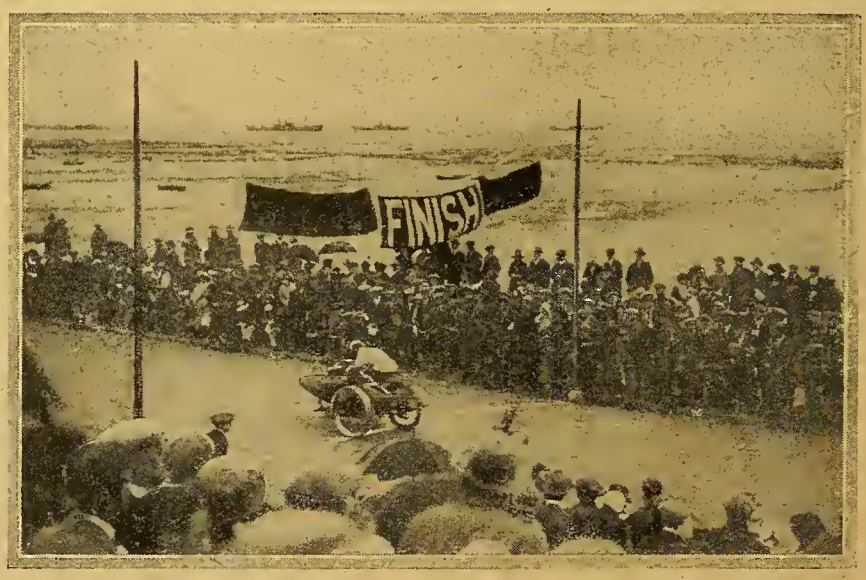
The compulsory curtailment of the trials was particularly annoying, for most of the possible excitement was apparently concentrated in one or two classes which were not run. F. W. Dixon (989 Harley-Davidson), E. Remington (998 Blackburne), and D. H. Davidson (998 Indian) were to have competed in one of the unlimited solo classes, and most people wondered how their times would compare with G. A. Vandervell's (Norton) and S. J. Bassett's on a very special A.B.C. Bassett, incidentally, caused some surprise by beating C. G. Pullin (746 Douglas) in a 750 c.c. class, and he would probably have won more firsts had he permitted his name to appear as frequently in the programme as did some of the others.

Again and again it happened, as may be observed by studying the appended results, that "members" made better performances than those in the open category of the same class. Amongst others to shine in this respect were E. Baldwin (499 Sunbeam), H. Baldwin (499 Sunbeam), W. H. Norris (698 Raleigh), L. F. McCardie (998 Harley-Davidson), L. F. Peaty (349 Hawker), T. B. Hensman (490 Norton), F. R. Cotgrove (349 Sheffield Henderson), P. F. Calcut (494 Douglas).

In the three-wheeler classes E. B. Ware (Morgan) enjoyed a series of walk-overs, a "Reindeer" entered by H. J. Fisher failing to materialise.

Fastest motor cycle time up to the abandonment of the meeting was made by G. A. Vandervell (490 Norton), his figure of 37 1-5secs equalling a speed of 60½ m.p.h. Unless the course measured more than the supposed kilometre, this seems slow, but the flying start was very short.

In one of the 500 c.c. divisions there were a number of riders, mainly amateurs, mounted on various popular



L. F. McCardie (988 c.c. Harley Davidson) crossing the finishing line in the event for unlimited sidecars.

Speed Trials on Westcliff "Prom."—

makes, and as a matter of interest we append the speeds of all :—

490 c.c. Norton, 60.46 m.p.h.
490 c.c. Norton, 53.01 m.p.h.
494 c.c. Douglas, 51.31 m.p.h.
499 c.c. Triumph, 51.31 m.p.h.
490 c.c. Norton, 49.49 m.p.h.
349 c.c. Coventry Eagle, 49.49 m.p.h.
486 c.c. Scott, 49.49 m.p.h.
349 c.c. Hawker (o.h.v.), 48.84 m.p.h.
349 c.c. Weatherell (o.h.v.), 48.00 m.p.h.
490 c.c. Norton, 47.59 m.p.h.
499 c.c. Triumph, 47.59 m.p.h.
248 c.c. New Imperial, 47.59 m.p.h.
248 c.c. New Imperial, 47.39 m.p.h.
490 c.c. Norton, 46.41 m.p.h.
494 c.c. Douglas, 46.41 m.p.h.
490 c.c. Norton, 44.16 m.p.h.
499 c.c. Rudge-Multi, 39 m.p.h.

There is no need to comment on this table except to remark that some riders obviously know more about tuning than others; or that probably the "others" are careless.

After the event a dinner was arranged at the Queen's Hotel, but was not so well attended as might have been.

The time results were as follows :—

STANDARD TOURING CLASSES.

350 c.c. Solo.—Open: 1, S. M. Greening (348 Francis-Barnett), walk-over, 56⅖s. Members: 1, N. A. Lowe (350 Coventry Eagle), 54⅗s.

500 c.c. Solo.—Open: 1, S. M. Greening (348 Francis-Barnett), walk-over, 50⅗s. Members: 1, E. Baldwin (499 Sunbeam), 48s.; 2, H. Baldwin (499 Sunbeam), 50⅕s.

750 c.c. Solo.—Open: 1, S. M. Greening (348 Francis-Barnett), walk-over, 53⅕s. Members: 1, E. Baldwin (499 Sunbeam), 48s.; 2, H. Baldwin (499 Sunbeam), 49⅕s.; 3, W. H. Norris (698 Raleigh), 50⅕s.

Unlimited Solo.—Open: 1, S. M. Greening (348 Francis-Barnett), walk-over, 53s. Members: 1, L. F. McCardie (998 Harley-Davidson), 42⅕s.; 2, W. H. Norris (698 Raleigh), 50s.; 3, H. Baldwin (499 Sunbeam), 51s.

SPORTS MODELS TOURING CLASSES.

250 c.c. Solo.—Open: 1, H. F. Edwards (248 New Imperial), 42⅗s.; 2, S. M. Greening (248 Francis-Barnett), 45⅖s.; 3, C. M. Fairweather (248 Coulson-B.), 46⅕s. Members: Same as open class.

300 c.c. Solo.—Open: 1, E. Remington (349 Edmund-Blackburne), 40⅗s.; 2, F. R. Cotgrove (349 Sheffield-Henderson), 43s.; 3, R. Weatherell (349 Weatherell), 50⅖s. Members: 1st and 2nd same as open class, but 3 L. F. Peaty (349 Hawker), 46s.

500 c.c. Solo.—Open: G. A. Vandervell (490 Norton), 37⅕s.; 2, A. C. Rhodes (499 Triumph), 43⅗s.; 3, J. V. Prestwich (349 Coventry-Eagle), 45⅕s. Members: 1, G. A. Vandervell (490 Norton), 37⅕s.; 2, T. B. Hensman (490 Norton), 42⅕s.; 3, P. F. Calcut (494 Douglas), and A. C. Rhodes (499 Triumph), tied, 43⅗s.

750 c.c. Solo.—Open: 1, G. A. Vandervell (490 Norton), 37⅖s.; 2, A. C. Rhodes (499 Triumph), 45s.; 3, C. G. H. Dunham (490 Norton), 48⅘s. Members: 1, G. A. Vandervell (490 Norton), 37⅖s.; 2, F. R. Cotgrove (349 Sheffield-Henderson), 42⅖s.; 3, P. F. Calcut (494 Douglas), 43⅖s.

Unlimited Solo.—Abandoned owing to rain.

Unlimited Sidecars.—Open: 1, W. J. Barker (1301 Henderson sc.), 50⅖s. Members: 1, L. F. McCardie (988 Harley-Davidson sc.), 47⅖s. (N.B.—McCardie did not enter for the open class.)

ANY TYPE CLASSES.

250 c.c. Solo.—Open: 1, J. V. Prestwich (249 New Imperial-Jap), 47s. Members: 1, J. V. Prestwich (249 New Imperial-Jap), 47s.; 2, C. M. Fairweather (249 Coulson-B.), 47⅖s.

500 c.c. Solo.—Abandoned owing to rain.

750 c.c. Solo.—Open: 1, S. J. Bassett (398 A.B.C.), 38s.; 2, C. G. Pullin (746 Douglas), 39s.; 3, E. A. Marshall (496 Matchless), 42⅕s.. Members: 1, C. G. Pullin (746 Douglas), 39s.; 2, E. A. Marshall (496 Matchless), 42⅕s.; 3, J. Day (490 Norton) 43⅘s. (N.B.—Cotgrove on a Sheffield-Henderson took 42⅕s., but was only entered on formula.)

1,000 c.c. Solo.—Abandoned owing to rain.

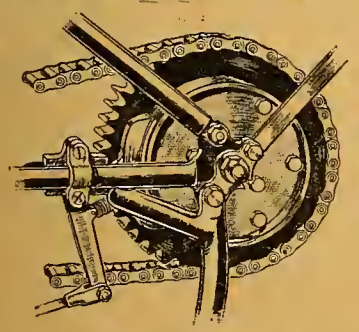
600 c.c. Sidecars.—Open: 1, C. G. Pullin (496 Douglas sc.), 47⅕s. Members: 1, C. G. Pullin (496 Douglas sc.), 47⅕s.; 2, K. Duncan (492 Sunbeam sc.), 49s.

NEW LIGHTWEIGHT SPORTS MODEL.

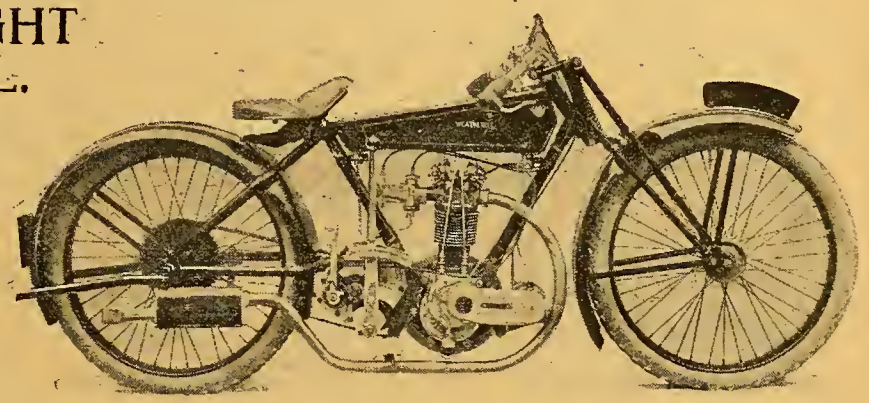
Weatherell Machines with Blackburne Engines; Float Feed Lubrication System.

REALISING the popularity of the 350 c.c. fast touring machine, Mr. R. W. Weatherell has placed on the market one of these which bears his name. The motive power is supplied by a 349 c.c. Blackburne sports engine (71×88 mm.) with overhead valves. Great care has been exercised in the construction of this machine, and it will be noted, on referring to the photograph, that the exhaust pipe is led away with an easy curve in which there are no acute bends, and it finally terminates in an expansion chamber of ample dimensions and a short extension pipe.

Miralite aluminium alloy is used in all cases where aluminium would be ordinarily employed; this is exceedingly tough metal, having a tensile strength of 14 tons. It is used for the magneto bracket, silencer end, and similar purposes.



A simple and effective brake; bolted to the rear sprocket is a steel drum to which a Ferodo-lined shoe is applied; it is brought into operation by a cam action.



Fitted with the Moss gear box, clutch, and kick-starter, and with a well-designed silencer arrangement, which should combine quietness with absence of back pressure, the 349 c.c. Weatherell has many points of distinction.

A feature of the Weatherell is the double top tube, which makes for lightness in construction and stops whipping. Particular attention has been paid to the brakes, which are both of similar design, and consist of a Ferodo-lined shoe applied by means of a cam action to a steel drum—in the case of the rear brake bolted to the rear wheel sprocket.

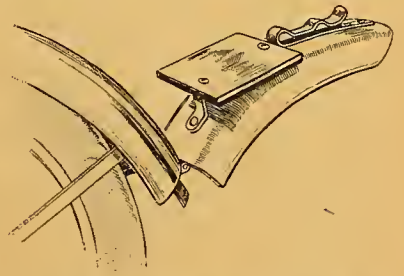
Steel is the material used for the engine plates, and 14 gauge tubing is employed practically throughout the frame construction.

Automatic Lubricating System.

Simplicity is one of the chief points about the lubrication system, that employed having already been described in *The Motor Cycle* under the name of Jebon. It consists of a chamber, containing a float, bolted on to the crank case and communicating with it. This device is also connected with the oil tank and works on the same principle as a carburetter float chamber, maintaining a constant level of about ¼in. depth in the crank chamber.

Other points about the machine are the width of the mudguards and the employment of flat strips as stays, while a considerable portion of the rear guard can be hinged back so as to allow access to the tyre.

Mr. Weatherell, Terrace Works, High Road, Kilburn, London, N.W.6, is shortly placing on the market a 698 c.c. Blackburne twin sports model, which has the same dimensions (71×88 mm.) as the 349 c.c. model just described for each cylinder.



The rear portion of the back mudguard can be lifted up to allow inspection of the rear tyre.

RELIABILITY TRIALS IN THE ALPS.

Details of the International Six Days' Event to be held in Switzerland Early in August.

On the Col du Bruck, the scene of this year's speed hill-climb in the International Six Days Trials.

BRITISH manufacturers and riders have more than a little interest in the International Six Days Trials.

The suggestion that such an event should be held came from this country at a meeting of the International Federation of Motor Cycle Clubs in 1912, and the trials are practically the direct descendants of the old international cup race of 1904. The idea of turning the premier international event into a reliability trial was due to the fact that in 1912 it was felt by all those concerned that greater encouragement should, on the whole, be given to reliability than to speed.

International Trials Before the War.

Since their institution the International Six Days Trials have had a chequered career. In 1913 the event was held in conjunction with the English Six Days and attracted one international entry—from the French firm of Clément, whose machines were found to be quite unsuitable for the Lake District. The next year's event was heralded with every promise of success, and a thoroughly representative British entry was obtained, while many of the riders had actually started for the scene of the trial (Grenoble) when suddenly war broke out and nothing more was heard of the event until 1920. This was too soon after the European turmoil, and only two teams entered—France and Switzerland.

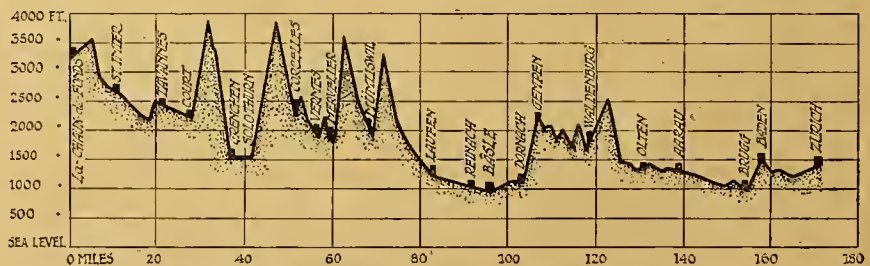
Last year an excellent British team was sent, and it put up a first-class fight, but tyre troubles were the principal cause of its undoing, and the Swiss sportsmen still retained the cup presented for the trials ten years ago by the British Cycle and Motor Cycle Manufacturers' and Traders' Union.

Teams from Five Countries this Year.

It is up to Great Britain this year to wrest the cup from its present holders. France, Sweden, and Italy have already promised to come in and make the event more interesting and give it a stronger international flavour. The trials are held in the country of the cup holders.

Motor cyclists who desire a Continental holiday could not do better than enter this trial, which takes place between August 3rd and 9th, and passes through the most beautiful parts of Switzerland.

Manufacturers also who have any consideration whatsoever for their overseas market can learn much more in this event than in any held in the British Isles. Conditions are totally different; severe gradients are few and far between, but such tests of cooling, carburation, and braking powers occur that do not obtain elsewhere. Such is the opinion expressed by one of our best known riders who took part last year.



Contour of the second day's run, from La Chaux-de-Fonds to Zurich.

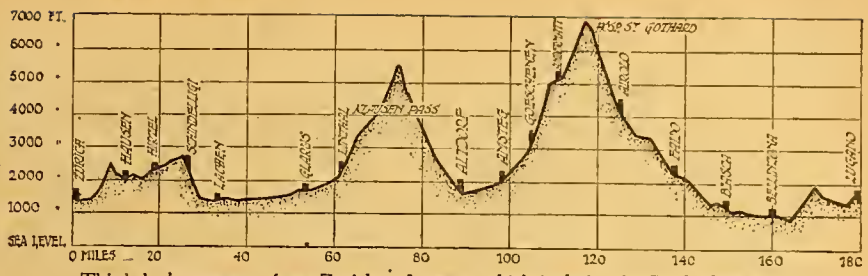
Reliability Trials in the Alps.

A machine suitable for the trials should be capable of climbing a 20-mile ascent with an average gradient of 1 in 20-30 without showing signs of distress, should have good carburation at an altitude of 6,000 ft. above sea level, and must have excellent brakes, as the descents are naturally as long as the ascents, and are often in the form of zig-zags which entail rapid braking on every corner.

Starting from Geneva.

As last year, the trial starts from Geneva, and practically the same route is followed. Geneva is left at 8 o'clock in the morning of August 3rd.

On August 1st and 2nd, when the weighing-in and examination of machines will take place, there will be important festivities in the town of Geneva in connection with the various aeronautical events preparatory to the Gordon-Bennett trial, which starts from Geneva on August 6th.



Third day's contours, from Zurich to Lugano, which includes the St. Gothard Pass.

It has now been definitely stated that the British team will consist of A. Bennett (499 Sunbeam), H. F. Harris (349 A.J.S.), and G. S. Davison (247 Levis). It will be noticed that H. F. Harris is riding in the place of Sheard, winner of the Junior T.T. Other British entries are the following: Eric Williams (349 A.J.S.), three Raleighs, F. W. Giles (349 A.J.S.), Lt. Glen Kidston, R.N. (499 Sunbeam), Clifford Wilson (654 Quadrant), and W. W. E. Clark (654 Quadrant).

Entries, which close at ordinary fees on Saturday, should be sent to the Secretary, The Auto-Cycle Union, 83, Pall Mall, London, S.W.1.

On the day following the conclusion of the trial, August 10th, the F.I.C.M. congress will take place, at which various matters connected with motor cycling will be discussed.

OFFICIAL RESULTS OF MIDLAND CENTRE (A.C.U.) TRIAL.

53 gold, 16 silver, and 2 bronze medals. B.S.A. and Beardmore-Precision share team prize.

THE official results of the recent open one-day trial organised by the Midland Centre (A.C.U.) are now to hand. 53 gold, 16 silver, and 2 bronze medals have been awarded. Two teams tied for the team prize, *i.e.*, the B.S.A. team, consisting of B. L. Bird, H. S. Perry, and J. H. Walker, and the Beardmore-Precision, comprising H. G. Greaves, L. A. Bees, and E. R. Jacobs.

GOLD MEDALS (SOLO).—P. L. Mayo (249 Coventry Eagle), B. Kershaw (249 New Imperial), J. W. Moxon (293 Monopole), F. W. Viles (349 Raleigh), H. Gibson (349 Raleigh), A. W. Thrush (499 Sunbeam), J. G. Orford (349 Henley-Blackburne), J. T. Bashall (678 Martinsyde), A. A. Symes (496 Martinsyde), R. W. Duke (499 Triumph), A. R. Edwards (211 Levis), R. C. Cooper (269 Allon), W. Johnson (269 Allon), H. J. Stretton Ward (499 Triumph), J. H. Walker (557 B.S.A.), A. Bennett (482 Sunbeam), W. H. Woodcock (499 Ariel), A. Rollason (499 Ariel), B. Lycett (249 New Imperial), R. I. Pinson (499 Sunbeam), W. G. Hough (398 A.B.C.), J. Whalley (349 Massey-Arran), J. A. Watson-Bourne (976 Brough-Superior), H. Radford (688 Coventry Victor), A. R. Evans (499 Sunbeam), G. E. Austin (688 Coventry Victor), H. Greaves (349 Beardmore), E. R. Jacobs (598 Beardmore-Precision), F. C. Parkes (225 Sun Vitesse), M. Bishop (225 Sun Vitesse), C. T. Hollyoake (269 Federal), R. C. Bennett (269 Federation), J. N. Roberts (249 New Imperial), H. V. Collins (654 Brough Superior), P. G. Dallison (370 Connaught), G. Kunn (595 Douglas).

GOLD MEDALS (SIDECARS).—H. G. Uzzell (976 New Imperial sc.), T. R. Cibbins (999 Rex-Acme sc.), B. L. Bird (557 B.S.A. sc.), H. S. Perry (770 B.S.A. sc.), P. W. Bischoff (550 Sunbeam sc), F. W. Giles (800 A.J.S. sc.), F. Smith (925 Clyno sc.), L. A. Bees (598 Beardmore-Precision), W. J. Montgomery (976 Brough Superior sc.), T. F. Blomfield (796 Ariel sc.), G. C. Beesley (550 Sunbeam sc.,) A. Watson (550 Sunbeam sc.).

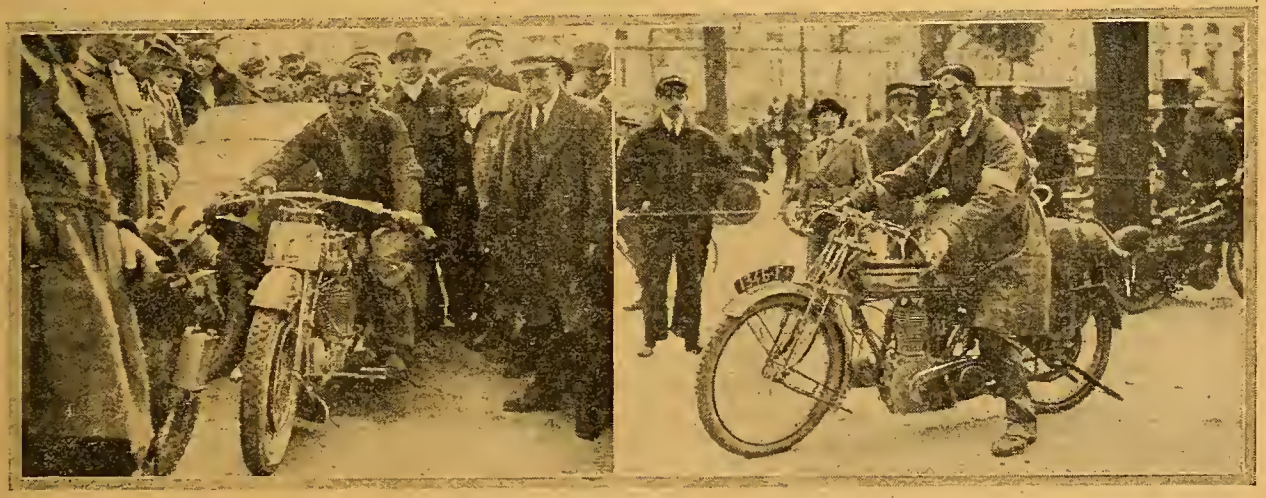
GOLD MEDALS (CYCLE CARS).—B. Bourke (1098 New Hudson), W. Ridley (1098 New Hudson), F. S. Spouse (1098 T.B.), F. B. Roberts (1098 Morgan), N. Norris (1098 Morgan).

SILVER MEDALS (SOLO).—Mrs. G. M. Janson (247 Levis), F. D. Scott (654 N.U.T.), E. Foster (698 Raleigh), G. Dance (499 Sunbeam), H. G. Catterall (595 Indian), C. Webb (293 Robust), W. H. Parkes (225 Sun Vitesse), A. J. Smith (370 Calthorpe), J. P. Brettell (370 Connaught), F. V. Wood (370 Connaught), B. Webb (293 Monopole-Jap).

SILVER MEDALS (SIDECARS).—T. H. Weaver (269 Sirrah sc.), F. H. Brown (499 Rex-Acme sc.), S. R. Philpot (678 Martinsyde sc.).

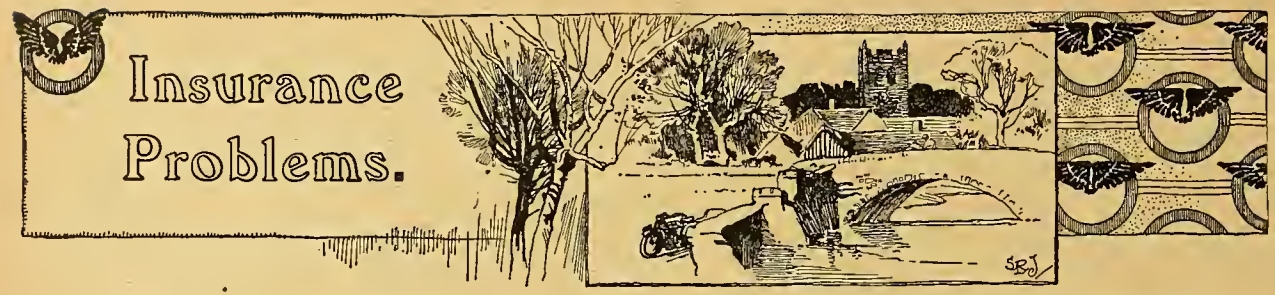
SILVER MEDALS (CYCLE CARS).—W. E. Bayliss (1098 New Hudson), J. W. Meredith (1098 T.B.).

BRONZE MEDALS.—R. Simpson-Harvey (993 Matchless sc.), T. H. Bonham (370 Calthorpe).



BRITISH MOTOR CYCLES IN FRENCH TRIAL.

In the reliability trial from Paris to the Pyrennes the bulk of the machines were, as was to be expected, French, but the few British made mounts that were entered made excellent performances. (Left). Rigon (750 c.c. B.S.A.), who came through with a clean score, although the last twenty miles were covered with a flat tyre. (Right). Sabbon, a Norton rider, who completed the course.



A New Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this new feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Passenger in Sidecar. Mr. Charles Hewitt, Lincoln, asks a question relating to compensation in case of accident to children when travelling in the sidecar. He says *The Motor Cycle* Insurance Policy states that the extra premium for passengers in the sidecar covers persons not less than 15, or more than 56 years of age. Surely this is a most ridiculous and unfair clause.

The age limit mentioned is a usual one, and we do not know of any company which will grant personal accident insurance in respect of children. It must be borne in mind that this class of insurance is usually granted to indemnify the injured person in respect of his loss, and we presume that an insurance company will not consider a child can suffer pecuniary loss in this way.

* * * *

Hire of Motor Cycles. Mr. A. F. Abbott, on the question of short period of insurance, writes: "I have a motor cycle which I let out on hire, and I should be glad to know if you could give me the name of any insurance company who would put forward a scheme whereby each individual hirer, by paying a normal fee, could have the machine insured for the period hired.

We do not know of any company which would be willing to grant insurance on the lines you suggest, excepting under such circumstances which would probably make the premium much heavier than the hirer would be willing to pay.

* * * *

Accident to Owner. Mr. H. Hewett, Bradford, asks the following query: "Supposing I had just dismounted my sidecar and stood close to the machine (on my right side of the road), or was mending a puncture when a car caught me as it passed, causing injury, would the company compensate as an accident to owner?

The point raised is, of course, rather a fine one, as the usual wording under this section of the policy is "cover accidents sustained in direct connection with insured motor cycle." If, therefore, at the time of the accident, the insured was removing or putting on the tyre, the accident would apparently come within the cover granted, but if he were standing away from the machine and preparing a patch, for instance, then we are afraid the insurance would not apply.

* * * *

Acknowledging Responsibility. A Birmingham reader asks the following question on the point which many motor cyclists may have thought about when in a tight corner: "Presuming I knocked down a child that may or may not have been seriously hurt and I paid for a taxi and also the doctor's fee for first attendance, did I acknowledge responsibility by doing so? No one but an inhuman individual would do otherwise than take the injured person to the nearest doctor, and both the doctor and the taxi driver would want payment."

In such circumstances as these, we do not think that any insurance company would repudiate liability on the grounds that liability had been admitted by the insured. It would, however, undoubtedly be advisable in paying the doctor's fee, to point out that responsibility is not accepted, as a point of this description would probably be made a lot of at a later date should the injured person put forward a claim for compensation.

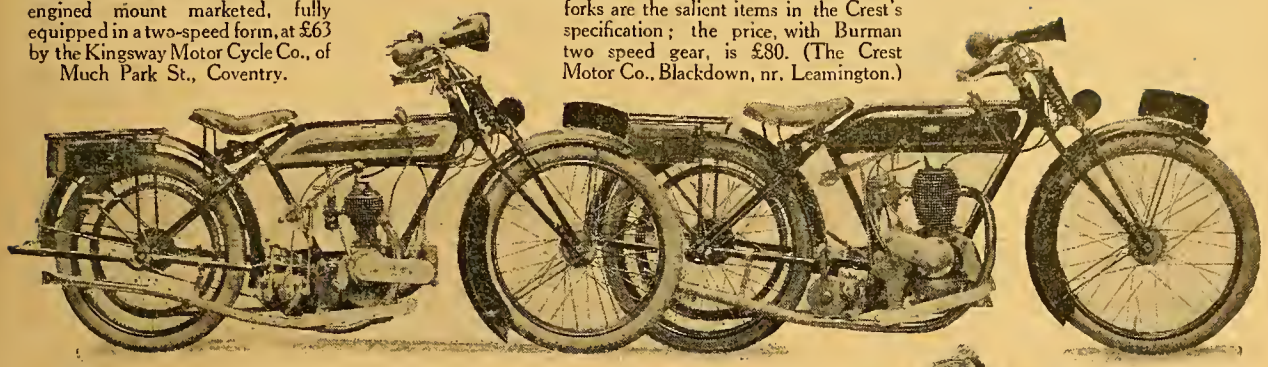
ILLEGIBLE MOTOR LICENCE CARDS.

Two motor cyclists who were charged under the Roads Vehicles Regulations for allowing licence cards to become defaced by the action of sun or rain were successfully defended, as members, by the A.A. The defending solicitor contended that, while the wording of Section 4 rendered it obligatory for the licence card to be carried so as to be clearly visible whether the vehicle was moving or stationary, there was no requirement that every letter or figure should be readable. It was thereupon argued by the police that under Section 12 of the Regulations, where a licence had become defaced the owner had to apply to the licensing authority for a duplicate. The solicitor, however, successfully repudiated this on the grounds that the prosecution was not brought under that regulation, and, in any case, that the particular regulation was "may," not "must," as suggested by the police.

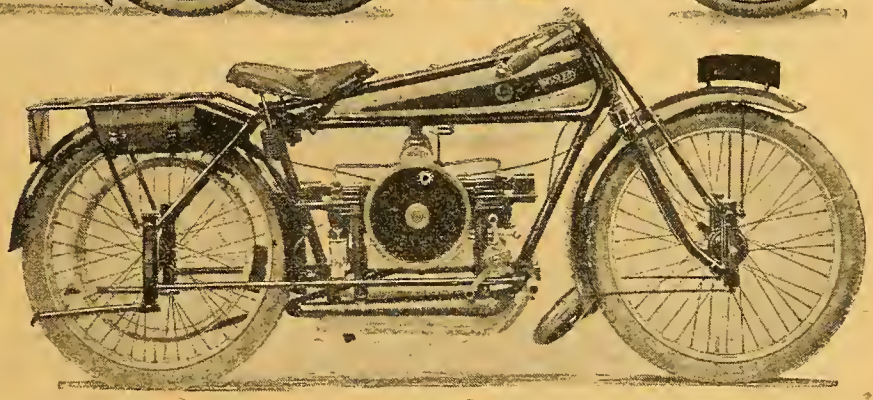
MID YEAR MODELS.

There is nothing unconventional about the Kingsway, a 293 c.c Jap-engined mount marketed, fully equipped in a two-speed form, at £63 by the Kingsway Motor Cycle Co., of Much Park St., Coventry.

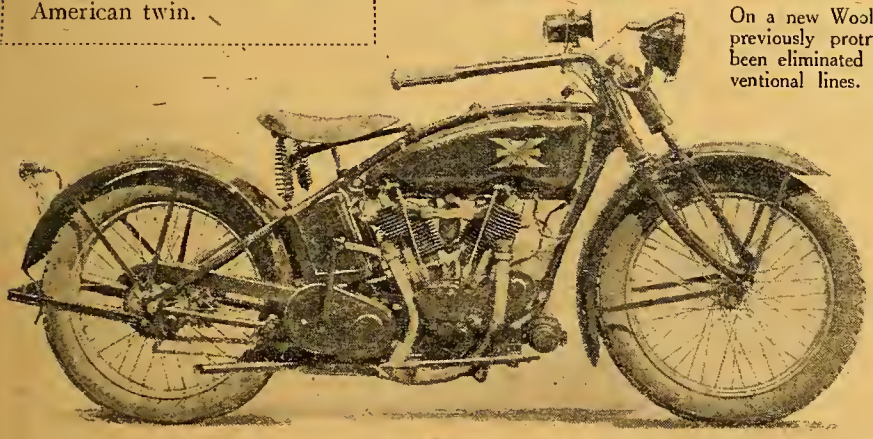
Barr and Stroud sleeve valve engine, Cox-Atmos carburetter, and Maplestone forks are the salient items in the Crest's specification; the price, with Burman two speed gear, is £80. (The Crest Motor Co., Blackdown, nr. Leamington.)



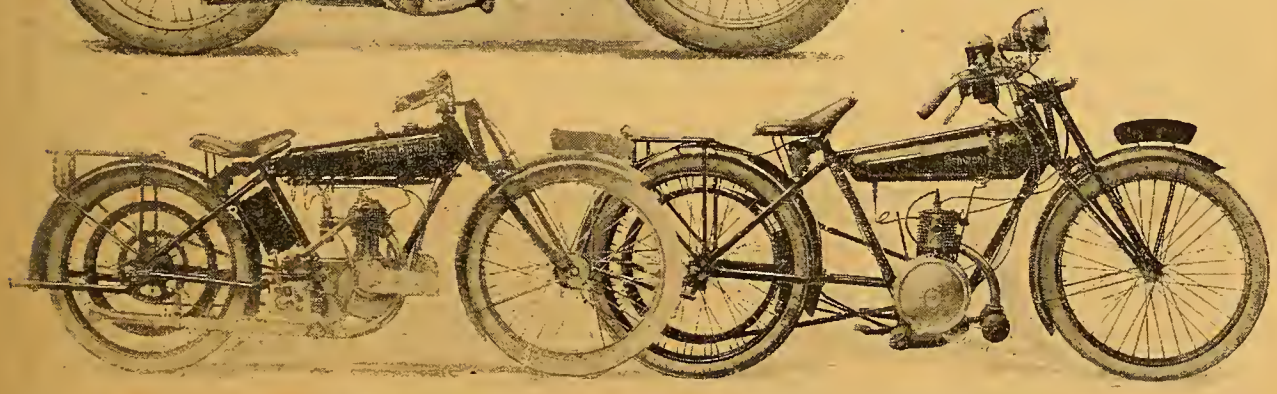
NEW names and new models under old names are continually appearing in the motor cycle world, but in no class more often than in that embracing light-weight solo machines. Five recently introduced models of this type are portrayed, and one of a modified American twin.



On a new Wooler that portion of the fuel tank which previously protruded in front of the steering head has been eliminated and the tank, still bulbous, follows conventional lines. (The Dederich-Wooler Engineering Co. Alperton, London.)

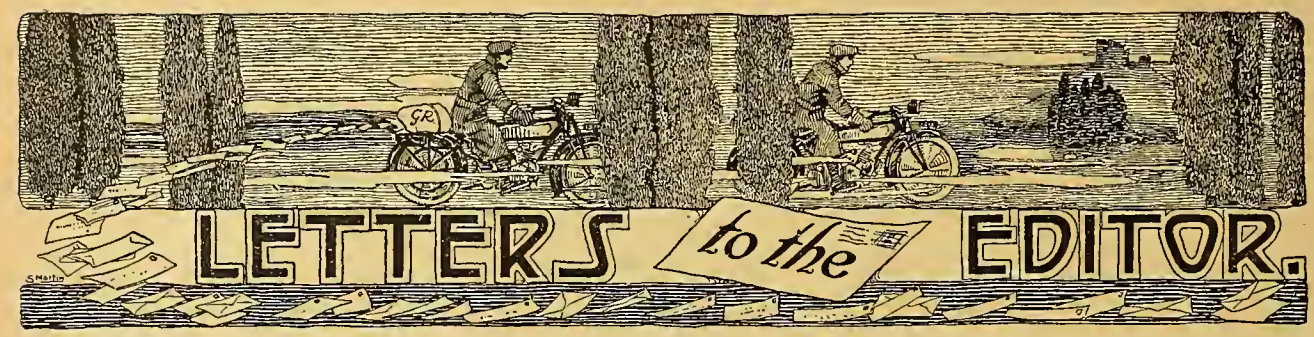


Dirt and dust excluding washers on the wheel-spindles, a stronger ammeter mounting behind the steering head, and an auxiliary hand pump-fed oil pipe to the crankcase are the chief modifications on the latest edition of the American X to arrive in this country. (Melchior, Armstrong & Dessau.)



Priced at £68, the latest Francis Barnett is a modified edition of the well-known sports model, a 293 c.c. Jap engine and two-speed gear box being fitted in this case. (Francis & Barnett, Ltd., Lower Ford Street, Coventry.)

The Beaufort relies on well-tried components; it is a Villiers-engined two-stroke selling with clutch at £40 15s., electric lighting £5 extra. (The Argson Engineering Co., Ltd., Beaufort Works, South Twickenham, Middlesex).



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

NOMENCLATURE.

Sir,—When are we to get back to the good old name for a maker's speed model, that is the T.T. Model? Pre-war motor cyclists must be sick of the present jumble of names —sports, super-sports, fast roadster, etc. W. B. TOBEY.

WHO ORIGINATED THE CRASH HELMET?

Sir,—Credit is given to Dr. Eric Gardner as being the originator of the crash helmet in 1914. I would point out that crash helmets were in very general use in aviation long before 1914.

The Warren helmet, produced by Mr. Warren, who ran a flying school at Hendon, came out in 1912, as also did the Brown helmet, produced by Messrs. Brown Brothers. Both these helmets are illustrated and described on page 349 of "Aeronautics" (Volume 5) of November, 1912.

PHILIP G. ROBINSON.

POWER LOSSES FROM OPEN EXHAUST.

Sir,—With regard to the letter written by "Solder" about tuning a Levis, I was much interested to notice that he states that a straight through exhaust slows a machine. He has evidently found this to be so in practice, as he stresses this point by putting it in italics. It would be very interesting to know what is the reason for this, and also whether it applies to all machines or only to two-strokes.

I would suggest the following: The exhaust charges in a two-stroke follow each other with such rapidity that there probably occurs a piling up or cushioning in the exhaust pipe which causes back pressure and negatives any vacuum which might occur further up the pipe.

A silencer would prevent this, for once the charges have expanded they will not regain their elasticity, and can exhaust into the air at a comparatively low pressure.

"FLUX."

IMPROVISED VULCANISATION.

Sir,—Returning late at night from Gloucester, I got a puncture (and also a shock) when I discovered that there was no solution in my kit. I had a Dunlop patch, and eventually it occurred to me (after contemplating riding home on the rim) to try and vulcanise it. I heated the patch over the top of my gas lamp until I could just smell the rubber burning, after which it adhered beautifully, and made a permanent mend. N. CLARK.

A VERY FULL WEEK.

Sir,—Perhaps my week-end mileage, without the use of trains, might interest Mr. Young.

I left Coventry for London Thursday night and completed the London to Edinburgh run at 9 p.m. Saturday night. I then started for Coventry on Sunday morning, 9 a.m., rode all day and night, and arrived at Coventry at 4.30 a.m. Monday.

The machine I rode was my old trials outfit, with a McKechnie spring frame, and I am quite certain that if I had been riding any other machine I would not have felt fresh enough to do the return journey on the following day.

F. H. BECKER.

Sir,—I left Sherborne on Thursday, June 1st, at 5 p.m., and arrived back on Wednesday, June 7th, at 11 p.m., *via* the following route: Sherborne, Claygate, Hendon, Edinburgh; Queensferry, Edinburgh; Dunbar, Edinburgh; Gretna Green, Lake District, Bingley (Yorks), Grantham, Oxford, Devizes, Sherborne. The total distance by speedometer was 1,242 miles, and beyond burning my clutch out on the Summit Hill through my own stupidity, I never opened my tool bags.

The machine was the ordinary 499 c.c. Sunbeam and "No. 3" sidecar, and I carried two 30-amp. 6-volt batteries, windscreen, mudguards, and all the etc.'s required on a trial. E. ARNOLD WRIGHT.

Sir,—With reference to Mr. Young's letter under the above heading, our Mr. F. E. Jones also returned from the I.O.M. Races by the night train on Thursday, arriving on Friday in time to start in the London-Edinburgh run the same evening in which he was successful in securing a "gold." He, however, made the return journey on Sunday by road. JONES' GARAGE, Muswell Hill.

R.A.C. SALUTES.

Sir,—With regard to Mr. A. Martin Cyder's difficulty in finding the R.A.C. patrols, I may say that I find plenty of them, and also every time I have passed one I have always had the salute. Between Coventry and Stratford-on-Avon I have often passed at least three, and each one gave me the salute. Only last week I was directed round a right-angle corner in Kenilworth by one of these patrols, who just saved me from meeting a "Tin Lizzie," while at the same time the salute was given. My only regret, I could not return the salutation. H.P.3704.

Coventry.

Sir,—"Ken Bush" asks the opinion of your readers concerning salutes by R.A.C. patrols.

I also seldom receive an acknowledgment of membership, and know several others who have said the same.

Caterham. GRIEVED.

SAFEGUARDS FOR THE "SECOND-HAND" BUYER.

Sir,—May I impress on readers the importance of using your deposit system when sending money in answer to second-hand advertisements?

A fortnight ago I answered an advertisement for a motor cycle which seemed unreasonably cheap; however, I received a most straightforward-looking letter describing the machine and asking if I could make an appointment, or, if not, perhaps I would send half the purchase money when the vendor would be pleased to put the machine on rail to me and, if satisfied, I could send on the other half.

This seemed quite a fair offer; so off went half the purchase money. But from that day to this I have not heard from the gentleman. But I have heard from the police, who have informed me that he has absconded.

Fortunately for myself, I had the forethought to post-date my cheque, so, except for a few postage stamps, I am no worse off. EX-D.R.

Newton Abbot.

"BREAKFALL."

Sir,—I was very much interested in your article, "How the Crash-helmet Originated," and having experienced the fact that one is less liable to injury when falling off at speed, thought your readers might be interested in the reason for this fact, apart from the beneficial effect of a crash helmet.

As soon as a person falls off a motor cycle he has two velocities:

(1) The velocity of the cycle, less effect of retardation due to wind resistance.

(2) Velocity due to the action of gravity.

No. (1) is horizontal, and No. (2) vertical in direction.

These two velocities can be added geometrically in the form of a triangle known as the triangle of velocities, and the third side will give the resultant velocity, which, if the triangle is drawn to scale, represents this velocity in both magnitude and direction.

A little thought will show that the greater the horizontal velocity (that of the machine) the smaller the angle at which the person strikes the ground becomes.

Now to go on to the subject of "breakfall." The object of "breakfall" is to land so that the force of impact is distributed over as large a portion of the fleshy part of the body as possible, rather than that it should be taken up by one of the bones, such as the collar-bone, etc.

When precipitated at an angle of, say, 5 degrees, the "breakfall" consists of falling flat on the fleshy part of the arms, and then, a fraction of a second later, on the whole of the front of the body. It can be seen that a person uninitiated in the art of "breakfall" will do this automatically, and so, apart from grazing along the ground, not hurt himself very much.

When thrown at an angle of, say, 50 degrees, the "breakfall" consists of dropping the head on the chest, taking the first part of the fall on the hands, and quickly rolling over (heels over head) on to the back, and finally stopping the roll with the soles of the outspread feet. This the uninitiated is unlikely to perform by chance, as he will probably not duck his head, and so land on it. This is where the crash helmet might save one, as the bowler hat does in hunting.

I trust this will not bring a stream of A.M.I.M.E.'s and the whole Japanese nation on my head.

Greenwich. NAUTICAL MATTHEW.

LIGHTWEIGHT TWO-STROKES FOR LONG-DISTANCE TCURING.

Sir,—No wonder some wise fellow said that heroes were born to blush unseen!

Bennett is reported to have pocketed umpteen hundred pounds for winning the T.T. at a beggarly fifty-eight miles per hour, while your correspondent Mr. H. Sutton, on his own statement, covered 256 miles between 9 a.m. and 12.30 p.m.—say about 73 m.p.h.—and no doubt arrived at Bagshot to find that there was not even a decent lunch awaiting him—probably he was not expected so early.

What a pity he stopped to use that oilcan—we might have had some real records. H.N. 1252.

Durbam.

THE NESBIT AWARD

Sir,—How is it that no Nesbit award was given in the T.T. this year? Surely it was merited. What about Mr. S. Wood (Cotton)? To have one's machine and person burnt, brakes no use and a crash, and then to finish fifth, surely this compares favourably with Jones (1921) and "Pa" Applebee (1920)? I have not picked out Mr. Wood because the Cotton is manufactured at Gloucester, but I will pass on to you remarks I have heard on several occasions lately, and that is that Mr. Wood could not possibly be awarded the prize because he is an amateur. I wonder if this is true?

Next year let us have a genuine amateur race, and then we shall not have your exceptionally fine paper spoilt with *ads. to the effect that the Ponk Ponk Co. won the races with a perfectly standard machine.*

Nailsworth A.D. 7590.

DOT AND CARRY ONE TWO-STROKES.

Sir,—With regard to the letter from "Celeritas," I have experienced the surging or periodic misfiring, to which he alludes, with my Clyno two-stroke when making adjustments to the contact breaker of my C.A.V. magneto. I find that if the points are set too far apart the machine, when run, fires exactly as he describes, *i.e.*, fires about half a dozen and misses two or three, and so on. I found this misfiring most irritating, and am very surprised to learn that anyone could mistake it for the normal running of their machine. ERIC S. BOOTH.

Sir,—I have experienced similar trouble with a two-stroke engine. It was cured by giving the contact breaker points a larger opening.

Stroud. SUNBEAM.

Sir,—In reply to "Celeritas," I had on my first machine (1919 single gear Metro-Tyler) the trouble which he has observed. For some time I could not cure it. One day I found—accidentally—that the contact point which is riveted through the spring in the C.A.V. contact breaker was loose. On tightening this up the misfire vanished.

With congratulations on the 1,001st act. A.P. 6912.

Battle.

Sir,—I have experienced the same trouble with my Villiers engine (C.A.V. magneto). Three different plugs were tried, the high tension lead and contact breaker examined, the feed system and carburetter dismantled and cleaned, but no improvement effected.

When the magneto driving chain cover was removed the trouble was obvious. The magneto driving chain had stretched very much, and one side of one link had broken. I had this link repaired and the chain tightened, and this seems to have cured the trouble.

Since this I have noticed that No. 11 of Messrs. Villiers' "Hints and Tips" says: "The magneto chain . . . should be adjusted if it should have stretched, as it is likely to cause the magneto to fire irregularly.

Aldershot. H.O. 1728.

MOTOR CYCLES IN THE SOUTH KENSINGTON MUSEUM.

Sir,—I wish to point out an oversight in Mr. R. A. Ashby's letter: the modern motor cycle is represented (in South Kensington Museum) by a Zenith-Bradshaw with Gradua gear, which is in the same case as the 1916 Rudge-Multi. Regarding engines, the examples are up-to-date, including a Villiers two-stroke with flywheel magneto, and also the four-valve Triumph. W. STEWART.

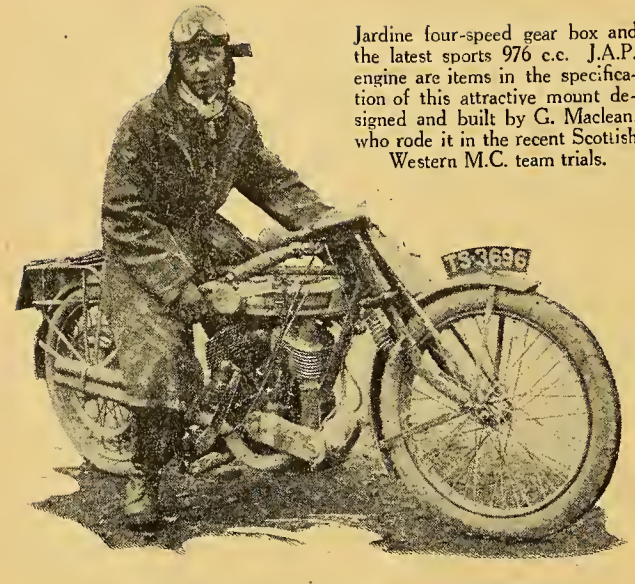
BOYCOTT INCONSIDERATE LORRY OWNERS.

Sir,—While most large trading concerns using road transport are careful at least to instruct their drivers to keep the left side, whether their lorrys are fitted with mirrors or not, it constantly happens that faster moving traffic is held up for miles behind slow moving vans, etc., either through carelessness on the part of the drivers of the latter or through sheer "don't care." This is bad enough on main roads, but now that so many firms distribute by motor to outlying villages on the smaller roads, the holding of the crown of the road is becoming both a nuisance and a danger.

One remedy, where this occurs, is for the owner of the vehicle so held up to make a note of the name of the owner of the offending van or lorry and, if possible, the number and to communicate to headquarters, backing this, where possible, with an assurance that in future the products of this firm will be banned by himself. Most commercial firms are well aware that road discourtesy can do them as much harm as bad service or bad advertising.

I have used the above method three times lately. One firm thanked me for informing them; the second, a brand of motor spirit, laughed at the matter, and consequently that spirit is barred by myself and friends; the third firm were decidedly nasty about it, and their groceries no longer grace my table. Competition is keen, and if such firms cannot see the matter at once, they will shortly find the results tell, if only other road-users would follow on these lines.

Matlock. "MIRROR."



Jardine four-speed gear box and the latest sports 976 c.c. J.A.P. engine are items in the specification of this attractive mount designed and built by G. Maclean, who rode it in the recent Scottish Western M.C. team trials.

BAULKING IN A COLONIAL TRIAL.

Sir,—My attention has been drawn to the following statement which appeared in the report of the "Yorkshire Colonial Trial" in your issue of June 22nd:—"Mrs. Janson stopped and had great difficulty in moving her mount from the course; thus several were baulked."

On reading this I realised that a mistake had somehow been made, and I therefore wrote to the hon. organiser of the trial, whose observers were stationed in considerable numbers along the section where the incident described above is said to have taken place. I quote from his reply:—"I am pleased to assure you that there have been no complaints or protests from other competitors about you baulking them, neither have I had the slightest word from any of the observers that you stopped and were unable to remove your machine from the course. I might also mention that if seven or eight solo riders had been baulked, there is absolutely no doubt that we should have received protests, which latter I am pleased to inform you were conspicuous by their absence."

This letter, the original of which is in my possession, speaks for itself. (Mrs.) G. M. JANSON.

CARBONISATION RECORDS.

Sir,—I am very much interested in the first "chit" of last week's "Current Chat," and am almost inclined to answer it with "indefinitely." I took delivery of a 4 h.p. Triumph in June, 1920, ran it a month on R. "Castrol" (of course, I did use some petrol), and then decarbonized it; it was fairly full.

In July, 1921, I decarbonized this selfsame Triumph again, not because it wanted it, but because my conscience smote me; I'd been reading about harsh treatment by novices, so I removed the cylinder. The interesting points are these:—

I had done over 9,000 miles. The cylinder and piston were both practically clean, what carbon there was seemed dusty and wiped off Fair amount of carbon under the rings; this carbon was more like granite, and took some shifting. There was no appreciable wear anywhere, and not until last month did I have it overhauled, only decarbonizing once since July, 1921, and then I had done another 4,000 miles.

I was, for the six months preceding July, 1921, using a "drain pipe" jet, size unknown, but which choked every other Triumph it was tried in; it only gave me 45-50 m.p.g., but gave me 57 m.p.h. and acceleration like a 9.5 shell. The trouble (you never get satisfaction without it) was heat, and consequently valves—three in ten days was the quickest I could break them without trying to do so. The absence of carbon I put down to the heat of my engine (I'm studying law, so I know you will excuse my ignorance). When the 'bus was at its zenith in "valve busting," I had the good fortune to have a pair of valves given to me, with an offer of replacement of every one I broke. Needless to say, I started in with a view to that replacement. I haven't had it. I've tried, I've nearly broken my heart and neck trying to break that valve, and can't. I used to dream about it, but I've got over that now. The most peculiar point about this exhaust valve is that it contracts when hot and expands on cooling. (I never drink when out riding.)

Anyhow, I was jolly sorry I touched my 'bus in 1921, as it took 4 m.p.h. off her, and I think if I hadn't touched her she would have run just as well right up to her overhaul last month, a matter of 16,000 miles.

Coventry. HP-1677.

WHAT IT COSTS TO TOUR.

Sir,—I shall be obliged to any of your correspondents who will give some idea as to the cost of touring and how they manage to keep it within the limits of the motor cyclist's pocket.

I have done many thousands of miles in one-day stunts, but had not set out on tour until a few weeks ago.

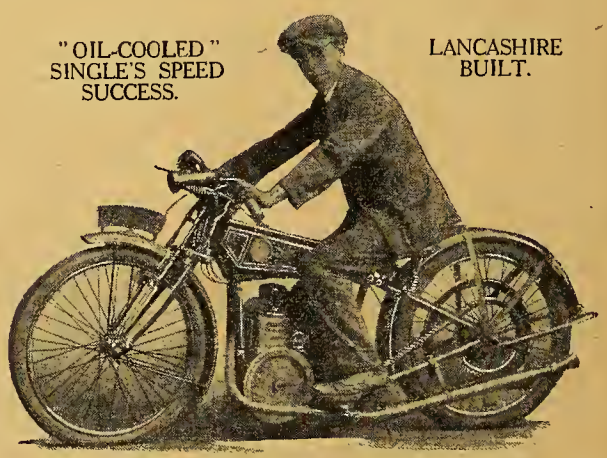
Being a member of the A.A., I put up at their appointed hotels—two-star class when available and three-star when not.

I found the average charges for two persons (my wife and myself) as follows: Dinner, 12s.; bed, 12s.; breakfast, 7s. 6d.; and on top of this one has to be careful to seize the correct moment for getting away or else it requires a pretty good nerve to walk past the hotel servants without being another 2s. down the river. Friends have since told me these charges are quite reasonable, some of them having been rushed as much as 28s. for bed and breakfast only, at quite moderate hotels; but my wife tells me that she could have supplied the breakfast herself at a cost of about 1s. 6d. to 2s. for both of us.

Then there is the midday meal, and perhaps also a drink of tea at, say, 5 o'clock. With petrol, oil, and fair wear and tear of the machine, £3 per day will not foot the bill. This does not allow for the small incidental expenses usually associated with holiday times.

After the first two or three days we hit on the idea, with a view to economy, of booking the accommodation by telephone, and arriving too late for dinner; and unless some good Samaritan comes forward with other ideas I am afraid that for the next tour I plan my 'bus will be left at home and I shall go by charabanc. A. S. KING.

Bradford.



A prize winner at recent Southport speed trials, J. Houlding, on his Matador, which is fitted with a 350 c.c. Bradshaw "oil-cooled" single cylinder o.h.v. engine.

CASTOR AND MINERAL OILS.

Sir,—Referring to the article by "Kemist," I may say that I have used Castrol "R" for some years, both with a single cylinder motor cycle engine and a four-cylinder water-cooled car engine. I have found the advantages of using Castrol "R" to be :—

(1) Engine requires decarbonisation much less frequently than when a mineral oil is used.

(2) Carbon on cylinder heads and piston was soft and far more easily removed; there was very little carbonisation even after several thousands of miles running with "R."

(3) Oil in base chamber was still "viscous" and good as a lubricant after over 1,000 miles with "R," while after 500 miles with a mineral oil all lubricating value had departed and oil had to be renewed.

(4) Engine kept much cooler when "R" was used.

(5) Greater speed power and smooth running was experienced with "R" than with any other oil.

(6) In winter "R" never clogged oil pipes, but always flowed freely.

(7) I should imagine less likelihood of harm would result by petrol priming for easy starting when "R" is used, it being less soluble in petrol and not likely to be entirely washed from cylinder walls and pistons by priming than in the case of a mineral oil.

(8) "R" is far cleaner in use than any other mineral oil.

(9) I have *never* found any damage to pistons, cylinders or bearings by using "R." Pistons and cylinders had a perfect glass-like surface. I rather think the writer of the article has confused "thick" oil with "viscous" oil. An oil may be very thick and yet a poor lubricant and have very little "viscous" or "oily" value.

As regards the T.T. entrants using castor oil (does the writer imply Castrol?), surely they would not do this simply because they like the smell or because it smells "racy." They have too much to lose by using any but most suitable oil. I have followed motor racing for many years, and have attended most of the big motor race meetings, and I think few oils other than Castrol "R" are ever thought of for speed. Personally I have found it best for touring also. I have no interest or connection with the manufacture of "Castrol" or any other oil, but write merely as a very satisfied user. G. O. F.

Windsor.

UNSATISFACTORY VALVE REPLACEMENTS.

Sir,—May I issue a warning to my brother motor cyclists, especially novices like myself?

"Obtain your spare valves direct from the makers of your engine."

"When your valves require facing, send them to the makers."

I ride a B.S.A. 1921 model, and on the advice of a garage mechanic I purchased a valve from him, which, although not a genuine B.S.A., he assured me was a perfect fit. He also faced up the genuine B.S.A. valve in his lathe. The engine slowly but surely lost compression, and my petrol consumption was enormous.

After numerous mechanics had tried in vain to improve matters, I wrote the makers, and they reported that the valve had caused all the mischief. They also examined the genuine B.S.A. valve which had been faced and found that it had been faced at a wrong angle. Both these valves had damaged the seating. XH 3296.

Essex.

SHAFT DRIVE'S UNPOPULARITY.

Sir,—I am disappointed to find that no one has come forward to refute the fact that the shaft-driven bicycle, which I referred to by way of a good illustration, died a natural death because it was not able to compete with the chain-driven machine in efficiency. An old Coventry racing cyclist, with whom I discussed the matter, tells me that there is not, to his knowledge, a single record established on the racing track by the shaft-driven bicycle. The inference is obvious, and no amount of figures gleaned from text-books can disprove it. In practice, text-book figures are apt to be misleading. One thing I must mention, and that is, practically all the heaviest commercial vehicles use chain drive to-day. Also the steam waggons of the latest types all seem to be chain-driven.

The case of the motor car is different altogether. Here some efficiency is sacrificed in order to obtain an admittedly better mechanical construction for the purpose in view, and having particular regard to silence.

I have not hurried to reply to the various letters on the subject, because I have been watching very carefully some practical experiments which are being carried out on the road (very different from laboratory conditions), on two identical cycle-cars, one fitted with shaft drive and live axle, and one with all-chain drive. The results, so far, from a point of view of efficiency at the road wheels, are well in favour of the chain drive, which, however, loses a little from the standpoint of silent running. As a matter of fact, the results point to a combination of the two, shaft from engine and final chain being adopted on the production model.

I am not, at the moment, permitted to make the results of these tests public, but if any reader cares to write to me I shall be happy to give some technical details. At the same time, one must keep an open mind on these subjects, and if a shaft-driven motor cycle can prove itself on the track equal to, or better than, a chain-driven one, I am sure there will be no lack of designers or manufacturers ready to consider it. As a high-class engineering job, I am quite ready to agree that such machines as the shaft-driven "F.N." are in a class to themselves, and are most worthy examples of modern motor-cycle engineering.

Coventry. WILLIAM A. WEAVER.

[This correspondence is now closed.—Ed.]

UNFAIR TO THE LATE STARTERS.

Sir,—On looking back on the recent T.T. races I feel compelled to point out in your columns an injustice that there is in the A.C.U. rules. I am amazed that the following point has not been raised before: First, it must be admitted that it is no mean feat to get a machine to complete the course at all. I wish to point out that the rules do not give all competitors an equal chance of doing so. While

Parallel link motion has been applied to rear springing by Mr. T. H. Webster, of 172, Ladykirk Road, Newcastle-on-Tyne. An experimental frame is shown which has given the designer satisfaction, but an improved lay-out, with the saddle tube vertical and the gear box close to the engine, has been evolved.

some riders start as much as half an hour after the first man the course is closed for *all* at the same time. Thus a man starting third has half an hour longer to complete his six laps in, and finish, than a man who starts 63rd.

This hit the Rudges very hard, as their riders mostly started late and had not time to finish in.

I am also of the opinion that a rule should be made that all machines must be run on motor spirit as sold to the public and not doped with ether, metho, etc. I do not think that running on these very expensive concoctions can be said to assist in improving the touring machine. W. B. TOBEY.

TEMPERAMENTAL ENGINES.

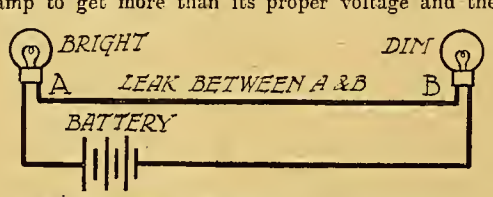
Sir,—I am quite convinced that the erratic running described by readers is due to an upsetting of the air stream round the carburetter. I have noticed this on my own Rudge.

Whenever I lift my right foot from the rear foot-rests in order to give a charge of oil, or if I move my right knee outwards, the speed immediately drops five to ten miles per hour. Immediately I regain the normal riding position—*i.e.*, both feet on rear foot-rests, knees against tank grips—the speed increases to the same extent. The cycle is *not* canted over to one side during the movements described, so upsetting the level, nor is there the slightest defect in its mechanism. The slowing up is not nearly so pronounced when one is riding minus coat, although it is still existent to some extent. E. O. GURNEY.

Taplow.

"IXION'S" SERIES WIRING PUZZLE.

Sir,—The fault is probably due to a partial leak or earth between the side and tail lamps. This would cause the side lamp to get more than its proper voltage and the tail



Both "Engineer's" and Mr. O. Glydon's letters are made clear by this sketch.

lamp will burn dim, due to voltage drop across battery and leads. The leak may be either between two adjacent wires, or, if the frame or chassis is used as a return, between one wire and the chassis. "ENGINEER."

Dublin.

Sir,—In a recent issue "Ixion" propounded a rather interesting little problem appertaining to the wiring of side and tail lamps in series.

From the details given I am inclined to hazard the following two deductions:—

(1) Both lamps are probably fitted with miniature screw bulbs—that is to say, the type commonly known as "pocket lamp bulbs."

(2) The owner of the outfit in question has probably been obtaining his bulbs from a local garage or electrical dealer who does not stock this type of bulb made by a well-known and reputable manufacturer.

Now, in burning lamps in series it is not only necessary that the voltage of each lamp be equal—*e.g.*, two four-volt bulbs on an eight-volt circuit—but it is also important that the lamps should be of equal amperage or candle-power.

If you take two four-volt lamps, one of four watts consuming therefore one ampere of current and the other of two watts consuming only half an ampere, and put these in series on an eight-volt circuit, the combination, as can easily be deduced from Ohm's Law $C=\frac{}{R}$ will pass two-thirds of an ampere. Under these circumstances the four-watt lamp will burn dimly, as it is not getting sufficient current, while the two-watt lamp will be exceedingly bright, as it is being overloaded; it is equivalent, indeed, to burning it direct on a circuit of 5.3 volts.

These figures have perhaps been exaggerated somewhat for the sake of clearness, but the fact remains that many miniature screw bulbs, sold mainly as replacements for pocket lamps and torches, do vary very considerably in their current consumption, and this, I think, may be the cause of the trouble.

I should certainly advise experimenting with two new bulbs stamped with a well-known name *and of similar candle-power*.

I am aware that this explanation does not cover the fact that the same bulb glows alternately bright and dull according to which lamp it is placed in. A. R. TURNER.

Birmingham.

Sir,—A slight short between "A" and "B" will produce the "wiring in series" trouble commented upon by "Ixion." OLIVER GLYDON.

Handsworth.

"SKIDS" IN THE 200 MILE SIDECAR RACES.

Sir,—With reference to your editorial comments, I am afraid that a large number of your readers will not agree that this safeguard was a "little over-anxiously conceived."

It must be borne in mind that this was a race of considerable length, and that there are risks other than the actual breaking of the axle to be considered with an "open-sided wheel."

The danger of shedding a wheel, or wheel collapse, is, of course, not great, but, *should* it happen, the risk of injury is not confined to the rider of the disabled machine, and the results could be ghastly; as all the machines were so fitted none were handicapped.

Your comment that "stub axles of cars very, very seldom come adrift" is, of course, true, but they *do* come adrift or break, as witness a certain car at Brooklands on the day of the sidecar races.

This car was being driven away from the fork after the race and had only travelled a few yards when the near-side stub axle broke like a carrot.

It was also my experience recently to pass a car on the road near Lewes that had had the near-side stub axle come adrift whilst at speed, and a more terrible mass of wreckage and twisted mechanism I have never witnessed.

I was assistant to a certain competitor on the day of the race, and from what I could gather the skid was looked upon favourably.

I drive a car daily, always maintaining a high average speed, but I confess frankly the stability of my front axles is always pregnant in my mind. I have had good luck so far after many years' car driving, but I have lost count long ago of sidecar-wheel breakages.

JOSEPH D. SEDGWICK.

Willingdon, nr. Eastbourne.

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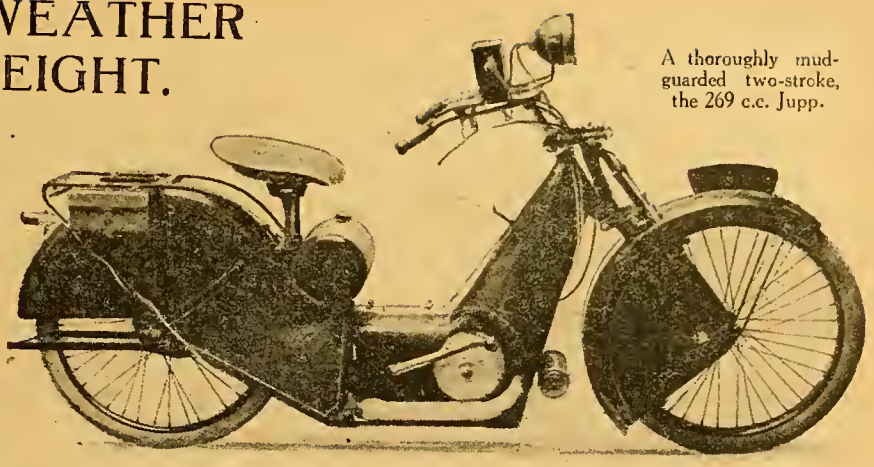
AN ALL-WEATHER LIGHTWEIGHT.

Duplex Open Frame and Completely Enclosed Mechanism on the Jupp Lightweight.



A thoroughly mudguarded two-stroke, the 269 c.c. Jupp.

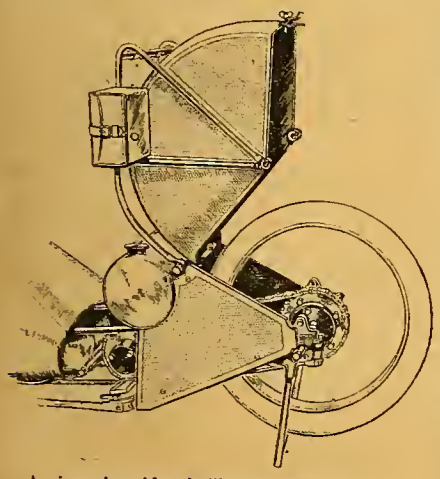
A DESIGN which should satisfy the demand for an all-weather machine has recently been introduced by the Jupp Motor Co., Ltd., 86, Leadenhall Street, London, E.C.3, Mr. W. J. Barker, A.M.I.A.E., 194, Balham High Road, London, S.W.12, being responsible for the design.

The Jupp, in its present form, is an attractive little machine, and should command the keen attention of the ladies. Since the Villiers flywheel magneto engine, having a bore and stroke of 70 × 70 mm. (269 c.c.), and the all-chain transmission are completely encased in easily detachable shields, the Jupp lightweight claims immunity from oil-slinging, whilst there is no doubt that the definite angular outline adds considerably to its appearance. In consideration of the fact that the total weight is only 170 lb., a very sturdy duplex open frame suspends the engine unit. It is composed of straight tubular members throughout, whilst the engine is slung from cross members spanning the upper and lower tubes.

A two-speed Sturmey-Archer gear box is neatly housed at the rear of the inclined engine, and adjustment to the primary chain is made by the usual arrangement of bolts on top of the box. This latter is suspended from the upper tubes by two angle plates.

A large circular tank capable of holding 2 gallons of petrol is fixed below the saddle, which is mounted on two pillars which seat on coil springs contained in a pair of vertical tubes brazed to the frame. To facilitate repairs to the back tyre, the rear mudguard is hinged, and since it is extended by large valances to the wheel centre, adjustment of the chain would also be difficult were it not that the whole component, including the toolbags and the carrier, can be raised. The saddle, of course, is pulled out beforehand. The usual adjustment of the driving chain is provided, whilst incorporated in the rear sprocket is an internal expanding brake, operated from a heel pedal on the near side.

Brampton spring forks are fitted, whilst an electric head and tail lamp, supplied from the flywheel generator, are included. An auxiliary dry battery provides illumination when stationary.



An ingenious idea facilitating repairs to tyre or chain.

Easily Controlled.

So far as the riding position is concerned, the location of the gear change lever, midway between the handle-bars and the base of the upper frame tubes is very handy, whilst a lever starter, operating on the starter spindle of the gear box, is conveniently placed for the right hand. A large, heavily valanced front mudguard should adequately protect the rider from front wheel splash. The price of this machine is £68.

THE BELGIAN GRAND PRIX.

AFTER the French Grand Prix comes the Belgian, a thoroughly sporting little affair on July 23rd, over a charming course in the neighbourhood of Spa. This course is the same as last year. It is triangular in shape and runs from Francorchamps to Malmédy and Stavellot.

So far as Great Britain is concerned, this country will be well represented: there are five Norton entries, one of which will be ridden by Hollowell, a Sunbeam to be ridden by Jackson, a Zenith-Bradshaw to be ridden by a Belgian, and three Triumphs, one, it is reported, to be ridden by Edmond. We are given to understand that the Belgian firm of Rush, which fits a J.A.P. engine, has entered a machine which will be ridden by Le Vack. Other English entries expected are those of O.K., Velocette and Sun. For the first time the F.N. will appear in the race, three of these popular machines being entered in the 350 c.c. class.

A great deal of work is being done on the roads; corners are being eased off, bridges are being widened, and the surface, we are assured, will be smooth as a billiard table.

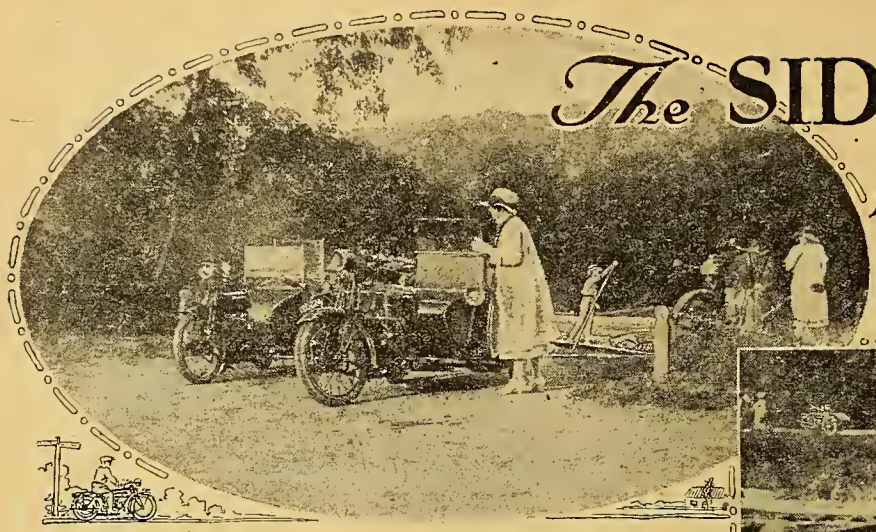
REGISTRATION NUMBER DIMENSIONS.

ACCORDING to the London daily papers, the Stratford magistrates towards the end of last month fined a motor cyclist 5s. for using too small figures on his number-plate. A policeman said that the figures should be 3½ inches high.

Lest this case should cause our readers endless worry we reproduce the correct minimum dimensions for motor cycle registration numbers, which, it will be noted, are just half what the policeman stated. This, of course, is not pure coincidence, for the sizes of motor car—and, incidentally, three-wheelers and sidecar outfits weighing more than 3 cwt. unladen—should be double the motor cycle figures.

Study of this sketch will reveal the minimum sizes and spacings of the registration figures allowable on motor cycle number plates.

The SIDECAR and the PUNT



Near Boulter's Lock, Maidenhead.

A pretty scene on the Thames near Marlow.

A Soliloquy, Written by the Cool Waters of the Thames after a Dusty Ride across the Chilterns.

BOULTER'S LOCK, 7 p.m.—A pageant of colour and pose. Like a dozen or more sidecarists, I am sitting on the banks of that narrow little stretch of water leading from the lock. After dropping down from the heights of the Chilterns into the Thames valley, we have been caught by the glamour and riot of colour passing along the cool green waterway. My fellow sidecarists, too, have been lured from the road in the same way, for each outfit has tarried independently. Here are men propelling punts with an air of studied negligence, but monstrously unsuccessful in their efforts to appear unconscious of the crowd's critical gaze. One tall, perspiring punter has allowed water to drip from his pole on the cushions and hat of a damsel reclining on blazing crimson and gamboge cushions.

Contrast.

This has resulted in a disturbance of a pose that must have taken hours of careful thought and preparation—careless monster to make a *faux pas* at this most important part of the play with an audience so near and so critical. What a contrast are these passengers to our own; there is no denying the cool luxury of reclining on huge cushions clad in the flimsiest of dresses—of being propelled silently, without an atom of vibration, in the shadows of willows and poplars. And the sidecarists—they are dusty, their filmy dresses are at home, they repose on leather, they know what vibration means, and "potholey" roads too. Their way is not by still water, and drooping willows. But after all there cannot be a real comparison, for, as attractive as the river is on a flaming day in July, the highways and byways of Great Britain offer infinitely more than a circumscribed stretch of water can ever do.

Not long ago we were lunching on the very topmost heights of the Chilterns, a lovely spot reached by branching off the main Aylesbury-Tring road near Aston Clinton on to the road that winds across the Chilterns past the water-works on to Cholesbury and Hawridge. It is a beautiful route along a road that eventually develops into a steep gorge running through a fairy wood as lovely as *Via Gellia* in Derbyshire. When the roof is reached—809 ft.—the country lies spread around much like the panorama from the Malvern Hills.

Seventy Attractive Miles.

The circular run we are making has been through amazingly exquisite country, as diverse as can be found anywhere in England—well, hardly that, for the sea was not embraced; but, considering the nearness of London, really wonderful. There must be thousands of Metropolitan and Home County sidecarists who are occasionally at a loss for a week-end "touring" route, and the following run, mapped practically as we went along, may fill a gap when a jaunt of seventy or so miles is desired.

One can start at 11 o'clock, taking the Edgware road as far as Elstree, or branching off before Elstree and including Stanmore on the way to Bushey and Watford. (A good road, excellent from Elstree.) From Watford through picturesque country to Berkhampstead, then branch to the left for Chesham. (A suitable spot for a picnic luncheon may be found on the pretty common on the right.) On reaching the bottom of the hill into Chesham, turn abruptly to the right (missing Chesham), then through Chesham Vale on to Cholesbury and past Tring water-works, and "little Derbyshire" (800 ft.), on to the Tring and Aylesbury road. Leave the main road again immediately for Wendover, Amersham, High Wycombe

£100 complete

"DUNELT" Model B

FRAME. Specially designed strong section loop frame, with heavily reinforced lugs, practically unbreakable. Long wheel base ensures great comfort to the rider.

FRONT FORK. An exclusive feature. Laminated spring, designed specially for the "Dunelt," effectively absorbs all road shocks.

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SIDECAR. Specially designed, roomy and comfortable, with spacious locker at rear, complete with apron.

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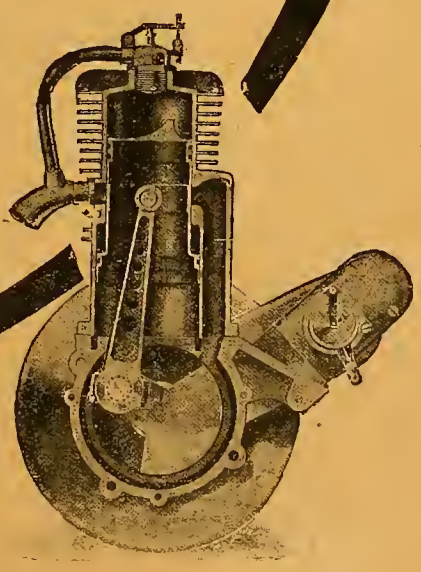
places the "DUNELT" in an unassailable position—it stands alone for VALUE and is the finest combination proposition that the motorcycle industry can offer. This is made possible by reason of the careful design of the machine from a production standpoint and large output—our position as manufacturers of special steels also enables us to obtain our supplies of material at minimum prices.

Comparison will prove to you that the "DUNELT" is quite exceptional in quality and value—its unbroken record of success in every trial entered is convincing proof of its ability—and a demonstration and trial run will convince you that for all round excellence and service there is nothing to equal it.

Write NOW for List and address of nearest agent—and let us arrange for a demonstration.

"DUNELT"
Model A-de-Luxe
Interchangeable
Wheel Outfit
with spare wheel

108 gns.



Section of Engine showing Truncated Piston

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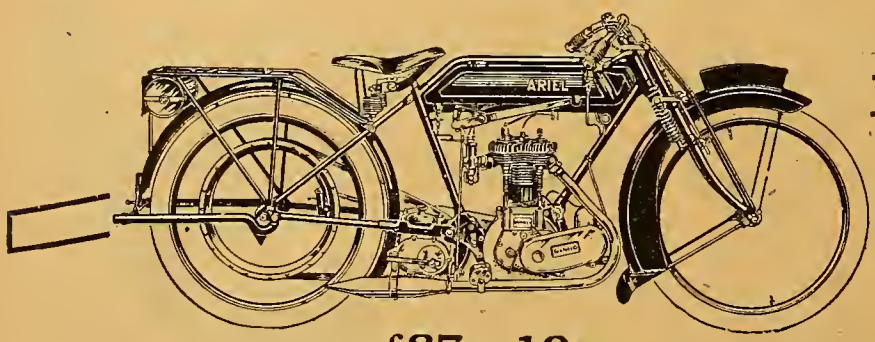

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motor cycles are carriage paid by goods train to nearest agent's station.

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The Sidecar and Punt.—

—hilly, attractive going—Great Marlow, Cookham, Taplow, Maidenhead, Windsor, Runnimede, Staines, and London.

This run embraces the best of the Chilterns and the finest reaches of the Thames. The roads, too, are good on the whole.

* * * * *

No! after all it is not a question of whether boating is superior to sidecaring: it is a matter of taste—or finance, for one cannot hire an outfit so easily as a punt. As attractive as the river is, I would rather have crossed the Chilterns and wandered along the luxurious Thames valley as we have just done, than have eaten lotus beneath a cascade of grey willow whilst reposing lazily in a punt.

* * * * *

Three Hours Later.

It is growing dusk, and a couple of sidecars still remain at the water's edge; it is, however, light enough to scribble. We have just returned a hired punt to the boat-house. It came about this way.

Self (still in dusty riding rig): "I expect every leaky old punt is in commission to-day."

Passenger: "'Spect so! The leakier the better, I should say." (Takes off coat and wrap.)

Self (rather surprised at the white dress beneath passenger's coat, also notices she wears white shoes): "Jove! You're just right for the river."

Passenger (jumping to conclusions): "Well, it's only dust on *your* boots, and you wear a white shirt and your trousers are flannel."

Self: "I wonder if it would be safe to leave the sidecar? And what about your pose? You've had no practice at posing."

(Passenger here strikes a self-conscious attitude and adopts an admirable and very self-conscious smile.)

Self: "Splendid! But what about *my* pose?"

Passenger: "That's all right, dear; it will come naturally to you."

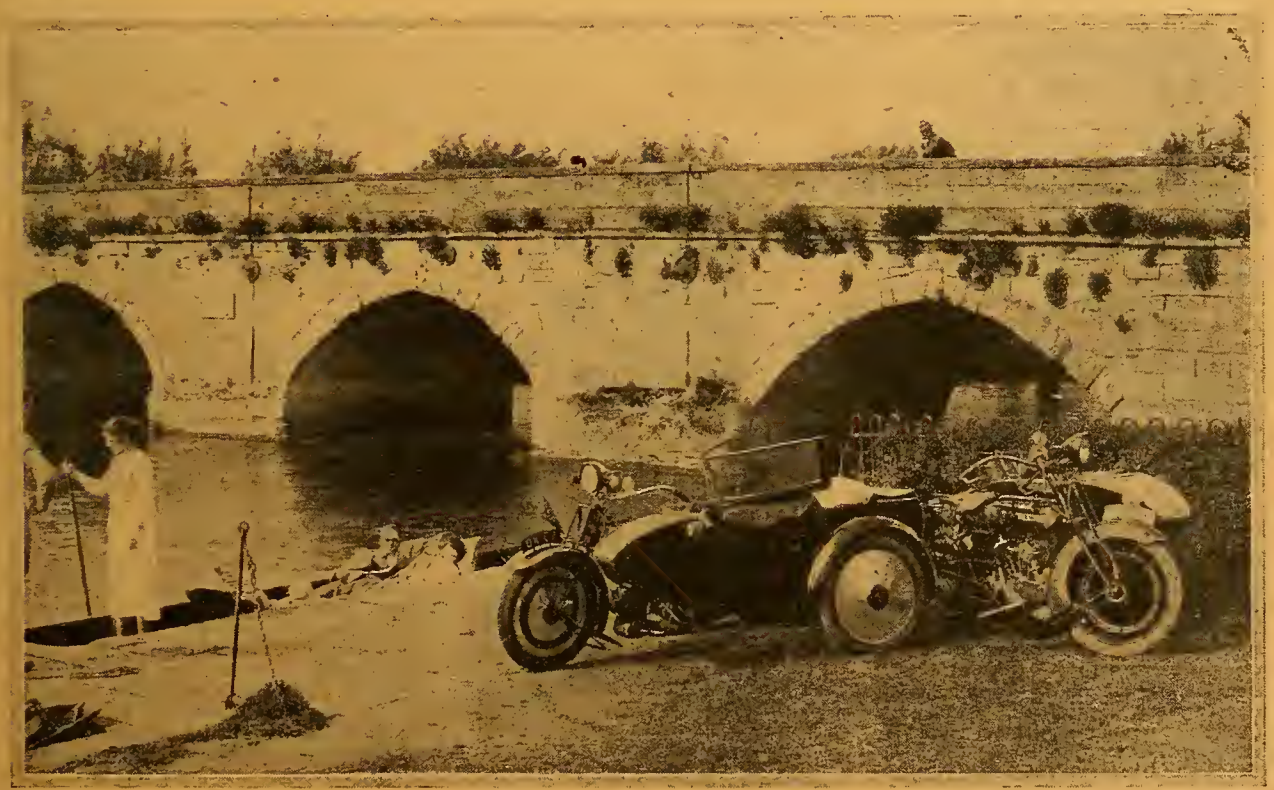
(She turns and walks hurriedly towards the boat-house! Self stands foolishly for a second or two, swallowing the compliment, then grunts and follows.)

* * * * *

The sidecar for me every time, it's very, very hot punting, and the gnats are a perfect pest when you sit under the willows. I look forward to the twenty-mile run home, yet I guess when my passenger talks to her friends of to-day's outing she will say: "We had such a lovely time punting on the Thames." But ask her to-morrow whether she would rather punt on the Thames for a fortnight, or sidecar through North Wales and the Lake District!

One cannot deny the romance of the river, for as I finish writing, a canoe glides by like a long grey shadow in the violet of the night, and as swiftly and silently as a black bat's flight. Murmurs faint and rippling waters . . . and so on to the accompaniment of muted harps and Eastern drums. But there's not much of a black bat's flight about a "hot stuff" Norton sidecar, say, on the Great North Road at midnight. No! there's not much romance about sidecaring as seen by the observer, although romance and the sidecar are sometimes very closely associated.

FRIAR JOHN.



At Stratford-on-Avon one is able to park the sidecar quite near to the water's edge whilst spending an hour or two on the delightful and historic Avon. B.S.A. sidecars are seen in the foreground.

Current Chat

Times to Light Lamps.

July 13th	.. ..	10.11 p.m.
„ 15th	.. ..	10.10 „
„ 17th	.. ..	10.8 „
„ 19th	.. ..	10.6 „

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Why Wheels Wobble.

A highly interesting review of the "wheel wobble" controversy which has been discussed in the correspondence pages of *The Autocar* was included in last week's issue of our sister journal.

A Dangerous Stretch.

A stretch of road between Egham and Sunningdale, on either side of the Wheatsheaf Hotel at Virginia Water, is reported to be extremely dangerous in wet weather, by reason of its glassy surface being a great provocative of skids.

Southsea Speed Trials Postponed.

The date originally fixed for holding the speed trials during the Southsea Carnival, August 17th, unfortunately coincided with the 200 mile race of the Junior Car Club at Brooklands. For this reason the trials have been postponed until Saturday, August 19th, when four out of some fifteen races will be set aside entirely for motor cycle entrants.

Demonstration at Bootle.

A big motor carnival and demonstration has been arranged to take place at Bootle on the 29th inst., commencing at 2.30 p.m., when the proceeds will be devoted to the Bootle Borough Hospital and other voluntary institutions at present in need of funds. A generous prize list will be provided, and the programme caters for all classes of motorists. Entry forms and full particulars of this event may be obtained from Mr. H. J. McFall, 88, Gloucester Road, Bootle.

D.R.'s Reunion.

The fourth annual rally of ex-Dispatch Riders formerly attached to the 24th Division was held recently at Lakeside, Windermere. In spite of the fact that the party only numbered seven this year, both the reunion and the dinner which followed were very much appreciated. Next year the rally is arranged to take place at Buxton, and all ex Don R's of the 24th Division who have not received notice of this annual affair are invited to communicate with the Secretary at Parksend, Swinton, Manchester, when full information will be forwarded to them.

A Stratford-on-Avon Gymkhana.

A procession of decorated motor vehicles will be a feature of Carnival Day at Stratford-on-Avon on July 29th, and the programme will also include a gymkhana, to be held in a public field opposite the Memorial Theatre. The hon. secretary is Mr. S. G. Foley, The Hospital, Stratford-on-Avon.

Progress.

The A.A. is enrolling new members at the rate of 1,000 per week, the total membership now exceeding 154,000. The income for the past year was £220,000, as against a budget estimate of £190,000. These figures indicate steady progress of the Automobile Association, and were referred to at length by Sir William Joynson-Hicks, the chairman of the A.A. and M.U., at the annual general meeting held on Monday of last week.

HOLDER OF THE CHAMPIONSHIP OF GERMANY. W. Rossig, who gained his title against riders on machines representative of many countries, on the 494 c.c. Douglas which he rode.

Special Features.

SIDECAR AND PUNT.
LADIES IN COLONIAL TYPE TRIALS.
MID-YEAR MODELS.
ACTIVITY OF THE CLUBS.

Blackpool Race Track.

A special committee has been appointed by the Blackpool General Purposes Committee to report on a proposal for the construction of a motor racing track in the new park projected for Blackpool. The suggestion for the construction of the track is said to be supported by forty motoring organisations, discussion of the project having first been instituted by the Blackpool and Fylde Motor Club.

Noisy Exhausts at Brooklands.

A notice issued by the Clerk of the Course at Brooklands, Colonel F. Lindsay Lloyd, is to the effect that motor vehicles, particularly motor cycles and others fitted with motor cycle engines, have become too noisy. In the future, therefore, no motor vehicle which makes a noise likely to cause annoyance to residents in the neighbourhood will be permitted to enter the track grounds.

A Royal Motor Cyclist.

Considerable satisfaction is being felt that the choice of H.M. the King of Belgium in purchasing a new motor cycle should have again fallen on a British-made machine. After an extensive personal trial in competition with other makes, His Majesty eventually selected a Coventry Victor as most nearly meeting his requirements. The engine and all important parts of the machine are being made at the Coventry works of the company thus honoured, the assembling being carried out at Brussels.

Closed to Motor Traffic.

It is announced by the Ministry of Transport that, following an investigation into all the circumstances of the case, an order has now been issued prohibiting motor cars from using the Old Wyche Road in Malvern from Westminster Road to the Wyche main road.

By the same order, the use of heavy motor cars is prohibited on Bransford Bridge over the River Teme on the Hereford-Worcester main road, over Holt Fleet Bridge crossing the River Severn on the Droitwich-Ombersley-Holt-Witley main road, and on New Mill Bridge over the River Teme at Shelsley Beauchamp.

Yesterday's Big Continental Race.

Yesterday the Grand Prix, France's premier motor cycle event, was held at Strasbourg; and, although at the time of going to press the result was not known, a British victory in the 500 c.c. class seemed highly probable. A full illustrated report of the event will appear in next week's issue of *The Motor Cycle*.

Harmful to the Movement.

The Duke of Leinster's motoring escapade—London to Aberdeen in 14½ hours—so prominently reported in the daily press, has called forth a letter of condemnation, widely circulated, from Mr. T. W. Loughborough, the secretary of the A.C.U. We agree unreservedly with Mr. Loughborough's comment that such a happening "merely does harm to the movement."

Wanted—A Speedway.

The North London M.C.C. is anxious to organise some speed trials, but a difficulty in securing a suitable stretch of road is experienced. The length of the course required is one kilometre (five furlongs), with sufficient room for a good start and finish. Any suggestions from readers would be welcomed by the hon. secretary of the club, Mr. Alan W. Day, "Claremont," Ballards Lane, Finchley, N. 3.

The Great Silencer Muddle.

At Richmond Police Court, Norman K. Pallent, of St. George's Road, St. Margarets, was summoned for not having a proper silencer on his motor cycle. He denied the offence, and said that the silencer was effective, and that the noise was due to the atmospheric conditions and a wall on one side of the way. Defendant also said that he had taken the machine to the Richmond police, and on their advice had had the silencer altered, and he complained that there was no unity in these matters. Machines which passed in one place would be stopped in another district. He was fined 40s. however.

A familiar view of the famous Bwlch-y-groes: J. W. Meredith (1098 c.c. T.B.) making a good ascent in the 24-hour M.C. and A.C. trial on Saturday last. This hill will very probably figure in the forthcoming A.C.U. Six Days Trials.

The Week-End Gale.

Competitors in the Bristol v. Bath Team Trial had to avoid branches of trees, blown off by the 100 h.p. gale which swept the West on Saturday last; at one point a large branch had fallen across a motor bus, and the road was nearly blocked.

126 ENTRIES FOR THE SIX DAYS TRIALS.

NO sign of waning support for the A.C.U. Six Days Trials is evidenced by the entry list, which shows that 123 machines are booked to demonstrate their merits between August 21st and 26th.

Cross-Country Route.

The route will be in the nature of a strenuous tour, involving some really serious hill work in Yorkshire, Wales and Gloucestershire, with a final speed test on Brooklands.

Below are the machines entered; where riders are already selected the names are given in parentheses:

CLASS A (250 c.c.).—New Imperial (B. Kershaw, L. Horton, and J. Wilkins), J.E.S. (R. P. Purnell), Coventry-Eagle (P. L. Mayo), Levis (three), Radco (G. Lovegrove), Sun-Vitesse (three).

CLASS B (350 c.c.).—A.J.S. (E. W. Cholderoft,° H. F. Harris, Mrs. O. M. Knowles,° and another), Raleigh (H. Gibson, W. H. Hadfield, C. F. Nott), Alloa (R. Cooper, L. E. Clulee, W. Johnson), O.K. Junior (A. E. Salway, N. Hall, W. Handley), Francis-Barnett (E. A. Barnett, S. M. Greening), Sheffield-Henderson (E. Searle), Connaught (I. F. Anderson, C. L. Sproson, A. G. Wall), Ner-a-Car (Mrs. Janson), Royal Ruby (C. J. Dodson, P. M. Hills), James (G. Kimberley, J. Lidstone), Beardmore-Precision (H. Greaves).

CLASS C (500 c.c.).—Rudge (W. L. Gard, F. S. Whitfield), Norton (R. M. Knowles*), Douglas (J. L. Hannan,* R. C. Winn,* J. A. Newman*), Sunbeam (G. Dance, A. Bennett, C. Greenwood, H. Beedon*), Martinsyde (A. A. Symes), Dunelt (two), Wilkin (W. H. Hardman*), Lea-Francis (R. P. Ransom, A. Lea), Triumph (W. N. Phillips*).

CLASS D (750 c.c.).—Scott (three), Powell (J. Westwood Wills), Coventry-Victor (G. E. Austin°), Martinsyde (A. G. Fennl, Indian (D. H. Davidson,* W. G Catterall*), McKechnie (F. W. Becker), Beardmore-Precision (S. M. Lewis), F.N. (T. Buckle), P. and M. (J. A. Leyland°).

CLASS E (1,000 c.c.).—Rudge (E. J. Kehoe), Brough-Superior (G. Brough°), Zenith (R. C. Charlesworth,° and two others), Harley-Davidson (W. D. Pugh°).

CLASS B/S (350 c.c. SIDECARS).—Connaught (L. P. Brettell).

CLASS F (600 c.c. SIDECARS).—New Hudson (B. Bourke and two others,) Rudge (A. W. Hadley,* W. L. Danskin, F. T. Sibley), Sunbeam (T. C. de la Hay, P. W. Bischoff, R. Brown), P. and M. (P. Cunningham, R. Lewis, G. M. Townsend), Dunelt (one), Beardmore-Precision (E. R. Jacobs).

CLASS G (1,000 c.c. SIDECARS).—Matchless (W. Bucknell,° E. C. Barton,° F. J. Ellis,° T. J. Ross, F. O'Brien), A.J.S. (O. Wade, H. Poole, F. W. Giles), Martinsyde (H. H. Nicholson, W. H. Bashall, J. T. Bashall), Excelsior (V. F. Long°), Chater-Lea (one), Indian (E. A. Bridgman,* R. Sivanton°), B.S.A. (H. S. Perrey, B. L. Bird, J. H. Walker), Bradbury (G. E. Minett,° P. Platt,* W. E. Grange), Harley-Davidson (G. Baxter, T. R. Allchin, C. W. Johnston), James (F. Cotton), Raleigh (E. S. Burnett*), Zenith (R. H. Bywaters), Ariel (one).

CLASS J 2 (750 c.c. CYCLE CARS).—Scott-Sociable (D. W. Rhodes), Metro-Tyler (A. McL. Powell*).

CLASS H 2 (1,100 c.c CYCLE CARS).—Morgan (S. Hall,* and two others), L.S.D. (G. W. Shepherd), T.B. (F. S. Spouse).

MACHINES UNSTATED.—(M. C. Breese, E. Cross, W. A. Fell Smith, Dickenson and Adams, Ltd.).

° Entered by rider.

COLWYN BAY SPEED TRIALS.

STANDING start kilometre speed trials were held by the Liverpool M.C. on Colwyn Bay Promenade on Saturday last, R. T. Cawthorne (490 Norton) making fastest time of the day.

There were 60 individual entries in the motor cycle classes alone, the following list of trophy winners giving a good idea of how the honours were distributed:—

Reliance 50-guinea Challenge Cup (for the fastest time by any rider): R. Cawthorne (490 Norton), 35 secs.

Baxter Memorial Cup (perpetual), for the fastest time by a private owner member of the Liverpool Club residing within 20 miles of Liverpool: G. S. Boston (349 A.J.S.).

Coopland Cup, for fastest time by amateur member (expert barred) of Liverpool Club: G. F. Burns (482 Sunbeam).

Cup, for fastest time with sidecar: V. E. Horsman (633 Norton sc.).

Cup, for fastest time with sidecar (amateur): S Ollerhead (494 Douglas).

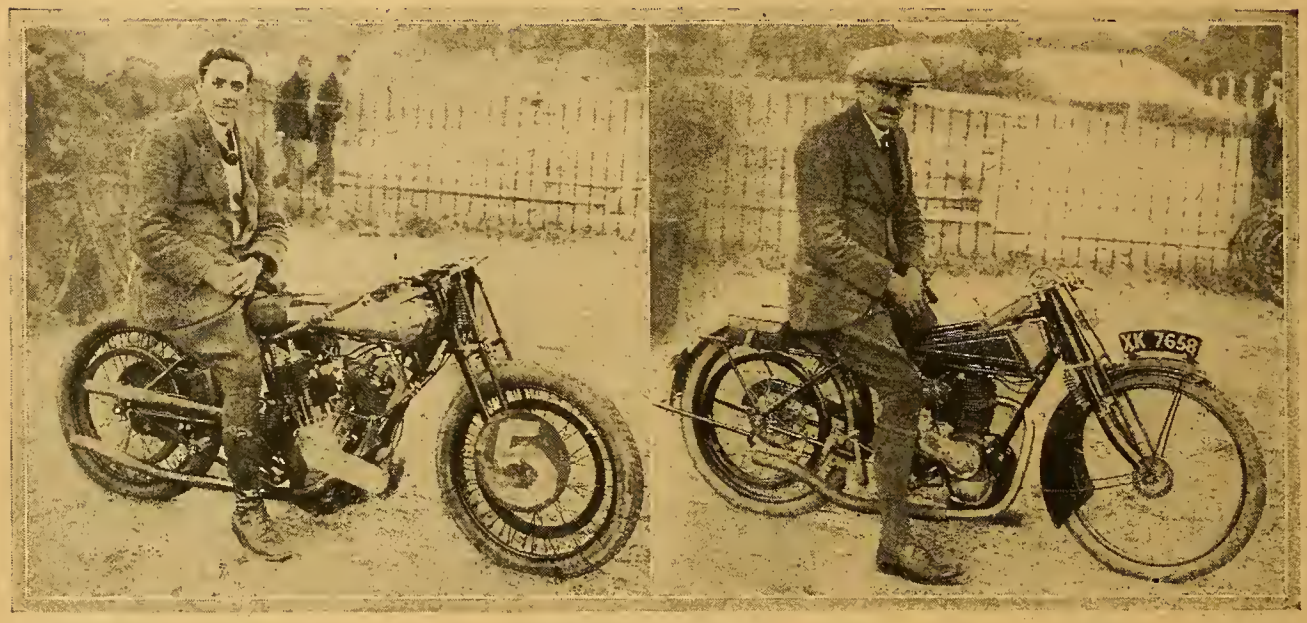
Cup, for fastest time (novice): O. Jessop (482 Sunbeam)

Mitchell and Butler Trophy, for fastest time by rider resident within 30 miles of Colwyn Bay: A. S. Jones (481 Scott-Squirrel).

Over 7,000 spectators were present and, excepting H. D. Killick's unfortunate spill, the event was very successfully organised and carried through.

NEW-COMERS' SUCCESS AT BROOKLANDS.

Sleeve-Valve B. & S. Engine and 80 m.p.h. Brough Superior among the Winners at M.C.C. Brooklands Meeting.



G. Brough (976 c.c. Brough Superior), an easy winner of the unlimited solo handicap at 82·08 m.p.h.

A. S. Guthrie (350 c.c. Diamond-Barr-and-Stroud), who won by an unexpectedly big margin in the 350 c.c. handicap.

AT the M.C.C. Brooklands meeting on Saturday, two new-comers to the track were successful in winning races at a first attempt.

A Barr and Stroud-engined Diamond opened the ball by romping home first by a big margin in the 350 c.c. handicap, the speed being 54.96 m.p.h.; and in the unlimited handicap a side-valve Brough-Superior driven by George Brough himself, won equally decisively at 82.05 m.p.h.

For the rest, the results might have been those of any B.M.C.R.C. event, H. Le Vack (New Imperial), J. Emerson (Douglas), and C. F. Temple (Harley-Davidson), being the winners of the three big solo scratch events.

Rain causes Curtailment.

Rain caused the curtailment of the meeting at 4.30 p.m., when it was announced that the remaining classes would be embodied in the Ealing Club's programme on the 29th inst.

All the races started and finished at the fork, and were of three laps duration.

Guthrie's win in the opening event—a 350 c.c. handicap—was quite unexpected, the favourites being C. G. Pullin (Douglas) and H. Le Vack (o.h.v. New Imperial), who were both on the scratch mark. As it turned out, three of the generonsly handicapped men were placed, and Le Vack succeeded, by reason of superior acceleration at the start, in leading Pullin all the way for fourth place.

350 C.C. SOLO HANDICAP.
1. A. S. Guthrie (350 Diamond), handicap 2m. 51s.
2. H. F. Edwards (249 New Imperial), 1m. 59s.
3. R. B. Clark (346 New Imperial), 27s.
Winner's speed = 54.96 m.p.h.

All the engines in the next—560 c.c.—handicap varied by no more than 9 c.c., and matters evolved themselves into a very fine but just unsuccessful attempt by F. B. Halford (499 Triumph) to gain 69s. on E. W. Spencer (499 Douglas). Both Emerson and Pullin were unable to beat their 9s. allowance to Halford.

350-560 C.C SOLO HANDICAP.
1. E. W. Spencer (499 Douglas), handicap 1m. 18s.
2. F. B. Halford (499 Trinmph), 9s.
3. A. F. Scroggs (496 Sunbeam), 1m. 18s.
Winner's speed = 65.66 m.p.h.

Next came the Brough-Superior's triumph, F. A. Longman (994 Ariel-M.A.G.), Le Vack (988 Zenith) and Temple (989 Harley) were the only other starters. A 6s. concession to Le Vack was too much for Temple, this time, anyhow.

OVER 560 C.C. SOLO HANDICAP.
1. G. Brough (976 Brough-Superior), 1m. 3s.
2. H. Le Vack (988 Zenith), 6s.
3. C. F. Temple (989 Harley-Davidson), scratch.
Winner's speed = 82.08 m.p.h.

Including B. F. C. Fellowes' historic 1899 De Dion, there were six starters in the first scratch event, but it was obviously going to be another Pullin-Le Vack duel with S. R. Axford on a 1921 T.T. A.J.S. as a dangerous dark horse. The New Imperial rider led throughout, and for two laps Axford and Pullin battled for a very close second place. Then Pullin retired, and Le Vack increased his lead slightly.

350 C.C. SOLO SCRATCH RACE.
1. H. Le Vack (346 New Imperial).
2. Major S. R. Axford (349 A.J.S.).
3. F. J Youngs (348 O.K.).
Winner's speed=71.31 m.p.h.

Halford's Triumph and Pullin's and Emerson's Douglases on level terms provided all the excitement in a well-supported "five-sixty" race. Halford and Emerson rode neck and neck for one lap with Pullin a few yards behind; next time round Pullin had changed places with Halford; and so they finished. It was the most thrilling struggle of the day.

560 C.C. SOLO SCRATCH RACE.
1. J. Emerson (494 Douglas).
2. C. G. Pullin (494 Douglas).
3. F. B. Halford (499 Triumph).
Winner's speed = 78.15 m.p.h.

Temple and Le Vack now staged another hard-fought contest, won, but not easily, by the former, whose speed, incidentally, was only 1.4 m.p.h. faster than G. Brough earlier in the afternoon.

OVER 560 C.C. SCRATCH RACE.
1. C. F. Temple (989 Harley-Davidson).
2. H. Le Vack (988 Zenith-Jap).
Winner's speed = 83.48 m.p.h.

What turned out to be the last race of the day—the 560 c.c. sidecar handicap—failed to arouse much excitement. J. S. Holroyd (346 Holroyd sc.) led until the last lap, when R. Newett overtook him to gain yet another Douglas victory.

600 C.C. SIDECAR HANDICAP.
1. R. Newett (499 Douglas sc.), handicap 2m. 0s.
2. J. S. Holroyd (346 Holroyd sc.), 3m. 18s.
3. C. Dickenson (498 Ariel sc.), 3m. 18s.
Winner's speed = 56.03 m.p.h.

Eng. Lieut.-Cmdr. A. K. Dibley (998 c.c. Indian) at the top of White Downs Hill. The surface lower down is particularly difficult, and several experienced trouble.

Naval Officers' Big Annual Event Won on Last Lap by Eng. Lt.-Com. S. G. Wheeler (490 Norton).

ALTHOUGH there are hundreds of motor cyclists in the Royal Navy, it is naturally a difficult matter to get a really large entry for such an event as the trial for the Arbuthnot Trophy. Yet this year, despite the naval operations off the coast of Devon, witnessed the best assembly with which this unique trial has yet been favoured. The event took place on Friday and Saturday last.

From Burford Bridge.

To describe the course in detail would be futile, but the following gives a rough idea of its nature. It formed a crude figure 8, one loop of which was covered before tea, and the other after, each lap being about 46 miles in length. Starting from Burford Bridge Hotel at 2 p.m. on Friday, the first item of interest was Ranmore Common, and quite early T. E. N. Knox (496 Martinsyde) left the course and lost much time.

Heavy showers fell during the first lap, turning the surface of the lanes into grease, and causing several retirements and troubles.

After climbing White Downs the competitors ascended through the woods on Netley Heath, and, reaching the main Guildford Road, carried on down a precipitous hill with a greasy surface. Here E. F. H. Lawson (490 Norton) suffered a slack hub nut and two skids; P. H. E. Welby-Everard (499 Rudge-Multi) skidded and ran into a fence; and H. A. Higgs (996 Brough Superior) fell twice in this locality. All agreed that they would rather ride up than down this terrifying hill. (Next day their wish was gratified.)

After Shere, that old favourite Combe Bottom was included, and here the first dozen men came up quite well, except A. D. Merriman (349 Beardmore) and Knox, who skidded. H. D. Chads (499 Triumph), joint holder of the trophy, made an excellent climb, as did C. A. Hutchison (292 Allon). The latter as No. 1 had taken great pains to keep to the course, and had made an outline map, carried on the handle-bars, showing the time he was due at every point; notwithstanding, he left the road once or twice. The marking was quite good on the whole. E. S. K. Evans-Greaves (976 Brough Superior), who won the first Trophy Trial (in 1919), came up riding beautifully; H. E. Welby-Everard (Rudge) foot-slogged, and then stopped after the corner.

Surrey Bye-lanes.

More by-roads followed. Newlands Corner was climbed, and then the men descended a cart-track to Albury, returning to Dorking, *viâ* Ewhurst, Holmbury St. Mary, down Tanhurst Hill, and through Redlands Woods.

During the tea stop, one heard of several incidents. E. S. K. Evans-Greaves (Brough Superior) left the course, and the saddle-peak support breaking, he fell on his head, and hurt his arm. He remounted but fell off again seven times and retired. R. T. Grogan (490 Norton), who did so well at Brooklands recently, retired with back spindle trouble. G. F. Mandeville (481 Scott-Squirrel) ran into a patch of soft clay at Newlands Corner. C. P. Robertson (490 Norton) and M. A. C. Slipper (499 Rudge-Multi) withdrew, and R. A. Braine (976 Brough Superior) had a loose exhaust pipe early in the lap. L. E. K. Rebbeck (Douglas) suffered timing gear trouble.

Only Six Clean Sheets.

These withdrawals and other casualties left six men in the running for the cup, J. H. Illingworth (499 Sunbeam), G. F. Mandeville (481 Scott-Squirrel), S. G. Wheeler (490 Norton), H. B. Baker (A.B.C.), Searles-Wood (499 Sunbeam), and H. D. Chads (499 o.h.v. Triumph).

After tea the weather cleared and the course was easier. Leaving Burford Bridge, a turn to the left was taken just short of Dorking Station, which leads on to the Dorking-Reigate road. Here F. H. Kennedy (998 Indian) fell, causing his retirement, but he was quite unable to account for his fall.

The Arbuthnot Trophy Trial.—

Pebblecombe caused no difficulty. Walton Heath was then crossed and the Brighton road followed; next a turn to the left was taken through pretty country, and eventually Wray Lane was reached and descended. After Merstham, White Hill was climbed and Arthur's Seat descended. Then followed three miles of tricky driving to Caterham Station, Coulsdon; and a journey through winding lanes to Banstead and Chipstead, eventually bringing the competitors home down Little Pebble Hill and Little Switzerland.

After suffering a number of side-slips in the first lap, A. D. Merriman (350 Beardmore-Precision) retired in the second, and C. A. Hutchison (Allon) had two stops owing to plug trouble and losing his way. The remainder made non-stop runs.

At the end of the first day, therefore, the same six men as made non-stop runs in the first lap remained in the running for the trophy.

The Second Day.

Though threatening, Saturday morning was fine, and fifteen survivors faced the starter. So as to ensure the finding of a winner, rather more importance was laid on punctuality than before, and a check was established at Newlands Corner on each lap. Though genuine amateur riders in every case, the men rode most consistently. Saturday's course was Friday's reversed. Consequently, Crocknorth Hill, the precipitous descent of which had been the bane of the competitors on the Friday, was the *pièce de résistance* as regards hill-climbing on the Saturday. It is but a track through beautiful woods, but greasy and steep. There was, however, some good riding. Wheeler (490 Norton) came up well, but made somewhat of a struggle over the crest, and Chads (499 Triumph) made a perfect ascent, but several clean sheets were spoilt by this hill. H .B. Baker (A.B.C.) failed the first time, and then made a splendid climb; Searles-Wood (Sunbeam) retired as he had lost his way earlier in the morning; Hutchison (292 Allon) made

The Trophy Winner—Eng. Comdr. S. G. Wheeler (490 c.c. Norton) on Whitedowns hill.

a good climb. Mandeville (Scott-Squirrel) failed—apparently owing to too high a gear—as did Illingworth (Sunbeam), Higgs (Norton), and Knox (Martinsyde). Dibley lost his way and retired, and only Wheeler and Chads were left with chances of gaining the trophy. Of these Chads was proving to be the better time-keeper.

Some interesting observations were made at the Headley hair-pin on the last lap. Here the men having come up through Little Switzerland had to turn sharply to the left up a piece of rough road, and although the route was clearly marked and Searles-Wood held up a card marked LEFT and pointed the way with extended arm, Hutchison, Chads, and another overshot the mark simply through inattention. Of the two favourites Chads had to turn to come back to the hair-pin, and Wheeler tried to take the turn on second, and only engaged his first in the nick of time. At Newlands Corner the cart-track leading to the check was climbed. On arriving at the check, Baker (398 A.B.C.), Chads (499 Triumph), and Knox (496 Martinsyde) made figures of 8 on the grass in sight of the time-keeper, making humorous remarks the while, until they were due to start.

An Exciting Ending.

As the end drew near there was great excitement as to who would be the winner. Sam Wheeler (490 Norton) arrived on the nick of time, but alas! poor Chads was missing. He arrived over ten minutes late, having lost his way near Reigate. S. G. Wheeler, therefore, was the indisputable winner. He rode a 490 c.c. Norton fitted with the invention of his brother—a floatless variable choke carburetter, which worked admirably. Thus ended the fourth Arbuthnot Trophy Trial, quite the best of the series.

In addition to the trophy winner, the following were awarded gold medals :—

Lt.-Comdr. C. A. G. Hutchison (292 Allon), Midshipman J. H. Illingworth (499 Sunbeam), Sub-Lt. G. F. Mandeville (481 Scott-Squirrel), Lt. H. D. Chads (499 Triumph), and Sub-Lt. T. M. Brownrigg (550 Triumph).

Sub-Lt. P. H. E. Welby-Everard (499 Rudge-multi), who rode extremely well, climbing Crocknorth Hill on the only belt-driven machine, and had a time error of only 2 min. 41 sec., was awarded the cup presented by Lt. E. S. K. Evan Greaves to the rider who put up the best performance under adverse conditions.

Lieut. H. B. Baker (398 c.c. A.B.C.) in rough going at the top of Newlands Corner.

Sub.-Lieut. J. I. Robertson (349 c.c. A.J.S.) and Lieut. F. H. Kennedy (998 c.c. Indian) at Newlands Corner.

IN SURREY AND KENT.

South-Eastern Centre A.C.U. Open Trial from Caterham.

AS the crow flies the competitors in last Saturday's one-day trial of the South-Eastern Centre, A.C.U., were never more than a dozen miles from the starting point.

None of the thirty-eight starters happened to be crows, however, so in getting out of Caterham from one side to getting back into Caterham from the other a little trip of fifty-three miles was accomplished.

Small Entry.

No doubt owing to lack of publicity concerning the event only a small entry was received. This was unfortunate, as the trial was a most interesting one, and its late start (at 10 a.m.) was most satisfactory to those who dislike hurried breakfasts and the tying on of official numbers in the cold grey dawn.

To describe the course of the trial in detail is almost impossible, for the endeavour of the route finders seemed to have been to traverse every winding and hilly lane between Caterham and Shoreham. In the afternoon the morning circuit was reversed, so that some of the tests were very different; for example, a rough stony descent in the morning which proved trying to riders with brake-locked back wheels became merely an easy climb in the afternoon; it is often noticeable, of course, that machines are easier to control when climbing.

Apparently there was no plan to save up the worst hill until the riders had got used to their tasks, for in a couple of miles the first and one of the worst tests was encountered. This was Succombs Hill, a really severe gradient approaching 1 in 4 and of that chalky and slimy stone peculiar to the district. To make matters worse the hill was entered by a by-road opening at right angles on to the worst portion.

On Yorkshire and Derbyshire limestone Succombs Hill would be a fairly hard climb, but a sure one for most machines. With its own peculiar surface it is difficult for solo men and touch-and-go with passenger machines; on a wet day it would be well-nigh impossible without non-skid chains.

A trio of solo riders on the rock-strewn lane at Titsey: E. C. Gordon (499 c.c. Triumph), Clifford Bowen (398 c.c. A.B.C.) and A. R. Wood (595 c.c. Indian).

Competitors on the grass-grown track of Scottshall Hill. W. Bucknell (976 c.c. Matchless sidecar) and L. J. Bucknell (976 c.c. Royal Enfield sidecar) both of the Croydon and District M.C.C. team.

The weather on Saturday morning at any rate gave everyone a favourable opportunity, but even so only one soloist made an undeviating and at the same time swift ascent; this one was R. Green (490 Norton). Excellent ascents at a slower speed were made by E. C. Gordon (499 Triumph), E. L. Showell (678 Martinsyde), C. Bowen (398 A.B.C.), A. R. Wood (595 Indian), J. E. J. Whitaker (499 Sunbeam), and H. A. Hampton (499 Sunbeam). Really good riding of a non-spectacular order was displayed by P. L. Mayo (249 Coventry Eagle) and A. H. Cox (499 Triumph). Others who made non-stop climbs were Mrs. G. M. Janson (211 Levis). W. E. Heborn (293 Monopole). T. G. Meeten (650 Indian), R. V. Crawford (654 P.V.), J. A. Newman (499 Douglas), F. A. McNab (654 Trump-Jap), A. H. Love (490 Norton), R. P. Steytler (349 P.V.), and B. J. Slade (348 Omega).

Less Successful.

There was one more soloist, J. F. Perrin (499 Zenith-Bradshaw), who also did not stop, but he had the greatest difficulty in keeping his skidding machine on the road; however, after some game struggles he reached the top. Another unfortunate, C. B. I'Anson, was mounted on a similar machine, but he had only the Gradua gear and failed to make the ascent.

R. M. Stewart (654 Trump-Jap) conked out unaccountably, R. A. Cass (349 Mohawk) failed, V. Vinnimore (499 P. and M.) skidded on the corner and fell, and his team mate, E. F. Chidley, used his feet for steadying purposes considerably, and finally took to the footpath.

H. A. Hampton (499 c.c. Sunbeam) and A. H. Cox (499 c.c. Triumph) rounding a bend on Titsey Hill.

Amongst the sidecars good ascents were made by P. W. White (976 Sunbeam sc.), who cleverly dodged a failing soloist. H. Jepson, on one of the new 976 c.c. three-speed Zeniths, was fast despite a slightly spinning wheel. E. O. Spence (989 Harley-D. sc.) was slow. P. Cunningham (555 P. and M. sc.) had his passenger well over the carrier. T. J. Ross (993 Matchless sc.), E. Eland (557 B.S.A. sc.), W. Bucknell (993 Matchless sc.). and L. J. Bucknell (976 Royal Enfield sc.) were excellent. W. Stevenson (976 Chater-Lea sc.) was steady. E. C. Barton (993 Matchless sc.) was not quite up to the standard of the other Matchless outfits. A. F. Pulling (976 Royal Enfield sc.) rushed the corner at speed, but without avail. The last sidecar was G. Baxter's Harley-Davidson, which climbed well, as did the only three-wheeler, a Morgan driven by J. A. McCarthy.

Incidents.

Not far after this point J. A. Newman was involved in a collision with a cyclist, and his Douglas was too damaged to continue. A. Pulling, on the Royal Enfield sidecar, collided with a bank and broke his fork spindles, having to retire. Baxter (989 Harley-D. sc.) was reported as having had a spill, but he carried on.

A rough little ascent at Scottshall Farm proved difficult, and some wheel slip was experienced on Salt Box; and there were several failures on Crown Ash. Titsey Hill was entered by a steep chalky lane, but only one failed at this point through missing his gear. After descending Chalk Pit Hill a steep climb through a wood (known as Tubbs Hill) resulted in practically every passenger machine failing with wheel spin. From Oxted to Caterham was easy running.

The Reverse Circuit.

After lunch all restarted except C. B. I'Anson (499 Zenith-Bradshaw), R. N. Stewart (654 Trump-Jap), R. A. Cass (349 Mohawk), J. A. Newman (496 Douglas) and A. F. Pulling (976 Royal Enfield sc.). As before non-stop rules prevailed.

The afternoon's run round the reverse direction of the course was a little easier until rain set in, which it did most inopportunely just as a short grassy rise at Scottshall Farm had to be ascended. However, even this did not cause any stops, but H. Jepson (976 Zenith sc.) had a bad attack of wheel slip, and only preserved his non-stop by good jockeying. The two P.V. machines made particularly nice climbs here, and R. Green (490 Norton) was again fast and sure.

Contrary to expectations, Chalk Pit and the rough climb at Titsey had caused no serious trouble. W. Stevenson's 976 c.c. Chater-Lea outfit being the only one to stop on the latter gradient. Near the finish W. E. Heborn (349 Monopole) had a skid which compelled his retirement.

Finish in the Rain.

E. L. Showell (678 Martinsyde) came up Scottshall very late, pointing to his tyres, while the Morgan was seen no more. Heavy rain fell as the competitors returned to Caterham via the downward slope of Succombs Hill, but twenty-six checked in during the downpour.

RESULTS.

GOLD MEDAL.

H. Jepson (976 Zenith sc.).

SILVER MEDALS.

E. C. Gordon (499 Triumph).
P. L. Mayo (249 Coventry Eagle).

BRONZE MEDALS.

Mrs. G. M. Janson (211 Levis).
A. R. Wood (585 Indian).
E. M. Chidley (499 P. and M.).
A. H. Cox (499 Triumph).

SEVERE 24-HOUR TRIAL.

Birmingham-Holyhead and Back. M.C. and A.C. Event in the Rain. Many New Hills.

HEAVY rain converted the Midland Cycling and Athletic Club and the Midland Car Club's twenty-four-hour trial from a moderately stiff test to a really severe trial for both men and machines.

Under these conditions it is creditable that out of 47 motor cycle and sidecar entries and four three-wheelers, no less than 31 of the former and all the latter reached the finishing point within their time allowance, though comparatively few retained really clean sheets.

Several interesting machines gathered at the start, at the Sansome Davis Garage on the Birmingham-Stratford road, on Friday evening at 7 o'clock.

Brinkworth's open-frame Omega was fitted with a 350 c.c. o.h.v. Blackburne engine, though his companion Ferriday had the standard two-stroke in a similar frame. Greaves' Barr and Stroud engined Beardmore had a novel exhaust pipe, the main bend taking the form of a sheet steel expansion chamber; Lewis on a 598 c.c. Beardmore Precision had sheet metal ribs to his exhaust pipe; and the Connaught riders apparently had inside information, since they turned out with high exhaust and inlet pipes, prepared for water.

An Early Watersplash.

As a matter of fact a very fair splash with a firm bottom but of some width and depth occurred in the second mile of the course and had to be crossed once more as a final obstacle. It was, however, a fair test, such as any standard machine should be able to negotiate, yet it caught a few napping. Weighing-in operations took place four miles from the start and were so well handled that there was no appreciable delay.

From Longbridge good roads were followed through Bromsgrove, Kidderminster, Bridgnorth, and Much Wenlock to Shrewsbury, where the first time check was located. Machines were parked in the beautifully equipped Raven Garage, while the riders were allowed over an hour for supper.

Severe 24-hours Trial.—

With lamps alight the long procession sallied forth on the main road to Holyhead, and there was wonderfully little lamp trouble throughout the night—a tribute to modern lighting sets.

Beyond Bettws-y-Coed some thirty or forty competitors were temporarily held up on account of a serious fire at Gwydyr Castle, as it was feared that accidents might occur with the oncoming fire engines.

So far the journey had been fine, but at Bangor, in the early hours of the morning, rain began to fall and scarcely stopped again until Wales was left behind.

One hundred and seventy-one miles from the start, Holyhead was the scene of the second time check and a welcome breakfast stop.

Back over the Menai Bridge through Carnarvon to Llanberris brought the first real test of the trial. Cefn-Du is a typical Welsh side road leading over a spur of Snowdon and having a surface composed of slate and grass.

On a critical portion of Bwlch-y-groes: L. E. Clulee (292 c.c. Allon) passing W. G. Harrison (349 c.c. Coulson-B), who suffered from belt slip.

Deceptive surfaces.

The hill rises for nearly two miles in a series of steps having a maximum gradient of about 1 in 5½; there is also a left-hand corner about half-way up, and it was here that most of the trouble arose. There was a reasonable path round the outside of the corner, but many were deceived by the apparently safe surface in the middle, and even light solo machines were troubled with wheel slip. Amongst these unfortunates were W. Hough (349 A.J.S.), and W. Gibb (494 Douglas). D. Atkin (346 Hobart) was in difficulties, but whether he actually stopped is a matter of doubt; he was not, however, in good health and the night ride had told on him, so that he retired shortly afterwards. F. Downs on a companion machine was baulked but restarted. Frank Smith (925 Clyno sc.), R. Scott-Walford (997 Excelsior sc.), one of the Rudge outfits, and indeed most of the sidecars experienced severe wheel slip, but as far as is known F. W. Giles (799 A.J.S. sc.), L. Newey (992 Ariel sc.), and F. H. Brown (550 Rex Acme sc.) made clean ascents. The three-wheelers all climbed well.

The route now led on through Beddgelert to the third time check at Harlech.

A fourth time check took place at Dinas-Mawdwy, and then came a timed ascent of Bwlch-y-Groes, the results of which will decide ties for premier awards.

On the whole the performances were good, but though we are without knowledge of the actual times taken the following appeared to stand out:—

E. A. Barnett (346 Francis-Barnett), H. Brinkworth (349 Omega), W. Hough (349 A.J.S.), R. F. Turner (249 New Imperial), H. Greathead (348 Ivy), W. Knight (499 Triumph), W. Hill (348 H.B.), A. R. Evans (499 Sunbeam), W. Gibb (494 Douglas), G. Butcher (499 Sunbeam), R. C. Atcherley (499 Triumph), L. Newey (992 Ariel sc.), H. G. Uzzel (976 New Imperial sc.), F. H. Brown (550 Rex-Acme sc.), and F. W. Giles (799 A.J.S. sc.), whose performance was almost startlingly fast. Of the three-wheeled cyclecars, F. Spouse (1098 T.B.) appeared to be the best.

After lunch at Bala, rain continued to fall heavily, and some five miles from the stop came a rough narrow ascent known as Cefn Coch. Though steep, the hill caused little trouble, but F. Ferriday (348 Omega) shed a chain.

A gate and a short stretch of wet grass led to the main mountain road to Llanfyllin, and a strong headwind with rain driving almost horizontally made the trip most unpleasant. After Llanfyllin a rough and greasy ascent and a dangerously greasy descent with an acute left-hand hairpin led to Peniarth hill, an uneven climb of no great severity.

Few clean climbs.

Moel-y-Golfa hill is a narrow lane nearly two miles long rising in three steep steps of very rough and very greasy surface. Really clean climbs were few and far between, since the surface was such that solo riders had the greatest difficulty in keeping upright.

Through Shrewsbury, once more, to a tea check at Cound, the next point of interest was Harley bank, where the stop and restart test was held. It was too easy to cause trouble, though for some unknown reason Brinkworth (Omega) failed to get away cleanly.

Returning through Bridgnorth and Kidderminster, Hagley Wood hill was the next obstacle—too easy for comment—thence over a grass track to Walton hill. Here C. B. Hemphill (348 Excelsior) failed to change cleanly, and stopped; and W. Johnson failed with a burnt-out clutch, spoiling the fine performance of the Allon team. W. G. Harrison (348 Coulson) also failed. The best ascents were made by N. Hall (348 O.K. Blackburne), W. Hough (348 A.J.S.), G. Butcher (498 Sunbeam), H. G. Uzzel (976 New Imperial sc.), F. H. Brown (550 Rex-Acme sc.), F. W. Giles (799 A.J.S. sc.), and L. A. Bees (598 Beardmore-Precision sc.),

Spectators on Beacon.

As usual Beacon Hill attracted a fair crowd of spectators, but it is an easy climb, and the brake test at Rose Hill was more interesting. Competitors were required to cover a measured distance at a minimum of 10 m.p.h., and to pull up in 9 ft. This test was performed satisfactorily by the majority, but the following lost marks either for being too slow or for overshooting the tape: P. G. Dallison (293 Connaught), F. V. Wood 293 (Connaught), N. Hall (348 O.K. Junior), W. Rudge (293 Connaught), C. B. Hemphill (348 Excelsior), W. Johnson (292 Allon), W. G. Harrison (348 Coulson), A. R. Evans (498 Sunbeam), W. B. Gibb (494 Douglas), C. L. Reading (498 Ariel), T. W. Meridith (1098 T.B.), and F. Spouse (1098 T.B.). Outstanding performances must be credited to W. Hough (348 A.J.S.), E. R. Jacobs (348 Beardmore-Precision), J. Sykes (596 Sunbeam) and R. W. Duke (499 Triumph).

From Longbridge to the finish the outward route was followed in a reverse direction, and only four miles from home E. A. Barnett (348 Francis-Barnett) lost his way and checked in four minutes late. This was a most unfortunate occurrence, for in spite of a heavy fall near Bala in which his machine was considerably damaged, he climbed all hills and rode most consistently. A large crowd round the Sansome Davis garage welcomed the returning competitors with cheers.

Club News

Knock M.C.C.

The social run held recently, starting from Neils Hill, Belfast, at 2.30, and finishing at Ballywalter, was an unqualified success, covering a distance of about 30 miles, which competitors had to complete at an average speed of 20 m.p.h.

Richmond and District M.C.C.

Proposals are at present on foot to organise a club for this district, and although the Ealing and the Surbiton Clubs are not far distant, it is still thought that motor cyclists in the actual Richmond district would welcome a club of their own formation. Those interested in the scheme should communicate with Mr. D. A. Griffith, at "Derriston," London Rd., Twickenham, who will supply all details in connection with it.

Darlington and District M.C.C.

A sporting trial was held on Wednesday evening, the 5th inst., and was very successful, although rather spoiled by rain towards the end of the event. The course included the ascent of Peat Fell, which is 1,333 feet above sea level. First place was won by J. M. Richmond (490 Norton sc.), followed by J. W. Moffet (10 G.N. light car), whilst W. A. Porter (249 Velocette) came in third.

Surbiton M.C.

Arrangements have been made, in conjunction with the Vaudeville Club of Thames Ditton, for holding a social evening, preceded by a trial run at Thames Ditton on the 20th inst., to take place in connection with the Disabled Drivers' M.C. Dancing, billiards, and cards are among the attractions offered; the course will not be at all strenuous, and the rules have purposely been kept simple to ensure a good entry. Particulars are available from Mr. Kaye Don, 6, Anglesea Rd., Kingston.

South Shields and District M.C.C.

The handicap hill climb which took place at Maggleswick Common, Durham, on the 2nd inst. over a half-mile course, was open to all clubs affiliated to the North-Eastern Centre, A.C.U., and some good performances were made. Results:—350 c.c. Class: Davidson Hall (349 New Scale), 41s. 600 c.c. Class: S. Bell (490 Norton), 34⅘s. Unlimited c.c. Class: S. Bell (490 Norton), 34⅘s., which was the fastest time of the day. The handicap winners were:—(1) K. Dixon (499 Sunbeam), 36⅕s. (2) M. Gardner (499 Triumph).

Rochester, Chatham and District M.C.C.

Below are given the results of the Brooklands meeting held in conjunction with the West Kent and Brighton and Croydon M.C.C. on the 1st inst.:—

350 c.c. Class (Amateur).—(1) A. Peet (349 A.J.S.). (2) R. Dequio (348 Ivy). (3) C. Quick (348 Rex-Acme). Expert:—(1) E. Remington (292 Edmund). (2) A. Fraser (348 Douglas). (3) T. Eve (348 Douglas).

600 c.c. Class (Amateur).—(1) — Hewitt (494 Douglas). (2) — Watt (499 Sunbeam). (3) — Sharpe (494 Douglas). (Expert).—(1) G. Maund (398 A.B.C.). (2) C. Volk (494 Douglas). (3) G Newman (499 Sunbeam).

1,000 c.c. Class (Amateur).—(1) — Watt (499 Sunbeam). (2) J E. Whitacker (499 Sunbeam). (3) — Sharpe (494 Douglas) (Expert).—(1) G. Maund (398 A.B.C.). (2) G. Newman (499 Sunbeam). (3) C. Volk (494 Douglas).

1,000 c.c. Sidecars.—(1) W. Bucknell (976 Matchless sc.). (2) — Clarke (550 Triumph sc.). (3) — Potts (998 Harley-Davidson sc.).

The Woodman Cup.—(1) G. Maund (398 A.B.C.) (2) E Remington (292 Edmund. (3) T. Eve (348 Douglas).

The Winners' Handicap.—(1) C. Volk (494 Douglas). (2) T. Eve (348 Douglas). (3) J. E. Whitacker (499 Sunbeam).

Doncaster and District M.C.C.

Arrangements have now been completed for the next speed trials, which are to take place on Thursday, the 20th inst., and full particulars may be obtained from Mr. L. Callender, 55a, St. Sepulchre Gate, Doncaster.

East Midland Centre A.C.U.

In view of the fact that the second round for the Centre Cup has been incorporated in the Clipstone Drive speed trials on the 29th inst., it has been decided to make the event open to all clubs in the Centre. The Loughborough and District M.C.C. has offered a silver cup to the member who makes the fastest time.

Week-End Club Events.

July 14th.—Coatbridge, Airdrie and District M.C.C.—Reliability Trial.
July 15th.—Worcestershire M.C. and District M.C.C.—Reliability Trial.
July 15th.—Mid Bucks M.C.C.—Social Run.
July 15th.—Gloucester M.C. and L.C.C.—Run through Forest of Dean, etc.
July 15th.—Birmingham M.C.C.—Hill Climb.
July 15th.—Bulwell M.C.—Hill Climb.
July 15th.—Dewsbury and District M.C.C.—Secretary's Surprise Run.
July 15th.—Walsall and District M.C. and West Birmingham M.C.C.—Reliability Trial.
July 15th.—South Midland Centre A.C.U.—Reliability Trial.
July 16th.—Reigate, Redhill and District M.C.C.—Social Run to Windsor.
July 16th.—Exeter M.C. and J.C.C.—Run to Maidencombe.
July 16th.—Leeds M.U.—Inter-club Run with Wakefield.
July 16th.—Prestwich and District M.C.C.—Hill Climb.
July 16th.—Manchester M.C.—Reliability Trial.
July 16th.—Rochester, Chatham and District M.C. and L.C.C., and West Kent M.C.—Inter-club Hill Climb at Shoreham.
July 16th.—Woolwich and District M.C.C.—Members' Team Trial.
July 16th.—Wallington and District M.C. and L.C.C.—Social Run.
July 16th.—Atherton and District M.C.C.—Run to Llangollen.
July 16th.—Loughborough and District M.C.C.—Trial for Will Chapman Cup.
July 16th.—Coventry Triangle M.C.—Run to Bromsgrove Lickeys.
July 16th.—Sheffield M.C.—Run to Rudyard Lake.
July 16th.—York and District M.C.—Run.
July 16th.—Newcastle and Northern M.C.—Consistency Hill Climb.
July 16th.—Bristol M.C. and L.C.C.—Day on the River at Salford.
July 16th.—Eastbourne and District M.C.C.—Reliability Trial.
July 16th.—Berkhamstead and District M.C.C.—Speed Judging and Balloon Chase.
July 16th.—Rotherham and District M.C.—Run to Harrogate.
July 17th.—Essex County and Southend A.C.—Village Seeking Competition.
July 18th.—Gloucester M.C. and L.C.C.—Evening Hill Climb.
July 19th.—York and District M.C.C.—Run to Kilburn Bank.
July 19th.—Leeds M.U.—Impromptu Run.
July 20th.—Bridgnorth and District M.C.C.—Hill Climb.
July 20th.—Worcestershire M.C. and District M.C.C.—Visit to Austin Motor Works.
July 20th.—Doncaster and District M.C.C.—Speed Trials.

Westmorland M.C.C.

A sporting trial over a difficult but well-directed course has been arranged to take place on the 23rd inst. for enthusiasts of this kind of trial. Entries will be received up to the moment of starting, which has been fixed at 9.0 a.m. from the County Hotel, Kendal. Any further particulars required may be obtained from Mr. J. P. Johnson, East Baok, Kendal.

North London M.C.C.

The annual sports were held at Radlett on the 1st inst., and although some rain fell, the success of the event was in no way interfered with. Riding the plank, a blindfold race, driving competitions, musical chairs, etc., were all keenly contested, and the afternoon was much enjoyed.

Sheffield and Hallamshire M.C. and L.C.C.

On Saturday, the 1st inst., a hill climb took place at Lodge Lane, Sheffield, when, in spite of a gradient that was none too easy and a bend near the finish, some good performances were made. The fastest time of the day was made by E. Searle (499 Sheffield-Henderson), his time being 32⅘s. Several interesting events are included in the programme for the near future.

West Birmingham M.C.C. and Walsall and District M.C.

An inter-club reliability trial has been arranged to take place on Saturday next (July 15th), open to motor cycles, sidecars, and three-wheelers. The course, starting from the Red Lion Hotel at Wombourne, will be approximately 80 miles in length. The various awards include the "Douglas Challenge Cup" presented by Messrs. Frank Whitworth, Ltd., for the best performance of a member of the West Birmingham Club, and "St. Swithin's" Challenge Cup for the most successful member of the Walsall and District Club. Communications should be addressed to Mr. N Rhodes at 212, High St., Bloxwich.

Newcastle and District M.C.

The results now to hand of the all-night run to Edinburgh and back from Newcastle are as follows: The Baker Challenge Trophy and silver ashtray for best performance, E. F. Walters (G.N. cycle car); Bainbridge Trophy and enamelled gold medal for best solo performance, Davidson Hall (496 N.U.T.); Ovaline Challenge Trophy and enamelled gold medal for best sidecar performance, T. W. Lorrey (490 Norton sc.); Douglas Challenge Bowl and club gold medal for best four-wheeler, E. F. Walters (G.N. light car); team prize, G. B. Bainbridge (Rolls-Royce), S. Bell (490 Norton), and A. Brewis (496 N.U.T.).

Gold Medals.—J. E. Reed (348 Wolf-Blackburne), G. Baker (994 Ariel sc.), and P. Hart (293 Calthorpe).

Silver Medals.—A. Brewis (496 N.U.T.), R. Ellis (496 N.U.T.), A. Stewart (496 N.U.T.), R. S. Scoon (654 Rover), T. Joynson (350 Invicta), N. McLean (490 Norton), A. Elliot (490 Norton), B. H. Cathrick (499 Dunelt), T. Wright (349 A.J.S.) J. E Thompson (349 A.J.S.), G. Watson (249 Velocette), H. Thompson (249 Velocette), S. Bell (490 Norton), H. Brogden (348 Douglas), H. Davies (678 N.U.T.), E. R. Cooper (799 A.J.S. sc.), J. McDonald (499 Dunelt), G. Heath (976 Matchless), G. F. Sturm (499 Dunelt), W. W. Chase (499 Dunelt), H. L. Young (933 Matchless sc.), A. Dixon (499 Rover), G. Watson (976 Matchless sc.), H. Tanake (1,301 Henderson), and J. Sawyer (499 Triumph).

Bronze Medals.—R. P. Reid (532 Scott), W. C. Thompson (496 N.U.T.), G. H. Twine (398 A.B.C.), B. J. Knight (499 Sunbeam), J. K. Hunter (350 Invicta), C. Leslie (350 Invicta), T. Thompson (490 Norton), J. Fairweather (269 Federation), M. N. Garbutt (499 Triumph), G. Batty (976 Dene sc.), N. Moore (976 Dene sc.), and J. A. Stewart (349 A.J.S.).

Members of the Norfolk and Norwich M.C. recently arranged a sidecar outing for the poor children of the district. The photograph depicts the start of the run, which was highly appreciated by the youngsters.

Weston-Super-Mare M.C.C.

A reliability trial is being held on Saturday, the 22nd inst., open to members of any club affiliated to the South Western Centre A.C.U. Particulars are available from Messrs. D. Read and Co., Orchard Street, Weston-super-Mare.

Lewes and District M.C.C.

An inter-team reliability trial took place on the 2nd inst. over a 90 miles sporting course, which included three water splashes. The winning team consisted of W. H. Law (349 Verus), G. E. Stacey (349 Verus), and S. Dunford (989 Harley-Davidson). The special award, a cup for the best individual performance, was won by H. V. Warren, of Eastbourne, on a 976 c.c. Royal Enfield sole, who completed the course without any less of marks.

Herts M.C. and L.C.C.

A stretch of road about 520 yards in length near Northaw, Potters Bar, was selected for the hill-climb held on June 29th. As many as seventy entries were received, and the results were as follows:

350 c.c. CLASS.—(1) H. Reyre (269 Reyre-Newson), 30s.=35.5 m.p.h., bronze medal; (2) O. D. D. Hall (293 New Imperial), 42⅖s.=25.2 m.p.h.

500 c.c. CLASS.—(1) E. C. Gordon (499 o.h.v. Triumph), 25s.=42.5 m.p.h., silver medal; (2) J. Hill (494 Douglas), 25s.=42.5 m.p.h., bronze medal (after a tie with W. Cox (490 Norton) at 26⅘s., Hill was the winner by one second).

BETWEEN 500 AND 600 C.C.—(1) G. C. Giddings (596 Indian), 32s.=33.2 m.p.h., bronze medal; (2) E. C. Gordon (499 o.h.v. Triumph), 32⅘s.=32.6 m.p.h.

750 c.c. CLASS.—(1) H. H. Saddington (654 James), 21⅘s.=48.8 m.p.h., silver medal; (2) E. C. Gordon (499 o.h.v. Trinmph), 23s.=48.8 m.p.h., bronze medal.

UNLIMITED CLASS.—(1) H. H. Saddington (654 James), 22⅖s.=47.9 m.p.h., silver medal; (2) E. C. Gordon (499 o.h.v. Triumph), 22⅘s.=47.1 m.p.h., bronze medal (after a tie with M. D. Borders (490 Norton).

600 c.c. SIDECAR CLASS.—(1) J. Hill (494 Douglas sc.), 29⅘s.=35.7 m.p.h., bronze medal; (2) H. B. Freeman 557 B.S.A. sc.), 51⅕s.=20.8 m.p.h.

800 c.c. SIDECAR CLASS.—(1) H. H. Saddington (654 James sc.), 27⅘s.=38.2 m.p.h., silver medal; (2) J. Hill (494 Douglas sc.), 31s.=34.3 m.p.h.

1,100 c.c. SIDECAR CLASS.—(1) H. H. Saddington (654 James sc.), 27⅕s.=39.1 m.p.h., silver medal; (2) J. Hill (494 Douglas sc.), 28⅘s.=36.9 m.p.h., bronze medal.

1,500 c.c. SIDECAR CLASS.—(1) H. H. Saddington (654 James sc.), 26⅘s.=36.6 m.p.h., silver medal; (2) W. H. Hardman (976 Matchless), 33⅘s.=31.8 m.p.h., bronze medal.

1,500 c.c. LIGHT CAR CLASS.—(1) A. A. Pollard (Alvis) 35⅕s.=30.2 m.p.h., silver medal; (2) G. Pollard (Alvis), 38⅘s.=27.7 m.p.h.

The fastest times of the day were put up by: (1) Sole meter cycles, H. H. Saddington (654 James), 48.8 m.p.h.; (2) Sidecars, H. H. Saddington (654 James), 39.6 m.p.h.; (3) Cars, A. A. Pollard (Alvis), 30.2 m.p.h.

Widnes M.C.

J. Mooney (499 Sunbeam) secured first place in the "Blake Cup" trial held on July 2nd over a main road course approximately 110 miles in length, followed by A. J. Sandand on a Mergan; A. J. Bailey (490 Norton sc.) came third, and J. Bardsley on a 678 c.c. Martinsyde and sidecar made a close fourth.

Tiverton M.C. and L.C.C.

There was only a small turn-out for the recent half-day reliability trial from Tiverton to Simonsbath and back by a different route, a total distance of about 90 miles. The hills were for the most part taken well, and the majority of the competitors checked in on time.

Berkhamsted and District M.C.C.

A successful reliability trial was held recently with the following results:—(1) L. Gower (550 Triumph) won the Porter Cup with a loss of 17 marks. (2) A. W. Howlett (498 Ariel), silver medal, lost 32 marks. (3) H. Sanders (633 Norton) lost 35 marks.

For the 16th inst. a speed-judging competition and balloon chase has been arranged, full particulars of which are now available from Mr. J. G. Craft, Apsley End, Hemel Hempstead, Herts.

Isle of Wight M.C.C.

The following results of the slow hill climb are now to hand:—

SOLO CLASS.—(1) H. Biles (293 New Imperial-Jap). (2) G. W. J. Marvin (595 Douglas). (3) G. Mansbridge (240 James).

SIDECAR CLASS.—(1) E. H. Darling (595 Douglas).

Wakefield and District M.C. and L.C.C.

Held recently over a 100-mile course, the annual reliability trial for the club silver cup was partly spoilt by the rain which fell heavily during the return journey. Out of eighteen entries fourteen started, with the following results: 1, S. E. Wood (Morris-Cowley car); 2, G. A. Smith (654 Quadrant sc.); 3, R. Leedal (1,098 Morgan).

Limerick and District M.C.C.

It is proposed to organise a motor cycle club in the Limerick district, including Clare and North Tipperary, provided that sufficient support is forthcoming. A meeting is being held on Friday, July 14th, to which all intending members are invited. All communications should be addressed to Mr. G. P. Quin, Corbally House, Limerick.

South Midland Centre A.C.U.

The reliability trial on Saturday, July 15th, will start from Frederic Street, Luton, at 10 a.m., and is open to motor cycles, sidecars, and three-wheeled cycle cars driven by members of clubs affiliated to this Centre. Entry forms and further particulars of the event may be obtained from Mr. C. Dickinson, 1, Frederic Street, Luton.

Neath and District M.C.

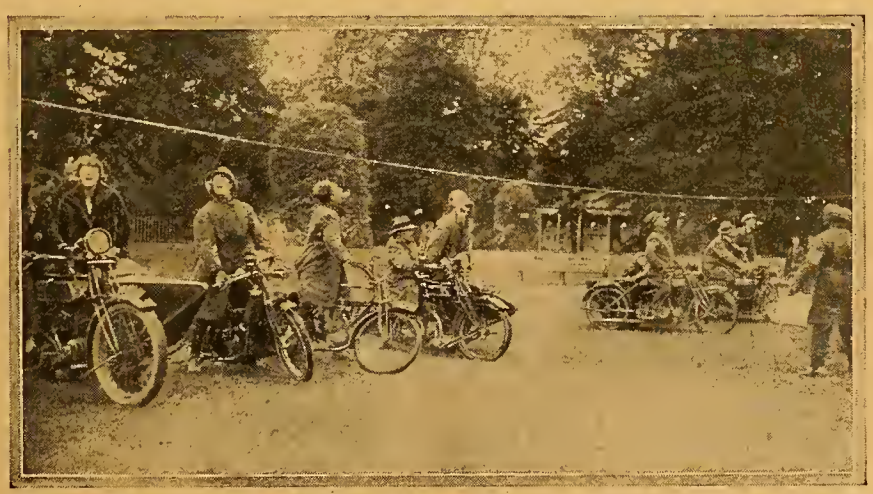
It is interesting to learn that this club has decided to hold a fifty-mile and a hundred-mile Welsh T.T. race on Pendine Sands on Bank Holiday Tuesday, August 8th, which marks the first attempt to hold a hundred-miles race in Wales. Full particulars of this event may be obtained from the honorary secretary, Mr. Haydn Evans, 9, Windsor Road, Neath.

Matlock and District M.C.C.

It is proposed to re-open a motor cycle club for this area covering a radius of twelve miles around Matlock. If sufficient support is offered it is hoped to organise a number of events during August and September, and to arrange lectures, etc., during the winter. Motor cyclists interested in the scheme are invited to attend a meeting at the Darley Bridge Garage, Darley Dale, at 7 p.m. on Saturday next, July 15th, or failing this, to communicate with Mr. E. F. Hurt at South Darley, Matlock.

Lee, Lewisham & District M.C. & L.C.C

The results of the "Ranger Cup" reliability trial, which took place at the end of last month, are as follows: The Ranger Challenge Cup and best performance under 350 c.c. sole, H. W. Allen (293 Coventry-Eagle), who gained 299 marks out of a possible 300. Best performance over 350 c.c. sole, H. Clifton (550 Triumph), 297. Best performance in sidecar class, E. Eland (557 B.S.A. sc.), 293. The special award for the novice, irrespective of class, was won by E. G. Griffen (269 Chater-Lea).



BRISTOL M.C.C. GYMKHANA AT BRISTOL ZOO. Competitors in the bun biting competition caused great amusement, each competitor having to eat the bun on the end of the string without touching it with his hands. Owners of A.J.S., Scott, Norton, and Douglas machines taking part in the competition.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle, Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

CONCERNING THE TWIN B.S.A.

(1) What is the best top gear ratio with medium weight sidecar for fast work in a level country? The top gear fitted to my 770 c.c. twin B.S.A. (5.5 to 1) seems rather low. (2) Can a silent front chain be fitted to this model? (3) Can twist grips be fitted?—J. J. L.

(1) 5 or 5¼ to 1; it is doubtful whether you will appreciably increase the speed by gearing higher than this. The ratio at present installed does seem rather low, but you should consult the makers before making a change. (2) A silent chain could not be fitted to this model without considerable alteration to the clutch and shock absorber. (3) Twist grip controls are marketed by most of the accessory houses, and they could be fitted to your machine.

SPEED AND GEAR RATIOS.

Shortly after purchase I tried my 633 c.c. Norton machine solo on a level road "all out." The speedometer, one of the magnetic type, pointed to 65 m.p.h. (1) Is this likely to be inaccurate? I have been told that this machine is geared a trifle low and advised to fit an engine sprocket of 18 teeth. (2) Would this be injurious to the engine (a) solo (b) with a light sidecar attached?—H.R.M.

(1) It is quite likely that the machine would do between 60 and 65 m.p.h., and there is no reason to doubt the accuracy of the speedometer. (2) A slightly higher top ratio will not be injurious to the engine, providing you do not allow the latter to labour on high gear when hill climbing or accelerating, especially when the sidecar is attached.

OVERHEAD CAMSHAFTS.

(1) Have overhead camshafts (bevel driven) any advantage over the push rod system? (2) What would you consider the maximum angle at which a motor cycle would be tilted when cornering at speed?—L.W.

(1) In the case of engines with a number of cylinders, especially of the long stroke variety, the overhead camshaft has decided advantages, as it cuts out a great deal of operating mechanism and eliminates many parts, the adjustment of which is affected by expansion due to the heat of the engine. It also permits of the entire valve mechanism being enclosed in the extensions of the cylinder heads, providing that adequate cooling can be arranged at the same time. Depending upon these considerations also, there is much greater possibility of obtaining silent running. (2) The answer to this question depends very much upon the design and weight distribution. Probably about 50° is an extreme on a perfectly level surface.

Important Dates.

Sat., July 15th—B.M.C.R.C. Members' Meeting at Brooklands.
Sun., July 23rd—Belgian Grand Prix.
Fri., July 28th, to Mon., July 30th—Anglo-Dutch Trial in Holland.
Sat., July 29th, North-Western Centre A.C.U. Open Hill Climb.
Sat., July 29th — Scottish Speed Championships.
Thurs., Aug. 3rd, to Wed., Aug. 9th—International Six Days Trials.
Sat., Aug. 5th, and Mon., Aug. 7th—Irish Two-day Open Trial.
Mon., Aug. 7th—West S. Wales Centre A.C.U. Open Speed Trials at Pendine.
Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.
Sat., Aug. 12th—Motor Cycle Races in Phœnix Park, Dublin.
Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.
Sat., Sept. 16th—The Scott Trial.
Sat., Sept. 23rd—500 Mile Race at Brooklands.
Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

UNEVEN SPARK ON 90° MAGNETO.

I have a 90° twin Eisemann magneto with compound magneto. When in position with plugs direct earthed and driven through the driving chain by turning the starting handle a very fat spark is given on the back, No. 1, cylinder, lead at slow speed, but the fastest turning at full advance will only produce a barely perceptible shock on the front, No. 2, cylinder lead. By removing the advance and retard limit stop screw, a further advance of about 45° will produce a spark on the defective lead, but the spark on the previous good lead fails after about 5° of this further advance. On removing the chain and turning the magneto sprocket slowly by hand with normal advance an equally fat spark is obtained on both leads. Holding the chain against the side of the sprocket has no ill effect, but on slipping it over the points of the teeth and turning through engine, the *one* spark immediately fails. The magneto has been overhauled and put on test, and was declared to be perfect and to give a ⅝ in. spark on both leads. A slight leak was discovered in the condenser and cured and the magneto remagnetised. I have tried a brass taper bush on the magneto sprocket, but this gives no improvement—a fibre bush tried previously was no better. There is no play in the armature shaft which would allow rubbing under chain pull. When running both plugs fire only at relatively high speed, and any slow running is accompanied by irregular firing and silencer explosions.—A.M.W.

The 90° angle does not lend itself very favourably to magneto construction, and in some cases manufacturers have found it impossible to make magnetos suitable for 90° engines unless they eliminate variable ignition arrangements altogether. We should advise you to endeavour to find a position for the contact breaker casing in which reasonably satisfactory sparking is obtained at both plugs, and then endeavour to run the engine without using the ignition control; if this is not possible your only course would appear to be to obtain a more modern magneto. There are two makes at least which are quite efficient in the 90° models.

WEIGHTS OF POWER UNITS.

What are the approximate weights of the following engines? Ordinary 4 h.p. four-stroke; 4 h.p. four-stroke with outside flywheel; 350 c.c. four-stroke; 350 c.c. two-stroke; 250 c.c. four-stroke; and 250 c.c. two-stroke.—T.W.E.B.

It is difficult to give you anything like the exact weights, as various makes show very considerable differences. Roughly speaking, a 4 h.p. four-stroke would weigh 60 to 70lb., the outside flywheel engine being slightly lighter. 350 c.c. engines weigh between 50 to 60lb as a general rule, and a two-stroke should weight 50lb. or slightly under. A 250 c.c. four-stroke would be roughly 40 to 50lb., and a two-stroke, about 40lb

THE DATE QUESTION AGAIN.

Last year I bought an outfit on the assumption that it was a 1918 model. I was obliged to sell the machine, at a much lower figure, last month, owing to bad health, though I have only ridden it twice. The present owner now says it is a 1916 model, and is demanding a return of some of the purchase price. I have also statements from him that he is well satisfied with it. Do you think I ought to refund any money, being previously ignorant of the original date of the machine?—R.R.

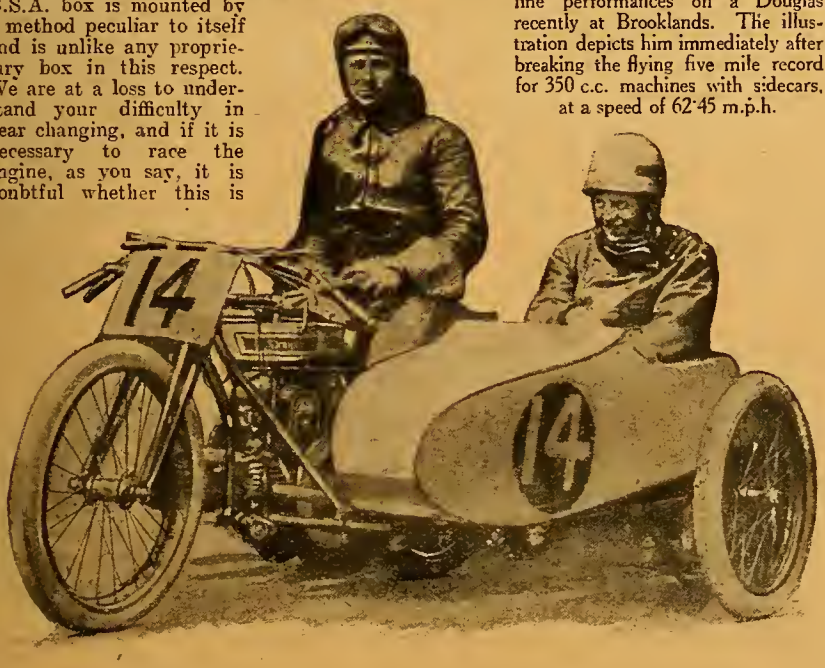
There was apparently misrepresentation, although of an unintentional character. The buyer of the machine would be entitled to a return of some part of the purchase price to compensate him for the difference in value between the 1918 and 1916 models, if the belief that the machine was a 1918 model induced him to give a price higher than he would have paid for the earlier machine. You, in your turn, would be entitled to sue the person from whom you obtained the machine for a like allowance. All things considered, we think it would be best for you to consult a local solicitor if the seller of the machine commences an action against you.

GEAR CHANGING DIFFICULTIES.

My machine, a 1919 6 h.p. twin, built from well-known components, is fitted with a handle bar controlled clutch and kick-starter on the three-speed gear box. I do not like the box at all, for when I wish to change gear I have to race the engine, and I do not like to do this. Would it be an expensive job to have a B.S.A. gear box fitted in place of the one I have now?—N. P.

It would be almost impossible to fit a B.S.A. gear box to your machine without structural alterations to the frame, as the B.S.A. box is mounted by a method peculiar to itself and is unlike any proprietary box in this respect. We are at a loss to understand your difficulty in gear changing, and if it is necessary to race the engine, as you say, it is doubtful whether this is due to the gear box itself. Perhaps the adjustment of the clutch is incorrect, or maybe the carburetter is not set to allow the engine to be throttled down nicely when changing. If all other methods fail, try the experiment of changing up on the exhaust lift. On most motor cycle gear boxes it is not even necessary to declutch when changing down

SCARBOROUGH CARNIVAL. Motor cycles were greatly in evidence at the recent Motor Rally which took place at the Marine Drive, owners coming from towns as far distant as Leeds and Newcastle.



C. G. Pullin, who has made many fine performances on a Douglas recently at Brooklands. The illustration depicts him immediately after breaking the flying five mile record for 350 c.c. machines with sidecars, at a speed of 62·45 m.p.h.

MAKING THE BEST OF IT.

Not being able to get another cylinder from the makers of my old Quadrant machine, I fitted the nearest to it that I could find, that being a Premier cylinder with piston and valves, etc. While the engine was down I had it rebushed. The stroke appeared to be about the same. (1) Will it make any difference if the combustion space is not the same? (Having a fairly good compression I did not think that would matter.) (2) I have an old Bosch magneto; it seems to spark well enough. Do you think it too old? (3) The engine seems to pull well when cold, but very soon gets hot, overheats, and starts to knock on the level. Is there anything you can suggest? (4) I have a Senspray carburetter with No. 32 jet. Is that in order? (5) The machine is geared at 5 to 1, which I think is about correct for a single gear. —S. H. W.

(1) If the stroke is not exactly the same it will make a difference to the compression ratio. As you have fitted a piston to correspond with the cylinder the combustion space should be in order if the connecting-rod length is the same on the Quadrant as on the engine from which the cylinder came. (2) If the magneto gives a good spark there is no need to scrap it simply because it is an old model. (3) Probably the compression ratio is too high, but you do not give sufficient details on which to base an opinion. Try packing up the cylinder with a 1-16in. or even ⅛in. base washer to lower the compression. (4) No. 32 is about correct, but to reduce knocking a larger size (36 or 38) might be more satisfactory. (5) A 5 or 5¼ to 1 gear should be in order.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned.

"R. M. B." (Old Windsor).—Stewart speedometers on motor cycles.

"T. S. B." (London).—L.S.D. three-wheeler: m.p.g., reliability, efficiency of two-speed gear.

"R. E. G. S." (Glasgow).—499 c.c. Rudge-Multi and sidecar: suitable make of sidecar and weight.

"F. B." (Oldham).—A.C. Sociable.

"W. E. K." (Manchester).—598 c.c. Beardmore-Precision; Barr and Stroud; 349 c.c. A.J.S.

"H. E. B." (Ashford).—225 c.c. Royal Enfield: speed, consumption, carburation.

"D. I. D." (Heaton).—Lamps run from "cut-out" terminal of E.I.C. magneto on four-stroke "single," value of inductance, size of bulbs, general results.

"V. G." (Nottingham).—1920. 496 c.c. Lea-Francis M.A.G. two-speed: suitable gear ratio, hill climbing ability, and m.p.g.

"W. J. B." (Poplar).—499 c.c. Sports Sunbeam: timing for and maximum speed; carburetter, etc.

"W. A. H." (London).—Morgan runabout: m.p.g. comfort, reliability.

"W. P." (Lostwithiel).—Scott Sociable.

"H. G. H." (Herne Bay).—698 c.c. Raleigh and sidecar.

"R. B." (Boston).—398 c.c. A.B.C.; 349 c.c. A.J.S. "semi-sports" model.

RECOMMENDED ROUTES.

BOURNEMOUTH TO EDINBURGH.—N.A.

Bournemouth, Christchurch, Ringwood, Ibsley, Fordingbridge, Salisbury, Andover, Newbury, East Ilsley, Steventon, Drayton, Abingdon, Oxford, Kidlington, Deddington, (edge of) Adderbury, Banbury, (edge of) Mollington, Ladbroke, Southam, Dunchurch, Rugby, Lutterworth, Leicester, Fosseway, Newark, Tuxford, East Retford, Doncaster, Wentbridge, Ferrybridge, Brotherton, Aberford, Wetherby, Harrogate, Ripley, Ripon, Leeming, Catterick, Scotch Corner, Gretna Bridge, Abbey Bridge, Barnard Castle, Bowes, Brough, Appleby, Temple Sowerby, Penrith, Carlisle, Gretna Green, Ecclefechan, Lockerbie, Beattock, Crawford, Abington, Biggar, Dolphinton, West Linton, Carlops, Edinburgh. Approximately 486½ miles.

LAUNCESTON TO LEVEN.—W.A.

Launceston, Exeter, Cullompton, Wellington, Taunton, Bridgwater, Highbridge, Axbridge, Bristol, Filton, Gloucester, Tewkesbury, Malvern, Worcester, Ombersley, Kidderminster, Bridgnorth, Shifnal, Crackley Bank, Newport, Whitchurch, Tarporley, Warrington, Wigan, Preston, Garstang, Lancaster, Carnforth, Milnthorpe, Kendal, Staveley, Windermere, Ambleside, Rydal, Grasmere, Keswick, Portinscale, Bassenthwaite Water, Bothell, Carlisle, Longtown, Canonbie, Langholm, Teviothead, Hawick, Selkirk, Innerleithen, Peebles, Penicuik, Liberton, Edinburgh, Leven. Approximately 549 miles.

An All-night Ride.

In the recent all-night run from Newcastle to Edinburgh and back, organised by the Newcastle and District M.C., J. E. Reed (293 Wolf) was successful in securing a gold medal.

True, may be—but not Exact.

An illustration appeared in the June 22nd issue of *The Motor Cycle* of two R.A.C. scouts mounted on machines described as "Joys." This, of course, should have read as "Ivys."

Sidecar Speed Trials.

The unlimited sidecar class in the Southport M.C.C. speed trials was won by A. Tinkler riding a 999.5 c.c. American "X" outfit, who put up an excellent performance.

A Featherweight Motor Cycle.

In our issue of June 22nd an account of the "Silver Prince" featherweight motor cycle was given. The manufacturers of this machine are the Tryus Cycle Co., Poplar Works, Johnstone Street, Birchfields, Birmingham.

A Creditable Performance.

In the recent joint speed trials held by the Worcester and Gloucester Clubs at Madresfield Court, the O.K. Junior motor cycle, ridden by W. Handley, obtained first position in no less than fourteen events.

The Real Cause.

In our issue of June 22nd we mentioned that C. Parkinson, whose life was probably saved by wearing a crash helmet supplied by H. Robinson, Ltd., of Cambridge, was thrown from his machine (a 349 c.c. Dot J.A.P.) by the breaking of his handlebars in the T.T. races. What really happened, so we are informed by the makers, was that the rider fell at Governor's Bridge, buckling his back wheel and causing the machine to roll so badly that the steering column of the forks gave way under the strain, and no blame can therefore be attached to the handlebars of the machine.

Chains at Brooklands.

It is a significant fact that the winning machine in each class for the 200 miles sidecar race held at Brooklands on June 17th was fitted with Renold chains. A report appeared in the daily press to the effect that D. H. Davidson (998 Indian sc.) broke a chain after passing the finishing line. The chain was purposely removed at the conclusion of the race, as is quite a common custom where racing machines are not fitted with free engines, in order to make it easier to push. The machines ridden by V. Horsman (596 Norton), G. H. Tucker (588 Norton) and H. le Vack (998 Zenith J.A.P.) were also equipped with Renold chains.

Instruction Booklet.

The revised edition of the booklet on "Instructions for Upkeep and Spare Parts Price List," published by the New Rover Cycle Company, Ltd., of Coventry, is now ready, and copies may be obtained at a nominal charge.

A Two-Stroke to the Rescue.

As R. W. Greaves (976 Brough Superior sc.) was unable to compete in the recent M.C.C. inter-team trials at Tring, his place was filled by H. J. Youngs, who successfully achieved a non-stop run on a 292 c.c. two-stroke O.K. Junior and sidecar.

Of Interest to Clubs.

Such things as cups, badges, and medals are constantly being required by motor cycle clubs, and these requirements are amply catered for by the firm of Thomas Fattorini, Ltd., Trafalgar Works, Hockley Street, Birmingham, whose reputation for excellence of design and workmanship is widely known and appreciated.

London-Edinburgh Echoes.

In the London-Edinburgh run this year, A. C. Maskell (Anzani-engine Morgan) was credited with a silver medal. This has now been altered and a gold medal awarded in its place. J. G. Hann (976 New Imperial) received a silver medal which was not announced in our list of awards, and the name of another competitor in the London-Edinburgh run which was omitted from the report was A. Hannan, who successfully rode a 349 c.c. Coulson, securing a gold medal.

Triumphs Overseas.

In the Liège-Bordeaux-Liège Trial, a distance of 1,242 miles, the Triumph motor cycle secured 1st and 2nd positions, these machines being piloted respectively by Thys and Vaillant. From Italy comes the news that in the third annual Circuito Umbria Marchigiano, which is an event over a most difficult course of 380 miles in the Apennines, the Triumphs succeeded in beating all machines up to 1,000 c.c., winning the first prize, team prize, three cups, and the Manufacturers' Cup. In the Liège-Paris-Liège Trial, over a distance of 456 miles, the Triumph gained first and second positions.

Additions to the Editor's Bookshelf.

PETROL CARS AND LORRIES, by Frank Heap. 2s. 6d. (Sir Isaac Pitman and Sons.)

RIPON AND DISTRICT. Illustrated. A collection of motoring tours radiating from Ripon. Free from the Town Clerk, Town Hall, Ripon.

Catalogues Received.

H. W. H. Engineering Co.: A booklet giving full list of prices for Coulson motor cycle spare parts.

R. Weatherell & Co., Ltd., The Terrace, High Road, Kilburn, N.W.—An interesting booklet containing the history and specifications, with illustrations, of the motor cycles manufactured by them.

Leo Swain & Co., Ltd., 237-9, Deansgate, Manchester.—A cleverly illustrated pamphlet dealing with the Leosco "tube saver," an anti-rust device to protect tyre tubes.

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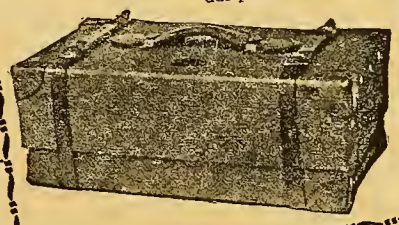

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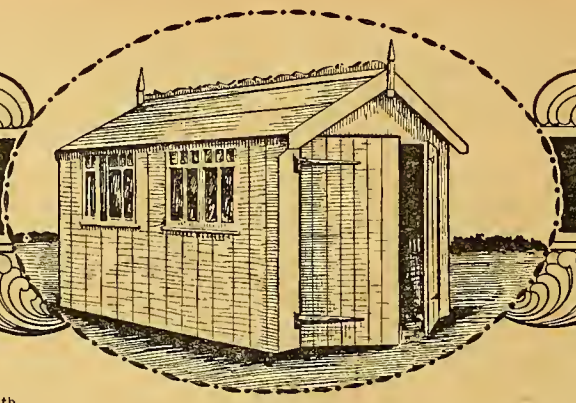

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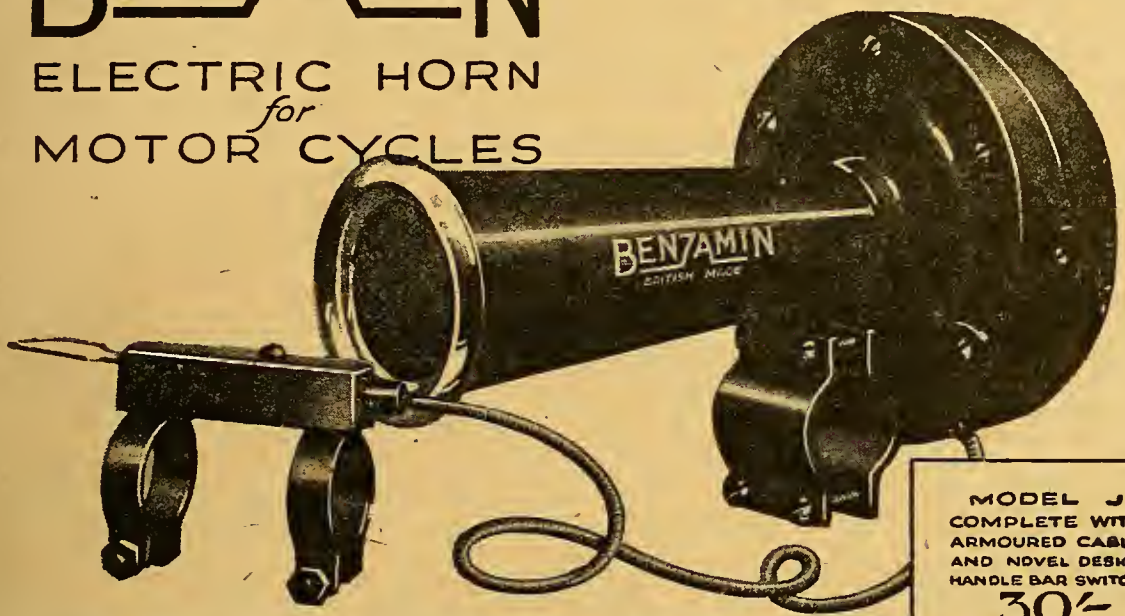

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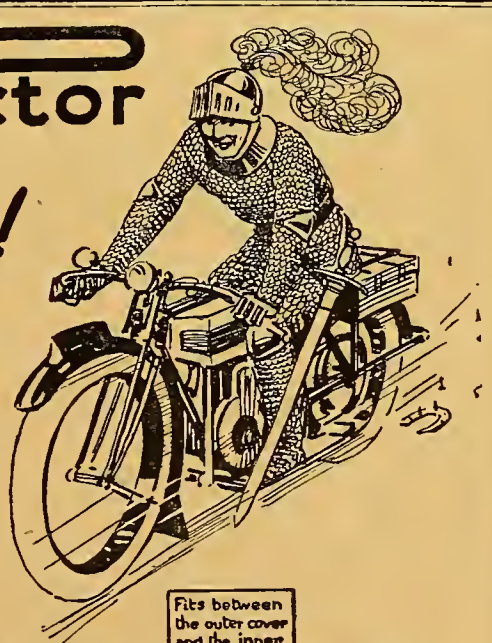

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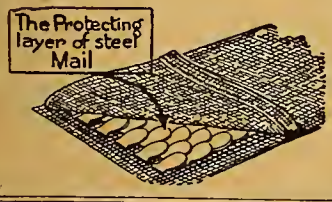

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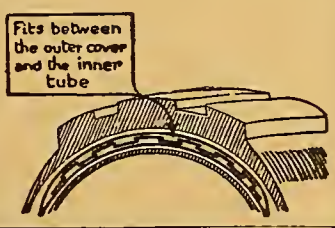

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HONOURED BY ROYALTY.

We have pleasure in informing you that our Belgian Concessionaires (Jeecy-Vea) have received the signal honour of an order from

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This Motor Cycle was ordered by His Majesty after a personal road test and in keen competition with other well-known makes.

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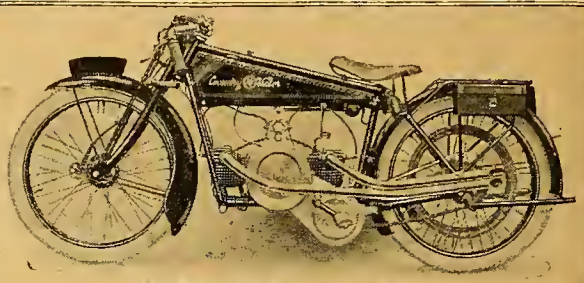

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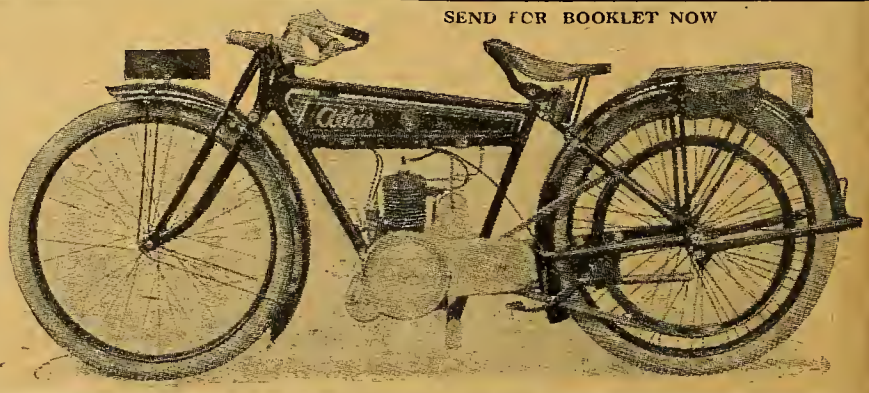

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BIRMINGHAM.

The holiday season is here!

Cut out the train scramble and go by road. The Taylor plan of "Payment out of Income" brings motoring with all its health and pleasure within the reach of the man of strictly moderate means. Call and select the motor cycle most suited to your needs and pocket. We can supply any of the following mounts for CASH or for payment over 12, 15 or 18 months—see examples below:—

Make of Machine	CASH PRICE	Deposit	Deferred Payments 12 Months	15 Months	18 Months
8 h.p. 1922 Matchless Comb., Sports Model	160 0 0	49 12 0	9 14 8	7 17 10	6 13 4
8 h.p. 1922 Excelsior de Luxe, dynamo lighting, electric horn, hood, leg-shields, spare wheel, luggage grid, windscreen and side screen, showroom soiled only, cost £200	180 0 0	48 16 0	11 10 8	9 6 11	7 17 9
4 h.p. 1922 P. & M. Comb., 4 speeds	130 0 0	35 4 0	8 6 8	6 15 1	5 14 0
4 h.p. 1922 B.S.A. Comb., all-chain drive	142 0 0	38 10 6	9 1 11	7 7 6	6 4 5
6-7 h.p. 1922 Ariel Combination	125 0 0	35 0 0	7 18 4	6 8 4	5 8 4
4½ h.p. 1922 Dunelt Comb., with spare wheel	113 8 0	30 4 0	7 6 2	5 18 6	5 0 0
4 h.p. 1922 Quadrant Comb., all-chain drive	105 0 0	29 4 0	6 13 4	5 8 1	4 11 3
8 h.p. 1922 Enfield Comb., dynamo equipment	158 0 0	41 6 6	10 6 0	8 6 1	7 0 3
7 h.p. 1922 A.J.S. Comb., dynamo lighting, sp. wheel	203 0 0	53 0 0	13 8 9	10 17 10	9 3 4
7 h.p. 1922 A.J.S. Comb., screen apron, luggage	175 0 0	45 0 0	11 12 11	9 8 6	7 19 0
2½ h.p. 1922 Excelsior, 2-stroke, 2-speed, clutch and K.S.	53 0 0	15 2 6	3 6 8	2 14 0	2 8 0
2½ h.p. 1922 Excelsior-Villiers, single-speed	39 18 0	11 10 0	2 10 0	2 0 7	1 14 3
2½ h.p. 1922 O.K. Junior, 269 c.c. Villiers engine	39 18 0	11 10 0	2 10 0	2 0 7	1 14 3
2¼ h.p. 1922 Enfield, 2-speed, 2-stroke, K.S.	57 0 0	15 16 0	3 12 6	2 18 8	2 9 7
2¼ h.p. 1922 Enfield, Sports Model	55 0 0	15 4 0	3 10 0	2 16 9	2 8 0
2¾ h.p. 1922 A.J.S., Sports Model	85 0 0	22 0 0	5 12 10	4 11 4	3 17 0
2¾ h.p. 1922 Raleigh, 2-speed	68 0 0	17 14 6	4 8 4	3 11 7	3 0 5
2¾ h.p. 1922 Excelsior, Blackburne, 3 speeds, clutch and K.S.	75 0 0	20 0 0	4 16 8	3 18 4	3 6 2
3½ h.p. 1922 Ariel, Sports Model, K.S.	90 0 0	23 12 0	5 16 8	4 14 6	3 14 3
3½ h.p. 1922 Zenith-Bradshaw, all-chain drive	119 0 0	33 15 3	7 10 0	6 1 7	5 2 8

SHOP SOILED AND CAREFULLY USED MOUNTS.

5-6 h.p. Raleigh Comb., 1921, shop soiled	145 0 0	37 16 0	9 8 4	7 12 8	6 8 9
3½ h.p. P. & M. Comb., 1921, shop soiled	115 0 0	30 0 0	7 9 4	6 1 0	5 2 2
6 h.p. A.J.S. Comb., 1920, dynamo lighting, spare wheel, carefully used	130 0 0	35 4 0	8 6 8	6 15 1	5 14 0
8 h.p. Zenith Comb., clutch, 1921, demonstration Model	145 0 0	37 16 0	9 8 4	7 12 8	6 8 9
2¾ h.p. Wooler, Brooklands Model, shop soiled	60 0 0	15 12 0	3 18 0	3 3 3	2 13 4
2½ h.p. Neal Dalm, 2-stroke, 2 speed, lamp, second-hand	35 0 0	For cash only.			
6-7 h.p. Ariel Comb., screen and lamps, second-hand, 1919	75 0 0				
2½ h.p. Ivy, 2-stroke, 2-speed, clutch and K.S., tax paid, 1921 Model	50 0 0				
6 h.p. A.J.S. Comb., dynamo lighting, speedometer, spare wheel, hood, etc.	135 0 0	35 8 0	8 15 0	7 1 10	5 14 2

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Guaranteed for three months from date of Purchase.

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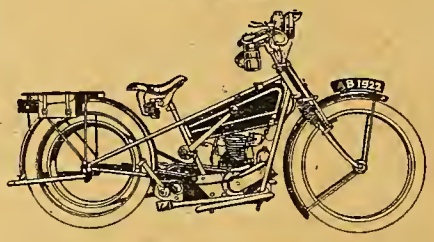

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4-40 M.P.H. 120 M.P.G.
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10×	8 ..	8 4 ..	5 9	12	19	0
12×	8 ..	8 4 ..	6 0	17	5	0
14×	8 ..	8 7 ..	6 3	21	0	0
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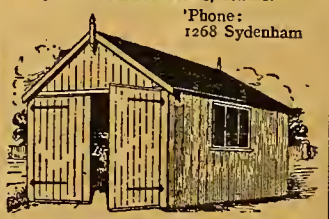

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THE B.S.A. Specialists.—On the Spot.—Our spares service is unrivalled—give us a trial.—County Cycle and Motor Co., Broad St., Birmingham. [4677

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BUCHET 2¾h.p., Grado gear, all on; £15.—294, Crystal Palace Rd., E. Dulwich, S.E.22. [9529

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CALTHORPE Junior, Precision engine, 2 speeds; 25 gns.—176, South Ealing Rd., W.5. [9260

CALTHORPE-J.A.P. 2¾h.p., Enfield 2-speed, all on.—Lidsey, R.A.F. Depot, Milton, Berks. [9704

CALTHORPE, J.A.P. engine, Enfield 2-speed, good tyres, shabby but sound, licensed; bargain for quick sale at £19; stamp replies.—Keen, Leominster. [9031

1½h.p. Calthorpe Motor Cycles.—New 1922 Models, £36; or £7 down and 12 monthly payments £2/9/6.—Wauchope's, 9, Shoe Lane, London, E.C.4 [8665

CALTHORPE, 4¼h.p. Precision, 2-speed, coachbuilt sidecar, good order; £30; seen Hammersmith by appointment.—Willcocks, 8, Willow Av., Barnes, S.W.13. [8945

1922 Calthorpe, 2-stroke, 2½h.p., absolutely as new, licensed for year; £30; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [9938

CALTHORPE 1918 4-5h.p., twin J.A.P., Sturmey 3-speed, countershaft, coachbuilt sidecar, hood, screen; 58 gns.; photograph.—Peter Gordon, Ltd., 10, Upper Richmond Rd., East Sheen. [9586

1919 Calthorpe 2¾h.p., speeds and clutch, tyres, magneto and chains new, tax, good condition, equipped, £33; otherwise £30; exchange, adjustment. Matthews, Souths, Ower, Fawley, Hants. [9707

1921.—2¾h.p. Calthorpe-Jap, 2-speed, equipped new cylinder, piston and rings, gudgeon pin, bushes, crank pin, valve guides, gear chains, new cones back and front wheels, pulley and belt, tax paid 30/- to next May.—200, High St., Penge. [9779

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1921 Chater-Lea, 2-stroke, Villiers engine, 2-speed, licensed, perfect; £32, or with cash, countershaft Triumph.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [9274

3h.p. 1920 Chater-Lea Combination, lamps, speedometer, Tan-Sad, horn, insured May, 1923; new April, 1921; price £105.—Needs, 12, Willenhall Rd., Plumstead. [9268

CHATER-LEA, 2½h.p., 2-stroke, electric lamps, mechanical horn, tools, etc., tax paid year, insurance; £28, or near offer.—2, Beauchamp Place, Brompton Rd., S.W.3. [9182

Chater-Fafnir.

3½h.p. Chater-Fafnir, kick-start, Grado gears; £18·2 take small engine part payment.—298, Kennington Rd., S.E. [9605

Clyno.

CLYNO Combination, 2-speed, lamps, spares; £25.—6, Martin's Rd., Bromley, Kent. [9746

£40.—2¼h.p. Clyno, 2-stroke, 2-speed, shop-soiled.—Townson and Ward, Ltd., Barrow. [9984

NEW 1922 8h.p. Spring Frame Clyno Combination; 155 gns.—Kays, 8, Bond St., Ealing. [9760

CLYNO Combination; £55.—R. Toms, 307, Euston Rd., N.W.1. 'Phone: Museum 8038 and 8039. [8835

1916-17 Clyno Combination, 3-speed, K.S.; £55; exchange.—2, Fortune Gate Rd., Harlesden, N.W. [9891

1920 Clyno 2¼h.p., 2-speed, clutch, all on, lovely machine; £33.—23, Asteys Row, Canonbury Rd., Islington. [8932

CLYNO 1921 8h.p. Combination, detachable wheels and spare wheel, fully equipped and tax paid; £100.—The Layton Garages, 30, Holywell St., Oxford. [7184

CLYNO Combination, 1917, in first-class running order, can be seen and tried any time by appointment; £50.—E. Pollard, Broomfield Rd., Chelmsford. [8802

5-6h.p. Clyno Combination, lamps, chains, tyres as new, spare wheel, just done fortnight's tour, good condition; £60.—Weeden, 312, Queen's Rd., New Cross Gate, S.E. [9048

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CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7664

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1922 MODELS

B.S.A., 10 h.p., dynamo lighting, starter, etc.	£340	0
CALTHORPE, 2-seater, all-weather body..	£376	0
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LAGONDA, 11.9 h.p. 2-seater, new model.	£299	5
LAGONDA, 11.9 h.p. (Coupé or 4-seater)..	£395	0
RHODE, 10 h.p. 4-cyl. light 4-seater.....	£276	0
B.S.A., 4½, 3-speed, All chain	£110	0
B.S.A., 4½, 3-speed, All-chain comb.....	£142	0
B.S.A., 6 h.p., 3-speed, coach comb.....	£164	0
DOUGLAS, 2¾, 2-speed.....	£68	0
DOUGLAS, 2¾, 3-speed, clutch.....	£82	0
ENFIELD, 2½, 2-speed, All chain.....	£88	0
ENFIELD, 8 h.p., All chain comb.....	£140	0
LEVIS, 2¼, 2-speed, belt and chain.....	£58	0
LEVIS, 2¼, 2-speed, model G.....	£61	0
MARTINSYDE, 6 h.p. comb., reduced to..	£150	0
NEW IMPERIAL, 2¾, 3-speed, All chain..	£73	0
NEW IMPERIAL, 8 h.p., comb.....	£145	0
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NORTON, 3-speed, Big Four.....	£120	0
NORTON, Big Four, and family sidecar....	£157	0
REX ACME, 2½, 2-speed.....	£50	0
SCOTT SQUIRREL, 3½ h.p.....	£108	0
SCOTT, 3½, comb.....	£145	0
SUNBEAM, 3½, 3-speed, new model.....	£126	0
TRIUMPH, 4 h.p., All chain, 3 speed	£115	0

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A.V. MONOCAR, 8 h.p., J.A.P., 2 speeds...	£75	0
ARIEL, 1920, 3½, 3-speed countershaft....	£69	10
B.S.A., 1919, 4½ h.p., 3-speed, tax paid....	£60	0
ENFIELD, 2½, 2-speed, 2-stroke, tax paid..	£37	10
EXCELSIOR, 2½, 2-speed, k.-s., tax paid..	£37	10
HUMBER, 3½, wants attention.....	£14	10
NEW IMPERIAL, 2¾, tax paid.....	£27	10
O.K. J.A.P., 1916, 2¾, 2-speed, tax paid....	£29	10
PREMIER, 3½ h.p., 2-speed, spring forks..	£35	0
PREMIER, 3½, 3-speed, spring forks.....	£32	10
RADCO, 2¼ Lightweight.....	£19	10
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RUDGE MULTI, late 1918, 3½, tax paid...	£49	10
RUDGE MULTI, 1920, 3½ I.O.M.....	£55	0
RUDGE MULTI, 1921, 3½ h.p., I.O.M.....	£59	10
RUDGE MULTI, 1920, 5-6 h.p., tax paid..	£62	10
RUDGE MULTI, 1920, 7-8 h.p.....	£70	0

PASSENGER MACHINES

RANGER, 2-seater, light car.....	£75	0
ARIEL, 3½, 1920, 3-speed comb.....	£79	10
B.S.A., 1919, 4½, all chain comb., tax paid.	£79	10
COVENTRY VICTOR, 5-8, 1921, flat twin.	£97	10
DOUGLAS, 1921, 4 h.p. comb., tax paid...	£97	10
HARLEY, 1918, 7-9, 1920 Grindlay s.c...	£97	10
HARLEY, 1919, electric comb.....	£105	0
MATCHLESS, 8 h.p. coach comb., tax paid	£87	10
REX M.O.V., 6 h.p., 2-speed comb.....	£39	10
REX J.A.P., 8 h.p., 2-speed comb.....	£82	10
RUDGE, 1920, 5-6, and sidecar, tax paid..	£72	10
RUDGE, 7 h.p., 1920 comb.....	£89	10
SUNBEAM, 8 h.p., M.A.G., 3-speed comb..	£97	10
TRIUMPH, 3½, 2-speed comb., tax paid...	£39	10
TRIUMPH, 1921, all chain comb., tax paid	£110	0

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£7 10 deposit and 10s. weekly buys

REX, 1912, 6 h.p., 2-speed comb.....	£37	10
REX, 1913, 6 h.p., 2-speed comb.....	£42	10
REX-J.A.P., 8 h.p., 2-speed comb.....	£47	10
WOOLLER, 1920, 2¾, accessories, tax paid	£47	10
PREMIER, 3½, Grado gear.....	£25	0
BRADBURY, 3½, 3-speed, tax paid.....	£32	10
BRADBURY, 3½, single gear.....	£26	0
HUMBER, 1914, 3½, 3-speed.....	£32	10

MOTOR CYCLES FOR SALE.

Connaught.

WAUCHOPE'S, 9, Shoe Lane, London.—2½h.p. Connaught 1921, 2 speeds; £45. [8666

CONNAUGHT, August, 1921, 2-speed, all accessories, perfect order; £42.—Barker, 59, Eagle St., W.C.1. [8770

1921 Connaught Combination, first-class condition, tax paid, insured; £50.—Pritchett, 30, Park St., Islington, N. [9175

1921 Connaught, single-speed, equipped, tax paid, guaranteed perfect; £28/10.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9828

1922 Connaughts, all models, for immediate delivery; single-speed, £39/18; Sturmey 2-speed, clutch and kick-starter, £57/10; 3½h.p., 3 speeds, C. and K.S., all-chain drive, £75; 3½h.p. combination, 3-speed, C. and K.S., £95; deferred 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9827

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T.T. Junior Race.—Cotton-Blackburne team the only 100% finishers. 85 recent awards and records. From 62 gns.—Cotton Motors, Gloucester. [9524

NEW 1922 Cotton-Blackburne, all chain, Burman 3-speed, K.S. and C., Bosch magneto, sports carburetter, tax paid, perfect; £73.—C. Sixty, Tibberton, Glos. [8760

COTTON-BLACKBURNE, 1922, 2¾h.p., 2-speed, clutch, K.S., perfect condition, unscratched, accessories, tax, cost £75, 100 miles trial any time; £65; worth seeing.—288, Sangley Rd., Catford. [8823

Coulson.

COULSON, £38.—1920 2¾h.p. Blackburne, 2 speeds, spring frame, all on, splendid condition.—Seen, Standard Garage, New Inn Hall St., Oxford. [8901

SPEED Merchants.—65 m.p.h., 350 o.o., overhead valve, Blackburne engined Coulson, long plated exhaust, 3-speed, close ratio gear box, racing Wex or Cox Atmos carburetters, Lucas horn, tools, spares, etc; £77/10.—Bloomfield, 99, Ashleigh Rd., Mortlake. [8916

Coventry Eagle

COVENTRY EAGLE 2½h.p., 2-stroke, 2-speed, electric lighting, perfect order; £25.—26, Webbs Rd., Battersea Rise, S.W. [9531

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1920 Coventry Eagle, 2¾h.p. J.A.P., Sturmey 2-speed, clutch and kick starter, all accessories, tax paid 1922; nearest £40.—Fowler, Moorland Close, Skegby, Mansfield. [9406

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Hazlewood.

5-6h.p. Hazlewood-Jap Combination, 1915, new condition; £45.—120, Argyle St., St. Helens. [9394

HAZLEWOOD 5-6h.p. Combination, 3-speed, kick start, foot clutch, splendid condition, any trial; best offer over £50 secures.—1, Benson Rd., Forest Hill, S.E.23. [9038

Henderson.

HENDERSON 10h.p. Combination, 2-speed, perfect order; £65.—Baseldon, West Byfleet. [7677

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Hendersons; unequalled service, repairs, etc. [3560

1922 Henderson Model de Luxe in stock, £165; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [4602

1921 Model K Henderson, double-seater sidecar, reverse gear, dynamo lighting, cost £300; accept £160, or near; tax paid; bargain.—307, Camden Rd., Holloway, N.7. [9416

£45.—Henderson 1916, with sporting sidecar, 10h.p., 4-cylinder, 2-speed, clutch, kick-starter, lamps, horn, speedometer, wants attention; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [9602

ROBERTSONS Motors, Ltd., who have handled these famous Henderson machines since 1911, can give trial runs with the latest model at any time by appointment. 1922 De Luxe model in stock at the new reduced price of £165.—157b, Great Portland St., W.1. [1092

ROBERTSONS Motors, Ltd. the original Henderson importers, offer the following: 1921 combination, electrically equipped, £140; 1920 electric combination, Tan-Sad, just completely overhauled, £135; 1920 Standard Capjon and Mudd, £80; sidecar, Cowey trip, and all accessories, £135; 1920 Standard combination, all accessories, tax paid, £115; 1916 clutch model, in really beautiful mechanical order, £50; 1915 Standard, with luxurious sidecar, speedometer, and accessories, £65.—157b, Gt. Portland St., W.1. [6076

Spare Parts:

ROBERTSONS Motors, Ltd., the Henderson Experts, have the most representative stock in the country.—157b, Gt. Portland St., W.1. [6079

Hobart.

HOBART 1920 2½h.p., single-speed, all tools, horn, tax paid; £27/10.—Maudes', Walsall Garage, Walsall. [9571

HOBART-VILLIERS 2½h.p., 2-speed, all on, tax paid, perfect condition; offers.—177, High Rd., Wood Green, N.22. [9010

1920 Hobart-Villiers, 2-speed, electric lighting, Klaxon, tax and insurance to December, magnificent condition; offers.—Box 2442, c/o *The Motor Cycle*. [9646

1919 Hobart-Villiers, 2½h.p., 2-speed, condition and appearance as new, licensed for year; 25 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [9940

Humber.

HUMBER 3½h.p. Combination, C.B., 2-speed, running order.—Sawyer, 116, Grove Hill, South Woodford. [9090

HUMBER 1920 4¼h.p. Flat Twin, fully equipped and tax paid; £60.—The Layton Garages, 30, Holywell St., Oxford. [7175

HUMBER 3½h.p. Combination, boat-shape sidecar, 2 speeds, lamp, Klaxon, Dunlops, excellent condition; £32, exchange.—Walter, Preston Down Rd., Paignton. [8816

HUMBER Combination, 1916-17, 6h.p., flat twin, water-cooled, 3 speeds, clutch, kick-starter, fully equipped, splendid condition; £60; exchanges.—63, Solon Rd., Brixton. [9461

HUMBER Motor Cycle Combination, 1920, 8h.p., upholstered sidecar, flat twin, good condition throughout; 75 guineas.—Ware & de Freville, Walmar House, Oxford Circus. [7553

HUMBER 1919 3½h.p., 3-speed, all-chain drive, Claudel-Hobson carburetter, handle start, hand clutch, Lucas lamps, coachbuilt sidecar; £70.—Maudes', Walsall Garage, Walsall. [9573

HUMBER, 4½h.p., flat twin, with sidecar, November, 1920; insured, licensed, horn, been carefully used, exceptionally good condition; £75, or offer.—County Motors, by Upper Warlingham Station, Whyteleafe. [9180

HUMBER Agents.—All 1922 models; write for catalogues and full particulars by return post free; exchanges and special payment terms arranged; correspondence invited.—Herbert Robinson, Ltd., Green St., Cambridge. [8496

Indian.

1922 Indian Scout, as new; £98.—Brunswick Lodge, Thames Ditton. [9033

H. F.

EDWARDS

& CO.,

101, GREAT PORTLAND STREET, W.1

Tel. Mayfair 4027.

WONDERFUL BARGAINS.

We have been appointed Sole Distributing Agents for London and 50 miles Radius for

The PRIORY, 2¾-H.P. J.A.P. 2-Speed, Clutch, Kick-Start. Price 52 Gns.

Also, the 2¾-H.P. PRIORY 2-Stroke, 2-Speed, Price £38.

Specification on request.

Several Brand New 5-6

1921 ZENITH COUNTERSHAFT

Models, Clutch, Kick-Start,

84 Gns.

Listed £118. Maker's Guarantee.

1922 3½ h.p.

ENITH-BRADSHAW

Belt drive, Brand New (shop soiled),

82 Gns.

Listed £113.

BRAND NEW (SHOP SOILED).

1922 **LIGHT SIX B.S.A.** and No. 4 sidecar £148
Listed £162. Maker's Guarantee.

SECONDHAND COMBINATIONS.

		Gns.
1920	4 h.p. **VICTORIA J.A.P.** 3-speed, clutch, and k/starter, equipped and licensed..	65
1920	**B.S.A.** Combination. Lucas Magdyno, speedo	80
1919	3¾ h.p. **SCOTT** and 60 guinea Rennoc sidecar, discs, wind screen, fully equipped ..	65

SECONDHAND SOLOS.

1921	2¾ h.p. **NEW IMPERIAL,** 3-speed, equipped, excellent condition	53
1917	4 h.p. **TRIUMPH,** 3-speed, clutch, kick start	52
1913	**RUDGE, N.S.U.,** 2-speed, clutch	33
1922	3½ h.p. **DOUGLAS,** Sports model, fully equipped, as new	93
1922	3½ h.p. **ZENITH-BRADSHAW,** 3-speed, chain drive, mileage 200, indistinguishable from new	100
1921	3½ h.p. **SUNBEAM,** semi-Sports, magdyno lighting, speedometer, electric horn, knee grips, absolutely as new	109
1921	2¾ h.p. **A.J.S.,** Lucas lighting, Cowey horn, excellent condition	72
1921	5 h.p. **SPORTS ZENITH,** electric lighting, speedometer, mileage 900, as new	70
1914	7 h.p. **INDIAN,** Clutch model, fully equipped and licensed, good condition	29

Deferred Payments & Exchanges on any of the above.
WANTED—SOLOS and COMBINATIONS.
Cash waiting.

MOTOR CYCLES FOR SALE.

Indian.

2¾h.p. Indian, 3 speeds, tax paid; £23.—Sax, 619, Garratt Lane, Earlsfield. [8775

INDIAN For Sale.—5-6h.p., 3-speed, K.S.; exchange entertained.—83, Balham Park Rd. [9026

7-9h.p. Indian Combination, spring frame, fully equipped; £40.—17, Heaton Rd., Mitcham. [9234

5-6h.p. Indian Combination, 1915, all on, excellent condition; £38.—17, Heaton Rd., Mitcham. [9235

7-9h.p. T.T. Indian, clutch, perfect, taxed, very fast, accessories; £38, offers.—25, Princess Av., Chester. [9030

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

INDIAN Combination, 7-9h.p., 3 speeds, English controls; £67.—23, Alexandra Park Rd., Muswell Hill. [9183

7-9h.p. Indian, 1915, clutch, lamp, speedometer, new condition; £30.—Hughes, 102, Brighton Rd., Worthing. [9053

1914 7-9h.p. Indian, with sidecar, clutch model, good condition; £40.—2, Empress Av., Manor Park, E.12. [9219

1920 Indian Combination, electric lighting, hood, windscreen, disc; £95.—29, High St., Northfleet, Kent. [8968

7-9h.p. 3-speed clutch, kick, Indian Combination, Indian sports torpedo sidecar; £65.—Averies, Englefield Green. [8872

1922 Indians.—Immediate deliveries; cash or deferred payments.—E. Brown, 3, Parker Lane, Burnley Tel.: 1032. [7081

1919 Indian 7-9h.p. Combination, 3 speeds, kick start, tax paid, absolutely as new.—L. Firstbrook, Old Mill, Darenth. [8769

NEW Indian Scout 4h.p., delivered late May, dynamo model, speedometer, K.S.; accept £98.—Parsons, 1, Acton Lane, Chiswick. [9482

INDIAN 1915-16 5-6h.p. Combination, speedometer, lamps, horn, and tools; £46.—King, 4, Willow Walk, Short St., Cambridge. [9798

INDIAN Combination, 1915, 7-9h.p., 3-speed, Easting, accessories, excellent condition; £60.—Seen Abbey Garage, Waltham Abbey. [9451

INDIAN 7-9h.p. Powerplus Combination, tax paid, equipped, fine condition; bargain, 70 gns.—13, Vambery Rd., Plumstead, S.E.18. [7906

7-9h.p. Indian Combination, 1919, lamps, speedometer, spares; £80.—Richards, 2, King Edward Gardens, Blenheim Rd., Barnsley. [9663

INDIAN Combination, coachbuilt sidecar, electric light, 3-speed, 5h.p., good condition; what offer?—Hunt, 30, Kirkley Rd., Merton Park. [9297

1915 5-6h.p. Indian Combination, 3-speed, clutch, electric, splendid condition; any trial; £75.—74, Hunsdon Rd., New Cross, S.E.14. [9352

INDIAN 7-9h.p. Combination, 3-speed, splendid order, new condition; £45.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [9807

INDIAN 1920 7-9h.p., T.T., 3-speed countershaft, all accessories, tax paid, exceptional condition; £50.—157, Burntwood Lane, Earlsfield, S.W.17. [9749

EXCEPTIONAL Bargain.—7-9h.p. Indian combination, spring frame, 3-speed, perfect condition; £63.—34, Beechwood Av., Thornton Heath. [9906

INDIAN 7-9h.p. Powerplus, 1919, solo, practically new, mileage under 300; £60 for quick sale.—4, Hanover St., W.1. Mayfair 786. (P) [9358

SPORTING 7-9h.p Indian Solo, 1919-20, really fast, T.T. bars, fully equipped, tax paid; £60.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. [9879

1920 Indian Combination, big valve model, fully equipped, good condition, numerous spares, any trial; £90, near offer.—Jacobs, 665, Fulham Rd. [8160

INDIAN Road Racer 1914 7-9h.p., completely overhauled, enamelled and plated, Cox carburetter; £32/10.—Cope, 15, Upper Hagley Rd., Birmingham. [9682

1919 Indian Powerplus, disc wheels, perfect; £60 new sidecar to match, £15.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [9654

INDIAN 7-9h.p. Powerplus Combination, disc wheels, electric starter, small mileage, excellent condition; bargain, £80.—Write, 11, Rotherwood Rd., Putney. [8768

INDIAN Scouts!—Immediate deliveries; easy payments, your present machine in exchange; any trial.—Indian Agents, 89, East Hill, Wandsworth. Battersea 443. [9753

INDIAN 1915, coachbuilt combination, 7-9h.p., spring frame, 3-speed, electric lighting, tyres, paint, etc., in fine order; £40.—Brown, 17, Christchurch Avenue, Brondesbury. [8894

INDIAN 1914 7-9h.p., 3-speed and clutch, spring frame, Lucas lamps, all accessories, very good condition, tax paid; £42/10.—Cope, 15, Upper Hagley Rd., Birmingham. [9681

b 56 **All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).**

MOTOR CYCLES FOR SALE.

Matchless.

£110.—Matchless Combination, Model H, 1920 (1921 wheels), Easting, spare wheel, speedometer, electric lamps, horn, new tyres, perfect condition and appearance.—50, Crayford Rd., Holloway. [9402

MATCHLESS 6h.p. Twin, Vindec gear, coachbuilt Burbury sidecar, A.J.S. windscreen, spare back wheel, tax paid December; nearest £50.—Handley, 11, Davenport St., Longport, Stoke-on-Trent. [8908

MATCHLESS.—Model H2, spring frame, M.A.G. engine, dynamo lighting, mechanically perfect, £110; Victory model, J.A.P., hood, electric lighting, perfect, £85.—Tassell, 1A, Bloomfield Rd., Plumstead. [9145

1922 Matchless, all models, for cash or exchange, without question the finest outfit obtainable. Count them on the road.—Get your machine from Daw, the ever reliable Matchless service agent, 114, Brixton Hill. [9481

MATCHLESS 1921, Model H, 8h.p., fully equipped, with speedometer, lamps, screen, and spare wheel. Was little used; in excellent condition; £15 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [9997

MATCHLESS 1922 Combination, double-seater sidecar, M.A.G. engine, Lucas electric lighting set, electric horn, tax paid, cost £218 seven weeks ago; accept £185.—Cope, 15, Upper Hagley Rd., Birmingham. [1035

MATCHLESS, March 1921, mileage 3,500, owner taking car, exceptionally fine outfit, faultless condition M.A.G., electric, Mills-Fulford coachbuilt double car, every possible equipment, tax, insurance paid, cost £299; prompt sale £155.—Hooper, 84, Milton Rd., Portsmouth. [9735

NEW 8h.p. 1922 Matchless Combination, 2-seater model, spring frame, £187; 8h.p. standard model, £170; sports model, £160; easy payments, one-fifth down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [8685

MATCHLESS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [7329

MATCHLESS H Combination, 1920, excellent condition, thoroughly overhanled this month, all accessories, spares, Easting, low-seated sidecar, legshields, spare wheel, horn, mirror, lamps, trip speedometer, etc., 3 practically new tyres, tax paid 1922; £115 cash; any time after 4 p.m.—12, St. John's Park Rd., Blackheath. [9230

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lea Green 744), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [5669

1922 Matchless, all models; cash, exchange, easy terms. The agent is Sam. E. Clapham; in addition, A.J.S., Connaught, Chater-Lea, Douglas, Hobart, Hazlewood, Harley, Triumph, Rudge, Royal Ruby, Rex-Acme, Sunbeam, James, Levis, Economic, McKenzie, Edmund, Beardmore, F.N., P. and M., etc. All makes light cars.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [8603

Spare Parts.

MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [4828

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

20 GNS.—1922 McKenzie, as new, mileage negligible, year's licence, horn, etc.—Bacon, Offington Lane, Worthing. [9250

Metro.

1921 Metro-Tyler, 2-speed gear; £30; excellent condition.—34, Mansell Rd., Acton. [9411

£25.—Metro-Tyler 2¾h.p., late model, splendid order, fast, taxed; bargain.—406, York Rd., Wandsworth. [9509

1920 Metro-Tyler 2¾h.p., single-speed, in perfect order, tax paid; £27/10.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9831

Minerva.

£16/10.—Minerva, 3½h.p.; any trial; take push cycle part.—57, Kenbury St., Camberwell, London. [9732

Mohawk.

MOHAWK Cycles new, or second-hand, at lowest prices, for cash or easy payments.—Mohawk Cycle Co., Ltd., 276, Alexandra Rd., Hornsey, N.8. [1924

Moto-Reve.

Spare Parts.

MOTO-REVE Spares for all models, also repairs, overhauls.—Motor Supply Co., Sole Concessionaires, 223a, High St., Lewisham, S.E. [6107

YOUR HOLIDAY
KIT IS INCOMPLETE WITHOUT ONE OF OUR
WATERPROOF MOTOR CYCLE SUITS

Fig. 1.

MOTOR CYCLE SUIT (Fig. 1)
With Plaited Leather Belt.

SPECIFICATION
MADE from hard wearing double texture material with an interlining of Rubber.
Double Breasted Jacket, with all-round plaited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof.
Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the troosers to be pulled off in a moment.

SUIT COMPLETE 35/-
Jacket only 25/-
NO EXTRA CHARGE FOR CARRIAGE

OUR ILLUSTRATED LIST AND PATTERN BUNCH OF CLOTHS, TOGETHER WITH SELF-MEASUREMENT FORM, WILL BE SENT POST FREE AND WITHOUT ANY OBLIGATION UPON RECEIPT OF YOUR NAME AND ADDRESS.

Waterproof Trench Coat 25/-
(Fig. 2. Fawn material, rubber lined, wind cuffs, guaranteed waterproof.

Fig. 2.

SEAT-LESS Trousers Fawn double texture material rubber interlined wind gusset & clasp fasteners. All sizes. Guaranteed Waterproof.

18/- per pair.

WATERPROOF OVERALLS.
Double texture material, clasp fasteners, perfectly waterproof.
per **12/6** pair
THESE GARMENTS ARE NEWLY MADE FROM FRESHLY PROOFED MATERIAL BY EXPERIENCED WORKMEN AND NOT HALF-PERISHED CLEARANCE LINES OR W.D. SURPLUS
If you cannot call, send money with breast measurement and height.

POST YOUR ORDER EARLY

Satisfaction guaranteed or money refunded if garments are returned to us within 7 days.

CARRIAGE PAID ON ALL ORDERS.

Actual Manufacturers:
Martin Waterproof Co.,
208, Oldham Rd., New Cross, Manchester

MOTOR CYCLES FOR SALE.

Motosacoche.

2h.p. Motosacoche, running order, tax paid; £8/10 —Batt, Dering Farm, Smarden. [8810

1¾h.p. Motosacoche, perfect condition; £12; apply after 7.—41, Clifton Crescent, S.E.15. [9146

MOTOSACOCHE; £6; working order, good frame, saddle, tyres; wanting cash.—Sheen, 30, Monk St., Tutbury, Burton-on-Trent. [9413

1914 3½h.p. Motosacoche Combination, M.A.G., twin, 2-speed, lamps, taxed; nearest £30.—C. Stubbington, School House, Great Munden, Ware, Herts. [9533

Ner-a-Car.

NER-A-CAR, 1921 (October), 1922 handle-bars and controls; a bargain, £42/10.—244, Old Christchurch Rd., Bournemouth. [8758

TWO Ner-a-Cars for sale, as new, mileage under 600 miles, both fitted with Cowey speedometer, 2 bags, spare chains, etc.; best offers.—Creasey, Sutton Bridge. [8829

NER-A-CAR.—The 1922 wonder, 2¼h.p. 2-stroke, electric and gas lighting, excellent finish, perfected friction drive; £65. We can give a limited number of immediate deliveries.—South Eastern Garage, Herne Hill, S.E.24. [9822

New Comet.

2¾h.p. new 1922 New Comet, lady's machine, fitted with Comet sidecar; £80; easy terms arranged. —Wauchope's, 9, Shoe Lane, London. [8686

£42.—New Comet 2½h.p., 2-stroke, 2-speed, clutch and kick starter, tax paid, done 600 miles, like new; or exchange with cash for A.B.C., Sunbeam, or 16H Norton.—C. P., 107, Highbury New Park, N.5. [7037

New Hudson.

NEW HUDSON, 2-stroke, splendid order, tax paid; £25.—28, Woodford Rd., Forest Gate. [9809

NEW HUDSON 2-stroke, 1914; £23/10.—28, Berkeley Crescent (Council Houses), New Barnet. [8900

1921 2¼h.p. New Hudson De Luxe, 2-speed, licensed 1922, in perfect order; Scott wanted.—Stebbings, Attleborough, Norfolk. [8886

1921 New Hudson De Luxe, 2-stroke, 2-speed, almost like new; £37/10, licensed.—Edwin Knight, High St., Reigate. [9486

1920 New Hudson, 2-stroke, 2-speed, lamps, horn, etc., tax paid; 30 gns.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0896

NEW HUDSON 2¼h.p. Model de Luxe, 1920, excellent condition; £37/10; exchange good combination.—42, Church Rd., Hendon. [9444

NEW HUDSON 1921, 2-speed, 2-stroke, absolutely as new; 35 gns.; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [9590

NEW HUDSON 2¼h.p., 2-stroke, 2-speed, 1920 model, in good running order, fully equipped; £30.—74, Brighton Rd., Surbiton. 'Phone; Kingston 3025. [9370

NEW HUDSON Motor Cycles.—London Depot, 45, Gray's Inn Rd., London, W.C.2. Immediate delivery all models. Spares stocked. Trade supplied. [0851

£35.—1914 3½h.p. New Hudson and coachbuilt sidecar, 3 speeds and clutch, lamps, horn, screen, tools, any trial; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [9601

1914 New Hudson coachbuilt Combination 6h.p., 3-speed hub gear with countershaft, Lucas lamps and horn, in first-class condition, tax paid; price £50.—Davis, High St., Ringwood. [9117

1922 2¼h.p. New Hudson de Luxe, 2-speed, tax paid for year, fitted with legshields, B. and B. carburetter, C.A.V. magneto, Dunlop heavy tyres; machine has only run 100 miles, and is in brand new condition throughout, and is guaranteed mechanically perfect; any trial welcomed; £37/10.—Allan, Station House, Aldeburgh, Suffolk. [9629

New Imperial.

NEW IMPERIAL, No. 3 model, in stock.—Wigfield, Goldthorpe Yorks. [6187

1917 New Imperial-Jap, 2-speed, equipped; £29.—Broadway Motor Co., Tooting. [9312

1919 New Imperial 2¾h.p., 2-speed; £26.—27, Doneraile St., Fulham Palace Rd. [8866

2¾h.p. Imperial-Jap, 2-speed, lamps; £23 for quick sale, offers.—Pootings, Edenbridge. [9021

NEW IMPERIAL Model 3 2¾h.p., 3-speed, chain drive; £73.—Kays, 8, Bond St., Ealing. [9763

NEW IMPERIAL-J.A.P., new April, 1921, fully equipped; £43.—Sharpe, 325, Essex Rd., Islington. [9912

SHEFFIELD Agent for New Imperial Motor Cycles; all models in stock.—J. A. Stacey, Ecclesall Rd., Sheffield [0813

NEW IMPERIAL-J.A.P. 2¾h.p., 2 speeds, good condition; £24.—92, Lyford Rd., Wandsworth Common. [8923

£35.—1919 New Imperial, 2½h.p. J.A.P., 2-speed, any trial; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [9599

MOTOR CYCLES FOR SALE.

New Imperial.

2¾h.p. New Imperial-Jap, 2-speed, lamps, horn, Tan-Sad, good running order; £27.—16b, Kennington Oval. [8783

1921 2¾h.p. New Imperial, 3-speed, clutch, K.S., all on, splendid condition: £50.—J. Powell, Shawbury, Shrewsbury. [9017

NEW IMPERIAL-J.A.P. 1917-18 2¾h.p., 2-speed, equipped, licensed, Tan-Sad; £35.—Clayden, 31, St. Albans Rd., N.W.5. [1015

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Japs, 1922, No. 3, £73; No. 2. £60; easy terms and exchange. [8687

4h.p. New Imperial, 2-speed, clutch, all chain, 1916, overhauled, excellent condition; Sheffield; £60.—Box 2440, c/o *The Motor Cycle.* [9648

1920 New Imperial J.A.P. Combination, condition as new; £87/10, bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [9079

NEW IMPERIAL 1922 2¾h.p. Sports Model, tax paid for 1922, equal to new; £75.—The Layton Garages, 30, Holywell St., Oxford. [7187

NEW IMPERIAL 6h.p. Combination, 1919, exceptional condition, Easting, all on, tax paid; £85, exchange.—Motor Co., Ltd. Hereford. [7601

1920 2¾h.p. New Imperial-Jap, 2-speed, fully equipped, perfect condition, as new, any examination; £43.—17, Birchington Rd., Kilburn. [9484

NEW IMPERIAL 6h.p. Combination, bought new 1921, beautiful condition, Lucas accessories, Easting; £105.—Jeavons, Draper, Lye, Stourbridge. [1047

1917 New Imperial-Jap 2½h.p., 2-speed, perfect condition throughout, fully equipped, tax paid; bargain, £35.—105, High St., Colliers Wood, Merton. [9705

NEW IMPERIAL 2¾h.p., 2-speed, in good condition mechanically and appearance; £30; tax paid.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9631

NEW IMPERIAL 8h.p. Combination, dynamo, electric horn, Easting, speedometer, Tan-Sad, new, Stepney back; £100; exchange solo and cash.—Thacker, Ledbury. [9667

NEW IMPERIAL 2¾h.p. Model No. 3, 3-speed, K.S., all-chain drive; £73; immediate delivery; cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [9102

NEW IMPERIAL 1919 8h.p., 3-speed, large sidecar, Easting, lamps, Klaxon speedometer, tax paid, 3 new 28×3 tyres, perfect mechanical condition; 70 gns.—2, Madrid Rd., Barnes. [9495

1922 New Imperial 2¾h.p., Model 3, 3-speed, clutch, K.S., all chain, tax paid, fully insured, not ridden 100 miles, perfectly new; best offer over £65.—101, Bath Rd., Swindon. [9643

1922 New Imperials in Stock.—No. 3, 2¾h.p., chain drive, £73; No. 3 with Maglita, £83; easy payments 4% extra; free delivery and tuition.—Premier Motor Co., Aston Rd., Birmingham. [5882

NEW IMPERIAL Combination, 2-seater, 3-speed, 8h.p., splendid condition, Easting screen, sidecar newly upholstered, all accessories; reasonable offer accepted.—47, Elborough St., Southfields, S.W.18. [9091

£26.—New Imperial Light Tourist 1915, 2-speed Albion gears, enamelled and plated, new oversize tyres, Lucas lamps and horn, spare chain, valve, etc., tax paid till December 31.—Steadman, 58, Dudley Rd., Wolverhampton. [9708

1920 New Imperial Combination, J.A.P. 8h.p., 3 speeds, C. and K.S., all lamps, horn, Easting screen; an exceptional bargain, tax paid; £85; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9832

NEW IMPERIAL 2½h.p. J.A.P., overhead valves, 2-speed, racing carburetter, large nickel tank, foot oiling, tax, 2 sets mudguards, chains, belts, sprocket valve. This machine has attained 70.8 m.p.h. and won many events; £45.—'Phone: Hammersmith 888. [9494

Spare Parts.

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

New Scale.

NEW SCALE Combination, 3½h.p. Precision, brand new; list £108; sacrifice, £65.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [9651

Norton.

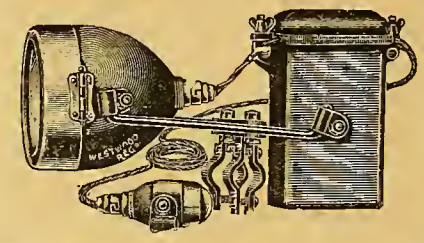
PREMIER Motor Co. for 1922 Nortons.

NO. 9, 3½h.p., £80; 16H, 3 speed, £115; Big Four, 3-speed, £120; sidecars from £22; easy payments. 4 per cent. extra, free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham [0865

NEW 1922 Big Four Norton, with Montgomery sidecar; £145, or exchange.—Jack Pruen, Weston-super-Mare. [7773

NORTON 3½h.p., speed model, perfect; £45.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [9653

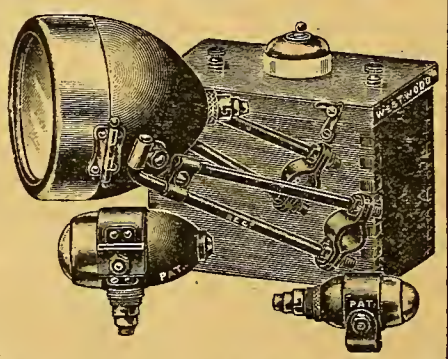
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

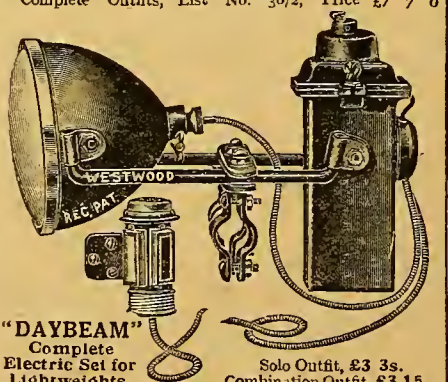
Complete Outfit, List No. 30/1, Price £5 5 0

"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The Accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting and will give very satisfactory service in use.

Complete Outfits, List No. 30/2, Price £7 7 0



"DAYBEAM" Complete Electric Set for Lightweights.

Solo Outfit, £3 3s.
Combination Outfit, £3 15

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TRADE MARK
WESTWOOD
RIM & PATENTS LTD
LAWDEN RD BORDESLEY BIRMINGHAM.

MOTOR CYCLES FOR SALE.

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

16H Norton, 700×80 tyres, mileage under 500, 20 successes in competition, tax paid; £110; exchanges.—The Dene, Hardwick Rd., Reigate. [9317

NORTON Models, 16H, new machines, for immediate delivery; one demonstration machine, tax paid, £102.—Andrews, Devonshire Garage, Boxton. [1044

NORTON 1920, 17c, and sporting sidecar, just overhauled makers, excellent condition, all accessories; £70.—47, Lovaine Place, Newcastle-on-Tyne. [9415

NORTON 1921 Big Four 16 H, countershaft model, new tyres, speedometer, lamps, etc., licensed; 75 gns.; also 1919 Philipson model; 40 gns.—54, Coval Rd., Mortlake. [9104

NORTON 1921 16H, taxed, speedometer, very fast, 78 gns.; 1920 Big 4, Magdyno, taxed, perfect order, 78 gns.; sports sidecar, new condition, £18.—Clark, 7, Exhibition Rd., S.W.7. [7362

NORTON.—New 1922 models; Big Four and De Luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115; exchange and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [8688

1921 Big 4 Norton Combination, Norton coachbuilt sidecar, clutch, 3-speed, kick start, electric lighting, Cowey horn, Cameo windscreen, 1922 tax paid; £105.—Will, 769, Romford Rd., Manor Park, London, E. [9438

NORTON Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [7327

1922 16H Norton for Sale, through temporary disablement, interchangeable standard and close ratio gears, aluminium piston, chain cover and few other enamelled parts electro-plated, condition absolutely as new, tyres scarcely marked, done 70 m.p.h.; only wants seeing; £105.—Tison, Sudbury, Suffolk. [9930

N.S.U.

N.S.U. 3h.p. twin, 2-speed, spring frame, Bosch, Senspray, Lucas lamps, Klaxon, excellent order; £16/10.—20, Woodstock Rd., Bedford Park. [8777

N.U.T.

N.U.T., 8h.p., fast, must sell; £30, bargain.—19, Wood Lane, Shepherds Bush. [9163

1920 N.U.T. 3½h.p., Magdyno, perfect condition; £70.—R. Welch, Gt. Missenden, Bucks. [1053

N.U.T. 1920-21, dynamo lighting, in splendid condition, owner buying car; £80.—Stevens, Old Mill Farm, Cowley Middlesex. [9367

N.U.T. 1920 3½h.p. twin, Magdyno, excellent condition throughout, tax paid; £75, or without lighting set, £65.—156, Thorne Rd., Doncaster. (P) [9723

5h.p. N.U.T. Combination, Magdyno lighting set and horn, purchased 1921, mileage 500; £95.—Storer and Tait, 20, Bondon St., Bond St., W.1. Mayfair 625. [1042

N.U.T. 5h.p., 1921, November, sporting machine, complete accessories, long nickel exhaust pipe, original tyres, plugs, etc., as new, tax paid £4 for sidecar; first £95 secures.—Simpson, 57, Tottenhall Rd., Palmers Green. (D) [9206

O.K.

O.K. 2½h.p. Mark IX. 1921 Model, new and unused, single speed; £30.—Eagles and Co., 275, High St., Acton, London, W. [9969

O.K. Junior 4-stroke, 2-speed, lamps, etc., tax paid, excellent condition, must sell; offers.—42, Mulgrave Rd., Neasden, N.W.10. [7787

1921 O.K. 2½h.p., 2-speed, clutch, kick-start, licensed, Lucas lamp, horn, guaranteed; £38.—Beesley, Warford St., Newtown, Manchester. [9342

LATE 1921 O.K.-Villiers 2-stroke, excellent condition, little used, tax paid; 26 guineas.—83, Penshurst Rd., Thornton Heath, S.E. [9532

1916 O.K. Junior 2½h.p., 2-speed, good running order, fully equipped, tax paid; £25, or offers.—105, High St., Colliers Wood, Merton. [9706

1921 O.K. 2-speed Lightweight, guaranteed condition, legshields, electric lamps, spare tyre and belt, suit either sex; approval; £35.—Collis Laver, Unthank Rd., Norwich. [9850

P. and M.

1914 P. and M. Combination; £27/10.—Kays, 8, Bond St., Ealing. [9764

1920 P. and M. Solo, fully equipped; £55.—Kays, 8, Bond St., Ealing. [9765

P. and M. 3½h.p., 2-speed, good order; £29.—P. Willcocks, Datchet, Bucks. [9013

3½h.p. 1919 P. and M. Solo, fully equipped; £55.—Wauchope's, 9, Shoe Lane, London. [8689

£24.—1914 3½h.p. P. and M., 2-speed, clutch, K.S. fine order.—King, Egrove Farm, Oxford. [9324

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Rudge.

£70.—3½h.p. Rudge-Multi, 1921, new.—Townson and Ward, Ltd., Barrow. [8982

NEW 1922 Rudge-Multi 3½h.p. touring, shop soiled only; £70.—Gray's Garage, Watford. [9614

RUDGE-MULTI for sale, very fast, cheap; 25 gns.; must sell.—67, Fernlea Rd., Balham. [9914

RUDGE-MULTI, excellent condition, lamps, horn, tax paid; £27/10.—Gray's Garage, Watford. [9616

1920 Rudge-Multi 3½h.p., perfect condition, all on; £40.—Latham, 114, Junction Rd., N.19. [9375

RUDGE, 3½h.p., perfect, all on; bargain, £25.—Brown, Prospect Villa, Vicarage Rd., Thetford. [9056

WAUCHOPE'S, 9, Shoe Lane, London.—New 1922 Rudge 3½h.p. I.O.M.; £77; easy terms arranged. [8673

£38.—5-6h.p. Rudge-Multi Combination, coachbuilt sidecar, fine running order.—King, Egrove, Oxford. [9326

1920 I.O.M. Rudge-Multi T.T. model, condition as new; bargain, 44 gns.—67, Fernlea Rd., Balham. [9917

T.T. Rudge, 1916, all on, hand clutch, very fast; £18.—284, St. James' Rd., Old Kent Rd., S.E.1. [9908

3½h.p. Rudge, 3-speed, clutch, tax paid, perfect running order; £32/10.—8, Park Parade, N.12. [9547

3½h.p. Rudge-Multi Combination, all on, tyres as new; best offer.—72, Mill Lane, West Hampstead. [9383

1921 Rudge-Multi, I.O.M., fully equipped, taxed, perfect condition; £50.—R. Welch, Gt. Missenden, Bucks. [9247

1922 I.O.M. Rudge-Multis in stock at the latest reduced prices, £77.—Jones Garage, Broadway Muswell Hill, N.10. [0791

1919 Rudge-Multi Combination, hood, screen, licensed, starter, clutch, Klaxon; bargain, £45. -89, East Hill, Wandsworth. [9750

1919 Guineas.—Rudge 1913 3½h.p., genuine T.T. model, tax paid; bargain; photo.—Spencer, Potter St., Bishop's Stortford. [9427

RUDGE-MULTI 5-6h.p. Combination, fully equipped and perfect; £38.—The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [9362

£77 is the price of a new Rudge. Get it from the Agents; in stock; cash or payments.—Knight's 126, Upper Tooting Rd., S.W.17. [0835

3½h.p. Rudge-Multi Combination, good condition; any trial; seen by appointment; £35.—G.P.C., 7, Florence Terrace, Ealing, W.5. [9267

1920-21 3½h.p. Rudge-Multi Motor Cycle, good condition, lamps, horn, and tools; £40.—King, 4, Willow Walk, Short St., Cambridge. [9796

1921 Rudge-Multi 5-6h.p., almost new, Millford, electric lamps, speedometer, Tan-Sad, tax paid; £80.—Hollis, Lucknow Dyke Rd., Brighton. [9689

RUDGE 7-9h.p., 3-speed, late 1921 model, practically new, only driven about 150 miles; £75.—C. A. Vandervell and Co., Ltd., Acton, W.3. [9118

1922 3½h.p. T.T. Rudge.—Brand new, in stock; £77. Cash or easiest of easy payments.—Wilkins, Simpson, Opposite Olympia, London. [9983

1920 Rudge-Multi, equipped regardless; offers; exchange combination, or Douglas and cash.—Harvey, Cosynook, Churchfields, Cheshunt, Herts. [9454

1914 Rudge-Multi 3½h.p., pedal starter, clutch, splendid condition, £40; also Tan-Sad, with footrest, 27/6.—Williams, Little Common Farm, Rayne, Essex. [8858

1921 Rudge-Multi, unscratched, only done 2,000 miles, Watford speedometer, Lucas horn and lamps; must be sold; £65 or nearest offer; exchange with cash considered.—E. H. Macmillan, Kings Langley. [9551

1922 Rudge-Multi to special order, many refinements, Binks, special handle-bars, condition perfect, very sweet running; £72/10; Manchester.—Fuller particulars, apply Box 2450, c/o *The Motor Cycle*. [9847

RUDGE, 1922, latest 7-9h.p. Combination, unused, 3-speed, spare wheel, magnificent turnout; advertiser cannot take delivery; will sacrifice deposit paid £25, leaving £125 payable; London.—Box 2433, c/o *The Motor Cycle* [9124

RUDGE-MULTI 1920 7-9h.p. Combination, as new; 79 gns., cost double. Also 1916 Rudge-Multi 3½h.p. Combination, 42 gns.; solo, 33 gns. Photographs. Exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [9591

HALIFAX.—Rudges: 3½h.p., clutch, £19/10; 1919 Multi, £49/10; 1920 Multi I.O.M., £55; 1921, £59/10; 1920 5-6h.p. combination, £75; 1920 7-9h.p. twin combination, £89/10. Deferred payments accepted.—Halifax Motor Exchange, Horton St., Halifax. [9972

BANCROFTIAN CO.'S
GREAT ANNUAL SALE

commences from to-day for 3 weeks only; so buy now and save money. The Greatest Bargains ever offered. Our sale is genuine.

We are advertisers in the "Motor Cycle" from its first publication.

TYRES.—Manufacturers' clearance stock, not W.D., although not guaranteed by the makers they are new and perfect, no rubbish. Wood-Milne extra heavy, 4-ply combination, **30/-**; Hutchinson, 26×2½, Heavy T.T., **22/6**; Passenger, 26×2½ for 2¼, **32/6**; 700×80 to fit 650×65 rims small car, extra heavy, **42/-**; Extra strong new model Passenger, 28×3, **48/6**; Extra heavy, 3-ribbed, 700×65, light car, **32/6**; 650×65, Steel stud car type, **52/-**. Firestone, 20×2 for Autowheel, **19/6**; original, 45/-; Tube, **5/11**. Palmer, 26×2, light, **21/-**; 650×65 cord heavy, **35/-**; 26×2½ cord heavy, **38/-**. Oylers, 650×65, square tread, heavy, **28/-**. Clincher De Luxe, Heavy, 26×2¼, **32/6**; 26×2 Junior De Luxe, **21/-**; 26×2¼, **24/6**; 26×1¾, **16/6**. A few wired edge covers, 26×2½ and 2¼, heavy, **29/6** each. Goodyear, Stepney road grip, Dominion Nobby and Hutchinson 1922-3 Models in stock.

TUBES.—24×2, 24×2¼, **4/6**; 26×2¼, 26×2½ and 26×2⅜, **4/11**; 28×3 and 700×80, **6/6**. Post 9d.

BELTS.—Clincher clearance, not W.D. ¾", 7' 6", **9/6**; 1", 7' 6", **11/3**; Bates short lengths, ¾", 5', **4/6**; 5' 6", **5/-**; ⅞", 4' 6", **5/-**; 5', **5/6**; 5' 6", **6/-**; 1", 2' 6", **3/-**, 3', **3/9**; Leather belts, ½" at **1/6** per ft.; Belt fasteners, **9d.** and **1/-**. Post 1/-.

Great purchase of Genuine "BOBJON" LAMPS. Nickel plated on brass or black and plated. Large size, 5½" front, with powerful back lens, large generator sufficient for two lamps, suitable for a heavyweight machine, **25/-** complete, as illustrated.

Original price 55/-. Smaller set, 4½" front, suitable for lightweight, **16/6.** The greatest bargain ever offered. When cleared can never be repeated at near the price. Postage and packing 1/6 extra. Special quotation for quantities.

SPECIAL PURCHASE OF SMITH'S JACKS.

No. 7. 7½" extend 11½" **7/6**
" 8. 8½" " 13½" **8/6**
" 9. 9½" " 15½" **9/6**
Above half usual prices.

SPEEDOMETERS.—Slightly shop-soiled, Cowey with trip, **£4 10s.** Smith's with trip, **£4 5s.** Bonniksen with trip, **£4 15s.** Post 1/6. Speedometer replacements in stock.

TAN-SADS.—A few with back seat to clear, **28/6.** Original, 57/-. Carriage 3/6 extra.

GAUNTLETS.—Extraordinary bargains. Tan leather, unlined, **7/6.** Lined, **9/11,** new and fresh. Chrome leather gauntlets with finger and thumb and wrist strap, **2/11.** Gloves, leather, wool lined, **3/11.** Above lines are worth more than double. Limited quantities only. Postage 6d.

WATERPROOF SUITS.—Less than pre-war prices. Great purchase of manufacturers' stock, consisting of double-breasted coat with belt, storm cuffs, and collars, and seatless trousers with gussets, patent fasteners, and leather bound seats. Finest quality, extra heavy, double texture waterproof material, dark fawn, new and fresh, only been made recently, not half-perished W.D. Our price to clear, **£2 2s.** Postage 1/6 extra. Could not be bought elsewhere under £4 10s. The greatest bargain ever offered. Order immediately to save disappointment. All stock sizes.

HORNS.—Reliable Electric, Motor Cycle, up to 4-volt only, complete with wire and switch; usual price, 29/6, our price, **15/6.** Postage 1/3 extra. Smith's Electric Horns, black and nickel, in 6, 8, or 12 volts, large size, suitable for heavy combinations; original price, £2 15s.; our price, **30/-.** Postage 1/6. The greatest bargain ever offered. All new and perfect.

We can supply anything for the motor cyclist at competitive prices.

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MOTOR CYCLES FOR SALE.

Rudge.

Spare Parts:

THE Promptest Firm for Rudge Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3165

Scott.

JOHN R. KINSEY and Co., Ltd., Croydon, for Scotts.

CROYDON.—Good second-hand Scotts. Motor cycles and Sociables in stock.—John R. Kinsey and Co., Ltd., 350-352, Lower Addiscombe Rd. [9717

SCOTT Twin, perfect order, little used; £35.—176, South Ealing Rd., W.5. [9258

SCOTT Squirrel, 1922, scarcely used; £95.—Welford's Motors, Brighton. [9133

SCOTT STANDARD, T.T. bars, lamps, perfect; £65. —Welford's Motors, Brighton. [9134

SCOTT 1921 3¾h.p., new condition, accessories, licence.—Pearson, 21, Myton St., Hull. [9035

SCOTT 1921 3¾h.p., fully equipped and tax paid; £80.—The Layton Garages, 30, Holywell St., Oxford. [7178

SCOTT 3¾h.p. Combination, 1915, 2-speed, kick starter, smart turnout; £42.—17, Heaton Rd., Mitcham. [9237

£65.—1920 Scott Combination, Binks, lamps, speedometer, accessories, splendid condition.—63, Solon Rd., Brixton. [9463

1922 Scott Squirrel, June, mileage under 200, tax paid; £100, or nearest offer.—Daniels, 30, Lion St., Abergavenny. [8822

3¾h.p. Scott, 2-speed, clutch, kick-start, chain drive, guaranteed perfect; £50.—Beesley, Warford St., Newtown, Manchester. [9341

SCOTT Combination, late 1919, good mechanical condition, Cox-Atmos carburetter; £65.—Jefferies, 4, Castons Rd., Basingstoke. [9661

1 SCOTT Standard, also Squirrel; used less than 5 miles for demonstration; £100 each.—Gibb, Northgate, Gloucester. Service Agent. [7549

SCOTT-SQUIRREL 1922, mileage 500, like new; £85.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [9652

£38.—1915 Scott Combination, Binks, Cowey, F.R.S., excellent condition and running, Cameo, twin drip, any trial.—60, Barrington Rd., Brixton. [9351

1914 T.T. Scott, fully equipped, licensed December, last, thoroughly sound but rather shabby; £40. —Write Bindlors, 7, Tavistock Terrace, N.19. [9201

1921, August, Scott Squirrel, Lucas lamps, horn, tax paid, condition unscratched, mileage under 2,000; £80.—F. E. Wootten, Ltd., 55, High St, Oxford. 'Phone: 308. [8978

SCOTT No. 1355 and Williamson Sidecar, recently overhauled, good tyres and running order, tax paid; accept £40; bargain.—B., Warwick House, Basingstoke. [8930

SOUTH London Scott Service Depot.—'Phone Croydon 1129 for demonstration runs; immediate delivery; prices from £105.—John R. Kinsey and Co., Ltd., 350-352, Lower Addiscombe Rd., Croydon. [8352

1920 Scott Combination, completely equipped, including Easting windscreen, licensed, insured, good condition throughout; £75; seen by appointment.—Lupton, North Grange Rd., Headingley, Leeds. [9611

Spare Parts:

WARD Motors, Ltd., 32, Hustler St., Bradford, for serviceable second-hand Scott parts on approval against cash. [0889

SOUTH London Scott Service Depot.—Scott Spares; Scott Repairs.—John R. Kinsey and Co., Ltd., 350-352, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [8353

GODFREYS', Ltd., 208, Ct. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

S.D.

SOUTHPORT.—1921-22 S.D. Combination, all-chain, Lucas electric lighting, splendid condition; 100 gns.; exchanges.—Kent's, 417, Lord St., Southport. [9668

Singer.

WAUCHOPE'S, 9, Shoe Lane, London.—2¼h.p. Singer 1910; £25. [8674

£15.—Singer 2¾h.p., 2-speed, good condition.—Baldwin, 105, Marsala Rd., Lewisham. [8819

SINGER Combination, 2-speed gear, clutch, speedometer, lamps, any trial; £29.—125, Kilmorie Rd., Forest Hill. [9487

25 GNS.—Singer 3½h.p., 3-speed, fast, sporting machine, in fine condition, year's tax paid.—Delancey St. Garage, Camden Town, N.W.1. [9208

£25.—Singer 4½h.p., 2-speed countershaft, clutch, kick-starter, Bosch magneto, good tyres, lamp, excellent condition.—C. Franklin, Swinford, Eynsham, Oxon. [9720

MOTOR CYCLES FOR SALE.

Singer.

SINGER 4¼h.p. Coachbuilt Combination, countershaft gears, clutch, starter, lamps, accessories, overhauled, new cylinder, connecting rod, flywheel, tyres, licensed; any trial; bargain, £45.—Protheroe, 31, Parade, Pontypridd. [9665

Spare Parts:

GENUINE Singer Parts. By return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [9701

THE Promptest Firm for Singer Spares.—Forne. Motors, Forfield Place, Leamington Spa. [3164

Sparkbrook.

1922 Sparkbrook, 2-stroke, 2-speed, Villiers, slightly soiled; 50 gns.—Gray's Garage, Watford. [9615

SPARKBROOK 1920 2½h.p., 2-speed gear, mileage 1,000; nearest £40.—Hill, Dinas Lane, Roby, Liverpool. [1045

SPARKBROOK 1919 2½h.p., perfect condition; £36, or near offer, bargain, must sell; going away.—47, Elborough St., Southfields, S.W.18. [9092

Sun.

FOR Sun-J.A.P., or Sun-Vitesse, get in touch with the sole North London agents. Models in stock, single Special, 42 gns.; 2¾h.p. J.A.P., 2-speed, K.S., 60 gns. Send for catalogues. Trade supplied.—Jones Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM Agents.

3½h.p. sporting model, £136/10.

3½h.p. light solo model. £136/10.

3½h.p. roadster model. £126.

4¼h.p. touring model, £141/15.

DELIVERIES from stock. Catalogues and full particulars free. Special terms and exchanges arranged.—Herbert Robinson, Ltd., Green St., Cambridge. [8499

£68.—3½h.p. Sunbeam, 3 speeds, clutch, K.S., all chain, perfect.—King, Egrove, Oxford. [9327

3½h.p. Sunbeam, as new, only run in 1922, double purpose model.—16, Broadway, Woking. [8827

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Sunbeams; unequalled service, repairs, etc. [3558

BRAND New 1921 Sunbeam Tourist, detachable wheels, etc.; best offer over £120.—Grimes, Bracknell, Berks. [9217

3½h.p. Sunbeam and Sidecar, 1919 model, 3-speed, etc.; £75.—Wanchope's, 9, Shoe Lane, Fleet St., London. [9958

3½h.p. Touring Sunbeam, about 1919, little used, first-class condition, fully equipped; £75.—Dosser, Slingsby, Yorks. [9857

SUNBEAM Sports, 3½h.p., 1921, electric lighting, fully equipped, tax paid, equal to new; £100.—Cope, 15, Upper Hagley Rd., Birmingham. [9677

SOUTHPORT.—Sunbeam Combination, 3½h.p., Sunbeam sidecar, excellent order, all on; bargain, 74 gns.; exchanges.—Kent's, 417, Lord St., Southport. [9669

SUNBEAM Combination, 1919, 3½h.p., Lucas lighting, Klaxon horn, Dunlop Magnums, excellent condition, tax paid to end of year; £100.—Pearse's, High St., South Benfleet, Essex. [8799

SUNBEAM 3½h.p. Combination, mechanically perfect, fully equipped, satisfactory trial run given, new tyres; £85.—Write, F. Tomkins, Town Hall Chambers, Marton St., Stratford, Essex. [9920

1921 Sunbeam 3½h.p., high gear, 4¼h.p., Irame, licensed, condition as new, 50 m.p.h. guaranteed, fully equipped, spares; London district; what offers?—Ogle, 15, New Broad St., E.C.2. [9253

1920 3½h.p. Sunbeam, Montgomery sidecar, Easting, Magdyno, legshields, luggage carrier, Binks or Amac carburetter, spares, mileage 2,500, tax and insurance; £135.—41, Portland Rd., Oxford. [9212

SUNBEAM 2¾h.p. 1914, semi-T.T. 2-speed hand clutch, enclosed chain drive, latest taper tank, enamel and mechanical condition excellent; £43.—7, Birkbeck Mansions, Birkbeck Rd., Hornsey, N.8. [8966

SUNBEAM 8h.p. Combination, M.A.G., dynamo lighting, electric and bulb horns, speedometer, spare wheel, hood, screen, spares, splendid condition; £125; by appointment.—Box 2457, c/o *The Motor Cycle.* [1051

SUNBEAM.—1921¾ 3½h.p. Sports, scarcely "run in," unscratched, unpunctured, beautifully equipped, cost £170, complete with spares, any trial; nearest offer to £110; owner buying car.—Write Designer, 188, High St., Harlesden, N.W.10. [9168

CHEAPEST Sunbeam Combination in England, 1920 model, with Sunbeam sidecar, spare wheel and tyre, apron, Easting windscreen, black and gold legshields, 3 Lucas lamps, 3 Lucas generators, Cowey horn, Cowey speedometer, Tan-Sad with back rest, spare tube, pump, tools, etc.; tax paid to 1923; £108.—Delancey St. Garage, Camden Town, N.W.1. [9209

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MOTOR CYCLES FOR SALE.

Sunbeam.

1920 Sunbeam (July) 3½h.p. Combination, Lucas lamps, windscreen, horn, Cowey speedometer, spare tyre, many extras, only done 5,000 miles, in excellent condition throughout; £110.—Worsley, Hazeldene, St. John Rd., Sevenoaks. Tel.: 241. [8828

SUNBEAM Combination, just delivered, brand new, had test run only, Easting Royal, spare wheel, fully equipped, tax and insurance for year, magnificent turn-out; cost over £200, accept £185 quick sale; consider deferred payments.—11, Church Grove, Lewisham, S.E.13. [9075

1920 3½h.p. Sunbeam Combination, 3-speed, clutch, and kick start, all chain drive, tax paid for year, A.M.A.C. carburetter, T.B. magneto, fitted with Sunbeam sidecar, Cameo windscreen, P. and H. lamps throughout with special generator. This machine has its original tyres, having only done 2,000 miles; is privately owned, and carefully kept; plating and general condition as new; any trial or A.A. inspection welcomed; £95, bargain.—Allen, Station House, Aldeburgh. [9628

T.D.C.

£14.—T.D.C., 2-stroke, Thomson-Bennett magneto, black tank, smart appearance.—King, Egrove, Oxford. [9328

T.D.C. Lightweight, full equipment, tax paid, excellent condition; offers, £28.—Graham, 70, Elm Grove Rd., Barnes. [9158

Torpedo.

TORPEDO, 2¾h.p. Precision, countershaft gears, really good; sacrifice, £17.—Bustin, Chilton, Thame. [9513

Triumph.

EFFRA Motor Irish M.T. Surplus.

4 GNS. Monthly.—Deposit £16/7/7 secures countershaft Triumph motor cycle, reconstructed, stove enamelled, and finished in makers' colours, Bosch magneto, new tyres, tubes, guaranteed 3 months; cash £60.—Below.

57 GNS.—1918 renovated Triumph, countershaft, unridden, 3 months' guarantee; monthly payments arranged.—Efra Motor Works, 59-63, High St., Clapham, S.W.4. 'Phone: Brixton 1115. [8727

PREMIER Motor Co. for 1922 Triumphs.

IMMEDIATE delivery of type H, 4h.p., 3-speed, £105; type S.D., chain drive, £115; type R., 3½h.p., overhead valve, £120; type L.W., lightweight, £65; sidecars from £20 to £50; easy payments, 4 per cent. extra; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham [0867

NEW Triumph, Model H, in stock.—Bounds' Garage, High Rd., Kilburn. [9516

TRIUMPH 1913, clutch model, good order; £25.—17, Elmstone Rd., Fulham. [8969

1921 Baby Triumph, accessories, taxed, absolutely as new; £42.—114, Brixton Hill. [9478

NEW Shop-soiled Triumph-Ricardo, tax; £113.—Box 2438, c/o *The Motor Cycle.* [9558

1918 Countershaft Triumph, perfect; £48.—24, Balliol Rd., North Kensington. [9282

1921 Countershaft Triumph, as new; £75.—24, Balliol Rd., North Kensington. [9283

1921 Triumph Complete Combination, well equipped, as new throughout; £95.—Below.

1920 Triumph, lamps, tax paid, exceptionally fine condition; £68/10.—Below.

1914 Triumph 4h.p., 3 speeds, clutch, excellent condition; £28/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [9564

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham [0868

1921 Baby Triumph, licensed, perfect, 500 miles; £45.—Welford's Motors, Brighton. [9139

3½h.p. Triumph, perfect order, lamps; £19/10; little used.—176, South Ealing Rd., W.5. [9259

1920 Countershaft Triumph, as new; genuine bargain, £60.—33, Hackford Rd., Brixton. [9864

1918 Triumph Countershaft, hardly used, perfect; £55.—9, Church Rd., Harlesden, N.W. [9350

TRIUMPH, 2-speed, clutch, splendid order, licensed, equipped; £26.—Bustin, Chilton, Thame. [9512

TRIUMPH, 1912, 2-speed, new Dunlop, drop Irame, taxed; £22.—103, Moore Park Rd., Fulham. [9405

1917 Triumph Solo, first-class running order; £50.—Rhind and Co., Stone Place, Rusholme. [9080

1922 Triumph Junior; £65.—Morriss and Co., Ltd., 139, Finchley Rd., Swiss Cottage, N.W.3. [8989

MODEL H 1922 Triumph, new, £105; also S.D. model, £115; cash or extended payments.—Below.

WE have several 1918-1919 C.S. Triumphs, fitted new tyres, tubes, etc., and many fitted with 1922 S.A. gear boxes, splendid value, enamelled and plated, £65.—The Hackford Engineering Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [9862

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

RIUMPH 3½h.p., clutch, lamps, tools; £27 offer.—Smith, 45, Easton St., Portland, Dorset. [8952

1h.p. Triumph, clutch; new magneto, good climber; 2 £22.—Simmons, Arcadia House, Hemsworth. [9377

RIUMPHS.—Prompt delivery and service.—Ba... and Son, Monton Eccles Tel.: 160 Eccles. [369...

918 Triumph Combination, just overhauled, splendid condition; £70.—Kays, 8, Bond St., Ealing. [9767

RIUMPH 4h.p.; £50.—R. Toms, 307, Euston Rd., N.W.1. 'Phone: Museum 8038 and 8039. [8836

RIUMPH Combination, nearly new, best accessories, unscratched; £78.—32, High St., Reigate. [8779

RIUMPH 1914, 3-speeds, full equipment, reliable; best over £30; 9 o'clock till 6.—165, Earl's Court [8972

922 Triumphs, all models for early delivery, cash or exchange.—Daw, Triumph Agent, 114, Brixton ll. [9479

RIUMPH 4h.p., practically new condition, Middleton sidecar, Easting; £75.—120, Fairbridge Rd., 19. [9883

42.—Triumph 4h.p., countershaft, overhauled, renovated W.D.; bargain.—406, York Rd., Wandsrth. [9507

RIUMPH, 1919, Swan sidecar, splendid condition, all accessories, not W.D.—129, Lothian Rd., Hargay. [8860

914 Triumph, mechanically perfect; £31/10.—Bowerman, 112, Underhill Rd., East Dulwich, ndon. [9169

918 Triumph Combination, in first-class running order; £72.—Rhind and Co., Stone Place, Rusholme. [9081

919 Triumph Combination, good condition, Easting, spares, complete; £80.—Philtrip, Badby, ventry. [8762

920 4h.p. Triumph, 3-speed, fully equipped; £63.—28, Woodford Rd., Forest Gate. 'Phone: Maryad 2598. [9806

RIUMPH 2-stroke, 1920, 2-speed, fully equipped £37/10.—M. Hillier, 216, Portobello Rd., North ensington. [7033

RIUMPH 1913, 3½h.p., Philipson, all on, good running order; £25.—Talbot Garage, Market St., ourbridge. [8049

30.—3½h.p. Triumph, £13 engine overhaul, Shewell oil pump, drop frame.—44, Lansdowne Rd., alston, E.8. [8764

RIUMPH Countershaft, perfect condition; any trial; £50.—33, Hackford Rd., Brixton. 'Phone: rixton 3062. [9863

918 4h.p. Triumph, 3-speed C.S., in new condition throughout; £48.—Pride, 156, Stockwell Rd., rixton, S.W.9. [9954

RIUMPH Combination, 1917, just overhauled, lamps, horn; £62; after 6.—21, Ullswater Rd., 'est Norwood. [9195

922 Baby Triumph, ridden once, licensed, unsoiled; £56, offers; exchange combination.—Bustin, hilton, Thame. [9514

RIUMPH 3½h.p., tax paid, lamps and accessories, recently overhauled.—Totland, Station Rd., rpington, Kent. [9867

MOFFAT, Yeovil, Official Triumph Service Agents.—1922 models from stock; exchanges; all spare arts. 'Phone: 50 [5725

RIUMPH Combination, C.S., 3-speed, electric lamps, excellent condition, any trial; £65.—120, Sutherand Rd., Croydon. [9619

RIUMPH 1920 4h.p., 3-speed, model H, Tan-Sad excellent condition; 70 gns.; no dealers.—4, hoyne Rd., S.W.17. [9469

£20.—Triumph Sporting Model, 3½h.p., waterproof Bosch, lamps, accessories, splendid condition.—3, Solon Rd., Brixton. [9464

SNIP, late countershaft Triumph Combination, new Binks, fully equipped, taxed, any trial; £45 lowest. —7, Cowdrey Rd., Wimbledon. [9612

918 Triumph, engine No. 59080, K.S., C.S., fully equipped; a bargain at £55.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [8722

£25.—Triumph 3½h.p., clutch, Philipson pulley, fully equipped, runs splendid, taxed; bargain.—143, Tavernsbury Rd., Earlsfield, S.W. [9791

RIUMPH 1919 4h.p., 3-speed, chain-cum-belt drive, kick-start, hand clutch, Gloria sidecar; £100.—Maudes', Walsall Garage, Walsall. [9574

TRIUMPH 4h.p., countershaft, 3-speed, late model, in excellent condition; £48.—74, Brighton Rd., Surbiton. 'Phone: Kingston 3025. [9369

RIUMPH 1913, Philipson, clutch, re-enamelled, overhauled, perfect; must sell; best over £30.—'ole, Cudliptown, Tavistock. (P) [9054

RIUMPH, 1911, modernised, low, Binks, new cylinder, etc., large tyres, lamp, horn; £25.—11, anor Parade, Stoke Newington. [9642

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MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1921 Combination, tax paid, beautifully equipped, unscratched; £82/10.—M. Hillier, 216, Portobello Rd., North Kensington. [7032

4h.p. Triumph and Sidecar, 1918 model, Sturmey-Archer countershaft, 3-speed gear, etc.; £65.—Wauchope's, 9, Shoe Lane, London. [9956

TRIUMPH 3½h.p., 3-speed, countershaft, latest type tank and frame, lamps, horn, speedometer, tools, tax paid, perfect; £45.—Below.

TRIUMPH 1918 4h.p., 3-speed, electric light, horn speedometer, discs, tax paid; £65.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [1041

1919 Triumph Combination, splendid condition, fully equipped, windscreen, lamps, etc.; £89.—96, Walton St., Aylesbury, Bucks. [9066

TRIUMPH 3½h.p., 3-speed Armstrong, free engine, fittings, £50; also Watsonian sidecar, £7/10; after 6.—51, Tonsley Place, Wandsworth. [8919

TRIUMPH 1918 Combination, splendid condition, Easting; £75; sole reason, buying more power.—70, Hunsdon Rd., New Cross, S.E.14. [9549

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

TRIUMPH-GLORIA, 1918, 3-speed, countershaft, dynamo lighting, Bird's engine, new condition overhauled; offers?—56, Delaford St., Fulham. [9148

TRIUMPH Countershaft, 3 speeds, kick start and clutch, very nice order, £46/10; another, late 1918, £52.—Hole, 129, Park Lane, Wallington. [9300

TRIUMPH Combination, 1918, countershaft, recently overhauled, in tiptop condition; £66.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [9187

COUNTERSHAFT Triumph, 1917, really sound condition, fully equipped, tax till end of year; £55.—88, Gloucester Place Mews, Portman Sq., W.1. [9873

TRIUMPH 4h.p., 1918, accessories, including speedometer, excellent running order; £48.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [9718

25 GNS.—Clutch Model Triumph, 1913, 3½h.p., Lucas lamps and horn; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station). [7358

£20.—Triumph 3½h.p., clutch, good engine and tyres, screen, lamps, and Tan-Sad; any time except Sundays.—Humphrey, Walberton, Sussex. [8811

TRIUMPHS.—Immediate delivery of all 1922 models; best prices for exchanges or liberal easy terms.—Edwards, 50, Harrington Rd., South Kensington. [9944

1918 Triumph, 4h.p., countershaft, 3-speed, clutch, kick start, all on, condition good, tax paid; 55 gns.—Middleton, 215, Norwood Rd., Herne Hill. [9175

TRIUMPH-GLORIA Combination, 1919, fully equipped, splendid running order; any test; £65 for a quick sale.—173, Elgin Terrace, Maida Vale. [9255

TRIUMPH 4h.p. Combination, late model, in first-class condition; £75.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9111

SHEFFIELD Agent for Triumphs; all models in stock for immediate delivery.—J. A. Stacey, Triumph Service Depot, 12, Ecclesall Rd., Sheffield. [0812

1920 Triumph Combination, recently overhauled, new back tyre, electric lighting, Easting; £65; after 3.—Underwood, 20, Sutherland Ave., Maida Vale. [9178

1921 Triumph Combination, all-chain drive, fully equipped, splendid condition, licensed; £92.—57, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [9431

1919 4h.p. Triumph, lamps, horn, knee grips, tax paid, in perfect condition only; £68.—F. E. Wootten, Ltd., 55, High St., Oxford. 'Phone: 308. [8977

TRIUMPH 4h.p., Hopley sidecar, September, 1921, all chain, Magdyno, Bonniksen, footboards, windscreen; offers.—44, First Av., Selly Park, Birmingham. [9589

TRIUMPH Junior, 1921, fully equipped, tax paid, condition as new; £42.—Maynard, 161, Bowes Rd., Bowes Park, N.11. 'Phone: Palmers Green 19. [9246

TRIUMPH Combination, speedometer, screen, lamps, low mileage, perfect condition; £80.—College Motor Co., 14, King's College Rd., Swiss Cottage. [9071

1920 Triumph Combination, electric lighting, speedometer, beautifully equipped; £87/10, bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [9082

£30.—Triumph 1913, 4h.p., 3-speed, clutch and K.S., lamps, horn, new back tyre, stored 4 years, any trial or examination, bargain.—61, Grand Parade, Harringay. [9262

19 GNS.—1914 T.T. Triumph, date guaranteed, dropped frame, Bosch, good appearance, licensed; must sell to-day; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [9773

MOTOR CYCLES FOR SALE.

Triumph

TRIUMPH 4h.p., 1914, engine overhauled 1919 at Triumph works, new 3-speed hub 1920, thereugh running order, take sidecar anywhere; £30.—Thomasen, Thornbury, Bristol. [8865

TRIUMPH 4h.p. 3-speed C.S. Combination, Millford sidecar, Sandum screen, all accessories, tax paid; £72; any trial.—Eagles and Co., 275, High St., Acten, London, W. [9967

1920 Countershaft Triumph, engine No. 66316, fully equipped, tax paid, nice conditieu; £65.—Maynard, 161, Bowes Rd., Bewes Park, N.11. 'Phene: Palmers Green 19. [9244

LATE 1918 Triumph countershaft Combination, in good condition, fully taxed and equipped, nearly new sidecar; £59.—Ward and Co., 51, Upper Richmond Rd., Putney. [9170

GENUINE 1918 (54597) Triumph countershaft 4h.p., 3-speed, clutch, kick start, Tan-Sad, etc., fine condition; £52.—Taylor, 4, Secretan Rd., Albany Rd., Camberwell, S.E.5. [9314

TRIUMPH o.v.h. J.A.P. engine, drop frame, stainless, unbreakable valves, nearly new cylinder, piston, etc., Bosch, taxed; £18/10.—18, Radford Avenue, Kidderminster. [8921

1918-19 4h.p. Triumph coachbuilt combination, excellent conditieu, with Easting, accessories, spares, insurance; accept reasenable offer.—136, Wanstead Park Avenue, Manor Park, E.12. [8947

TRIUMPHS.—Cambridgeshire Service Agents. Complete stock spares; all models from stock; easy payments and exchanges arranged.—King and Harper, 6, Bridge St., Cambridge. [9803

TRIUMPH 3½h.p., clutch, several renewals, perfect order, good Dunlop tyres, Watford speedometer, lamp, tax paid; £25, no offers.—French and Fexwell, Burgh Heath, Surrey. [8817

TRIUMPH.—Immediate delivery of all 1922 models; sidecars to suit from £20. Write for catalogne and full particulars of easy payments.—P. J. Evans, John Bright St., Birmingham. [9100

48 GNS.—Triumph 4h.p., countershaft, 1918, engioe No. 54278, renovated, nearly new Dunlop tyres; exchanges.—Smith's, 86, Chalk Farm Rd. (oppesite Chalk Farm Tube Station). [7359

TRIUMPHS, Soles, and Combinatiens, 1918, 1919, 1920, and 1921 models, all in good order, and taxed, from £45 to £90; cash or terms.—Bunting's Motor Exchange, Wealdstone, Middlesex. [1025

1922 Chain-drive 4h.p. Triumph, Millford sidecar, Lucas lamps, all accessories, tyres good, taxed, or sell with solo gears, excellent condition; what offers?—Box 2340, c/o *The Motor Cycle*. [8805

TRIUMPH-GLORIA Combination, June 1920, sidecar repainted, engine overhauled, splendid conditien, accessories, spares; £95; after 6.—Harrison, Moorlands, Clifton Rd., Sutton Coldfield. [9695

1919 Triumph Sporting Combination; sell solo; enamelled, plated, and overhanled June, tax paid, accessories, speedometer; ride 50 miles; £69.—Seen 106, North End Rd., West Kensington. [9272

1921 Triumph-Gloria Combinatioo, all-chain, Best automatic pump, Cameo de Luxe screen, Lucas lamps, Tan-Sad, fully insured next May, tax paid, many spares; £125.—J. H. Dunn, Carlton St., Leicester. (P) [9278

TRIUMPH Agents.—All models frem stock; catalogues and full particulars by return post free; exchanges and special payment terms arranged; correspondence invited.—Herbert Rohinson, Ltd., Green St., Cambridge. [8497

1920 Trinmph-Gloria Combination, Brooks cantilever saddle, Easting, speedometer, lamps, footboards, mechanical horn, spares, licensed, insured, appearance and condition as new; £90.—G. Ashurst, Fyfield, Ongar. [8859

1920 Triumph 4h.p., in splendid condition, complete with lamps, Cowey, horn, Watford speedometer, tools, etc., new tyres; £67/10.—Merriss and Co., Ltd., 139, Finchley Rd., Swiss Cettage, N.W.3. [8991

TRIUMPHS, 1917, 1918, 1919, brand new in crates, at £72/10; others frem £37/10. We have the largest stock of second-hand Triumphs in London.—'Phene: Park 5541 or call, 204, Ladbroke Grove, W.10. [8724

TRIUMPH.—1920 Combination, 3-speed, clutch, kick starter, fully equipped, Gloria sidecar, perfect; £95, or would exchange fer car, cash adjnstment.—200, London Rd., Kingston Hill, S.W. 'Phone: Kingsten 104. [9159

TRIUMPH Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed fer second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southpert. 'Phene: 607. [7326

TRIUMPH 1921-22 chain-drive Combinatiou, as new, 102 gns.; solo, 84 gns. Triumph 4h.p., 3-speed, countershaft, 42 gns. Triumph 3½h.p., 3-speed combination, 37 gns.; sole, 28 gns. Triumph-Ricarde. 1922, 112 gns. Photographs; exchanges.—Peter Gerden, Ltd., 110, Upper Richmond Rd., East Sheen. [9592

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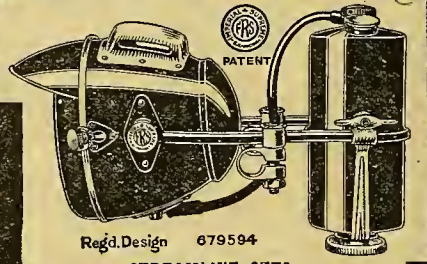

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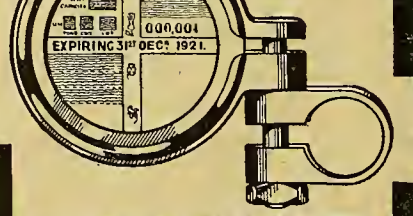

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TRIUMPHS.—All models supplied from stock; tended paymeot propositions and exchanges pleasure. Top value given for good modern machi in part payment.—The Layton Garages, 30, Hely St., Oxford. [8

1918 Triumphs, 3-speed, K.S., C.S., 20 in st from £45; 1917, from £37/10. Don't elsewhere before seeing our bargains; satisfact guaranteed.—204, Ladbroke Grove, W.10. 'Pho Park 5541. [8

1921 Triumph-Gloria chain-drive Combinat Lucas electric lighting, Cameo screen, shields, Bonnikseo speedometer, perfect condit throughout, tax paid; £140.—Premier Motor Aston Rd., Birmingham. [7

78 GNS. exchange.—Extremely smart, alm brand new, 1919 Triumph, clutch, kick-st 3 speeds, large bulbous back sidecar, electric li beautiful turn-out, unscratched.—Seabridge, Han Rd., East Dulwich. Sydenham 2452. [9

4h.p. Triumph Combinatien, 1921, Gloria side Easting screen, Tan-Sad pillion seat, speedome electric lamps and accumulators, horn, etc., tax 1922; £120. Convenient easy payments.—Han Motor Sales Rooms, 118, Brompton Rd., Londen. [9

OFFICIAL Croydon Agents for Triumph.—3½ o.h.v. 1922 Triumph, tax paid, all lamps, slig soiled, 75 m.p.h. guaranteed, bargain, £115; Type £105; S.D., £115. Spare part stockist and repai of Triumphs.—The Winstan-Henney Motor Co., South End, Croydon. 'Phone: 2431. [0

TRIUMPHS.—New 1922 4h.p. Combination, chain drive, £155; chain-cum-belt combinat £145; 4h.p. S.D. all-chain, £115; Model H. ch cum-belt, £105; Junior 2¼h.p., £65; alse sev second-hand Triumphs from £40; and one 3½ o.h.v., done 500 miles, £115. Second-hand mach taken in exchange, remainder on easy terms. V allowed on old machine accepted as first paym down.—Wauchope's, 9, Shoe Lane, London. 'Pho Holborn 5777. [8

Spare Parts

TRIUMPH Spares.—Immediate delivery.—Kays, Bend St., Ealing. [7

COMPLETE stock Triumph and Sturmey-Arc spares, ne waiting.—Ward's, 51, Upper Richm Rd., Putney. 'Phene: Putney 2754. [9

TRIUMPH Agents since 1906.—All Triumph spa at new reduced prices from stock; principal mingham agents and service depot.—Premier M Co., Aston Rd., Birmingham. [0

TRIUMPH Spare Parts for all Models; Sturmey-Archer gear parts from stock, post f gear overhauls by specialist.—Jones Garage, Trium Agents, Broadway, Muswell Hill, N.10. [0

LIGHT Car and Motor Cycle Engineering Co., Lt For Triumph bargain spare parts see our dis advertisement in this number.—26, Tulse Hill, Brix S.W.2. 'Phene: Brixton 1292. (½ minute frem B ton Skating Rink.) [9

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TRIUMPH Parts, 1904-22, every part in stock, or second-haod. Why not second-haud in p of new till prices drep? Half the price, satisfac guaranteed. Hundreds of testimonials. Triumph pairs and renovations a speciality, under pers supervision of our proprietor, late with Triumph Premier cycle companies. Cylinder regrinding latest machinery.—Forfield Motors, Forfield Pl Leamington Spa. [7

Velocette.

PREMIER Motor Co., for 1922 Velocettes.

IMMEDIATE delivery of Model E.2 2-speed, E.3 3-speed, £72/10; E.L.2 lady's open fr £68; all with clutch and kick starter; easy payme 4% extra; carriage paid to any address.—Pre Motor Co., Aston Rd., Birmingham. [

1922 Sports Velocette, 3-speeder, Watford licensed; £65.—Welford's Motors, Brighton

VELOCETTE T.T., lamps, tax, geod order; bare £22.—Write Ashford, 66, Swinton St., K Cress.

1922 Velecette, Watford trip, Lucas lamps, licer legshields, spotless; £65.—Welford's Mo Brighton.

1921 Velecette, 2-speed, licensed, beautiful co tion; £50.—Wm. Brown, Bagmere, Brere Sandbach.

1919 Velecette 2½h.p., 2 speeds, lamps, all on, paid; £28/10.—Shepherd, Enfield High Tel.: Waltham Cross 31.

1921 Velocette, 3-speed, sports, 249 c.c. engine m.p.h., Lucas and electric lighting, mil negligible, unscratched, perfect, any examination; —17, Birchington Rd., Kilburn.

MOTOR CYCLES FOR SALE.

Verus.

20 2¾h.p. Verus-Blackburne, 2-speed and clutch, all on, tax paid; 50 gns.—Shepherd, Enfield hway. Tel.: Waltham Cross 31. [0897

Williamson.

.p. Williamson Combination, Easting, dynamo lighting, exceptionally smart outfit, as new; .—Rhind and Co., Stone Place, Rusholme, Man- ter. [9078

Wolf.

1h.p. Wolf-Jap, 3 speeds and clutch, copper ex- haust pipe, all on, guaranteed perfect; bargain, ; after 5 p.m.—I. Brown, 103, Norroy Rd., Put- [9456

Wooler.

21 2¾h.p. Wooler flat twin, variable gear, spares, tools, lamp, horn, excellent condition; £40; owner ght car.—Major Clarke, Bisley, Glos. [8960

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110.—8h.p. Zenith-Gradua Sports Model, shop- soiled.—Townson and Ward, Ltd., Barrow. [8980

1h.p. Zenith-Jap, Gradua gear, taxed, lamps; £22. 2 —2, Fortune Gate Rd., Harlesden, N.W. [9890

110.—6h.p. Zenith-Gradua, countershaft model, shop-soiled.—Townson and Ward, Ltd., Barrow. [8979

ENITH 1922 Super-Sports J.A.P., like new; £105. —R. B. Clark and Co., 7, Exhibition Rd., .7. [1005

ENITH 5-6h.p., aluminium sidecar, just overhauled; exchange Triumph, Norton; or sell.—21, Church , Erith. [9392

108.—3½h.p. Zenith-Bradshaw, oil-cooled, Gradua gear, 1922, shop-soiled.—Townson and Ward, ., Barrow. [8981

ENITH.—New 1922 Models on easy terms; list on application; exchanges.—Wanchope's, 9, Shoe ie, London [8677

OBERTSONS Motors, Ltd.—1922 shop-soiled Zenith-Bradshaw Gradua gear: £100.—157b, Gt rtland St., W.1 [6082

PORTS Zenith, about 1916, 4h.p. J.A.P., Gradua, lamps, horn, speedometer; £28/10.—8, Culmore , Peckham, S.E.15. [9047

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ENITH 1920 8h.p. Sports Model, fully equipped and in new condition: £70.—The Layton Garages, Holywell St., Oxford. [7179

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ENITH-BRADSHAW 1922 and Swan Sidecar, fully equipped and equal to new; £125.—The Layton ages, 30, Holywell St., Oxford. [7191

21 Zenith 5-6h.p. Combination, Cowey speedometer and horn, licence, etc.; absolute bargain, price 5.—Baker, 33, High St., Dorking. [9842

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ZENITH-GRADUA 4h.p. Sports, fully equipped, in exceptional condition, tax paid; £17/10; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9833

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ZENITH 8h.p. 1920 Combination, best sidecar obtainable with dickey, done 3,800 miles, cost £270; bargain £125; licence paid, insurance Feb. 1923, photos available.—Newman, 24, Villiers Rd., Southall. [8913

ZENITH.—1920 6h.p. Sports Combination, Gradua gear, clutch, "Lower" starting attachment, all accessories, recently overhauled, perfect working order; £70.—Goode, 110, Holland Rd., Harlesden. [9181

ZENITH 8h.p. 1921 Countershaft Combination, fully equipped, £110; 1920 ditto, £90; 1920 8h.p. sports combination, £80.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9110

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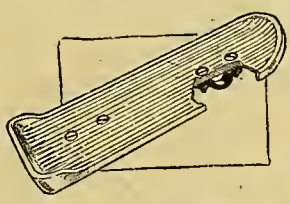

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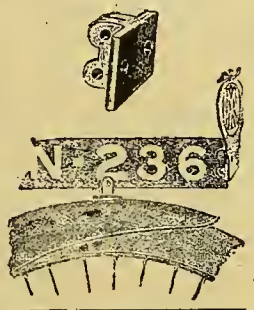

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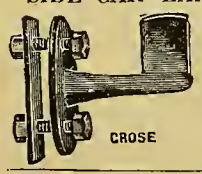

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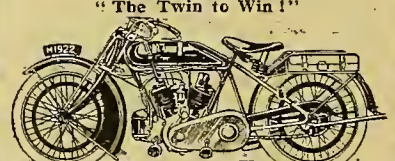

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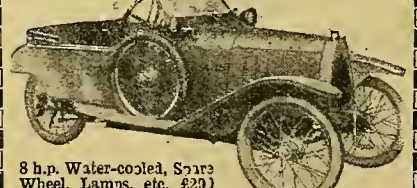

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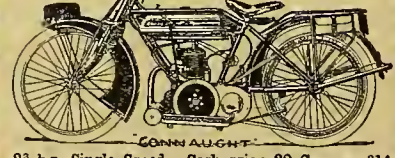

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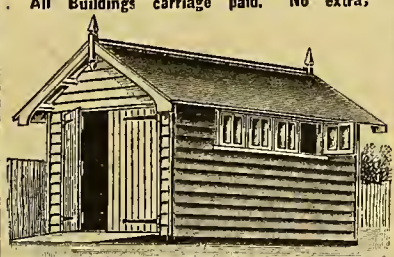

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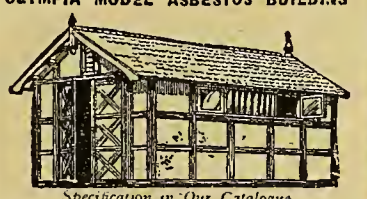

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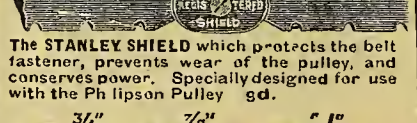

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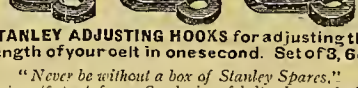

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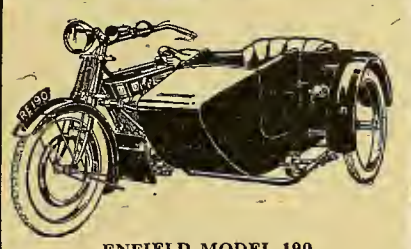

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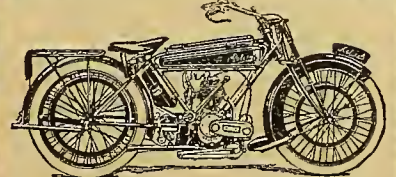

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LAGONDA Coupe, 10h.p., perfect; 90 gns.—Miss Moore, 106, Acre Lane, S.W.2. [9568

PALMER'S Garage, Tooting.—£35 down and 12 monthly payments £5 secures smart 12-15h.p. Panhard landaulet, runs well.

PALMER'S Garage, Tooting.—£25 down and 12 monthly payments £5 secures 12-15h.p. Swift limousine, seats 5 inside, 4 cylinders.

PALMER'S Garage, Tooting.—£25 down and 12 monthly payments £5 secures 2-ton Karrier lorry chassis, new tyres.

PALMER'S Garage, Tooting.—£125 down and 12 monthly payments £10 secures modern 15.9h.p. Swift touring car, dynamo lighting.

PALMER'S Garage, Tooting.—£20 down and 12 monthly payments £5 secures 12-14h.p. Fiat light van.

PALMER'S Garage, Tooting.—£50 down and 12 monthly payments £8/10 secures Piccard-Pictet ¾ landaulet, dynamo lighting.

PALMER'S Garage, Tooting.—£25 down and 6 monthly payments £5 secures excellent Renault taxicab.

PALMER'S Garage, Tooting.—£150 cash secures modern 15.9h.p. Napier 30-cwt. covered van, solids.

PALMER'S Garage, Tooting.—£150 cash secures 1914 Unic 2-seater, dickey, 4 speeds, dynamo lighting, wire wheels.

PALMER'S Garage, Tooting.—£90 cash secures modern 10-12h.p. Belsize light 4-seater, 4-cylinder bloc engine, gate change.

PALMER'S Garage, Tooting.—£40 down and 12 monthly payments £10 secures 30h.p. Berliet touring car, Small Six.

PALMER'S Garage, Tooting.—£75 down and 12 monthly payments £10 secures 16-20h.p. modern Wolseley touring car.

PALMER'S Garage, Tooting.—£30 down and 12 monthly payments £8 secures excellent Sheffield-Simplex ¾ landaulet.

PALMER'S Garage, Tooting.—£40 down and 12 monthly payments £5 secures 15h.p. Maxwell sporting 2-seater, disc wheels.

PALMER'S Garage, 187, 199, High St., Tooting, will accept your old car or motor cycle as part payment for any car in stock. For cash price deduct 10% from above totals. [9290

CARS FOR SALE.

JOWETT De Luxe Model, now reduced to £295; in stock.—Welford's Motors, Brighton. [9136

IN Stock, 1922 8h.p. Rover 2-seater; £220, cash or deferred.—33, The Parade, Golders Green. [8832

LANCHESTER 28h.p. 6-cyl. Landaulet; £95.—Chauffeur, 1a, Strathleven Rd., Brixton, S.W. [9570

GRAHAME WHITE Cycle Car, hood, screen, new May; £75.—"Highclere," Pennhill Av., Parkstone. [9005

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St., London, W.1. [0350

ROVER 8h.p. Single, 2-seater, splendid running order and condition; bargain, £50.—12, Lesbourne Rd., Reigate. [9363

A.B.C. Car, new 1922 model, fully equipped; £295; exchange or easy terms.—Wauchope's, 9, Shoe Lane, London. [9960

WEST Norwood! 60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, West Norwood [1932

SCRIPPS-BOOTH 13h.p. 2-seater, lighting and starting, late model; £100.—Mrs. De Fries, 1, Grove Lane, Camberwell, S.E. [9569

ROVER Cars.—The famous 8h.p. model in stock, £220; for immediate delivery.—Eagles and Co., 275, High St., Acton, London. [0761

M.M.C. 2-seater, dickey, 10-12h.p. 4-cylinder; £40, or exchange combination or solo; selling owing to tax.—53, Idonia St., Deptford. [9229

IN Stock, 1922 Belsize-Bradshaw Car; £275 complete, cash or deferred.—D. and S. Autocar Co., 33, The Parade, Golders Green. [8833

COVENTRY PREMIER, 1922, 4-wheel model; £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

HAND 10h.p., 4-cylinder, water-cooled, dynamo lighting and starter, double dickey; £300.—Ratcliffe Bros., 200, Great Portland St., W. [4395

ROVER 1922.—Brand new 8h.p.; trials and tuition free; £220 cash, or easiest of easy payments.—Wilkins, Simpson, Opposite Olympia, London. [9985

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash, deferred payments 4% extra.—Ratcliffe Bros., 200, Gt. Portland St., W.1 [0729

HALIFAX 1922 B.S.A., Calthorpe, Coventry Premier, Lagonda, and Rhode, latest models, cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [7?

ROVER 1922.—Model-de-luxe 8h.p., brand new; trials and tuition free; £245 cash, or easiest of easy payments.—Wilkins, Simpson, Opposite Olympia, London. [9986

G.N., 1922, Touring, £225; All-Weather, £250; fully equipped; inspection and trial invited. Deferred payments arranged. From Agents and Show rooms, 222, Gt. Portland St Museum 2271. [1629

AVRO 1920, £85; Bayard, £90; Emscote 1920, dynamo, £100; Morgan G.P., 1918, magneto, £115; Calthorpe, 1917, 4-seater, £200.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [9655

G.N. 8h.p. 1921 touring, dynamo lighting, detachable wheels, original tyres little worn, hood, screen, horn, first used this year, tax paid to December 1922, ready to drive away; £145.—"St. Maur," Benhill Wood Rd., Sutton, Surrey. [9116

4-SEATER Alldays 12h.p., flush-top body, fully equipped, many spares, £35 just spent, dark blue, unscratched, excellent condition; £130; driving taught free; exchange 2-seater Morgan or motor cycle.—63, Solon Rd., Brixton. [9466

1920 Emscote, 8-9h.p. J.A.P., 2-3-seater body, grey dome, black wings, Lucas dynamo lighting, 5 detach Sankey wheels, hood, screen, etc., as new, guaranteed; exchange good combination.—Rhind and Co., Stone Place, Rusholme, Manchester. [9084

MOTOR TRANSPORT VEHICLES.

½-TON Gladiator Motor Van, running order; £35.—W. Mayes, Rattlesden, Bury St. Edmunds. [8866

CHARRON Van for sale, 2-cylinder quadrant, good appearance and condition, reliable, working daily; £30.—24, Ingleton St., Brixton. [9064

WARWICK Auto-Carrier, thoroughly overhauled by makers, now waiting collection at works; £60, or exchange motor cycle.—Bunting's, Wealdstone, Middlesex. [9814

FOR Sale, Montgomery commercial box carrier, cost £23/10; price £18; never been used; also Enfield chassis and wheel, £6/10.—Rockall, 21, Lymington Av., Wood Green. [8904

EXTENDED PAYMENTS.

TRY Wauchope's, 9, Shoe Lane, London, E.C.4, for easy terms. 'Phone: Holborn 5777. [7218

ROBERTSONS Motors, Ltd.'s hire purchase terms could not be simpler.—157B, Gt. Portland St., W.1. [7375

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At the request of numerous clients we have decided to alter our business hours, and in future we shall be open to give every attention to prospective customers up to

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Motor Cycles and Combinations.
Any period from one day.

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And many others. Call and inspect.

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REPAIRS.

Good Machines taken in for Sale on Commission.

New Imperial Spare Parts Stockists.

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The Speedwell "V" LEG SHIELD

ANSWERS THE PURPOSE.

IN WET WEATHER THIS SHIELD PROTECTS FROM RAIN, MUD, ETC. IN HOT, DRY WEATHER, IT DOES THAT WHICH NO OTHER SHIELD DOES,

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For Lightweights the price is **30/-**
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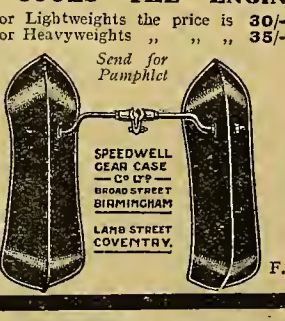

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FOR Best Treatment and best terms for ligh cycle cars, or motor cycles of any make, second-hand, write Service Co., 292, High H W.C.1.

EASIEST of Easy Payments for any make of cycle or car. Ask us to quote you to payments on any make.—Wilkins, Simpson, O Olympia, London.

CREDIT is obtainable from the Clifford Mfg. Co. in respect to any make of motor sidecar, or car.—177, Westminster Bridge Rd., 'Phone: Hop 210.

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QUADRANT Engine, 3½h.p., top-hole cond £3.—Particulars, Bainbridge, Witton Gill

P. and M. Engines, £4/10; overhauled and pleted, £6/10; spares.—7, Hereford Rd., water.

BRAND new 8h.p. J.A.P. engine, air-cooled, g fect-perfect and unused; £18/10.—Daw, 114, ton Hill.

8h.p. J.A.P. engine, Binks, mag., all as new; sa first £28, or exchange lightweight.—M P.O., Mexborough.

ONE new 3½h.p. J.A.P. engine (twin), cor with magneto platform, inlet pipe, exhaust and valve lifter; price £14/10.

ONE new 3½h.p. J.A.P. engine (single), con price £12/10.

TWO Amac carburetters, new; price £1/7/6 one Schrebler carburetter, with flange, as price £2/5.—B. P. Garage, 40, Murray Mews, den Town, N.W.

P. and M. Engines, overhauled, complete, £ with magneto and carburetter £10/10.—I Durham Rd., Seaforth, Liverpool.

ARIEL 3½h.p., complete with C.A.V. magnet B. and B. carburetter, nearly new; £18 Clarke, 138, Brighton Rd., S. Croydon.

VILLIERS (1921), Mark 3, carefully used, ex condition, also B. and B. carburetter; reas offer.—25, Old Lodge Lane, Purley, Surrey.

ENGINE, P. and M. R.A.F., £3, requires ove ing; 4h.p. De Dion, 35/-; Bosch magneto, 1, Springfield Park Crescent, Catford, S.E.6.

3½h.p. Fafnir Engine, good condition, with proof magneto and carburetter; £9/1 McBain, 139, Carlton Vale, Kilburn, N.W.6.

SPARE Parts for Villiers, Blackburne, and engines from stock; trade supplied; write for list.—Maudes', 100, Great Portland St., W.1.

JAMES 4¼h.p. single, new cylinder and crank perfect, £17; Cox Atmos (brand new), carbu 55/-.—Dalby, Baker St., Sparkhill, Birmingham.

6h.p. Water-cooled De Dion Engine, complete be seen running; £5. Ditto, cylinder, com 30/-.—Peacock, 17, Stafford Mews, West Kil London.

3h.p. Paragon 1920 2-stroke Engine needing adjustment, complete with 2-speed gear i unit, C.A.V., Amac; £5/10, or offer.—29, Ac Rd., Honor Oak Park, S.E.23.

WHATEVER Type of Engine You Require, w supply. Special bargains: 1914 Tri £13/13; 3½h.p. Rndge, with magneto and retter, £13/13; 2¾h.p. Calcott, £7.—Forfield M Forfield Place, Leamington Spa.

IGNITION, LIGHTING, ETC.

A MAGNETOS at Bargain Prices, not con starters, all tested; money back if unsati post 1/3 each magneto.—Below.

THOMSON-BENNETT 180° Twins, 37/6; anti singles, 25/-; Dixie singles and 180°, E.I.C. and M-L singles, anti, £2/10; C.A.V. spindles. £2/10.—Banister and Botten, 341, St., London, N.1. 2480 North.

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
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MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

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The Grand Prix Race.

ONCE more a British machine has won the Grand Prix Race—France's premier motor cycle event—and, what is just as important to those interested in the development of the lightweight, a British two-stroke has carried off the laurels in the 250 c.c. category. Italy must be credited with the honour of winning the first three places in the race for 350 c.c. motor cycles.

There are several features of interest in connection with the two British victors; one also won the Grand Prix last year and this year's Senior Tourist Trophy Race, and the other holds the Lightweight Tourist Trophy. These two riders can rightly claim to be, in their respective classes, Europe's premier racing men, while the makers of their mounts share their success.

No British machines were entered in the 350 c.c., or possibly yet another victory for this country would have been scored, for, good as the Italian machines were, no one will deny that the make which has four times won the Junior Tourist Trophy, in addition to a Senior win, is many miles an hour faster than any two-stroke of the same capacity yet produced.

Every credit must be given, however, to the makers of the 350 c.c. winner, which, in securing the first three places, demonstrated the practicability of a type of engine new to motor cycle practice. It also proved that, given sound and suitable design, good workmanship and reasonable luck, a comparatively unknown machine may leap from local into international fame.

Being practically straight and without gradients, the course provided a test entirely different from that imposed by the sinuous and hilly route traversed by competitors in the Tourist Trophy Races. Such a course called for sheer speed, and few prophets predicted a win for a two-stroke engine in any of the three classes. That, in such an event, the winners of two of the classes were two-strokes in competition with engines embodying the latest four-stroke practice, shows the progress of the type.

Another lesson of the Grand Prix is the fact that a greater proportion of the smaller machines survived the high speed test than those of the 500 c.c. class, which on the whole did not aquit themselves so well as they should have done.

Being held under the auspices of the French Government, the preparations at Strasbourg for the event were unquestionably excellent. But there were several points in the actual organisation of the race which might be criticised, and the English visitors could not help but compare the French methods with the A.C.U.'s very complete organisation of the Tourist Trophy Races. Notwithstanding, the Grand Prix of L'Union Motocycliste de France was a great success, and one looks forward to the 1923 event.

Right-hand Sidecars in Great Britain.

CONSIDERABLE interest has been aroused by a recent article suggesting that sidecars should be fitted to the right- and not to the left-hand side of the machine. Although a most ingeniously argued case was presented in favour of the change, the general weight of opinion appears to favour leaving things as they are, only one correspondent this week agreeing fully with the writer of the original article.

It seems to be a case, too, where the conservative majority are in the right; for the danger accompanying an attempt to overtake another vehicle without first obtaining a clear view of the road ahead is in itself sufficient to outweigh all the advantages of having the sidecar on the so-called off-side of the machine.

An index to the advertisements in this issue will be found on the page facing the back cover.

I Commit a Crime.

CASUISTS and moralists may find food for thought in the causes which may lead up to my doing time at the moment these words appear in print. I was riding a motor cycle in somewhat lightsome mood, and was also on my way to catch a train to fulfil an important engagement at a distance. The road was straight, empty, devoid of turning, and to all appearance deserted. The machine on which I was seated has done as near as no matter 70 m.p.h. on Brooklands, and at the critical moment—shortly to be described—it was absolutely all out. Suddenly a couple of constables jumped out of concealment in the hedge, and held up their arms. I didn't stop, because I couldn't; at that speed a cautious man requires room to pull up. As I slowed down, the sergeant emerged; and about the place at which I came to a standstill, the inspector dived out. I don't feel in the least guilty. Ought I to?

Aggrannoying.

AN awkward word, yet expressive. Suitable for parsons, who mustn't use blunt Saxon expletives. I had exactly five minutes to get to the start of a hill-climb two miles away. I wheeled out the machine, and depressed the float tickler. It stayed depressed, and an immense flooding commenced. Moreover, the tickler was only removable from the underside of the float chamber lid, and the carburetter was fitted with "top feed" of the type which demands two very thin spanners and much caution if the float is to be exposed without destroying the petrol pipe. I got there, but my fuel consumption was at the rate of about 20 m.p.g. This happened because I had laid cunning plans to enjoy a non-stop season.

Compromise.

THANKS to "Entente" for tackling the merits of 3in. *v.* 2⅞in. tyres, but a word of criticism as to his presentation of the facts. I have reluctantly concluded that a sloppily inflated tyre skids more and less controllably than a small hard tyre. If I were competing in a Six Days and expected greasy roads, I would certainly fit 2⅞in. covers, and keep them jolly hard. Similarly in a speed event I would use a hard tyre (size immaterial), as would any other sensible man. "Entente" talks of "rolling" and "bouncing" on 3in. tyres, and condemns them as a "mistake on medium weight machines." Here he goes much too far, as Sir Julian Orde said when Chassagne's Sunbeam did an extra lap in the Car T.T. If a tyre is slack enough to roll, it doesn't bounce, for one thing. Our correspondent has completely ignored the two chief factors, viz. :—

(1) A 3in. tyre doubles the comfort.
(2) A 3in. tyre hardly ever punctures.

So if I were a commercial traveller resident in North Devon (which I praise Allah I am not), I should use board-hard 2⅞in. tyres from September to March, and puddingy 3in. tyres from March to September. This is for solo mounts, of course; on sidecars, the big tyre is at present without a rival.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

A Half Legging.

OF the making of overalls there is no end, and I had almost registered a vow to restrict myself to one or two well-tried friends in this line and to make no more experiments. But I had often felt what the famous Dr. Spooner once described from the pulpit as a "half-warmed fish" for a short leg overall as summer wear. A few weeks ago the Para Rubber Co., of John Bright Street, Birmingham, sent me a pair of their Flexi-Spring leggings, which quite fill the bill. The two legs are separate, ceasing below the fork. Concealed springs of a peculiarly flexible character hold the legging in place and compel it to keep a smart shape, in lieu of flopping unseemly, as many overalls do. The fastenings consist of four spring clips down the back of each leg, plus a minor novelty in the form of a quick release for the instep strap, this snap fastener being high enough up on the foot to keep fairly clean. In conjunction with a three-quarter length coat these leggings are very nice wear. Moreover, they are pretty thoroughly guaranteed, which is a rarity in such matters.

How to Advance the Ignition.

THE local knut—one of those second year experts—was in sad trouble with his new baby two-stroke, which crawled, overheated, and only registered 25 m.p.g. In fact, it displayed the most disquieting symptoms of pernicious anæmia. At last he was simply compelled to consult the local garage in a casual roundabout way, and, of course, the local mechanic promptly suggested that the ignition was timed very late. A week later the knut pocketed his pride, and actually brought the machine in for repairs. The mechanic tested the timing, and found she was firing on the exhaust stroke, so to speak. "Why didn't you advance the timing?" "I did." "How much?" "Two inches." After the mechanic had said several things commencing with "What the . . . ," the knut confessed to supposing you advanced the timing by chopping bits off the high tension cable, on the principle that the spark would then reach the plug sooner.

Occasional Comments.—

Variable Jets.

ON my 499 c.c. Triumph I use a Sutton and Pocklington variable jet. Intelligently used, these devices are invaluable. A few experiments with two or three standard jets of different delivery rates will convince anybody of this. With, say, a 28 jet one will get low fuel consumption, poor acceleration, limited speed and not too good a climb. With, say, a 35 jet the same engine will be excellent in the three latter respects, but consume hogsheads of petrol. Variable jets enable one to get these and other combinations from the saddle. But I would add that the nickel disc on the handlebar control of the jet should be marked with, say, half-a-dozen notches, so that when a useful aperture is found by experiment, the same setting can be regained to a hair at any moment. The use of the lever naturally upsets the action of the air lever, and mixture control becomes so uncertain that some riders hardly ever vary the jet. When the disc is notched, two or three positions will be utilised regularly.

No Switch.

THE tip given by F. E. D. H. on p. 35 in our issue of July 6th for dispensing with any visible switch on electric lamp equipments desires greater prominence, which I hereby accord it. I am fitting it to all my lamps henceforward.

Found in a Public Library.

I DON'T know the inner history of the following gem which was found by a reader on the table of a public reading room. Perhaps some local Boy Scout had been swotting up for his mechanic's badge. The spelling, etc., has not been faked, but is exactly as found.

> "In a fourstroke engine it is consisted by a stroke. In the cilinder its a piston. This piston has four stroke. The first stroke is called a suckssion stroke, because when it goes down it sucks. Is the bettsall and air, which is a 'gass. When the piston up, it pushes up the gass, but its still stopping.
>
> The cilinder because the way with which it comes has been closed. The piston pushes up the gass until it is in but a small space then. The second stroke is called a comppression because it is preesed together. Third stroke is called exorst. And the fourth stroke is a firing stroke. By a firing stroke I mean it is inflamable. By inflamable I mean it will easily take fire."

The office Sherlock Holmes suggests that motorcycling schoolmasters should

(*a*) Use models in explaining engines to small boys.

(*b*) Refrain from dictating while they are suffering from sore throats.

Not the least enjoyable part of a motor-cycling holiday, whether it be in the form of a long tour or a series of excursions from a centre, are the al-fresco meals partaken by the roadside. A picnic scene in North Wales.

THE 1922 GRAND PRIX

OFF! From zero to 60 m.p.h. in a few yards. Riders in the 500 c.c. class a second or so after the flag was dropped. Bennett and de la Hay, the Sunbeam exponents, were too quick for the photographer and had already leaped forward out of the range of the camera.

British Machines first in 500 c.c. and 250 c.c. Classes. A. Bennett (Sunbeam), winner of the Senior T.T. and last year's Grand Prix, secures this year's 500 c.c. Race, with H. Hassall (Norton) second, and Zind (Motosacoche) third. G. S. Davison (Levis) first in 250 c.c. Class. New Italian Two-stroke first, second, and third in 350 c.c. Race.

STRASBOURG was early astir on Wednesday last week, the occasion of the Grand Prix Motor Cycle Race, organised by the Union Motocycliste de France. The whole of the week has been given up to a national fête in Alsace, car races following the motor cycle event on Saturday and Sunday.

Many visitors from all parts flocked towards fair France's regained province, not a few hailing from England, whilst Italians were also in evidence.

The race itself provided still another victory for British productions, A. Bennett (492 Sunbeam) winning the senior event, and Geoffrey S. Davison (248 Levis) the lightweight section, Italy gaining the 350 c.c. event in Visioli, who rode a vertical twin-cylinder two-stroke Garelli—a machine of extraordinarily neat design, which showed up conspicuously throughout.

No 350 c.c. British Machines.

It is a pity that no British machine was represented among the six entries in the 350 c.c. section; one would much have liked to see A.J.S. riders in the contest, and some of the fleet J.A.P. and Blackburne engined mounts of home construction.

It is particularly noteworthy that both Bennett and Davison repeated their Isle of Man successes. In the case of Bennett his victory in the Grand Prix is all the more convincing, as he carried off first place in France last year, won the T.T. this year, and now achieves the grand slam by again winning the Grand Prix. Both Bennett's Sunbeam and G. S. Davison's Levis were fitted with the identical engines used in the Isle of Man, and, moreover, their gear ratios, even after experiment, were unchanged, despite the fact that the roads in the Strasbourg circuit are practically flat.

It was raining slightly as the spectators wended their way to the course, six miles west of Strasbourg, and as the roads were closed to traffic at 7 a.m. a

THE 1922 GRAND PRIX IN A NUTSHELL.

500 c.c. CLASS.

1st.—A. Bennett (492 Sunbeam), 4 hr. 5 m. 40 s. = 61·0 m.p.h.

350 c.c. CLASS.

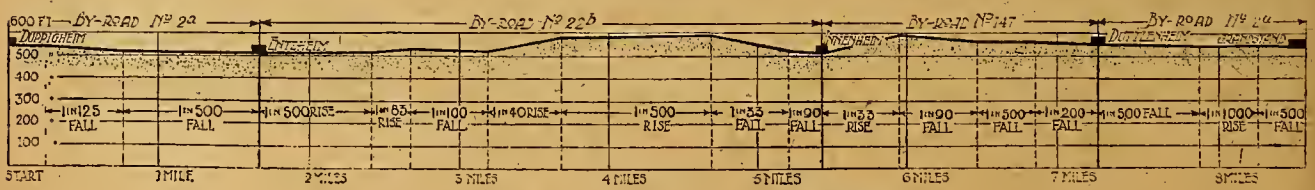
1st.—Visioli (349 Garelli), 3 hr. 39 m. 56 s. = 56·7 m.p.h.

250 c.c. CLASS.

1st.—G. S. Davison (249 Levis), 3 br. 0 m. 84 s. = 52·4 m.p.h.

FASTEST LAP.

H. Hassall (490 Norton), 7 m. 38 s. = 65·7 m.p.h.



Contour of the 1922 Grand Prix Course at Strasbourg.

The 1922 Grand Prix.—

long detour was necessary to reach the grandstands. Those riders who had foolishly abandoned mudguards were obviously fretting about the possibility of ignition and transmission troubles, for the steady rain had thoroughly soaked the road surface.

All round the course railings were used to keep spectators off the roadway; gendarmes and soldiers with fixed bayonets guarded the approaches being stationed at equal distances over the whole course.

French Government's Preparations.

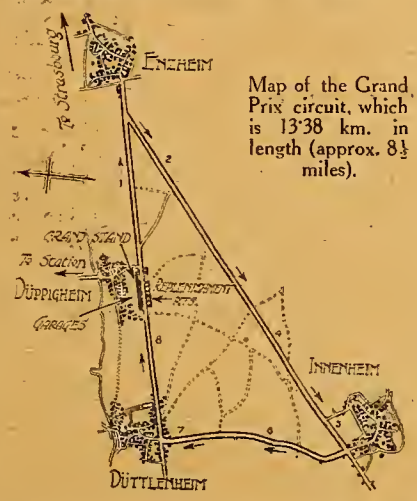
The erection of huge grandstands opposite the replenishment depots, tiers of seats at various vantage points at the three acute bends of the course, and bridges over the roadway, gave some idea of the wonderful preparations made for the races. It is said that a million francs had been spent by the authorities on the organisation of the Grand Prix.

But if the preparatory arrangements were complete, it must be confessed that the actual organisation of the race failed at several points. The score board, for instance, as worked by the U.M.F., was most unreliable, and, in fact, misleading. Again, three or four men were flagged to stop when actually they had not completed their allotted laps, and the times of the leaders were given only every five laps, and then very late. Thus a complete record of the laps traversed had to be made by each spectator who desired to follow the progress of the race at all intelligently.

The usual hubbub of a typical French crowd was not sufficient to drown the din of the healthy exhausts of the forty engines warming up on the starting line. They were ranged up in three groups, 19 in the 500 c.c. class, 6 in the 350 c.c., and 15 in the 250 c.c. class. The start, which was timed for 8 a.m., was delayed a quarter of an hour, for the rain had stopped and there was a chance of the roads drying up.

AT DUTTLENHEIM CORNER. Francisquet, one of the French Norton riders and Liandois (Isoard Liandois).

Promptly at 8.15 a.m. there was a rare din as the starter's blue flag fell and to a man every 500 c.c. rider got smartly off the mark. Two minutes later the six representatives of the 350 c.c. class went away, Gnesa (Garelli), who alone of the half-dozen used his clutch to start, at once forging ahead. Another two minutes and a fine batch of fifteen lightweights roared away in a fashion that was inconceivable of 250 c.c. engines a year or two ago, Cottin (Velocette) outstripping his *confrères*, and Froment (Yvels) remaining in the rear pushing vigorously.



Map of the Grand Prix circuit, which is 13·38 km. in length (approx. 8½ miles).

First Circuit Completed.

Once away there was little time before the 500 c.c. leaders were due, since the triangular course is but 8½ miles in extent, and as a matter of fact part of the longest leg, with the competitors fleeting along the tree-lined roadway, could be seen from the grand stands.

The Strasbourg Circuit is a near approach to Brooklands but for the three acute bends, for the surface is magnificent, and except for slight bends on the short leg of the circuit the course

A few seconds after the simultaneous start of the competitors in the 250 c.c. Class

The 1922 Grand Prix.—

is dead straight. There are no hills whatever, and but for the bends the riders might have used single gears.

Suddenly a group of riders appeared in sight. To the astonishment of most of the British spectators the first man round was Jolly on a twin-cylinder Alcyon, a light blue finished machine; its rider wore a jersey to match. Naas (A.B.C.) was next, within hailing distance, Hassall (Norton) third, with Bennett (Sunbeam), Shaw (Norton), Edmond (Triumph), de la Hay (Sunbeam), Hollowell (Norton), and Walker (Norton) in the order named. But the mud they sprayed! Even after one lap most were bespattered, and a small bow wave was sent up by their front wheels—fearless racing indeed!

Davison takes the Lead.

First to stop at the depots was Pélissier (Motosacoche), but he was off again in three minutes. The Italian, Visioli, led the 350 c.c. class on his Garelli twin, a fine crackle suggesting no fluke about his early advantage. His *confrère* Gnesa was hot on his heels, Meunier (Alcyon) being but 100 yards behind. Of the lightweights, Kershaw led the way, but pulled up as he passed the stands and did not restart, for he had broken a valve at the very point from which he started. Barely 300 yards behind was Davison and his marvellous little T.T. Levis.

Already the men who straggled around the whole of the course passed so frequently that it was not easy to keep track of them. On the second lap, Naas, the French champion motor cyclist and his A.B.C. had managed to wrest the lead from the Alcyon ridden by Jolly which now lay second with Hassall's Norton third. Meanwhile, Francisquet (Norton) toured into his *depôt* for adjustments.

Gnesa (Garelli), too, displaced Visioli for leadership in the 350 c.c. event, though they remained in close order with Meunier (Alcyon) third.

Score Board Errors.

Already the score board was recording laps which were obviously wrong. After three laps Hassall had crept up to second place, but Jolly's Alcyon was but a hundred yards away. In this lap Edmond (o.h.v. Triumph), who, by the way, did not appear so fast as in the Island, fell at the Enzheim bend and lost a minute or two; de la Hay (Sunbeam), who was close on his heels had difficulty in avoiding him. De la Hay, whose engine was noticed to be emitting a metallic ring later retired with a seized exhaust valve. There was a distinct difference in the exhaust notes. The Continental machines, for instance, mostly dispensed with silencers, but for real crackle we award the palm to Gillard's Peugeot, which, incidentally, seemed fast enough to win but suffered stops. The Ricardo-Triumphs had a deep mellow note, while the Sunbeams were more piercing and were only excelled by the Nortons, whose bark is well known. The Velocette in the race had a fearsome note.

When Clech (Motosolo) came round he had tied his handkerchief over his face to protect him from flying mud; he sadly needed goggles.

Hard Fought Duels.

An A.B.C.-Norton-Alcyon fight was proceeding with Triumphs and Sunbeams lying low but a short distance behind the vanguard. With twenty-five laps still to go and the roads in the treacherous state they were, there was nothing definite in the placings. The pace, too, was distinctly hot, laps in less than eight minutes being usual for the fastest 500 c.c. mounts.

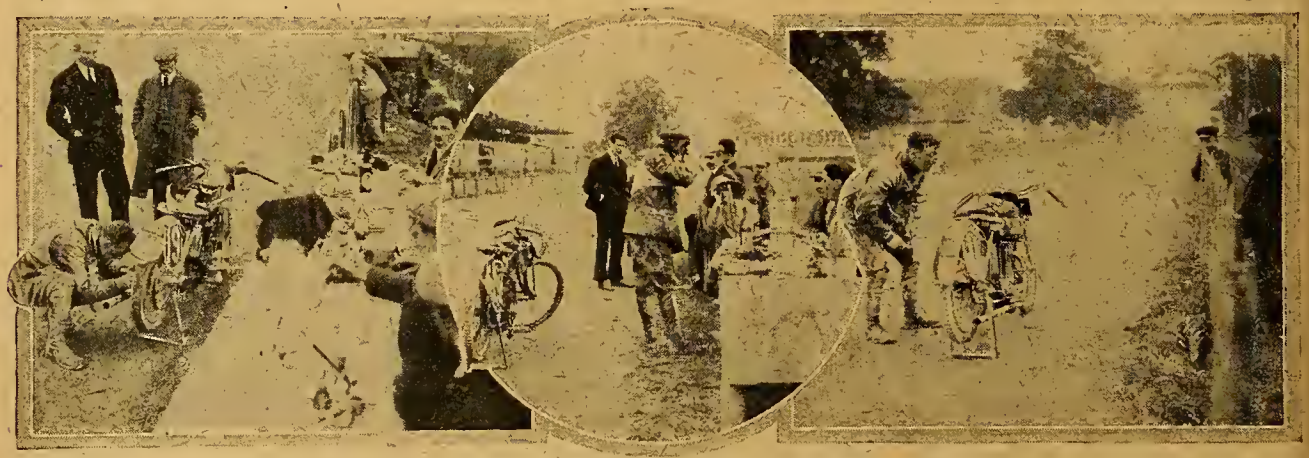
Of the 350 c.c. machines, Gnesa (Garelli) led Meunier (Alcyon), the latter having held first place for two laps, while Visioli (Garelli), the eventual victor, had dropped back to third place.

Among the lightweights, Davison was going well though he had a doughty rival in J. Whalley, whose Massey-Arran was going great guns and threatened leadership throughout the race. Generally, however, the race was not so exciting or absorbingly interesting as the Tourist Trophy. With three sets of riders on such a short course, and the men passing in one long procession, the public was unable to assimilate the position, and the absence of times and the poor lap scoring did not assist.

Hassall as Pacemaker.

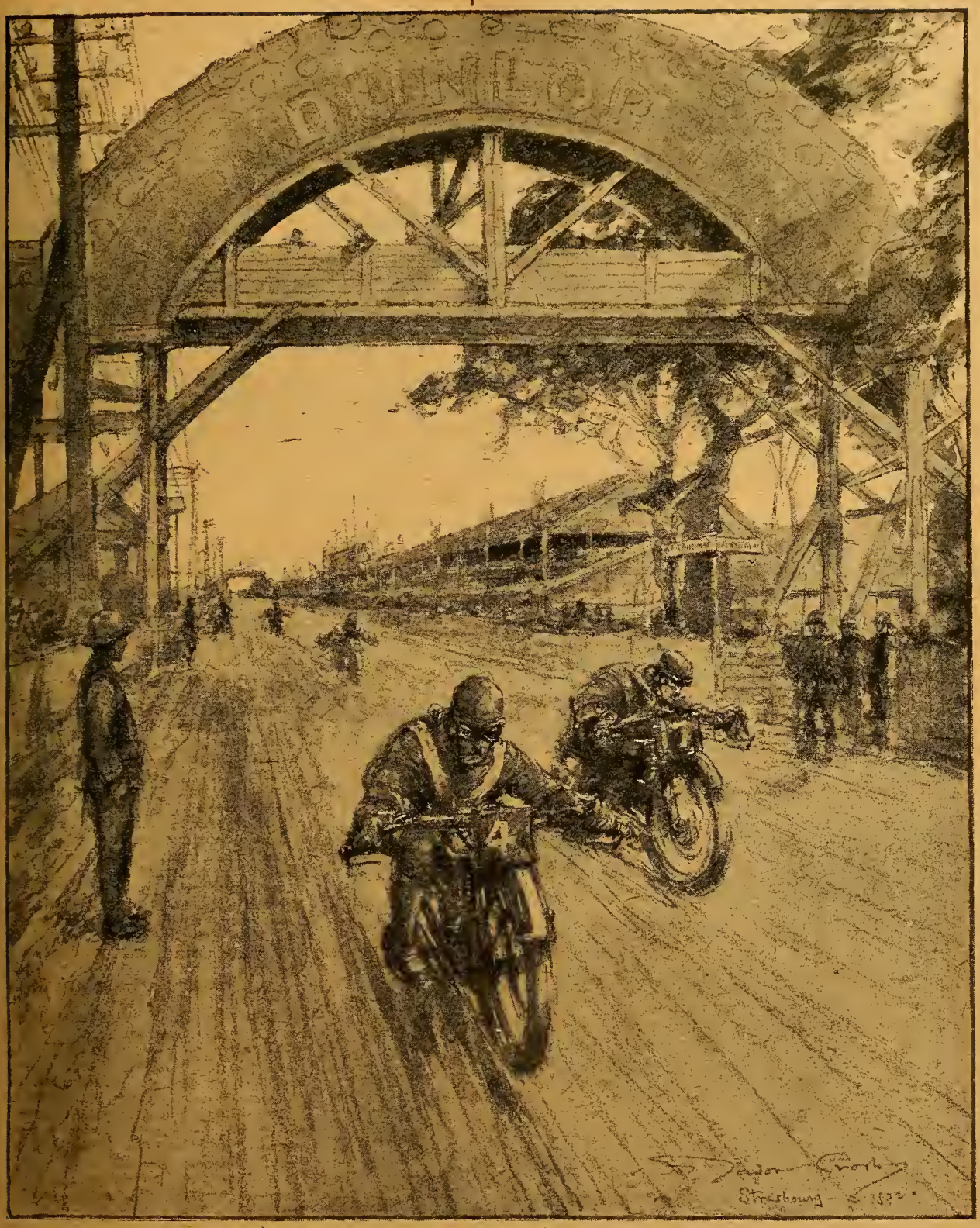
A ding-dong struggle was being fought out in the Senior class, however. Up till the ninth lap the order stood: Naas (A.B.C.), Hassall (Norton) and Jolly (Alcyon), and never more than a hundred yards separated the trio. Jolly actually used Hassall as a pace-maker. Another A.B.C. rider—Bartlett—was going extremely well, and Gillard (Pengeot) at one time promised for a place, but Bennett (Sunbeam), who had apparently been taking matters comfortably at the start, began to creep up place by place, jumping, in fact, from eighth position on the fourth lap to fourth on the ninth circuit. Edmond (Triumph), too, was now doing better.

Gnesa had lost the lead in the 350 c.c. section, Visioli on a sister machine displacing him after eight laps, only to give way to Meunier (Alcyon) for two laps due to a stop for fuel. Many of the riders halted about this period for replenishments. The 500 c.c. leaders were by this time lapping the lightweights, but the pace of the latter was surprising. Davison was still retaining his lead, which he had held from the start. P. Sallot (Thomann) rode extremely well, occupying third place for four laps, but dropped back to make an adjustment. Handley had also dropped back several places on his O.K., and Woods later was seen briskly pushing the sister machine into the depot and proceeding to effect an engine adjustment. But the piston trouble he had supposed turned out to be a broken valve. Marcel Jolly (Armor) was improving, also Cottin (Velocette), who jumped from fourth position on the eighth lap to third on the ninth lap.



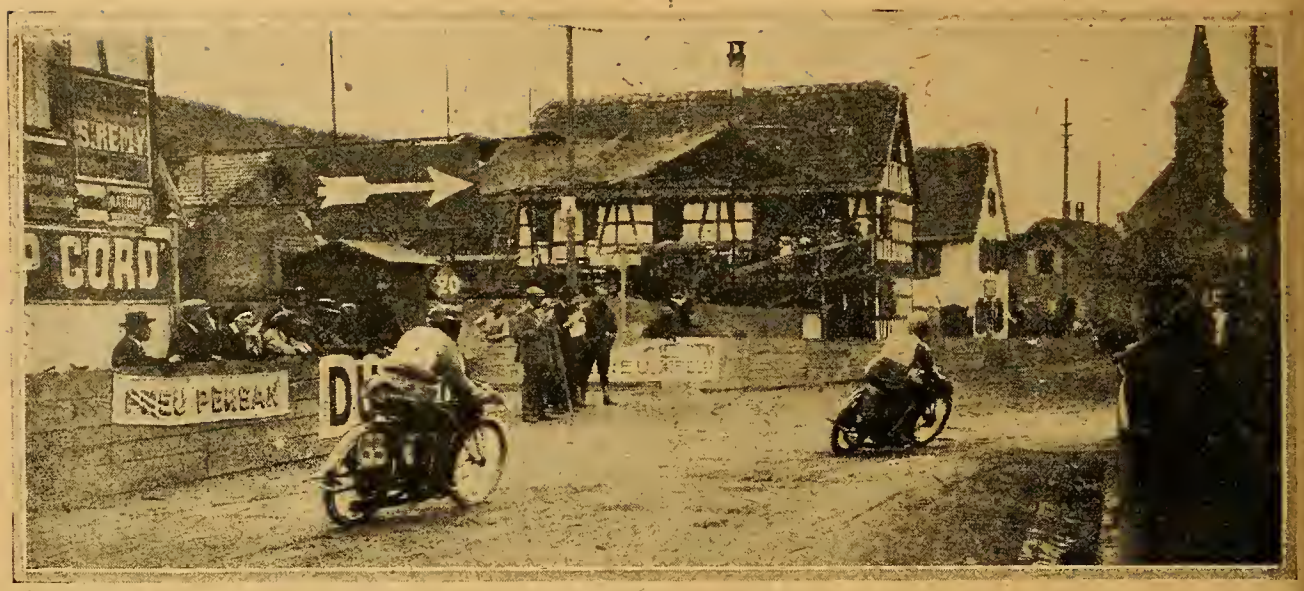
WHEN MEN AND MACHINES GET A RESPITE.

VOLUNTARY AND INVOLUNTARY STOPS. (Left) Hassall (Norton) replacing his rear wheel. (Centre) Vernisse (Yvels) taking in "stamina" fuel. (Right) Edmond (Triumph) searching for lost speed, afterwards discovered to be due to a broken valve spring.



110 MILE DUEL IN THE GRAND PRIX.

A. Bennett (Sunbeam) and Jolly (Alcyon) representing England and France respectively hurtling neck-and-neck past the grand stands during a duel which lasted for thirteen laps.



Gnesa (Garelli) at the heels of a 500 c.c. machine on the third of the three corners of the course. Eventually he ran second in the 350 c.c. class to Visioli on a duplicate machine.

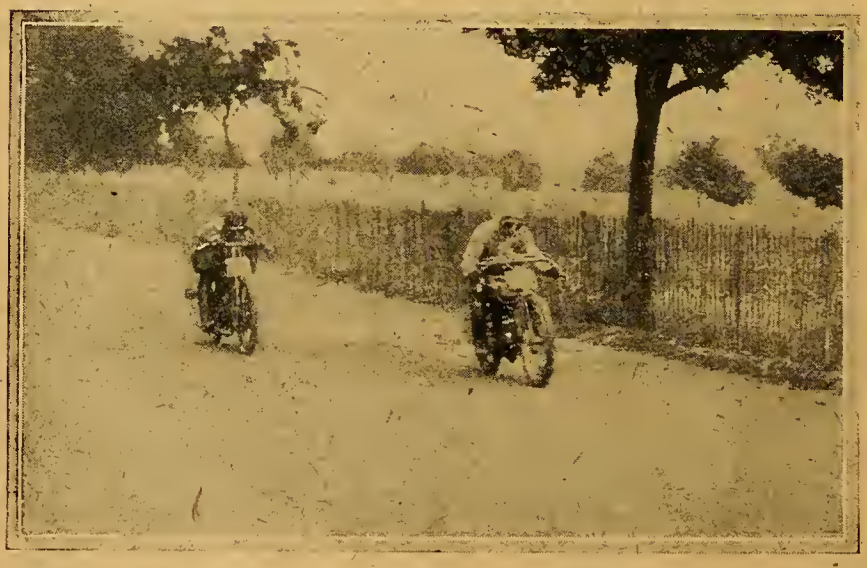
THE LEADERS AFTER 10 LAPS—83 MILES.

		h.	m.	s.
500 c.c. Class.	Naas (A.B.C.) ..	1	18	36
350 c.c. Class.	Meunier (Alcyon) ..	1	29	1
250 c.c. Class.	G. S. Davison (Levis)	1	31	55

The Italian Garelli riders had started in long thin mackintoshes, but the wind and speed had torn the lower portions into shreds, exposing inner tubes around their waists.

One was bound to admire the courageous riding of the leaders, for on roads still having a distinct coating of grease they ploughed along at over a a mile a minute. Hassall, in particular, shot past the stands time after time at a rare pace, but he was not in luck, for he had sundry troubles, and when leading after eleven laps, came into depot with his back wheel wobbling and chain dangling very loose. Finding that the back wheel bearing had given out, Mr. J. L. Norton removed the back wheel from his sidecar machine, and, fitting it to Hassall's mount, the rider was soon off again to regain valuable lost time.

Naas (A.B.C.) again took up the leadership after twelve laps and kept it for three more, but this time it was Bennett (Sunbeam) who was to harass him, though Jolly (Alcyon) having lost position due to a brief stop was still lying third. Another Norton rider, Francisquet, now climbed up the ladder, thanks to several meteoric circuits, and another Alcyon rider, Marc, was consistently annexing higher positions, being fifth after sixteen laps.



Where the course was not boarded off, fencing was used so as to enclose the track entirely. Marc (497 c.c. Alcyon) and Clech (248 c.c Motosolo) on the long leg of the triangle.

LIGHTWEIGHTS RUNNING WELL.

Meanwhile Visioli's Garelli continued to run with remarkable regularity, and was never challenged for leadership among the six 350 c.c. machines, and the same may be said of Davison's Levis, which had only Whalley (Massey-Arran) and Cottin (Velocette) to fear; for, in the order named, those three maintained their positions for lap after lap, Cottin dropping back when, in his sixteenth circuit, he had to refill. Davison had a huge tank with the object of stopping once only for replenishments.

At thirteen laps Bennett was only a couple of miles in arrear of Naas (A.B.C.) and now occupied second place, Jolly and Hassall being next, but the Sunbeam rider seemed to be crouching lower, and we have learned to know what that means; gradually but surely he wore his opponent down, until, during the fifteenth lap, Naas unfortunately suffered a broken piston and retired, and Bennett secured the lead.

THE PENALTY OF NOT WEARING GOGGLES.

Clech (Motosolo) was now almost blinded by the mud due to wearing no goggles; so his plight can best be imagined. That Handley's O.K. was possessed of real speed was seen when he flashed past Jolly (Alcyon) in front of the grandstands.

Edmond in the meantime had stopped for petrol, but he was now over a lap in arrears. De Neufville (Triumph) also halted, and had some difficulty in getting his engine to fire on restarting. Gillard (Peugeot), arriving late, made a quick refill, as did Hassall (Norton). Chauvière, on a 250 c.c. mount of his own make, retired with a broken aluminium piston, the second only of the 250 c.c. mounts to retire to this point, though several of the Senior machines were out of the running.

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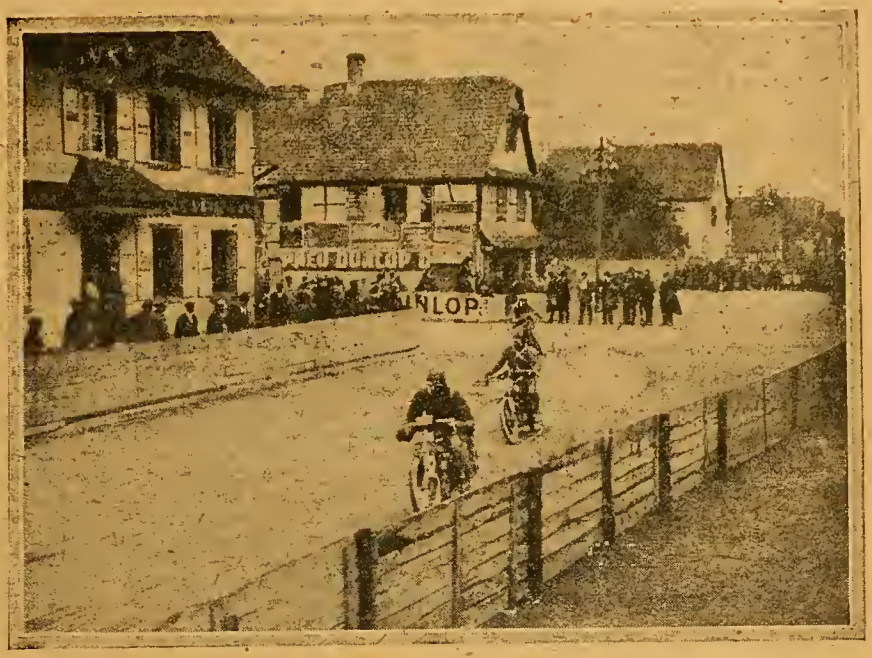
All the 350 c.c. riders were running well at half distance. Bartlett's A.B.C. was misfiring, due to mud and wet on the magneto. Cottin (Velocette) now arrived and, having apparently decided to pass on, changed his mind and caused some consternation by riding the full length of the stands in the reverse direction of the course unhindered. Marc (Alcyon) got another lift up due to retirements, and Hassall was making a really plucky attempt to retrieve lost ground.

At Half Distance.

About half distance the roads began to dry up, the sky brightened, and there was every prospect of a really good finish; the crowds too—affected earlier on by the adverse weather—considerably increased in proportions. The wonderful Alcyon ridden by Jolly was still hotly pursuing the leader, and its chance came when Bennett, already delayed by a fall at Duttlenheim corner, due to his rear brake seizing, stopped for petrol and oil. The Frenchman thus led from the 16th to the 18th lap by a maximum of 27 seconds, only to be repassed by the Sunbeam wizard on the nineteenth circuit.

From this point onwards Bennett rode like a winner, never varying his lap speeds, and nobody remained who could live with him but Hubert Hassall, who experienced unexpected mishaps.

Zind (Motosacoche) had now worked up well, but this Swiss rider, though eighth on the 14th lap, occupied third place from the 19th to the 21st laps, when he was displaced by Hassall (Norton), whose fight against odds was the feature of the day. Twice he lost his position on account of minor mishaps, but pluckily regained it, establishing the record lap: 7m. 38s. (over 65 m.p.h.), later beating it by a few seconds.



Representatives of each class at Duttlenheim Corner. Cuzean (347 c.c. Terrot); Zind (499 c.c. Motosacoche); and Belney (249 c.c. Terrot).

When Edmond arrived in depot he eyed his machine disconsolately, and discovered the cause of his lack of speed—a broken inlet valve spring, which caused his retirement. Pinney (Triumph) arrived slowly about the same time and retired, due to a lost tappet rod, having paddled 10 km. to the finish. Pelissier (Motosacoche) was very fast; he easily slipped ahead of Jolly (Alcyon) in one of the many duels in front of the grand stand. On the next lap a trio at speed was a sight worth seeing, particularly as it was made up of International stars—Jolly (Alcyon), Zind (Motosacoche), and Bennett (Sunbeam).

Vernissi (Yvels) now stopped to change a tyre.

AFTER 15 LAPS—125 MILES.

		h.	m.	s.
500 c.c. Class.	A. Bennett (Sunbeam)	1	59	33
350 c.c. Class.	Visioli (Garelli) ..	2	11	49
250 c.c. Class.	G. S. Davison (Levis)	2	19	31

Bartlett withdrew his A.B.C. due to a fall at Duttlenheim, caused by a broken

England's premier lightweight speedman—G. S. Davison (Levis)—finishing first in the 250 c.c. class.

The 1922 Grand Prix.—

brake cable. He was not hurt, the spill merely adding to the layer of mud plastered on his clothes. De Nenfville now added to the Triumph's cup of disappointment by having to withdraw, due to loss of compression. Zind, the Swiss rider ot a Motosacoche, ran with his machine in the reverse direction of the course, and was reprimanded, but he merely wanted to daub the chains with a paint brush dipped in oil.

Spectators hereabouts conjectured whether Bennett and Jolly would have to stop again for replenishments, since there were but seconds between them. When they came by the grandstand Bennett actually had a 25 seconds' lead, but the Frenchman stopped for fuel.

A Wonderful Lightweight.

The little Levis was an eye-opener to the crowd. With only a lap or two to go another success for the two-stroke seemed a certainty. Actually Davison suffered his only stop during the closing stages, a plug giving out. He had been hampered, however, by a lack of petrol in the float chamber, and had continually to depress the needle to ensure a sufficiency.

Meanwhile Whalley was pegging away on his Massey-Arran, as regularly second as Davison was first—and Davison knew it! When the latter halted on the nineteenth and penultimate lap, he feared that Whalley might beat him on the post, but as luck had it Whalley, too, had trouble, as his gudgeon pin broke, and he had to finish on foot, losing three places thereby in the last few miles.

G. S. Davison received a hearty cheer as he arrived, but stopped short of the official flag (borne by the Chevallier René de Knyff) and had to be waved on again, with the result that he started again on a superfluous lap.

Once again the Levis has raised the standard of two-stroke machines by this second successive victory, and has made an achievement of considerable significance.

P. Sallot, on a Thomann, gained second place at the finish, having ridden well and consistently. Cottin (Velocette) was third man home, a position he occupied for a long time.

FINAL TIMES IN THE 250 c.c. CLASS.

	h.	m.	s.
1. G. S. Davison (Levis)	3	0	8.4
2. Sallot (Thomann)	3	34	3
3. Cottin (Velocette)	3	34	41
4. J. Whalley (Massey-Arran) ..	3	41	7
5. Clech (Motosolo)	4	11	3
6. M. Jolly (Armour)	4	18	7
7. Belney (Terrot)	4	28	5
8. Nell (Velocette)	4	30	42
9. Vernisse (Yvels)	4	38	51

Interest now centred upon the 350 c.c. class, since the closing stages of the 25 laps had been entered upon. At the conclusion of 20 circuits the Garelli riders were still first and second—the sole example of consistent positions in the whole race, Mennier (Alcyon) still being third.

TIME AFTER 20 LAPS—166½ MILES.

	h.	m.	s.
350 c.c. Visioli (Garelli)..	2	56	12
500 c.c. A. Bennett Sunbeam).. ..	2	40	11

Gillard (Peugeot) now retired after sundry meteoric laps punctuated by various minor troubles. Bennett, as regularly as ever, continued to increase his advantage, with the Alcyon rider hanging on until the 25th lap, when the latter had to retire. It was noticed when he passed for the last time that his machine was wobbling as if the steering had been affected.

This let up Hassall into second place, though still two laps behind Bennett, and he never lost it, though once he had difficulty in passing Vernisse (Yvels), who was on his wrong side, and Hassall had to apply his brake. Zind (Motosacoche) likewise moved up one when Jolly went out, and he, too, stuck to the third position.

A Triple Win for Italy.

Still the 350 c.c. mounts ran with clocklike precision, though there were but a dozen riders left on the course when Bennett stopped to fill up. While Davison was being fêted, the French agent for Levis, M. Psalty, advertised the Levis success on the windscreen and disc wheels of his car, with which he proceeded to parade the good news.

The only changes in the positions of 350 c.c. class were that dall' Olio displaced Meunier (Alcyon) on the 23rd lap, and thus enabled the Garelli two-strokes to finish first, second, and third, after a fine exhibition of consistent running. Visioli (Garelli) acknowledged the cheers by waving both arms in the air as he sped along. Thus two races finished before noon.

350 c.c. RACE, 208 MILES—RESULTS.

	h.	m.	s.
1. Visioli (Garelli)	3	39	56
2. Gnesa (Garelli)	3	41	1
3. dall' Olio (Garelli)	4	6	46
4. Meunier (Alcyon)	4	30	48
5. Cuzeau (Terrot)	4	36	1

When Jolly retired, Marc, on another 500 c.c. Alcyon, took up the running, but from fourth place his task was too great. On the other hand, due to an error on the scoreboard, many thought he was pressing the leader as he came round regularly half-a-mile or so in arrear.

It began to drizzle again, but the road surface had dried well. On commencing his last lap Bennett received an encouraging cheer, and one saw him in the distance flashing along the magnificent highway bordered by tall trees. His Sunbeam never faltered, and he came home at a wonderful pace, being cheered vociferously for his third successive victory. On the principle of doing in Rome as the Roman does, competitors who had retired rushed forward and kissed Bennett, and soon he was the centre of an admiring crowd, which grew to positively dangerous proportions on the course itself.

Marc now came along, and, being flagged, stopped under the supposition that he had finished the course. Later the officials discovered the error, and urged him to complete two more laps, but having lost much time Marc declined, and indeed demanded to be credited with second place. It was extremely unfortunate, as Marc had ridden a fine race and fully deserved better luck.

Hassall (Norton) now came along, and, hesitating as he peeped into the tank, decided he had enough petrol to proceed on his final lap. He came home second after an adventurous and plucky ride full of thrills, approximately 15min. behind Bennett. Third to finish was Zind (Motosacoche), a marvellous performance when it is considered that he was no higher than sixteenth on the first and second laps, and from that moment gradually ascended the ladder. Only one other rider survived the course in the 500 c.c. class, *viz.*, Francisquet, another Norton rider, who also was low down (fifteenth) after two laps, but climbed rapidly, being fourth at half distance.

Few 500 c.c. Survivors.

The small percentage of survivors in the Senior section is certainly surprising, the more so when compared with the smaller classes. Tyre trouble was noticeably absent throughout the day. Most brought home the new tubes with which they started. Engine trouble was the most pronounced—which is perhaps not surprising when the flat triangular course of 8½ miles, with its long, straight stretches, is taken into account.

500 c.c. RACE, 250 MILES—RESULTS.

	h.	m.	s.
1. A. Bennett (Sunbeam)	4	5	40
2. H. Hassall (Norton)	4	20	8
3. Zind (Motosacoche)	4	33	33
4. Francisquet (Norton)	4	42	48

The French Grand Prix has thus again added to the laurels of British manufacturers. In both the 250 c.c. and the 500 c.c. classes British riders and machines were first

Thus in the big international race organised by the governing body of the sport in France, no French machine secured a victory. In the 250 c.c. class representatives of cross-Channel makers were second, fifth, sixth, seventh, and ninth, while a French rider of a British machine was third.

Italy claimed the first three places in the 350 c.c. race, with French machines fourth and fifth; no British machines were entered.

In the 500 c.c. class, as already recorded, only four out of the nineteen starters finished the course, and of these none represented the organising country, Britain taking first, second, and fourth places, with Switzerland third.

DETAILS OF THE WINNING MACHINES.

250 c.c. Class. G. S. Davison (Levis).

British single-cylinder two-stroke; Dunlop tyres; E.I.C. magneto; Senspray carburetter; Renold chains. Weight of machine, 156 lb.; rider, 132 lb.

350 c.c. Class. Visioli (Garelli).

Italian twin-cylinder two-stroke with common combustion space; Hutchinson tyres; Mea-Garelli magneto; Zenith carburetter. Weight of machine, 195 lb.; rider, 149 lb.

500 c.c. Class. A. Bennett (Sunbeam).

British single-cylinder four-stroke; Dunlop tyres; M.L. magneto; Amac carburetter; Renold chains. Weight of machine, 251 lb.; rider, 136 lb.

WHAT THE WINNERS SAID.

Davison thought the Course Monotonous.

WHEN Davison's win seemed a certainty the French representative of the Levis became violently excited, but when Whalley was seen to be pressing him hard his face fell. Then poor Whalley broke down, and Psalty, the agent referred to, once more became exuberantly joyful.

Geoffrey S. Davison took his fine win most modestly, and reported he had had by no means a trouble free run. Uneven firing, due to bad carburation, caused him considerable anxiety, and this he ascribed to a different brand of petrol from that he had used in practice; but it was the only kind he could procure just before the start. Also, although he was laps ahead of his rivals towards the end, he had to stop once, in the 19th circuit, to change a plug. Mud and grit caused considerable discomfort, and that thrown forward by the rear wheel blew back again and hit him in the face.

G. S. Davison and his wonderful Levis at the conclusion of his splendid ride of 166½ miles in 3 hrs. 0 min. 8·4 sec.

Asked about the course, he considered its long straight stretches monotonous, the only relief being the slightly winding stretch between Innesheim and Duttlenheim—the shortest of the three legs of the triangle.

The Levis he rode was the identical mount he used in the Isle of Man, and had the same gear ratios, *i.e.*, 4.2, 5.125, and 6.75 to 1.

He considered the corners too sharp to enable a close ratio-box to be used with success; but, for experimental purposes in France he was well provided with gear boxes giving various ratios. Finally he selected that used in the Isle of Man. His tank held sufficient petrol and oil to enable him to survive the 20 laps (166½ miles) with but one stop.

Following upon his recent success in the T.T., Davison and the makers of his Levis are to be heartily congratulated upon their signal victory. Davison's mount was equipped with Dunlop tyres, which hardly showed a mark at the end of the race, E.I.C. magneto, Senspray carburetter, and Renold chains; Miracle oil was used.

Visioli Interviewed with Difficulty.

A CHAT with Visioli, a typical Italian, short and clean shaven, the gallant rider of the Garelli, was no easy matter, as he spoke no French, and his interviewer little Italian. He, too, had trouble on the run, and had stopped four times owing to plug defects. Asked as to his views of the course, Visioli said that he considered it to be very stiff for small machines, which had to be driven hard all the time. It was quite different from Italian races, which were often held in hilly or undulating country. Signor Garelli, who witnessed the race, is naturally pleased with the triple success of his machine—a two-stroke vertical twin with a common combustion chamber. Third to finish, dall' Olio, is a private owner.

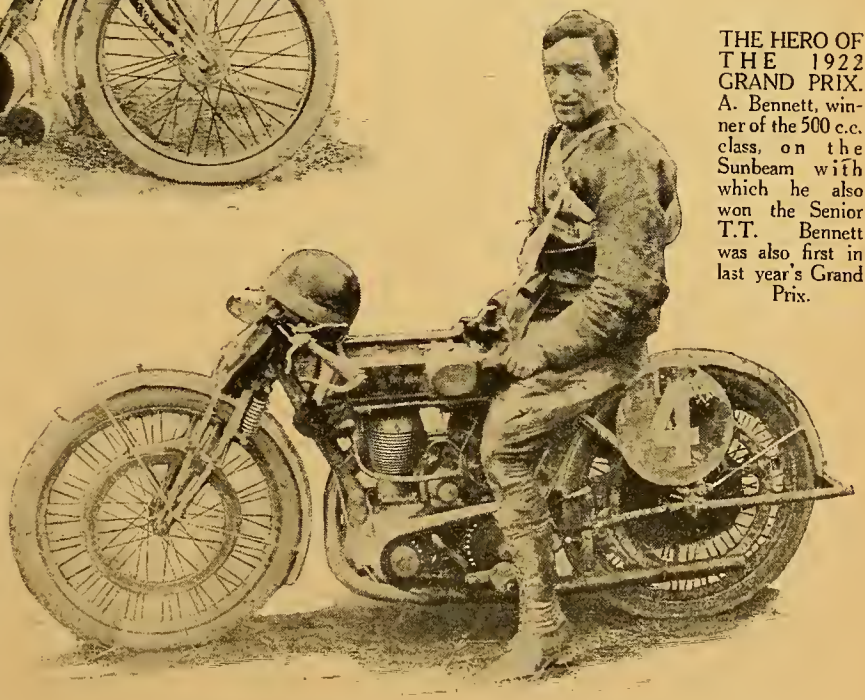
All the Garellis were fitted with Mea Garelli magnetos, a special Zenith carburetter with two vaporising chambers and one float chamber, and Hutchinson tyres.

How they Greeted Bennett.

BY winning the French Grand Prix last week Alec Bennett has performed the "hat trick."

When a Frenchman wins his compatriots embrace him. Taking a leaf out of their book, de la Hay and a host of other Englishmen soundly kissed Bennett on his arrival. Probably our French friends now think that we have changed since the war, and have become more demonstrative.

Save for a slight accident on the ninth lap Bennett had no trouble. At Duttlenheim corner a Frenchman on a small two-stroke cut across his bows and so Bennett had to lock his back wheel. This saved a collision, but the eventual winner skidded, fell, hurt his arm, and slightly cut his face. In answer to a question, Bennett laughingly replied that he had had no oil trouble this time, and had stopped to replenish every eight laps. He considered the course, though easy, very trying to an engine, as it got little or no relief. Notwithstanding the noticeable dissimilarity in the Isle of Man and French Grand Prix courses, Bennett found his T.T. gears just right for the Strasbourg circuit, and, in fact, used the identical machine, engine, and gear box, with ratios of 4.1, 5.3, and 7.8 to 1. He finished fresh, and was just as retiring over his victory as is his wont. When a man can win three important contests in succession, as Bennett has done, he must be acknowledged to be possessed of wonderful judgment and restraint, quite apart from the known qualities of the magnificent Sunbeam he rides. Bennett's machine was fitted with an M.L. magneto, Amac carburetter, Dunlop tyres and Renold chains.



THE HERO OF THE 1922 GRAND PRIX. A. Bennett, winner of the 500 c.c. class, on the Sunbeam with which he also won the Senior T.T. Bennett was also first in last year's Grand Prix.

NOTES.

Francisquet's Norton was fitted with a grease cup feeding lubricant to the inlet valve guide.

* * *

Four-valved twin-cylinder engines were the feature of the racing Peugeots. The overhead mechanism was entirely enclosed in ribbed aluminium casings.

* * *

A number plate was used to indicate to the waiting competitors the number of minutes before "zero hour," which was 15 minutes after schedule. Quite a good idea, as the noise of the exhausts silenced all other sounds.

* * *

W. F. Newsome, the old Triumph racing man, rode from Strasbourg on the step of a lorry which was conveying spares to the depot. Suddenly a steering pin fell out; the driver lost control, of course, hit a cart and turned it over. Fortunately no one was hurt.

* * *

J. L. Norton found that his garage had been broken into overnight and Hassall's machine had had several nuts loosened. The matter was brought to the notice of the French officials, who regarded it in a very serious light and promised full investigation. One more case of this kind will kill international competition as surely as it was killed in 1905.

* * *

M. Jolly (Armor) stopped to replenish on his 7th lap, keeping his engine running all the time, but stopped it immediately he engaged his clutch.

* * *

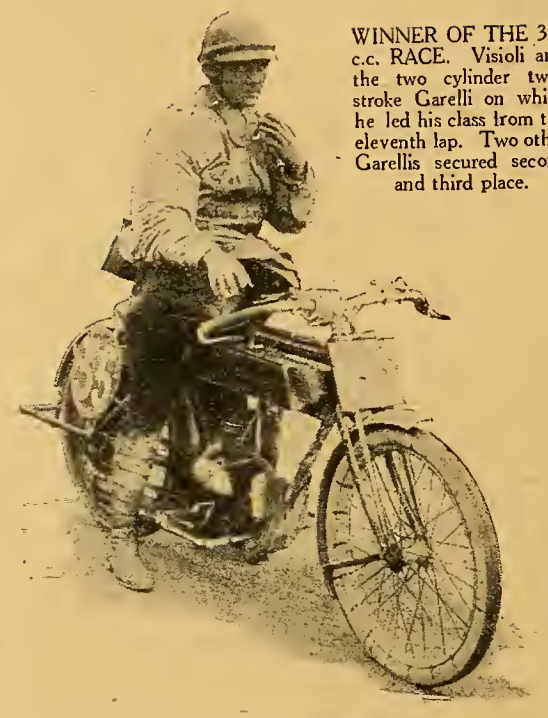
Cottin (Velocette) overshot his depot and *rode* back to it, thereby arousing ire among the officials.

* * *

Duttlenheim Corner was taken steadily by most of the competitors, but Naas, the daring A.B.C. rider, actually passed a rider on the bend and just escaped touching him.

* * *

In the Armor-Thomann-Alcyon depot petrol poured from its tin into a spouted can was filtered through someone's hat.



WINNER OF THE 350 c.c. RACE. Visioli and the two cylinder two-stroke Garelli on which he led his class from the eleventh lap. Two other Garellis secured second and third place.

Group starts are always impressive, but the manner in which the two Sunbeam riders, Bennett and de la Hay, disengaged themselves from the throng was well worthy of note.

* * *

Two of the three Garelli's made excellent starts and kept up a fine average throughout. This is the first time this ingenious two-stroke has been raced before a representative group of British motor cycle enthusiasts, but it is not unknown to Italian speed events.

* * *

We pay grateful tribute to the kindness and courtesy extended by MM. Reni de Knyff, Longuemare, Tatin, and Fourreau who always gave valuable assistance when requested.

The lightest machine in the 500 c.c. race was Marc's Twin Alcyon, which weighed 195lb. Thus the rider's weight of 147lb. was 43 per cent. of the total of rider and machine.

* * *

The heaviest motor cycle in the 500 c.c. class was Walker's Norton, which weighed 279lb., the rider being 179lb., 39 per cent. of the combined weights.

* * *

Lightest among the lightweights was the privately constructed Chauviere, which weighed but 149lb. This machine had a four-valve four-stroke engine built into a Villiers frame.

* * *

Again the side valve single has won a big international event in competition with the o.h.v. type, which was in the majority.

* * *

Below we give a table showing the equipment of the machines in the three races. It will be seen that British components played quite an important part.

TYRES.

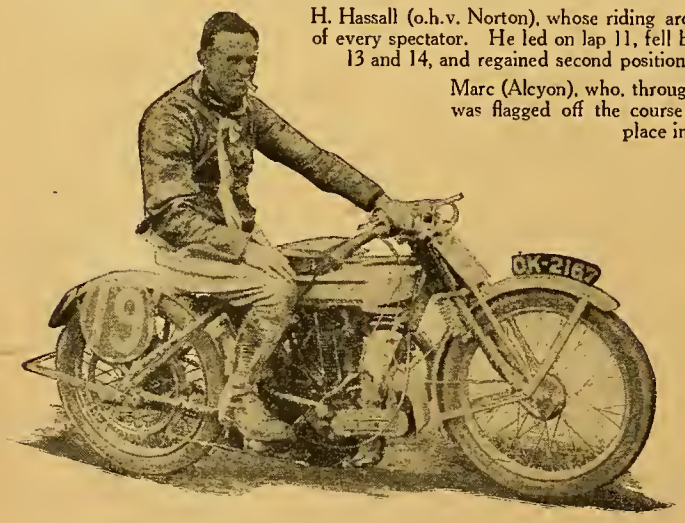
	Dunlop.	Hutchinson.	Avon.
500 c.c. ...	16	3	—
350 c.c. ...	3	3	—
250 c.c. ...	11	3	1

MAGNETOS.

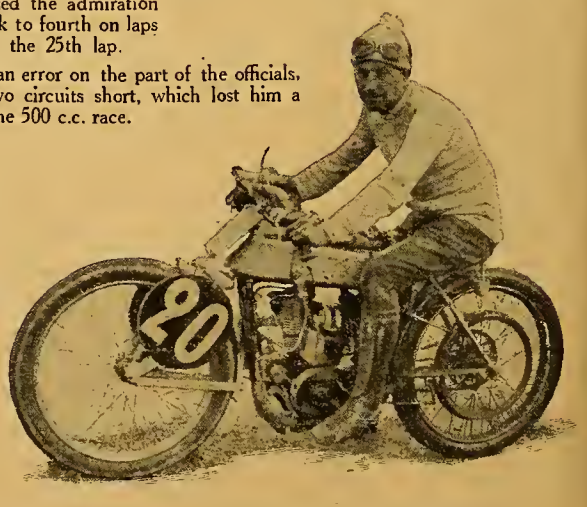
	B.T.H.	E.I.C.	M.L.	C.A.V.	Schtilla.	S.E.V.	Zenith.	France.	M.e.a.	Bosch.
500 c.c.	3	0	2	4	2	1	3	0	0	3
350 c.c.	0	0	0	0	0	0	2	1	3	0
250 c.c.	2	2	3	0	3	1	2	0	0	0

CARBURETTERS.

	Amac.	B. & B.	Longue-mare.	Claudel.	Zenith.	Cox.	Sen-spray.	Flexi.
500 c.c. ...	12	0	2	3	2	0	0	0
350 c.c. ..	1	0	0	2	3	0	0	0
250 c.c. ...	5	1	0	1	4	1	1	1



H. Hassall (o.h.v. Norton), whose riding aroused the admiration of every spectator. He led on lap 11, fell back to fourth on laps 13 and 14, and regained second position at the 25th lap.



Marc (Alcyon), who, through an error on the part of the officials, was flagged off the course two circuits short, which lost him a place in the 500 c.c. race.

AT STRASBOURG.

Impressions of the Alsatian Capital during Grand Prix Week.

AT least half the enjoyment of a French motor-cycle race lies in the general atmosphere which prevails. At Strasbourg, indeed, it was the more marked because the weather was vile on the actual day of the race, for, even with this to damp everybody's spirits, still the spectators treated the whole thing as a spectacle for their amusement.

Before the race anybody with a motor cycle, more particularly anyone in a peculiar garb or with an engine possessing an unusually strident bark, was the centre of almost embarrassing attention, and, knowing this, handled his machine with as many little spectacular touches as possible.

Interested Critics.

If any motor cycle stopped, while its rider so much as lit a cigarette, an enormous crowd formed a thick hedge all round it to comment on the engine or rider impartially in a *patois* which owed something to Germany and little to France. Even when the inevitable white-trousered *Agent de Police* arrived, inquisitive as to the obstruction, the crowd did not dissolve, but had to be pushed aside until the Majesty of the Law confronted the motor cyclist. Even then the Law was stymied, because, in nine cases out of ten, the motor cyclist, being English, could not understand a word—or for convenience claimed this disability.

To go to a café of an evening, especially in any sort of leather coat, was to be a hero very easily. Can it be wondered that everyone rode the streets in sharp bursts, let their engines "rev." suddenly until the old buildings rang with the noise, and allowed their machines to skid just sufficiently to demonstrate a masterly recovery. In any case a motor cycle of the racing brand can make more noise than a sporting car, and, since noise is appreciated in France, the motor cycles scored heavily over the many ferocious canvas-bodied cars which were in Strasbourg for the car races.

Seriously, though, the atmosphere of a French town before a race is something worth experiencing after the apathy of the average English crowd. When the Frenchman—or in this case the Alsatian—sets out to make merry, he makes very merry and is not afraid to show it.

On the day of the race all who wanted to see the motor cycles turned out in big cars with bodies tied on with string, and, rain or no rain, amused themselves. And this is true not only of the men, but of their womenfolk, who, moreover, are experts at wearing a really suitable and really practical motoring garb and yet appearing attractive in it.

It is not done in England.

In England, to stroll about munching the end of a long roll and with a large bottle of cider under one arm, would invite undue attention. If, added to this, one is wearing a purple waterproof, a blue collar having a pattern of crimson flowers and a yellow necktie with vermilion spots on it, then a crowd—probably a hostile crowd—would collect. In France nobody pays any attention, and everyone is happy.

Enthusiasm of the Crowd.

At the *Tribunes* the attitude of the crowd is characteristic. Man, woman and child, they watch each machine which stops at the pits and argue hotly as to why, going into technical details to any length. All classes do this. Now imagine a charwoman in England who could talk seriously about an o.h.v. Triumph, and you have the parallel case. There are, of course, rules and regulations, policemen and barriers, posses and brassards. Yet, towards the middle of the race, quite a lot of people have got where they shouldn't be, and done what they "didn't ought," *and nobody minds.* You would not see the T.T. winner kissed by a quite strange girl immediately he finished; perhaps it would increase the entry if you did; but it has happened in France, and nobody can see why she shouldn't. Every tram, nearly every house, and practically every car has a flag, two flags, four flags, or more, the cars often having as many as their owners can borrow or steal. This adds colour to the scene, brightens everybody up amazingly, and convinces one that this really is a *fête*, not a funeral. So great is this effect that even staid Britons have been known to wear a tricolour in their hats. Taking it all round, the French know how to stage a race and, which is more important, the crowd know how to act their parts with zest.

S. C. H. D.

INTER-CLUB RIVALRY.

Bristol *v.* Bath Team Trial. Victory for Bristol.

AN annual West country event, the Bristol and Bath inter-club team trial, was contested, in a howling gale, on the 7th of July.

It proved to be one of the most strenuous trials in the history of either club. It will be remembered that in the "Arctic" Trial of April 1st last, the afternoon's course in the Mendip Hills was cancelled, and this was, in fact, the principal portion of the route of the Bath and Bristol event, which has been favoured for some years past. In the 40 miles lap, taken twice, are five observed hills notorious for bad surfaces, and the effect of recent weather on these and the other twenty miles of "colonial" sections was to render them atrocious. Ashton Hill was the easiest. Lye Hill is a freak, but comparatively simple gradient. East Dundry, Ubley and Burledge are also freak climbs named in the order of their severity, Burledge being the most difficult; it produces wheel spin without apparent reason, and the upper sections are boulder strewn to such an extent that keeping a balance is more a matter of luck than skill. Ubley is a dark, steep track on the sloping sides of thick wood, and heavy rain had rendered this very uncompromising.

The whole Bristol team got home with very nearly perfect scores; only one hill failure among ten machines on ten freak hills is rather remarkable riding. Bath was unlucky enough to have one solo man retire, within a few miles of the start, and there were numerous failures on the hills; also a number of time errors at checks.

Full Points Gained.

Of the Bristol team, in the solo section, the best performance appeared to be that of S. G. McWatters on a 490 c.c Norton (incidentally the machine which G. H. Tucker rode through the "Arctic" Trial). He gained bonus points on all the "bonus" hills and thus scored a "highest possible." Only those who rode through the trial can fully appreciate the merit of such a performance. W. A. Le Brun (499 Rudge), E. F. Jellyman (490 Norton), V. Courteney (499 Sunbeam), F. A. Simpson (346 Francis-Barnett), and K. J. Woods (499 Wilkin), all finished without any failures, but with only two or three of the possible four bonus points awarded for feet not leaving the rests on Burledge and East Dundry.

The sidecars were equally successful. H. F. Walters (994 Ariel sc.) and G. H. Tucker (490 Norton sc., the mount on which he rode in the "200 mile" at Brooklands recently) both had top scores. F. G. Mann (998 Harley D. sc.) lost the crank case plug early on, and ran most of the way on a poor oil supply; consequently one hill failure out of ten hills was a good performance.

In the Bath team, the G.N. light car driven by Noel Harbutt, had no failures; all the sidecars failed on one or other of the hills. Vic. Anstice (the Douglas T.T. rider), on a 749 c.c. Douglas, kept a clean sheet until the second ascent of Ubley, when his gearbox seized; fortunately he was able to free two gears and finished on time. The Bath solo men were very unequal, one or two doing well, but others lost many points.

Of the twenty other competitors, E. G. Fery, on a racing G.N., conquered the hills by sheer speed.

350 c.c. Beardmore-Precision with Barr & Stroud Engine.

SPECIFICATION.

ENGINE: Barr & Stroud; four-stroke, single sleeve valve, 70 × 90·5 mm. (350 c.c.).
FRAME: Beardmore-Precision; rigid, all steel with integral pressed tank.
LUBRICATION: drip feed.
BRAKES: Front: contracting band. Rear: V block in dummy bell rim.
TRANSMISSION: All chain (½ × ¼).
GEARBOX: Sturmey-Archer, three-speed.
TYRES: 26 × 2⅜.
FORKS: Beardmore-Precision leaf spring.
WEIGHT: 210 lbs.
PRICE: £90.

NOT having previously ridden a machine fitted with the Barr & Stroud engine, yet fully aware that as a unit it had special features which had enthused more fortunate colleagues, the opportunity to borrow one for an afternoon was seized with alacrity.

For journalistic road-testing purposes the selection of a machine taken to the Isle of Man as a T.T. hack by one of his staff is scarcely fair to the manufacturer, who naturally wishes to place a new, if not specially selected machine into the hands of a pressman.

Not a New Machine.

However, it was just fortuitous circumstance that placed a very much used, very dirty, and altogether ancient and ill-used mount in our possession on that sunny afternoon when the machine was tried.

As the weather was very hot, no difficulty was experienced in starting; with great ease the engine came to life with the weakest thrust of the starting pedal. Moreover, the smooth way in which it commenced to tick over, without any preliminary racing or fuss, pointed to a commendable freedom from those minute air-leaks which often have an appreciable effect on some most excellent poppet valve engines until the heat of the cylinder has reached the carburetter.

Before starting away the complete absence of the usual rattle of a poppet valve engine was noticeable, and the exhaust was quiet almost to the degree of "woolliness."

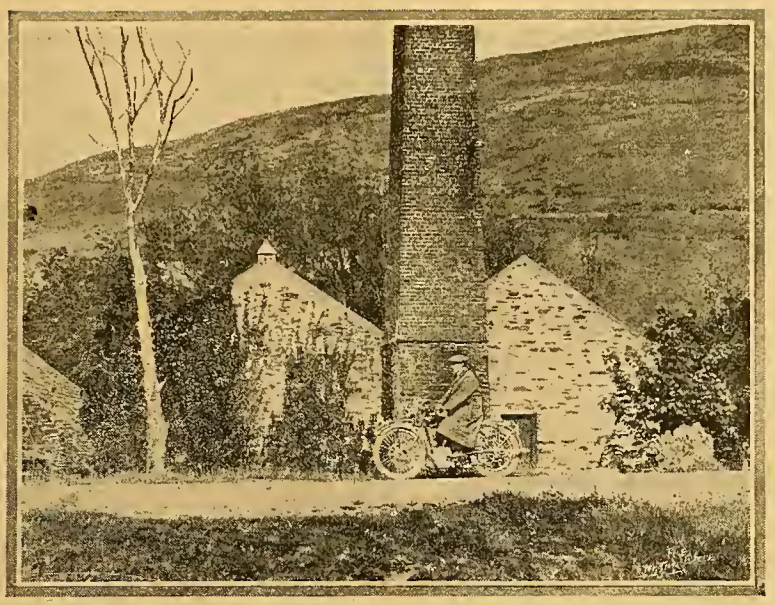
Letting in the clutch gently without appreciably opening the throttle, the machine went away well on its first gear; no doubt the large outside flywheel permits this unspectacular method of starting, and maybe in consequence will be a great grief to the really hot type of rider who "gets away" from the starting line of an all-night reliability trial as though commencing a "standing start" attempt in a speed hill-climb. To such as he, however, the docility of the B. & S. engine may be circumvented by widely opening the throttle and dropping in the clutch on middle or top gear, for the gentlemanly tone of the engine's conversation belies its manner if it is so desired, and it will deliver a decidedly hefty punch.

Subtle Charm.

Once on the road it is difficult to describe in what way the power unit differs from other first-class engines. Take the best single-cylinder poppet valve machine there is—letting "best" in this instance signify such qualities as flexibility, silence of operation, and freedom from vibration.

There are one or two engines in which these qualities may be said to be developed to the utmost extent possible to their type. Good! Mount a machine

Road Tests.—



The Beardmore-B. & S. was tested in the Isle of Man. It is here shown passing the deserted mills in Sulby Glen on its return from a successful attack on the hairpins and gradients that lead to the Snaefell mountain road.

powered with the B. & S. engine, even one with a worn and slapping piston and a rather noisy gearing to the magneto, as had that fitted in the Beardmore, and an indescribable difference will be sensed. It is a difference appreciated rather than felt as this, that, or the other apparent and positive quality.

That rather "woolly" exhaust sound is indeed deceptive. Even in a comparatively heavy layout like the Beardmore frame, which is built with an eye to stability and consequent comfort of mind, the engine is capable of a thoroughly satisfactory touring performance on the open road. In hill-climbing, too, there is ample power for the ascent of freak gradients, picking a course amongst rocks and boulders at low speed; throttling down to a dead crawl on a hairpin and opening wide immediately a fair passage is assured.

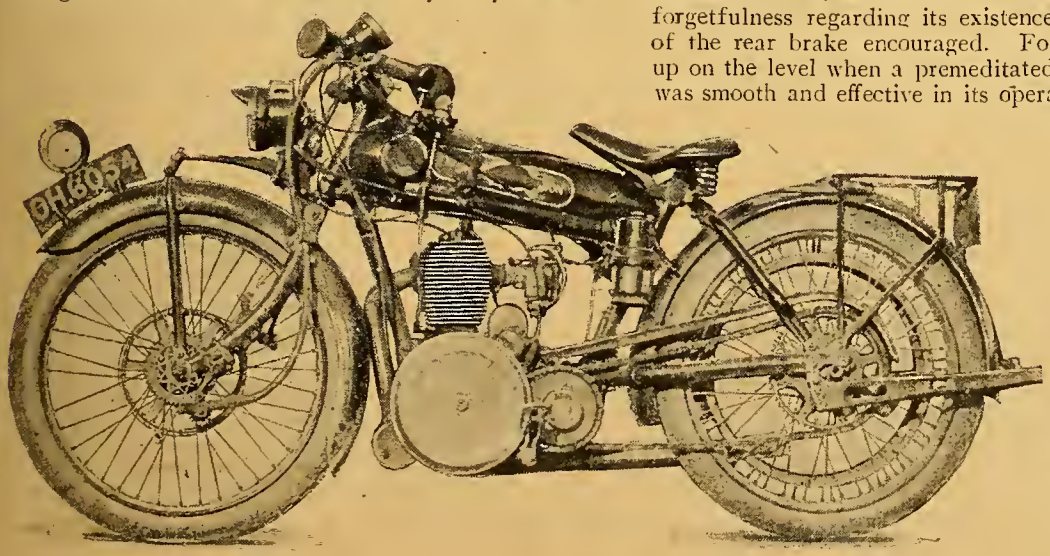
Under all such circumstances a smooth response is made to the opening throttle; there is a kind of elastic "push" which enables the machine to be controlled with great flexibility at low speeds without any tendency to knock and without the necessity for delicate spark manipulation; somewhat a rare quality with a long-stroke cylinder.

On the particular engine under review a decided piston rattle was evident, and, as before mentioned, the magneto drive appeared to be unduly noisy. The former may well have been a characteristic of the individual machine, but the latter was rather inferred to be a defect of the method of driving. Chains seem to be preferable for such subsidiary drives.

Robust Frame Construction.

So far the engine alone has been dealt with, but the Beardmore-Precision frame is by no means unworthy of notice. The sturdy construction is obvious not only to the eye, but to the muscles when the machine has to be hauled up on to its stand. Slightly greater height than the normal increases the effort of the latter operation, but does not appear to affect the steering.

A comfortable riding attitude is provided by the sports type of layout, and the high footrests and ample ground clearance make the machine a suitable one for trials and general rough riding. Steering was remarkably good and steady; even a fiercely braked back wheel on a rough and stony descent only resulted in a perfectly straight-skid of some twenty yards; incidentally the rear dummy belt rim brake is not harsh unless powerfully applied. The braking action is smooth and progressive with the pedal conveniently situated against the right footrest in a position which does not necessitate any searching. The contracting band front brake, it must be admitted, was neglected. This omission to test a detail of the machine is due to a forgetfulness regarding its existence which the power of the rear brake encouraged. For ordinary pulling up on the level when a premeditated stop was made it was smooth and effective in its operation.



Altogether an admirable mount, powerful enough for all ordinary and strong enough for most extraordinary riding.

As a machine suitable for overseas conditions the 350 c.c. Beardmore, with Barr & Stroud engine, should be ideal. It is strongly built and easy to handle, while there is ample ground clearance and the footrests are placed at a good height.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made Gadgets, with some Practical Hints on Work in the Garage.

Repairing a Mechanical Horn.

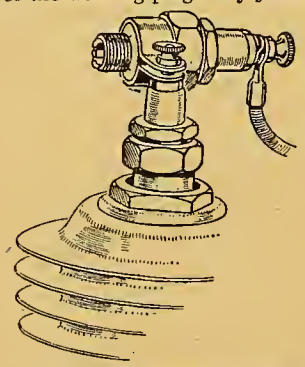
HERE is another simple scheme connected with mechanical horns. It frequently happens that the plungers of these get lost, sometimes jumping out on the road and never being found again. In this case a scrap-box repair was carried out by Mr. P. Oddy. A door-knob with the square spindle passing through the lock was discovered to be an exact fit in the square hole at the top of the horn, and the ratchet teeth were easily filed in one face. An external spring under the

Using a door-handle as a plunger for a mechanical horn.

knob will provide for a return of the plunger if an inside spring cannot be arranged for the new plunger.

A Free of Charge Spark Gap.

By utilising a piece of strip metal as a clip, Mr. E. Roberts, of Huddersfield, carries a spare sparking plug at the terminal of the working plug. By joining up



Cheap method of producing a spark gap.

the high-tension wire to the spare a spark gap is made automatically, for the current passes over the points of the top plug and so through its body to the terminal of the main plug, where it fulfils its normal function.

Joining a Chain.

Ordinarily the easiest way to join a chain is to place both ends on the sprocket, forcing it down into the teeth until the extremities approach sufficiently near to each other to insert the connecting link, finally adjusting the tension by sliding back the wheel by the method provided by the maker of the machine.

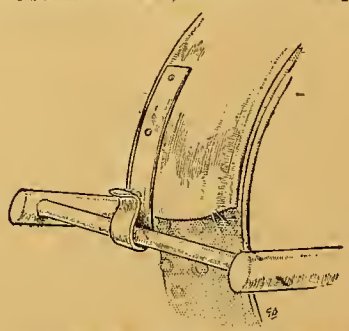
Sometimes the chain is just long enough to be correct when jointed, but just short enough to be difficult to pull into place. Mr. A. Young, of Loughborough, sends a tip (which is not original) that may help someone out of a difficulty. A piece of string is passed through the end links in the manner shown, and by pulling thereon, "the block and tackle" purchase will draw the end

"A little bit of string" as an aid to chain repairing.

links together quite easily. This paragraph really should be headed "Putting the half-Nelson on the chain."

A Stand Clip.

No doubt Mr. J. S. Bakewell, of Penrith, has been troubled by a stand-clip lacking in the essential quality of "grip," otherwise he would surely never need to deal with it so drastically. But then, perhaps all the roads he traverses are not like that lovely stretch leading to Carlisle. The sketch is self-explanatory. A strip of springy steel is bent into a hook and pinned or riveted to the tail of the mudguard; the stand crossbar falls into the crook, and it cannot drop down under any circumstances. So much for the *pro*.

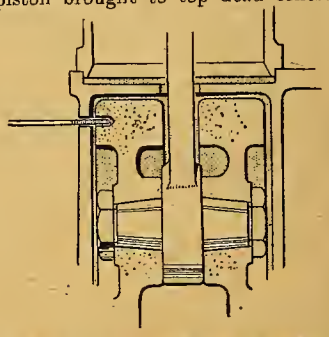


An old but effective method of gripping the stand.

On the *con* side it would seem rather a nuisance that each time the machine is to be jacked up the stand must be raised, and the mudguard pressed in until the crossbar clears—but then perhaps Mr. B. always leans the machine on its foot-rest or uses a prop-stand?

Locating the Crank for Timing Purposes.

When the amateur tuner becomes bored with searching for the piston top through the compression tap hole with a piece of wire Mr. C. S. Moores, of Exeter, recommends him to take the drastic step of drilling a small hole through the crank case wall vertically above the main shaft. Then when the cylinder is taken off and the piston brought to top dead centre, a

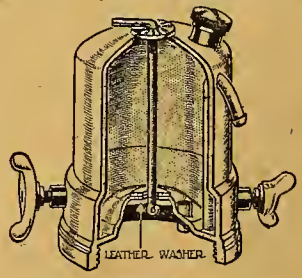


A device to facilitate timing the engine.

drill may be passed through and a corresponding hole made in the flywheel. During future tuning operations there need be no further difficulty in searching for t.d.c. Simply insert a spoke through the crank case hole and slowly rotate engine until hole in flywheel coincides. A small screw may be used to plug the hole.

Roadside Repair to a Generator.

Many readers no doubt have suffered generator trouble. Perhaps the most annoying mishap in this connection, however, is the breaking of the drip-feed adjusting screw. This was recently the experience of "C," who effected a roadside



Improvised generator drip control.

repair as follows. The valve seating of the water container was removed and a large leather washer cut. A piece of wire was passed through this with an eye formed on its end. The other end of the wire was passed through the top of the water container and bent over so that the water just leaked by the washer sufficiently to generate gas. To shut off the water entirely, the wire is pulled until the washer is drawn into the hole, and then bent over sharply.

Insurance Problems.

A Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Insuring the Licence.

Mr. Reggie Mackintosh, writing from Leeds, asks: "In basing 'present value' of a machine, is it any use adding '£3' or '£4' as value of the taxation licence in consequence? Would the insurance company pay this additional amount in the event of the machine and its licence being stolen?"

The insurance companies are not concerned with the licence, but only with the insurance of the machine, so that consequently, in stating the value of the machine at the time of proposal, the cost of the licence should not be added.

* * * *

Basis for Premium Rating.

Mr. H. G. Fairlie, London, S.W.3, and Mr. B. W. Jones, of Brockley, S.E.4, revert to a question which has been discussed several times in *The Motor Cycle* which concerns insurance companies' horse-power basis for premium-rating purposes.

Mr. Fairlie instances his own machine, which has a 350 c.c. two-stroke Precision engine, the makers' rating of which is 3½ h.p., and points out that there are other 350 c.c. engines which are rated according to their makers at 2¾ h.p.

Mr. Jones instances a 678 c.c. Martinsyde rated by the manufacturers at 6 h.p., and points out that a 650 c.c. Quadrant is rated by the makers at 4½ h.p.

Whilst Mr. Fairlie wishes to know whether an insurance company is justified in charging him the higher premium according to makers' h.p., Mr. Jones wishes to know whether an insurance company would permit him to insure under the scale of premium chargeable for machines below 5 h.p.

Insurance companies adopt the basis of makers' h.p. for purposes of rating, the advantages of this system being, from their point of view, its simplicity, besides being understandable by the vast majority of motor cyclists.

We certainly consider that the motor cyclist has a legitimate grievance in this particular connection. The present basis of rating produces certain anomalies, and the solution of the difficulty would appear to be with the makers, and it is only on the adoption by the makers of a standard h.p. basis that these can be removed.

* * * *

Accidental Damage.

Mr. J. Gill, writing from Peckham, says: "I had the misfortune to run into the back of a sidecar which belonged to my brother, owing to a sudden check in the traffic. My number plate cut the back of the sidecar. I reported it to my insurance people and my brother did likewise. My brother's company, of course, refuses to pay, and the company I am insured with has written to him and also refused; I have heard nothing further myself. In this case I shall have to pay for the repairs myself. Is it worth while insuring if you have to pay insurance and then pay claims?"

It certainly would appear, granted the particulars are as stated, that you are being unfairly treated. We would like fuller particulars, and on receipt of these will be pleased to advise more fully.

* * * *

Repaired or "Patched Up."

"Recently I became the owner of a brand new two-stroke," writes Mr. S. W. Onseley, Ealing, W., "but unfortunately on the second ride I was unlucky enough to have a bad collision with a car. I am fully insured, but I should like to know whether the machine should be returned to me as new, having only done about thirty miles, or whether it should be patched up and returned. This is, I think, a question of vital importance to anyone purchasing 'out of income.'"

You are entitled to receive your machine back properly repaired and in as good condition as it was prior to the accident. Indemnity under an insurance policy indemnifies you against loss; that indemnity is only complete when the machine is returned in as good a condition as it was prior to the accident.

SUMMARY.

In addition to the queries dealt with above, we have received a number of letters asking for advice, replies to which are given below:

W.J.K. (St. John's Wood, N.W.8).—You should draw the attention of your insurance company to the fact that the value of your machine is now less than when first proposed for insurance, and inquire if you are entitled to a reduction in premium.

H.R.G.W. (Cranford, Middlesex).—We know nothing against the organisation you name.

D.G.R. (Milan, Italy).—We do not know of any British company transacting motor cycle insurance in Italy.

F.B.T. (Greenhithe, Kent).—The Autocar Insurance Co. will issue you a policy subject to satisfactory proposal at the premium you name. It would also give you the other information you seek. The fact that you desire to change your insurance company does not affect the position at all.

WHICH SIDE FOR THE SIDECAR?

Readers Discuss the Subject of Right- and Left-hand Sidecars.

IN an article in *The Motor Cycle* of June 29th it was suggested that British sidecars are fitted on the wrong side, that the better way would be to attach them to the right-hand side of the machine. Mr. Batten's remarks have aroused considerable interest, and a selection of opinions from our readers is appended.

Experience with a British outfit on French roads, where the rule of the road is the reverse to that obtaining in this country, leads Mr. R. H. Cox to disagree with the case for a change. He writes:

"There are certainly advantages in fitting sidecars to the right-hand side, but I am inclined to think that Mr. Batten has never tried out his theory thoroughly in this country or very serious disadvantages would have become apparent to him.

"In the first place he would wish us to ride along the camber of the road with our sidecar ready to lift at the slightest provocation; we all know that an anxious moment can be experienced when forced to the right of a steeply-cambered road in passing another vehicle; Mr. Batten would wish us to have many anxious times.

"Furthermore, and equally important, it would be found with this arrangement that, when negotiating by-lanes and narrow roads the driving wheel of the outfit would be attempting to perform its duties in the worst possible part of the road, while the sidecar wheel which has little or no gripping to do, would be riding on good hard ground.

"My remarks are founded on the experience of a British outfit on French roads, where the right side rule obtains; and, in my opinion, the two disadvantages given above very much outweigh any slight advantage we might gain in cornering and adjustment of machine by adopting the 'sidecar on the right' principle. Besides, what about standing on your head to adjust the tappets!"

Overtaking other Vehicles.

Quite a different objection is put forward by a correspondent signing himself "Safety First":

"Mr. H. M. Batten, I think, fails to point out the one great fault of all left-hand drives, namely, the enormous danger present when a left-hand driven machine is overtaking and wishes to pass a heavy vehicle which is travelling slowly and completely obliterating the view of traffic coming in the opposite direction. To pass the other vehicle the driver of the left-hand machine must swing out nearly his whole width beyond the rear off side of the vehicle he is passing before he can even see if there is any vehicle coming in the opposite direction. On narrow roads the danger in doing this is very acute with modern fast motor traffic, and even on wide roads there is considerable danger. This, incidentally, does not seem to have been taken into account by the commission which was set up to inquire into the advisability of forbidding left-hand drives.

"I speak against the left-hand drives as one who has had experience of its dangers, having had many 'narrow squeaks' when travelling on open country roads on market days, with left-hand driven Fords turning out suddenly from behind heavy market carts. Of course, the driver is hardly to blame—he cannot see whether his road is clear or not, and when there is little traffic he sounds his horn and swings out, taking the risk, sometimes with disastrous result, because he stands very little chance of pulling in again quickly.

"It seems to me that this ever present danger with left-hand drives overrides the advantage of easy cornering to the left, and as most people naturally take the precaution of slowing down for all corners, left or right, unless they want a heavy tyre bill, it would make but little difference in that respect if the right-hand sidecar fitting were adopted. Nowadays the average sidecar is pitched much too low to come up in the air at moderate speeds on left-hand corners, and there are very few sharp bends now which are not provided with the familiar red warning triangle."

Weighed in the Balance.

Cornering difficulties are Mr. B. R. Reiss-Smith's chief objections to the proposal:

"In my opinion Mr. Batten's suggestion is entirely wrong, and my conclusion is based on the following facts:—

"(a) Left-hand bends, sidecar on right:

(i) Bad for seeing round corner—a 'slight disadvantage' according to your contributor.

(ii) Sidecar will not lift—a 'big advantage.'

"(b) Right-hand bends, sidecar on right:

(i) Good for seeing round corner. Naturally this must be classed a 'slight advantage' in sympathy with (a) (i) above.

(ii) Sidecar tends to lift. Similarly this must be a 'big disadvantage.'

"From the above points brought out by Mr. Batten it is surely mathematically correct to say that the battle is at least 'all square.'

"Mr. Batten admits that the chief reason why sidecars are fitted to the left is for the comparative safety of the passenger in case of collision. Surely, as we place ourselves responsible for our passengers, this is a big advantage.

"In addition, Mr. Batten apparently does not consider the fact that when turning to the left with a left-handed sidecar the camber of the road helps in preventing lifting, whereas in turning to the right with a right-handed sidecar the camber actually assists the lifting.

"This point alone should surely decide the issue. Indeed, I think that turning to the right with an empty right-handed sidecar (especially when the turn is from flat to uphill) would be positively dangerous above a crawl, without any emergency coming into the situation at all.

"True, with a left-handed sidecar the effect of lifting is likely to be more serious, as Mr. Batten points out, but why not adopt the plan where lifting is less likely to occur?

"As regards chain and magneto adjustments (and I don't see many people making adjustments on the roads nowadays), I think this is quite a minor point. Chains are not always on the left side, and neither are magnetos wholly adjusted from the left."

One Way of Settling the Problem.

"Eye-Sore" has original ideas on the matter, although we do not think that they provide a solution to the matter:

"If the right-hand side is also the right side, it will mean that all the makers of sidecar outfits must re-design their products, to a certain extent anyhow. Would it not be better if they went the whole hog and re-designed them as mechanical and efficient vehicles for transporting two, *i.e.*, as three-, or, preferably, four-wheeled cycle cars?

"There are, to my mind, many disadvantages to the left-handed sidecar, and just as many when it is on the right. Why not take it away altogether?"

Finally, two and a half years' experience with a "right-handed" outfit, of the make which his *nom-de-plume* implies, convinces "Harleyite" that our original contributor was right. "Harleyite" writes:

"I agree with all the author says, as I have driven a right-handed sidecar, attached to a Harley-Davidson, for the last 2½ years, and find that for cornering, etc., it has a great advantage over the left-handed pattern.

"Many times I have heard remarks passed, some intended to be sarcastic, but these were entirely due to ignorance, and possibly if the doubters were to drive one they would alter their opinions.

"It is always my intention to stand by the right-handed sidecar."

Letters to the Editor

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address

ARE ENCLOSED CHAINS DESIRED?

Sir,—Is it possible that a difference of opinion as to the desirability of a totally-enclosed chain-drive really exists? I cannot believe that it is so.

Two years ago I bought a much-advertised machine, one of the new-comers, and was assured at the Show that before deliveries commenced, full protection for the chain would be provided. This protection did not materialise, and after the first fifty miles, the near side of the back wheel was smothered with black oil, probably due to too much lubricant in the gear box. Realising also that the chain would have to be frequently removed for cleaning, and having no desire to spend a deal of time and trouble in this unprofitable recreation, I decided to have a chain-case made. I soon found, however, that no one was a bit keen on the job, as it was a spring frame machine, so had to do the work myself.

Now, after several thousand miles, the chain is as good as new. It has been regularly oiled, but never removed from the machine, and very seldom adjusted.

My question is prompted particularly by the fact that I shall probably want a new machine next year, but on looking over specifications of the various possibilities, I find a naked chain is the rule rather than the exception; the explanation generally put forward being that if the chain is enclosed it never receives any attention until, through want of adjustment, it jumps the sprockets and makes a general mess of things.

Personally, I am not prepared to accept this as the real explanation, and would suggest that the manufacturers are not prepared to supply what is really preferred by 99% of their clients and in my opinion an indispensable fitting, until it is insistently called for. EXCELSIOR.

Birmingham.

CHILDISH "BLINDING."

Sir,—I was on a 250-mile journey the other day, and was going as fast as I could to get it over. (To prevent shoals of letters, indignant, witty, and otherwise, I may say at once I do not claim a 40 m.p.h. average.) I came up to and passed a gentleman on a well-known "sports" model, which, I believe, is guaranteed to do "70."

A few seconds later I heard a roar and was enveloped in a cloud of dust, which, of course, was no more than I expected. What I did not expect was to catch up and pass the same gentleman about two miles further on. Still, less did I expect to hear another roar and be enveloped in another cloud of dust. About two miles further I caught him up again, with the same result, and this particular sort of tip and run business went on for the next fifty miles or so, when my tormentor turned off on another road. My own machine is a 293 c.c. touring model—so there was not even the possibility of my being goaded into a race, and the gentleman on the sports model must have known this. Besides which, I was "all out" as it was.

Now my grievance is this: if a man wishes to "blind," by all means let him, and good luck to him, but to demonstrate the superiority of a 70 m.p.h. over a 40 m.p.h. machine in the manner I have described seems to me to be most extraordinarily childish, and incidentally the most obnoxious kind of "bad form" met with on the road. N. W.

Wroxham.

EXPERIENCES WITH THE HARLEY FLAT TWIN.

Sir,—As a Harley-Davidson enthusiast and a constant reader of your very interesting paper, I think it is my duty to correct certain impressions which may have been formed by anyone reading the report of your road test of a Harley flat twin which appeared in your issue of February 16th. Though this letter is somewhat belated, I hope that you will give it a place in your columns.

I purchased my first Harley Sport in June, 1920, and it ran 3,600 miles without decarbonising, and this would not have been done had not the exhaust valve on the rear cylinder got stuck. After decarbonising the machine did not give trouble for another 2,000 miles, when clutch slip set in. This I found incurable by the usual method of tightening the clutch springs, so I changed a set of discs, since when there was no trouble. Up to October of last year the machine had done 9,000 miles. The original tyres were still on the 'bus, and looked good for another 2,000 miles. This machine averaged 73 m.p.g. for the whole of its mileage, while the oil consumption worked out at 1,200 m.p.g. The highest speed it attained was 52 m.p.h. with two up, when the machine was not in perfect tune. This, as you will note, is 7 m.p.h. faster than your representative got out of his Harley, and the fuel consumption is lower by 8 m.p.g. I can vouch for the accuracy of the speedometer, a Johns-Manville.

At the end of last October I sold the machine, and bought an electric model of the same type and make.

This machine has done 4,000 miles to date, with petrol and oil consumptions of 80 and 1,100 miles per gallon respectively. I have touched 50 m.p.h. on it and hope to do better in a day or two, as I have just decarbonised and ground the valves. I might mention that an engineer friend of mine has succeeded in obtaining 56 m.p.h. on his Harley, without any faking of the engine. LEO D'ALMADA, JR.

Kowloon, China.

WHERE IS IT?

Sir,—I think the hill which your correspondent "O.E. 2990" refers to is Crackley Bank, and, although I am not a good judge of gradients I should say 1 in 5 is a fair estimate for its steepest part.

I climbed the hill a little time ago with a Light Tourist New Imperial, but as the engine was new I changed to second for the last portion.

As the hill is fairly straight, and can be rushed, it should be a fairly easy top-gear climb for the average machine, but to climb it with a 494 c.c. sidecar on a gear of 8 to 1 and 22 stone up, is no mean performance. D.H.2946.

Stafford.

ILLUSORY PRICE REDUCTIONS.

Sir,—There is a firm of motor cycle manufacturers which recently reduced the price of its single speed model *only* by £5, so that one has *now* to pay £17 10s. extra for two-speed c. & k.s., whereas six months ago, when things were dearer, one could get the two-speed model for £12 10s. extra. The specifications then and now are identical. 26X3.

Kent.

TEMPERAMENTAL ENGINES.

Sir,—Just a suggestion to add to the confusion of ideas on super-Rudging: I have never owned a Rudge, but have had several Senspray carburetters, and incidentally found them excellent instruments. Each one, however, had the same fault, viz., the tickler return spring after some use took a set sidewise and by bearing on the needle made its action sluggish. This, of course, led to alternate flooding and starving and consequently to irregular running. I removed the spring and gave up "tickling," leaning the machine over instead when a little loose juice seemed to be indicated.

Will the gentleman who has tried every suggestion up to now see if the above has any effect on his trouble?

J. STUART WHITE.

YET AGAIN!

Sir,—Motorists here, in one of the outposts of the Empire, have read with much interest your article on overseas trade in motor cycles. Those of us who still have a regard for the condition of the old country, look with despair at the great preponderance of American machines on the road. To find the cause, we have to get beyond the actual machines, as the British have proved themselves to be equal to their Yankee rivals both in speed and reliability. The reason is the service of the agents. Well-equipped garages with plenty of spares, are at the service of the riders of the Harleys and Indians, while the man who sells the English 'bus is "very pleased to get one from home." It is heart-breaking to the enthusiast. Then, too, prices.

One well-known lightweight, retailing at home at £85, is being offered for sale here at £135; while another with a home price of £95 is being sold at £114. Why? Valves at home, 3s.; here, 12s. 6d.

We see the advertisements in *The Motor Cycle* and we like our money's worth. If the manufacturers cannot control their agents, there is not much hope for the revival of England's overseas trade. A. K. H.

Port Elizabeth, South Africa.

GOGGLES AND HEARING.

Sir,—Being one who likes to maintain a good pace and rides in all sorts of weather, I find the winds very trying for my eyes, yet never feel safe whilst wearing goggles.

The trouble is that they greatly upset my power of hearing, or rather some sense which we have which enables us to do the right thing at the right moment when in a tight corner.

For some time I thought this must be just a silly fad of mine, but on mentioning it to a pal I found he was troubled the same way.

I thought perhaps many of your readers have had the same experience, and it would be a great boon to know how to overcome this difficulty. SUTTON BANK.

Yorks.

BRITISH LIGHTWEIGHT'S WONDERFUL PERFORMANCE.

Sir,—I notice in your issue of July 6th the wonderful performance of a Triumph Junior, ridden by J. Booth, in the Durban-Johannesburg Trophy.

For its size and engine capacity it is nothing short of marvellous that such a small powered cycle should keep up an average of 24.3 m.p.h. on a very rough and trying course of 396½ miles. The hills and state of the roads must have been a gruelling test, and a great amount of credit is due to the rider.

Surely this must be a record for an engine with a cubic capacity of only 225 cubic centimetres? I now feel proud of being an owner of a machine of the same capacity and make. W.X. 1779.

Gerrard's Cross.

SILENT OPEN EXHAUSTS.

Sir,—Might I say a few words in favour of the straight-through exhaust pipe. The general impression seems to be that a machine with a straight-through exhaust must be noisy, which, I think, is quite without justification. I have in my mind a well-known "4 h.p." single which, with the standard exhaust system I have known of, ejects the most ear-splitting noises, but which, with a straight pipe of sensible diameter (1½in. or over), has become a most pleasant machine to hear. TENTERDEN.

Kent.

THE BATTLE OF TYPES.

Sir,—In your recent article on "The Beginner's Mount," there were two passages which seem to me to need some explanation.

"There is so little advantage in one type over the other" (four-cycle and two-cycle engines).

"All British machines are to all intents and purposes of equal merit in the matter of reliability."

This would seem to class the woolly, petrol-drinking, noisy, ineffective average two-stroke, the steady-plugging-pull-for-hours-without-getting-faster four-stroke type, such as P. & M. or B.S.A., the super-revving o.h.v. 350 c.c. four-stroke, and the silent sleeve-valve engine in one and the same category.

It appears to me that a novice is very liable to gain a very false impression of modern engines, for neither in reliability, speed, economy, or noise do the four types mentioned bear any apparent connection—save perhaps in degrees of noise!

JACK G. NEWBIGGING.

[Our correspondent, we fear, is a trifle prejudiced against two-strokes. Does he recall, to name but one instance, the performance of the Levis and Scott machines in this year's T.T. Races?—ED.]

IMPOSSIBLE AVERAGES.

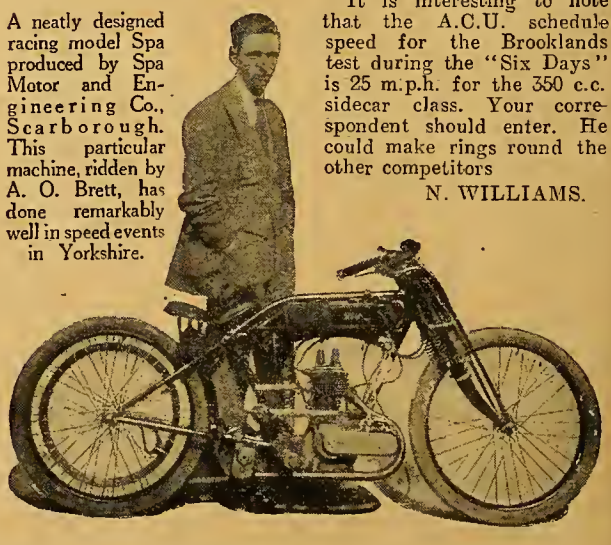
Sir,—I must apologise for intruding into an affair which really is not mine at all, but may I ask "H.S.," who writes in your "Readers' Replies" column, what make of speedometer he uses?

It is beyond possibility that a standard 350 c.c. Douglas can average 30-35 m.p.h. with loaded sidecar. This question of average speed has been raised again and again. The average "H.S." claims is an extremely good one even for fast solo mounts, and on my Scott Squirrel, admittedly one of the fastest machines obtainable, it is only under extremely favourable conditions that I can average 35 m.p.h. And that average necessitates taking full advantage of the Squirrel's powers of cornering and hill-climbing.

I should imagine 35 m.p.h. average impossible even with a solo 350 c.c. Douglas, and with sidecar somewhere about 25 m.p.h. the extreme limit.

It is interesting to note that the A.C.U. schedule speed for the Brooklands test during the "Six Days" is 25 m.p.h. for the 350 c.c. sidecar class. Your correspondent should enter. He could make rings round the other competitors

N. WILLIAMS.



A neatly designed racing model Spa produced by Spa Motor and Engineering Co., Scarborough. This particular machine, ridden by A. O. Brett, has done remarkably well in speed events in Yorkshire.

GENUINELY AMATEUR TRIALS.

Sir,—Surely your correspondent, Mr. O. C. H. Giddy, is mistaken in his statement that the Arbuthnot Trophy Trial (which, by the way, was instituted for *serving* officers of the R.N., and is therefore closed to ex-officers) is the only genuine amateur event of the year.

He has only to read *The Motor Cycle* regularly to discover many others. EX-N.C.O.

Kidderminster.

INFLUENCE MACHINES FOR I.C. ENGINES.

Sir,—Further to my original letter suggesting the use of influence machines for ignition purposes, and in face of two letters published on July 6th, I would like to point out that the spirit which prompted the idea was that, writing to a journal like *The Motor Cycle*, the subject would catch the eye of some *scientific* motorist who would possibly be a help in developing this branch of a neglected science to some useful purpose.

The static influence machine, to those who *understand* it, undoubtedly opens up a great field of research, and I think eventually it will be the means of such improvements as to create quite as much an advancement over the magneto as the wireless telephony has over ordinary telephones.

I was indeed pleased to see that interest was shown in a practical form by Mr. Lutman's letter, although every one will admit that the apparatus as described is of a crude nature, and has many mechanical weaknesses, but *which could all be overcome satisfactorily if the same time and money were spent upon it as the dynamo and magneto have had spent on them.* I would like Mr. Joughin kindly to take note of the above, and also to ask if he is familiar with the Tudsbury influence machine, which works in a *metal* container, under atmospheric pressure, which gives an excellent spark for X-ray work, and is capable of lighting a tube easily where an ordinary induction coil of the *same rated spark length would fail entirely.*

For this purpose (X-rays) anything less than an 8in. to 10in. spark length is merely a toy, and as a ¼in. spark is all that need be talked about for motors I still feel that a much lighter and smaller instrument can be developed from the static machine to take the place of the magneto. As for the idea which Mr. Joughin has that no type of machine can give a constant stream of sparks, I would say that he is partly right and partly wrong. Even the magneto must have an interval sufficient to charge its condenser; it is the same with an induction coil, with the added weakness of its current being alternating.

With the static machine, its current being *uni-directional*, the charging interval is considerably less; therefore, given the proper insulation of parts, a much more constant and greater output can be obtained with the static machine than with either the coil or magneto. It is its present undeveloped state which is its drawback, and it is the improvement of it which I am greatly concerned about and which I was anxious to see taken up by those who understand it such as Mr. Lutman, but unfortunately one's work is often nullified by such writers as "Losch-Bodge," who have no scientific knowledge or interest, and who are simply content to use the only means attainable at the moment for a given purpose.

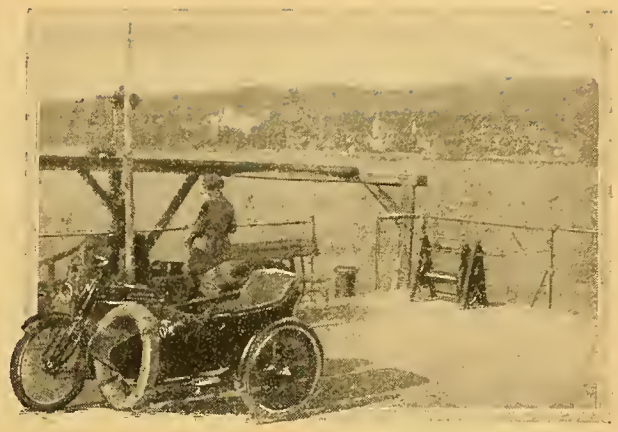
FREEMAN LEE.

RUNABOUT AND SIDECAR.

Sir,—I see "A.F.J.," in his article comparing the Morgan with the sidecar outfit, complains of the difficulty of accommodating an extra passenger in the former vehicle.

I should recommend him to try the Family Morgan, which would, I think, fulfil his desires. The design of the body is, in my opinion, an improvement on the *de luxe* model, and unless the driver is a very lanky fellow, he will find ample room in the front seat, and if the back seats are not required for passengers they form an excellent place for luggage when on tour.

I have been a motor cyclist since 1912 (a purchaser of *The Motor Cycle* for the same period), my last machine being a Triumph outfit, and with wife and three children I had a difficulty in packing them in the sidecar. Not being able to afford a four-seater car, my choice for a new machine rested between an 8 h.p. motor cycle and double-seater sidecar and a Family Morgan, and I decided on the latter. I am glad to say that I have not regretted the purchase.



IN A FAMOUS EUROPEAN TOURING DISTRICT. A P. & M. sidecar outfit, laden for touring, crossing the Danube near the Castle of Persenburg.

I use the machine professionally, and for this purpose the Morgan has many advantages, perhaps the greatest of these being that I do not have to garb myself in overalls, but can ride in comfort in my ordinary clothes. If it rains I simply put the hood up and am then in the dry—a great asset.

I agree with "A.F.J." that, owing to the absence of a reverse gear, it is rather difficult to turn the Morgan in a narrow road, but it is no heavier than a big outfit, and I have many times turned it round single-handed in a narrow lane without undue exertion.

I have no connection with the Morgan Co. NM 1519.

Biggleswade.

Sir,—I was very much interested in the article entitled "Runabout and Sidecar." Your sub-title aptly describes this subject as "ever green"; yet one deplores the fact that it should be so; a little more attention devoted to securing the comfort of sidecar users would, I submit, leave the majority of advantages in favour of the sidecar outfit when compared with the runabout.

For some time I have owned an 8 h.p. outfit bearing a very famous name. I am pleased to say that I have never had a moment's mechanical trouble; so accustomed have I become by this time to exemplary engine performance that the thought of an involuntary stop never enters my head. Leaving the question of weather protection out of consideration, I am yet dissatisfied with the outfit as a means of getting about the country.

My dissatisfaction comes entirely under the heading of comfort. As a motor cyclist I have always endeavoured to obtain two kinds of comfort—one physical and the other mental. In my own case I find that both must be ministered unto if I am to have an enjoyable trip. We all know well enough what is meant by physical comfort. By mental comfort I wish to convey the "I-needn't-worry-about-that" feeling which cheers a man who, on a long journey, reflects for instance that his rear wheel is of the easily detachable variety.

I do not agree in the very least with your contributor's definition of "*comfortitis—a dread disease that must run its course.*" (One could more readily understand the etymology of "discomfortitis"—a state of affairs where the inflammation is only *too* apparent.) He speaks as though the desire for comfort were a mere passing affliction, like measles. I submit that he really objects to the continual bumping and banging of main road travel as much as I do, yet, seeing there is little chance of getting manufacturers to study the comfort of those who ride their products, is content to make the best of things as they are. This policy, however, tends to delay the advent of the really comfortable sidecar outfit by quite a few years.

Folkestone. RAYON DE SOLEIL.

H.P. RATINGS.

Sir,—*Re* the proposed "1 h.p. per c.c." rating, I should like to point out that two engines of identical cubic capacity may develop different horse-power if one is designed for touring and the other for racing. It seems to be obvious that a "hot-stuff" engine should be credited with a considerably greater power output than its "slow but sure" brother.

C. E. N. BALMFORTH.

"THE SPORT AND THE MASSES."

Sir,—In reply to "R. O. Bins," I would remind him that the T.T. races are held in the I.O.M. and not near London.

The reason for the small crowd is obvious. I would also emphasise that in Lancashire, anyhow, 80 per cent. of a crowd go to see sport and not to gossip.

Greenock, N.B. "V.S. 1503."

BEAUTIFUL PEMBROKESHIRE.

Sir,—I was interested in your article "Where to Tour," but I fail to agree with one part, in which it referred to "nothing of interest below Aberystwyth."

What about beautiful Pembrokeshire?—Newport (Pem.), a pretty little seaside place, and Fishguard (of which you give a picture); then on to the very old and quaint city of St. David's, the birthplace of St. David, with its ancient cathedral and palace ruins, and several places of interest; to the pretty village of Solva with its delightful fishing streams and picturesque harbour; to Newgele, a glorious three-mile stretch of sands, sufficiently firm for motoring; thence to Haverfordwest, which brings one into "Little England beyond Wales," where no word of Welsh is spoken; to Milford, famous for its shipbuilding and heaps of other things, and across the Haven to Pembroke? Several other places, too, one would see on the way, and anyone doing the tour, I feel sure, would enjoy it very much.

CONSTANCE E. SMITH.

THEORETICALLY CORRECT RADIATING FINS.

Sir,—Having read the controversy in your journal on cylinder cooling, I venture to ask a question relating to the cross sectional shape of cooling fins. It seems to me that in most cases the fins are of nearly uniform thickness from root to tip, only having enough taper to allow of drawing the patterns. Now the conducting area of a uniform fin increases in direct ratio with the diameter, thus giving greater conductance at the tip, where most of the heat has presumably been dispersed, than at the root, where all the heat has to pass through the metal. Also a fin of uniform thickness being cooler at the tip than at the root would tend to distortion.

From this I should conclude that the best shape of fin would be of a taper section, and that there would be a correct number of fins for any given set of conditions. Would any of your correspondents care to say whether or not this is so, and if not, to correct?

R.W.R.

Salford.

"A RIVAL TO BEGGAR'S ROOST."

Sir,—Referring to your account of a new Devonshire hill, I first saw this hill thirteen years ago. I approached it from the top on a push bike unaware of its existence, and thought a landslide must have taken place; the road seemed to have disappeared, being invisible till one is right on the brink of the hill. In those days there was a quite respectable water-splash at the foot of the hill, over which the present bridge was built some ten years ago (rather unfortunately from a club contest point of view).

It is said that a newly married couple returning to Ilsington were taken by an inebriated driver at full gallop, in a carriage and pair, down this hill without mishap, and a local youth has the credit of having climbed it on a push bike. Personally I have not yet ventured to put a motor cycle at it either up or down.

JOHN D. W. PATCH.
Vicar of Ilsington.

[Our correspondent goes on to point out that the local name of the hill is "Sibbs," not "Sims," and the nearby village "Ilsington," not "Islington."—ED.]

PRICES OF ALUMINIUM PISTONS.

Sir,—In reply to the letter of "A.H. 42" (Tynemouth), may I state that I have fitted, with entire success, two aluminium pistons to an A.J.S. twin at a cost much under the figure he mentions.

I shall be very happy to assist him.

ARTHUR E. BACH.

STARTING DIFFICULTIES—WITH A WATCH!

Sir,—I have recently fitted a handle-bar watch obtained from a well-known firm. It is satisfactory in all ways but one. If ever allowed to stop, it can only be restarted by twirling it rapidly in the hand after removal from the machine—rather a lengthy proceeding as the case is one of the "thief-proof" variety. No amount of swinging of the handle-bars or driving over "pot-holes" will persuade it to start; even the Jarrow roads fail. Can any reader suggest a simpler remedy than fitting a C.A.V. electric starter?

D. L. W. AWBURN.

Newcastle-on-Tyne.

THE ZENITH BRADSHAW.

Sir,—I read of your road test of the Zenith-Bradshaw with particular interest, inasmuch as I have experienced the same nuisance with the oil-pump indicator as you describe. I think it only fair that the true explanation of this should be given to your readers, as it will not alone be of interest to prospective owners, but will be much appreciated by present riders of this fine machine, who have not yet experienced the trouble.

The inside of the indicator consists of a plunger, to the bottom of which is screwed a leather washer, similar to a tyre pump washer. After several hundred miles running, with no signs of leakage, the leather, having become sodden with oil, suddenly, and without warning, goes on strike, and the lucky man—I was one, touch wood—discovers that his oil is being pumped on the road without getting seized up. The replacement of the washer (cost about 2½d.) takes about five minutes, and I strongly advise all Zenith-Bradshaw users to carry a spare washer and keep their oil indicators under observation. Messrs. Zeniths are now fitting a visible indicator to their new machines, and owners would do well to get one fitted, if possible, or fix up a mirror.

CHAIN-DRIVE ZENITH-BRADSHAW.

VEHICULAR TAXATION.

Sir,—"3½ Triumph's" letter caught my eye chiefly on account of its rationality. How good of him to allow the kiddies to own such road-racking monsters as toy motors, tricycles, scooters and roller skates, and to think of charging them even less than he is charged for his little Triumph. Surely other readers must acknowledge his generosity!

Bury. DISGUSTED.

[This is one of half a dozen or so letters signed "Disgusted" by readers who have evidently taken our original correspondent's suggestion too seriously.—ED.]

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Ealing and District M.C.C.

The third Brooklands meeting is being held on Saturday, the 29th inst., when races will be arranged for motor cycles, three-wheelers and cars. Entry forms for any of these events and particulars of membership may be obtained from Mr. E. H. Gordon, 23, West Lodge Avenue, West Acton, W.3.

Wallington and District M.C. and L.C.C.

Motor cycles, sidecars, and light cars up to 1,500 c.c. may take part in a sporting trial which has been arranged to take place next Saturday, the 22nd inst., starting from the "White Lion" Hotel, Cobham, at 3 p.m. Communications should be addressed to Mr. Clifford Bowen, "The Chalet," Woodcote Avenue, Wallington.

Atherton M.C.C.

In spite of the heavy rain which fell during the return journey from Windermere, the reliability trial held on the 2nd inst. proved a great success. All the machines came through without trouble, and the first prize (a shield) was won by W. Morrison (490 Norton), who only lost 4 points. The second prize was won by W. Wood (550 Triumph) with a loss of 10 marks.

Taunton and District M.C. and L.C.C.

Nearly £20 was raised by members at the hospital fête on July 6th by means of "joy rides," and a programme of gymkhana events resulted in the following successes:—*Tilting the bucket:* D. Dawkins and J. Skinner (348 Douglas); *obstacle race:* S. D. Blake (499 Sunbeam) and S. Goodman (499 Sunbeam sc.); *musical chairs:* P. V. Hare (494 Douglas).

Yeovil and District M.C.C.

A non-stop trial over a circular course of twenty-five miles, which has to be covered three times, has been arranged to take place on Saturday, the 29th inst., for the President's cup and silver medal. The run will start near Yeovil, and the course has been selected purposely to obviate the necessity of expert riding and the risk of damaging competing machines. Further particulars may be obtained from Mr. E. A. Wright, at Sherborne, Dorset.

Ilkley M.C. and L.C.C.

Although the speed trials held on the 10th inst. were not favoured by good weather, some creditable speeds were registered. The winners of bronze medals for the fastest times in their respective classes were:—250 c.c. Class, L. Runton (249 Velocette), 42.65 m.p.h.; 350 c.c. Class, L. Runton (249 Velocette), 42.65 m.p.h; 500 c.c. Class, J. S. Duxbury (481 Scott), 68.18 m.p.h.; 750 c.c. Class, J. S. Duxbury (481 Scott), 68.18 m.p.h.; Unlimited c.c. Class, J. S. Duxbury (481 Scott); Sidecars, 750 c.c., W. B. Lee (678 Martinsyde sc.), 39.30 m.p.h.

Coatbridge, Airdrie and District M.C.C.

Bowhouse Brae, near Tankerton, selected for the open hill climb held on the 8th inst., is about one mile long and quite straight, with a gradual rise increasing towards the summit; competitors were timed over a measured half-mile of the stiffest part, with a flying start of 150 yards. The results were:—

275 c.c.—General: J. A. Porter (249 New Gerrard), 30⅘s. Experts barred: W. Kennedy (249 New Imperial), 36s.

350 c.c.—General: J. A. Porter (349 New Gerrard), 30⅘s. Experts barred: H. Drummond (349 Massey-Arran), 38⅕s.

500 c.c.—General: A. H. Alexander (494 Douglas), 27⅗s. Experts barred: A. B. Fairley (494 Douglas), 27⅘s.

760 c.c.—General: A. H. Alexander (494 Douglas), 27⅘s. Experts barred: N. Muir (490 Norton), 28⅘s.

Unlimited c.c.—General: D. S. Alexander (998 Indian), 24s. (fastest time of the day). Experts barred: A. B. Fairley (494 Douglas), 29⅖s.

All three sidecar classes, for 500, 750 and unlimited c.c., were won by A. H. Alexander (494 Douglas sc.), whose time in each class was 34⅘s.

Week-End Club Events.

July 22nd.—Bradford M.C. and L.C.C.—Cricket Match at Castle Howard.
July 22nd.—Kelso and District M.C.C.—Open Hill Climb on Lanton Hill.
July 22nd.—North Wales M.C.C.—Reliability Trial.
July 22nd.—Dewsbury M.C.C.—Run to Blackpool.
July 22nd.—Essex M.C.—Race Meeting at Brooklands.
July 22nd.—South Birmingham M.C.C.—Trial (open to the Midland Centre A.C.U.).
July 22nd.—North London M.C.C.—Hill Climb.
July 22nd.—Middlesborough and District M.C.—Hill Climb (Yearby).
July 22nd.—Wallington and District M.C. and L.C.C.—Sporting Trial.
July 22nd.—Atherton and District M.C.C.—Run to Hoylake.
July 22nd.—Exeter M.C. and J.C.C.—Inter-Club Trial to Weston-super-Mare.
July 22nd.—Weston-super-Mare M.C.C.—Reliability Trial.
July 22nd.—Wolverhampton M.C.C.—Hill Climb.
July 22nd.—Coventry Triangle M.C.—Petrol Consumption Test.
July 22nd.—Newcastle and Northern M.C.—Picnic run to Roman Wall.
July 22nd.—Sheffield M.C.C.—Picnic.
July 23rd.—Eastbourne and District M.C.C.—Breakfast Run.
July 23rd.—York and District M.C.—Run.
July 23rd.—Leeds M.U.—Reliability Trial.
July 23rd.—East London M.C.C.—Picnic at Kweleyha Mouth.
July 23rd.—Coventry Triangle M.C.—Run to Meriden Shaft Wood.
July 23rd.—Exeter M.C. and J.C.C.—Run to Holne Chase and Newbridge.
July 23rd.—Middlesborough and District M.C.—Run.
July 23rd.—Sheffield M.C.—Douglas Vicker's Cup Trial.
July 23rd.—Westmorland M.C.C. Sporting Trial.
July 23rd.—Barrow and District M.C.—Hill Climb.
July 23rd.—Rotherham and District M.C.—Run to Gringley-on-the-Hill.
July 24th.—Essex County and Southend A.C.—Crippled Children's Outing.
July 25th.—York and District M.C.—Run.
July 26th.—Leeds M.U.—Impromptu Run from City Square.
July 26th.—Reigate, Redhill and District M.C.C.—President's Cup Trial.
July 27th.—Mid Bucks M.C.C.—Speed Trials.

Bedfordshire A.C.

In spite of unfavourable weather conditions a united meeting took place on the 9th inst. of the North London M.C.C., Herts M.C.C., and St. Albans M.C., as the guests of this club at Bedford. The visiting clubs, after a short tour of the town, were entertained to tea and returned home at 7.30 p.m.

Aberdeen and District M.C.

A large and representative gathering mustered at Queen's Cross on Saturday, the 8th inst., for the speed trials which took place on that date, the weather remaining favourable until 5 o'clock, when rain began to fall heavily. The trials took place over a measured half-mile, and two classes were run—one open to all members handicapped on the strength of previous wins, and one for 350 c.c. machines, similarly handicapped. Results:—

CLASS I.—1, W. Cheyne (492 Sunbeam), 28.2s.; 2, R. Dempster (499 Triumph), 29.5s.; 3, G. K. Ferres (349 Massey-Arran), 29.6s.

CLASS II.—1, G. K. Ferres (349 Massey-Arran); 2, T. Smith (249 New Imperial).

Sale and District M.C.C.

Delays on the road necessitated an earlier termination than had been at first intended in the midnight run carried out on the 8th and 9th inst. At the start the weather conditions were unfavourable, but an improvement took place after about four hours.

Coventry and Warwickshire M.C.

The 24-hour reliability trial to Torquay and back, for the Golden Goblet, is planned to take place on Friday, the 28th inst. The run will commence at 10 p.m., and is open to motor cycles, sidecars, cycle cars and cars. Entries and other communications should be addressed to Mr. C. W. Faulconbridge, at King's Head Chambers, Hertford Street, Coventry.

Bradford M.C. and L.C.C.

R. T. Cawthorne, riding a 490 c.c. Norton, put up the fastest time of the day in the handicap speed trials on the 9th inst. at a speed of 78.63 m.p.h. Second in the solo class was W. Blackburne (499 Triumph), followed by E. P. Dodd (499 Sunbeam). The sidecar class resulted in a win for J. Calvert (532 Scott sc.), runners-up being R. T. Cawthorne and R. Clay, both riding 490 c.c. Nortons and sidecars.

Oxford M.C.

No freak hills are to be included in the members' non-stop and consistent driving trial, which has been arranged to take place on Saturday, the 29th inst., commencing at 3 p.m. The course includes a thirty-mile circuit to be covered twice, beginning and finishing at the "Lambert Arms" Hotel. Entries must be received by the 26th inst. (Wednesday), and forms may be obtained from Mr. Wilfred Mathews, of 6, St. Aldates, Oxford.

Barrow and District M.C.

Results of the speed trials held recently at Hest Bank Sands are announced as follows:—

EVENT 2: (1), P. Barron (348 Hawker). EVENT 3: (1) J. N. Yates (499 Sunbeam). EVENT 4: (1) H. Jackson (499 Sunbeam). EVENT 7: (1) H. Jackson (499 Sunbeam). EVENT 10: (1) H. Baxter (490 Norton). EVENT 11: (1) H. Baxter (490 Norton).

FIVE MILE RACE.—(1) B. Houlding (349 Matador sc.).

Macclesfield and District M.C.

Heavy rain storms rendered the seventy-mile "Colonial" reliability trial on the 9th inst. even more difficult than was originally intended, but, in spite of this, some very creditable performances were made. Included in the course were the famous hills at Little Slack and Jenkin Chapel, a watersplash at Meerbrook, and about eight miles of unused grassgrown coach tracks, with only about five miles of main road travelling. The winner was B. H. Davenport on a G.N. light car, followed by S. Gleave (490 Norton) second, and J. H. Broadhead (550 Triumph) third. Bronze medals were awarded to R. Carter (499 Sunbeam), G. Holmes (499 Sunbeam), and C. R. Mills (10 Swift light car). W. Taylor, mounted on a 998 c.c. Indian, had very bad luck, as he was forced to retire with magneto trouble within a few miles of home after a good performance.

Redditch and District M.C.C. and Kidderminster M.C.C.

The fastest time of the day in the inter-club speed trials held on the 10th inst. was made by R. Eveson (490 Norton), who covered the 500 yards course in seventeen seconds with a flying start of twenty-five yards. Other results were as follows:

250 c.c.—1, N. Hall (249 O.K. Junior), 22⅘s.; 2, F. Robbins (249 Triple H), 23⅕s.

350 c.c. CLASS.—1, N. Hall (292 O.K.), 18⅖s.; 2, T. Featherstone (349 A.J.S.), 19⅕s.

TWO-STROKES UP TO 350 c.c.—1, F. Robbins (249 Triple H), 23⅕s.; 2, A. Salway (292 O.K.), 24s.

600 c.c.—1, R. Eveson (490 Norton), 17⅕s.; 2, N. Hall (292 O.K.), 18⅖s.

UNLIMITED.—1, R. Eveson (490 Norton), 17s.; 2, N. Hall (292 O.K.), 19s.

UNLIMITED SIDECARS.—1, R. Eveson (490 Norton sc.), 20⅗s.; 2, H. Perrey (770 B.S.A. sc.), 21⅖s.

CURRENT CHAT

Times to Light Lamps.

July 20th	.. ..	10.5 p.m.
„ 22nd	.. ..	10.2 „
„ 24th	.. ..	9.59 „
„ 26th	.. ..	9.56 „

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Motor Cycles at Goodwood Races.

Special arrangements have been made by the A.C.U. for the parking of motor cycles at the Goodwood race meeting.

Disabled Drivers' Motor Trial.

To-day, Thursday, an evening trial over a course of about thirty miles, starting and finishing at Thames Ditton, will be contested by ex-service drivers all of whom sustained some disablement during their war service.

"Road Mending in Progress."

A correspondent writes to say that the road through Denbigh to Rhyl at Llandegla Village is at present under repair for about a mile. He adds that the repairing process is very slow, and is being carried out with the assistance of large, loose stones, which are entirely innocent of the attentions of any steam roller.

Motor Cycles in France.

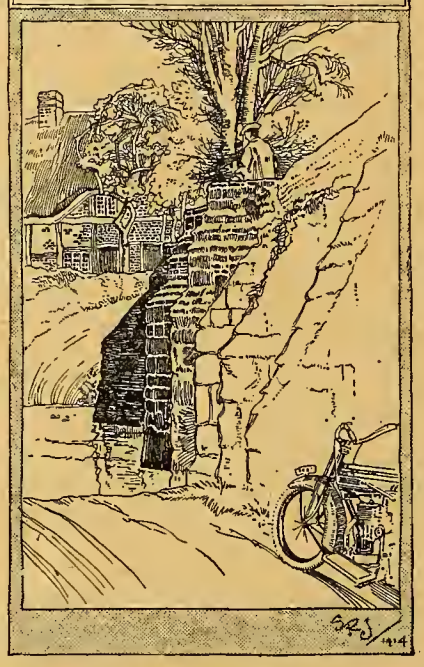
In 1921 the total number of motor cycles registered in France was 42,864, while in 1920 there were 50,783 registered. It is thought that the reason for this falling-off in the number of motor cycles is due, not to any lack of popularity of this form of locomotion, but to the fact that in France the cycle car is becoming a serious competitor to the motor cycle and sidecar.

A New Term.

The Motor Cycle originated the term "flat twin" as an easily remembered title for the horizontally-opposed twin cylinder engine—and it caught the popular fancy. Now we are constrained to suggest, more or less seriously, the term "split-single" for engines having two cylinders with a common combustion space, like the Garelli, which secured the first three places in the 350 c.c. Grand Prix.

The Next Open Trial.

If it is even approximately as successful as last year's event, the open reliability trial of the North Wales M.C.C., to be held over a sporting but fair course on August 12th, should be well worth entering. Entry fees are reasonable—£1 for non-members—and the prizes are valuable and numerous. Particulars may now be obtained from the secretary of the event, Mr. L. Stanley Jones, 1, Ruthin Road, Denbigh, N. Wales.



Mid-week London Trials Sought.

Several London motor cyclists complain that there is no Metropolitan or district club that organises competitions at any other time than during the week-end. For the benefit of those whose business permits mid-week leisure only, can any club secretary refute this suggestion?

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Special Features.

THE GRAND PRIX. RIGHT-HAND SIDECARS IN GREAT BRITAIN.

Misuse of the Highway.

Scotland Yard has issued an edict pointing out that the use of the highway for sports and purposes other than bona-fide travelling has no legal sanction. Obstruction or disorder arising from events of this nature is particularly to be avoided.

5 m.p.h. an Excessive Speed!

Speed limits of 6 m.p.h. on the straight and 4 m.p.h. when turning corners are being considered by the powers that be in the island of Alderney. Single-geared solo machines may soon, we imagine, be at a discount in that part of the world.

Welsh Open Speed Trials.

The famous course on Pendine Sands has been chosen for holding open speed trials on Monday, August 7th. Entries closely definitely on Saturday, the 29th inst., and forms, together with further particulars, may be obtained from the West Wales Centre Secretary, Nelson Hotel, Carmarthen.

Scottish Speed Championships.

Races of 10 miles for the 250 c.c. class and 20 miles for the others will be included in the Scottish speed championship event on the West Sands, St. Andrews, on Saturday, the 29th inst. The meeting, which is being held under the auspices of the Scottish Auto Cycle Union, will start at 10.30 a.m.

Unusual Police Activity.

By every post we receive from readers cuttings from local newspapers describing police court proceedings against motor cyclists. Usually the fines do not exceed 30s. or so, but at Horsham recently the amounts varied from £5 to £10. The reader who forwarded the information in this case characterises the treatment accorded to some as abominable. After perusing columns of report, we agree. Horsham should be avoided.

The Phantom 500-Mile Race.

According to a London evening paper of Wednesday of last week there was to have been fought out at Brooklands last Saturday "what is (not even excepting the Tourist Trophy) the most arduous test of machine and man in the motor cyclist's calendar—the annual 500 mile race." Half a column was devoted to comments on the riders who were to take part—several were mentioned by name—and the article concluded by advising readers to make their way to the Weybridge track about midday on Saturday, when they would be in plenty of time to see the closing stages. As a matter of fact they would have exactly ten weeks to wait!

Next Saturday at Brooklands.

Three motor cycle races are included in the programme of next Saturday's Brooklands meeting of the Essex M.C.

Sudden Fame for Bristol Rider.

Coincident with his several successes at Brooklands on Saturday, S. G. Watters, a Bristol Norton rider, has just been awarded one of the only two solo gold medals in his local club's recent contest with the Bath M.C.C.

Alms Hill in a Trial.

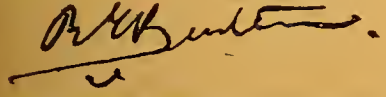
Alms Hill, near Henley, reputed to be steeper than 1 in 3, was on Saturday included for the first time in an important reliability trial. Although by no means in its worst condition, it was the means of failing 90 per cent. of the entry.

Lady Aspirant to Long Distance Records.

It was the intention of Mrs. Janson, the well-known lady motor cyclist, to attempt the "double-twelve"—an authorised substitute for the twenty-four hours—record early this week on a 350 c.c. Trump-Jap. Her attempt was to have been coincident with S. F. Edge's run for the same record on an A.C. car.

Sensible Classification.

In the programme of last Saturday's South Midland Trial (described on page 108), machines were designated by their cubic capacities instead of horse-power ratings, *i.e.*, "490 Norton," "550 Triumph," "247 Levis," etc., thus following the lead set by *The Motor Cycle* some weeks ago.



Whose signature is this? If the writer cannot be traced before the 1st of August the Edinburgh M.C. will hand over to charity the first prize of its guessing competition on the Scottish Trials.

Echo of the Arbuthnot Trial.

To the list of medal winners in the Arbuthnot Trophy must be added the name of Sub-Lieutenant J. B. Heath, R.N. (976 Brough Superior). The reason his name was omitted from the official list was that he was originally No. 21, but he lost this number and attached 31 to his machine, hence there was some confusion in recognising him.

International Six Days Trials.

Entries for the International Six Days Trials closed at ordinary fees on Saturday last, and will close at double fees on the 22nd inst. At the time of writing, forty-two entrants have sent in their names, and so far as riders are concerned five countries are represented: England, Switzerland, France, Holland, and Sweden. Three teams have entered—Switzerland, holders of the Trophy; England, to be represented by A. Bennett (Sunbeam), F. W. Giles (A.J.S.), and G. S. Davison (Levis); and Sweden, represented by B. Malmberg (500 Husquvarna), G. Göthe (500 Husquvarna), and E. Westernberg (1,000 Husquvarna sc.). The trials start on August 3rd.

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Curious Calculation.

Extract from a recent Brooklands programme:

Weatherell ...	71×88 mm.=350 c.c.
Sheffield-Henderson	71×88 mm.=348 c.c.
Ruscoe-Blackburne.	71×88 mm.=347 c.c.

Under Happier Circumstances.

A correspondent reminds us that the Belgian-German frontier during the war ran at a distance of about one kilometre from Francorchamps, near the Belgian Grand Prix course, and troops on their way to occupy the Rhine towns after the cessation of hostilities presumably marched along what is now the course for the races.

Where are the Best Riders?

In view of the fact that very few of the competitors in last Saturday's trial in the Chilterns got through with anything approximating clean sheets, it would be interesting if a contest were held over the same course open to teams of North Country, Yorkshire, Midland, Welsh, and South-Western riders. Would they beat the local men?

Imports and Exports.

Less than half the number of motor cycles were imported into this country last month compared with May, the number for June being 86.

The uncertainty of trade conditions is shown by the extraordinary ebb and flow of the export returns month by month. Instead of a steady upward curve, as we should like to see, the tell-tale graph depicts erratic ups and downs, like a barometrical chart of changeable weather. Last month the value of exports was down by nearly £30,000 compared with May.

MOTOR CYCLE IMPORTS. JUNE.

	1920.	1921.	1922.
Value of machines ..	£16,784	£6,111	£4,208
Value of accessories ..	£12,634	£9,178	£4,100
No. of machines.. ..	253	71	86
Total	£29,418	£15,289	£8,308

MOTOR CYCLE EXPORTS. JUNE.

	1920.	1921.	1922.
Value of machines	£105,733	£54,792	£35,018
Value of accessories	£48,853	£19,374	£16,096
No. of machines. ..	1,408	722	496
Total	£154,586	£74,166	£51,114

Road Warnings.

It is important that motorists strictly observe the speed limit of 10 miles per hour through Redhill, Reigate, and Crawley, states the A.A. Special caution in regard to the speed limit is also necessary when passing through Farningham (Kent).

Brighter Brooklands Programmes.

For the more or less humble sum of one shilling the programme of a Brooklands meeting has not hitherto provided much really readable matter. In the most recent issue, however, a new feature was started—"Brooklands Celebrities," illustrated. The first subject was Lieut.-Col. R. N. Stewart, an outline of whose wonderful war record will come as a surprise even to those who know him intimately.

"Excellent Reason for Selling."

The motoring advertisement columns of the lay Press frequently contain delightful fragments of unconscious humour, but a specimen gleaned from a recent provincial weekly newspaper shows what a car really can do if put to it. The owner is anxious to dispose of a "five-seater, lovely condition, any trial, cheap to clear," and amongst other qualifications its petrol consumption is stated as 30 gallons to the minute. It is hardly surprising that the vehicle is for sale!

First Swiss Grand Prix.

Motor cycles, solo and sidecar, from 250 c.c. to 1,000 c.c., competed in the Swiss Grand Prix this year. In the heavier machines Boisetti was the winner on a 998 c.c. Harley-Davidson, Sperdel finishing second on a Motosacoche. In the 500 c.c. class many incidents occurred first place eventually being won by Lavanchy on a Douglas, with Meylan (532 Scott) second, and another Scott third. Heusser (Condor) won the 350 c.c. class, being the sole survivor out of six entrants; and the winner of the 250 c.c. class was Trezza on a Moser, second place being gained by Jean, riding a Condor.

How to get to the Belgian Grand Prix.

Motor cyclists intending witnessing the Belgian Grand Prix, which is to be held at Spa on Sunday next, will find that the most convenient way of taking a motor cycle over to Belgium is to travel by the G.E.R. service, leaving Liverpool Street at 8.40 p.m. The steamer arrives at Antwerp at 7.30 a.m., allowing the motor cyclist plenty of time to get his machine through the Customs and make an early start to Spa. Travellers from the Midlands and other parts of England have a train service running in direct communication with the Harwich-Antwerp steamers. For instance, connecting trains leave Liverpool Central at 2.30, Manchester 3.25, Sheffield 4.42, and through carriages are run from all these places. There are also connections with Stafford, Burton-on-Trent, Derby, Leicester, Melton Mowbray, and Nottingham.

Last year the road from Antwerp to Spa was mostly in very good condition, the route being through Diest, Aerschott, and Liége, about 150 miles. Visitors can only leave Belgium on the Sunday night by the G.E.R. boat sailing from Zeebrugge at 11.15 p.m.

TWO CYLINDERS—ONE CONNECTING ROD.

Details of the Garelli Motor Cycle which secured First, Second, and Third Places in the Grand Prix 350 c.c. Class.

IN view of the triumph of the Garelli machine in the 350 c.c. Grand Prix some details of this Italian two-stroke cannot fail to interest our readers.

The engine follows similar lines to those of the old Lucas two-stroke, which, as some readers of *The Motor Cycle* will recall, was fitted to the Valveless car. In appearance the power unit is extremely neat and in many respects sets an example which British manufacturers could follow with advantage. We refer chiefly to the manner in which the magneto is housed and to the unit construction of gear box and crank case.

Common Combustion Head.

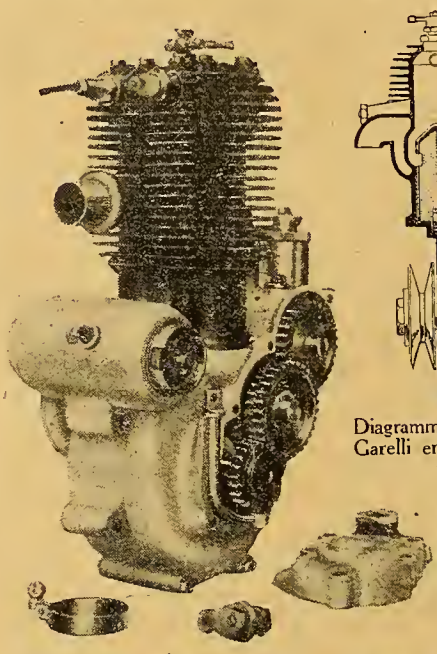
The two cylinders (50 × 89 mm.) are arranged transversely across the frame, with an air passage between them; they have a common combustion head. The two pistons are connected by one gudgeon pin and transmit the power by a single connecting rod.

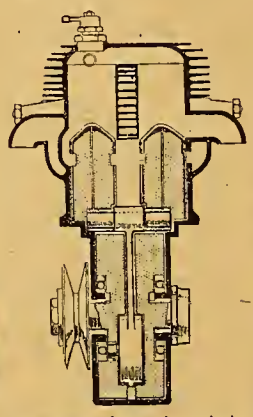
Primarily induction is *via* the crank case in the usual way, and it is controlled by the right-hand piston. The gas transfers at the bottom of the left-hand cylinder through a ring of ports in the wall, and the burnt gases make their exit through ports uncovered by the right-hand piston. Only one sparking plug is used, and the impulse effect is identical with that of a single-cylinder two-stroke engine of the conventional type.

Technical Details.

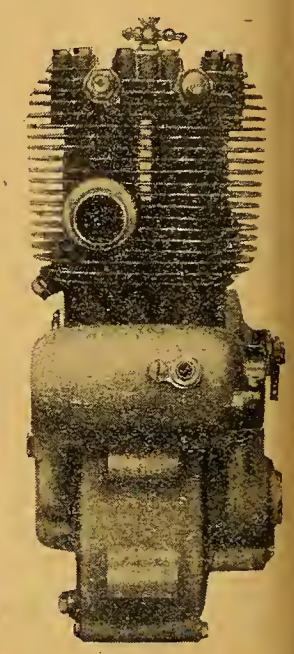
A ball bearing of large diameter is employed in the connecting rod, this being somewhat unusual. The crankshaft itself is also mounted unconventionally, for the shafts float in compression-tight glands, the crank discs being carried on ball races mounted on fixed flanges formed on the base chamber walls.

In the case of the racing machines used in the Grand Prix the particular type of Zenith carburetter employed had two vaporising chambers, one for each cylinder and a common float chamber.





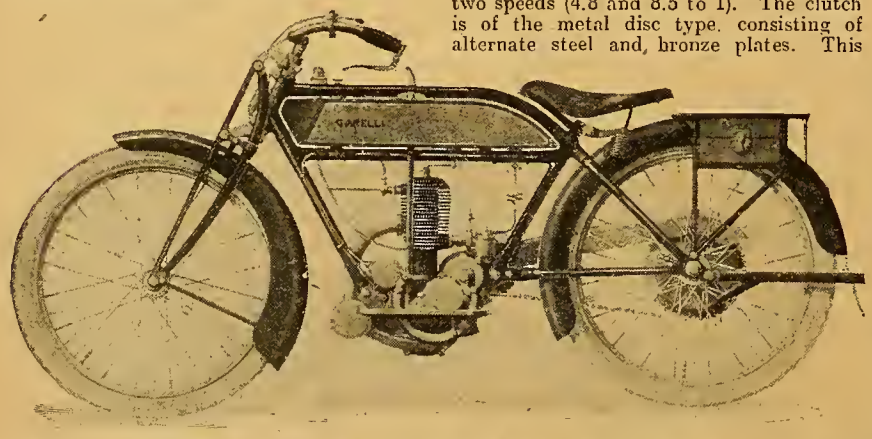
Diagrammatic section of the Garelli engine, showing the two pistons mounted on a common gudgeon pin and the single connecting rod. Observe the common combustion chamber.



Side and front views of the Garelli engine, showing the enclosed Mea-Garelli magneto and the change speed gear.

Another interesting feature of the machine is the arrangement of the Mea-Garelli magneto, which is cylindrical in shape and is carried in a housing, forming an extension of the crank case. The use of this type of magneto on a two-stroke engine is to be commended, since the ignition range is controllable by rotating the magnets in relation to the armature, and not merely by turning the contact breaker cams; by this method the full efficiency of the magneto is obtained at any degree of retardation. A similar extension on the other side of the crank case encloses the clutch and gears, giving two speeds (4.8 and 8.5 to 1). The clutch is of the metal disc type, consisting of alternate steel and bronze plates. This arrangement allows the use of but a single chain, which runs at low speed.

The Garelli is manufactured by La Societá Anonima Moto Garelli, 287, Casella Postale, Milan, Italy.



The complete Garelli touring model motor cycle, which closely resembles the sports model on which the 350 c.c. class in the Grand Prix was won, the chief alterations being in the handlebars and the special double vaporising chamber carburetter fitted.

WELL-KNOWN MOTOR CYCLIST IN FATAL AIR CRASH.

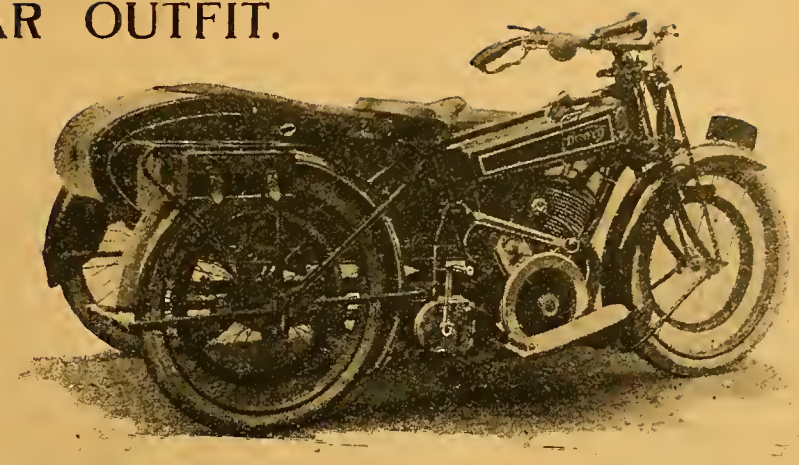
WE regret to record the accidental death of Mr. P. J. Evans, of Birmingham, when returning from the Grand Prix by the aeroplane which crashed last Sunday. Mr. Evans accompanied *The Motor Cycle* staff to Strasbourg to witness the motor cycle Grand Prix, and stayed over to see the car races of last Saturday and Sunday. The winner of the first Junior Tourist Trophy in 1911, "P.J.," as he was known to his friends, keenly followed motor cycle racing, and made a practice of presenting handsome souvenirs to those who made fastest laps in such events as the T.T. and Grand Prix. When the present writer took leave of him at the conclusion of the motor cycle event at Strasbourg he was shown a silver cigarette case intended for the rider who made the fastest lap—Herbert Hassall being the fortunate one.

The late Mr. Evans was well known as a successful motor cycle agent in Birmingham, which city — and the pastime generally—loses one of the staunchest supporters of the motor cycle movement. He leaves a widow and family, to whom our deepest sympathy is extended.

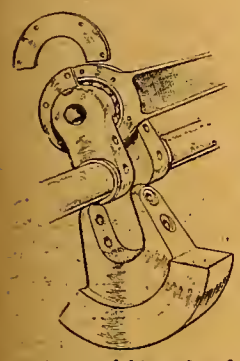
A £100 SIDECAR OUTFIT.

Revised Dunelt Model.

AFTER seven months' hard work on last year's standard model Dunelt, we were thoroughly satisfied with the performance of the big two-stroke for all-round sidecar work, and consequently it was of peculiar interest to us to take over the new £100 model for a road test during the past week. The only noticeable change from the earlier model is that interchangeable wheels are no longer fitted, though all wheels are quickly detachable, and our road experience showed that the latest £100 model is an improvement rather than otherwise on the type which we possessed.



Externally the utility Dunelt sidecar outfit differs little from last year's model; simplicity is a great feature of this machine.



A new type of big end is fitted to the £100 Dunelt. The connecting rod is threaded over the crankshaft; the rollers are inserted through a groove and retained by riveted plates, the balance weights being bolted to the crankshaft after assembly.

NEW ENGINE DETAILS.

Relieved sides are a feature of the latest type of Dunelt piston; this construction leaves slipper surfaces on the thrust sides.

In the power unit, the only material alteration is that the split roller big end has been discarded in favour of a single row race threaded over the solid crankshaft, the balance weights being attached after the big end unit has been assembled. In addition to this the piston has been modified to some extent, the sides being relieved for practically the full length of the working piston, leaving a kind of slipper upon the working surfaces only. The extreme simplicity of this big two-stroke outfit is exactly what is required by the comparative novice, and there is little that can possibly go wrong. The 85×88 mm. two-stroke engine with its double diameter piston shows no signs of overheating under normal use, and the machine is extremely comfortable to ride. Long wheelbase and special design of fork minimise road shocks to a great degree; comfort also is a feature of the sidecar, which has a long and roomy body with a large locker at the rear capable of containing a two-gallon can of petrol in addition to quite a reasonable amount of luggage.

UNCERTAINTY REGARDING THE ANGLO-DUTCH TRIAL.

AT the moment of going to press we are advised by the A.C.U. that the Competitions Committee has abandoned the Anglo-Dutch Trial, which was scheduled to take place on the 29th of this month. We understand that no British team has been selected owing to difficulties experienced by the A.C.U. in obtaining regulations and details. Coincident with this intimation from the governing body we have received the following very definite programme from Holland, as well as a complete team nomination.

"On Friday, the 28th of the month, at 6.15 in the morning, the English team will arrive at the Hook of Holland, there to be met by members of the organising committee and by representatives of the Rotterdam M.C.

"An hour and a half after arrival in Holland the team will start away from the Hook, *via* Monster and Loosduinen, to arrive at The Hague at 8.30 for breakfast. At 10 o'clock the party will leave for Utrecht, passing through Leyden and Woerden. After lunch at Utrecht a start is to be made at 3 p.m., *via* Amersfoort, Voorthuizen, and Millingen for Deventer, where the night will be passed. Having had dinner, the competing machines will be examined and number-plates will be issued.

"The trial will be a two-day run, starting from Deventer on Saturday, July 29th. The distance to be covered is 285 kilometres (173 miles), through Gelderland, Overysel, Friesland, and Drenthe, finishing at Hengelo. On the second day 240 kms. (146 miles) will be covered, the route leading through Overysel, Gelderland, Utrecht, to The Hague.

"After the trial the official dinner will be held at either Scheveningen or The Hague.

"On the day following the trial (Monday, July 31st) an outing has been planned to the seaside resort of Noordwyk-aan-Zee, where lunch will be taken. After a farewell dinner at 5.30, the British team will be escorted to the Hook for re-embarkation.

From this it will be seen that arrangements in Holland were in a fully advanced stage.

It is to be hoped that the Competitions Committee of the A.C.U. will reconsider its decision, as this annual trial has always been most popular with motor cyclists on both sides of the North Sea.

COLWYN BAY SPEED TRIALS.

FULL results of the Colwyn Bay speed trials, a brief account of which appeared in last week's issue of *The Motor Cycle*, are now to hand.

275 c.c.—1, G. E. Tottey (249 New Imperial), 43½s., silver medal; 2, A. W. Muirhead (249 D.O.T.), 46½s., bronze medal. Special novice award: A. Clotton (249 New Imperial). Special general award: G. E. Tottey (249 New Imperial).

278 TO 350 c.c.—1, G. S. Boston (349 A.J.S.), 36½s., gold medal; 2, J. Cooke (348 Edmund), 37⅗s., silver medal; 3, C. H. Foster (348 New Scale), 40⅖s., bronze medal. Special general award: J. Cooke (348 Edmund). Special novice award: A. W. Holmes (349 Rex-Acme).

351 TO 500 c.c.—1, G. F. Burns (492 Sunbeam), 36⅖s., gold medal; 2, V. E. Horsman (490 Norton), silver medal, and H. N. Gaskell (499 Triumph), 37½s., bronze medal. Special general award: H. N. Gaskell (499 Triumph). Special novice award: O. Jessop (492 Sunbeam).

501 TO 750 c.c.—1, V. Horsman (588 Norton), 35⅖s., gold medal; 2, C. P. Wood (532 Scott), 37⅗s., silver medal. Special general award: E. L. Boston (532.5 Scott).

UNLIMITED c.c.—1, R. T. Cawthorne (490 Norton), 35s., gold medal; 2, H. Langman (532 Scott), 36½s., silver medal; 3, V. Horsman (588 Norton), 36⅖s., bronze medal. Special general award: S. Ollerhead (494 Douglas). Special novice award: O. Jessop (492 Sunbeam).

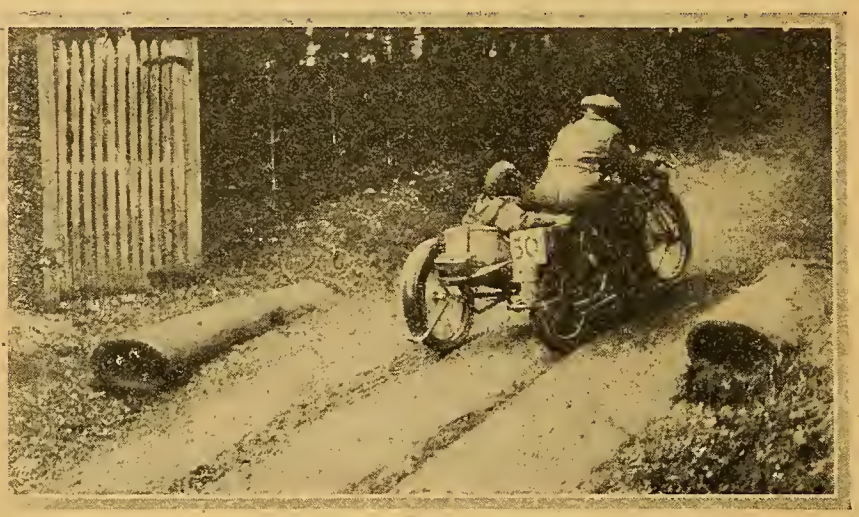
350 c.c. SIDECARS.—1, G. S. Boston (349 A.J.S. sc.), 39⅘s., silver medal; 2, B. Houlding (349 Matador-Bradshaw), 47s., bronze medal.

351 TO 600 c.c. SIDECARS.—1, R. T. Cawthorne (490 Norton sc.), 39½s., gold medal; 2, V. Horsman (588 Norton sc.), 42s., silver medal; 3, S. Ollerhead (494 Douglas sc.), 43s., bronze medal. Special general award: S. Ollerhead (494 Douglas sc.).

UNLIMITED SIDECARS.—1, G. S. Boston (349 A.J.S. sc.), 40⅖s., gold medal; 2, V. Horsman (588 Norton sc.), 41s., silver medal; 3, C. P. Wood (532 Scott sc.) and R. T. Cawthorne (490 Norton sc.), 42⅘s. Special general award: A. Tinkler (999 American X sc.).

SURPRISES IN SOUTH MIDLAND TRIAL.

Centre Event Arranged by Luton and North London Clubs. Chiltern Rivals to the Cotswolds.



After making a faultless climb of the steepest stretch of Alms, H. H. Saddington (662 c.c. James sidecar) came to a stop with wheel-slip near the summit.

IT has generally been considered impossible to plan out a trials course within easy reach of London that would spoil the clean sheets of 90 per cent. of those who attempted to traverse it non-stop.

On Saturday, however, the South Midland Centre event proved that it could be done, and—what is even more important—without introducing any great element of freakishness.

It may be that many of the hill failures or semi-failures were due to a preponderance of genuine private owners in the entry list, coupled with the fact that the Home Counties' enthusiast does not have the same opportunities of perfecting his mountaineering as, say, his North country brother of the throttle lever.

Nevertheless, the South Midland Trial, organised for the Centre by the Luton and South Beds. and North London clubs, could in point of difficulty be compared favourably with most Devonshire, Derbyshire or Yorkshire scrambles. Furthermore, the 68 competitors took what came their way in a thoroughly sporting spirit; forty-eight of them finished and only ten claimed non-stops.

"New" Hills.

Included for the first time in an important trial, Alms Hill, Henley, was responsible for many of the failures, but one or two new discoveries in the neighbourhood of Princes Risborough ran it very close. Main roads were as infrequent as real colonial going was common.

Bradgers Hill, within a mile from the start at Luton, was hardly worthy of observation, but an extremely sticky descent a little further on caused much wobbling among the soloists, and one sidecar, F. H. L. Walker's Zenith-Bradshaw, turned over.

A grass track, fairly dry, near Houghton Regis, was responsible for further uneasiness, and this time E. W. S. Howard (492 Sunbeam) came off, luck more than skill keeping several others upright.

The Henley terror, with its maximum grade of 1 in 3 and its upper surface of wet leaves, was, however, the first real point of interest. At a casual glance it appeared to be in excellent condition, an opinion that was confirmed by *The Motor Cycle* representative when he successfully attempted the ascent himself.

Then the competitors began to arrive. "No. 1," C. Bourlet (498 Ariel) appeared in the distance, drew slowly nearer, wobbled into the ditch and failed; "No. 2," E. W. S. Howard (492 Sunbeam) charged up to "the cannons" at a great speed and skidded to a standstill; "No. 3," C. C. Labin (738 Martinsyde), did not get so far as "No 2." The fourth man, L. P. Walter (550 Triumph), made a moderately clean ascent, and then there was a further succession of variously spectacular, glorious, and rank failures, relieved only by the good climbs of T. S. Sharratt (349 A.J.S.), and C. B. Smyth (493 Sunbeam). W. F. S. Love (490 Norton) also reached the summit non-stop, but with feet dangling all the way. F. G. S. Babb (348 A.J.S.) leapt off the road, machine and all, with such velocity that hitherto unperturbed spectators scurried to the woods for safety.

R. Pugh (499 Triumph) and L. Welch (O.K.) made respectively good and moderate climbs, non-stop in each case; and H. H. Robinson succeeded in footing his Wooller over the worst portion, a meritorious feat of physical endurance repeated later by M. Pearson (550 Triumph).

After an arrow-like flight up the steepest patch, R. Worsley (Scott-Squirrel) attempted either to change gear or to slip his clutch, and he, too, joined the ranks of the fallen.

Lady Does Well.

Just before the sidecars appeared on the scene the only lady competitor in the trial, Miss Bates (499 Triumph), toured up, without a sign of wavering or anxiety,

One of the best ascents of Alms Hill was made by the only lady competitor in the trial Miss Bates (499 c.c. Triumph).

Surprises in South Midland Trial.—

what was now a positive avenue of stationary machines awaiting outside assistance. Her's was a faultless climb.

It was mainly a matter of wheel-grip with the sidecars, and since nobody appeared to have thought of chains it was not surprising that there were six failures before F. D. Chapman (993 Matchless sc.), helped by his passenger on the carrier, was successful. G. D. Johnston (550 Triumph sc.) got creditably far up before he, too, had to vault off and run alongside, and G. Haines (633 Norton sc.) further upheld the reputation of the big single by fully equalling Chapman's performance. The only other non-stop passenger ascents were made by S. Hall on a Morgan and an unnamed late entrant.

Unnecessary Mud-ploughing.

Hills came thick and fast after the High Wycombe lunch stop. Crowell, a weird and wonderful two-level track up the Chilterns, terminating in a slough of mud quite impossible for a sidecar, was climbed by fully half the entry before it was discovered that it had been officially cut out of the route the night before.

One or two enterprising riders found that a detour through the woods avoided the quagmire at the summit, but the majority of the soloists ploughed bravely through the mud with waving legs and staring eyes. During the half-hour we wasted watching the debacle quite the best show was made by R. Pugh (499 Triumph).

Less than five miles further on, Wain Hill proved less freakish, but still a very severe test. Had its half-grass-grown surface been wet probably nobody would have reached the summit. Additionally, it possesses a very acute left-hand hairpin bend and is long enough and steep enough to demand the very best that engine and man can give. T. S. Sharrad (349 A.J.S.), C. C. Labin (738 Martinsyde), H. Reyre (498 Ariel), C. B. Smyth (499 Sunbeam), F. Roberts (598 Indian), W. F. S. Love (490 Norton), F. G. S. Babb (349 A.J.S.), F. C. W. Bennett (292 O.K.), R. Burley (499 Sunbeam), E. F. Shuldon (348 Raleigh), R. Pugh (499 Triumph), L. Welch (292 O.K.), H. H. Robinson (348 Wooler), A. Milward (348 Wooler), F. F. Hickman (550 Triumph), H. Milligan (349 A.J.S.), and M. Pearson (550 Triumph) were among the best of the soloists, but in view of his small engine and high gear, A. Mockett on an Enfield two-stroke deserves special mention.

Only a mile or so from the start, Bradger's Hill was climbed easily by all. H. Reyre (498 c.c. Ariel) coming up in second gear.

Miss Bates, who had been doing so well on a four-valve Triumph, ran into the bank and dislocated her knee—not badly, for she carried on. W. Hardman (993 Matchless sc.) made the least flurried and therefore most imposing sidecar climb, but an un-named Norton rider assisted by a very plucky lady passenger was certainly faster. W. Ridley (1092 New Hudson three-wheeler) also made an excellent ascent.

For half an hour or so there was a lull in the difficulties of the route; then came Gadsden, a path through a wood near Whyteleafe and rumoured to be as steep as Alms. It was not quite; but six hours sunshine was solely responsible for preventing a repetition of the scene at Henley, or worse. As it was, over thirty lost no marks there, mainly the same riders who had distinguished themselves on Alms and Wain hills. H. E. K. Sawtell (Moragn) and B. Bowker (T.B.) were noted as best of the three-wheeler drivers.

Nearer home Aldbury Hill attracted many expectant spectators, but caused few failures. In many ways it resembled Gadsden, and in places it was so dark under the trees that it was almost necessary to light up to pick a safe path to the top. N. B. Beigh (748 A.J.S.) failed, and H. Willis (498 Ariel) and R. G. Hickman (496 N.U.T.) footed. At Dunstable, which, by the direct road, was only 5 miles to the finish, the competitors were led a merry dance through more by-lanes and round further observed hairpins, and, reaching Markyate, thought that the finish was in sight. It was not, by any means, and again it was only the unsporting sunshine which caused disappointment to the crowd on Green Lane—a favourite of the Lutonians, which, that morning, was "quite unclimbable."

Provisionally, the Mid-Bucks M.C.C. wins the Service Shield.

W. E. S. Love (490 c.c. Norton) splashing through a shallow watersplash in the morning's run.

BIG FIELDS AT BROOKLANDS.

349 c.c. Weatherell wins the 100 Mile All-comers' Handicap at Fourth B.M.C.R.C. Meeting

Machines in the 350 c.c. Class on their starting line in the 100 mile handicap, won by R. Weatherell on a 349 c.c. Weatherell fitted with a Blackburne engine.

ALTHOUGH the weather was threatening at midday, it improved considerably during the afternoon, and many of the events in the fourth members' meeting of the British Motor Cycle Racing Club on Saturday last were run off in brilliant sunshine.

In spite of the fact that the first race was the keenly contested 100 mile handicap event for the Mellano Cup, public interest was not what might have been expected, and the number of spectators at the fork was comparatively small.

In the great event of the day, the 100 mile handicap, the experiment was tried of handicapping on distance instead of by time as is the usual practice. Signals for starting were given by maroons, but the competitors took the actual starting signal from marshalls who were stationed at each starting line. The scheme appeared to work quite satisfactorily.

Fifty-four entries were received, and forty-two started.

Stiff Pace in 100 Mile Race

From the very beginning a stiff pace was set, the effects of which began to be felt after the first half-dozen laps by one or two of the less fortunate competitors. G. L. Thompson (349 Weatherell) came into his depot with his magneto swinging loose on the end of the control cable, whilst another Weatherell, ridden by A. W. Hemmings, was delayed with a loose driving chain. Great disappointment was felt when it was noticed that E. B. Ware (1,086 Morgan-Jap) had retired after only four laps with tyre trouble, for his engine was running faultlessly, and his time so far had been excellent.

A number of machines experienced plug troubles. G. H. Tucker (588 Norton) met with bad luck, fracturing his lower tank tube after eight laps in the neighbourhood of 60 m.p.h.

Emerson's Tyre Trouble.

A. A. Swan had only completed three laps on his 249 c.c. New Imperial when he was compelled to retire with a broken inlet valve. F. Thorpe (349 O.E.C.-Blackburne) retired after putting up a good fight for seventeen laps, and J. L. Emerson (494 Douglas) had his chances spoilt by a burst back tyre. He entered his depot smiling good-humouredly, with the cover half off the rim, the tube hanging out and the back wheel wobbling badly.

The result of the race was a decided win for R. Weatherell (349 Weatherell), who certainly deserved his success.

1. R. Weatherell (349 Weatherell).
2. F. A. Longman (349 A.J.S.).
3. H. Le Vack (349 New Imperial).

Winner's speed = 66.64 m.p.h.

A series of three-lap races followed, the first for 500 c.c. solo machines, and some close racing was witnessed, but finally G. McWatters (497 Norton) took the lead and held it, coming in an easy first in the final lap.

1. G. McWatters (497 Norton).
2. C. Volk (496 Douglas).
3. J. Bance (348 O.E.C.-Blackburne).

Winner's speed = 72.15 m.p.h.

Another three-lap solo handicap followed—500 c.c. to 1,000 c.c.—and, as far as speed counts, provided the greatest thrills of the afternoon. Lt.-Col. R. N. Stewart as usual rode his 994 c.c. Trump Anzani, which did so well in the recent Yorkshire Speed Trials at Saltburn, whilst O. M. Baldwin, with his 994 c.c. Matchless, and V. E. Horsman (596 Norton) both looked as though they meant business. H. Le Vack and Kaye Don, mounted on 988 c.c. Zenith-Japs, also made a formidable pair, and J. A. Watson-Bourne (976 Brough-Superior) was not to be disregarded.

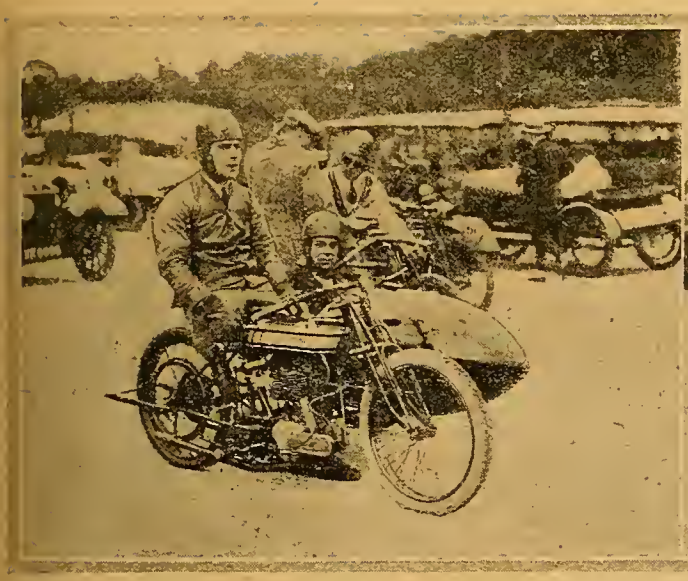
As it happened, the latter had it all his own way over the first lap, although Victor Horsman was not far behind, and O. M. Baldwin's speed was surprising. R. N. Stewart burnt his clutch out in the second lap and had to retire, and Kaye Don was obliged to give it up on account of plug trouble in the same lap. The end of the second lap saw Watson-Bourne still leading, with Baldwin second, and Victor Horsman third.

The race resulted in a close finish between:—

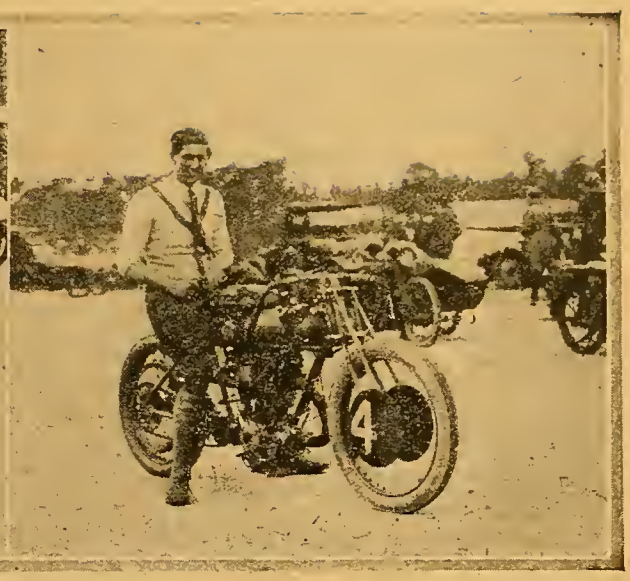
1. O. M. Baldwin (994 Matchless).
2. V. E. Horsman (596 Norton).

Winner's speed = 86.43 m.p.h

Chairing R. Weatherell, the winner of the 100 mile giant handicap, who rode a machine of his own make at a speed of 66·64 m.p.h



A. G. Smith, winner of the private owners' handicap on a 490 c.c. Norton and sidecar.



O. M. Baldwin, winner of 500 c.c.—1000 c.c. 3-lap solo handicap on a 994 c.c. Matchless.

A three lap handicap for sidecar machines not exceeding 600 c.c. formed the fourth event of the afternoon, and in this McWatters again pulled off a first place with his 497 c.c. Norton and sidecar. There were ten competitors. It was an interesting race, A. G. Smith, the one-legged rider, leading for the first lap on a 490 c.c. Norton. He was followed by G. McWatters (497 Norton sc.), and E. Searle (499 Sheffield - Henderson sc.), fiercely struggling for second place. Next were C. Volk (499 Douglas sc.), V. E. Horsman (596 Norton sc.), S. M. Greening (346 Francis-Barnett sc.), and E. A. Bridgman (497 Indian sc.). J. Hill (499 Douglas sc.) met with misfortune in the second lap, having to retire owing to his exhaust pipe coming adrift.

The second lap saw McWatters leading, followed as before by Searle, with A. G. Smith (490 Norton sc.) third, and Victor Horsman (596 Norton sc.) a close fourth. There was considerable excitement, for it was obvious that a keen contest would take place in the third lap between the two leading machines. Unless something unforeseen turned up, it seemed evident that none of the other riders could overtake them.

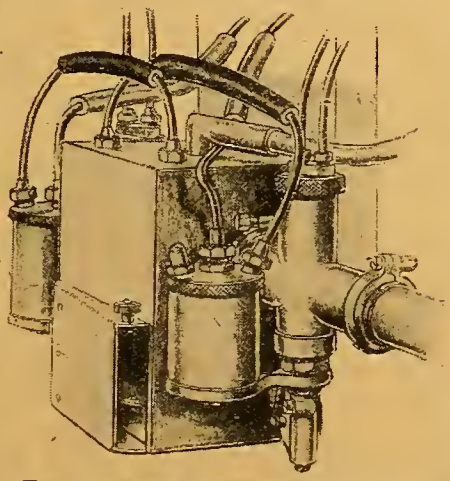
Onlookers craned forward to see who was leading, and at a distance it was certainly difficult to tell. As the pair neared the finishing line, however, there was little doubt as to who was first. McWatters roared past at well over 65 m.p.h. on his Norton, with Searle close on his back wheel.

The results of the event were:—

1. G. McWatters (490 Norton sc.).
2. E. Searle (499 Sheffield-Henderson sc.).
3. A. G. Smith (490 Norton sc.).

Winner's speed = 61.45 m.p.h.

Big twin sidecar and three-wheelers competed in the next race. E. B. Ware (1,086 Morgan J.A.P.) was at scratch, which lost him exactly one lap to the first man round, whilst H. Martin (1,074 Morgan Anzani) only got 27 seconds handicap. 997 c.c. Indian sidecars were ridden by D. H. Davidson, E. A. Bridgman, and W. H. A. Turner, whilst another formidable trio, H. Le Vack, S. E. Longman, and R. Charlesworth, were on big Zenith-Japs. Two 976 c.c. Brough-Superior outfits, ridden by J. D. Marvin and J. N. P. Rowlandson, were favourably handicapped, and from the first lap it was obvious that the race belonged to them; no one else had a chance. Rowlandson easily led every lap, closely followed by Marvin. Ware reached extraordinary speeds with his Morgan, but without avail.



Twin carburetters with variable jets controlled from the handle-bar and a special air-intake are fitted to some of the Douglas racing machines. Caused by the speed of the machine a balanced air pressure is created on the petrol in the tank and in the float chambers

1. J. N. P. Rowlandson (977 Brough-Superior sc.).
2. J. D. Marvin (977 Brough-Superior sc.).
3. C. G. Pullin (746 Douglas sc.).

Winner's speed = 67.10 m.p.h

The last event of an interesting, and successful meeting was a private owners' handicap. McWatters and his all-conquering Norton met with a set-back this time, retiring in the third lap with a flat front tyre; W. H. Sheraton (490 Norton) also gave it up during the third lap; and J. N. P. Rowlandson (977 Brough-Superior sc.) came home with a broken exhaust valve.

After three exciting laps, during which many individual struggles took place, the final lead was gained by A. G. Smith (490 Norton sc.). The results of the race were:

1. A. G. Smith (490 Norton sc.).
2. G. H. Williams (348 Weatherell sc.).
3. R. G. Spikins (1,087 Salmson light car).

IRISH RELIABILITY TRIAL.

FOR reasons which require no explanation, the Dublin and District Motor Cycle Club was not able to issue the list of awards in connection with the open twenty-four hours reliability trial held on June 23rd and 24th, until last week. The awards are as follows:

GOLD MEDALS.—P. H. Hurse (633 Norton), G Briggs (499 Triumph), P. A. Bell (749 James sc.), C. A. Murphy (550 Blackburne), Capt. Cooper (8 G.N.), T. Slevin (249 Humber), J. Healy (550 James sc.), J. T. Cathcart (249 Velocette), J. J. Kidney (550 Triumph), M. J. Doyle (293 New Imperial), S. J. Redmond (998 Indian sc.), R. Murphy (550 Triumph), H. E. Bell (500 James), and G. V. B. Cooke (499 Sunbeam).

SILVER MEDALS.—T. E. Greene (494 Douglas), C. S. Maguire (600 Humber) W. Fagan (596 Indian), J. Browne (494 Douglas), C. D. Maguire (976 Matchless sc.), J. A. Adair (557 B.S.A.), and F. Holmes (976 Enfield sc.).

BRONZE MEDALS.—J. D. Wallis, Junr. (557 B.S.A.), and G. Thomson (500 N.U.T.).

FINISHERS CERTIFICATES WERE AWARDED TO.—T. Woods (557 B.S.A.), J. A. Carville (557 B.S.A.), H. McGarry (994 Ariel sc.), Dr. Broderick (211 Levis), and B. G. D'Olier (293 Hobart).

SPECIAL AWARDS.—Passenger Machine Prize: J Healy (550 James sc.). Passenger Machine under 650 c.c.: J. Healy (550 James sc.). Lightweight Prize: M. J. Doyle (293 New Imperial). Hutchinson Prize (250 c.c.): T Slevin (249 Velocette). Team Prize: H. E. Bell (500 James), P. A. Bell (749 James sc.), and J. Healy (550 James sc.).

CLUB NEWS (continued from p. 103)

Essex M.C.

In order to suit the convenience of a number of members who find it difficult to manage the usual early start, the organisers of the club meeting at Brooklands on Saturday, the 22nd inst., have arranged for the first race to commence at 2.30 p.m. The entries for this event are good, and a full military hand will be in attendance.

Birmingham M.C.C.

Competitions stated to be of a "simple and amusing" nature will be a feature in the Rally at the Greswold Arms at Knowle on Saturday at 3.30 p.m. A speed-judging paper chase will also be included, starting at the George Hotel, Solihull, at 2.15 p.m., and finishing in time to join in the other sports. Entries are free, and the events are open to club members and their friends.

Bradford M.C. and M.C.C.

Considerable public interest was displayed in the handicap speed hill climb for the Dyson Shield on Saturday last, the 15th inst. There were over 60 entries in all, and 50 machines lined up at the start at Tong, near Bradford, the distance of the course being one-third of a mile. The results were:—

SOLO.

1. W. H. Rhodes (998 Indian), gold medal.
2. H. Askham (490 Norton), silver medal.
3. R. Turner (494 Douglas), bronze medal.

SIDECARS AND THREE-WHEELERS.

1. J. Smith (490 Norton sc.), gold medal.
2. R. Clay (490 Norton sc.), silver medal.
3. T. Northwood (Morgan), bronze medal.

The Dyson Shield was won by J. Smith on a 490 o.e. Norton and sidecar, who was given 10 seconds and beat W. H. Rhodes (998 Indian) by about 8 yards.

Cumberland County M.C.C.

A successful picnic, followed by a gymkhana, was held at Moffat on the 9th inst. The weather, although not promising at the start, cleared later, and did not interfere with the event, and thirteen machines turned out for the run.

North London M.C.C.

Members of the North-West London M.C.C. are joining in the annual hill climb next Saturday, the 22nd inst., at Kop Hill, in competition for the challenge cup at present in the possession of this club. The climb is due to start at 4.0 p.m., there being 9 classes with two men from each club in each class.

Bristol M.C. and L.C.C. and Bath M.C.C.

Official results of the inter-club trial described on page 93 have just reached us; the highest possible marks were 244—3 points per mile for 80 miles, plus 4 bonus points for clean ascents of East Dundry and Burledge Hills.

SOLO MACHINES.

S. G. McWatters (490 Norton), 244, gold medal.
W. E. Le Brun (499 Rudge), 244, gold medal.
F. A. Simpson (346 Francis-Barnet), 242, silver medal.
V. Courteney (499 Sunbeam), 223, bronze medal.
E. F. Jellyman (490 Norton), 222.
K. J. Woods (499 Wilkin), 201.

SIDECARS.

G. H. Tucker (633 Norton sc.), 244, gold medal.
H. C. Walters (994 Ariel sc.), 244, gold medal.
F. G. Mann (998 Harley-Davidson sc.), 222, bronze medal.

LIGHT CARS.

A. R. Passey (G.N. light car), 244, gold medal.

The total of the winning Bristol team amounting to 2,330 points, as compared with the 1,806 points of the rival club, giving Bristol a margin of 524 points.

Inverness and District M.C.

Leys Hill was selected for the club's first hill-climb held on the 12th inst. There were sixteen entries, and the competitors were divided into three classes. The length of the climb was one mile. Results:—

UNLIMITED CLASS.

1. K. J. Mackintosh (490 Norton), 1m. 25s., who made fastest time.
2. G. Corsair (398 A.B.C.), 1m. 29⅕s.

UNDER 350 C.C.

1. S. Macqueen (348 G.R.I.), 1m. 33s.
2. J. Inglis (348 G.R.I.), 1m. 48s.

2-STROKE CLASS.

1. W. T. Bullock (225 Royal Enfield), 2m. 37s.

St. Albans and District M.C.C.

A detailed report of the hill climb held on Thursday last, the 13th inst., at Newgate, is now to hand, and results are given as follows:—

350 C.C. CLASS.

1. A. A. Swan (249 New Imperial) and A. Godman (348 Cotton-Blackburne), 14⅕s.

600 C.C. CLASS.

1. C. Dunham (490 Norton), 10⅗s.
2. C. Gordon (499 o.h.v. Triumph), 11⅖s.
3. A. C. Girling (494 Douglas), 12s.

1,000 C.C. CLASS.

1. A. C. Girling (494 Douglas), 11s.
2. C. Dunham (490 Norton) and C. Gordon (499 o.h.v. Triumph), 11⅕s.
4. D. M. Berdnass (490 Norton), 11⅗s.

600 C.C. SIDECAR CLASS.

1. D. M. Berdnass (490 Norton sc.), 15⅖s.
2. C. Gordon (499 o.h.v. Triumph), 16⅗s.

The fastest time of the day was put up by C. Dunham on a 490 c.c. Norton.

A SCOTTISH TEAM TRIAL.

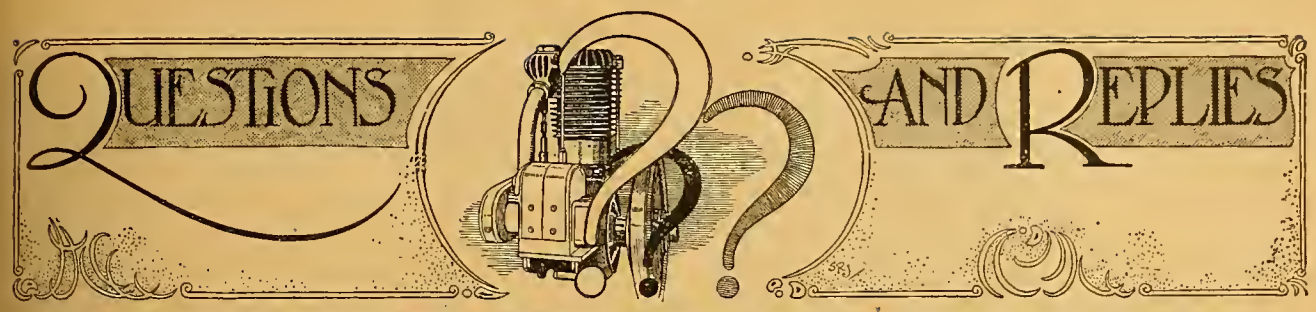
ELEVEN clubs entered teams for the "John Bull" team trial which took place on the 1st inst., organised by the Scottish Western Motor Club. In all there were sixteen teams competing, consisting of four riders each, making a total of sixty-four entrants. The event was won after a close contest by the Falkirk and District M.C., who all completed the 56-mile course without a stop, and with a total time error of only 109⅘ seconds. Details of the winning team are as follows:—W. Sinclair (490 Norton), time error 14⅖s.; A. Climie (349 A.J.S.), 33⅖s.; Mrs. D. Bell (799 A.J.S. sc.), 44⅘s.; A. Neilson (750 A.J.S. sc.), 17⅕s. Runners up, another team of the same club, J. E. Chisholm (498 Ariel), 30⅖s.; A. Howie (490 Norton), retired; P. Armstrong (799 A.J.S. sc.), G. L. Hannah (799 A.J.S. sc.) 7⅘s. All except Howie completed non-stop runs.

The following competitors from various clubs were also successful in completing "non-stops":—R. Spence (499 Sunbeam), A. Smith (499 Sunbeam), J. Cunningham (976 Campion sc.), G. Black (490 Norton), A. L. Downie (498 Ariel), J. Alexander (976 Sunbeam sc.), A. Downie (750 A.J.S.), R. Stanfield (481 Scott), H. Nelson (499 Rudge sc.), G. Hope Wilson (350 Edmund R. and S.), R. M. Cowan (496 Martinsyde), J. Barr (750 A.J.S. sc.), Nos. 85, 61, and 12 of the first Clackmannan team, B. Gold (346 Francis Barnet), J. Caldor (799 A.J.S. sc.), P. Nicholson (550 Triumph), C. C. Taylor (749 James sc.), H. E. Horwood (498 Ariel), R. N. Lockhead (498 Ariel), J. Stewart (633 Norton), J. N. Philips (499 Sunbeam), R. M. Wilson (349 A.J.S.), A. J. C. Lindsay (499 Triumph), W. Romanel (398 A.B.C.), J. Martin (633 Norton), J. Bennie (654 Rover).

Several of the sidecar entrants were disqualified by their passengers being out of their seats; the majority of the failures were recorded at Amulree.

Other clubs competing, apart from the one already mentioned, included Edinburgh and District M.C. (three teams), Scottish Western M.C. (two teams), Clackmannan M.C.C. (two teams), Kilmarnock M.C.C., Elgin and District M.C.C., Glasgow M.C.C., West Fyfe M.C., Perth M.C. (two teams), and East Lothian M.C.

Competitors in last week's 350 c.c. Grand Prix. The leading machine, an Alcyon, is followed by the three Garellis which finished first, second and third.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

FUELS: NEAT AND MIXED.

(1) What adjustments are necessary to the B.S.A. variable jet carburetter to run on pure benzole and on half-and-half benzole and petrol? (2) Which fuel would be most suitable, and is there much advantage over petrol? (3) Is benzole more or less likely to catch fire than petrol?—G.B.

(1) The variations of your jet are a matter for experiment. The greater the proportion of benzole the more you should be able to cut down the jet size. (2) Probably the best all-round results are obtained from a half-and-half mixture. The use of benzole eliminates knocking and gives smoother running, with improved mileage and power. (3) Petrol is slightly the more inflammable, but from a practical point of view there is no difference.

CONTACT BREAKER ADJUSTMENT.

In overhauling my 350 c.c. Douglas I find that the contact points open twice as much on one compression stroke as on the other; is this usual? The engine fires all right at speed on both cylinders, but when running very slowly in neutral, one misfires.—F.C.

It is not uncommon to find a slight variation in the contact gap in twin cylinder magnetos. The usual cure is to pack up one contact cam with a strip of metal foil or paper, between the cam and the case, when the two are made separately. After carrying out this operation carefully check the timing and see that both cylinders are timed exactly alike. The faulty slow running is more likely to be due to air leaks, probably through a slack inlet valve guide, than to the contact breaker adjustment.

CRANK-CASE HEATING.

New rollers, retainers, and crank-shaft in the big end have been fitted to my 1917 Indian. Also the cylinders have been reground and new pistons and rings fitted. Compression is good; valves and ignition are correct, yet when I have gone about ten miles at about thirty miles an hour the crank-case is so hot that I can only just touch it. (1) Can you tell me the reason for this and how to cure it? (2) Engine will not run smoothly under 15 m.p.h. on top gear, but seems to run free and then jerk badly. I have also a 1916 renovated Triumph. Everything is in good order, and valves and magneto are timed per makers' instructions. Piston rings and compression are good, but the crank-case gets hot just the same as the Indian.—S.C.

There is no harm in the crank-case of your engines becoming hot provided the machines run satisfactorily. It is most probable that extra heat is caused by the new rings and pistons being rather tight; this will cause the oil to get hotter, but as the crank-case is an excellent radiator, it should do no harm.

Important Dates.

Sun., July 23rd—Belgian Gr n rix.
Fri., July 28th, to Mon., Jul 7th—Anglo-Dutch Trial in Holland.
Sat., July 29th, North-Western Centre A.C.U. Open Hill Climb.
Sat., July 29th — Scottish Speed Championships.
Thurs., Aug. 3rd, to Wed., Aug. 9th—International Six Days Trials.
Sat., Aug. 5th, and Mon., Aug. 7th—Irish Two-day Open Trial.
Mon., Aug. 7th—West S. Wales Centre A.C.U. Open Speed Trials at Pendine.
Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.
Sat., Aug. 12th—Motor Cycle Races in Phœnix Park, Dublin.
Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.
Sat., Sept. 16th—The Scott Trial.
Sat., Sept. 23rd—500 Mile Race at Brooklands.
Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

COMPRESSION RATIO.

What is the relational area of "compression ratio," in proportion to the area of the working cylinder? What relationship would you consider best in a first-class make of cylinder? By compression ratio am I to understand the relationship between the space where the gas is compressed between the piston and cylinder end when piston is at its full inward or compression stroke, and the area the gas occupies when piston is at its full outward stroke?—M.C.

The first part of your query is not very clear, but we imagine that you wish to know the proportion of the compression space to the swept volume: this usually is about one-third, which would give a compression ratio of four to one. There is no hard and fast rule for compression ratios which vary with engines of different designs. The normal side-by-side valve touring engine usually has a compression ratio slightly below four to one.

SCOTT CARBURATION.

New pistons and cylinders have been fitted to my Scott, and the machine has done about 300 miles since. Everything was clean when reassembled. Timing of magneto is correct, as advised by the makers, and the oiling and cooling are in order, yet overheating occurs. (1.) Can the carburetter be the cause in any way? It is a Binks 3-jet, and when the machine is moving up to 20 m.p.h. or just over, the throttle barrel is still at the bottom of the main intake; should this be so? (2.) What is likely to prove the best arrangement of jet sizes for solo riding, as at present I am only getting about 50 miles to gallon, and machine is very sluggish in starting? (3) Which are the most suitable plugs: I used to have Reliance, but understand they are not to be obtained now? (4.) What would be the effect on the engine if the rubber rings in the cylinder base were imperfect, as upon taking cylinders off once I found these practically melted away?—L.D.

(1.) The adjustment of the carburetter is probably incorrect, and you should write to the makers for an instruction booklet. (2.) Jets numbered 00, 2 and 7 generally give the best results; you should get about 65 m.p.g. riding solo. (3.) Reliance plugs are now very seldom seen, but you should have had good results with most standard single and three-point plugs under ordinary touring conditions. (4.) If the cylinder base rubber rings are damaged, the engine will not run regularly, as there will be serious compression leakages between the combustion chamber and the crank case, *via* the annular passage in the engine base below the cylinder flange.

READER'S REPLY.

SIDECAR ON SOLO LIGHTWEIGHT.

I would like to ask "H. S." how he keeps his engine cool enough to climb hills in second gear, or whether he has to wait until his engine cools before attempting a climb.

I have a 350 c.c. three-speed Douglas in perfect condition, and my speedometer does not register 5,000 miles yet. I should like to attach a light sidecar, but find that after a run of five or six miles with a pillion passenger I cannot do anything on any fair gradient unless I resort to low gear, for the reason that my engine gets hot and loses power. I don't doubt the machine will take a sidecar if only I could keep it reasonably cool.

L. W. WHITE.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned.

"W. P. J." (Liverpool).—293 c.c. single speed Connaught: fuel consumption, speed, general wear.

"O. B." (Beckenham).—29 × 3½ in. tyres on heavy weight outfits, especially Bates and Goodyear.

"S. H. G." (East Ham).—654 c.c. Quadrant, solo and sidecar.

"J. S." (Brockley).—F.E.W. valve attachment on 749 c.c. A.J.S. and sidecar: easy starting and fitting; prevention of leaks in valve guides.

"O W." (Carnarvonshire).—499 c.c. Abingdon King-Dick engine in Coventry Eagle.

"E. N. D." (Stortford).—Weatherell automatic lubrication on 550 c.c. Triumph.

"H. G." (Beaconsfield).—349 c.c. A.J.S. standard sports model.

"W. S. C. S." (Perth).—748 c.c. F.N. and sidecar.

"T. C. B." (Ryde).—349 c.c. A.J.S. sports model: tuning, m.p.h., m.p.g. suitable jet sizes.

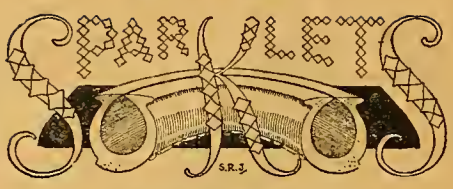
RECOMMENDED ROUTES.

BIRKENHEAD TO PURLEY.—H.C.

Birkenhead, Chester, Broxton, Whitchurch, Gailey, Brownhills, New Oscott., Castle Bromwich, Stonebridge, Kenilworth, Leamington, Bishops Tachbrook, Gaydon, Warmington, Banbury, Oxford, Littlemore, Nuneham Courtenay, Dorchester, Shillingford, Nettlebed, Henley, Maidenhead, Salthill, Eton, Windsor, Staines, Sunbury, Kingston, Norbiton Church, New Malden, Cheam, Sutton, Carshalton, Purley. Approximately 221½ miles.

BIRMINGHAM TO CONSETT.—P.B.

Birmingham, Sutton Coldfield, Bassetts Pole, Tamworth, Nomansheath, Measham, Ashby-de-la-Zouch, Nottingham, Mansfield, Worksop, Tickhill, Doncaster, Ferrybridge, Aberford, Wetherby, Harrogate, Ripley, Ripon, Leeming, Catterick, Scotch Corner, Barton, Stapleford, Darlington, Ferryhill, Durham, Lanchester, Leadgate, Consett. Approximately 242½ miles.



Improved Belt Adjuster.

The patentees of Forbes belt adjuster have recently brought out an improved model which should find favour with motor cyclists. The wearing parts of the adjuster have been case-hardened to provide greater strength.

Spare Parts Reduced.

Since the war F.N. spare parts have been increased 150 per cent. in price, but their cost has now been reduced to 75 per cent. above pre-war prices. The same reduction applies in the case of complete machines: the 748 c.c. four-cylinder being now £125, with sidecar £160, or £153 without hood and screen.

A Consistent Trials Rider.

A rider who is distinguishing himself by steady driving in the big trials is P. L. Mayo (the Coventry Eagle exponent). He is the leading figure on the illustration which appeared at the top of page 73 in our last issue.

High Finish and Low Price.

Circumstances have permitted a considerable reduction in the price of the 496 c.c. 3-speed Lea Francis motor cycle and the price of this model has been fixed at £90, a truly wonderful value for such a highly finished machine. It will be remembered that the M.A.G. 496 c.c. engine is employed with totally enclosed front and rear chains, foot boards, toe shields, and admirable mudguarding.

A Good Record.

To be the winner of every class for solo machines up to 250 c.c. at any speed trials is not a record to be easily beaten. Besides various other successes this was achieved by F. Reynard, of Long Street, Easingwold, on a 249 c.c. Monopole-Jap at Saltburn.

An Error Remedied.

Some time ago a little trouble with sticking contact breaker rollers was experienced in C.A.V. magnetos, manufactured by C. A. Vandervell and Co., Ltd., of Acton, London, owing to an error having crept into the manufacture. This error was corrected as soon as discovered, and no trouble has been met with since, as was testified by the recent T.T. races. Any riders experiencing the trouble referred to above are invited to communicate with the makers.

Reduction in Prices.

As from July 1st the prices of Martinsyde motor cycles, manufactured by the firm of Martinsyde, Ltd., Maybury Hill, Woking, have been reduced as follows: 496 c.c. "sports" solo, £93; 678 c.c. machines—"sports" solo, £110; standard sidecar model, £150; "sports" sidecar model, £145; "sports" solo with "sports" sidecar, £135; solo off standard sidecar model, £120; delivery outfit, £150.

Something for Nothing.

A sample tin of H.M. grade Challenge motor cycle oil will be sent to any prospective customer on application to the Challenge Oil Co., Ltd., Howard Works, Stoke Newington, London, N.16.

A Useful Handbook.

Owners of Bradbury motor cycles will appreciate the latest handbook containing instructions and hints on driving, adjusting, and maintaining these machines, which are manufactured by Bradbury and Co., Ltd., Wellington Works, Oldham.

Current Prices.

Some confusion has recently occurred in the price of two machines which are in the public eye at the present time, the 350 c.c. Raleigh and the newly revived 925 c.c. Clyno sidecar outfit. The former is listed at £68 (two-speed model) and the latter is 158 guineas.

The Roadmaker.

An interesting booklet, comprising about forty pages of instructive reading matter and a number of illustrations, is being published under the title of "The Road Maker," on behalf of the British Reinforced Concrete Engineering Co., Ltd., whose head offices are situated at 1, Dickinson Street, Manchester, and with works at Trafford Park, Manchester.

Details at a Glance.

The firm of R. Weatherell and Co., Ltd., The Terrace, High Road, Kilburn, N.W., manufacturers of the 349 c.c. Weatherell motor cycle, have adopted the novel and very useful idea of embodying in one blue print every individual component of the machine, thus enabling all details to be seen clearly at a glance.

Found on the Road.

On July 9th, near Carnforth, a carburetter float chamber cap, by Mr. W. H. Glover, 47, St. Mark's Road, Preston, Lancs.

On July 10th, between Etchingham and Burwash, by Mr. W. J. H. Bassett, 145, High Street, Sevenoaks, a licence holder containing a licence card for an Enfield sidecar, issued by the East Sussex Licensing Committee on January 5th.

Lightweight Success.

At the Redditch and Kidderminster M.C.C. joint open speed trials on the 10th inst., the 249 c.c. O.K. Junior, manufactured by Humphries and Dawes, Ltd., Hall Green Works, Birmingham, gained first place in the 250 c.c. and 350 c.c. classes, second fastest time with a 350 c.c. machine in 600 c.c. class, and second prize for the two-stroke class, machines up to 350 c.c., was gained with a 292 c.c. O.K. Junior. At Brooklands on July 8th this machine finished third in the 350 c.c. scratch race.

Lubrication Specialities.

Satisfactory lubrication, whether of engines, wheel bearings, or driving chains, is always an essentially important factor. Special attention has been paid to these requirements by the County Chemical Co., Ltd., of Bradford Street, Birmingham, who supply "Chemico" chain lubricants. "Vasol" is prepared for use in bearings. Both contain graphite.

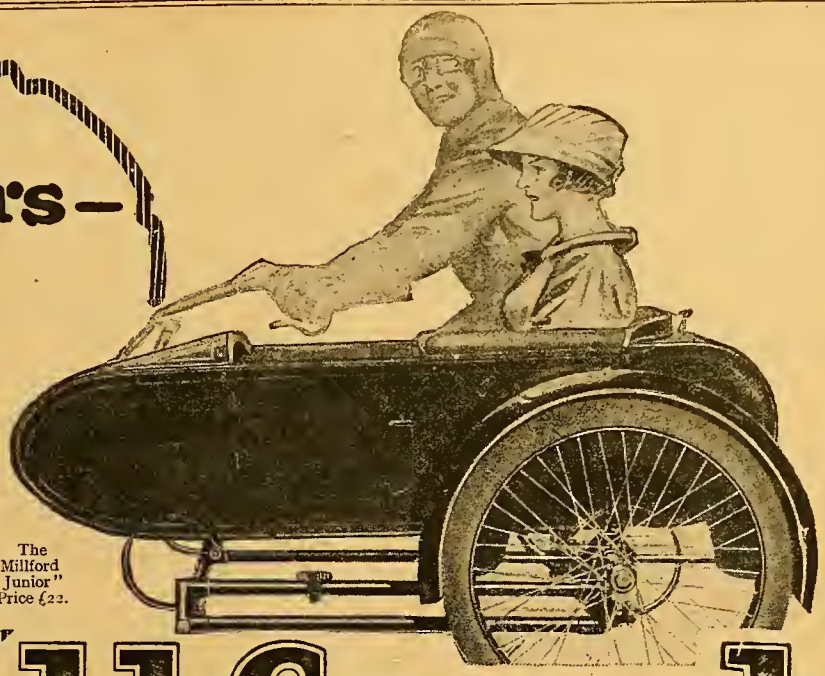
For 20 Years—

Millford Sidecars have been famous for quality and comfort.

A Millford Sidecar costs from £22. You know what your favourite solo machine costs. Add the two and see what you save compared with the price of a *Combination*.

There are 8 models for 1922.

Write for Folder B,
MILLS-FULFORD, LTD., COVENTRY.
The Original Sidecar Makers.
(Established 1899.)



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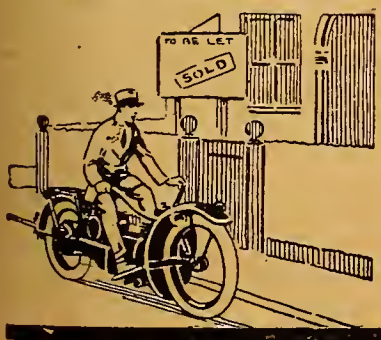

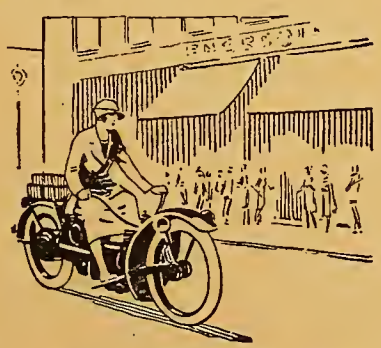

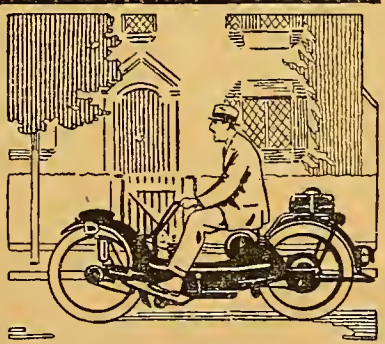

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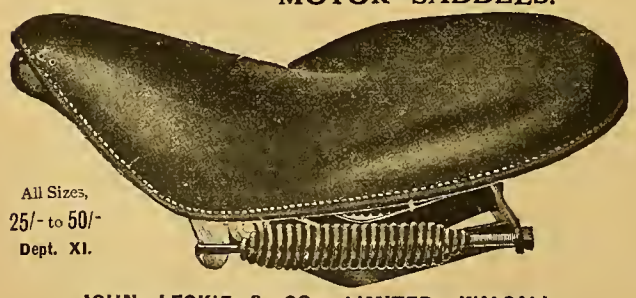
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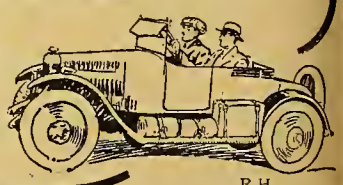
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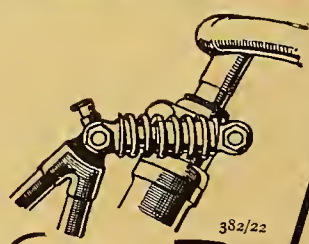
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BROUGH SUPERIORS.—Order your new mount from us. We are the Brough experts. Specially tuned to order. Mark I., 8h.p., side valve, £150; sporting combination, with screen, step, mat, and apron, £180; Mark I., 90mm. bore o.h.v. £160; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. combination, £150. Special Service Agents; lists.—G. and J. Dawson, The Ideal Garage, Cambridge. 'Phone: 993. [0834

MOTOR CYCLES FOR SALE.

Brough Superior

BROUGH SUPERIOR, 1922 models, 6.5h.p. M.A.G., £125; 8h.p. (side valve engine), £150; 8h.p. side valve combination, £180; demonstration model in stock; call for a trial run.—Storer and Tait, 20, Bourdon St., Bond St., W.1. 'Phone: Mayfair 625. [7368

BROUGH SUPERIOR, latest model, 8h.p. o.h.v. twin, fitted with Lucas Magdyno lighting set and electric horn, specially tuned and guaranteed capable of exceeding 75 m.p.h., only used for demonstration purposes; list price £185, special price £125; liberal exchanges, easy terms.—Frank Hallam, Brough Superior Agent, Dalton St., Birmingham. [1104

ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½ o.h.v., 3-speed, clutch, and kick starter, £160; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.6, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

Brown.

BROWN C.B. Combination, 7-9h.p., 3-speed, clutch perfect, all on; £30; sacrifice; cash wanted.—16, King's College Rd., Swiss Cottage. [1636

B.S.A.

B.S.A. 6-7h.p. Combination, spare wheel, excellent condition; £130.—Nelson's, Rhyl. [1419

B.S.A. 1922, model K.2, almost new; £97/10.—The Layton Garages, 30, Holywell St., Oxford. [1963

B.S.A. 1913 3½h.p., T.T., discs, good order; £28.—"Branksome," Woodford New Rd., Woodford Green. [1023

NEW 1921 4¼h.p. B.S.A. Combination and accessories; £120.—Bounds' Garage, 223, High Rd., Kilburn. [2059a

B.S.A. Single, all-chain drive, K.S., tax paid, trial; £28; exchange lightweight.—497, Old Ford Rd., Old Ford. [2229

4¼h.p. 1919-20 B.S.A. Combination, 3-speed, fine engine, kick-start; £75.—Wauchope's, 9, Shoe Lane, London. [2134

1922 B.S.A. 6h.p. Combination, No. 3 sidecar, never ridden; £145.—Shove, 9, Montiore Av., Redlands, Bristol. [1518

B.S.A. 4h.p. Combination, very fine order; £45.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St., W.1. [2080

B.S.A. 1919 4¼h.p. Combination, splendid condition, fully equipped, tax paid, any trial; £78.—Tippen, Marden, Kent. [9213

£45.—1916 4¼h.p. B.S.A. Combination, 3-speed, clutch, K.S., windscreen, lamps, taxed.—King, Egrove, Oxford. [1969

B.S.A. 4¼h.p., 3-speed, all accessories, new in January, scarcely ridden; £95.—Hicks, 67a, High St., Maldon. [1305

B.S.A. Combination 4¼h.p., 3-speed, 1920, good order, licensed and insured; £70.—11, Atlingworth St., Brighton. [1910

NEW B.S.A. 4¼h.p., 3-speed, with new B.S.A. sidecar, unregistered; sacrifice, 88 gns.—62, Princess Rd., Kilburn, N.W.6. [2063

£80.—B.S.A. 4¼h.p. Combination, fully equipped, in excellent condition, tax paid till December.—Hartwell's Garages, Ltd., Oxford. [1269

1922 B.S.A., new Model E twin, with No. 3 sidecar, slightly shop-soiled; £150.—Hucklebridge, 133, Sloane St., Chelsea, S.W.1. [1685

B.S.A. 4¼h.p., 1922, K2, 3 speeds, clutch, K.S., brand new, slightly soiled; £97.—Eagles and Co., 275, High St., Acton, London, W. [2072

1922 model H B.S.A. Combination, Lucas lamps, horn, sidecar, and rear lamp set, absolutely new; £130.—H. O. Preater, Ltd., Swindon. [2024

£24.—B.S.A. 3½h.p., 2 speeds, clutch, all accessories, excellent condition, reliable and cheap.—143, Ravensbury Rd., Earlsfield, S.W. [2302

GODFREY'S, Ltd.—B.S.A. 1920 4¼h.p., H. B.S.A. sidecar, screen, completely equipped; £88, guaranteed.—208, Great Portland St., W.1. [2348

GODFREY'S, Ltd.—B.S.A. 1914 4¼h.p., 3-speed, all chain, coachbuilt sidecar, accessories, guaranteed; £65.—208, Great Portland St., W.1. [2349

4¼h.p. B.S.A., 1922, all-chain, with Montgomery sidecar, horn, and tax paid, guaranteed as new; £126.—Tilleys, The Esplanade, Weymouth. [1991

£45.—B.S.A., model K, Combination, 3 speeds, clutch, kick starter, countershaft, good order; gilt.—Clarke, 406, York Rd., Wandsworth. [1935

A FEW EXAMPLES OF PURCHASE BY 18 MONTHLY INSTALMENTS

The amount of deposit and monthly instalments is clearly shown against each motor cycle in this list. We have all these machines and many others in stock, and they are therefore ready for immediate delivery.

NEW 1922 MODELS.

ARIEL, 3½ h.p., Sports model, 3 speeds and clutch	£87	10	0
Deposit £23 4s. 6d., 18 monthly instalments of	£3	17	3
ALLON, 2¾ h.p., 2 speeds, clutch and K.S.	£60	0	0
Deposit £15 18s., 18 monthly instalments of	£2	13	0
B.S.A., 4¼ h.p., Model K2	£107	0	0
Deposit £28 7s. 6d., 18 monthly instalments of	£4	14	6
DOUGLAS, 2¾ h.p., 2 speeds, all on	£68	0	0
Deposit £18 1s. 6d., 18 monthly instalments of	£3	0	0
DIAMOND, 2¾ h.p., model F3, speeds, clutch and kick-starter	£65	2	0
Deposit £17 5s., 18 monthly instalments of	£2	17	6
HAWKER, 4¼ h.p., Blackburne engine, 3 spds., clutch and kick-starter, all-chain drive	£89	5	0
Deposit £23 13s., 18 monthly instalments of	£3	18	10
HAWKER, 4¼ h.p., Model C Combination	£110	0	0
Deposit £29 3s., 18 monthly instalments of	£4	17	2
MATCHLESS, 8 h.p., Model H Combination	£170	0	0
Deposit £45 1s., 18 monthly instalments of	£7	10	2
MATCHLESS, 8 h.p., model H Combination, magdyno lighting	£188	0	0
Deposit £49 17s. 6d., 18 monthly instalments of	£8	6	0
MATCHLESS, 8 h.p., Family Comb., model H	£175	10	0
Deposit £46 10s.6d., 18 monthly instalments of	£7	15	0
N.U.T., 3½ h.p., twin, model M	£100	0	0
Deposit £26 10s., 18 monthly instalments of	£4	8	4
N.U.T., 5 h.p., Model M., all-chain drive	£120	0	0
Deposit £31 16s., 18 monthly instalments of	£5	6	0
NEW IMPERIAL, 2¾ h.p., model 3	£73	0	0
Deposit £19 6s. 6d., 18 monthly instalments of	£3	4	6
ROYAL ENFIELD, 2¼ h.p., 2 speeds	£55	0	0
Deposit £14 11s. 6d., 18 monthly instalments of	£2	8	7
ROYAL ENFIELD, 2¾ h.p., 2 speeds, clutch and kick-starter	£57	0	0
Deposit £15 2s. 6d., 18 monthly instalments of	£2	10	4
ROYAL ENFIELD, 8 h.p. Combination, magdyno lighting	£158	0	0
Deposit £41 18s. 6d., 18 monthly instalments of	£6	19	6
RALEIGH, 2¾ h.p., model, 2 speeds, clutch and kick-starter	£68	0	0
Deposit £18 1s. 6d., 18 monthly instalments of	£3	0	0
RALEIGH, 2¾ h.p. model, 3 speeds, clutch and kick-starter	£73	0	0
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RALEIGH, 3 h.p. model, 2 speeds, clutch and kick-starter	£73	0	0
Deposit £19 6s. 6d., 18 monthly instalments of	£3	4	6
RUDGE MULTI, 3½ h.p., I.O.M., Sporting model	£77	0	0
Deposit £20 8s. 6d., 18 monthly instalments of	£3	8	0
RUDGE MULTI, 3½ h.p., I.O.M., Touring model	£77	0	0
Deposit £20 8s. 6d., 18 monthly instalments of	£3	8	0
ROVER, 4 h.p., 3 speeds, clutch and K.S., all-chain drive	£100	0	0
Deposit £26 10s., 18 monthly instalments of	£4	8	4
SIRRAH, 2¾ h.p., Blackburne engine, clutch and kick-starter, 2 speeds	£67	0	0
Deposit £17 15s. 6d., 18 monthly instalments of	£2	19	2
TRIUMPH, 4 h.p., model S.D., all-chain drive	£115	0	0
Deposit £30 9s. 6d., 18 monthly instalments of	£5	1	7
TRIUMPH, 4 h.p., model H., chain-cum-belt drive	£108	0	0
Deposit £27 16s. 6d., 18 monthly instalments of	£4	12	9
TRIUMPH, 2¾ h.p., 2-stroke, 2 speeds	£65	0	0
Deposit £17 4s. 6d., 18 monthly instalments of	£2	17	5
ZENITH-BRADSHAW, 3½ h.p., model A, Gradua gear	£113	0	0
Deposit £29 18s. 6d., 18 monthly instalments of	£4	19	10

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B.S.A.

1913 3½h.p. B.S.A., clutch model, perfect co tion, tax paid; £25.—Storer and Tait, Bourdon St., Bond St., W.1. Mayfair 625. [

B.S.A. Combination, 4¼h.p., 1921, 3-speed, chain, kick-start, hand clutch, all lamps, paid; £110.—Mandes', Walsall Garage, Walsall. [

1920 B.S.A. Combination, 4¼h.p., 3-speed, speedometer, lamps, Klaxon, tax paid, excel condition; £60 or offer.—19, Willow St., Romfor [

£26.—3½h.p. B.S.A. T.T., in splendid condi lamps, Klaxon, new tyres, belt, and Tan- tax paid, trial.—49, Winstead St., Battersea, S.W [

1920 4¼h.p. B.S.A. Combination, Henderson sid beautiful condition, £65; ditto 1916 com tion, fine condition, £43.—24, Balliol Rd., North singtón. [

6-7h.p. B.S.A. Combination, late 1921, dyn equipped regardless, very small mileage, any g antee; £140.—Burt, 39, Craven Gdns., Wimble S.W.19. [

B.S.A. 4¼h.p., 1922, lamps, horn, tools, mil guaranteed under 100, tax and insurance p accept best offer over £100.—Wombwell, Bradwel Sea, Essex. [

B.S.A. 1914-15, 4¼h.p., 3-speed, countershift, chain, lamps, tax paid, excellent condition; change lightweight; sell £42.—Suffield, Fins Bromsgrove. [

B.S.A. 1916, chain-cum-belt model, with M Fulford sidecar, 3-speed and clutch, with 1 tyre, 3 acetylene lamps; £55.—Rivett, 236, High Leytonstone. [

1920 B.S.A. 4¼h.p. Combination, Easting, L lamps, fully equipped, good condition, ow ridden; £85.—Simpson, Knypersley End Farm, dulph, Staffs. [

B.S.A. 1916 4¼h.p., 3-speed, kick-start, all-cl drive, fully equipped; bargain, £38; coach car, £5.—28, Woodford Rd., Forest Gate. 'Pho Maryland 2598. [

1918 4¼h.p. All-Chain B.S.A., with extra fitti also just been overhauled by the makers; £70.—Apply W. Helyer, Toddington Farm, Li hampton, Sussex. [

£90.—B.S.A. 4¼h.p., delivered new 1921, comp with Coupette sidecar, all-chain drive m lamps, tax, etc.—Goad, 122, Maida Vale. 'Pho Hampstead 1353. [

B.S.A. 1921 Model K2, with Dinky sporting side accessories, nice condition; £79.—Elce, 13-15-16, Bishopsgate Av., Camomile St., E. 'Phone: Avenue 5548. [

B.S.A. 1921 Combination, absolutely perfect, miles, original tyres, lamps, speedometer, East £110, or exchange larger combination or light car.—Uplands Rd., Harringay. [

B.S.A. 4¼h.p., 3-speed, all-chain; 42 gns. B. 3½h.p. combination, countershaft gears; 36 g photographs.—Peter Gordon, Ltd., 110, Upper E mond Rd., East Sheen. [

B.S.A. 1915 4¼h.p. Combination, belt-cum-ch hood, windscreen, Tan-Sad, replacements, cost £15, 1921 licence, insurance paid; £70.—Par 16, Barnmead Rd., Beckenham. [

£68.—1920 B.S.A. 4¼h.p. Combination, equipped, hand clutch, splendid condition, liable, in grand tune.—Allen, Carlton House, B St., Seaford, Sussex. 'Phone: 12. [

B.S.A. 4¼h.p. Combination, 1915, 3-speed, clu K.S., speedometer, all on, perfect condition, paid; 75 gns., nearest offer, quick sale.—Hodg 97, Lower Richmond Rd., Putney. [

1920 B.S.A., chain-cum-belt model, 4¼h.p., 3-sp clutch and kick starter, front and rear la horn, Watford speedometer, splendid condition; £6 Rivett, 236, High Rd., Leytonstone. [

EXCEPTIONAL Bargain.—B.S.A. 1922 4¼ model H.2, all-chain drive, tax paid, better new, not done 50 miles; accept £89/15.—Wil Simpson, opposite Olympia, London. [

6-7h.p. twin B.S.A. (1921 purchased Nov. 1920) bination, electric lighting, accumulator, Ea windscreen, spare wheel, luggage grid, Tan-sad; cost £240; offers.—Box 2259, c/o *The Motor Cycle*, [

B.S.A. 4¼h.p., 2-speed, clutch, kick-starter, co built underslung Canoelet sidecar, equipped, tyres perfect, first-class condition thro out, photograph; £36.—128, London Rd., K Lynn. [

4¼h.p. B.S.A. Combination (late model), L dynamo lighting and horn; cheap. 3½h.p. B.S.A. Combination, thoroughly overhau 39 gns. or nearest.—181, Newton Rd., Burton Trent. [

1922 4¼h.p. B.S.A. Combination, No. 3 sid absolutely brand new, unregistered and ridden; purchaser unable now to take delivery; price £139, accept £116.—Daw, B.S.A. Agent, Brixton Hill. [

MOTOR CYCLES FOR SALE.

Douglas

9 15 Douglas 2¾h.p., 2-speed, lamps, horn, tax paid, new tyres, good condition throughout; 26 s.—15, Summerhill Rd., Dartford. [1749

18.—Douglas, 2¾h.p., 2-speed, tax paid, good tyres, belt stand carrier, etc., perfect, ride away.—15, Hodges Rd., W. Hampstead, N.W.6. [1391

h.p. Douglas Combination, 1919, good condition, comparatively small mileage, tax paid; £70.—10, Harlevine Circus, Sydenham, S.E.26. [1456

45.—Douglas 4h.p. Solo, renovated, overhauled, as new, plated and stoved, late forks; real bargain. Clarke, 406, York Rd., Wandsworth. [1936

PORTS Douglas 3½h.p., 1922, all on, perfect condition, specially tuned, ride any distance; £95. Thornton, 71, London Rd., Leicester. [1509

OUGLAS 1917 2¾h.p., 2-speed, lamps, mechanical horn, footboards, tax paid, any trial; £38.—Organ, 3, Agamemnon Rd., West Hampstead. [1632

9 19 4h.p. Douglas Combination, Easting, condition excellent, exceptional engine; £70.—Ayson, R.A.F., Hawkinge, Folkestone. [1295

IBB, Gloucester, has ridden Douglases for years past; [illegible] delivery of the various models from stock; trade supplied where not represented. [7542

9 17 Douglas Combination, fully equipped, new sidecar, most efficient engine, any trial; £49.—Taylor and Kirk, 406, Garratt Lane, Earlsfield. [1792

9 20 (September) smart Douglas Combination, fully equipped, mileage 3,090, insured, practically new. unique; £90.—25, Carlton Park Avenue, Raynes Park. [1688

9 21 Douglas 4h.p. Combination, all accessories, tax paid, condition like new; any trial; £100, offer.—C. A. Blay, 192, Heath Rd., Twickenham. [2093

9 20 Douglas 2¾h.p., 3-speed, head and tail lamps, Lucas horn, new Dunlop tyres, insurance and tax paid; £55.—Rivett, 236, High Rd., Leytonstone. [1319

9 19 4h.p. Douglas Combination; a beautiful lot; just tuned ready for holiday trip; £80; accept £ down.—Buntings Motor Exchange, Wealdstone. [2281

OUGLAS 4h.p. 1917, 3 speeds, clutch, kick-starter, renovated, £48; also 2¾h.p., 2 speeds, tax paid, 55.—Eagles and Co., 275, High St., Acton, London. [2071

3h.p. Douglas, single-speed, Bosch magneto, ride away; £17/10; exchange and cash, 3h.p. Hopley leaf spring, 12/-.—2, Gainsborough Rd., Hackney Wick. [1379

OUGLAS 1922 2¾h.p., tax paid for year, fully equipped, only run few miles; £55; must sell. 74, Brighton Rd., Surbiton. 'Phone: Kingston 25. [217]

965.—Douglas 4h.p. combination, coachbuilt, late model, electric lighting, tax paid till December, excellent condition.—Hartwell's Garages, Ltd., Oxford. [1267

PORTINGLY Equipped 1919-20 2¾h.p. Douglas, very little used, absolutely reliable; £45, lowest; tax paid; genuine.—Scott, Montrose, Winchmore Hill, London. [1202

9 15 2¾h.p. Douglas, all on, spares; £27, or offer. —White, Hewett's Quay, Barking. After 6.30: 7, Monkhams Ave., Woodford Green. 'Phone: Wan 756. [1448

OUGLAS 2¾h.p., 1915, thoroughly overhauled, head lamp, new generator, new tyre, tax paid; 55.—261, Mitcham Lane, Streatham. Tel.: 2940 Streatham. [2032

OFFAT, Yeovil.—What we don't know about Douglas M.C.'s—nuf sed. New 1922 models, spares and repairs; exchanges. Agents since 1908 'phone: 50 [5724

ATE 1916 2¾h.p. Douglas, splendid condition, equipped, Bowden extra air, 100 m.p.g., cut-out, big exhaust, fully licensed; 34 gns.—1A, Hearne Rd., New Bridge. [1527

9 20 4h.p. Douglas Combination, new oversize tyres, dynamo lighting, engine overhauled at makers, new condition, tax paid; offers.—Kinsey, Darran, Risca, Monmouthshire. [1

OUGLAS 2¾h.p., nearly new, latest 1922 tank, buffer head, lamps, horn, footboards, plated wheels; £43.—261, Mitcham Lane, Streatham. 'Phone: 940 Streatham. [2034

OUGLAS 1922 Models: 2¾h.p. £68, 4h.p. solo £110, 4h.p. combination £135; prices include all accessories; delivery from stock.—Rivett, 236, High Rd., Leytonstone. [2680

OUGLAS 4h.p. 3-speed Combination, 1918; 65 gns. Ditto, solo, 52 gns.; photographs. Exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [9587

9 20 Douglas, 2¾h.p., 3-speed, clutch, kick-start, fully equipped, little used, practically brand new; £55, bargain.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [2254

3h.p. 1921 2-speed Douglas, all on, £60, solo; also 3½h.p. 1914 Douglas Combination, 2-speed, £35.—Wauchope's, 9, Shoe Lane, Fleet St., London. Cash or easy terms. [2138

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1921 5-6 h.p. **ROVER** comb., lamps, horn, Easting, in perfect condition..... £120

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1920 6 h.p. **ENFIELD** comb., electric lamps, speedometer, etc. £105

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1920 Douglas 2¾h.p., 3-speed, clutch and K.S., complete with accessories, in really excellent condition; accept £55.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [1705

£27/10.—Douglas 2¾h.p., 2-speed, Amac Carburetter, tank in makers' colours, good order, ready for use, few extra special; £30; carriage extra. —59, High St., Clapham, S.W.4. [2330

DOUGLAS 1919 2¾h.p., all on, speedometer, rubber grips, knee-grips, complete tools, excellent condition, also tyres, tax paid; £50, nearest offer.—Pryor, 58, Hammet St., Taunton. [1589

1918 4h.p. Douglas Combination, very good condition, Easting, speedometer, lamps, horn; £60; reason for selling, sailing for Dominions.—Wills, 113, Portland Rd., Holland Park, W.11. [1906

1919 Douglas 2¾h.p., 2-speed, lamps, horn, belts, tools, spares, knee grips, discs, long exhaust, speedometer, tax, excellent condition; £50, complete.—Walker, Foresthill, Shortheath, Farnham. [1127

1918 4h.p. Douglas Combination, Douglas screen, tax December, recently overhauled, costing about £20, offers; also Clyno-Enfield combinations.—Parkfield Garage, Perry Vale, Forest Hill. [1510

DOUGLAS 4h.p. Combination, Oct., 1920, equipped lamps, horn, Tan-sad, licensed 1922, mileage under 3,000, appearance exceptional, mechanically perfect; £90, or offer.—129, Fermie Park Rd., Crouch End, N.8. [1698

EXCEPTIONAL Bargain.—Douglas 1922, 2-speed, all on, lamps, horn, licence holder, etc., tax paid, not done 30 miles, new July 1st; accept £59/17/6.—Wilkins Simpson, opposite Olympia, London. [1325

DOUGLAS Combination, 1921, accumulator lighting, Klaxon, Bonniksen, small mileage (mostly solo), perfect mechanical condition, appearance, gold medallist London-Edinburgh; £100.—17, Dunmore Rd., Wimbledon. [2266

DOUGLAS 1918, 2-speed, 2¾h.p., very fast, disc wheels, guaranteed throughout, nice condition, good tyres, all accessories; trial any time; bargain, £33.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney. [1620

1922 3½h.p. Sports Douglas, latest model, new last month, lamps, horn, knee grips, Bonniksen, will do 80, too fast for owner; cost £125 complete, best offer over £100; see Exchange.—Taylor, Station Hotel, Habrough, Grimsby. [2005

DOUGLAS Combination, 4h.p., 1920, condition and appearance perfect, mileage 4,000, hood, screen, lamps, horn, mirror, luggage carrier, new spare belt, tax paid; £90.—Private Owner, 107, Kingsland Av., Earlsdon, Coventry. [1259

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill. [0786

DOUGLAS 1922 4h.p. Combination, electric lighting, speedometer, elaborately equipped; cost £165 all on; what offer? Touring Norfolk July 22nd-August 5th. —Write 29, Beaumont Place, Norwich, or 150, Uxbridge Rd., London, W.12. [1549

DOUGLAS 2¾h.p., 1917, overhauled, in good condition, £30; 1918 2¾h.p., overhauled, tax paid, £35; these machines have been thoroughly overhauled and done up, all worn parts replaced.—W. Murch, Jun., 179, Brixton Rd., London, S.W.9. [2264

DOUGLAS 4h.p. Coachbuilt nice Combination, powerful, fast, 1916, 3 speeds, kick-starter, good tyres, guaranteed perfect, all accessories; trial any time; bargain, £49.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney. 'Phone: East 4542 [1617

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DOUGLAS.—£68; new 2¾h.p. 2-speed models delivered from stock; all machines complete with best lamps, horn, licence-holder, pump and tools; exchanges and special payment terms arranged; correspondence invited; catalogues and full particulars by return post free.—Herbert Robinson, Ltd., Green St., Cambridge. [2165

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DOUGLAS new 2¾h.p. 1922 2-speed models, fully equipped, £68; 2¾h.p., 3-speed, clutch, and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £115; 6h.p. combination, all on, £165. Your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. [2139

£39/10, offers.—Special Douglas, originally 1915, 2¾h.p. 2-speed model, fitted with drilled pistons, lightened valves and replacements value £25 (proof) since November, 1921, entirely dismembered Whitsun, 1922, plated, stove enamelled dark red, thoroughly overhauled, very best lamps, horn, tools, spares, B. and L. mechanical pump, discs, knee-grips, fircones, exceedingly fast, smart, reliable; finance forces sale.—Thorpe, 284, Plumstead Common Rd., London, S.E. (P) [1541

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DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7665

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DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones Garage Broadway, Muswell Hill N.10. [0806

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1921 Dunelt 3½h.p., 2-stroke, new tyres, M-L dynamo lighting, all accessories, tax paid, only wants seeing.—3, Norwood Rd., Herne Hill, S.E.24. [1439

DUNELT 1922 4h.p. Combination, spare wheel, speedometer, all accessories, mileage under 300; best offer.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1770

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£34.—Economic, variable gear model, finest value; call and inspect.—Pino's Garage, 12, High St., Fulham. [8296

£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

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ECONOMIC Motor cycles £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

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EDMUND Spring Frame, Blackburne or Barr and Stroud engines.—Gourlay's, Fallowfield. [7670

1922 Edmund-Barr-Stroud, tax paid, £73; 1922 Edmund-Blackburne, tax paid, £68.—5, Rochester Mews, N.W.1. [2218

Enfield

1922 Enfields in stock.—Premier Motor Co., Birmingham. [4601

NEW Enfield Combinations in stock.—Bounds' Garage, 223, High Rd., Kilburn. [2058

1921 2¼h.p. Enfield, 2-speed, 2-stroke; £35/10.—89, Spencer Place, Leeds. [1530

SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

£9.—Enfield, twin, carburetter needs repair, tyres fair.—Swinnerton, 69, Victoria Rd., Fenton, Staffs. [1625

ROYAL ENFIELD, 1916, 3h.p. Twin, 2-speed, new Dunlops; £40, or offer.—64, Bolton Rd., Harrow. [1873

ENFIELD 2-stroke 1920, lamps, etc., excellent condition, licensed; £28.—Box 2585, c/o *The Motor Cycle.* [1516

ENFIELD 1921, 8h.p. combination, Lucas dynamo lighting, complete with spares, as new; £118.—Below.

ENFIELD 1920, 6h.p., dynamo lighting, hood, all accessories; £105.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

ROYAL ENFIELD 2¼h.p., 2 speeds, kick starter. £57.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31 [0879

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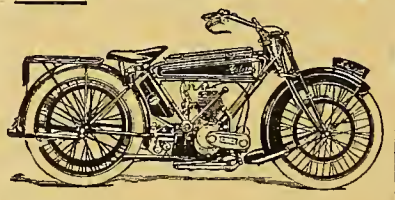

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1921 8h.p. Enfield Combination, speedometer, pill lamps, mileage 2,000, tax paid; £120.—Mar Sedbergh, Yorks. [1

1919 6h.p. Enfield Combination, dynamo light hood and windscreen; £75.—64, Church Edgware Rd., N.W. [2

ENFIELD Combination, 6h.p. J.A.P., all in condition; £55; seen evenings.—Chiverton, Tavistock Sq., W.C.1. [1

ENFIELD 1917 6h.p., 2-seater sidecar, speedome lamps, horn, Tan-Sad, hood; £85.—3, Turle Tollington Park, N.4. [1

1922 8h.p. Enfield 2-seater combination, Lucas h tax paid, purchased June; offers.—Chapman, Bostall Hill, Plumstead. [1

DAN GUY, Weymouth.—Enfield 1921 8h.p., A dyno, double-seated sidecar, hood and scr guaranteed perfect £125 [0

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ENFIELD 1919 Combination, excellent order; —Newnham Motor Co., 223, Hammersmith W.6. 'Phone: Hammersmith 80. [1

ENFIELD Combination, 8h.p., late 1920, equipped, excellent condition; £95; tax pai Procter, 14, Victoria St., Hereford. [1

ENFIELD, 1922, K.S., 2-speed, tax paid, h honestly perfect; any trial; under 500 miles; —14, Chelmsford Rd., Walthamstow. [1

CROYDON and District.—Sole official appoi agent for Royal Enfields.—A. F. Pulling, London Rd., Croydon. 'Phone: 1619. [6

8h.p. Royal Enfield Combination 1922, dynamo li ing, £137/10; cash or easy terms.—Wauchope's Shoe Lane, London. 'Phone: Holborn 5777. [2

ENFIELD.—Complete range of 1922 models for mediate delivery; cash; exchanges; easy payme —P. J. Evans, John Bright St., Birmingham. [1

ENFIELD 1922 Magdyno Combination, not 1,000 miles, excellent condition, tax paid; £ —The Layton Garages, 30, Holywell St., Oxford. [1

ENFIELD 1920 8h.p., J.A.P. engine, Combinat electric lamps, perfect order; £80.—Vivian Ha and Lane, Ltd., 23 and 24, Woodstock St., W.1. [2

1922 8h.p. Enfield Combination, electric light licensed, indistinguishable from new; £12 Godfrey's Garage, Cranbrook Rd. 'Phone: Ilford [1

ENFIELD 2-stroke, 2-speed, a smart and effici mount, any examination, looks like new; £32/ —Naylor and Kirk, 406, Carratt Lane, Earlsfield, S [17

ENFIELD-J.A.P., 1920, 8h.p., Magdyno Comb tion, paint and enamel as new; mechanic sound; bargain, £105.—14, Cannonbury Rd., Ra gate. [1

ENFIELD 6h.p. 1916 Combination, hood, scr lamps, tax paid, exceptionally good condit silent engine, any trial; £75.—120, Powis St., W wich. [1

ENFIELD Combination, 6h.p., fully eqnipped lamps, etc., in excellent running order, tax for year; £45; bargain.—74, Brighton Rd., biton. [2

1922 Enfield 2-stroke, new in June, full lice paid, ridden about 700 miles; £52 or near offer; no further use.—Ford, Oxford Daventry. [2

ENFIELD 1922 latest Combination, 8h.p.; advert cannot take delivery; will sacrifice £20 de paid, leaving £120; London.—Box 2580, c/o *Motor Cycle.* [1

EXCEPTIONAL Bargain.—Enfield 1922, 2-stroke speed, kick-starter, tax paid, better than only done 30 miles; £45.—Dunn, 14, Bridge Northampton. [1

6h.p. Enfield Combination, late 1918, in excel condition, good tyres, tax paid, lamps, horn, private owner; any trial; £85.—H., 73, Carleton Tufnell Park, N.7. [7

3h.p. Enfield, twin M.A.G., 2-speed, all chain, £47 18 months ago; nearest offer accepted, w exchange with cash for late New Imperial.—Ga High St., Uxbridge. [1

ENFIELD 1922, brand new, 2-stroke, 2¼h.p., sports model, just arrived, secure now; £55; changes; easiest of easy payments.—Wilkins Simp opposite Olympia, London. [1

1922 Enfield 8h.p. Combination, electric light, not done 160 miles, winner gold medal and si cup Builth Trials, tax paid, insured; accept £14 Ivor Weale, Builth Wells. [1

ENFIELD Combination, practically new, just turned from makers, hood, screen, speedome Tan-sad, and spares; £105.—Hammond, "Heathsi (top Station Rd.), Crayford, Kent. [1

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:OUTS.—A P.C. will bring you a demonstration (no obligation), true revelation. The ideal.—"Par-d," Indian Agents, 89, East Hill, Wandsworth. [1713

DIAN 7-9h.p., Powerplus, spring frame, solo, 1919, 3-speed, clutch, kick-start, new and unused, mile-300; £58.—4, Hanover St., W.1. Mayfair 786. [1896

DIAN 5-6h.p. Combination, 3-speed, clutch, East-ing, taxed December; £47; exchange B.S.A. ıbination or similar.—132, Seven Sisters Rd., N.7. [1475

ODFREY'S, Ltd.—Indian Scout 1921 4h.p., dy-namo lighting, Lucas electric horn, speedometer, ranteed; £105.—208, Great Portland St., W.1. [2354

ODFREY'S, Ltd.—Indian Powerplus Combination 1919 7h.p., spring frame, dynamo lighting, acces-s, guaranteed; £95.—208, Great Portland St., [2357

ODFREY'S, Ltd.—Indian Powerplus 1916 7h.p., with Indian coachbuilt sidecar, disc wheels, ometer, accessories, guaranteed; £88.—208, Great tland St., W.1. [2356

)19 Indian Powerplus Combination, dynamo lighting, speedometer, milesge 2,700, splendid lition; lightweight and cash considered.—James, Roscoe St., Liverpool. [1851

DIAN Combination, 1914, 7-9h.p., 2-speed, clutch, K.S., electric light, sound order and good appear-e; any trial; £60, or near offer.—72, Huron Rd., nam. 'Phone: Streatham 1596. [1197

ODFREY'S, Ltd.—Indian Scout 1921 4h.p., with Millford sidecar, Easting screen, complete with ssories, condition throughout as new, guaranteed; 5.—208, Great Portland St., W.1. [2355

'DIAN Combination 1919, not W.D., dynamo light-ing, horn, speedometer, elaborate sidecar, also ng body, lavishly equipped, perfect, mileage 5,000, trial; £89.—86, Florence Rd., N.4. [1498

)19 Indian, 7-h.p. Powerplus, Millford sidecar, spring frame, Cameo, electric light, licensed, ellent condition; £95, or exchange 3-wheeler.—W. B., Devonia, Herschel Park, Slough, Bucks. [1447

)16 5-6h.p. 3-speed Indian Combination, kick-start, as new, unlicensed, £55; also 1915 7-9 spring frame combination, like new, £48.—28, odford Rd., Forest Gate. 'Phone: Maryland 2598. [1757

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ODFREY'S, Ltd.—Indian Powerplus Combination, 1920, 7h.p., spriog frame, 3-speed, dynamo light-speedometer, bulbous back body, windscreen, d, guaranteed; £105.—208, Great Portland St., [2358

)22 Indian 7h.p. Combination, electrically equipped, 2-seater sidecar, Bluemel's wind-en, condition as new, tax paid, only done 700 es; £165.—C. A. Blay, 192, Heath Rd., Twicken-n. [2094

ATE 1921 Indian 7-9h.p. Powerplus Solo, elec-trically equipped, tyres hardly worn, unscratched, r-drive speedometer, tax paid, in perfect mechanical er; £90 cash; or gradual payments arranged.—Seen 248, Bishopsgate, E.C. (Juno Showrooms). [2106

)20-21 Standard Indian Combination, complete with dynamo lighting, hood, screen, bulbous k, perfect condition, only 3,000 miles, fully in-d, tax paid until December; owner will accept 10 or near offer.—Apply Godfrey's, Ltd., , Gt. Portland St., W.1. [1242

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'DIAN Combination, Powerplus, delivered March last, only done 400 miles, absolutely perfect; ler has car, must sell; electric horn and lighting, lford sidecar extra large, Easting windscreen, tax d and fully insured; what offers? Would consider d lightweight, 1921 or 1922, in part payment.—., 47, Hereford Rd., Westbourne Grove, London, 2. [1086

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GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd., London ('Phone: Brixton 3129), supply all parts from stock, new and second-hand. They also specialise in Indian repairs. [9129

INDIAN Scouts.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hamp-stead 8616. [1867

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GODFREY'S, Ltd.—Invicta 2¾h.p. 1919, J.A.P., 2-speed, accessories, guaranteed; £42.—208, Great Portland St., W.1. [2359

3½h.p. Invicta, smart coachbuilt sidecar, with adjustable seat and locker at back; new outfit offered as shop soiled at clearance price; £100; 3½ h.p. ditto solo, £85. Convenient easy payments.—Harrods Motor Salesrooms, 118, Brompton Rd., London, S.W.1. [1482

Ivy

2½h.p. 2-speed Ivy, 1920, perfect running order; £32.—88, Park Rd., Dulwich. [1737

£23.—1916 Ivy, 2-stroke, new piston, main bearings, new Amac, tax, new Dunlop tyre.—Orchardleigh, Leatherhead. [1751

1920 Ivy, 2-stroke, 2-speed, perfect running order, excellent condition; nearest £35.—Kent, Tirdal Rd., Aylesbury. [1747

1921 2½h.p. 2-stroke Ivy, 2-speed, clutch and K.S., Sturmey, all accessories, tax paid, better than new; £45.—5, Norwood Rd., Herne Hill, S.E.24. [1440

IVY 1922 2-stroke, 2-speed, clutch, kick-starter, Model D; £47/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

IVY 2½h.p. 1920 2-stroke, Sturmey-Archer 2 speeds, clutch, kick-starter; £38, including accessories; tax paid.—Eagles and Co., 275, High St., Acton, London, W. [2074

IVY Combination, 5-6h.p. twin J.A.P., all accessories, coachbuilt sidecar, windscreen; 90 gns., nearest offer; any trial.—Lucking, 28, Church St., Rugby. Tel.: 145. [1400

IVY 3h.p. 1922 T.T. Model, as used in the Isle of Man races this year, 3-speed, all-chain drive, guaranteed to do 60 miles per hour; £75.—Maudes', 100, Gt. Portland St., London. [1780

James.

JAMES 1920 3½h.p. Twin, all chain, 3-speed, perfect order; £60.—Marston, 31, Bridge St., Chester. [1807

JAMES 3½h.p. Twin Sports, completely overhauled, fast; bargain, £50.—229, Maryvale Rd., Bournville. [1252a

JAMES.—All 1922 models in stock; call and inspect.—The Agents, Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [7369

1920 6h.p. James Combination, tax paid, hood, screen, lamps, etc., in splendid order; bargain, £80.—Churchill, The Grove, Dorchester. [1143

4½h.p. James Combination, 3-speed, all-chain drive, oversize tyres, accessories, licensed, excellent condition; £59.—45B, Cato Rd., Clapham. [1875

£35.—4¼h.p. James Combination, 3-speed, countershaft, gears, clutch, K.S., canoelet coachbuilt sidecar, fully equipped.—King, Egrove, Oxford. [1971

1920 James 2-stroke, 2-speed, all lamps, horn, knee grips, tax paid; £35; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1820

1922 James 3½h.p. Twin Sports, as new, fully equipped and licensed, only done 600 miles; £95; guaranteed perfect.—77, Shelbourne Rd., Bournemouth. [1174

1920 James Combination, 5-6h.p., electric lighting, speedometer, etc., bulbous back sidecar, Bluebell screen; £65.—Martin, 10, Herbrand St., W.C. Museum 6594. [1139

JAMES 4¼h.p. Combination, cane sidecar, good condition, K.S., 3 speeds and clutch, speedometer, lamps, etc.; £70.—33, Lisson Grove, Marylebone. [2371

NEW 1922 model de Luxe James 7h.p. Combination; windscreen, spare wheel, child's dickey seat; £160; easy payments, 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [8614

1919 5-6h.p. James Combination, Montgomery sidecar, lamps, horn, speedometer, K.S., 3-speed, unridden since recent overhaul by makers; excellent condition and appearance; £88.—86, Church Rd., Upper Norwood, S.E.19. 'Phone: Sydenham 2363. [1900

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1915-16 5h.p., M.A.G. Bransome-Kent Combination, Sturmey-Archer 3-speed, kick-starter, hand foot-controlled clutch, Lucas lamps, etc., well equipped; accept £60.—Glover, Hereford Villa, New Barnet. [1915

Kerry.

KERRY 2¾h.p., running order, licensed; £10/10; suit beginner.—196, Albert Rd., South Norwood [1314

Kingsbury.

KINGSBURY 2¾h.p., 2-speed, all-chain, superbly equipped, unridden, licensed; £46.—16, Shoot-up Hill, N.W.2. (P) [1830

Lea-Francis

1920 Lea-Francis, 3½h.p. M.A.G. engine, accessories, very good condition; £50.—Premier Motor Co., Aston Rd., Birmingham. [2208

1920 Lea-Francis 3½h.p., M.A.G., 2-speed, K.S., fully equipped and in first-class condition; £55.—Gray and Levin, 5, The Boulevard, Balham High Rd., S.W. [1743

LEA-FRANCIS, 1920, M.A.G., 3½h.p., hand-foot clutch, K.S., fully equipped, Watford speedometer, absolutely perfect, any trial; £65.—B., 11, Pleasant Place, N.1. [2278

LATE 1919 Lea-Francis 3½h.p., 2-speed gear, h.b.c., clutch, kick-starter, thoroughly overhauled, excellent condition; bargain, £48.—Gibson, Swansea House, Pickering, Yorks. [2062

LEA-FRANCIS 3½h.p. 1920, M.A.G. engine, all-chain, Binks carburetter (new), Lucas lamps, knee-grips, Norton handle-bars, Triumph footrests, mechanical condition guaranteed, fast solo mount, licensed December; £80 or offer; must be sold.—Dalgleish and Baird, New Bridge, Riccarton. 'Phone: 404 Kilmarnock. [1224

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POPULAR 2¼h.p. Single-gear Levis, £48; Model S, 2¼h.p., 2-speed, clutch, £58; Model G, 247 c.c., 2-speed, clutch, £61; kick starter £2 extra; easy payments 4% extra; carriage paid to any address; all models in stock for immediate delivery.—Premier Motor Co., Aston Rd., Birmingham. [5881

LEVIS 2¼h.p., 2-stroke, just overhauled by makers; £25, bargain.—Moss, Wem. [1954

GIBB, Gloucester, Sole District Agent for Levis: immediate delivery from stock. [7545

£28.—Levis, very low, fast, any trial; exchange.—57, Kenbury St., Camberwell, London. [1579

£19.—2¼h.p. Levis Popular model, good running order.—King, Egrove Farm, Oxford. [1972

LEVIS Popular, 2-stroke, accessories, tax, 1919; £28.—Midland Motors, St. Clement's, Oxford. [1496

1921 2-speed Levis, tax paid, perfect condition; £37, or nearest.—Binns, Melrose, Pelsall, Staffs. [2019

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1921 Model S. Levis, Sturmey-Archer 2-speed, handle-bar controller clutch, Lucas lamps and horn, perfect condition; £42.—Premier Motor Co., Aston Rd., Birmingham. [2207

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1921 O.K. Junior, 2-speed, licensed; bargain for quick sale, £33.—38, Cowley Rd., Oxford. [1121

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P. and M. 1921 Solo, all accessories, tax paid; £75.—42, Quinton St., S.W. 18. [1852

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P. and M. Combination, 1920, electric, speedometer, Easting, beautiful condition, standard sidecar; bargain, £65, or near; after 6.—113, Browning Rd., Manor Park. [2244

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£20.—3½h.p. Premier, Bosch, Binks, 2-speed, free engine, tyres good, cylinder rebored, fast, reliable, ride away, send photo.—Proudlove, "Dunedin," St. Anne's Rd., Blackpool. [1231

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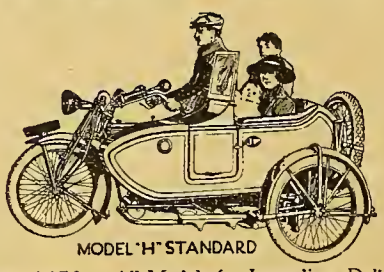

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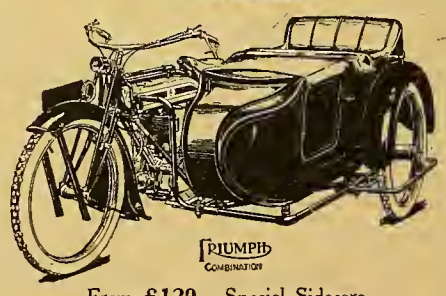

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REX 3½h.p., £16/10; also 2¾h.p., £15; both perfect; particulars and photos.—Spencer, Charleville, Hersham Rd., Walton-on-Thames. [1845

REX 3½h.p., single speed, in splendid condition; engine thoroughly overhauled by makers; any trial after 7 p.m.; price £25.—W., 62 Ferdinand St., London, N.W.1. [1095

REX 4h.p. Sporting Motor Cycle, in going order, single gear, about 1912-13, just right for the holidays; £35, or offer.—Aylward, Farringdon, Alton, Hants. [1289

£28.—Rex combination, 5-6h.p., 2-speed, fully equipped, engine overhauled, smart coachbuilt sidecar.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. [1795

REX 6h.p. Twin Coachbuilt Combination, fast, economical, 2 speeds, free engine, good order guaranteed, Bosch, B. and B.; bargain, £22.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney. [1618

2¾h.p. Rex Combination, Blackburne engine, new, fast, just delivered ex works, 3-speed Sturmey-Archer gear, kick-starter, and hand-controlled clutch; £96/15; exchange or easy terms.—Wauchope's, 9, Shoe Lane, London. [2148

Rover.

1920 5-6h.p. Rover (sidecar), J.A.P., 3-speed, sound; £63/10.—89, Spencer Place, Leeds. [1529

3½h.p. Rover 1914, single-speed model road racer; £37/10; easy terms.—Wauchope's, 9, Shoe Lane, London. [2157

1919 3½h.p. Rover, 3-speed, countershaft Combination, electric lamps, Easting; £65, bargain.—Motor Mart, Yeovil. [1078

ROVER T.T., Philipson, late model, splendid condition, lamps, accessories, tax paid.—5, Ashford Avenue, High St., Hornsey. [1349

1919 6h.p. Rover Combination, speedometer, windscreen, condition excellent; must realise; 64 gns.—67, Fernlea Rd., Balham. [2268

£30.—3½h.p. Rover, Philipson pulley, free engine clutch, condition and appearance good.—Premier Motor Co., Aston Rd., Birmingham. [2210

1921 Rover Combination, 5-6h.p., excellent condition, mileage 500, Klaxon, 3-speed, kick, lamps; £85, offer.—6, Silvester Rd., Dulwich. [1129

ROVER, nearly new, 5-6h.p. combination, 1919-20, £15 accessories, hardly used; 75 gns.; would separate.—73, Windermere Rd., South Ealing. [1637

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Sunbeam.

1919 Sunbeam 3½h.p., Montgomery sidecar, Eastling screen, apron, horn, Lucas lamps, new umlops, tax paid, equal new, any trial; £95.—ames, 49, Cheyney Rd., Chester. (P) [1308

1921 3½h.p. Sunbeam Combination (August), windscreen, accessories, little mileage, perfect condition; cost £220, will accept £125, or nearest offer.—urrows, 16, Walmer Rd., Waterloo, Liverpool. [2017

1915 Sunbeam 3½h.p., 3-speed, chain drive, clutch and kick starter, front and rear lamps, horn, an-Sad, tyres in new condition, very fine machine; 57/10.—Rivett, 236, High Rd., Leytonstone. [1521

1921 3½h.p. Sports Sunbeam, perfect condition, just over 1,000 miles, Cowey hooter, brand new ucas lighting set, unused, spare valve, etc.; £100; righton.—Box 2581, c/o *The Motor Cycle*. [1815

1921 3½h.p. T.T. Sporting Sunbeam, ridden carefully 250 miles only; owner must sell immediately, no reasonable offer refused.—Write, Jameson, /o Herbert Robinson, Ltd., Green St., Cambridge. [21/0

1921 Sunbeam 3½h.p., sporting model, less kickstarter, Lucas dynamo lighting, Bonniksen peedometer, horn, licence paid, excellent condition; 96.—King, 4, Willow Walk, Short St., Cambridge. [2115

SUNBEAM 8h.p. Combination, 1921, dynamo lighting, electric horn, speedometer, windscreen, hood, pare wheel, Tan-Sad, tools, insured and taxed, new ondition; cost £300; accept £220.—19, Church St., Wickenham. [1881

SUNBEAM Combination, 3½h.p., late 1920, new Montgomery sidecar and windscreen, condition s new, leaf spring forks, fully equipped, tax paid, ny trial; £110; owner bought car.—Jenkins, 4, Vineard Rd., Wellington, Salop. [1730

1920½ Sunbeams, Semi-Sports, laminated forks, Binks, F.R.S. Major, Cowey, open exhaust, footests, additional silencer, footboards, legshields, meanically perfect, condition new, cost £165; sell £110; hoto.—24, Scarisbrick St., Southport. [2075

1921 Sunbeam Combination, 3½h.p., new April, interchangeable wheels, leaf-spring fork, full ze touring gear box, oversize Dunlops, carefully used, erfect internally and externally, speedometer, lamps, owey horn; £125.—Plowman, 6, Clarence Crescent, Windsor. [1473

SUNBEAM Combination, December, 1921, 3½h.p., spare wheel, Magnum cord tyres, 26×3 in., B. 00 saddle, Lucas electric and acetylene lighting, owey speedometer, electric and Klaxon horns, Triplex reen, etc.; price £165, cost over £210; condition erfect; seen Woking.—Box 2572, c/o *The Motor ycle*. [1378

SUNBEAM Combination, 3½h.p., just delivered from makers, brand new, fully equipped, including Eastng Royal, spare wheel, tax and insurance for 12 onths, cost over £200; accept 160 gns.; great sacrice, and bargain for magnificent turnout; consider eferred payments, or will take £100 and Bebe Peneot.—11, Church Grove, Lewisham, S.E.13. [1508

GENUINE Bargain.—Sunbeam 1921 8h.p. J.A.P. Combination, 3-speed, Lucas Magdyno lighting, lectric horn, Cowey speedometer, screen, storm apron, ood, luggage grid, sidecar mat, legshields, Tan-Sad, pare wheel and tyre, all Dunlops, tax paid till 1923, ot done 3,000 miles, condition throughout excellent; xcept £159/15.—Wilkins Simpson, opposite Olympia, ondon. [1323

Swift.

19.—3½h.p. Swift, go anywhere, new Dunlop tyres, Bosch.—Davies, School, Newbridge-on-Wye. [1236

Torpedo.

TORPEDO-PRECISION Lightweight, tax paid, rebushed, new tyres, Bosch, B. and B., 2-speed; 16.—W. Porter, 23, Winchester St. N., Taunton, omerset. [1125

Triumph.

EFFRA Motor Irish M.T. Surplus.

GNS. Monthly.—Deposit £16/7/7 secures counter shaft Triumph motor cycle, reconstructed, stove namelled, and finished in makers' colours, Bosch agneto, new tyres, tubes, guaranteed 3 months; ish £60.—Effra Motor Works, 59-63, High-st., Clapam, S.W. 'Phone: Brixton 1115. [2333

PREMIER Motor Co. for 1922 Triumphs.

IMMEDIATE delivery of type H, 4h.p., 3-speed, £105; type S.D., chain drive, £115; type R., ½h.p., overhead valve, £120; type L.W., lightweight, 65; sidecars from £20 to £50; easy payments, 4 per ent. extra; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0867

TRIUMPH 4h.p. C.D., as new; £100.—The Morris Garages, Oxford. [2111

1922 Triumphs in stock; cash or exchange.—Rose's Garage, Uxbridge. [1503

LATE Triumph 4h.p. countershaft combination, new condition; £55.—Below.

TRIUMPH 4h.p., solo or combination, 3-speed; £32, would consider exchange.—1, Pembury Mews, Pembury Rd., Tottenham. [1945

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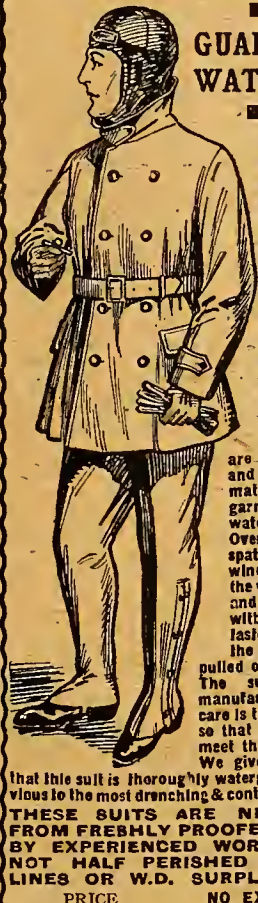
MOTOR CYCLE SUIT

With Plaited Leather Belt.



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208, Oldham Rd., New Cross, Manchester.

MOTOR CYCLES FOR SALE.

Triumph.

1918 Countershaft Triumphs from £40.—24, Balliol Rd., North Kensington. [1669

TRIUMPH 1921 Model H, mileage 1,000, perfect; £65.—25, Croydon Rd., Penge. [2214

NEW 4h.p. Triumph, Model H, in stock.—Bounds' Garage, 223, High Rd., Kilburn. [2059

3½h.p. Triumph, 2-speed, lamps; £25.—Sharp, 11, Vorley Rd., Highgate, London. [1635

TRIUMPH 4h.p. Countershaft Combination; £50, excellent bargain.—Nelson's, Rhyl. [1416

1918 Triumph, countershaft, almost new, perfect; £55.—9, Church Rd., Harlesden. [1717

TRIUMPH 4h.p., S.D., 1921, new condition; £110.—Evans and Sons, Stone, Staffs. [1345

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0868

TRIUMPH 1919 4h.p., fully equipped, tax paid; £65.—145, Widmore Rd., Bromley. [2340

1918 4h.p. Countershaft Triumph, as new; £55.—2, Fortune Gate Rd., Harlesden, N.W. [1493

1922 Triumph 4h.p., brand new, complete with brand new Coupette sidecar; £125.—Below.

1922 Triumph 4h.p., brand new, all-chain, owner must sell; offers.—Below.

1914 Triumph 4h.p., 3 speeds, clutch lamps, etc.; £25; bargain.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2321

TRIUMPH-RICARDO 4-valve Model; £120; from stock.—Marston, 31, Bridge St., Chester. [1803

MODEL H 1922 Triumph, new, £105; also S.D. model, £115; cash or extended payments.—Below.

WE have several 1918-1919 C.S. Triumphs, fitted new tyres, tubes, etc., and many fitted with 1922 S.A. gear boxes, splendid value, enamelled and plated; £65.—The Hackford Engineering Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [2286

TRIUMPH 4h.p.; £50.—R. Toms, 307, Euston Rd., N.W.1. 'Phone: Museum 8038 and 8039. [1136

3½h.p. Triumph, Bosch, N.S.U., lamps; £24; after 7.30.—134, Northcroft Rd., West Ealing. [1883

TRIUMPHS.—Prompt delivery and service.—Barlow and Son, Monton, Eccles. Tel.: 160 Eccles. [3692

CROSS, Effingham Sq., is agent for the trusty Triumph in Rotherham. All models from stock. [2164

TRIUMPH, 1918, and sidecar, all on, tax paid; £70.—Warner, 87, Bermondsey St., Bermondsey. [1095

TRIUMPH 4h.p., K.S., countershaft, perfect condition, all on; £65.—42, First Av., Rotherham. [1609

TRIUMPH 1918, perfect, very fast; £47/10.—Lobban, 34, Burton St., nr. St. Pancras Church. [1348

TRIUMPH, clutch model, 1913, tax paid, guaranteed; cheap.—Arsenal Works, Hampton Hill. [1522

1917 Triumph, countershaft, with 1921 sidecar, perfect; 50 gns.—62, Princess Rd., Kilburn, N.W.6. [2064

1920 Triumph Junior, equipped and taxed, almost as new; £38.—Brockbank, 58, Lord St., Southport. [2125

TRIUMPH Countershaft, less unit, tank, bars, saddle, etc.; £12/10.—2, Appian Rd., Bow, E.3. [1905

1922 Triumphs, delivery from stock, Ricardo, Type H, or S.D.—Daw, Triumph Agent, 114, Brixton Hill. [2000

1918 Triumph, 3-speed, countershaft, with all accessories; 40 gns.—64, Church St., Edgware Rd., N.W. [2250

LATE Model Triumph Combination, perfect condition, any trial; £65.—120, Sutherland Rd., Croydon. [1832

4h.p. Triumph, countershaft, 1916-17, aluminium discs, licensed; £42.—17, Sussex Rd., New Maldeo. [1909

TRIUMPH-GRINDLAY Combination, fully equipped; £70.—Oakford, Jordan Well Chambers, Coventry. [1789

1921 Triumph, lavishly equipped, countershaft, mileage 1,000; £75.—24, Balliol Rd., North Kensington. [1670

TRIUMPH 1913, 3½h.p., Philipson, all on, good running order; £25.—Talbot Garage, Market St., Stourbridge. [8049

1917 Triumph Combination, equipped, good condition, any trial; £52.—77, Haverstock Hill, Hampstead. [2237

TRIUMPH 4h.p., countershaft, 3 speeds, late model, in splendid condition; £45.—74, Brighton Rd., Surbiton. [2172

GODFREY'S, Ltd.—Triumph 1919 4h.p., type H, Millford Empress sidecar, condition excellent, guaranteed; £84.—208, Great Portland St., W.1. [2364

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Countershaft, perfect condition; any trial; £50.—33, Hackford Rd., Brixton. 'Phone: Brixton 3062. [2287

F.O.C.H. for Triumphs, new and second-hand in stock at tempting prices.—5, Heath St., Hampstead (nr. Tube). [7866

1917 Countershaft Triumph Combination, lamps, tax, all on; £55.—11, Blechynden Mews, Lancaster Rd., W.11. [2234

TRIUMPH 3½h.p., clutch, Philipson's governor pulley, Lucas lighting.—Jacques, Thornton, Ettington, Stratford-on-Avon. [1215

GODFREY'S, Ltd.—Triumph 1919 4h.p., type H, excellent condition, guaranteed; £72.—208, Great Portland St., W.1. [2362

MOFFAT, Yeovil, Official Triumph Service Agents.—1922 models from stock; exchanges; all spare parts. 'Phone: 50. [5725

LATE 1918 Triumph, as new, registered; £52.—Handship, Fire Station, South Parade, Church St., Chelsea, S.W. [1097

TRIUMPH 4h.p. Combination, 1916, excellent condition; £60.—Buckett, 135, Beulah Rd., Thornton Heath, Surrey. [1109

3½h.p. Triumph, clutch, Grado, Binks, Bosch, lamps, good condition; £40, or offer.—21, Keston Rd., Peckham, S.E.15. [1495

TRIUMPH Junior 1919, licensed, Lucas lamps and horn, excellent condition; £38.—Law, The Hollies, Sedgley, Staffordshire. [2012

3½h.p. Triumph Coachbuilt Combination, clutch, Philipson, all on, tax paid; £35/10.—Hack, Victoria Rd., Bromsgrove. [1094

1914 Triumph-Gloria Combination, 3-speed, K.S., tax, insurance paid, fine condition; £46.—169, Loughborough Rd., Brixton. [1476

TRIUMPH Combination, 1914, good running order; taken for debt; sold highest bidder.—Palmer, 8, Findon Rd., Shepherd's Bush. [1311

TRIUMPH 4h.p., late 1918, countershaft, 3 speeds, clutch, kick-starter, overhauled, new condition; £55.—63, Solon Rd., Brixton. [1651

GODFREY'S, Ltd.—Triumph 1913 3½h.p., 3-speed, clutch, pedal-starter, accessories, guaranteed; £40.—208, Great Portland St., W.1. [2361

TRIUMPH 4h.p., late 1921, good condition, all on, spares, etc.; £80; owner going abroad.—33, Guildford St. 'Phone: Museum 3396. [1255

TRIUMPH Combination 1921 tax paid, equipped, exceptional bargain; £82/10.—M. Hillier, 216, Portobello Rd., North Kensington. [1524

SEVERAL second-hand Triumphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1181

TRIUMPH-GLORIA Combination, countershaft, Easting, speedometer, perfect condition; £85.—31, Avoca Rd., Tooting Bec Rd., S.W.17. [1209

1918 Triumph, 3-speed Sturmey, all accessories, new Dunlop rear, tax paid; a bargain, £58.—1, Norwood Rd., Herne Hill, S.E.24. [1438

1922 Triumph, S.D., and Gloria sidecar; £155; just arrived: bring yours along for allowance.—Buntings Motor Exchange, Wealdstone. [2280

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

TRIUMPH 1913 Coachbuilt Combination, underslung sidecar, 2-speed and clutch; £32, no offers.—Speechley, 86, Churchfield Rd., Acton, W.3. [1356

1918 Triumph Combination, fully equipped, D.A. lighting, tip-top condition; gift, £65.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [2256

1920 Triumph-Gloria Combination, screen, electric lighting, spares, good appearance, owner-driven, overhauled; £95.—9, Oyster Lane, Byfleet. (P) [1157

TRIUMPH 1921, splendid Combination, electric, Easting, speedometer, disc wheels, licence; £82, offers.—29, Addiscombe Court Rd., E. Croydon. [1897

SACRIFICE.—3½h.p. Triumph, dropped frame, engine perfect, decompressor fitted, appearance as new; £30, or nearest.—8A, Moat St., Coventry. [1292

TRIUMPH 1916-17. New sidecar, windscreen, accessories. Wheels tank renewed 55 guineas. Photograph.—Fish, 62, Addison Gardens, W.14. [1397

TRIUMPH 4h.p., countershaft, just overhauled, top-hole condition; 58 gns.; or exchange A.B.C.—Harris, 6, Ardwick Rd., West Hampstead, N.W.2. [1595

1921 4h.p. Triumph Combination, Magdyno, every possible accessory, condition perfect; £105, or offer.—C. A. Blay, 192, Heath Rd., Twickenham. [2096

TRIUMPH 4h.p. Combination, licence paid, all accessories, £55; also one type H combination, nearly new, £90; and one 1921 SD combination, all-chain drive, discs, screen, licence paid, all accessories; £100.—Marston, 31, Bridge St., Chester. [1804

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WRITE TO-DAY

MOTOR CYCLES FOR SALE.

Triumph.

1918 Triumph 4h.p., excellent running order, good condition and very reliable; accept £47.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [1706

ALL Triumph models always in stock; also full range of Triumph Spares. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1180

SHEFFIELD Agent for Triumphs; all models in stock for immediate delivery.—J. A. Stacey, Triumph Service Depot, 12, Ecclesall Rd., Sheffield. [0812

1920 Triumph, fully equipped, lamps, horn, etc., Stewart speedometer, genuine bargain; £63.—Ward, Fleur de Lys, Chiton Hampden, Abingdon, Berks. [1234

SEVERAL Triumph Countershaft Motor Cycles, in perfect condition, all accessories; £45 each.—Richardson, Rosslyn Hill, Rosslyn Mews, Hampstead. [1763

1920 Triumph Combination, equipped every possible accessory, magnificent outfit; great bargain, £78.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [2255

GODFREY'S, Ltd.—Triumph 1917 4h.p., type H, with sporting sidecar and windscreen, completely equipped, guaranteed; £74.—208, Great Portland St., W.1. [2363

1918 Triumph Combination, coachbuilt sidecar, lamps, horn, mirror, tools, etc., beautiful condition; £60, or offer.—Morriss Garage, Rosenau Rd., Battersea Park. [1206

1920 Triumph-Gloria Combination, fully equipped, perfect condition, £30 spares; nearest £125.—Cocker, Secondary School, Bromsgrove, Worcestershire. [1658

TRIUMPH 1918 4h.p., 3-speed, electric light, horn, speedometer, discs, tax paid; £65.—Storer and Tait, 20, Bonrdon St., Bond St., W.1. Mayfair 625. [1041

TRIUMPH 3½h.p., clutch model, horn, pump, new back tyre and tube, tax paid, condition good, ride away; £30, or nearest offer.—T. Taylor, 32, Newtown Rd., Carlisle. [1204

£26.—1912 Triumph, clutch, C.B. Combination, Grado gear, licensed, equipped, expert examination; after 6.—Daglish, 26, Witherington Rd., Drayton Park, N.5. [1890

LATE 1918 Triumph countershaft Combination, in good condition, fully taxed and equipped, nearly new sidecar; £59.—Ward and Co., 51, Upper Richmond Rd., Putney. [9170

TRIUMPH 4h.p., 1920, Model H, 3 speeds, clutch, kick-starter, excellent condition, including accessories; £65; tax paid.—Eagles and Co., 275, High St., Acton, London, W. [2073

1920-21 Triumph-Millford Combination, H model, electric lamp, accumulators, Tan-Sad, Bluemels screen, spare belt and tube; £95.—165, Homesdale Rd., Bromley, Kent. [1076

TRIUMPH, Sporting model, electric light, Senspray, discs, Tan-Sad, posh outfit, only wants seeing; nearest £40 secures; real bargain.—H. Gore, 800, Holloway Rd., N.19. [2232

TRIUMPHS.—Immediate delivery of all models. Special sidecars to suit, £25. Exchanges with pleasure; easy payments.—The Layton Garages, 30, Holywell St., Oxford. [1987

TRIUMPHS.—Cambridgeshire Service Agents. Complete stock spares; all models from stock; easy payments and exchanges arranged.—King and Harper, 6, Bridge St., Cambridge. [9803

1922 Triumph, all-chain drive, in stock for immediate delivery; £115; exchanges or deferred payments 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1823

TRIUMPH All-chain Model in stock; immediate delivery of all other models; liberal exchanges or deferred payments if desired.—Edwards, 50, Harrington Rd., South Kensington. [2188

3½h.p. Triumph, single-speed, clutch, recently overhauled by Triumph Co., new belt, tyres good, fully equipped, perfect condition; £30; bargain.—13, Station Rd., Lewes, Sussex. [1101

FAMILY Turnout.—1919 Triumph, with roomy 2-seated sidecar and Tan-sad; lamps, screen, speedometer; splendid condition, £85.—Buntings Motor Exchange, Wealdstone. [2279

TRIUMPH.—Immediate delivery of all 1922 models; sidecars to suit from £20; write for catalogue and full particulars of easy payments.—P. J. Evans, John Bright St., Birmingham. [1427

TRIUMPH 4h.p., new April, 1921, Canoelet sidecar, sports model, all accessories, not used since October last, selling owing to death of owner; £92; a real bargain.—Executor, Penrhyn, Enfield. [1219

TRIUMPH coachbuilt Combination, 1914, 4h.p., 3-speed, clutch, Bosch, good tyres and condition, lamps, horn, tools; £24.—Burns, 16, Trafalgar Sq., White Horse Lane, Mile End, London, E.1. [1441

SOUTHPORT.—Ricardo, done 800 miles, lovely condition, faultless Lucas head lamp, tax; £112; also 1912 clutch Triumph, good condition, 28 gns.; exchanges.—Kent's, 417, Lord St., Southport. [1983

MOTOR CYCLES FOR SALE.

Triumph.

A GOOD Selection of Countershaft Triumphs always in stock from £40.—The Triumph agents and spare parts specialists, The Hackford Eng. Co., 33, Hackford Rd., Brixton. 'Phone: Brixton 3062. [2288

3½h.p. Racing Triumph, just completely overhauled, 2 pulleys, pistons, 1 special aluminium, drilled con-rod, etc., all new parts to engine, short wheelbase very fast, trial; £39.—Ford, Sowell, Berks. [1514

TRIUMPH 4h.p. 1921, renovated, countershaft, Millford sidecar, Cameo screen, electric light, horn, and other accessories, full tax and insurance paid; £85.—Wood, Pranketts, Stoke-under-Ham, Somerset. [1304

GODFREY'S, Ltd.—Triumph 1919 4h.p., type 'H,' with Middleton spring wheel sidecar, hulbous back, Easting windscreen, Rotax dynamo lighting, guaranteed; £96.—208, Great Portland St., W.1. [2365

1921 Triumph, all-chain model, exceptional engine, 110 m.p.g., perfect throughout, low mileage, speedometer, horn, lamps, 95 gns.; C.B. sidecar, 10 gns.; Maidenhead.—Box 2542, c/o *The Motor Cycle*. [1200

1922 Triumph-Gloria Combination, Model H.C., new April, Lucas horn, lamps, mirror, Autocar insurance policy, all spares, tax paid 1922, as brand new, unscratched; £145.—32, Melville Rd., Coventry. [1543

£50.—1917 C.S. Triumph combination, Gloria sidecar, fully equipped, Cameo screen, luggage grid, year's licence, splendid condition, not W.D.; photo, particulars, stamp.—Bacon, Offington Lane, Worthing. [1582

3½h.p. Triumph, modernised, new bars, tank, tyr tube, lamps, engine £15 overhaul, new cylinder pistons, bushes, valves, tappets, guides, etc., splendid climber, fast, reliable; £27/10.—Forder, Wykin, Hinckley. [1241

4h.p. Triumph and Sidecar, 1918 model, Sturmey-Archer countershaft, 3-speed gear, etc., £65; also 4h.p. 1914 3-speed gear model, with clutch and kick-starter, £45; easy terms.—Wauchope's, 9, Shoe Lane, London. [2151

TRIUMPH.—1920 Combination, 3-speed, clutch, kick starter, fully equipped, Gloria sidecar, perfect; £95, or would exchange for car, cash adjustment.—200, London Rd., Kingston Hill, S.W. 'Phone: Kingston 104. [9159

TRIUMPH 1911, with 3-speed hub, top hole, £35; also complete rear portion, £4; Binks, new, £3; new 1in. belt, complete, £1; 6in pulley, 15/-; top back rear stays, 15/-; offers considered.—Ford, Clock House, Tisbury. (D) [1355

TRIUMPH Agents.—All models from stock; catalogues and full particulars by return post free; exchanges and special payment terms arranged: correspondence invited.—Herbert Robinson, Ltd., Green St., Cambridge. [2157

1921 Triumph-Gloria chain-drive Combination, Lucas electric lighting, Cameo screen, legshields, Boonikseo speedometer, perfect condition throughout, tax paid; £140.—Premier Motor Co., Aston Rd., Birmingham. [7351

3½h.p. Triumph, 1913, very fast sporting machine, clutch, kick-start, Lucas lamps, Klaxon, year's licence, tools, tyres almost new, stored during war, mechanically perfect; £25; exchanges.—31, Marlborough Rd., Richmond, Surrey. [1933

78 GNS., exchange.—Extremely smart, almost brand new, 1919 Triumph, clutch, kick-start, 3 speeds, large hulbous back sidecar, electric light, beautiful turn-out, unscratched.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [9999

1919 Triumph 4h.p., and £30 patent comfortable sidecar, specially picked engine for reliability trials, climbs Porloch comfortably, won several medals, perfect condition, suit critical judge, tax, insurance paid.—Kibble, Coombe Dingle, Bristol. [1841

TRIUMPH 1919, 3-speed, mileage 2,000, Watford speedometer, rear wheel drive, lamps, horn, original tyres, spare valve, fork spring, belt and tyre; condition like new; any trial; £65.—Hall, 91, St. Peter's St., St. Albans. 'Phone: 636. [1431

4h.p. Triumph Combination 1921, Gloria sidecar, Easting screen, Tan-Sad pillion seat, speedometer, electric lamps and accumolators, horn, etc., tax paid 1922; £120. Convenient easy payments.—Harrods Motor Salesrooms, 118, Brompton Rd., London, S.W.1. [1480

1919 Triumph 4h.p., Dunhill sidecar, hood, windscreen, electric lighting, appearance as new, overhauled and re-enamelled last April, tyres good, new Dunlop rear, all tools, spares; accept £80; condition perfect; trial by appointment.—84, Park Lane, Wallington, Surrey. [1070

TRIUMPH Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Easthank St., Southport. 'Phone: 607. [7326

OFFICIAL Croydon Agents for Triumph.—3½h.p. o.h.v. 1922 Triumph, tax paid, all lamps, slightly soiled, 75 m.p.h. guaranteed, bargain, £115; Type H., £105; S.D., £115. Spare part stockist and repairers of Triumphs.—The Winstan-Henney Motor Co., 63, South End, Croydon. 'Phone: 2431. [0895

Messrs. W. E. LINE,

ONLY A FEW LEFT! SHOP-SOILED genuine

READING STANDARD

8-10 h.p. Motor-Cycles

100 Gns.

A FIGURE THAT WILL NEVER BE REPEATED.

The Machines are of the 1921-1922 type, complete with DYNAMO LIGHTING, ELECTRIC HORN, etc., etc.

THESE MACHINES CAN BE PURCHASED ON DEFERRED TERMS AS FOLLOWS:

£25 deposit on delivery of the machine, the balance payable in SIX months at £14 per month;
OR
£25 deposit on delivery of the machine, the balance payable in TWELVE months at £7 5 5.

SHOP SOILED PLUS ONE SIDECARS, with Hoods and Screens, £37 10 0 each.

Retail Price £60 12s. 6d.

IN BLACK AND GOLD, BLUE, HARLEY GREEN, RED AND OLIVE GREEN.

MANY NEW AND USED MACHINES IN STOCK

WE ARE PREPARED TO PURCHASE A NUMBER OF LATE MODEL MACHINES.

CASH OR TERMS.
EXCHANGES ARRANGED.

TO THE TRADE

Your enquiries are invited for particulars, terms, etc., of the

"DORWAY"
FOLDING SIDECAR

This can be attached to any machine. The body can be removed in a minute, and the chassis, which remains attached and permanently lined up to the machine, will pass through a

28inch "DORWAY"

Sample outfit can be seen in basement during alterations. Wholesale only for this attractive proposition.

TO THE PUBLIC.

YOUR LOCAL MAN CAN SUPPLY.

89, GT. PORTLAND ST., LONDON, W.1.

LANGHAM 1601.

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1921-22 chain-drive Combination, as new, 102 gns.; solo, 84 gns. Triumph 4h.p., 3-speed, countershaft, 42 gns. Triumph 3½h.p., 3-speed combination, 37 gns.; solo, 28 gns. Triumph-Ricardo, 1922, 112 gns. Photographs; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [9592

TRIUMPH-GLORIA Combination, late 1921, little used, cost £170, Lucas lighting, speedometer, Atomizer, special valve sleeves, spare tyre, belt and tube in case, sprocket, valve, chain, etc., all tools, luggage and petrol carriers, Lucas horn, knee grips, tax paid, full insurance; £130; seen July 28 or appointment.—P., Bramley Cottage, Handsworth, Sheffield. [1454

TRIUMPHS.—New 1922 4h.p. Combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D, all-chain, £115; Model H, chain-cum-belt, £105; Junior 2¼h.p., £65; also several second-hand Triumphs from £40; and one 3½h.p. o.h.v., done 500 miles, £115. Second-hand machines taken in exchange, remainder on easy terms. Value allowed on old machine accepted as first payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [2152

Spare Parts.

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7661

COMPLETE stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Agents since 1906.—All Triumph spares at new reduced prices from stock; principal Birmingham agents and service depot.—Premier Motor Co., Aston Rd., Birmingham. [0798

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

SEND to the Rhosha Motor Garage, South St., Romford, for Triumph and Sturmey-Archer spares. No disappointing delays; every part in stock. Repairs by skilled mechanics. We are official service agents.—Tel.: Romford 584. [7766

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

Trump.

NEW 2¾h.p. Trump-Jap, 2-speed model, £60; exchange or easy terms.—Wauchope's, 9, Shoe Lane, London. [2128

WORKS Demonstration Trump models at greatly reduced prices:—350 c.c. sports model J.A.P., £68; 293 c.c. standard model J.A.P., £50; 500 c.c. sports model J.A.P., £90. All in new condition; only used for demonstration. Call at our works for inspection and trial.—Trump Motors, Ltd., Foxlake Works, Byfleet, Surrey. 'Phone: Byfleet 126. [1366

Velocette.

PREMIER Motor Co., for 1922 Velocettes.

IMMEDIATE delivery of Model E.2 2-speed, £65; E.3 3-speed, £72/10; E.L.2 lady's open frame, £68; all with clutch and kick starter; easy payments. 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4609

1921 Velocette, 2-speed, licensed, beautiful condition; £50.—Wm. Brown, Bagmere, Brereton, Sandbach. [8820

1921 Velocette, perfect, lamps; £44; exchange modern higher power.—11, Lyndhurst St., Burslem, Stoke-on-Trent. [2003

1919 Velocette 2½h.p., 2 speeds, lamps, all on, tax paid; £28/10.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0892

1922 Brand New Velocette, E.3, 3-speed touring model, special machine with 249 c.c. sports engine, licence paid, guaranteed unused; sacrifice £67 cash.—Box 2591, c/o *The Motor Cycle*. [2211

Verus.

1919 4h.p. Verus and Sidecar, 3-speed, lamp, horn, etc.; any trial; £70.—Haines, 12, High East St., Dorchester. [1144

1920 2¾h.p. Verus-Blackburne, 2-speed and clutch, all on, tax paid; 50 gns.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0897

£33.—Verus-Sirrah 1921 2-stroke, 2 speeds, clutch, kick-starter, all accessories, taxed, as new bargain, must sell.—143, Ravensbury Rd., Earlsfield, S.W. [2303

1920 Verus, 2¼h.p., 2-stroke, under 1,000 miles, equal new, electric light, good accessories, tax paid, insurance; £40.—25, Santos Rd., Wandsworth, S.W.18. [1452

Vindec.

£24.—6h.p. Vindec, all on, tax, 2-speed, just overhauled; or exchange with cash; by appointment.—French, Springfield, Cranford, Middlesex. [1312

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. a35
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Werner.

WERNER 2¾h.p., good running order, new T.B. magneto; £10.—A. Baker, 40, West St., Croydon. [1843

Williamson.

£47/10.—Williamson 8h.p. water-cooled Combination, 2 speeds, clutch, handle starter, chain, fast, reliable.—Clarke, 406, York Rd., Wandsworth. [1934

Wolf.

WOLF 2¾h.p. 4-stroke, variable gear, Senspray, thoroughly overhauled, new tyres, lamps, footboards, good running order; £22.—Fox, 180, Dewsbury Rd., Leeds. [1526

WOLF King Dick, 1916½, 4h.p. Countershaft Combination, 3-speed, complete, speedometer, horn, lamps, windscreen, perfect order; accept £60; genuine bargain, licence paid December 31st.—Rainger, Farringdon, Alton, Hants. [1286

Wooler.

WOOLER, 1920, complete, everything as new, mileage 1,500; bargain, 39 gns.—17, Highbury Gardens, Ilford. [1235

WOOLER 2¾h.p., 1920, good condition, not licensed; £30, or offer.—H. Spurgeon, 96, Far Gosford St., Coventry. [1167

WOOLER 2¾h.p., variable speed, clutch, lamps, horn, tools, speedometer; £40.—Telford Garage, 47, Streatham Hill, London, S.W.2. [1421

WOOLER 2¾h.p. Touring Model, T.T. bars, specially fitted, absolutely as new, mileage 50, lamps, all accessories; £45.—Miller, Hatton, Warwick. [1122

1919 Wooler Flat Twin, 2¾h.p., complete with lamps and Klaxon horn, in good condition; best offer.—Jenkins, 4, Vineyard Rd., Wellington, Salop. [1731

Zenith.

H.
F.
EDWARDS & Co.,
50, Harrington Rd., South Kensington,

HAVE a few brand new 5-6 Zenith countershaft models, clutch, kick start, at 84 gns. (listed at £118).

1922 3½h.p. Zenith-Bradshaw, belt drive, brand new (shop-soiled); 82 gns. (listed at £113).

EXCHANGES or Deferred. [9945

ZENITH All-chain Eight, £130.

IMMEDIATE delivery from Allan Gruzelier, Ulster Chambers, 168, Regent St.

WE can supply any model Zenith immediately, and have in stock many second-hand bargains. New 1921 5h.p. Countershaft model, 84 gns.; we have a few of these to offer. [1430

EXCELLENT 6h.p. twin Zenith-Gradua, electric light; £45.—26, Griffiths Rd., Wimbledon. [2025

ZENITH-GRADUA coachbuilt Combination, 4h.p., all on; £48.—55, South St., Greenwich. [1479

1922 Zenith-Bradshaw 3½h.p., Gradua gear, shop-soiled only; £89.—Tippen, Marden, Kent. [9214

ZENITH-J.A.P. 5-6h.p., Gradua gear, lamp, horn, etc., ride away; £50.—Box 2565, c/o *The Motor Cycle*. [1223

1922 Zenith-Bradshaw, brand new; any reasonable offer accepted.—16, Harborough Rd., Southampton. [1100

8h.p. Zenith Countershaft, July, 1921, new condition; bargain, £90.—5, Hatchlands Rd., Redhill, Surrey. [1746

ZENITH-BRADSHAW, new 1922 model, £95; 3½ h.p. oil-cooled engine.—Marston, 31, Bridge St., Chester. [1809

F.O.C.H. for Zeniths, new and second-hand in stock at tempting prices.—5, Heath St., Hampstead (nr. Tube). [7867

1918 Zenith 8h.p. Sports, perfect order, pillion, etc.; snip, £47/10.—18, Fulham Place, Paddington, W.2 [1833

ZENITH.—New 1922 models on easy terms; list on application; exchanges.—Wauchope's, 9, Shoe Lane, London. [2153

ROBERTSONS Motors, Ltd.—1922 shop-soiled Zenith-Bradshaw, Gradua gear; £100.—157h. Gt. Portland St., W.1. [6082

ZENITH 4h.p. Combination 1916, just thoroughly overhauled, electric lighting, spares; £50, or offer. —6, Moore St., Colne. [2018

ABSOLUTELY Genuine.—6h.p. Zenith-Jap, 1918; any inspection; no dealers; £58; evenings.—9, Sussex Sq., Brighton. [1605

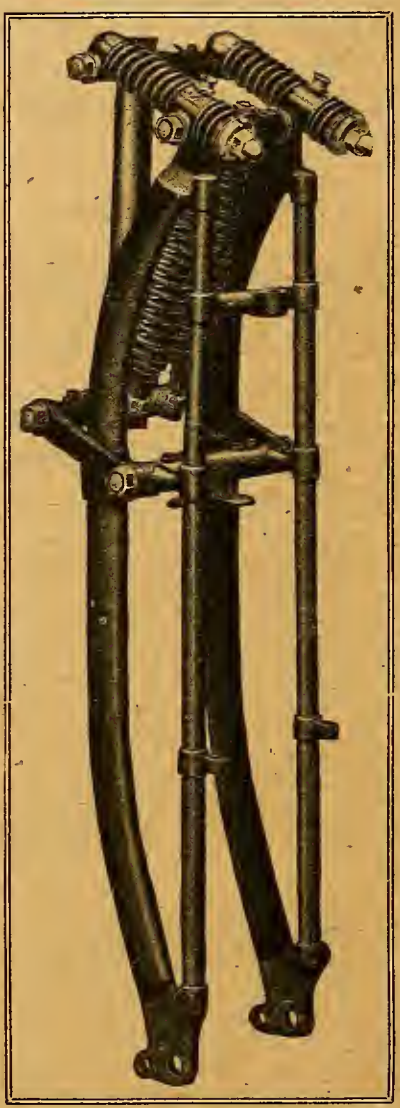
ZENITH 5h.p. Countershaft, new and guaranteed, few only left; 84 gns.—R. B Clark and Co., 7, Exhibition Rd., S.W.7. [5913

ZENITH 3½h.p. Combination, ready to ride away, test given; £49/10.—Apply W. J. Barlow, 48, Alsen Rd., Holloway, N.7. [1907

The

BRAMPTON

BI-FLEX SPRING FORK.



Users are unanimous

in their opinion of the Brampton Bi-Flex Spring Fork. The following is an extract of unsolicited letter, dated June 24th, received from Messrs. Theo and Co., Motor Engineers, 6, Hatton Garden, Johnson Street, Liverpool:—

"We may say that our client, Mr. Sutcliffe, informs us that your Spring Forks made a vast improvement to his ——— combination; in fact, he declares that riding is now an intense pleasure, without experiencing the shocks and jars on bad roads, as was the case prior to the fitting of your forks."

For comfort's sake choose a motor cycle fitted with the Brampton Bi-Flex Spring Fork.

Measurement forms and descriptive booklet on request

BRAMPTON BROS. Ltd.
Oliver Street, BIRMINGHAM.

MOTOR CYCLES FOR SALE.

Zenith

GODFREY'S, Ltd.—Zenith-Bradshaw 1922 3½h.p., Gradua gear, condition as new, guaranteed; £87. —208, Great Portland St., W.1. [2366

6-8h.p. Zenith-Gradua Combination, Easting, J.A.P., tax and insurance paid; any trial; £65.—Beard, 10, Winchester Rd., Higham's Park, E.4. [1882

LATE 1920 8h.p. Countershaft Zenith Combination, Millford De Luxe sidecar, as new; exchanges; £67/10.—24, Balliol Rd., North Kensington. [1672

ZENITH 8h.p. Sports model, special machine, the only one of its kind, nearly new; offers or exchanges.—Barker's Motors, 194 Balham High Rd., S.W.12. [1182

1920 Late Zenith 8h.p. Sports Combination, new tyres, lamps, etc., perfect; price £70.—Matthews, Haisboro, Baker St., Weybridge, Surrey. [1584

£80, or near offer.—1916 Zenith combination, 5-6h.p. J.A.P., engine just overhauled by makers, clutch, kick-start, dynamo lighting; bargain.—Randall, Andover. [1271

ZENITH-BRADSHAW, new 1922 model, Gradua gear, slightly soiled; £90; exchanges entertained. —Eagles and Co., 275, High St., Acton, London, W. [2069

SOUTHPORT.—All-chain 3-speed 1922 Zenith-Bradshaw, like new, Lucas accessories; 87 gns., gift.; exchanges.—Kent's, 417, Lord St., Southport. [1984

ZENITH All-chain 8h.p. Sports in stock; 1922 Super Sports, 8h.p. J.A.P., new condition, taxed, equipped £105.—Clark, 7, Exhibition Rd., S.W.7. [2180

ZENITH-BRADSHAW 3½h.p., 3-speed all-chain drive, shop-soiled only; £105.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1769

ZENITH 1920 8h.p. Sports, Grindlay sports sidecar, electrics, discs, speedometer, luggage carrier, etc., top-hole condition, done 3,000; £75.—Blunt, Crowell Farm, Pulborough. [1486

ZENITH-BRADSHAW 3½h.p., 1922, Gradua gear, condition absolutely as new, run 600 miles, splendid solo mount; quick sale accept £90 cash.—Brown, Kirbymooraide, Yorks. [1189

ZENITH 8-10h.p o.h.v., late 1921, mileage 2,300, Klaxon, speedometer, year's licence, do over 70, spares; unscratched, £95.—C. R. Catesby, Fairhaven, Chilton Rd., Edgw. [1575

ZENITH Combination 1920 8h.p., clutch and K.S., original tyres, perfect condition, any trial, tax paid, fully equipped, D.A. lighting; 75 gns.—145, Widmore Rd., Bromley. [2338

NEW 1921 Zeniths at Bargain Prices.—8h.p. sports, Model G, £100; 8h.p., clutch Model H, £110; 5h.p., clutch Model D, £88.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [7370

GENUINE Bargain.—1919 8h.p. Zenith-Jap, with Dunhill sidecar, hood, screen, lamps, horn, etc., tax paid till 1923; make sure and secure now; £65. —Wilkins Simpson, opposite Olympia, London. [1328

ZENITH-J.A.P. 8h.p., clutch, kick-starter, Millford sidecar, overhauled, new tyres this season, speedometer, windscreen, petrol carrier, tax paid December; any trial; £58.—4, Briar Rd., Cricklewood, N.W.2. [1402

ZENITH, October, 1920, 8h.p. J.A.P., with Mills-Fulford family sidecar, excellent condition, best British combination on road, all accessories, tax paid 1922; no reasonable offer refused.—Golby, 27, Bournemouth Park Rd., Southend-on-Sea. [1059

90-BORE Side-valve Zenith, clutch, kick-starter, perfect mechanical condition, very fast, expert examination invited, trial evenings, price £55; also Henderson sporting sidecar for machine if wanted.—Chauffeur, Wykeham House, Gordon Av., Stanmore. [1913

8h.p. 1920 Countershaft Zenith, new Lucas lamps and horn, spare belts and chain, 3 sprockets, Tan-Sad, new Bates cover and tubes, enamelling and plating new, long plated exhausts; any severe trial or guarantee.—Apply Dugdale, Easton Rd., Morecambe, Lancs. [1281

3½h.p. Zenith-Bradshaw (privately owned), special picked engine, do 70, special finish, 3-speed, K.S., all-chain drive, Cowey 80 m.p.h. speedometer, done under 500 miles, condition as new; £120. (See Exchange.)—"Trevista," Coulsdon, Surrey. 'Phone: Purley 1171. [1531

REX BRITTAIN'S 8h.p. Zenith Combination, late 1921, super-sports J.A.P. engine, Millford de luxe sidecar, all 1922 improvements, electric lighting, many extras, a powerful, luxuriant, speedy, yet economical machine, externally perfect and mechanically better than new; a bargain at £130.—360, Upland Rd., E. Dulwich. [1170

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [4829

Ladies' Motor Cycles.

GODFREY'S, Ltd.—Lady's New Imperial 1915 2¾h.p., 2-speed, in good condition, but requires slight repairs; £28.—208, Great Portland St., W.1. [2345

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Ladies' Motor Cycles.

HACK, 1¼h.p., open frame motor cycle, disc clutch, chain drive; weight 75 lbs.; 40gns.—Hock Engineering Co., Victoria Road, Hendon. [7554

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, distributing agents for the Lady's Ivy, daintiest of all ladies' machines; £62, complete. Send for list. [0724

VELOCETTE 1922 open frame models for immediate delivery: 2-speed, £68; 3-speed, £75; the ideal lady's mount, easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [7354

Miscellaneous.

1920 3½h.p., spring frame, K.S., clutch; about £45. —Howling, 9, Hollywood Rd., Kensington. [1645

J.A.P. 2½h.p., speedometer, good running order; £15, quick sale.—41, Grove Rd., South Woodford. [1318

URGENT.—2¾h.p., 3 speeds, clutch, perfect, tax, insurance; £22, offers.—255, South Lambeth Rd., S.W.8. [1895

O.H.V. 3½h.p. J.A.P., overhauled, re-enamelled, exceptionally fast; £24.—69, Kingston Rd., New Malden. [1908

1922 Levis, kick-starter type, Sturmey-Archer gear, hand clutch, electric lighting set, licence paid, not sailed; £58.

4h.p. Douglas Combination, splendid condition, open to expert's examination; £80; licence paid.

ALSO 1922 4h.p. Douglas Combination, not done 200 miles, absolutely as new; price £120; licence paid. Owner just purchased car.

ALSO 1920 2¾h.p.; 3-speed, kick-starter model Douglas, including many extras, perfect condition, and licence paid; £55.

ALSO 1919 or 1920 Baby Triumph, 2-speed model, in perfect condition, licence paid; £40.

ALSO 5-6h.p. Twin J.A.P. Engine Hazlewood Combination, almost as new, not done 3,000 miles, many extrss and licence paid; £65; subject to expert's examination and trial.—Huttons, Motor Engineers, Devizes Rd., Swindon. [1106

THE following high-class motor cycles, brand new and never ridden, for immediate disposal, to make room for light cars:—

ROVER 3½h.p. 1920, 3-speed, countershaft model, best offer secures.

L.M.C. 6h.p. 1920, twin, 3-speed, countershaft, suspension frame model, best offer secures.

L.M.C. 6h.p. as above, rigid frame model, best offer secures.

L.M.C. 3½h.p. 1920, single cylinder, 3-speed, countershaft, best offer secures.

ALSO L.M.C. 6h.p. twin, 3-speed, countershaft, complete, with Henderson B1 sidecar, speedometer, lamps, fully equipped; only used for demonstration purposes; best offer secures.

MEBES and Mebes (Est. 1893), 144, Gt. Portland St., W.1.—'Phone: Langham 2230. [8995

3½h.p. Motor Cycle, new magneto and tyres, all accessories, tax paid; £10.—64, Church St., Edgware Rd., N.W. [2251

O.H.V. 2¾h.p., specially built for competitions this year; owner giving up speed events; first offer of £50.—63, Peaksfield Av., Grimsby. [1126

BARGAIN.—3½h.p. T.T. single, Bosch, Sensprayride 50 miles to buyer; photo 6d.; £22.—1, Willmore Rd., Perry Barr, Birmingham. (D) [1058

RACING J.A.P., 2¾h.p. o.h.v. single, brand new, complete less piston, £15; with waterproof Bosch, £18/10.—28, Clevedon Rd., Balsall Heath, Birmingham. [1250

MOFFATT, North Wimbledon Cycle Stores, 14, Church Rd., Wimbledon, S.W.19; Tel.: Wimbledon 2270; have the following bargains to offer or exchange:—

MOFFATT.—A.J.S., brand new, 1922, tax paid, sports model; £85.

MOFFATT.—Alldays' Allon 1921, 2-speed, clutch and kick-starter, tax paid, all accessories, nearly new; £39.

MOFFATT.—Indian 1919 7-9h.p. solo, 3-speed, clutch, hand and foot, T.T. bars, all accessories, tax paid; £47/10.

MOFFATT.—N.U.T. Sporting Combination, 5h.p., twin J.A.P., o.h.v., 3-speed countershaft gear J.A.; £40.

MOFFATT.—Humber and Sidecar, 1914, 3½h.p., 3-speed, kick-starter, clutch, tax paid; this machine is practically as new, been in store; £34.

MOFFATT.—Rover 3½h.p., T.T. model, very fast; £24.

MOFFATT.—Scooter Motor, Mobile Pup, low mileage; £9/10.

MOFFATT.—Sunbeam 3½h.p., 1919, 3-speed, kick-starter, clutch, tax paid; £60. [1632

BELOW IS A LIST OF

New 1922 Models

THAT ARE ACTUALLY IN STOCK AND ARE THEREFORE AVAILABLE FOR

IMMEDIATE DELIVERY

ARIEL, 3½ h.p., Sports	£90
B.S.A., Model K2	£107
BROUGH SUPERIOR, Mark II	£150
EDMUND, Blackburne	£90
ENFIELD, Model 180	£140
ENFIELD, Model 190	£158
ENFIELD, Lightweight	£55
ENFIELD, Sports	£55
HUMBER, Sports	£100
HUMBER, Standard	£110
INDIAN SCOUT	£112
MASSEY	
MATCHLESS, Model H, Comb.	£170
NORTON, Model 16H	£115
REX ACME, Impy model	£100
SCOTT-SQUIRREL	£105
TRIUMPH, Model H	£105
TRIUMPH, Model S.D.	£115
TRIUMPH, Model Ricardo	£120
TRUMP, J.A.P.	£150
VELOCETTE, Model E2	£65

IN ADDITION TO THE ABOVE WE HAVE THE FOLLOWING SECOND-HAND BARGAINS:—

ENFIELD 1921, magdyno Comb. Not done 2,000 miles, and in exceptional condition. Bargain at £120

DOUGLAS, 1920, 2¾ h.p., 3-speed, clutch and K.S., fully equipped.. £65

VELOCETTE, 1920, 2½ h.p., 2-speed, fully equipped and licensed. Very fine order ..... 40 gns.

ZENITH-BRADSHAW, 1922, and Swan sidecar. Fully equipped and licensed £125

TRIUMPH, 1920, and sidecar, lamps, horn and Easting £85

ZENITH, 1919, 5 h.p., C.S. model, lamps, horn and speedometer. Bargain at £65

BLACKBURNE, 1921, 8 h.p., magdyno Comb., speedometer and spare wheel. Very fine. Bargain at £125

DOUGLAS, 1915, 2¾ h.p., 2-speed, fully equipped and licensed £35

BEARDMORE PRECISION, 1921, and sidecar. Not done 300 miles. As new £75

BLACKBURNE, 4 h.p., Comb., completely equipped. Exceptional order £80

For further Bargains see Miscellaneous Columns.

Exchanges and Extended Payments with pleasure.

Triumph Service Agents for Oxford & District

Layton Garages

90, High Street, OXFORD, and BICESTER.

Phones: 581 and 784 Oxford: 35 Bicester
Grams: "Integrity," Oxford and Bicester.

J. W. Tollady,
General Manager.

MOTOR CYCLES FOR SALE.

Miscellaneous

WANDSWORTH Motor Exchange.—Finest selection motor cycles, combinations, in London. Exchanges, easy terms.

WANDSWORTH.—We have the exact motor cycle you want, also the exact price you wish to pay.

WANDSWORTH.—Easy terms. The only firm to give immediate delivery first deposit.

WANDSWORTH.—1921 Royal Enfield 2¼h.p., 2 speeds, lamps, nearly new; 45 gns; exchanges, easy terms.

WANDSWORTH.—1921 New Hudson 2¼h.p., 2 speeds, lamps, little used; 43 gns.; terms.

WANDSWORTH.—1921-22 Douglas, almost new, 500 miles, 2¾h.p., 3 speeds; 58 gns.; terms.

WANDSWORTH.—1921 Triumph, almost new, 4h.p., 3 speeds, lamps; 85 gns.; easy terms.

WANDSWORTH.—1920 Rover, beautiful combination, 6h.p. twin, 3 speeds; 85 gns.; easy terms.

WANDSWORTH.—1920 F.N. lovely combination, 7h.p., 3 speeds, lamps; 95 gns.; easy terms.

WANDSWORTH.—1920-21 Indian combination, dynamo lighting, bulbous sidecar, Easting, speedometer; 89 gns.; terms

WANDSWORTH.—1920 A.B.C. combination, twin, 4 speeds, lamps, speedometer; 79 gns.; easy terms.

WANDSWORTH.—1920 Henderson, dynamo lighting, 10h.p., 3 speeds; only 89 gns.; easy terms.

WANDSWORTH.—Douglas late 4h.p., 3 speeds, clutch, kick, lamps, speedometer, newly painted; 49 gns.; terms.

WANDSWORTH.—F.N., magnificent machine, 6-8 h.p., 3 speeds, clutch, shaft drive, lamps, overhauled, newly enamelled, newly plated; 49 gns.; easy terms.

WANDSWORTH.—Premier coachbuilt combination 3½h.p., 3-speed gear box, kick; 49 gns.; terms.

WANDSWORTH.—P. and M. 1919 3½h.p., 2 speeds, kick, lamps, beauty; 49 gns.; easy terms.

WANDSWORTH.—P. and M. 1918 3½h.p., 2 speeds, lamps, runs splendidly; 39 gns.; easy terms.

WANDSWORTH.—Indian (late) 7h.p., 3 speeds, newly enamelled, newly plated; 55 gns.; terms.

WANDSWORTH.—Indian, 1915, clutch model, 7 h.p. twin, very fast; sacrifice, 39 gns.; terms.

WANDSWORTH.—Zenith 6h.p. twin, Gradua gear, fine sidecar machine; 39 gns.; easy terms.

WANDSWORTH.—Matchless coachbuilt combination, 6h.p. twin J.A.P., 2 speeds; 39 gns.; easy terms.

WANDSWORTH.—Hazlewood coachbuilt combination, 5h.p. twin J.A.P., 3 speeds, hood, lamps; 55 gns.

WANDSWORTH.—Indian coachbuilt combination, 5h.p. twin, 3 speeds, lamps; 48 gns.; easy terms.

WANDSWORTH.—Premier coachbuilt combination, 3½h.p., Grado gear, kick, lamp; 39 gns.; easy terms.

WANDSWORTH.—Vindec coachbuilt combination, 5-6h.p. twin, 2 speeds, kick; 29 gns.; easy terms.

WANDSWORTH.—Triumph 3½h.p., clutch model, kick, good tyres, runs splendidly; 29 gns.; terms.

WANDSWORTH. — Triumph 3½h.p., sporting machine, F.E., clutch, dropped frame; 25 gns.; easy terms.

WANDSWORTH.—Rac 5-6h.p. twin, F.E., clutch, new tyre, lamps; sacrifice, 27 gns.; terms.

WANDSWORTH.—F.N. 4½h.p., 4 cylinders, 2 speeds, shaft drive, wants attention; 17 gns.; terms.

WANDSWORTH. — De Dion 2¾h.p., magneto, dropped frame, licensed, drive away; 16 gns.; easy terms.

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WANDSWORTH Exchanges, Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [2192

£15 to £25.—We can offer you choice of a dozen good machines, A.J.S., Bradbury, New Hudson, Enfield, etc.—Bunting's Motor Exchange, Wealdstone. [2284

1922 4h.p. Coulson, Blackburne engine, 3-speed, K.S. and clutch, Montgomery sidecar, mileage under 100, £85, special bargain; 1922 O.K., K.S. and clutch, mileage very small, as new, £48; 1914 New Hudson, 3-speed hub gear, good condition, £25. —Chas. Baker Co., Tonbridge. [1168

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or deferred payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1611

MOTOR CYCLES FOR SALE.
Miscellaneous.

8h.p. Williamson Combination, £47/10; 4h.p. B.S.A., 3-speed combination, £45; 4h.p. Douglas, renovated as new, £45.—Clarke, 406, York Rd., Wandsworth, S.W.18. [1937

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories, Waterloo Rd., Blackpool.

BLACKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £95/10. Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination, spare wheel, £150; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel, £110/10/6; 1920 Tamplin, £59/10/6; Morgan de Luxe, £147/10/6; two 1920 Matchless combinations, £115/10/6 and £120/10/6; 1920 Rudge combination, dynamo lighting, £79/10/6; 1920 Rudge, £55/10/6; Indian Combination, £45/10/6; 1920 Sun, £35/10/6; another, £39/10/6; Alldays' Allon, £36/10/6; another, £42/10/6; 1922 O.K., mileage 600 £34/10/6; several others cheap; push cycles taken in exchange.—Booths' Motories, 294 Waterloo Rd., Blackpool. [1020

6h.p., twin, all-chain drive, 3-speed C.S. gear box, clutch, good sidecar, complete with horn, lamps, speedometer, spare chains, tyre, etc. Also 3½h.p. New Hudson combination, 3-speed; must be sold immediately; any offer considered.—Grovend, Knockholt, Kent. [1681

HALIFAX.—Cash Bargains: Humber 3½h.p., £10/10; Premier 3½h.p., Grade gear, £22/10; Premier, 2-speed, £27/10; Rex, 2-speed, and sidecar, £24/10; 2¾h.p. New Imperial, £22/10; Matchless combination, £39/10.—Collier's Motories, Horton St., Halifax. [2102

LIGHT Car and Motor Cycle Engineering Co., Ltd.—Shop-soiled Triumph, latest model, £98/10; 1918 countershaft Trinmph, tax paid and accessories, £55/10; 1917 Triumph, splendid mechanical condition, £47; 1913 3-speed Triumph combination, good condition, and all accessories, £40; 1912 clutch model Triumph, guaranteed order, £22; Alldays' Allon, 2-speed, K.S., and clutch, special bargain, £32; 1921 Douglas 2¾h.p., tax paid, all accessories, long exhaust, new condition, £55; 1916 Douglas, exceptional order, £33.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292 (½ minute from Brixton Skating Rink). [2122

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1922 3¾ h.p. **DOUGLAS,** Sports model, fully equipped, as new	93
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1921 3½ h.p. **SUNBEAM,** semi-Sports, magdyno lighting, speedometer, electric horn, knee grips, absolutely as new	109
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WANTED, 6h.p. Bradbury frame.—Apps, Bracknell. [1904

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PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

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PALMER'S Garage, Tooting.—Catalogue free. Telephone: 208 Streatham. Telegrams: Palmer's Garage, Tooting. [1939

8h.p. countershaft solo, 1920-21, for cash.—Write Miller, 2, Belvoir Rd., E. Dulwich. [1926

1921 2¾h.p. Douglas.—Full particulars and price, 89, Dalyell Rd, Stockwell, S.W.9. [2277

DOUGLAS Combination Wanted for £60; late model —33, Richmond Rd., West Kensington. [1383

WANTED, modern combination; £16 deposit, balance monthly.—Z., Box 2482, c/o *The Motor Cycle*. [1107

RECENT Single-cylinder Combination, any make cheap.—100, Scalpcliffe Rd., Burton-on-Trent Staffs. [1302

3½h.p. I.O.M. Rudge-Multi, good order, 1916-1920 local inspection.—Elliot, Resting Seat House, Braintree. [1111

HARLEY Combination, late dynamo model; £8[illegible] offered; state engine number.—108, Church St., Edmonton. [1623

WANTED, Combination Harley-Enfield, A.J.S., Sunbeam preferred, reasonable.—Mosedale, 30, Cantelbury Rd., Kilburn, N.W.6. [900

WANTED, A.J.S 1922 or late 1921 dynamo Combination, cash waiting.—Price, particulars, letter only, Pye, 28, Elmwood Rd., West Croydon. [221

WANTED, 1921 Coventry Premier 3-wheeler, no fancy prices; 1920 Triumph combination part exchange, perfect.—Beauchamp, 27, West Park, Bristol [166

WANTED, 1920 countershaft Triumph solo or combination, for spot cash.—Maynard, 161, Bowes Rd., Bowes Park, N.11. 'Phone: Palmers Green 19 [205

MODERN Motor Cycles and Combinations bought for cash or sold on small commission; send details first.—South Eastern Garage, Herne Hill, S.E.24 [143

WANTED, combination or Morgan for Temperino 2-seater, shop-soiled, unregistered, quite new £100; any test.—89, East Hill, Wandsworth. Battersea 443. [171

WANTED, Matchless or Harley Combination, 191[illegible] or later, for 1918 P. and M. combination and cash; any trial; inspection.—Ball, Langmore, Hollywood, Horley. [116

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ADVERTISER requires good combination not earlier than 1920, immediate cash if price reasonable.—Letters only to Will, 769, Romford Rd., Manor Park, London, E.12. [1916

WANTED, late combinations, solos, also Morgan runabouts, G.N.'s, and Rover 8's; cash or exchange.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

BUNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [0828

SPECIAL Cash Buyers; Triumphs, Enfields, B.S.A.'s, Douglases, Matchlesses, A.B.C.'s, Scotts, Bradburys, Martinsydes, Zeniths.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686.

V-CYLINDER F.N.'s, Hendersons, T.A.C.'s, T.M.C.'s wanted.—Wandsworth Motor Exchange, Ebner St., Wandsworth.

RED Indians, Harley-Davidsons wanted.—Wandsworth Motor Exchange, Ebner St., Wandsworth Town Station). [4559

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition. Call, write, or 'phone, Short and Glass, Ltd., 485-93, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

M.O.C.H. always have cash waiting for sound machines of all types; highest prices and courteous treatment assured.—Fair Offer Car House, 5, Heath Street, Hampstead (near Tubs). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1610

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MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2231

1920 Willow Scooter, splendid order; £16; take push cycle part.—57, Kenbury St., Camberwell, London. [1580

A.B.C. Skootamota, new, unsoiled, latest model; £45 sacrifice.—Frank Whitworth, 139, New St., Birmingham. [4658

SCOOTA Motor for sale, little used, in perfect condition; cost £55 new in 1920; what offers?—Elward, Farringdon, Alton, Hants. [1288

AUTOPED Scooter, fitted Amac, carburetter, saddle; only wants tuning; £13/10; exchange typewriter lady's cycle and cash.—Hammond, Colenso Rd., Bolton, Lancs. [2015

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WALL Auto-Wheel, B.S.A., perfect condition; £8.—14, Mount St., Aylesbury. [1574

AUTO-WHEEL, good condition, new tyre; £8.—90, South Worple Way, Mortlake. [1069

YOUNG Motor Cycle Attachment, James cycle; best offers; new.—Jones, Greatford House, St. Asaph. [2026

WALL Auto-Wheel with 2-speed cycle, good condition; £13.—Bayly, 34, Greenvale Rd., Eltham, S.9. [1604

B.E.S. 1¾h.p. Auxiliary Set, pedal starter, excellent machine for beginner; £23.—Maudes', Walsall Garage, Walsall. [1774

1¾h.p. 1921 Motor Attachment on a B.S.A. pedal cycle, very efficient, 3-speed gear, etc.; £17/10.—Vauchope's, 9, Shoe Lane, London. [2159

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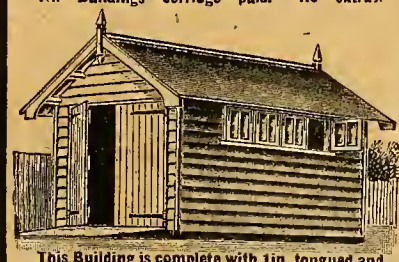

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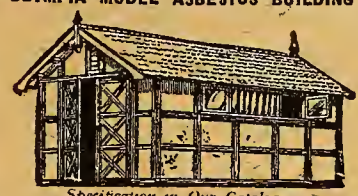

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WINDSCREENS, 50 only, small Triplex glass, suitable sidecar; 10/6 each.—7, Codrington Mews, Blenheim Crescent, London. [1254

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SHOP-SOILED Sporting Body, coachbuilt, suit Douglas chassis, £7/10; P. and M., renovated as new, £4; several P. and M. and other chassis at bargain prices; brand new coachbuilt bodies from £5/5; write for illustrated list.—26, Tulse Hill, Brixton. 'Phone: Brixton 2922. (½ minute from Brixton Skating Rink.) [2123

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COACHBUILT Body and Chassis, 4-point, complete; £4/10, bargain.—Ekinore, Willoughby Rd., Colwyn Bay. [1614

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SINGLE Bodies from £4 to £15.—Full particulars from The London Body Manufacturers, 192, Merton Rd., Southfields, S.W.18. [2259

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HELEN Sidecars.—Streamline, brand new, £3/15; full bulbous back bodies from £6; 2-seaters from £9; bodies finished all aluminium, £10.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W. 'Phone: Brixton 1585. [2326

TORNADO Aluminium Sidecars.—The last word in sporting and touring sidecar bodies, handsome, roomy, and comfortable, light yet tremendously strong, adaptable to any chassis.—Catalogue post free from Greenwood, 193, Manchester Rd., Oldham. [8840

£4/17/6.—250 Douglas type, bulbous backed, and locker under seat, brand new, bodies unholstered in rexine; £4/17/6 each; owing to contract, we have bought right, to sell right; they simply require a finishing coat to complete; photo sent on request and stamp. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [2590

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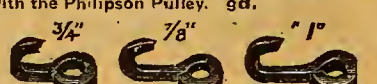

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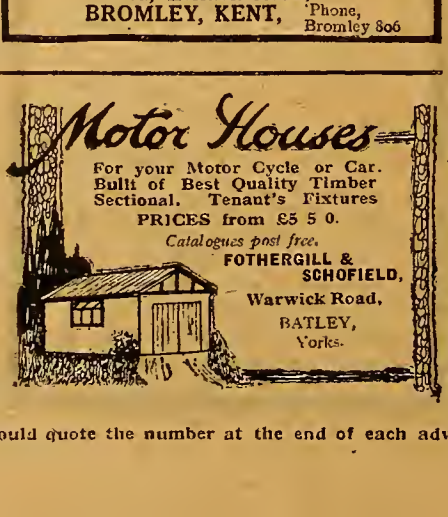

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INDIAN Spring Frame Sidecar, special sports bod brand new, door, locker; £14.—Hamlyn, Limp field, Surrey. [141

SMART Rennoc Light Sidecar, dark red, nearly ne locker, apron, lamp, good tyre; £12.—41, Evely Rd., Wimbledon. [140

WHITLEY Sidecars, Coventry.—Three models, £2 £29/10, £32/10. Nothing on one wheel equal. Lists free. [085

2-SEATER Patey Sidecar Body, hood; £10. Glori pattern body, £8.—Barker's Motors, 194, Balha High Rd., S.W.12. [118

MILLFORD Coachbuilt Sidecar, £5/10; Clya tradesman's sidecar, £5.—534, Fulham Rd., Wa ham Green Basement. [156

SPORTING Coachbuilt Sidecar, hood, Triplex win screen, new Pahner, disc, good condition; £8.—3 Cumberland St., Luton. [131

COACH Sidecar, good condition, £5; Bramble unde slung coach sidecar, £7/10.—Gill, 51, Nassingto Rd., Hampstead, N.W.3. [148

1921 Rennoc Sporting Sidecar, disc wheel, win screen; £10.—37, Arlington Rd., Surbito 'Phone: Kingston 1274. [202

SIDECAR Chassis, several designs; trade supplied.— W. H. Rodbam and Co., Manufacturers, Stratfor St., Camp Hill, Birmingham. [625

1922 Brand New A.J.S. Sidecar, lightweight mode cost £25; unscratched; £16.—Joll, Tailo 139, St. Michael's Hill, Bristol. [166

EXTENDED Payments accepted for sidecars; mode for all makes.—Send for catalogue, etc., Ridee Sales, Ltd., 5, Victoria St., S.W.1. [082

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GLORIA Sidecar, complete with fittings, £14; spor ing coachbuilt sidecar for Triumph, £11; hig coachbuilt sidecar, suit Triumph, £6.—Hole, 129, Pa Lane, Wallington. [173

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AILTON, Cobam and Co., Ltd., Water St., off Blackfriars St., Manchester. [2108

.N. 1921, as new; £105; or exchange.—497, Old Ford Rd., Old Ford. [2227

.C. Sociable, perfect order, speedometer, hood; £20. —Firminger, 93, Chesson Rd., Fulham. [1098

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.N. touring model, immediate delivery; £225 Ratcliffe Bros., 200, Great Portland St., W. [4x26

ORGAN 1914 8h.p. J.A.P., any trial; 50 gns., real bargain.—35, Marlow Rd., Anerley, S.E.20. [1723

914 Humberette, all new gears, in good condition; £80.—10, Sparhawk St., Bury St. Edmunds. [1084

ORGAN Runabouts: immediate delivery 1922 models from stock; enquiries invited.—Moss, Wem. [1957

AMPLIN 1921 2-seater, in perfect condition, complete equipment; £90.—71, Beverley Rd., Hull. [2317

ORGAN de Luxe, perfect condition; any trial; bargain, £85.—Earl, 10, Catherine St., Plymouth. [1066

RAND New 1922 De Luxe G.N., cost £250, with extras; accept £190.—24, Balliol Rd., North ngton. [1678

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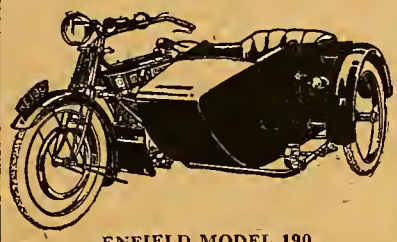

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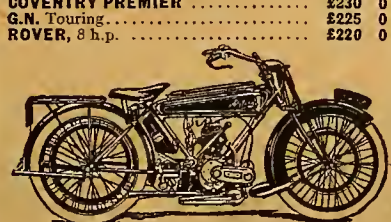

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RICHARDSON 1921 8h.p., 4-speed, reverse, equipped, excellent order; 85 gns.—Clark, 7, Exhibition Rd., S.W.7. [2185

MORGAN.—New 1922 Models in stock.—Agents, Birkenhead Motor Works, Old Bidston Rd., Birkenhead. 'Phone: 2047. [2389

2-SEATER 10h.p. 4-cyl., Trumbull, perfect condition; £80, no reasonable offer refused.—29, Bristol Gardens, Maida Vale, W.9. [1147

£100.—Bebe Peugeot, 1915, fully equipped, beautiful condition, any trial, tax paid.—2, Oriental Parade, Monument Rd., Woking. [2296

1914 8h.p. w.c. Perry 2-seater, 5 detachable wheels, lighting and full equipment, tax paid; 90 gns. —356, Lordship Lane, S.E.22. [1407

1922 Superb 3-wheeler, J.A.P., 3-speed, lovely car; offers; exchange lightweight and cash.—121, Leicester Causeway, Coventry. [2318

1920 Grand Prix Aero Morgan, M.A.G., w.c., electric lighting; nearest offer £130.—Mallows, 17, Tregunter Rd., Earl's Court. [1572

CARDEN 1921-22 2-seater, fully equipped, perfect mechanical order; £70 for quick sale, or exchange solo.—71, Alleyn Park, W. Dulwich. [1153

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MORGAN, Popular model, £150; also de luxe and Grand Prix models; delivery from stock; no waiting.—Marston, 31, Bridge St., Chester. [1810

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1921 Coventry Premier 3-wheeler, dynamo, spare wheel, dickey; £150.—Hillier, (Side Bell) 9, Wallingford Avenue, North Kensington. [1861

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MORGAN de Luxe, 8h.p. J.A.P., a.c, speedometer, good tyres, nickel front to bonnet, etc.; £85; trial by appointment.—44, River Rd., Holloway, N.19. [1351

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1921 Castle Three, with 1922 drive, unscratched, mileage under 1,000; cash urgently needed; dynamo, spare wheel; £135.—35, Falkner Square, Liverpool. [2013

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1920 Lawrence-Jackson, 8h.p. water-cooled J.A.P., 3 speeds, reverse, hood, screen, thoroughly overhauled; £90; would consider motor cycle part.—52, Sidbury, Worcester. [1301

1921 Aero Morgan, M.A.G., special primrose body, dynamo lighting, speedometer, aluminium dash, perfect condition; £140.—"Corvallis," Burlington Rd., Wallasey. [1626

1922 Coventry Premier 4-wheeler, spare wheel, dynamo lighting, only run 400 miles, guaranteed; £175, or exchange good combination and cash. —Hillier, (Side Bell) 9, Wallingford Avenue, North Kensington. [1860

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1921 Castle Three, dynamo, spare wheel, mileage only 900, guaranteed; £160, or exchange good combination and cash.—Hillier, (Side Bell) 9, Wallingford Avenue, North Kensington. [1858

1920 G.N., dynamo lighting, spare wheel, hood, mileage 7,000, tax paid; any trial; £130, or offer; seen evenings after 6 p.m.—78, White Horse Lane, E.1. 'Phone: E. 1027. [1590

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A.V. 1921 (October) 2-seater, excellent condition, only run 2,500 miles, Magdyno set, speedometer, etc.; cost over £180, accept £130.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croyden. [1707

COULSON 8-10h.p., 2-seater Cycle Car, brand new, beautifully equipped, Smith's speedometer, clock, hood, windscreen, D.A. lighting, licensed; sacrifice for quick sale; £105; combination part; real bargain. —27, Wandle Rd., Wandsworth Common, S.W.17. [2036

BARGAIN for Family Man.—1921 10h.p. J.A.P.-engined car, small 4-seater, 3-speed and reverse, Dunlop Magnums, lamps, hood, all new throughout; £60, or offers. Also Triumph, fixed engine, engine perfect, fast, new belt, lamp, and spare tyre; £22; must be sold.—Bottomley, Albert Rd., Margate. [2050

SWIFT 7h.p. 2-3-seater body, in extremely fine condition throughout, sump lubrication, 3-speed and reverse, gate change, recently thoroughly overhauled, repainted, new hood, double windscreen, and dome wings fitted; acetylene and oil lamps, all good tyres and spares; very smart appearance; economical and silent running, tax paid to December; £65.—The Gables, Sylvan Hill, Upper Norwood. [1894

A.C Sociable, smart 2-seater, 6h.p., hood, screen, lamps, good tyres, newly painted; only 49 gns.; exchange motor cycle; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [2195

1921 Carden 2-seater, electric lighting, tyres perfect, hood, screen, perfect order; £70. Your present motor cycle taken in part payment.—Hemac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1825

1921 Bleriot-Whippet, reverse gear, speedometer, electric light, spare wheel, in absolutely perfect condition; 100 gns.; exchanges or deferred.—Edwards, 60, Harrington Rd., South Kensington. [9947

ROVER 1921 8h.p., dynamo lighting, overhauled, repainted Saxe blue, as new, new tyres, spare wheel, extra tyre, petrol can to match, and carrier; £160.—Derrington, Grafton Rd., New Malden. 'Phone: 256. [2127

CASTLE-THREE dynamo, spare wheel, 1921, absolutely indistinguishable from new; £43 down, £2/8/10 weekly; discount for cash; exchanges entertained.—57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [1245

1914-15 Chater-Lea Light Car, 9h.p., w.c., 3-speed, gate, worm drive, wire wheels, mechanically excellent, good tyres, any trial; no reasonable offer refused; owner abroad.—Colonial Travel Agency, 161a, Strand. [2217

1921 Carden car, in good running order, electric light, spring seats, hood, and screen; best offer accepted, or will exchange for good Combination.—Allsopp, c/o Jones Motor House, 108, Lothian Rd., Edinburgh. [1458

A.C. Sociable by the A.C. Company, dependable runabout, take 2 persons anywhere, good condition and appearance, hood, screen, lamps, etc.; bargain, £40; trial.—29, Allsop St., Upper Baker St., London, N.W [8169

MORGAN 1921, 8h.p. M.A.G., water-cooled, complete with lamps, horn, tools, etc., new tyres, bodywork just repainted, etc.; £138, or close offer.—86, Church Rd., Upper Norwood, S.E.19. 'Phone: Sydenham 2363. [1901

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Established 16 years.

No better or Cheaper House

24×2	**Clincher de Luxe**, Junior	17/6
24×2½	**Hutchinson**, T.T., Rubber Stud	21/6
26×2	**Englebert**, Passenger Rubber Stud	17/6
	Bergougnan, 3-ribbed, Heavy	18/6
26×2½	**Hutchinson**, T.T., Rubber Stud	22/-
	Spencer Moulton, Sq. ribbed	16/6
	Spencer Moulton, St. Stud, ex-Heavy	24/-
	Clincher de Luxe, Heavy	24/6
	Midland, Rubber Stud, Heavy	24/-
	Goodrich, Safety Tread, ex-Heavy	27/-
	Michelin, Semelle Steel Stud	20/-
	Rom Combination	37/-
26×2¾ to fit 26×2¼	**Hutchinson**, T.T., Rubber Stud	24/-
	Midland, Rubber Stud, Heavy	25/-
	Kempshall, Anti-skid, Heavy	30/-
	Clincher de Luxe, Heavy	25/-
	Clincher de Luxe, ex-Heavy	26/-
	Goodrich, Safety Tread, ex-Heavy	36/-
	Clincher Dreadnought, ex-Heavy	36/-
	Dominion, Usco Rubber, non-skid, Heavy	25/8
	Dominion, Corrugated, Heavy	28/6
	Dominion, Nobby Tread, ex-heavy	36/-
	Hutchinson, T.T., Ribbed	28/6
	Midland, Ribbed, Heavy	30/-
26×2½	**Hutchinson**, Super Stud, ex-Strong	55/3
	Bergougnan, 3-ribbed, Heavy	23/-
	Goodrich, Safety Tread	35/-
	Midland, Rubber Non-skid, Heavy	28/-
	Hutchinson, T.T., Rubber Stud	26/6
	Spencer Moulton, 3-ribbed ex-Heavy	22/6
	Michelin, Fine Ribbed	20/-
	Spencer Moulton, Steel Stud	25/-
	Skew, Rubber, Non-skid	30/-
	Englebert (Wired Edge)	25/-
26×3	**Midland**, Ribbed, ex-Heavy	35/-
650×65	**Goodrich**, Safety Tread, ex-Heavy	40/-
	Clincher Dreadnought	36/-
	Clincher de Luxe, ex-Heavy	35/-
700×80	**Clincher**, 3-ribbed, ex-Heavy	47/-
	Goodrich, Safety Tread, ex-Heavy	48/-
	Super Chain, ex-Heavy	42/-
	Clincher, Fine Ribbed	44/-
	Hutchinson, Super Stud, ex-Strong	61/-
28×3	**Midland**, 3-Ribbed, ex-Heavy	39/-
	Goodyear, All-Weather Tread, ex-Heavy	55/-
	Goodrich, Safety Tread, ex-Heavy	47/6
	Firestone, Rubber non-Skid, ex-Heavy	45/-
	Portage, Rubber non-Skid, ex-Heavy	43/-
	Federal, Rubber non-Skid, ex-Heavy	43/-
	Hutchinson, Super Studded, ex-Heavy	64/3

TUBES.

Goodrich, Clincher, Hutchinson, and Red Fox.

24×2 and 24×2½	each	4/3
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700×80, 28×3 and 650×65	each	7/6
Goodyear Butted 26×3	each	7/6

The above New Clearance Covers and Tubes are sent on approval against remittance CARRIAGE PAID.

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RUNABOUTS AND CYCLE CARS.

59 Guineas, exchanges, a speciality.—1919 Monocar, 6h.p., hood, screen, electric l disc wheels, smart. Many other cars at bar prices.—Seabridge, Hansler Rd., East Dul Sydenham 2452. [

REYNOLDS Runabout, in perfect condition, 2-s 2-stroke engine, 2-speed gear, kick-starter, Du sents, as new, with tool kit; makers' price 75 our price 55 gns. only; come and test it.—C. Du and Co., 16, Little Portland St., London. [

COVENTRY PREMIER 4-wheeled super runab 8h.p. water-cooled, spare wheel, dynamo, insured, etc.; £230. Motor cycles, etc., taken in exchange; instalments if desired.—Frank Whitwo ltd., 139, New St., Birmingham. [

1921 Coventry Premier, 500 miles, absolutely aluminium discs, hood, screen, dynamo, s wheel, quantity of new spares, tyre, tubes, va etc., gift; £150; insured £250.—James, c/o B mores, 482, Harrow Rd., Paddington. [

MORGAN Aero, 1922, delivered March, mileage condition as new, sports M.A.G. engine, dyn lighting, aluminium discs, speedometer, clock, ma hood, screen, serpentine mascot, horn, Jeff tube, p tank and radiator, cost £252; accept £220.—Col Depot, 62, High St., Leicester. [

1922 Morgan De Luxe, fitted hood, screen, lamps, discs, speedometer, aluminium Binks carburetter, dual controls, absolutely taul order, tax paid, insured until March 1923; Homac's, Morgan Service Depot, 243, Lower Cla Rd., N.E. 'Phone: Dalston 2408. [

A.V. Monocars, J.A.P. engines, 2 speeds, dic lighting, windscreen, painted red with black guards, fast, reliable, sporty appearance; all overha and tuned; also 2-seater Bi-Cars and Runabouts; particulars and prices on application; exchanges sidered.—A.V. Specialist, 103, Castlenau, Barnes. [

A.B.C. New 12h.p. Light Car, efficiently equip hood, screen, etc., sporting model, with s wheel and tyre complete, disc wheels, etc.; £295; motor cycle or sidecar combination taken in part ment, and the remainder in 12 equal monthly ments.—Wauchope's, 9, Shoe Lane, Fleet St., Lon [2

Spare Parts:

MORGAN Spare Parts From Stock; trade plied.—Maudes', 100, Gt. Portland St., W.1. [

MORGAN Spare Parts Depot.—Spares for all mo from stock; list free.—Elce, Ltd., 13-15 Bishopsgate Av., Camomile St., E.C.3. 'Pho Avenue 5548. [

MORGAN Service Depot.—We are officially annoti by the Morgan Motor Co. Overhauls repairs by experts. All spares in stock.—Hom 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2 [

TAXI-COMBINATIONS AND CABS.

"COUNTY" 8h.p. B.S.A. Sidecar Taxis, as lice throughout the country.—Write for full part lars, County Cycle and Motor Co., "Originato 300, Broad St., Birmingham. [

CARS FOR SALE.

IN Stock, 1922 8h.p. Rover 2-seater; £220, cash deferred.—33, The Parade, Golders Green. [

ROVER Cars.—1922 8h.p. model; price £220; e delivery.—Godfreys', Ltd., 208, Gt. Portland London, W.1. [

WEST Norwood! 60 cars, absolute bargains, free, exchanges.—Douglas S. Cox, Lansdo West Norwood. [

ROVER Cars.—The famous 8h.p. model in st £220; for immediate delivery.—Eagles and 275, High St., Acton, London. [

IN Stock, 1922 Belsize-Bradshaw Car; £276 c plete, cash or deferred.—D. and S. Autocar 33, The Parade, Golders Green. [

LAGONDA All-weather Coupe, 35 m.p.g., will change for G.N. combination or solo and cas 45, Knighton Rd., Forest Gate. [

SINGER 10h.p. 2-seater, dynamo lighting, e splendid order; £125, or exchange.—Clayl Tavern, Old Ford Rd., Bow. [

PIERCE-ARROW 4-cyl. 10h.p. Coachbuilt Comb tion, splendid outfit; great bargain, £55.—Spe ley, 86, Churchfield Rd., Acton, W.3. [

COVENTRY PREMIER, 1922, 4-wheel model; £2 immediate delivery; cash or deferred payment Ratcliffe Bros., 200, Gt. Portland St., W. [

HAND 10h.p., 4-cylinder, water-cooled, dyn lighting and starter, double dickey; £30 Ratcliffe Bros., 200, Great Portland St., W. [

ROVER 8h.p. Light Car, 1922 models, dyn lighting; £220 cash, deferred payments extra.—Ratcliffe Bros., 200, Gt. Portland St., W. [

A.C. Light Car, 3-seater, perfect little car, 35 m. 1916, any trial, guaranteed in new condit repainted, overhauled.—341, Upper St., London, N [

4-SEATER Alldays 12h.p., flush-top body, equipped, many spares; £35 just spent; blue, unscratched, excellent condition; £130. Dri taught free. Exchange 2-seater Morgan or m cycle.—63, Solon Rd., Brixton. [

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." — *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle, Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Still Another British Success.

THE Belgian Grand Prix of Sunday last again proved the efficiency and speed of British motor cycles. Once more the machines which won the 500 c.c. and 250 c.c. classes in the Tourist Trophy races and the French Grand Prix were successful, while the 350 c.c. class was won with a British engine.

It may be recalled that the original purpose of the Tourist Trophy event was to provide facilities for British machines to prove their capabilities in competition with those of foreign manufacture. For various reasons the T.T. does not receive the support due to it from riders across the English Channel, and it speaks well for the enterprise of our manufacturers that they patronise the Continental races, on the princip. of Mahomet and the mountain.

Such consistent successes as have been secured by the winning machines cannot fail to impress the whole motor cycle world.

Silencing Racing Machines.

SOME small amount of consternation has been created by the recent Brooklands edict, and its enforcement, anent the silencing of motor cycles.

It appears that complaints have arisen amongst those resident near the track regarding the noise of racing motor vehicles, and the track authorities state that these protests are more particularly aroused by motor cycles and machines with motor cycle engines.

Whether a solo motor cycle with open exhaust creates more actual noise than, say, a 5,000 c.c. racing car with huge "drain-pipe" exhaust arrangements is open to question, but there may be some justification for the grumble when it is recollected that, although perhaps less in actual volume of noise, the sharp crackle of a motor cycle exhaust is, maybe, somewhat more penetrating and irritating to those to whom its music does not appeal.

Whatever the rights of the case, it must not be forgotten that the track authorities have threatened to close the Brooklands course to the B.M.C.R.C. unless better silencing is observed by its members, and as this is an eventuality which would do considerable harm to all concerned, it behoves the offenders to deal with their machines as the occasion warrants. Some loss of power may occur, but it must be remembered that this would affect everyone to an almost equal degree.

One suggestion which we may put forward is that the B.M.C.R.C. specifies for each class a standard capacity exhaust box to be fitted at the end of a long pipe or otherwise as the rider desires. For tuning purposes some part of the track at certain hours might be set aside for testing with open exhaust pipes.

Well supported Trials.

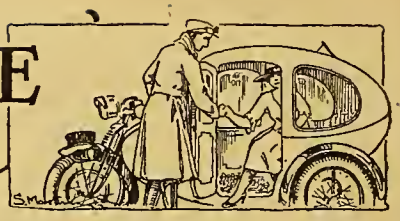
ALL over the country the competition side of the movement is extremely active. Sporting reliability trials are particularly popular, and the practice of confining these events to a half-day, say Saturday afternoon, further attracts the genuine private owner.

As recent competitions have shown, it is possible to map out a thoroughly sporting route within quite a small radius of any of our large cities. Unless really freak tracks are wanted—and they seldom are, nowadays—it is not necessary to go to the moors or the mountains in order to provide an afternoon's rough-riding difficult enough to attract the keenest enthusiast yet not too difficult for the novice.

An index to the advertisements in this issue will be found on the page facing the back cover.

PASSENGER MACHINE TOPICS

by "Friar John"



The Coupé Sidecar with "Solid" Hood: Pierrots and the "beastly hills."

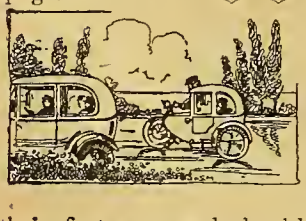
COMFORT for the passenger should be the highest aim of sidecar makers. It is the subtlest form of propaganda. A badly sprung chassis, unyielding upholstery, an ill-designed screen, the absence of a hood in a downpour of rain, can on a trial run damp a woman's sidecar enthusiasm for a long time, and the impression received during a trial run may affect the sale of a sidecar or even an outfit.

Whether Mr. Goad, the maker of the Coupette sidecar, has had experience of this sort or not, the excellent protection he can give with his Coupette sidecar should encourage and produce good business, for it will certainly appeal to the feminine fancy.

Although I was familiar with the design of the Coupette on paper, I had not had the opportunity of criticising the finished article until last week. I went prepared to criticise, because I had seen similar contrivances which had shocked me by their crudity, weight and ugliness, but no adverse criticism was necessary. The Coupette sidecar itself has a pleasing contour, is carried on a well-sprung chassis, and is most comfortable. The upholstery is well padded and sprung. Mr. Goad told me his idea was to produce a fully-equipped and weather-protected sidecar which would appeal particularly to users of medium-powered motor cycles. This he has done, for the sidecar is particularly light and the wind resistance small, even when the hood is in use.

Although he has departed from the conventional, his sidecar does not bear the imprint of improvisation, such as many novelties do. It is a sound and practical job, the rigid hood swings easily into position, and folds back into its recess when not in use, leaving the lines of the sidecar quite clean. This feature is an admirable one. Nothing looks worse than a weather-bleached hood so obviously and aggravatingly untidy when folded out of use. This Coupette sidecar, which is made by Mr. Alfred Goad, 122, Maida Vale, London, W.9, should enjoy a popularity worthy of its undoubted attraction. Photographs are shown on the following page.

◇ ◇ ◇ ◇



IS the sidecar really an uncomfortable-looking vehicle? As an ardent sidecarist I cannot, of course, answer this question. But I have been struck many times by passengers' remarks after their first run, and should imagine that the average non-motor cycling individual *does* really think the sidecar a bumpy, nerve-racking contrivance. "Your sidecar is really quite comfortable, not a bit like I thought it would be," was the surprised remark made to me only last week by a lady well used to car riding, but who had never been in a sidecar, and, strangely enough, the persons who are more used to riding in 'buses and trams than in cars have similar ideas about sidecars.

◇ ◇ ◇ ◇

A READER signing himself "Summer Cyclist," writing on the subject of "Touring Grounds," says, in all seriousness, that I should suggest North Wales as a touring ground. I thought every motor cyclist had been to North Wales. Is there a man possessing the wherewithal to purchase petrol and a night's lodgings who has left unvisited Llanberis and Aberglaslyn? There is! For once I met two men with their wives who had made a bee line for Llandudno or Colwyn Bay, garaged their sidecars and settled themselves down to the pierrots and picture palaces for a whole fortnight, glad in their journeying to have been able to avoid "the beastly hills by taking the flat coast road through Flint and Rhyl."

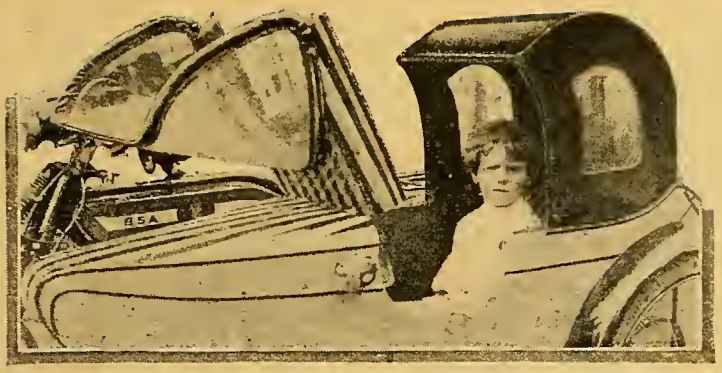
◇ ◇ ◇ ◇

I THINK it must be this kind of person who leaves beer bottles and bits of paper at his various stopping places *en route*. Only last week I pulled up near a spot just vacated by two sidecars and a Ford, and the refuse left on the grass would have disgraced Hampstead Heath on a Bank Holiday evening. This complete indifference to common decency, curiously enough, often goes hand in hand with apathy towards, or inability to appreciate, nature even when she is most sublime.

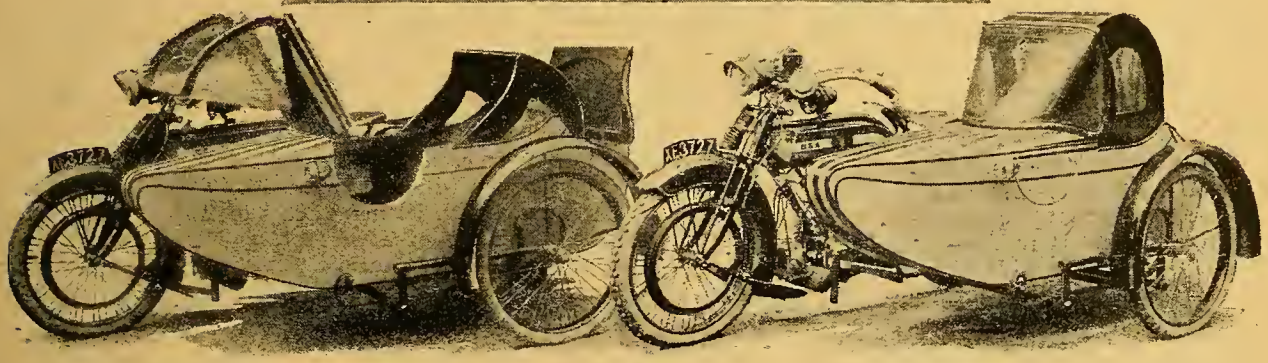
◇ ◇ ◇ ◇

IT frequently happens when deciding on a fairly lengthy tour that the travelling bags are either too big or too small. On my last long tour I abandoned bags and cases altogether except for one on the machine and carried luggage for three in waterproof sheeting, choosing to do this in preference to forwarding parcels on to various stopping places on the road. The method adopted was to make three separate rectangular parcels as big in area as the grid would allow, *each strapped securely* in waterproof sheeting, finally enclosing the three in one large rubber sheet to form a solid rectangular package. It is astonishing what a quantity of luggage can be carried in this way, but don't be mean or careless with the straps.

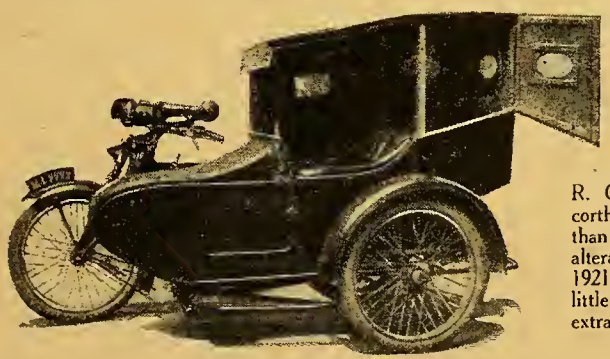
THE CULT OF THE COUPÉ SIDECAR



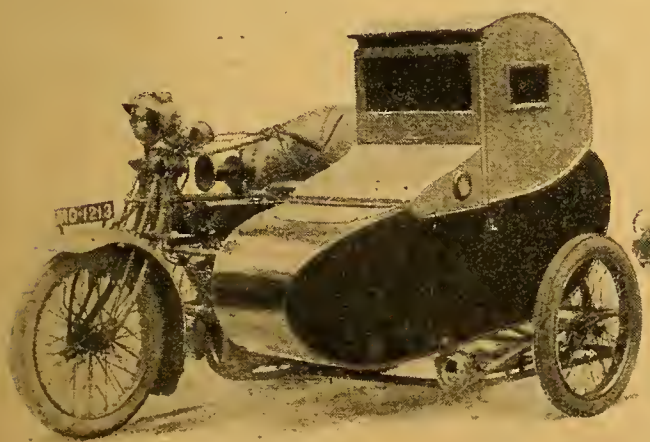
The three upper illustrations depict the "Coupette" sidecar, an exceptionally neat and workmanlike job. It will appeal to owners of medium powered machines, for it is light in weight and its wind resistance negligible. A. Goad, 122, Maida Vale, London, W. 9, is the manufacturer.



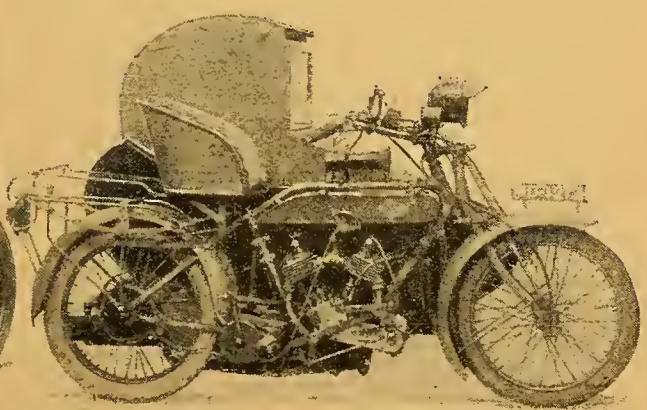
Considerable attention is being paid both by manufacturers and private makers to the all wood or all metal hood. Some of the wooden types fold back, roll top desk fashion; others are solid, like the "Coupette" shown above, and simply pivot backward and forward. The demand for complete protection for the passenger is very insistent in these days, and no doubt when the advantages of this type are better known, the coupé top will become popular, especially with owners of sporting sidecars, the clean lines of which are spoilt by untidy hood sticks and flapping cloth.



A non-collapsible hood of three-ply wood, which extends over the rear auxiliary seat. Although grace of outline may have been sacrificed, R. G. Kerr, of Enniscorthy, says he is more than satisfied with the alteration, and that his 1921 749 c.c. James feels little or nothing of the extra weight and wind resistance.



A "solid" form of hood which can be detached from the body together with the screen. This model is manufactured by P. S. Collyer, 78, Snell's Park, Upper Edmonton.



The maker has thought of the driver's comfort, also, in fitting to the 1922 "Collyer" twin a bucket seat supported on cantilever springs.

Maniacs ?

THERE is an old Roman proverb "*de gustibus non disputandum*," well balanced by the modern North Country maxim "there's nowt so queer as folk." Last week I found myself marooned amongst some strange men whose chief passion in life is a new sport known as "hiking." For the benefit of the non-hiker, let me expound that the hiker goes one better than the snail. The snail carries his house on his back; the hiker goes further, and carries his grub as well as his house. The grub consists of the three essentials of life—bread, beans, and bacon; the "house" is an ex-W.D. ground sheet in which a blanket is rolled—if you are a cold mortal you may also carry a bit of muslin the size and shape of a dogkennel, which is euphemistically termed a tent. We fell to comparing our respective hobbies. Easy fruit, thought I to myself. I held forth eloquently on the red weals produced by the shoulder straps of the pack; of the tedious crawl at which a dull landscape passed over the hiker's shoulder; of the discomfort of sleeping under hedges; of ticks, earwigs, and harvest bugs; of vipers; of lighting fires with wet wood. Believe me, I had none the better of the argument. What those hikers had to say of motor cycling would char these chaste pages. So I won't print it. Philosopher as always, I opine that one man's meat is another man's poison. I tried a 24-hour hike with these eccentrics, and an o.h.v. Triumph was sweeter than ever when I escaped from them.

The First Baby Two-Stroke.

A GENTLEMAN who was prominently associated with the evolution of the two-stroke assures me that the first "baby" two-stroke to take the road in this country was a Levis, which appeared in the early months of 1910. Any rival claimants, please?

The Trewso Leggings.

FOR fussiness in details commend me to two classes of men—the camper, in regard to his entire kit; the keen motor cyclist, in regard to his riding wear. I am going to spend yet another paragraph on the Trewso leggings, because I have in the past both commended them and criticised them. They were—to the best of my belief—the pioneers of the quick-detachable type of waterproof legging, which is so rapidly killing the clumsy patterns which compel you to lie on your shoulders and wave your legs in the air till some kind friend comes along and "skins" your legs for you. Their particular device consists of two spring-steel tongues per leg, one for the calf and another for the shin. You can rip these out of their sockets in half a second with a double motion of the hands, when the garment promptly collapses round your feet, and so does not get soiled internally by the mud on your boots. In the past I found fault because the aforesaid spring tongues occasionally flew out when one was walking about. I have now ascertained that this is solely due to bad fitting; if you give your correct measurements when ordering, this catastrophe will never happen. The latest type is equipped with leather patches to take the heavy wear on the inside of each foot, and the instep security device is a chain, fixed by elastic at one end—quite a clever notion.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Over-Lubrication in Excelsis.

A READER was duly impressed by the works manager with the advisability of over-lubricating his new bus for the first 1,000 miles. He followed the counsel so energetically that after a couple of months the machine began to run rather badly; and upon examination it was found that the bore of the exhaust pipe had carboned up till there was barely room for a lead pencil to be inserted. Moderation in all things.

A Gap in the Programme?

A GENTLEMAN who is interested in the motor cycle trade is anxious to put up a valuable trophy for open competition, preferably including sidecars as well as solo machines. He desires the trophy to be of the annual challenge variety, and to be awarded for some outstanding feature not adequately covered in the current programme. These conditions are not easily fulfilled, but it is obvious that at present we have no event limited to lady motor cyclists. If any reader has a better suggestion to make, let him send it along to me, and it shall reach the proper quarter.

Observe!

EMERGING from a garage yesterday I met a tall athletic girl, clad in heavy leathers, perspiringly pushing one of the special light-weight machines deliberately designed for the inexpert potterer. Her back tyre was flat, and to judge from its worn condition a further crop of punctures was her inevitable doom. She was of a temperament which is utterly bored by even the most straightforward forms of roadside tinkering, and preferred to risk punctures and push on to a garage when unfortunate, rather than learn how to do a very simple operation for herself. The incident throws into relief the wiser design of the Harper Runabout, which is equipped with both detachable wheels and detachable rims.

To Strasbourg for the Grand Prix

After-Impressions of a Hurried Trip Across France to Alsace.

THERE is more romance in a yacht entering a foreign port than in thousands of miles of cruising round its homeland coast.

The same applies to the motor cyclist who finds himself and his machine through the customs in a foreign land.

Instead of being a mere tourist the rider becomes an explorer; instead of roads, the highways are paths into the unknown. So far the coasts of Great Britain have represented the outposts of civilisation, and it comes almost as a surprise to the motor cyclist on his first visit to the Continent that finger posts, steam rollers, garages, and inns are continued beyond the Channel.

There they are, however, different, perhaps, from the wayside objects of this country, but nevertheless the same old familiar friends.

Driving on the Wrong Side.

First impressions leave a deep mark, and in this connection probably every British motor cyclist who has toured on the Continent retains vivid memories of the first few hours of driving on the right-hand side of the road. On meeting or overtaking traffic instinct tends to cause the driver to do the wrong thing, and on the first day, at least, it is with tensioned nerves that he forces himself to do what is right. When one is occupying the centre of the road and meets an approaching high speed car, also in the centre of the highway, it requires the same amount of will power to draw over to the right, as is necessary when a bicyclist essays to balance a tricycle.

Although I have toured in America, Scandinavia, and France, this preliminary nervousness has always been present. Perhaps other motor cyclists are quicker to adapt themselves to the different rule of the road; in fact, F. G. Edmond, the Triumph rider, asserts that he finds no difficulty in changing over from the left to the right-hand rule, but experiences confusion on returning to this country.

Incidentally, the tourist in a conventional British outfit here finds an answer to the controversy on right or left-hand sidecars. With a sidecar on the left and "keep to the right" as the rule, it is sometimes difficult to see the road ahead when overtaking slower traffic, because it is not until the centre of the road is reached that the driver is able to ascertain whether the way is clear or not.

Such were some of the thoughts which flitted through the mind while speeding towards Paris *en route* to Strasbourg for the Grand Prix. On encountering the *pavé* in the suburbs of Paris, one's thoughts turn to the other matters which concern such things as spring frames and oversize tyres.

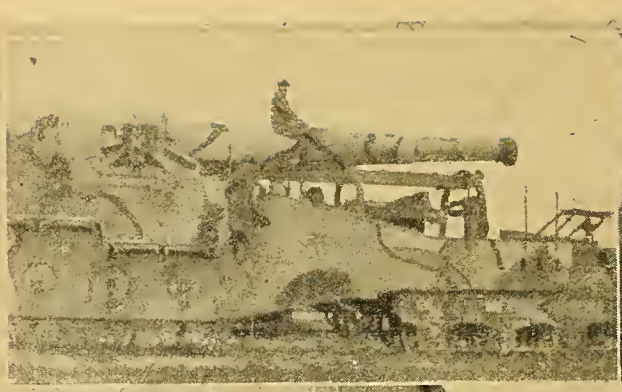
Tucked away out of the whirr of modern life—a Strasbourg fruit market in a courtyard near the centre of the city.

Paris the Real Starting Point.

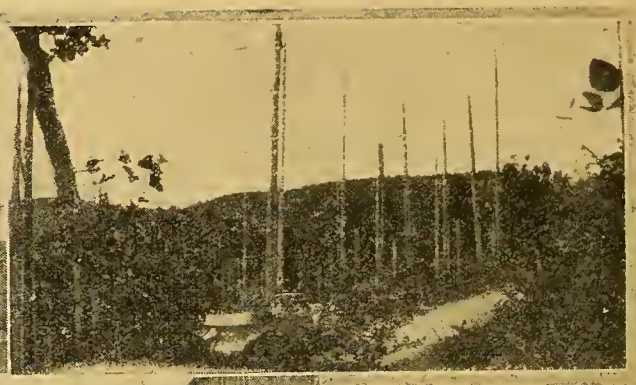
Actually the trip to Strasbourg began at Paris, which gay city was anything but gay as we left it in the very early hours of Monday morning prior to the motor cycle Grand Prix. A southerly course was taken *viâ* Champigny, near which town we passed a race-course where French cavalry were in training, and a fine sight they made at the gallop.

Moderately good roads were traversed all the way to Provins, where a big road race was held last year. Here we began to realise that we were journeying south, and as we sped along on roads which were dead straight for miles on end, both passenger and driver were silent. It transpired at the next stopping place—Sézanne—that each had been occupied by thoughts on the same subject.

In every town and village through through which we passed nearly every house had its wooded-slat shutters closed. It is always so in southern countries, where the principle adopted is to keep out the light and so exclude the heat. But it was not hot; it was not even sunny for fully half the journey, yet on both sides of every road the majority of windows were shuttered. For the first few miles these shuttered windows are just noticed in passing, but after two hundred odd miles of it, they tend to depress the wayfarer and create many morbid thoughts.



One of a large park of big guns which occupies a grass grown siding miles away from "anywhere." A reminder of the Great War.



A natural monument to those who fought on the old Franco-German frontier. The edge of a forest of dead pines in the Vosges.

Archway through which the traveller may enter the picturesque town of Vitry le François.

These notes are impressions; therefore, irrelevant as it may be, I was reminded that fair France has not yet recovered from the war. Somewhere I have read that our cross-Channel neighbour lost 50% of her young men between the ages of 19 and 32. Mere figures, perhaps, but the fact remains very few young men are to be seen excepting in uniform, and, in this connection, it occurred to us that there were a great many more men under arms in France than are to be seen in this country.

"And what has that to do with motor cycles?" asked my companion.

"Everything," was the reply.

Can one expect France to become a big motor cycling country if all her young men are in the army? Can posterity be guaranteed success in commercial life, in the arts or scientific research, if all the young blood is drained into a military machine?

We continued this argument for several miles until the official at the *octroi* on the outskirts of the next town turned conversation into another channel.

Monsieur took a prefunctory glance over the outfit, decided that we were *étrangers*, and waved us on. Had we had cabbages or chickens or even a surplus supply of petrol aboard, we should have had to pay the local duty which is levied on all goods imported by the towns from the country. Incidentally, it is cheaper to buy petrol outside the large towns than within.

Strasbourg recalls the story books of childhood

Those shuttered windows really had got on our nerves, but even this characteristic feature of the French road side failed to make a depressing picture of Vitry le François, where we lunched.

Vitry is a clean little town where everyone and everything appeared to be dozing. The traveller enters it through a beautiful archway, where a motor char-a-banc disputed our right of way. Outside is the blue-green of heavy foliage, and inside the grey town. It is like opening a door in the wall of an old-world garden and finding oneself in the street. That motor coach seemed out of place somehow—certainly it had pneumatic tyres which rendered it silent on the *pavé*, but one felt that such places ought to be visited on foot with a staff and haversack.

In the centre of Vitry is a fountain where the four roads into the town meet, so one cannot pass through without pulling up. We lunched at an hotel which approximated to any English hostelry in a quiet cathedral town, in company with divers persons whose calling in life it was impossible to conjecture. Including the Grand Duchess who lunched ferociously within sight of the chauffeur of her limousine at another table, they all had their counterparts in England.

French Towns.

Leaving the sleepy environment of the square, we took the road opposite to that by which we had entered, and continued our journey towards France's regained province of Alsace.

No wonder the Michelin guide gives a plan of most towns in France. It is such a problem to find one's way through, for if the roads are long and straight, the streets are short and tortuous, and, as a rule, the difficulty of finding the way into the usual centre square is only exceeded when discovering a way out again.

Plan of the square at Vitry showing the four main roads which meet at the fountain in the centre.

More straight roads, more dilapidated country dwellings with

To Strasbourg for the Grand Prix.—

their manure heaps, more shuttered windows, and in due course we arrived at Nancy, where we made a halt for tea.

Regarded as one of France's cleanest towns, Nancy makes a strong appeal. The inevitable square in this case, the Place Stanislas, is enclosed by massive iron gates richly gilded. Two corners of the square are occupied by beautiful fountains, and the words "five o'clock tea" on the flapping front of an hotel canopy suggested that English visitors were frequent.

"More probably American," murmured my passenger. But in America five o'clock tea is practically unknown—but perhaps mine host does not know this.

Behind the Lines.

On the road once more after half an hour's stay we continued our way along tree-lined roads to Luneville, and, as we were now approaching an area which was not far behind "the lines" in the bad days between 1914 and 1918, we had several reminders that cleaning up after a war is a big task. At one point miles away from town or village we saw a large railway siding where on grass-grown tracks lay dozens of heavy guns still in their camouflage paint. Here we came across *The Autocar* editorial party on an eight-cylinder Talbot-Darracq. Our *confrères* had started from Paris several hours after we had left, and by greater speed and better experience of the roads had got ahead. Incidentally, they soon left us again, and we were able to appreciate to the full why the peasants look upon motor cars with disfavour. The dust that car raised was like the spray on Boulogne pier during the gale which was raging on the day we landed. All the roads, of course, are not tar surfaced like our own.

We reached the edge of the Vosges at Badonviller, which town reminded us that we were indeed in a foreign land. From now on the road wound among great forests of pines up the mountains to the Col de Schirmeck, a pass over 2,000ft. high and at times with gradients and hairpins that would gladden the hearts of the Edinburgh Club officials when in search of routes for a Scottish Six Days.

Well-graded Roads.

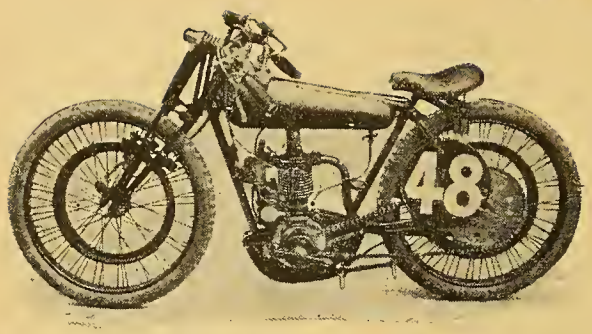
Unlike those in Scotland, however, the road was good but so graded that it covered many miles in comparison to the flight of the crow. I suppose one should substitute magpie for crow in this part of the world, for everywhere on our route we had seen the black and white mischief-makers which are as common as the bullock-drawn farmer's waggon.

Gone now were the straight flat roads and their avenues of top-heavy trees with their great bunches of mistletoe. No longer could we see very far ahead, for hairpin after hairpin followed in quick succession as higher and higher we mounted above the valleys and ravines. Forgotten were the shuttered windows of the plains of France as we hurried on in second and bottom gear amid scenery which has no parallel in Great Britain, for here the trees covered the hills to their crowns.

Scenes Worth Revisiting.

Would that we could have tarried awhile; it is a country which is worth travelling far to see and offering possibilities for a camping tour for any-

In ancient Strasbourg—capital of Alsace, France's regained province—where the 1922 Grand Prix race was run.



The Chauviere motor cycle, built by its owner who competed with it in the 250 c.c. Grand Prix. The frame is a Villiers, and the engine a small four valve unit built up by the rider himself. Direct chain drive is used.

one who loves the grandeur of forest clad mountains.

Surely war could not have disturbed such a peaceful corner of the world? To such a place one would come to get away from the din of the clashing arms. . .

Then round another hairpin and disillusionment. Whole forests of dead trees towered towards the sky with leafless branches and naked trunks bleached white by passing time. Some were shattered at their base and leaned against their fellows. Others lay half hidden in the tangle of Nature's mantle which, as if to cover up the destruction wrought by man, is healing the great wounds made by bursting shells that came across the mountains and forced the Allies' soldiers to seek refuge in the dugouts now visible on every side.

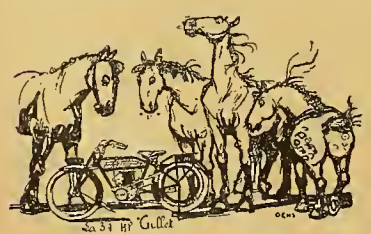
We now fully understood why sidecar outfits were used in the ambulance service on this front, for their mobility on the steep and comparatively narrow roads would be a very great advantage. I tried to imagine a four-wheeler ambulance turning round on these gradients of 1 in 7 with perhaps shells bursting on either side.

We descended into a valley *viâ* an enlarged Inverfarigaig corkscrew which tested the brakes to the full, and then on again upwards for a thousand or more feet with glorious vistas all around, until finally the summit was reached and the descent into Alsace began.

Alsatian Colour Schemes.

What a change! We had indeed entered another country. Instead of the paint-starved grey houses and their heaps of manure, we now saw clean white or cream washed walls, brilliant red tiles, and green painted shutters. Trim farmsteads lay off the road, and, occasionally, an Alsatian costume to add further colour to the scene.

Remembering that this was France's regained province, we wondered whether the new paint was due to an overhauling by the makers or to the usual habits of the people. In only one respect did Alsace appear similar to the France we had left behind on the other side of the Vosges—the expressions on the faces of the people. Everywhere, from the coast to Strasbourg, we noticed it, a sadness reflected even in the countenance of the young. East of the Vosges it seemed to fit the country. For one could not imagine laughter and song where the villages are grey and only the red poppies relieve the monotony of green in the open country. But in gaily-coloured Alsace, with its swift running streams and flower decorated houses, one expected to find happiness and care-free faces, such as one meets in Norway and Switzerland.



In this subtle manner a French company advertises its 3½ horse power machine.

Just an impression perhaps, but then these notes do not aspire to be anything more.

A Fairy Story Town.

In the gathering dusk we approached Strasbourg, and as we entered by roads with smaller and more crooked streets on either hand we were reminded of childhood memories of the place where the storks build their nests on the chimney pots and of crooked houses which for generations have illustrated the fairy stories of Hans Anderson and the Brothers Grimm.

I will leave the pictures of Strasbourg to speak for themselves. It is a beautiful city blending the ultra-modern with the Middle Ages. Some day I shall go again with an easel and a paint box having an extra supply of purples and blues in order to depict the shadows that for once are beautiful.

We expected gaily uniformed bands performing in the city square, we looked forward to *fêtes* and rejoicings. For was it not the great Alsatian week? We had promised ourselves a city ablaze with colour and illuminations. The illuminations were there and flags were flying—and the band turned up with its bugles and side drums at its head; but as it was teeming with rain we turned into a place of amusement—which was almost as deadly dull as a *conversazione* organised by a village chapel.

In another generation, perhaps, France will return to its former lightheartedness; in the meantime everyone seems to be an onlooker waiting for someone to take the initiative—and no one does. VEDETTE.

K. Bartlett, the English rider of the A.B.C. in the Grand Prix. Bartlett won the 350 c.c. race in 1920 on a Verus, but he is now associated with the production of the French A.B.C. and Gnome - Rhone machines.

A FAST TOURING MOUNT.

Some Notes on the 16H Norton after Prolonged Use

AMONGST the duties of *The Motor Cycle* staff is the personal observation of points of interest in long-distance trials. For this purpose it is necessary for the observer to be mounted on a perfectly reliable machine, so that he may not only survive the trial without mechanical delays, but also return to headquarters with "copy" in the shortest possible time.

Again, since observed hills are often close together, a fast mount is essential if competitors' performances are to be watched at all the tricky places.

With these points in mind, and after due consideration, the writer of these notes selected a 490 c.c. Norton for his working hack.

Departures from Standard.

The 16H model was chosen as a basis, but in order to obtain increased comfort on long runs certain minor alterations from the standard specification were incorporated. First of all 700 × 80 mm. tyres were fitted, and to compensate for the slightly increased gear ratio an engine sprocket with one tooth less than standard was ordered.

Next, a fully valanced front mudguard, such as is fitted to the "Big Four," was specified so as to afford rather more protection in bad weather. It must be stated that all these extras, which were but the rider's personal whims, were fitted by the makers without necessitating any alterations in existing parts. Later modifications and additions to detail specification consisted of a Jelley saddle—a type always used by the writer—a Webb front brake to replace the horseshoe type as then fitted, a medium-sized Hunt electric head lamp with 6-volt accumulator carried behind the saddle tube, and a special pair of handlebars to suit the rider's "out size" in build. Thus equipped the machine came very near to the ideal fast tourist as imagined by its owner.

On the road with the 490 c.c. Norton—a mount long since proved exceptionally fast, comfortable, and easily controlled.

Suitability for Long Journeys.

Now, at one time there was current amongst a section of the motor cycle community a notion that the Norton was purely a "speed iron" and was not a suitable machine for long-distance touring. That this is an absolute fallacy has frequently been proved, and in the particular case under discussion additional proof is furnished by the fact that the Norton has the best non-stop record of any of the large number of machines which have from time to time occupied the owner's garage. Over a distance of some 7,000 to 8,000 miles the single mechanical hitch which occurred was a momentary piston seizure due to a mixture of oils which did not blend. Even this *contretemps* did not cause a road stop, and it was not until a week later that an opportunity was found for removing the cylinder for examination. Inspection revealed a slight seize mark, which was polished off with fine emery cloth, and subsequently all went well.

A Fast Touring Mount.—

Little need be said of the Norton's speed qualities, which are known the world over, but it may be added that, even with big tyres and a very full equipment, the H.16 more than satisfied all the requirements in this respect. As regards garage attention, the owner makes a rule of removing the cylinder of any machine he may possess after every 2,000 to 3,000 miles. Apart from decarbonisation, such an inspection reveals any latent troubles, which in the case of the Norton were invariably absent. The replacement of a front chain, one adjustment of the front hub, and the fitting of a locking device to a mudguard nut which persisted in working loose and causing a rattle, are the only adjustments worthy of mention. If driven on thin mixtures the Norton is a little apt to pink when picking up on a high gear, but this trouble was largely eliminated by fitting a 1 mm. washer, supplied by the makers, below the cylinder. With this washer in use top-gear hill-climbing under touring conditions is exceptionally good, and it is seldom indeed that low gear is required, except for hairpin corners and freak surfaces, which must be traversed at little more than walking speed. Amongst the many noted hills to the credit of the Norton are Porlock, Lynton, Park Rash, Alt-y-Bady, and the famous Welsh Screw hill. It is true that a stop occurred on the last-mentioned climb, but this was due entirely to the rider who, with a strange carburetter control, opened the throttle instead of closing it, causing wheel slip. The machine was immediately restarted at the same spot and went away with plenty of power in hand. With such a fast machine it was possible to attain average speeds as high as the road would stand, and the Norton is one of the very few machines which will honestly cover the mile per minute under normal road conditions.

Features Contributing to Speed.

When such excellent all-round results are obtained from an apparently normal 500 c.c. single, it is worth studying the design in order to find out "the reason why," and the "insides" of the Norton are certainly more interesting than the exterior. A very light cast-iron piston (aluminium pistons are offered as an alternative) and a light but stiff connecting rod are partly responsible for the rapid acceleration and ability to maintain high speeds without apparent effort, while the unusually large and heavy flywheels are responsible to some degree for the smooth, slow running and wide flexibility range. The valves are not unduly large,

Stiff H-section connecting rod with roller bearing big end; it is liberally drilled up the centre web.

A light cast-iron piston with a decided waist is fitted to the standard Norton. The hollow gudgeon pin is located by a peg and locked by a split pin at the opposite end.

but the cams and the port design are excellent, and the long stroke enables a reasonably shaped compression chamber to be employed.

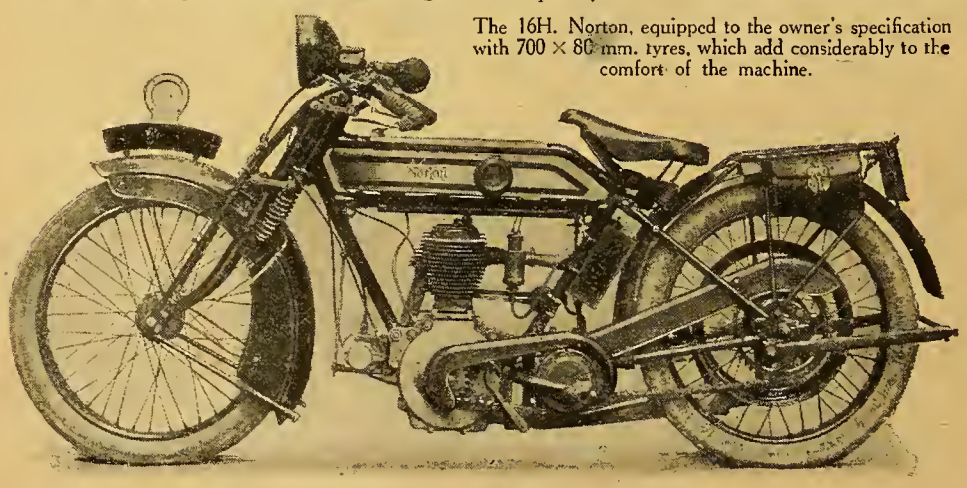
The above points, in conjunction with the admirably designed cylinder, well ribbed where necessary, and having ports separated from the barrel, are chiefly responsible for the fact that the Norton is one of the fastest standard machines on the road. The word "standard" is used advisedly, for the Nortons, even as used in road racing, *are* standard machines, subject, of course, to individual tuning by their riders.

General Characteristics.

In praise of the Norton 16H, it may be said that it is fast, reliable, flexible, a fine hill-climber, well balanced, and easy to handle—what more is required?

Criticisms of this machine are not easy to find, but slightly better protection and lubrication of the front driving chain might be arranged with advantage, a rather unduly large hole is left in the back of the magneto chain case, which permits the entry of water and grit when traversing typical trials routes, and the mudguarding is—only little better than on the average sports machine. All these matters, however, are trifles compared to the fact of its wonderful power and flexibility, and the owner would have put up willingly with more serious faults for the pleasure of riding so fine an all-round performer, which, tractable as a lamb in traffic, can become a roaring lion at the touch of the throttle.

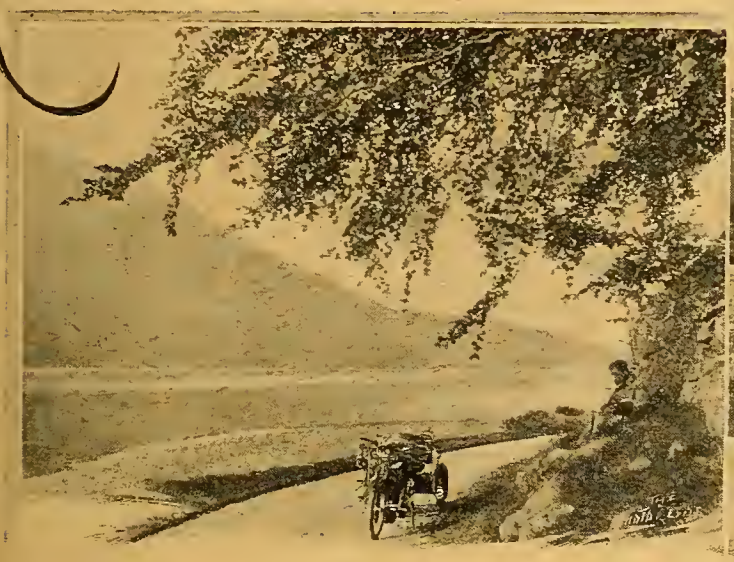
The machine has now changed hands, but it is satisfactory to watch it piling up gold medals in the hands of the new owner, who is absolutely unconnected with the trade, but is nevertheless having thoroughly satisfactory results in some of the more important long distance reliability trials.



The 16H. Norton, equipped to the owner's specification with 700 × 80 mm. tyres, which add considerably to the comfort of the machine.

SCOTLAND and the MOTOR CYCLIST

Notes on Touring in the Highlands and the Appreciation of Mountain Scenery.



(Left) A halt on the shores of Loch Lochy, Caledonian Canal. (Right) Near Cockbridge.

MOST motor cyclists promise themselves a Scottish tour—"next year, perhaps," they say, "if times are better." But the percentage of those who ever realise this dream is comparatively small—and more's the pity, for the peculiar charm and beauty of the Highlands is unrivalled.

The writer has motored in many lands, but neither the Mediterranean countries of Europe, the sun-swamped Orient, nor the many climes of Africa have revealed to him anything quite so fascinating as the calm, rugged grandeur of our own "Bonnie Scotland."

With this magic hunting-ground at his door, so to speak, the discriminating tourist has no call to go abroad in search of Fairyland.

Bad weather is a "spoil-sport" anywhere, but rain in the Highlands is a very different thing from a wet day in Manchester, and it is wonderful how the swirling Scotch mists can soften the most vigorous landscape.

Not Always Raining.

However, it is not always wet north of the Clyde; in the latter half of the summer of 1920 there were six consecutive weeks of glorious weather. Still, it must rain sometimes, even in the best regulated countries, and when it does, why, there are other fields to plough: where, for instance, is the gun or the rod more in evidence—the artist or the golfer better catered for? Moreover, when you *are* in the "Land-o-Cakes," what better opportunity for sampling them? Then there's the famous native wine. . . .

He is an old man who can say that he has exhausted the possibilities of Scotland. It will take many an annual three weeks' holiday to visit even the better known beauty spots—and the Highlands are all beauty spots.

A mistake a great many people make is to map out an extensive tour and then spend all their hard-earned vacation trying to keep up to schedule. What is the use of hurrying along day after day just so as to be able to say, "I covered 2,000 miles on my holiday?" "More fool you," the rejoinder should be. "You might have done even better up and down the Great North Road."

Avoiding a Set Itinerary.

How often has one thought, when motoring in the Highlands, "What a pity, after coming all this way, to rush by this glorious scenery, these wonderful glens—I should like to linger here?" For heaven's sake, then, why not do so? And yet few do; they *must* push on to such and such a place, because otherwise they would feel that they were wasting time.

By far the best way is to make no plans at all, and just wander along till one comes to some spot that takes one's fancy, and then make straight for the nearest village. Discreet enquiry is almost sure to discover some cottage where one may lodge for a few days.

The writer has always followed this scheme when motoring at home or in France or Spain, to the benefit both of his pocket and enjoyment, for the quaint

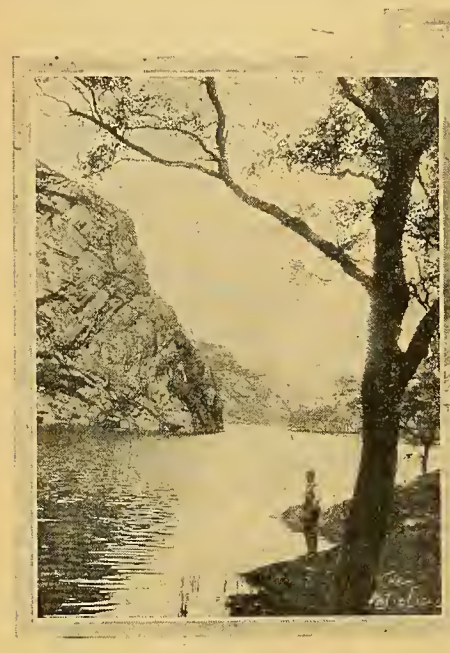
Scotland and the Motor Cyclist.—

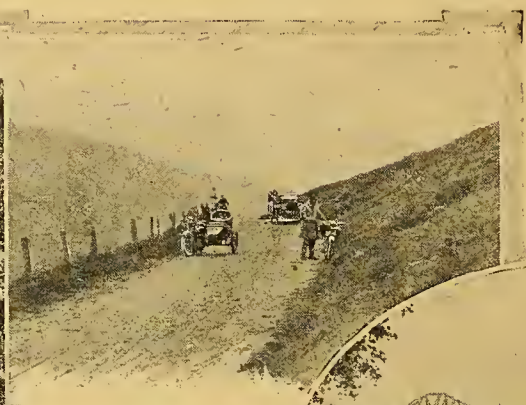
customs and society of the natives are infinitely more amusing than the trivialities of the commonplace hotel.

"People who live in flat countries," they say, "have drab minds." This may be so, but then their pleasure is all the keener when visiting the land of their more fortunate neighbours.

One must not, however, expect to find the Alps in Scotland; but lest this should deter some from venturing thither, it is as well to remember that one mountain is much like another, and that many of the world's giants turn out, on inspection, to be comparatively disappointing—the reason being that a considerable portion of their altitude is derived from the already high level of the ground from which they spring. It is a fact that many of the Highland Bens, while the snow lingers on their summits, are quite as impressive as the Pyrenees, say, or Mount Olympus.

D. C. BURN,
(B.A., F.R.G.S.).





(Left). Loch Katrine, The Trossachs.

(Top). At the summit of the "Devil's Elbow."

(Right). The Forth Bridge.

USEFUL THINGS TO KNOW.

Engine Revolutions, Gradient and Speed Estimation by Simple Rules.

WHEN motor cyclists foregather it frequently happens that discussions turn on such subjects as speeds and gradients.

Below are given some formulæ and other data by means of which many an argument may be settled.

To Find Engine Revolutions.

If the r.p.m. of an engine, at different speeds and on a certain gear, be divided by the speed, a constant results, which, when further divided by the gear ratio, gives a fresh constant, depending on the size of the tyres used. These constants are as follows:

For 24in. wheels = approximately 14 (14.04).
For 26in. wheels = approximately 13 (13.01).
For 28in. wheels = approximately 12 (12.1)

From this we can see that:

$$\frac{S}{V \times r} = k \text{ or } S = k \times V \times r.$$

where: V = speed in m.p.h.
S = engine speed in r.p.m
r = gear ratio.

For example, on a machine travelling at 30 m.p.h. with a 5 to 1 gear and 26in. tyres, the engine speed will be $30 \times 5 \times 13 = 1{,}950$ r.p.m.

Measuring Gradients.

Every motor cyclist knows the way in which local hills become terrors of 1 in 3 and 1 in 4, when there is no one near who has actually measured the gradient to correct the mistake. The apparatus required to measure the gradient of any hill is a piece of string, preferably weighted at one end, and a ruler.

Place a wheel of the machine with the valve nearest to the ground, and stretch the string across the centre to form a diameter. Where it again meets the other edge of the tyre hold it and let the free end hang vertically. Mark where the end passes the tyre, and measure the distance between this point and the point of contact of the tyre with the ground. If the diameter of the wheel is now divided by the distance just found, the result is the gradient of the hill.

Thus, on a machine having 28in. tyres, if the measurement is found to be 2in., the gradient will be known at once to be 1 in 14.

Estimating Speed.

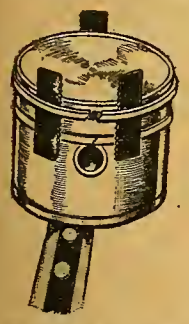
To find one's approximate speed when travelling along a main road, it is only necessary to count the number of telegraph posts that are passed in two minutes. This, when the posts are at the usual distance of 60 yards, gives one almost the exact speed in miles per hour. For instance, if 30 posts are passed in two minutes, the speed is approximately 30 m.p.h.; 15 would be passed in one minute, or 15×60 in one hour. Each post being 60 yards from the next, which equals $\frac{3}{88}$ of a mile, the speed is really $15 \times 60 \times \frac{3}{88}$ miles per hour, which, when reduced, becomes 30.6 m.p.h.

W. T. H.

NOTES ON PISTON RINGS.

Hints on the Manipulation of an Important Engine Detail.

IN the making of piston rings it is important that they should be turned to such a diameter that the ring fits the cylinder when the gap is closed. The correct diameter is found by multiplying the bore of the cylinder by 3.1416, adding the width of the gap *when the ring is open*, and finally multiplying the result by 0.318. If the rings are to be ground after turning, a further 0.01in. should be allowed. Castings for piston rings should be of iron, cast vertically, the lower end being used for the rings since this portion of the metal is cleaner and less porous. It is, of course, only necessary and worth while to *make* rings when fitting oversize pistons or in an emergency, and this information is worth remembering.



Removing piston rings by means of three strips of hack-saw blades.

Making Special Rings.

In turning rings they are first made over-size, bored to correct size, parted off, cut, and clamped upon a mandrel with the slot closed, and finally ground to the size of the cylinder. The cylinder should be carefully measured either with inside micrometer or by means of inside callipers (transferring the latter measurement to outside callipers with which to check the grinding of the new ring). Catalogue specifications of cylinder bore should never be accepted since the cylinder may have worn oversize to the extent of three or four thousandths, which can be compensated for in the new rings.

The final grinding operation, after cutting gives an eccentric finish to the ring, thus putting the greatest strength of the ring at the point of greatest leverage. Many rings, however, are not eccentric.

In removing the ring three pieces of hack-saw blade or strips of sheet metal are passed behind the ring, so that they are an equal distance from one another. The ring may then be easily slid off. In re-assembling remember to fit the bottom ring first.

When the Ring is Burnt In.

If the ring is gummed into its groove with carbon a piece of hack-saw blade should be judiciously worked to and fro under the end until the carbon is loosened. Sometimes a piece of copper wire pushed round under the ring will achieve the desired result.

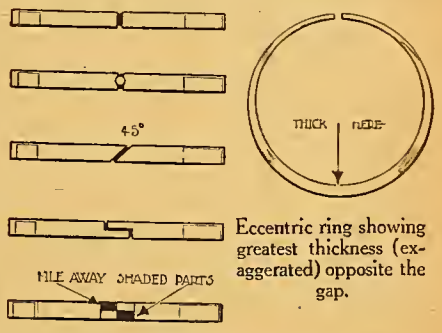
In fitting new rings they should be tried in the bore of the cylinder prior to placing on the piston, and the slot adjusted so that a gap of about 0.004in. obtains.

There are various piston ring slots, such as the plain sloping one, the pinned variety (which is chiefly used on two-strokes to prevent the ends creeping round and fouling the exhaust and transfer ports, although it is sometimes used to keep the slots from working in line on four-stroke engines) and the step-jointed slot which is made as shown by filing two rectangles on opposite edges of the ring so that they meet.

Dealing with Worn Cylinders.

When a cylinder has worn so that a perfectly round ring is not satisfactory, the ring should be hammered to fit. First the ring should be placed on the piston and the latter pushed up and down in the cylinder for two or three seconds, using a wood block in the cylinder head to prevent the piston running up into the combustion chamber. Upon removal the portion of the ring not in contact with the cylinder will show up, and if this part is held on a flat iron block and judiciously hammered from the inside, it will probably mark up all round.

C. M. N.



Eccentric ring showing greatest thickness (exaggerated) opposite the gap.

Various types of piston ring slots, showing also the method of step cutting.

SOLDERING ALUMINIUM AT LOW TEMPERATURE.

ALUMINIUM, despite the general ease with which it is worked from the manufacturing point of view, is one of the most difficult of metals with which the repair man has to deal.

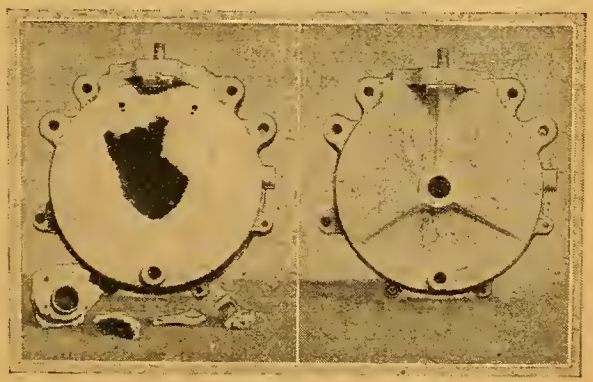
Primarily the difficulties which arise in aluminium repair work are due to the rapid oxidisation of the metal, the chemical changes at the surface being almost instantaneous after filing or cutting.

Welding of aluminium, of course, is possible, but unless skilfully done by specialists the intense heat used is apt to injure the physical properties of the metal, not to mention the possibility of setting up distortion or local stresses in a delicate casting.

Most of the difficulties of repairing aluminium articles, however, are overcome by the use of a solder prepared by the Salunite Aluminium Solder Co., of 43, Johnson Street, Westminster, London, S.W.1. This preparation melts at a comparatively low temperature, such as may be obtained by a small blow-lamp or even a soldering iron. No preparation of the metal is required other than by cleaning and scraping to a bright surface; a flux is not essential, and the work to be repaired is "tinned" by bringing it up to the requisite heat and rubbing the stick of solder thereon, finally brushing in the molten metal with a stiff wire brush.

As the solder becomes plastic it is possible to mould bosses, strengthening ribs or the like on a weak casting, this moulding being done with a flexible knife-blade.

When the solder has set it can be turned, drilled or tapped with ease, and it is very difficult to break away at the joint any two pieces which have been properly soldered together. Salunite is sold at 8s. per lb.; a trial outfit is available at 6s.



A badly damaged motor cycle crank-case repaired with Salunite aluminium solder. Not only has the boss been replaced but strengthening webs have been added to support the repair, making the case stronger than when new.

What it Costs To Tour

The Choice of Accommodation during a Holiday Awheel. How to find a Comfortable Hotel.

EVERYONE appears to be interested in touring, but nobody agrees as to its cost. It was fully anticipated that a recent letter complaining of the almost prohibitively high level of hotel charges would arouse some interest and one or two denials, but even we were surprised at the extent of the correspondence which has followed.

One main fact emerges at once from the welter of ideas supplied by readers to rescue our original correspondent from holiday-making by motor coach. The economically-minded tourist must avoid the big motoring hotels. Not, it should be noted, because these places do not provide the comfort their classification would indicate; but because anything approaching a large hotel, with a correspondingly large staff which specially caters for the purely seasonal motor tourist, cannot be expected to compete in the matter of price with the smaller "family and commercial" inn which pays its way all the year round as a matter of course.

There is sound sense in this view; but the difficulty would appear to lie in discovering these less pretentious commercial houses in strange towns. There are many small hotels which exist chiefly as places for the sale of intoxicating liquor, and externally these are almost indistinguishable from the establishments in which the commercial traveller and other habitual wanderers find comfortable accommodation.

Again our correspondents come to the rescue. "Ask a policeman" is a safe and well-recommended plan; the local shopkeepers are usually able to help; or, according to one reader who has "been on the road for twenty years" a useful list may be found in "Good Lines," published by the Commercial Travellers' Association, Aldersgate, London, E.C.

The Question of Finance.

On the other hand, one or two unpleasant experiences at wayside inns which lacked the seal of any motoring association are sufficient to discourage many people from further experimenting. Henceforth they decide to take no more risks even if they have to pay a little more for their comfort.

The whole subject is one which appeals to no two people in the same light; and the fact that the temperament and financial standing of every motor cyclist tourist is far from alike makes it still more difficult to lay down any general rules. For example, the present writer has felt more satisfied when, paying a 19s. 6d. bill at a certain "three-star" recommended hotel than, two days later, when 10s. 6d. was charged at a wayside inn; but, on another occasion, he obtained incomparably greater comfort and better food for 13s. at a Welsh market town non-motoring family and commercial hotel than he enjoyed a few days later for 15s. 6d. in a doubled-starred establishment much frequented by motorists generally.

High Charges No Guarantee of Satisfaction.

Locality sometimes makes a big difference, but again it is impossible to say definitely which way the difference lies. The largest house in a big city often provides better value for money than the unassuming village inn; but just as often the best hotel in the village is more comfortable than 90 per cent. of the city establishments and less costly than all of them. It should be unnecessary to point out that the charges at seaside and holiday resorts are almost invariably higher than the corresponding rates in districts less favoured by the holiday-makers, but even in this case there are more exceptions than should be necessary to prove the rule.

Perhaps it is a case where wisdom lies in a variety of counsels, and, on this assumption, we append a selection of letters from our readers:

"Commerk," who is what his *nom-de-plume* implies, recommends commercial hotel, advice which he follows himself with satisfactory results:

"My usual bill for tea, bed and breakfast—a meat tea, *not* a 5- or 6-course dinner, comfortable bed and a good bacon and egg or fish breakfast—is, for one person (and the same rate applies when I take my wife), 3s. 6d. tea, 3s. bed, and 2s. 6d. breakfast. One gets as much to eat as one would wish for, a good bed, and courteous attention, without being overwhelmed with servants to tip; this charge also includes garaging."

A very sensible defence of hotel charges is propounded by Mr. W. T. Jabobs:

"Do we realise that, often, an hotel of, say, twenty rooms has only a few engaged all the year round and has to pay rates and taxes on the lot; a staff has to be kept large enough to cope with a sudden filling up of all the rooms;

What It Costs to Tour.—

and a vast amount of clean linen must be available—which all represents so much dead money?

"I have seen very moderate bed, breakfast, and bath charges advertised at some quite good London hotels, but I think in most cases these are nearly always full, or nearly so, so each guest has to bear a much smaller proportion of the overhead charges than a guest at a country or small town hotel, where, except for some special show week or other local event, the hotel is three parts empty.

"People expect to find a bed, wash, and a meal at any time they turn up in any town, and as long as we expect that I suppose we shall have to pay for it. May I suggest that the A.C.U. and A.A. (who ought to be one) get out a list of private apartments in various towns which are willing to put people up for a night."

Valuable assistance from the A.A. Handbook is acknowledged by Mr. A. F. Scroggs, who thinks Mr. King, our original correspondent, has been unfortunate in his choice of accommodation:

"No doubt these things vary in different parts of the country, and I cannot say what the conditions are in the North, but I have done a good deal of touring in the West of England, and I do not find it so expensive as Mr. King appears to do.

"With the very valuable assistance of the A.A. handbook, I usually find very comfortable rooms, with dinner and breakfast for 20s.—25s. for two people for one night, and I have had them as cheap as 18s. (at the "Ship" Hotel, Crediton, Devon). I always aim at staying at a village or small country town rather than at a big town, as I find that at, say, a two-star hotel in a town one sometimes gets one-star comfort at a three-star price, while at a one-star village hotel one may have good food, perfect comfort, and that personal, courteous attention that is generally lacking in a big hotel. I should like to mention especially the 'Bath Arms' at Cheddar in this connection.

"We generally buy food for the mid-day meal and take it in the sidecar, eating it by the roadside wherever we happen to be, about 1 p.m. This is much cheaper, pleasanter and more convenient than lunching at an hotel. Acting on these lines the expenses work out at rather under £2 per day, the daily mileage being about 80-100 miles."

Economy First.

Classified hotels should be avoided, according to Mr. H. A. House, whose experiences otherwise tally with Mr. Scroggs's:

"I have done a good deal of touring on a Triumph and sidecar, and am a member of the A.A., to my own great advantage, as I have often found. But if cheap touring is desired, the classified hotels must be carefully avoided. Personally I always make for the better class of village inn, or a temperance hotel, and with reasonable care in selection, I have always found these clean and hospitable, with good plain food, and quite suitable for a lady, provided great luxury or comfort is not expected.

"On arriving in a strange town, have a chat with the local policeman—he will generally give useful advice as to a suitable place. Also, *always* enquire prices before deciding to stay the night. For the mid-day meal it is far cheaper (and more enjoyable, too, in my opinion) to buy a few supplies, and have a Thermos filled before starting, and then to have lunch in the open, when and where one will. Tea may be managed in the same way, or high tea at about 6 p.m., does away with the expense of dinner and is far cheaper.

"A short while ago two of us did a four days' run to Yorkshire and back, covering 615 miles, and including everything the cost was £1 10s. per day for the two of us. Last summer two of us did an eighteen-day trip round North Wales, during August, covering 925 miles. The total cost for the two of us was £1 6s. per day. The most comfortable place we stayed in cost us £2 2s. for the two of us for three nights.

"Of course, if Mr. King really wants to spend as little as possible, and see as much as possible, camping is the very best solution. With a friend, I have done a fourteen-days' camping tour of Cornwall, covering 1,150 miles for £9 10s. inclusive for the two."

Several useful rules for the economically-minded tourist are embodied in the following letter from Mr. E. L. Long:

"Having toured in practically every county in England and Wales and not being blessed with overmuch wealth, I have reduced expenses by observing a few self-taught rules.

"Firstly, as you are not a commercial traveller and will not be using the hotel again, do not tip except in the case of exceptional attendance by waitress or "boots," which as a motor-cyclist you will not often receive.

"Only go to a "recommended" hotel as a last resource, and if forced to, for bed and breakfast only. Another important point is to knock off early: this gives one the opportunity of looking about for a reasonable place. The fact of a small temperance hotel not having a garage will usually save 6d., as the ordinary garage always charges less than the hotel. Avoid hotels and inns for lunches and teas, especially for the latter.

Evenings Free.

"If riding near the coast knock off about four o'clock at a town about six miles inland. Have tea, wash, and a clean-up after having fixed up your hotel for the night and then run down to the coast and enjoy yourself for the evening.

"Of course, the game will always be expensive as far as accommodation is concerned: you cannot expect an hotel to be run on private house lines. Mr. King made a mistake in letting his wife see the bills; I always lose mine. When a man pays as much for tea, bed and breakfast for one night as the lady gets to keep the family for a week, he must expect some remarks. I nearly had a holiday in North Wales spoilt from the same cause. Nevertheless, except for the hotels, petrol, and oil, there are very few extras, as we find our own amusements, and cent. for cent. it is very little dearer than a seaside holiday if care is taken."

Beginning with the statement that solo touring is the most economical way of spending a holiday, "'Bus before Char-à-banc" goes on to describe his own holiday:

"At the end of June I spent nine days touring from the Midlands, in Devonshire, and in all covered about 900 miles. I put up at nights at any convenient commercial hotel, all of which I found to provide most comfortable accommodation, and the average charge for each of the eight nights was between 9s. and 10s. for supper, bed, and breakfast. The total cost of my holiday, including absolutely everything except the wear and tear of the machine—a 4 h.p. Triumph—and with no desire to cut down expenses, was £9 16s. 6d."

Mr. J. Stuart White solves the problem by touring in France. He writes:

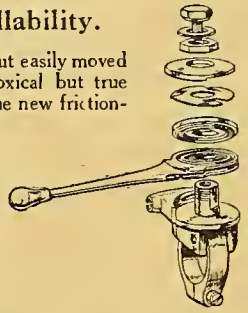
"Having suffered from the high charges of our hotel keepers I have great pleasure in giving Mr. A. S. King some good advice as to how he may avoid them. This in three words—'Tour in France.' He will find that by picking the smallest hotels in the Michelin Guide he can travel comfortably with his wife for just the same figures in francs as it costs him in shillings in England per day, *i.e.* his holiday will cost him only half an English one in hotel expenses. Besides this he will have the very finest of cooking and will be welcomed as a friend at the hotels. (See picture in Michelin Guide, which is quite true to life.)

"My boy and I, touring France last year, found that all the passport expenses, cost of crossing both ways with a Scott and a sidecar and the extra cost of petrol were amply covered by the saving on hotel bills. Prospective tourists can choose any sort of scenery they fancy."

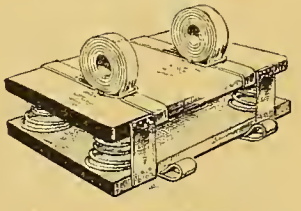
AMONG THE ACCESSORIES

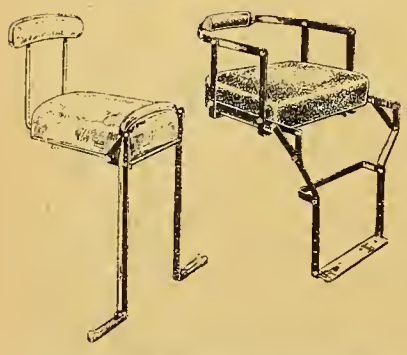
Controllability.

Immovable but easily moved is the paradoxical but true attribute of the new friction-held control lever introduced by J. Doherty & Son, Digbeth, Birmingham.



Carrier Equipment.



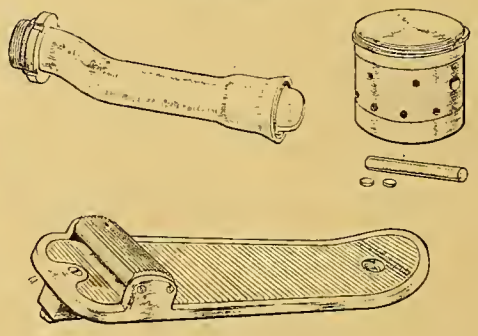


All forms of pillion seats, etc., are handled by Saxessories at Saxol's Works, Coventry, above being a sprung luggage carrier (20s.), and below astride (37s. 6d.) and side (35s.) pattern seats.

'Multum in Parvo.'

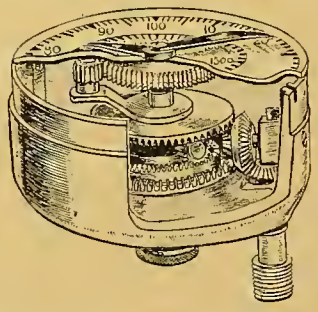
Embodying a screwdriver, an ordinary tyre lever, and a small ¼in. spanner, which will take the centre bolt of a magneto contact breaker, the Master tool also acts as a tyre locking lever, preventing the cover from rolling off the rim, while leaving both hands free. 7d. (Dell & Mitchell, 24, Soho Street, Liverpool.)

Specialisation.



Fitments designed specially for Douglas machines form the output of W. G. Coram, 150, Victoria Street, Bristol, three of whose latest productions are shown. Top, left: an extension oil sump filler for the 595 c.c. model: top, right: a light cast iron piston, with two rings in one groove, for the 348 c.c. machine; and, below, foot-boards also for the 348 c.c. model.

Mileage Recording.

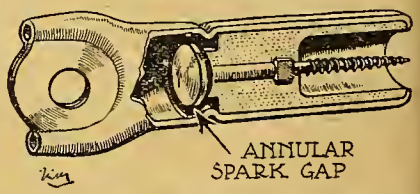


Trip and total mileage, indefinitely, are recorded only by the Ahcol indicator. The ingenious epicyclic reducing gear is shown in this semi-sectioned drawing. Transmission of course is on usual speedometer lines. £2 2s. (A. Hyslop & Co. Ltd., 30 Durham Road, Holloway, London N. 7).

Locking-up the Fuel Supply.

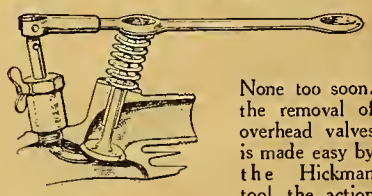
Theft prevention is aimed at on the Wright petrol tap by cutting off the fuel supply by means of a Yale lock. 30s. (R. Wright, 114-116, Southampton Row, London, W.C. 1.)

Neat and Inexpensive Spark Gap.



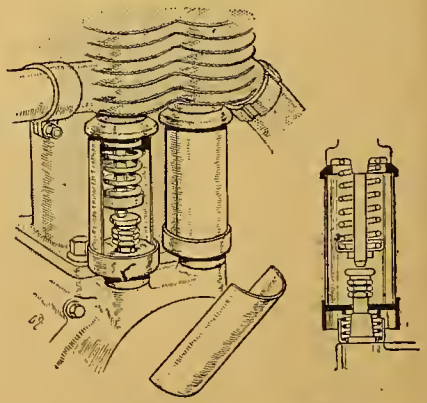
The firm of Lodge Plugs, Ltd., has introduced a terminal embodying an auxiliary spark gap device, which is offered at 1s. 6d. It is particularly recommended for use with slightly faulty or easily oiled-up plugs.

Eliminating an o.h.v. Disadvantage.



None too soon, the removal of overhead valves is made easy by the Hickman tool, the action of which is self-explanatory. (H. G. Hickman, 59, Queen's Road, South Farnborough.)

Enclosing the Valves.



Neatness, simplicity and ease of manipulation are the outstanding features of the valve cover protected by H. F. Harrison, 13, Styvechale Avenue, Coventry. Each end of a split sleeve fits into a metal cup and the whole is held in position by the pressure of a spring located in a socket encircling the base of the tappet guide.

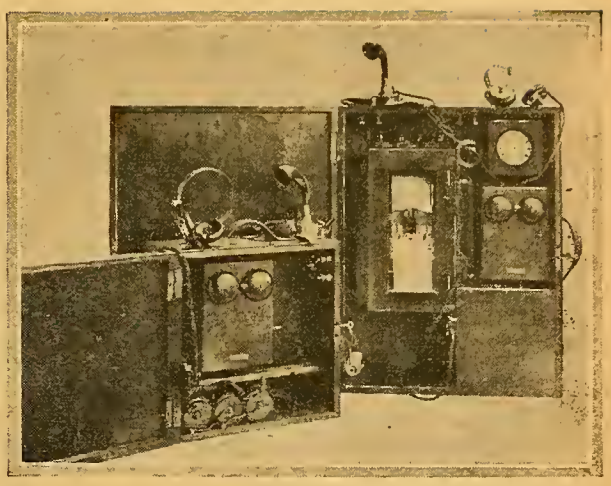
ELECTRICAL TIMING APPARATUS ON LOAN.

Well-known Firm in the Motor Industry Ready to Help Clubs with Hill Climbs and Speed Trials.

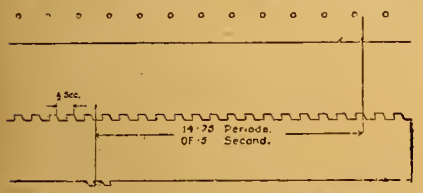
ARRANGING a method of timing his club's hill climb is one of the chief bug-bears of the average club secretary, who will learn with much pleasure that an up-to-date electrical apparatus is now being offered on loan by Ferodo, Ltd. (Sovereign Mills, Chapel-en-le-Frith), manufacturers of the brake lining of that name.

The outfit, which we illustrate, is complete with telephone and the necessary cable for kilometre speed trials.

The recorder and the electric control from the clock were specially manufactured by Elliott Brothers, Ltd., and the degree of error in working is for practical purposes quite negligible. Times can be recorded, and the record kept down to minute fractions of a second, impossible to obtain with the best class of split second chronometer. In addition, the times of any number of competitors can be recorded at very brief intervals, so long as the person in charge of the instrument can mark the different competitors' names or numbers against the starting and finishing marks recorded on the paper strips.



Timing apparatus, clock one telephone, etc., are contained in the large case at the rear, the telephone and connections for the contact strip at the start being in the smaller one.



Timing strip, showing how the apparatus is used.

In operation the device works on the same general principles as the one used for short distance records at Brooklands, which has already been described in *The Motor Cycle*. In this case a brief recapitulation should suffice.

Contact strips are laid across the road or track in electrical circuit with the recording arrangement; the recorder is started, and drives the strip of paper under three special marking pens; the two outer pens make straight lines, the centre one is given a lateral movement, which produces a continuous series of regular zig-zag lines, the periodicity of each cycle being exactly half a second.

The sketch of a length of the paper strip used shows what takes place. On contact being made by passing over the road contact strip, the pen on one side is drawn out sideways and returned immediately contact is released. The strip shows two such marks, one being made by the front and one by the rear wheel of the vehicle.

At the termination of the run, the vehicle makes contact with the other strip, and this is recorded by the other pen. Drawing lines at right angles from these points to the centre marking gives the time elapsed between start and finish. As shown, there are fourteen periods of half-seconds, plus three-quarters of a half-second; the time taken, therefore, is 7.375 seconds.

By using a scale for sub-division below quarters of a second, readings can readily be made to one-sixteenth of a second, and a permanent record kept by suitably marking the strip.

Promoters of speed trials and hill-climbing events who wish to take advantage of the offer of the apparatus should lose no time in getting into communication wth Ferodo, Ltd.

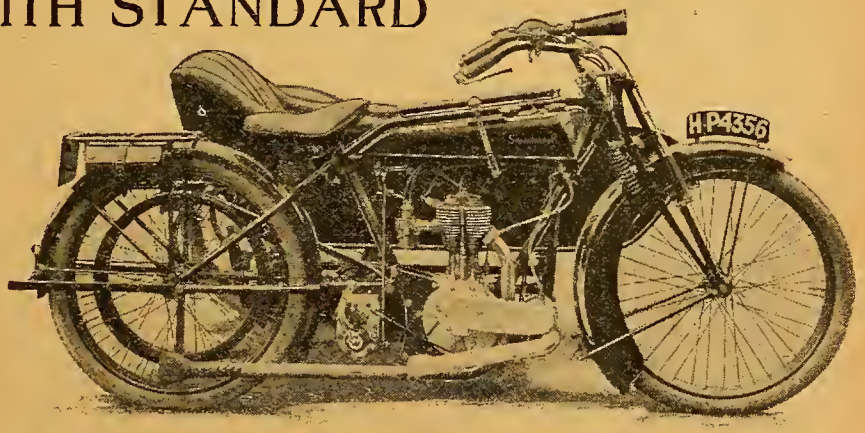
DISTINCTION WITH STANDARD COMPONENTS.

New 350 c.c. Sparkbrook Lightweight Sidecar Outfit.

THE modern tendency towards lightweight sidecar outfits is well exemplified in the latest model Sparkbrook.

Engined with the standard 350 c.c. side-by-side valve J.A.P., it has chain and belt transmission through a three-speed Sturmey-Archer gear, with clutch and kick-starter. Although the excellently-finished machine is constructed on standard lines throughout, it differs from the average assembled machine in that practically all the parts are constructed in the Sparkbrook works, even the Druid type forks being of the firm's own manufacture.

Instead of utilising the normal Sturmey-Archer change speed lever, a neat gate is attached to the tank, the actual control lever being carried on the lower tank rail. The specification includes B. and B. carburetter, M-L magneto, aluminium footboards, a channel section rear stand, and an internal V rear brake. In addition to this, such improved details as a positive adjustment for the front chain and gear box are included.



Several refinements distinguish the Sparkbrook lightweight outfit from other machines embodying a very similar specification.

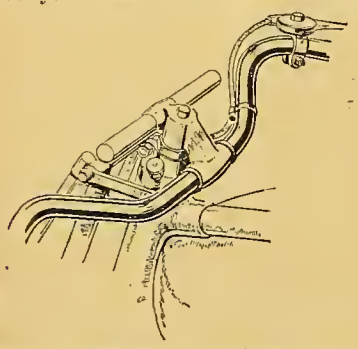
The price of the machine, with a neat and well constructed sidecar of suitable proportions, is £101 17s., or solo £78 15s. The makers are the Sparkbrook Manufacturing Co., Ltd., Payne's Lane, Coventry.

NEW RANGE OF SPORTING SINGLES.

Neat Design of Massey Machines fitted with Blackburne Engines and Burman Gear Boxes.

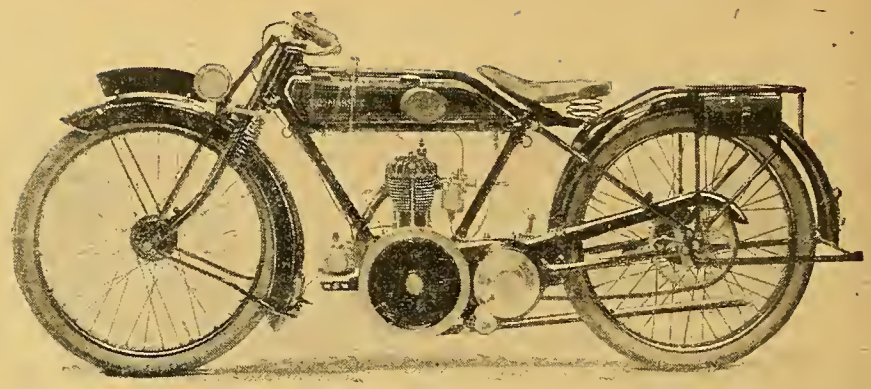
QUITE a new make of motor cycle has recently made its appearance in the Birmingham district. Known as the Massey, it is being produced by the Massey Motor Company, Ltd., of 227-238, Belgrave Road, Birmingham.

Several variations are made to suit the requirements of different types of rider, but in the main all the models are similar, and therefore it will suffice to describe the 349 c.c. sports model. It is fitted with a Blackburne engine of that capacity, an enclosed chain transmitting



Massey handle-bars with auxiliary mounting for lamps, etc. to preserve the celluloid covering on the main bar.

the power to a three-speed Burman gear box with clutch and kick starter. Final drive is also by chain, protected over the top run by a light guard. Internal expanding brakes are fitted to both wheels, the front being the well-known Webb type. A Cox carburetter supplies the mixture, and the circular type M-L magneto is employed for ignition purposes.



Extremely symmetrical lines are followed in the layout of the standard 349 c.c. Massey.

On the whole the Massey machines have a standard lay-out with a particularly neat appearance, but it is in detail work that they chiefly excel. The steering head is fitted with very large ball races, both the upper and lower ones having special lubricators.

A Practical Handle-bar.

Quite an unusual fitting is found in the handle-bar unit, the bars themselves being celluloid-covered and attached to a backward projecting lug, while a forward extension of the same lug carries a short cross piece to which lamps, speedometer, etc., may be fixed, thus saving the handle-bar covering. In spite of the fact that they are of sporting appearance, the bars give a particularly comfortable position for touring. A particularly fine piece of work is to be seen in the bottom bracket lug, which is both light and stiff in construction, being internally webbed and having a draw bolt adjustment for the gear box.

Mudguarding again is well carried out, the rear guard being of wide section and domed, while the fully valanced front guard is of a peculiar rectangular section, splaying towards the rear, where it is no less than 9½in. wide.

Sidecar lugs are incorporated in the frame, and the top tube slopes slightly rearwards, in addition to being dropped in a gentle curve. Foot rests are adjustable for position, and in the case of damage can be easily removed and replaced. Silencing arrangements are carried out by an aluminium expansion chamber lying below the chain stay.

Amongst the other practical points which are very noticeable on the machine are the sensibly proportioned screw adjustors for the rear wheel, and the rubber knee grips screwed direct to the tank, and having a considerable range of adjustment in a horizontal direction. The price of this machine is £78 15s.; it is also sold at £79 16s. in a modified form, with aluminium piston and racing cams, and tuned to do over 60 m.p.h.

T.T. and Sidecar Models also.

A third model with a similar frame is of the T.T. type, having an overhead valve Blackburne engine, and a close ratio gear box without kick starter; it is priced at £99 15s. Fitted with a neat sidecar of sporting appearance, with adjustable windscreen, and painted in black and gold to match the motor cycle, the standard 349 c.c. model is sold at £101 17s., while a very similar outfit having the 555 c.c. Blackburne as a power unit is priced at £110 5s.

FIVE 500-MILE RACES.

THERE will be five separate 500-mile races this year, one for each of the five recognised classes; these races, of course, will be run concurrently at Brooklands on September 23rd.

The table given below shows the classes of the machines for which the event is open, the time of starting, and the colours of the regulation jerseys worn by the riders.

Class	c.c.	Starting time.	Colour of jersey.
A ..	250	7 a.m.	White
B ..	350	8 a.m.	Blue
C ..	500	9 a.m.	Yellow
D ..	750	10 a.m.	Green
E ..	1,000	10 a.m.	Red

The races will be stopped at 6 p.m.

The races will be open only to male members of the B.M.C.R.C. mounted on solo motor cycles. Prizes totalling £300 will be offered by the Motor Cycle Section of the Motor Trade Association, and by the British Motor Cycle Racing Club.

Any part of a competing machine may be renewed or replaced during the races except the cylinder or cylinders and/or the crank case, which parts may be sealed. Entries, which cost £6 6s. 0d. and close on August 31st, are limited to fifteen in each race.

Replenishment depots will be established at the Fork; each competitor will be allowed two attendants, and these must wear coloured numbered caps corresponding to the colour and number of the competitor.

No claims for records will be allowed unless the claimant has completed at least half the total distance of the race. Any competitor riding in close proximity to another competitor for two or more consecutive laps will be disqualified. Racing helmets must be worn. Entry forms can be obtained from the hon. secretary of the B.M.C.R.C.—Mr. T. W. Loughborough, Mill House, Warlingham, Surrey.

AUGUST HOLIDAYS.

Publishers' Announcement.

Readers who wish to insert Miscellaneous Advertisements in the issue of "THE MOTOR CYCLE" dated August 10th, 1922, should note that, due to the Holidays intervening, instructions must be in our hands by first post on Thursday, August 3rd, addressed to Dorset House, Tudor Street, London, E.C. 4.

ILIFFE & SONS LTD.

SELF-LUBRICATING SPRING FORKS.

Escombe Leaf Spring Suspension; Forks Combined with Mudguards.

So many spring forks and frames designed by enthusiasts have got no farther than the paper stage that it is particularly interesting to find an unorthodox device which has actually received considerable road testing. This applies to the front suspension under consideration, though the rear springing which we are also able to illustrate has

An unusual front suspension employing leaf springing. This spring fork has been in use for several thousand miles on an Indian motor cycle.

so far progressed no farther than the drawing-board.

Mudguard Valances form Fork Girders.

Several noteworthy points characterise the front springing, and it is claimed by the inventor that it is light and strong, attachable to existing machines, and cheap to produce. In essentials the fork consists of a sheet steel mudguard indented about the position of the normal fork girders to increase the stiffness and additionally strengthened at this point by an extra internal sheet. Pivoted from the end of the fork are a pair of forgings which take the form of a trailing link, in which the spindle is carried; they also serve as points of attachment for the butt ends of laminated springs. At the thin or rearward end of these springs are anchored two oscillating slippers, and one of the indentations on each side of the combined fork and mudguard is arranged as an oil reservoir, the contents being sufficient to last for many thousands of miles. Oil is fed direct to the pivot bearings, thence down the enclosed springs to the oscillating slippers.

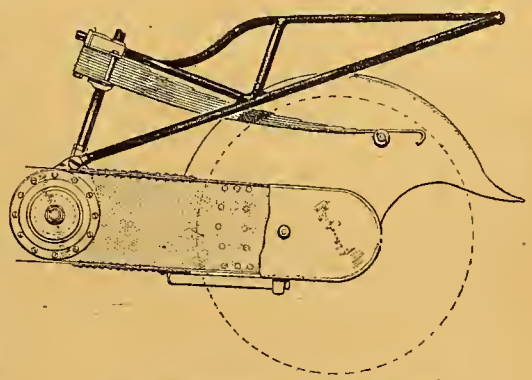
The head tube is attached to a lug fixed to the mudguard, and is stiffened in a forward direction by a triangular web and laterally by side tubes extending from the lug to the handle-bars.

Constant Spring Resistance Claimed.

It is claimed that by using springs which operate from a concave to a reverse camber and are directly attached to the links, the resisting movement of the spring about the pivotting points of the link may be regarded as constant throughout its deflection. The movement permitted is large, but to prevent excessive motion suitably curved stops are provided at the thin end of the spring to increase the resistance at abnormal deflections; these stops also constitute a safety device, since should the main leaf fracture, the second, third, and fourth leaves would butt against the stops. The travel of the wheel is additionally limited by the slots through which the spindle works. Considerable forethought is obvious in the design of the pivot attachments, since these are built up to a reasonable width by steel washers riveted and welded in position, the design of the mudguard also is practical, and should not only protect the rider but also all the working parts of the fork. In addition to the advantages of neatness and simplicity, and the very desirable trailing link action, the construction provides for a minimum amount of unsprung weight, and absolute lateral rigidity of the wheel. The moving parts consist only of the links and springs, with their oscillating slippers, all of which are efficiently lubricated by means of the reservoir already mentioned in conjunction with a wick feed. The springs are protected from mud and dust by their gaiters, and the wheel is instantly detachable by means of a knock-out spindle.

Preliminary Road Tests Satisfactory.

An experimental fork as described above has been undergoing road tests for some fifteen hundred miles, fitted to a 998 c.c. Indian, and has so far given admirable results. In addition to this a rear suspension has been designed in which a special chain case and dummy chain case form radius rods from the gear box to the rear wheel, laminated springs being attached to the saddle tube and to rollers on either side of the rear sheet steel mudguard. This is designed for a maximum deflection of nearly twelve inches, and should provide extreme comfort, though considerable ground clearance will be necessary. The inventor is Mr. R. D. Escombe, South Park, Sevenoaks, Kent.



A proposed method of rear suspension.

FURTHER NOTES ON SOLDERING.

In dealing with hints on soldering it is the writer's opinion that insufficient stress is usually laid on the absolute necessity of thoroughly cleaning, by scraping or other means, the surfaces to be united: omitting this precaution is the reason why so many beginners fail in making a good job.

When soldering nipples on control wires, it is sometimes necessary to unravel the inch or so that has been exposed to the air and clean each strand separately with emery cloth, afterwards twisting together, securing the ends with a turn or two of soft wire and "tinning," taking care that the solder penetrates well between the strands. When the nipple has been soldered in position the whole should be well washed in hot, soapy water to remove any acid that may remain.

Trouble is sometimes caused by the heat from the bit oxidising the steel wire and so preventing the solder adhering; for this reason it is advisable to use the lowest temperature that will allow the solder to run freely, and also see that the surfaces to be soldered are well covered with flux before applying the bit.

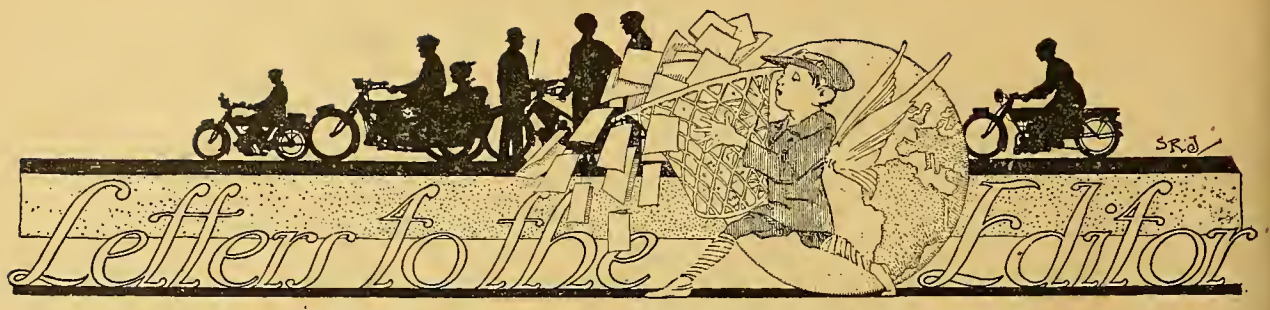
Remaking Cracked Joints.

Cracked soldered joints are nearly always corroded; therefore it is best to separate the parts and well scrape the surfaces before attempting a repair.

Leaks sometimes occur round filler cap bushes and cause much annoyance by allowing petrol to splash over the outside of the tank. The screwed bush may be removed by inserting the point of a knife in the crack and melting the solder by means of a large bit, at the same time levering apart. Here a word of warning may be given, the writer having seen a flame two feet long leap from the aperture through an incandescent fragment on the bit igniting the gas in the tank although all petrol had been mopped out and the filler cup left off two days previously. One scarcely cares to imagine the result had the repairer's eye been over the hole at the time.

Beginners generally make the mistake of using too small a soldering bit, with the consequent rapid loss of heat. One about ½ lb. in weight is a very useful size.

H.W.B.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address

EVOLUTION OR REVOLUTION?

Sir,—For some years I have followed the progress made in design and lay-out of motor-cycle engines, and every year, whether at the T.T. or at Olympia, I have to some extent been disappointed with the improvements made. I find myself looking for something really new, not just a modification of pre-war engines or borrowed "aero practice"—so-called—but a new departure in internal combustion engines that will give us these things which even the most "super-bus" now produced does not give; that is, absolute reliability, complete silence, speed, and real economy.

Has the i.c. engine really reached its zenith, and are we to be content with what is actually a noisy, wasteful, unreliable, and tiresome piece of mechanism which would not be tolerated but for its mobility? Or is there a day coming when the petrol engine as we know it will be regarded in the same light as the old reciprocating type of steam engine is regarded to-day? C.J.M.

Warwick.

POWER LOSSES FROM OPEN EXHAUST

Sir,—Having seen that "Flux" is anxious to know my reasons for condemning a straight through exhaust pipe on Levis motor cycles, I submit the following as the probable reasons for the results obtained:—

The piston of the Levis engine (if I remember rightly) is not primarily designed for the purpose of aiding the incoming gases to expel the burnt exhaust gases, but rather that these two are kept apart, thus securing good petrol consumption.

The burnt gases have therefore two methods by which they are induced to leave the cylinder: (1) by their greater pressure than that of the atmosphere, (2) by a form of "inter-extraction."

It is on the latter that I base my theory. Suppose the piston to be at the bottom of its stroke, the exhaust gases will be flowing at a certain speed into the exhaust pipe, down to the silencer; now let the piston ascend for the compression stroke, and the inertia or momentum of the gases will be the means of forming a vacuum between the exhaust port and the silencer. When, therefore, the piston again reaches the bottom of its stroke, the burnt gases will be sucked down the exhaust pipe. This is called "inter-extraction."

If a straight through exhaust pipe is fitted it has generally to pass through an angle of 180°, which means to say that the skin friction of the gases will be very great, thereby reducing their speed and minimising the above-mentioned effect. SOLDER.

Oxford.

Sir,—My experience is exactly opposite to "Solder's." I changed the standard exhaust system, on my 1915 Levis, to a straight through 2in. flexible exhaust pipe. The difference is extraordinary: the 'bus is miles faster on the level, will climb with ease "pimples" at which it would have kicked before, runs cooler, and does not knock half so easily.

I can only suppose "Solder" refers to a straight through pipe of small dimensions, with sharp bends.

At the same time I notice that Davidson, on the T.T. Levis, had a standard silencer fitted, and I guess he has got a pretty good reason for it.

I found that a piece of aluminium tube, 5in. long, fitted over the air intake of my Amac carburetter, made a noticeable difference to the running of the 'bus.

If the edges of the exhaust port flange are rounded off with a file, it will be found that this portion will not carbonise up so quickly, and will permit a freer passage for the exhaust gases.

For speed I time the Levis, so that the points are just breaking when the piston is 6 mm. from t.d.c. With this timing the engine tends to revolve backwards on starting up, but only for the first few explosions. The magneto is a 1915 fixed ignition "Dixie."

I should be interested to know the maximum speeds obtained by private owners of 1915 Levis single-speed models.

Whitchurch. TONEY FLEX.

UNAPPRECIATED BELT DRIVE.

Sir,—Being in a fickle mood a few weeks ago I visited several well-known agents for the purpose of purchasing a solo "big twin," offering my three-months-old belt driven 500 c.c. machine in part exchange.

It gave me rather a shock to find that the average price offered for my machine ranged about 50 per cent. of the list price—the reply to my indignant protests in each case being, "People will not buy belt driven machines."

I do not blame the agents, but I think there is certainly something wrong with the public. I have owned several "all chain drive" machines and can say, without the slightest hesitation, that, compared with my present mount, the drive was harsh and the gear box generally unsatisfactory. This fact I did not appreciate at the time, but only since becoming converted to all belt drive.

For the solo competition rider all chain drive and a three (or four) speed gear box is undoubtedly "the thing," but why the remaining 95 per cent. of solo riders insist on these encumbrances is rather a mystery.

In Strasbourg during the Grand Prix week.
An American outfit bearing a French name.

A stable companion to my machine is a 350 c.c. all chain machine bearing a world-famous name. In eighteen months the owner has used his bottom gear once, and at low speeds he eases his clutch to avoid snatch—as per makers' instructions.

I should be the last to deny that trials and speed events have been tremendous factors in the evolution of the modern motor cycle, but if one effect of them is to send belt drive to the wall then, in my opinion, there is no doubt that they have done a tremendous amount of harm.

I should like to know what type of machine the "expert" would drive (solo) if all competition and trade considerations were put on one side. "GRADUA."

London, N.W.6.

GEAR-CHANGING PROCEDURE.

Sir,—In reply to "Ug Chugalug's" letter, is it really the makers' fault, or carelessness on the part of the rider?

Some makers in their instructions advise one to lift the exhaust when changing. Is the clutch just for ornament? To change down perfectly without harming gears, transmission, or tyres, one must declutch and slightly accelerate the engine. One cannot accelerate with the exhaust valve lifted, and it is impossible to engage two gear wheels travelling at different rates without grating.

Another point: why do agents instruct their customers—and also do it themselves—to change right down when stopping? In most cars one can get straight from any gear into free, while in most motor cycles one must change through second before free (neutral) is reached; hence my motto—"Wait until the *omnibus* stops."

Durham. UNUSUAL DISCLAIMER.

Sir,—Referring to the remarks made by "Ug Chugalug," I should like to say that, in my opinion, changing gear by lifting the exhaust is a much neater way in that it is effected much more quickly than when declutching. Moreover, it need not earn the reputation of harsh control, and saves clutch wear by a good deal. I am referring to Sturmey-Archer gears, but being young in experience I am open to hear and perhaps to profit by the advantages of declutching when changing gear. TRIUMPH-4H.P.

Spilsby.

"BORN 1909, ——!"

Sir,—Perhaps my experience on an old Triumph may be of interest to your readers. The machine has a 1909 engine, which, when I bought it in 1920 was in excellent condition, having been rebored, etc. I did 4,000 miles on it before overhauling last spring. No new parts were required, but I noticed the small end was rather slack. So I decarbonised and ran for another 1,000 miles, mostly with a pillion passenger. My last run was from Staines to Brighton and back. On the outward journey it was not its usual self, the petrol consumption was high, speed was lacking, but hearing no unusual noise I carried on, thinking an overhaul was due. On taking off the cylinder, I found to my surprise both piston rings were in pieces and a segment 1½ inches was missing from the top ring. Proceeding further I found the gudgeon pin was in half, and a piece was missing from the small end bush, also the valves looked as if they hadn't been seating for years. Can anyone tell me where the piece of piston ring and small end are? The cylinder is not scored. I had intended getting a more modern machine, but after taking me over a hundred miles in that condition I feel I can't desert the old 'bus now, so I am having her modernised, and am waiting in pleasant anticipation for many more happy days astride the

London, W.11. TRUSTY TRIUMPH.

A miniature for the War Office. This little 165 c.c. Economic has just been delivered for special messenger work.

A fine ascent of a freak hill. E. H. Hughes (398 c.c. A.B.C.) climbing Sibbs Hill, a rival to the famous Beggar's Roost. Sibbs Hill was the scene of a recent impromptu hill climb by Exeter motor cyclists when Hughes made the best performance against several machines of a larger capacity.

SAFEGUARDS FOR THE SECOND-HAND BUYER.

Sir,—While congratulating "Ex-D.R." upon getting so well out of a deal with an apparent crook, it must be noted that his own procedure was far from businesslike.

He states that the agreement was to send half the purchase money to the vendor, when the latter would put the machine on rail for approval. He goes on to say that he sent a post-dated cheque, *i.e.*, that he sent a worthless piece of paper. Had I, or any other business man, been in the vendor's position (but, of course, operating a straight deal) I should not have moved a hand towards despatching the machine until the cheque had become due and been collected.

I agree with "Ex.-D.R." that the only proper system, apart from a personal call, is your deposit system.

J. STUART WHITE.

WHO ORIGINATED THE CRASH HELMET?

Sir,—The crash helmet was in common use in the early days of flying at Brooklands and elsewhere. The Hon. Alan Boyle wore one when he crashed at the Bournemouth meeting in 1910, and, if I remember rightly, the late Hon. Charles Rolls had one on when he flew across to France and back without landing overseas. J. MORSE SCOTT.

Sir,—I believe I can lay claim to being the oldest rider on the English track to use a crash helmet on all occasions from 1906 until I gave up track work.

This crash helmet can be seen here at any time, bearing a few marks which can show its use, and what it saved my head on two occasions; it was sent me at my request from Paris by Mr. Geo. Barnes (then called "Cannon-Ball Barnes," in France) in the autumn of 1906.

I have several cuttings from *The Motor Cycle* during 1907, 1908, 1909, etc., of myself wearing this helmet, one occasion being at the Olympia Sports at the Stadium.

Maybe someone else, perhaps Barnes himself, used one in England before me, but I do not remember it, nor have I heard of anyone. DUDLEY R. CLARKE.

[In the article which has aroused this correspondence, Dr. Eric Gardner was given credit for originating the present "rim-less" helmet; the older type was, of course, in use many years before.—ED.]

R.A.C. SALUTES.

Sir,—I cannot understand any educated man wishing to be saluted by road patrols, but to a certain type that saw little of the army, such cheap homage (paid in advance) should please such simple folk.

Personally, I think saluting by the R.A.C. patrols should be stopped, as it is quite unnecessary.

London, W. CHISWICK.

Sir,—In reply to "Ken Bush," I also have repeatedly noticed an absence of salutes—within this last year's riding particularly.

This has given me an uneasy feeling, after passing patrols, as to whether "all's well"; yet to pull up and inquire the reason means not only a possible waste of time, but if it were only an oversight, a sense of snobbishness also.

Birkenhead. 40144 OR THEREABOUTS.

SOLDERING BOWDEN NIPPLES.

Sir,—It may be of interest to Mr. A. E. Bottomley and others to know that in our frequent tests of our wire mechanism, soldering, etc., we have invariably found that a properly soldered nipple will hold while the stranded wire cable will break, not at the nipple, but at a place that has not been heated. There must be something wrong with the method of soldering if the wire breaks at the nipple after heating.

The wire and nipple should never be held in an open fire or gas flame when soldering. For ordinary purposes, the method recommended by "G.R.H., Cambridge," is quite suitable. Our own method is not, of course, applicable, but it may be of general interest to state that we use a bath of molten solder, maintained at a constant temperaure of 400° Centigrade, into which the nipples are dipped.

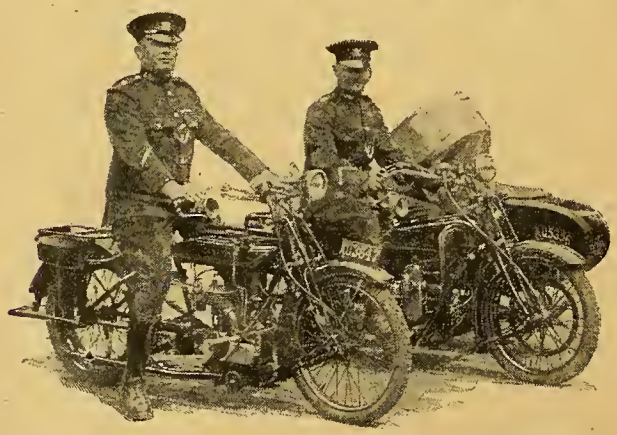
We tremble to think of the consequences to us if our soldering resulted in our wires breaking in the manner suggested by your correspondent.

p.p. BOWDEN WIRE, LTD.,
James R. Nisbet.

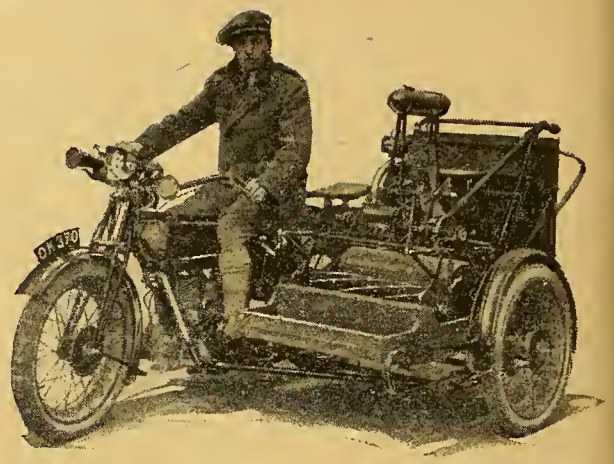
GUILDFORD HILL.

Sir,—Is it not time motorists in general organised some form of protest against the absurd and stringent speed regulations imposed on vehicles ascending the bad hill in Guildford Town. As all motorists know, this road is very wide, and has no side turnings to speak of, and the police seem to have no discretion as to what is a reasonable speed. On Sunday evening they seem to have been particularly busy. A friend of mine, among others, was coming up the hill at certainly not more than 12 m.p.h., and was promptly pulled up and accused of doing 25 m.p.h., which was absurd, as you will agree when I tell you that the machine was over 18 years old and has a fixed gear, the engine being an old Antoine of 3 h.p. I suggest it is about time motorists combined and boycotted the town, as was done in the case of Reigate some years ago. The Kingston police have a dangerous town to look after, so have an excuse, and are to be admired at the way they carry on during busy hours, but the Guildford police have yet much to learn if they wish to win the respect and assistance of the motoring public. What is the matter with the big motor associations which are still crying out for members and seem to be idle?

S.W.8. OLD MAN HEP.



The Nottingham police authorities were among the first to recognise the value of the motor cycle in police work, and have for several years employed sidecar outfits. These two machines—a Campion and Raleigh, both made locally—are recent additions to the fleet.



A Rudge sidecarrier built specially for the use of the Atco motor lawn mower representative, who uses it for the conveyance of this speciality—a lawn mower fitted with an air-cooled two-stroke engine.

SECURING SILENCE.

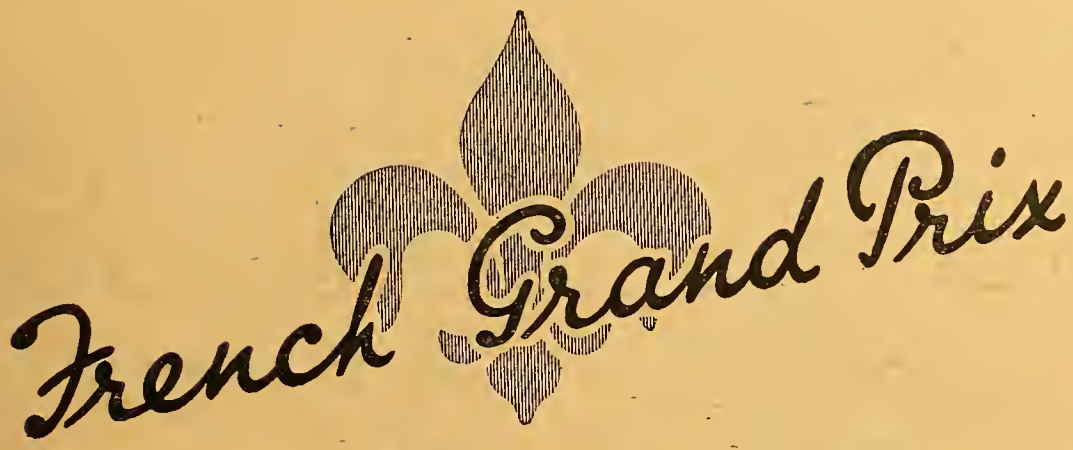
Sir,—The chief offenders in the matter of noisy exhausts are those riders who, in an endeavour to give a sporting appearance to a standard machine, have detached the silencer and fitted instead a plain, straight through pipe. These machines are often offensively noisy, and are a danger to other road users, for their riders must often fail to hear what, with ordinary silence, would be an audible warning.

But what I fail to understand is the purpose of these beautiful shining pipes on any but a specially designed speed mount. As most riders will know, the object of a long, clean, exhaust tract is to obtain at high piston speeds a small back pressure, and, in addition, an "extractor action" at the end of scavenging, due to the momentum of the rapidly moving gases. This extractor action is only of value at the end of the exhaust stroke, and to obtain full advantage of it a long period of valve opening over T.D.C. is necessary. For obvious reasons makers do not time their machines in this manner, and unless a bad design of silencer was previously fitted, a very small gain in maximum power can hardly be worth the consequent noise. Manufacturers of sporting machines usually fit such pipes, but they seem to have ensured that they are reasonably quiet.

Until recently but slight attention was given to silencer design—a case of delicate compromise. Lack of space in which to fit a silencer of really adequate capacity is a most detrimental factor in efficient muffling. It seems to me that the best position for the silencer is near the rear wheel at the end of a long pipe with easy bends. Gas momentum is made use of, and on entering the silencer the gases will have diminished in pressure and volume. Hot gases flow more easily than cold. The silencer is then in direct line with the direction of flow; an injector action can be combined with it by taking advantage of the force of the wind, which is strongest when most desirable. In this position the silencer should be easily detachable for cleaning, etc.

Silencers and piping of sonorous designs and metals, such as brass, copper, aluminium, are inclined to be noisy. The explosions set up ringing vibrations in the metal. These can be damped by sheathing in asbestos; but this impairs cooling. Some cast metal silencers have quite a bell-like tone

B. M. THORNTON.



Motor Cycle Races

Strasbourg, July 12th.

500 c.c. class (Course distance 249 miles).

FIRST	Bennett (Sunbeam)
SECOND	Hassall (Norton)

250 c.c. class (Course distance 166 miles).

FIRST	Davison (Levis)
SECOND	Sallot (Thomann)
THIRD	Cottin (Velocette)

and RECORD LAP (Hassall on Norton)

The riders' praise for the tyres that carried them through.

Copy of telegram from ALEC. BENNETT:—
"First 500 class French Grand Prix on Dunlop tyres which gave no trouble showed absolutely no wear and were perfectly steady on the wet roads a product without equal."

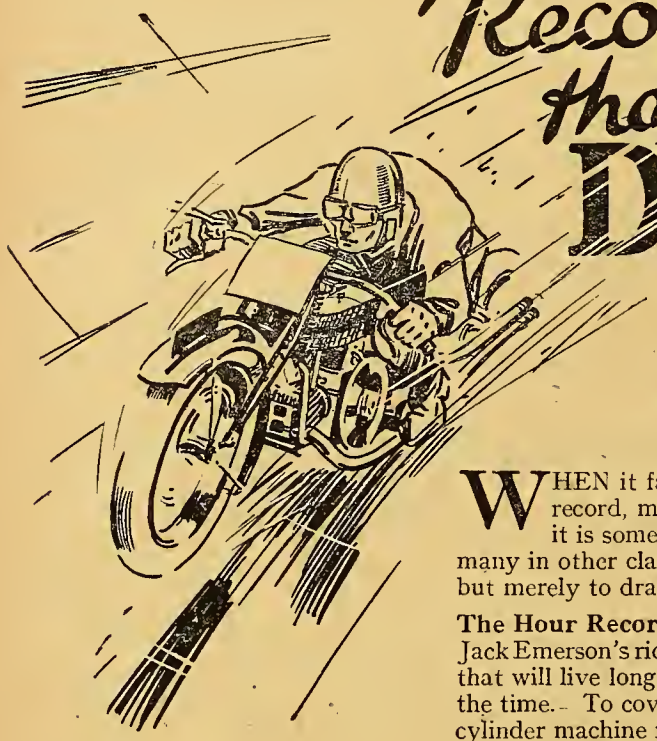
Copy of telegram from H. W. HASSALL:—
"Second on Norton Dunlop tyres were excellent."

Copy of telegram from G. S. DAVISON:—
"Finished first Levis on Dunlop tyres 250 class French Grand Prix your tyres absolutely perfect no wear visible on either cover no trouble at all."

ALL ON DUNLOP TYRES

FOR SPEED, SECURITY AND CERTAIN SATISFACTION — SPECIFY **DUNLOP.**

In answering this advertisement it is desirable to mention "The Motor Cycle."



Records that have made Douglas Famous!

WHEN it falls to the lot of one particular machine to gain a single record, much ado is made about the feat. In the case of Douglas it is somewhat different; as they hold most in their class and so many in other classes it is impossible to proclaim the importance of all, but merely to draw attention to the very outstanding rides.

The Hour Record is considered the "Blue Riband" of all records and Jack Emerson's ride when establishing this and the **50 Mile Record** is one that will live long in the memories of Brooklandites who were present at the time. To cover **78.91 m.p.h. in 60 minutes** on a little 500 c.c. twin cylinder machine is extraordinary, and proves the stamina and reliability of the twin opposed engine and its superiority over all other types.

On the same day the **50 Mile Record was established at 78.77 m.p.h.** Both these records are World's Records.

Another outstanding ride was that of C. G. Pullin in covering the **half mile at 100.61 m.p.h.** electrically timed at Brooklands on March 23rd. On the same day the extraordinary figures of **99.58 m.p.h. for the mile and 97.57 m.p.h. for the kilometre were established,** beating all existing records, proving again that the twin cylinder engine is not only faster over a longer distance, but the fastest machine of its type in the world. It must not be forgotten that only 12 months ago the 1,000 c.c. machine first reached the extraordinary 100 m.p.h. mark.

The surprising performance of the **3½ H.P. Douglas and Sidecar** was also established by Cyril Pullin, when he covered the **kilometre at 77.14 m.p.h.** and the **mile at 76.49 m.p.h.,** with a little 494 c.c. engine carrying sidecar and passenger. Compare this speed with any previous speed put up on a similar size machine and you will be amazed at the difference.

On the smaller machine, the record of **400 miles in 400 minutes by Tudor Thompson on a 2¾ H.P. Douglas** still remains as the finest ride on that size machine ever accomplished. It appears that the record is going to stand some time, and the little engine that could average this speed over such a distance is certainly one for which reliability and general efficiency of unequalled quantity can be claimed.

In all, 86 records have fallen to the lot of Douglas, including World's, British and Foreign establishments. The 500 c.c. British Championship, 750 c.c. British Championships, 500 c.c. Scottish Championship and the Championship of Germany are also to its credit and are

Performances which bring fame to the name of DOUGLAS.

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THE BATTLE OF TYPES.

Sir,—May I offer a protest against Mr. Jack G. Newbigging's letter on the subject of "The Beginner's Mount"?

In regard to his first objection, J. G. N. does not apparently understand the situation. The question that was being discussed, as I understand it, was whether a *small* two-stroke, or a *small* four-stroke, is more suitable for the average schoolboy as his first mount; and not whether a baby two-stroke possesses any advantages over a Brough Superior or Harley-Davidson. Also, may I ask why he thus condemns the two-stroke?

If he thinks that two-strokes are so "ineffective," how does he account for the success of the Scott-Squirrel and Levis in this year's I.O.M. races; and for the latter machine's win in the 1922 "Grand Prix"? Incidentally, I possess a Levis two-stroke, and have never noticed the defects which he mentions.

I am sure that none of those who have ever possessed a Levis or Scott can complain of "wooliness" in the exhaust; yet neither of these bicycles are as noisy as the "super-revving," o.h.v. 350 c.c. four-stroke.

As for "petrol-drinking," my mount can do the 120 m.p.g. as guaranteed by the makers with ease.

I admit that the average 250 c.c. two-stroke is not a match for the 350 c.c. sporting mount in speed; but I am sure that it absolutely heads the list in its own class.

With regard to the second point in J. G. N.'s letter, I uphold the writer of the article, as I think that, taken all round, the reliability of *all* classes of modern machines is marvellous. What other kind of petrol-driven vehicle could stand the Scottish Six Days—excepting a Rolls—without "konking out" or retiring? Yet out of the 119 starters for the event this year 64 per cent. finished; and of the finishers 64 per cent. got "golds"! D. A. BEATTIE.

HANDLEBAR WATCH DIFFICULTIES.

Sir,—In reply to Mr. D. L. W. Awburns' letter, the trouble he has is quite common among modern watches of the cylinder type, and is due to a technical fault too lengthy to explain.

If the winding stem is pulled out to set the hands and the hands are turned backwards and forwards I think he will find the watch will start off quite easily. (Winding the hands backwards is in no way detrimental to a modern watch.)

LISS.

LET THE BEST MAN WIN.

Sir,—May I suggest to the B.M.C.R.C., through your columns, that there should be at least one *scratch* race for each class at its very excellent race meetings? No one will deny that a good handicap provides an excellent race (the finishes of many handicaps at Brooklands this season have been most spectacular); but, on the other hand, most people like to see the best man win, and I think I am voicing a widely held opinion when I say that men who have the skill and courage to lap at 80 to 90 m.p.h. deserve to stand a chance of scoring a win at least once during the afternoon's sport.

Let us have handicaps by all means, and plenty of them, but why not, say, one scratch race for each class during the afternoon, to give the fast men a chance of scoring the successes they deserve? G. K. RAE.

SIDECAR ON SOLO LIGHTWEIGHT.

Sir,—My letter over the initials "H.S." (which, incidentally, should read "J.R.J.") has called forth two replies in your last week's issue, and I am taking this opportunity of replying to both at one and the same time.

I mentioned that I could average 30 to 35 m.p.h. with a loaded sidecar and my 350 c.c. Douglas. I again repeat that statement, but with this qualification: I do not guarantee to keep up that average on a 100-mile run through various cities and towns, for the simple reason that my engine in time would naturally become over-heated through changing down, etc. However, on a short run of about 30 to 40 miles on a tolerably good road, I should be extremely surprised if I could not keep up the average named.

Mr. Williams continues: "I should imagine 35 m.p.h. average impossible even with a solo 350 c.c. Douglas." May I in return inform Mr. Williams that on the 17th inst. I left Birkenhead on my 350 c.c. Douglas (solo) at 10.15 a.m. and arrived at Birmingham at exactly 1.5 p.m., a distance of 97 miles. The average m.p.h. works out at 34.2, and, when it is considered that the rider en route had to pass through no less than five towns (Birkenhead, Chester, Whitchurch, Newport, and Birmingham), perhaps Mr. Williams may in future alter his opinion about the 350 c.c. Douglas.

Mr. White would like to know how I keep my engine cool? After the above-mentioned ride from Birkenhead my engine was warm—not hot; immediately after luncheon on the same day I set out for Stratford-on-Avon with a pillion passenger and again kept up an average of about 30 to 35 m.p.h. All hills were taken either in top or second, and anyone who knows the road in question will not dispute the fact that there are two or three severe tests in hill climbing.

My machine is a standard one; I look after it well, and am fairly generous towards it with oil. J. R. JONES.

GOGGLES AND HEARING.

Sir,—Perhaps "Sutton Bank" will be pleased to know that his failing to hear while wearing goggles is quite a common experience, and is mostly due to pressure on the nerve channel in direct communication with the drum of the ear. It is also possible in some cases for this nerve to effect the whole system, causing the rider to get the "wind up" when in a tight corner.

There were illustrations in the issue of *The Motor Cycle* of June 8th, of a device known as the "Phace" screen, which not only overcomes this trouble, but protects the whole of the face, neck, and chest, and prevents the wearer from inhaling the dust. Goggles, unfortunately, have another failing—entirely obliterating the view by fogging, which often proves more uncomfortable than loosing one's hearing; the "Phace" screen does not fog. PHACE SCREEN.

Southsea.

VALVES THAT CONTRACT WHEN HOT.

Sir,—I was very interested in the statement made by your correspondent, "HP 1677," in *The Motor Cycle*, to the effect that his exhaust valve contracts when hot and expands again on cooling.

For the last few months I, also, have been using an exhaust valve in my 550 c.c. Triumph, which produces the same phenomena. If the tappet is correctly adjusted when the engine is cold, then after about twenty miles' running the clearance has increased to three or four times the original. On the other hand, if the tappet is adjusted correctly when the engine is hot, then on cooling down there is no clearance at all, and the valve stem presses on the tappet, thus preventing the valve from seating properly.

I might say that the tappet locknut is always securely tightened, so there is no question of the tappet head having worked loose. OH 4634.

Birmingham.

Sir,—May I suggest that the cause of the exhaust valve seeming shorter when hot is that it is made of an alloy steel with a smaller coefficient of expansion due to heat than cast iron, with, I should imagine, a high proportion of nickel. W. T. JACOBS.

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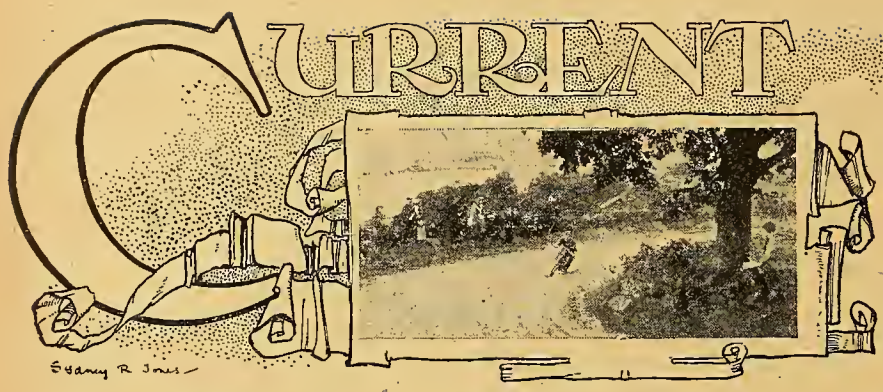


Special Features

TO STRASBOURG.
SCOTLAND AND THE MOTOR CYCLIST.
WHAT IT COSTS TO TOUR.

Times to Light Lamps.

July	27th ..	9.25 p.m.
,,	29th ..	9.22 ,,
,,	31st ..	9.19 ,,
August	2nd ..	9.15 ,,

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

No Motor Cycle Events at Southsea.

Possibly because the proposed event clashes with the English Six Days Trials, the A.C.U. has refused a permit to embody motor cycle speed events in the Southsea Carnival. The car races, of course, are not affected by this decision.

Finding the Way.

Why is it that some parts of the country are so much better signposted than others? In certain counties, however hard one tried, it would be difficult to lose the way, even in the most unfrequented lanes; in other districts the mapless rider welcomes the occasional signpost as a long lost friend.

Truly Unsolicited Testimonials.

Every day we receive letters commencing, "Having seen in your Correspondence columns testimonials to the promptness and efficiency of the spares service, etc., of various firms," and going on to describe good treatment which the writers themselves have experienced. The curious part of the business is that actually they have *not* seen such letters in our Correspondence columns; so many are received that to publish them all—the only fair way—would mean excluding all the other interesting subjects discussed week by week under "Letters to the Editor."

Lighting-up Times.

Trouble has apparently arisen through readers failing to appreciate the value of the footnote hitherto appended to our lighting up tables to the effect that one number-plate should be illuminated half-an-hour earlier than the times stated. In future, therefore, our tables will give the actual times at which lamps must be lighted to comply with the number-plate aspect of the case. When the lamp illuminating the number-plate can be independently controlled the driving lights and rear light need not be brought into use until one hour after sunset or half-an-hour after the times tabulated.

A.C.U. Prize-winners.

First prize of £100 in the A.C.U. competition inviting ideas for demonstrating the advantages of membership has been awarded to Mr. A. C. Gilman, 22, Rowden Road, Beckenham, Kent. Second and third prizes of £50 and £10 have been won by Mr. R. Beal, 6, New Street, York, and Mr. A. C. Godfrey, Hambro Lodge, Dachet, Bucks, respectively.

Impromptu Silencers.

When it was first decreed that motor cycles should make less noise on Brookland's track, the ingenuity of some of the riders was severely taxed. On the day of the fourth members' meeting of the B.M.C.R.C. the Saturday before last, several members were apparently unaware that the rule of silencers was to be strictly enforced at once, and open exhausts were numerous. The quick change alterations made to comply with the new regulation were humorous and clever. In many cases quart oil tins of various well-known makes added an artistic touch to the exhaust arrangements when employed as expansion chambers!

Another Record.

Seven foolscap-size folios of type-script were necessary to record the full time and formula results of the motor cycle classes at the recent Westcliffe speed trials—and, even then, no machines were specified!

A Caution.

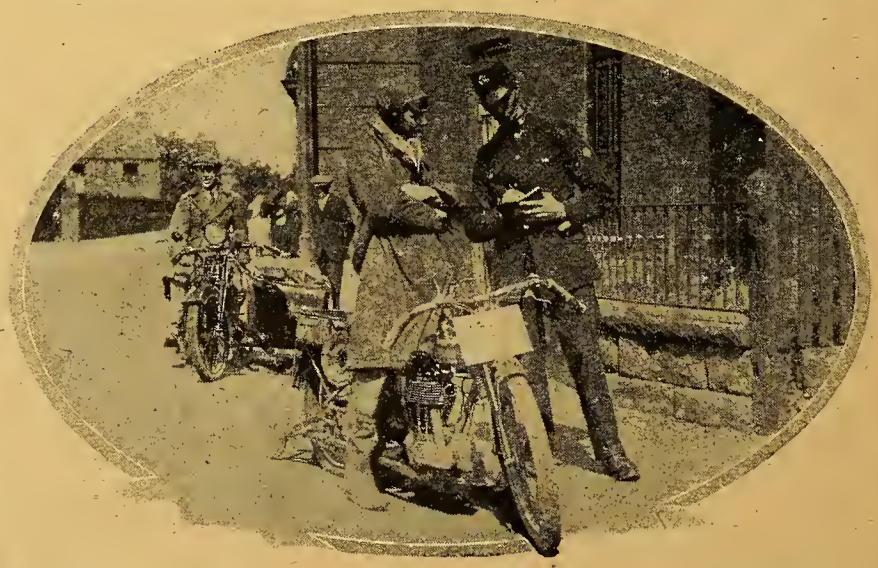
We are informed that police activity is being exercised in the Hexham district; the chief offence to be guarded against apparently is "furious driving" on account of which there have been several convictions lately.

A.C.U. Consul for Lincoln.

Mr. G. A. Weatherill (the Schoolhouse, Holton-le-Moor, Lincoln), who has written in our pages on camping with a trailer caravan, has been appointed by the Auto-Cycle Union as its local consul for the district.

Veterans' Race at Brooklands.

Commencing at 2 p.m., the fifth members' meeting of the B.M.C.R.C. will be held at Brooklands on Saturday, August 12th. The programme will include five three-lap handicap motor cycle races in the various classes. Event six will be a three-lap veterans' handicap for motor cycles and passenger machines of any class, driven by a member of the club over forty years of age. The last event will take the form of a three-lap private owners' handicap.



HIS UNLUCKY DAY. A competitor in the Liverpool Motor Club's recent reliability trial whose luck was out. After failing to climb the formidable hill at Helsby (Cheshire), he returned to the village, where he fell into the hands of the police for an alleged technical offence regarding his brakes.

A Motor Cyclist Clown.

Joha, the F.N. rider in the Belgian Grand Prix, is a clown by profession.

Costly Roads.

No less than £420,000 was spent on the roads of Northumberland during 1921.

More Motor Cycles for China.

Last year motor cycles imported into China totalled nearly four times the value of those in 1919.

Traffic Control in the Potteries.

The chief constable of Stoke-on-Trent has intimated that he may shortly have to ask for a sidecar outfit to be used for overhauling recklessly driven motor vehicles.

Have You Seen It?

We have received a request from the Consul-General of Mexico, 25, Craven Road, London, W.2, for the address of the makers of a flying motor cycle, supposed to have been manufactured and marketed in England. It is described as a motor cycle with folding wings, capable of flying short distances.

Prize Fund for 500 Mile Race.

Since the prize for last year's 500 mile race was won outright, the Motor Agents Association, Ltd., is endeavouring to raise the prize fund of £200 for the 1922 event. An appeal is being made to agents who are members of the Association to contribute to the fund, as it is felt that the event will help business. The awards subscribed for will be known as "Agents' prizes."

Disabled Drivers' Clubs in the Provinces.

In consequence of the success of the Disabled Drivers' Motor Club in London area, it is suggested that similar organisations be formed in other parts of the country. The secretary of the London branch (c/o The Disabled Society, 48, Grosvenor Square, London, W.1), will endeavour to put local parties in touch with each other if they will communicate with him.

Noisy Motor Cycles at Brooklands.

Col. Lloyd has recently complained of the noise of racing motor cycles on Brooklands track, while Mr. Locke King, who owns the track, has likewise protested. Noticing no improvement in this direction on the occasion of the last meeting, Col. Lloyd has informed the B.M.C.R.C. that unless there is much better silencing of exhausts at the next event, the track will be closed to the club.

Confusion Worse Confounded.

In a recent interim report on British standard nomenclature for automobile, motor cycle, and cycle parts much good work has been done by the British Engineering Standards Committee in unifying technical phraseology. One serious blunder, however, appears to have been made in naming the three main categories of motor cycles, which are described as "singles," "sidecars," and (cycle) "cars." The term "single" meaning a solo machine will cause endless confusion with the motor cyclist's familiar term of "single," applied to a machine with one cylinder.

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Beware.

Motor cyclists should beware of the police activities at Hexham and Corbridge, near Newcastle-on-Tyne.

The late Mr. P. J. Evans.

The late Mr. P. J. Evans, who was killed in an air smash whilst returning from the Grand Prix race at Strasbourg, was buried in Birmingham yesterday.

Petrol Imports.

172,966,645 gallons of petrol were imported during the first half of this year, an increase over the corresponding period last year of 33,063,119 gallons.

Police Campaign Against Noise.

A correspondent writes warning motor cyclists against travelling through the Potteries district unless they have their machines fitted with an expansion chamber, and not a "straight-through" exhaust pipe. Apparently the police are showing signs of discomforting activity in this direction.

Fish-tails unpopular in Grimsby.

Some magistrates have held that the "fish-tailed" silencer is sufficient; but after attending a demonstration given outside the Court for his benefit, the Grimsby magistrate said in his opinion the "fish tail" was not a sufficient silencer, and he should insist on an expansion chamber being fitted to machines used in the town.

Motor Cycle Brakes.

A motor cyclist charged at Kingston for driving a motor cycle without an independent brake operating on the front wheel was successfully defended by the A.A. Cross-examined by the A.A. solicitor, the police could not deny that there were two independent brakes on the machine. It was, moreover, pointed out to the Bench that a case of this kind should not have been brought by the police merely on the legal knowledge of a constable, and that advice should have been taken before prosecuting. The Bench were therefore asked to mark their disapproval by awarding costs against the the police, which they did, awarding one guinea costs against them, and the summons was dismissed.

Motor Cycles in France.

In a recent 300-mile run across France we saw less than a dozen motor cycles outside the big cities. Motor assisted bicycles predominated.

Exchanges.

Among the articles offered in exchange for motor cycles in last week's issue were: a motor launch, piano, typewriter, and jewellery, organ, cinema camera, Bedford Buick car, a one-ton van, and a Singer coupé.

Poetic Licence!

Various stories are going the rounds of a motorist whose licence holder for quite a considerable period has carried nothing more than the label from a bottle of Guinness' stout. It sounds too good to be true; but, anyhow, the practice is not to be recommended.

Hill-climb Washed Out—Literally.

Rain storms that almost earned the title of cloud bursts made the surface of Kop Hill quite impossible for the North and North-West London Club's contest, which was to have taken place there on Saturday. Both clubs had mustered strong sides.

Further Entries in the Six Days.

In addition to the list of 126 entries for the A.C.U. Six Days' Trials already announced, the following names have been received:—F. Smith (926 Clyno sc.), N. Clayton Russell (633 Norton sc.), H. H. S. Harris (800 A.J.S. sc.), and J. H. Davies (entered by the N. Wales Centre A.C.U.), on a 599 c.c. Sunbeam.

Pre-war Survivors.

A favourite and seemingly increasing feature of present-day speed trials and hill-climbing events is the inclusion of a class set aside for enthusiastic members riding machines which first left the factory in the neighbourhood of 1914. It is remarkable, moreover, to notice the performances of which some of these veteran mounts are still capable.

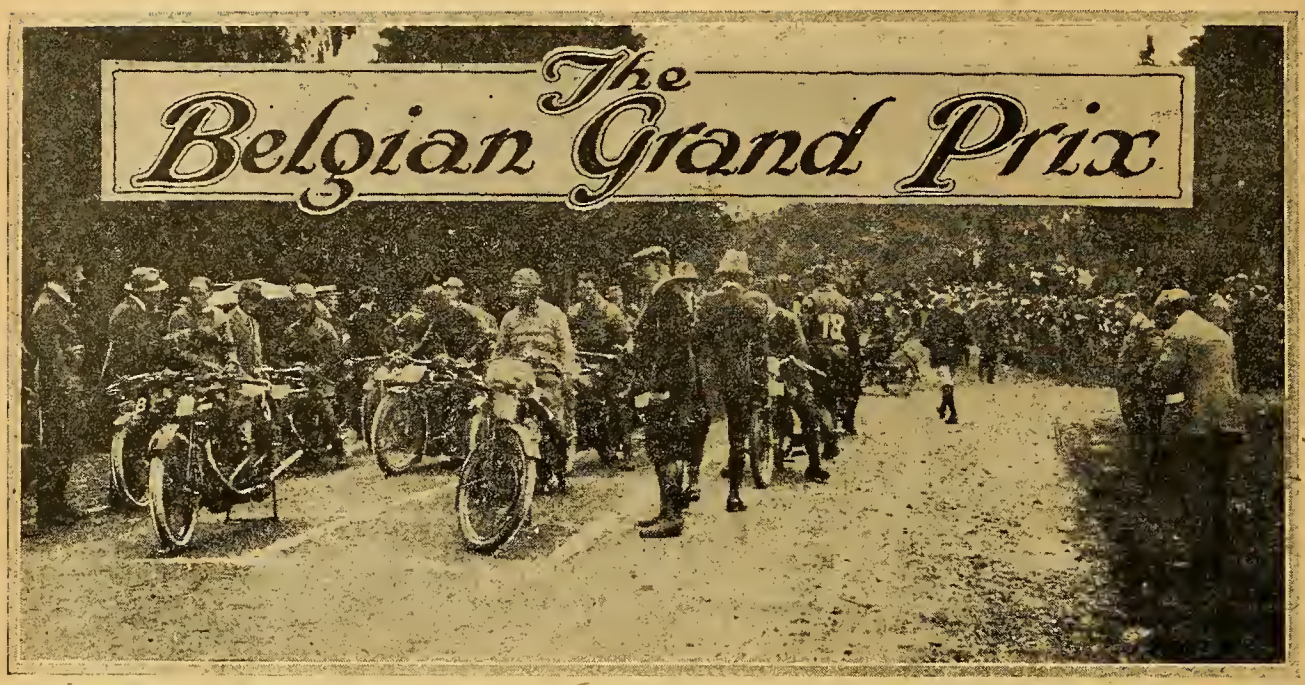
British Industries Fair.

The British Industries Fair, rapidly growing to be regarded as an important annual event, is being held next year (1923) in the Exhibition Buildings at Castle Bromwich, Birmingham, from February 19th to March 2nd. In previous years this fair has formed the meeting-place of buyers from all parts of the country, as well as those from countries abroad. Applications for space should be addressed to the General Manager, British Industries Fair, Chamber of Commerce, Birmingham.

Motor Cycle Licences.

The Ministry of Transport has just published the figures of motor licences issued from December 1st, 1921, to May 31st, 1922, and from these it is seen that the number of annual licences issued amounted to 272,950, and the approximate number of licences current on May 31st, 335,796. In addition to these the number of motor cyclists who availed themselves of the quarterly licensing arrangements equalled 78,606; 15,760 of which were taken out in the first quarter and 62,846 in the second quarter. Under this heading is included as many as 313 invalid motor vehicles.

The Belgian Grand Prix



Lined up and ready for the start of the Belgian Grand Prix. Dr. Lamborelle, Chairman of the Belgian Motorcyclists Federation is talking to A. Jackson (Sunbeam) who proved to be the winner of the 500 c.c. class.

British Riders win All Classes in Belgian Grand Prix. Heavy Rain Causes Many Retirements. Sunbeam, Levis, and Rush-Blackburne Machines Successful.

FRESH on the heels of their success in the French Grand Prix, British riders and machines swept the board in the big Belgian race last week-end.

Again, a Sunbeam was foremost in the 500 c.c. class, the rider being A. Jackson, a north countryman not yet well known in the racing world.

In the 350 c.c. class the winner, E. Remington, rode a Belgian assembled machine, the Rush, equipped with a Blackburne engine, while once more the 250 c.c. victory has fallen to G. S. Davison on the all-conquering two-stroke Levis.

If Bennett, after his French win, complained of the monotony of the Strasbourg circuit, English riders had no cause to do so of that utilised for the Belgian Grand Prix.

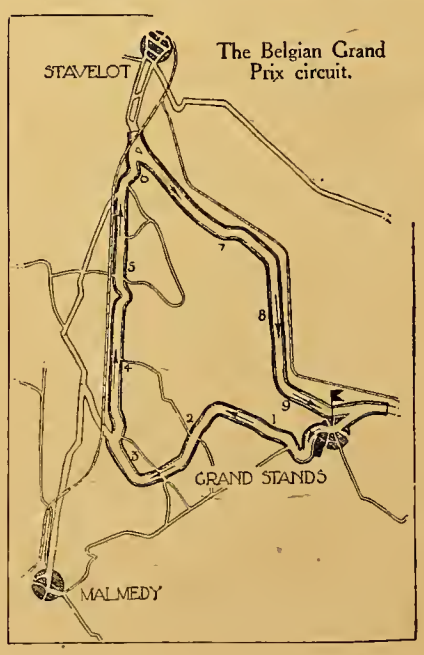
Whereas the one course consisted of a practically straight-sided triangle, with no gradients worthy of mention, the other is all ups and downs, and has corners enough and to spare.

Course Greatly Improved.

The Belgian course is approached from Spa by a hill—the Côte de Malchamps, of which there is no familiar counterpart in England, France, Germany, Italy, or Switzerland. It rises abruptly from the town with a consistent gradient of 1 in 10, has one easy bend three-quarters of a mile from its beginning, then one more, and then a gradient of 1 in 9, next an easy rise, making two miles of hill in all, and then a descent to the Francorchamps corner.

Thanks to the courtesy of Mr. Paul Kelecom we had an opportunity of carefully studying the course from a four-cylinder F.N. sidecar outfit, driven by Baron de Grady.

Much improvement was noticeable. Bridges had been widened and corners vastly improved. From the start opposite the grand stand the course is on the down grade, a bend over the first widened bridge follows, then another, after which the road rises sharply for some distance.



The Belgian Grand Prix circuit.

After the summit there is a fast down grade stretch to Burnenville, the old German frontier, then a greatly improved corner, a long straight, at the end of which is a curve followed by a bad hairpin. Next ensue fast stretches on an upgrade to a severe hairpin, also improved, which leads back to the grand stand—9⅜ miles in all. Immediately after its repair the surface must have been fairly good, but excessive pleasure motor traffic has done it no good, as it is inclined to be rough, and is quite loose at the corners.

The Race.

After a long spell of rain, fine weather favoured the morning of the race, and as the start was not till 10.30 a.m., everyone had a chance of being present.

From an early hour motor cycles held their sway on the roads, and at nine o'clock a continuous stream swept up the great hill from Spa. Fast cars there were in plenty, but motor cycle traffic predominated. It was hard to believe that so small a country as Belgium could contain so many of these machines, but it is so, and it is pleasing to note that British makes predominate. From the enthusiasm displayed it would seem that the Belgian Grand Prix would rapidly outshine the great French event, and all that can hinder its progress is the lack of experience of its organisers, who have hitherto run only one similar event.

Organisation this year, though capable of improvement, was not bad, and there were no such silly incidents as stopping

Belgian Grand Prix.—

men before they had completed the requisite number of laps, but it was not wise to have placed the scoring board at the side and to the rear of the Press stand, nor to have made the latter too flimsy and then to have crammed half of it with spectators so that it began to collapse and cause almost a panic just after the start. The rustic grand stand on the hillside was all right when the weather was fine, but on Sunday ——!!!

Threatening Clouds.

Alas! within half an hour of starting time clouds obliterated the sunshine, and heavy rain threatened. As usual, on the Continent, the men were started by groups according to classes. Edmond (Triumph) led easily at the start, being by far the smartest man off the mark. In the 350 c.c. class Eysdon, the British private owner of a standard A.J.S., was the first to reach the first corner, but, of course, he had no chance, and rode purely for the fun of the thing. Among the lightweights Handley (O.K.), whose riding throughout was remarkable, was the first away. Worse luck, the good weather disappeared at the very start; rain fell as the first batch left, and soon became a veritable downpour, soaking the roads, spoiling the speeds, and reducing the side of the course adjacent to the replenishment depots to a quagmire.

Rain blew in on to the press stand and wetted the scoring sheets, then the stand began to collapse, and before three laps had been covered all count of the men's positions had been lost.

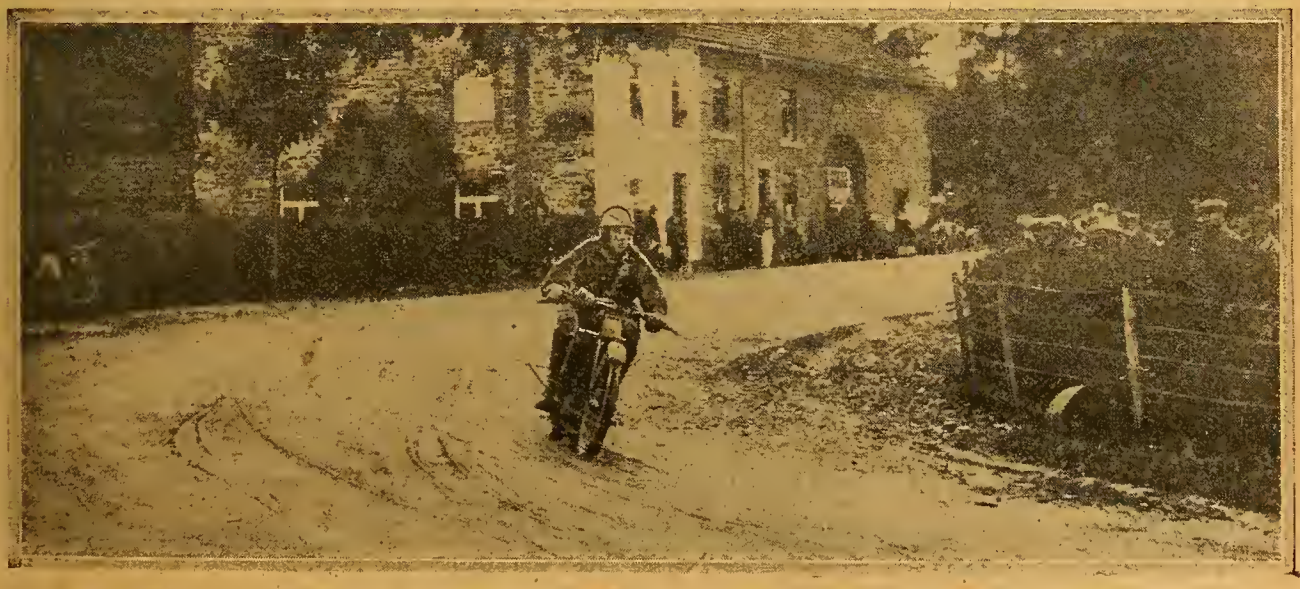
Among the Senior machines were several famous riders. Hassall, who won last year, was a clear favourite, Edmond was known to be fast, but the faults in his engine which had proved to be his undoing at Strasbourg had not been remedied. With such a strong team, consisting of Shaw, Walker and Hollowell (as well as Hassall), the Norton seemed well-nigh invincible, whilst the

Breslau, a Belgian Norton rider, taking the first corner comfortably. Edmond (Triumph) is the rider by the roadside.

Sunbeam was represented solely by Jackson, who, although he competed in the T.T., is a comparatively unknown rider. The Saroléas entered were there more to represent the honour of their country than anything else, as the machines were clearly not fast enough.

The rain which fell during the race naturally accounted for numerous incidents. As they approached the first corner the Norton brakes screamed as they were applied. Hollowell had water in the carburetter on his sixth lap, and by then had had two tumbles. Edmond was out in his third lap with magneto trouble. Thys, another Triumph rider, had retired. Pélissier (Motosacoche) retired before covering one lap owing to a cracked cylinder head. Stolz (Norton) only survived one lap, while Delvigne (Indian) lasted out but two.

Of the Juniors, the new overhead valve F.N.'s clearly had it all their own way, while Davison (Levis) was busy leaving all the lightweights behind. Growing lap times were posted every two



H. W. Hassall (Norton) rounding the Francorchamps corner. He had every prospect of winning until he suffered tyre trouble on his last lap.

Belgian Grand Prix.—

laps with fair regularity, and lap leaders were likewise announced.

After six laps, Hassall (Norton) was well at the head of the 500 machines. His was obviously the fastest mount on the course, and as early as the first lap he was leading by half a mile. His colleague, Walker, ran second, while Jackson (Sunbeam) was third. In the 350 class, Claessens (F.N.) was travelling well, rapidly creating the reputation of the new model, and an almost certain runner for the fastest lap if not for a win for his category. Reinartz (Gillet) occupied second place, while Fraser (Sheffield-Henderson) was running third.

After Davison in the 250 class, Handley (O.K.) was second, and Kershaw (New Imperial) was third. By this time, Woods (O.K.) was suffering from water in the magneto, and though he pluckily tried to remedy the trouble it eventually got the better of him.

At this stage we had a chance of a chat with the unfortunate Edmond, who had reappeared carrying broken magneto parts in his hand. He told us he thought the course more sporting than the French one, but that it had suffered through being improved too late. He considered the French organisation to be better.

Many men were by now retiring or experiencing trouble. Fraser (Sheffield-Henderson) who was promising well, was using the frame of one of the machines used in the T.T. A halt at the Norton depot brought the news that Hassall had covered eleven laps and had not yet stopped to replenish, Hollowell had lost a footrest and Walker was behind time.

A Lull in the Storm.

The rain had now stopped, and there followed a welcome respite from the drenching wet which was taking its toll of riders.

Pierard (Gillet) had retired like many others owing to magneto troubles, while Kershaw (New Imperial), who had actually been leading, had been delayed. News was heard at the Triumph depôt that Antoine was the sole survivor.

Another unfortunate among the lightweights was Whalley (Massey-Arran), into whose magneto water had entered. Reinartz (Gillet) overshot his depôt while trying to stop so as to replenish and rode back in the reverse direction. This would have raised a storm of protest in France, but no one seemed to mind here.

After Ten Laps.

At the end of 10 laps the first three men in each class were

500 c.c. Class.
H. W. Hassall (490 Norton).
A. Jackson (482 Sunbeam).
J. W. Shaw (490 Norton).

350 c.c. Class.
F. Claessens (349 F.N.).
Reinartz (349 Gillet).
E. Remington (349 Rush-Blackburne).

250 c.c. Class.
B. Kershaw (249 New Imperial).
W. Handley (249 O.K.).
G. S. Davison (247 Levis).

Remington's Rush is a Belgian built machine with a Blackburne engine. Claessens was leading by a lap, and there seemed every prospect of the old-established Belgian firm making its reappearance in racing in a somewhat sensational manner. Thus it seemed at half-time, but the F.N. team had had its casualties, and the brilliant Claessens was fated to fall out with a broken chain and magneto trouble. Meanwhile things were happening in the other classes.

At half-time, though Hassall was still leading, Jackson (Sunbeam) had had to cede second place to Shaw (Norton). At that moment Claessens (F.N.) was still enjoying his meteoritic ride to glory, while Remington (Rush) was running second and no third man had been posted. These gaps in the lists of leaders and also on the scoreboard were annoying.

Davison in the Lead.

Among the lightweights Davison (Levis) had regained his accustomed roll of leader, and Handley (O.K.) ran second. Apparently Fraser (Sheffield-Henderson) was third, but the notice-board preserved a discreet silence on this point.

Dame Fortune was still busy thinning the ranks. News came in that the ill-fated Walker was forced to retire owing to a broken crank pin, Huynen (F.N.) had withdrawn owing to a broken valve, and Claessens was now missing. Thus failed a gallant attempt on the part of an indigenous firm to wrest the laurels from the British invader. We wish them better luck next time.

When 20 laps had been completed Jackson (Sunbeam) had wrested first place from Hassall (Norton), and the plucky Antoine ran third, thus gallantly upholding the honour of the Triumph. In the 350 c.c. class Fraser (Sheffield-Henderson) was leading, and had apparently every chance of winning, while Remington was second, and in the baby class Davison (Levis) was still at the top. Towards the end of the race there was great excitement. All prophecies as to who would win seemed like being upset.

Beaten in the Last Lap.

Hassell, having by far the faster machine, easily overhauled Jackson once more, who was covering his final laps with a butt-ended inner tube trailing in the mud. Then the puncture or tyre fiend eventually settled the Norton rider, as passing with a flat rear cover, he yielded the winner's place to the ever victorious Sunbeam. Fraser seemed certain in leading the Sheffield-Henderson to victory, but he dropped back and Remington took his place. Meanwhile, as they had only 20 circuits to do the lightweights had finished, and Davison received the customary bonquet, having won by a clear lap.

THE WINNERS.

500 c.c. Class; 28 Laps—261½ Miles.

T. Jackson (492 Sunbeam), 5h. 15m. 42s.
— Antoine (499 Triumph), 5h. 21m. 47s.
H. W. Hassall (490 Norton), 5h. 29m. 58s.
Winner's speed (approx.), 49¾ m.p.h.

350 c.c. Class; 24 Laps—224 Miles.

E. Remington (349 Rush-Blackburne), 5h. 23m. 18s.
A. Fraser (348 Sheffield-Henderson).
Winner's speed (approx.), 41½ m.p.h.

250 c.c. Class; 20 Laps—186¾ Miles.

G. S. Davison (247 Levis), 4h. 18m. 43s.
W. Handley (249 O.K.), 4h. 32m. 35s.
Vermander (248 Griffon), — — —
Winner's speed (approx.), 43¼ m.p.h.

NEW OVERHEAD VALVE RACING F.N.

PROBABLY forerunners of an excellent sporting mount and almost certain runners in the next T.T., the new 348 c.c. F.N. racing machines embody many new features.

The fact that the steel plates forming brackets for the support of the o.h.v. gear are similar in design to the A.J.S. gives the first impression of a similarity to that engine, but there the similarity ceases.

A detachable head is employed which is heavily finned, especially round the exhaust port. Over this head lies a stirrup resting in a groove between the fins and secured by long holding-down bolts with nut couplings at their base and ball-joints on top. Long push rods actuated by the cams through the usual levers in the timing gear serve to operate the overhead valve mechanism, the shafts of which run in roller bearings.

Lubrication is effected by means of a Best mechanical lubricator, while a separate oiling arrangement lubricates the front chain. It is interesting to note that the English type gear box and the English forks comprise many parts made in the F.N. factory. A Bosch magneto and an Amac carburetter form part of the equipment. Each of these machines had to climb Malchamps Hill at high speed, and in practice one did so at 60 m.p.h.

ANGLO-DUTCH TRIAL POSTPONED UNTIL SEPTEMBER.

LAST week Mr. Van Turenhout, of the Royal Dutch Motor Cycle Club, paid a visit to the Auto-Cycle Union and interviewed Colonel F. S. Brereton and Mr. E. J. Bass, in connection with the Anglo-Dutch Trial.

It appears that the Dutch Club sent a letter to the Secretary of the Auto-Cycle Union on July 3rd giving the particulars asked for. This letter never arrived, and on July 5th the Auto-Cycle Union wired to Holland for the necessary details, such as rules and route. Presuming that the letter of July 3rd had been delivered, the Dutch officials ignored the communication. Consequently, a misunderstanding arose; the Auto-Cycle Union naturally thought that the Dutch officials were slack, and the Competitions Committee decided to abandon the trial. Now the matter has been brought before the Management Committee, and it has been decided to hold the trial from September 15th-18th. The British team will be selected forthwith, and will be due to cross over to Holland on September 14th.

SPORTING HALF-DAY TRIAL.

Medley of Water-Splashes, Hills and Hairpins in South Birmingham M.C.C. Trial for the Avon Cup.

EVEN Midland motor cyclists may be surprised to find that it is possible to lay out a first-class sporting trial's course within a radius of fifteen miles of Birmingham. Yet this feat was accomplished by the organisers of the South Birmingham M.C.C. half-day trial for the Avon Cup, held on Saturday.

Excepting Beacon Hill hairpin and one or two deep fords, the course, in itself, provided no great difficulties, though to average 20 m.p.h. over a twisty route with an obstacle every few miles is none too easy, and this difficulty was increased by poor route marking in certain sectors.

In places the blue stain was too faint to be seen without careful search; frequently it was laid after the turn only, instead of being placed as a warning before. This led to considerable delays and not a few competitors got off the course, rejoining the route further on. Two ladies were amongst the forty-eight entrants, Mrs. Janson (247 Levis) and Miss Cottle (547 Powell), but the former decided to rest on her laurels after her strenuous two days at Brooklands, though she thoroughly enjoyed watching the performances at Packington ford.

Neville Hall (292 c.c. O.K.), H. Greaves (349 c.c. Beardmore Precision), and H. S. Perrey (557 c.c. B.S.A.), passing through Packington Ford.

The Fun Begins.

Starting from Lordswood Road, Birmingham, the fun began within three miles, where a narrow, grassy lane terminated in a series of minor splashes, joined by a single rideable track, just submerged by an inch or two of running water. Next came Hagley Wood and Walton Hills, the latter observed but too easy for comment when the surface, as it was on Saturday, is dry.

A brake test took place on Sheepwash Hill, near Shut Mill, at which the following appeared to make outstanding performances: W. J. Knight (499 Triumph), W. J. Moxon (349 Monopole), J. L. Handley (398 A.B.C.), E. A. Montgomery (499 Sunbeam), F. Hallam (Brough Superior), and W. Goodall (976 Morgan), Romsley Hill—sometimes known as Shut Mill Hill—followed; though scored with deep ruts, it is easy when dry. Then came the Gulley and Beacon Hill.

A straightforward climb of Beacon presents no difficulties to a modern machine, but part way up the competitors were led round a grass triangle providing a hairpin of some severity.

At this point several riders "came unstuck." L. Cox (249 New Imperial) hit the bank and bent his crank. Miss Cottle, who was riding a Powell with a Jardine gear box, also hit the bank and fell, baulking Stretton Ward (499 Triumph), who, however, managed to pass very neatly. Goodall's Morgan also failed to get round clean. R. Cooper and L. Clulee (Allons), A. Cope (494 Douglas), E. Jacobs (349 Beardmore-Precision), J. Orford (349 Henley-Blackburne), W. Knight (499 Triumph), H. S. Perrey (557 B.S.A.), and B. L. Bird (770 B.S.A. sc.), all made good performances; but many others touched with their feet.

A mile and a half further on came the stop, start, and low gear test. Riders were expected to get away from rest within five seconds and cover a timed uphill section on low gear. The test was an easy one, but in spite of the most explicit instructions at least two riders changed up in the low gear section.

Miss M. Cottle (547 c.c. Powell) preferred the bridge to the watersplash.

Deceptive Appearance of Severity.

Gravel Pit and the Gaby Glide were the next obstacles, and then came Beoley ford, near Redditch. The number of failures at this spot can only be accounted for by its deceptive appearance of severity. The ford is fairly wide, but not deep enough to be really serious. Nevertheless, J. Bacon (490 Norton) stopped and fell; E. Jacobs (349 Beardmore-Precision), H. V. Collins (654 Brough Superior), Miss Cottle (547 Powell), J. Moxon (349 Monopole), and A. Sidley (348 Verus), failed, and at least nine others used their feet. L. Horton (249 New Imperial) probably made the neatest crossing.

There was a time check at the Bird-in-hand (Stratford Road); then came Windmill Lane hill with its attendant fords, and more fords at Barston, Grimshaw, and Pelham, each of which spoilt

Sporting Half-Day Trials.—

a few non-stops—a colonial section between Castle Bromwich and Coleshill, and finally Packington ford, quite the event of the day.

Many spectators had collected to watch the fun at the crossing, which is a matter of about thirty yards and nearly a foot deep for quite a considerable distance. Really clean crossings were few and far between, although the following were excellent: J. N. Roberts and L. Horton (New Imperials)—the former appeared to have clutch slip—W. Johnson (292 Allon), H. J. Stretton-Ward (499 Triumph), H. V. Collins (654 Brough Superior), B. L. Bird (770 B.S.A. sc.), T. Ward (349 Sirrah), H. Uzzell (964 New Imperial sc.), E. Arthur (Brongh Superior), E. Montgomery (499 Sunbeam), H. Walker (770 B.S.A. sc.), and H. Ward (557 B.S.A.).

There were fourteen absolute failures, but B. Green (348 Verus), R. Cooper and L. Clulee (Allons), S. Lewis (349 Beardmore-Precision), H. S. Perrey (557 B.S.A.), A. Sidley (348 Verus), and F. Hallam (Brough Superior), all made good crossings, apparently just using their feet to steady.

Five miles, mostly very rough going, brought the riders to the finish at Stonebridge Hotel, where thirty-five checked in by 7 o'clock.

Provisional results have been announced as follows:—

Best performance of the day: E. Clulee (292 Allon), winning the Avon Cup and a gold medal.

GOLD MEDALS: S. W. Lewis (598 Beardmore-Precision), H. J. Stretton-Ward (499 Triumph), H. Uzzell (976 New Imperial sc.), and E. Arthur (Brough Superior).

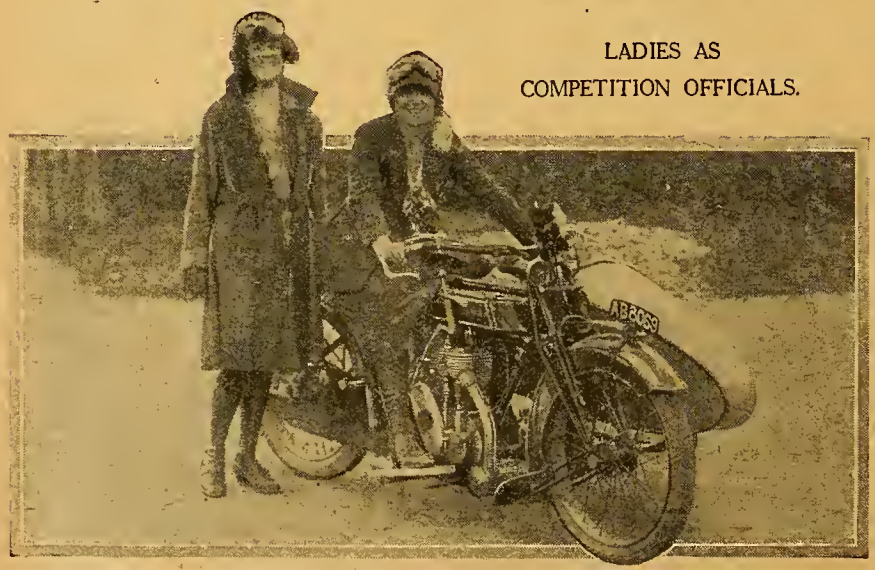
S. W. Lewis (598 c.c. Beardmore Precision) in the water splash at Quinton.

SILVER MEDALS: J. W. Roberts (293 New Imperial), L. Horton (293 New Imperial), R. C. Cooper (292 Allon), W. Johnson (292 Allon), S. Green (349 Verus), A. C. Cope (348 Douglas), W. J. Knight (499 Trinmph), H. S. Perrey (557 B.S.A.), B. L. Bird (557 B.S.A. sc.), J. H. Walker (557 B.S.A. sc.), and F. Hallam (Brough Superior).

BRONZE MEDALS: T. H. Weaver (349 Sirrah), R. F. Turner (293 New Imperial), S. H. Greaves (350 Beardmore-Precision), Neville Hall (292 O.K. Junior), H. Ward (557 B.S.A.), H. V. Collins (Brough Superior), and W. Montgomery (499 Sunbeam).

The team prize was won by the B.S.A. team, comprising H. S. Perrey, B. L. Bird, and J. H. Walker.

48 competitors entered, of whom 44 started, and 34 finished.



LADIES AS COMPETITION OFFICIALS.

THE SOCIAL SIDE OF RELIABILITY TRIALS.

A pleasing feature of the recent one day reliability trial held by the Worcester and District M.C.C. and M.C. was the appointing of lady marshals. Mesdames Blickley and Gibbs and their Sunbeam outfit, on which they performed very useful work in the course of the event which covered two fifty mile circuits.

LUBRICATION TESTS.

SOME time ago the engine department of Bayliss, Thomas, and Co., manufacturers of the Excelsior motor cycle, King's Road, Tyseley, Birmingham, commenced a series of lubrication tests with various oils in a standard 650 c.c. Excelsior and sidecar which were productive of some interesting results.

Graphite mixed with a standard high grade oil caused carbonisation and pinking in 750 miles, which necessitated dismantling and thoroughly cleaning the engine. The same oil, used without graphite, gave satisfactory running for 1,600 miles before pinking occurred.

The engine was once more taken down, cleaned, re-assembled, and put on the road again to be tested with another brand of oil. After running successfully for some months the test was discontinued, the distance covered being 3,200 miles.

On dismantling a third time, the carbon deposit was found to be less than had accumulated in the previous test of 1,600 miles. But, even more remarkable feature was that during the whole of these trials the valves were not ground in. In fact, the whole of the engine remained untouched.

Club News

West Kent M.C.

A hill-climb will take place on August 27th at The Cut, near Maidstone, off the Maidstone-Ashford road, commencing at 1.30 p.m. All entries must be forwarded to Mr. A. G. Williams, 51, Beckenham Lane, Shortlands, Kent, before Friday, August 18th.

Lichfield and District M.C.C.

Twenty-four competitors took part in a reliability trial held at the beginning of the month as the first round for the Hoskison Cup. Results: FIRST-CLASS AWARDS.—F. H. Twyman (499 Sunbeam); A. Jones (292 Diamond-Jap).

SECOND-CLASS AWARDS.—A. S. Button (550 Triumph); J. J. Smith (490 Norton); H. Griffin (976 Royal Enfield sc.). The second round will be run off on August 27th.

Ilford M.C.C.

August 13th has been selected for the holding of a one day reliability trial for motor cycles, sidecars, and three-wheel cycle cars. Various cups will be awarded, in addition to gold, silver, and bronze medals. The run will start from the "Bell" Hôtel, Epping, at 9.30 a.m., and other particulars of the event are available from Mr. A. E. Sweetingham, 25, Christchurch Road, Ilford.

Eastbourne and District M.C.C.

Arrangements are now in hand for the holding of speed trials on the parade at Eastbourne between 2 p.m. and 6 p.m. on September 9th, when the following clubs have been invited to compete: The B.M.C.R.C., Woolwich, Plumstead and District, Brighton and Hove, and Surbiton M.C.C. A number of valuable cups are being offered, together with gold, silver, and bronze medals. Further particulars may be obtained from the club secretaries concerned, or from Mr. H. V. Warren, 73, Terminus Road, Eastbourne.

North London M.C.C.

About forty members turned out for the evening run held on Wednesday of last week. The riders started from their headquarters, "Ye Olde Gate House," Highgate, at 8 p.m., and returned at 12.45 a.m. after a very enjoyable run through Potters Bar, Hatfield, Welwyn, Knebsworth, and Harford, where supper was served, the return journey, starting at 11.45 p.m., being made *via* Hartingfordbury, Hatfield, and Barnet. It is hoped to repeat this success in the near future. Meanwhile, the next event is the Club Cup Trial on Saturday next.

Neath and District M.C.C.

Tuesday, August 8th—the day following the open speed trials on Peudine Sands—has been chosen for holding the "Welsh T.T." There will be run off a 100 miles race—twenty laps of five miles each—with classes for 500 c.c., 750 c.c., and unlimited c.c., and a 50 mile race (ten laps) for 250 c.c. and 350 c.c. machines. The event is open to all members of clubs in the South West Wales Centre A.C.U. In addition to other valuable prizes, the Capt. Watkins Challenge Silver Rose Bowl and the President's Challenge Trophy will be competed for.

South Midland Centre A.C.U.

Official results of the championship and team trial, a detailed report of which appeared in last week's issue of *The Motor Cycle*, are now to hand.

SPECIAL GOLD MEDAL: T. D. Chapman (993 Matchless sc.).

GOLD MEDAL: C. Broom-Smith (998 Indian Chief sc.).

SILVER MEDALS: T. S. Sharratt (349 A.J.S.), C. B. Smyth (499 Sunbeam) L. Welch (292 O.K.), E. O. Spence (989 Harley-Davidson sc.).

BRONZE MEDALS: C. C. Lahin (678 Martinsyde), L. P. Walter (550 Triumph), H. Reyre (498 Ariel), F. Roberts (596 Indian Scout), T. G. S. Babb (499 Sunbeam), Miss Bates (499 o.h.v. Triumph), L. V. Freeman (976 Sunbeam sc.), and C. Slade (490 Norton sc.).

Club cups were awarded to Luton and S. Beds. (E. O. Spence), Oxford M.C. (L. Welch), N.W. London (C. B. Smyth), and Mid. Bucks (T. S. Sharratt).

The Service Challenge Cup was won by Bucks. County M.C.

Week-End Club Events.

July 27th.—Mid Bucks M.C.C.—Speed Trial.
July 28th.—Coventry and Warwickshire M.C.—24-Hour Reliability Trial.
July 29th.—N. London M.C.C.—Club Cup Trial.
July 29th.—Sheffield M.C.C.—Picnic.
July 29th.—Coventry Triangle M.C.—Run to Sutton Park.
July 29th.—Dewsbury and District M.C.C.—Trial.
July 29th.—Dumfries and District M.C. and C.C.—Social Run.
July 29th.—Bulwell M.C.—Run to Half-way House.
July 29th.—East London M.C.C.—Novices' Competition.
July 29th.—Bristol M.C. and L.C.C.—Porlock Trial.
July 29th.—Gloucester M.C. and L.C.C.—Run to Weston-Super-Mare.
July 29th.—Oxford M.C. v. Bucks M.C.—Hill Climb.
July 29th.—East Midland Centre A.C.U.—Clipstone Drive Speed Trials.
July 29th.—Yeovil and District M.C.C.—Presidents' Cup Trial.
July 29th.—Ashford M.C. and L.C.C.—Picnic Run.
July 29th.—Ealing and District M.C.C.—Brooklands Meeting.
July 29th.— } *Atherton and District M.C.C.—Run*
July 30th.— } *to Shrewsbury.*
July 29th.— } *Bradford M.C. and L.C.C.—Brad-*
July 30th.— } *ford–London–Bradford 24-Hours' Trial.*
July 30th.—Bridgnorth and District M.C.C.—Clee Hills Picnic.
July 30th.—Exeter M.C. and J.C.C.—Run to Dulverton.
July 30th.—York and District M.C.—Run.
July 30th.—Manchester M.C.—Gymkhana.
July 30th.—Sheffield M.C.C.—Run to Nottingham Castle.
July 30th.—Colne and District M.C.—Run to Knutsford.
July 30th.—Coventry Triangle M.T.—Run to Coleshill Woods.
July 30th.—Leeds Motor Union.—Run to Hardrow Force.
July 30th.—Newcastle and Northern M.C.—Follow the Arrow Trial.
Aug. 2nd.—Middlesbrough and District M.C.—Run to Hutton Gate and Kildale.
Aug. 2nd.—Leeds Motor Union.—Impromptu Run from City Square.
Aug. 3rd.—Gloucester M.C and L.C.C.—Gymkhana.

Eastbourne and District M.C.C.

Trying weather conditions attended the annual reliability trial on the 16th inst, when the Harold Day cup and the Kett cup were competed for (for solo and sidecar machines respectively). The winner of the first trophy was L. S. Mason (550 Blackburne), whilst H. V. Warren carried off the Kett cup with a 976 c.c. Royal Enfield and sidecar.

East South Wales Centre A.C.U.

A reliability trial will be held on Saturday, August 19th, starting at 2.30 p.m. from Cardiff, at which there will be several novel and interesting features, including speed judging and acceleration and braking tests. Voluntary marshals are needed, and help from motorists who live in the Cardiff and Newport district would be much appreciated; communications should be addressed to Mr. E. R. Mitchell, 29, Llanfair Rd., Cardiff.

Sarum and District M.C. and C.C.

S. E. Crisp (Ner-a-Car) won the reliability trial held on the 12th inst. for the July Challenge Cup (presented by Messrs. Hobden Bros.), a silver medal being awarded in addition. Second came H. A. Lord (James sc.), followed by H. G. Macklin (550 Triumph), both of whom gained silver medals. Twenty competitors entered, all successfully completing the course.

Woolwich, Plumstead and District M.C

Best performance in the club team trial held on Saturday, the 15th inst., was made by F. Murray (499 B.S.A. sc.). The team prize was won by the following team: H. A. Collier (Matchless), B. J. Sims (499 Triumph sc.), and F. J. Ellis (976 Matchless sc.).

Sunderland and District M.C.C.

The weather for the reliability trial held on the 16th inst. was very unfavourable, but in spite of this a fair number of competitors faced the starter. Boltby Bank and Arden Bank in Yorkshire, together with several watersplashes (swollen by the rain) were included in the course. H. L. Young (349 A.J.S.) was first, with a loss of only five marks, closely followed by S. Bell (490 Norton), with a loss of eight marks.

North Liverpool M.C.C.

All motor cyclists residing in the district are invited to become members of the new club which has recently been formed under this title. The club will be affiliated to the North Western Centre A.C.U. Those interested should attend a meeting which is being held to-night at 8 p.m. at Croylands Street Schools, Walton, Liverpool.

Worcester and District M.C.C.

In conjunction with Worcestershire M.C. the annual one day reliability trial was held on Saturday the 15th inst., when the president's cup, the Eric Williams cup, and the Badgery shield were competed for. The course was one of 51¼ miles completed in two circuits, making a total of 102½ miles, starting from the Fox Inn at Brandsford.

H. J. Stretton Ward (499 Triumph) and J. A. Newman (494 Douglas) tied for the Eric Williams cup; President's cup was won by W. A. Carr (8 Morgan).

The team prize was carried off by (1) J. A. Newman (494 Douglas), (2) H. J. Stretton-Ward (499 o.h.v. Triumph), and (3) W. R. Brown (499 Sunbeam sc.).

FIRST CLASS AWARDS SOLO: J. A. Newman (494 Douglas), H. J. Stretton-Ward (499 o.h.v. Triumph), W. J. Knight (499 o.h.v. Triumph), C. F. Townley (Norton), J. Bacon (Norton), S. W. Lewis (Beardmore), and E. Main (369 A.J.S.).

SIDECARS AND 3-WHEELERS: W. R. Brown (499 Sunbeam sc.), B. Bladder (976 New Imperial sc.), W. A. Carr (8 Morgan).

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

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LADY MAKES THE FIRST "DOUBLE-TWELVE" RECORD.

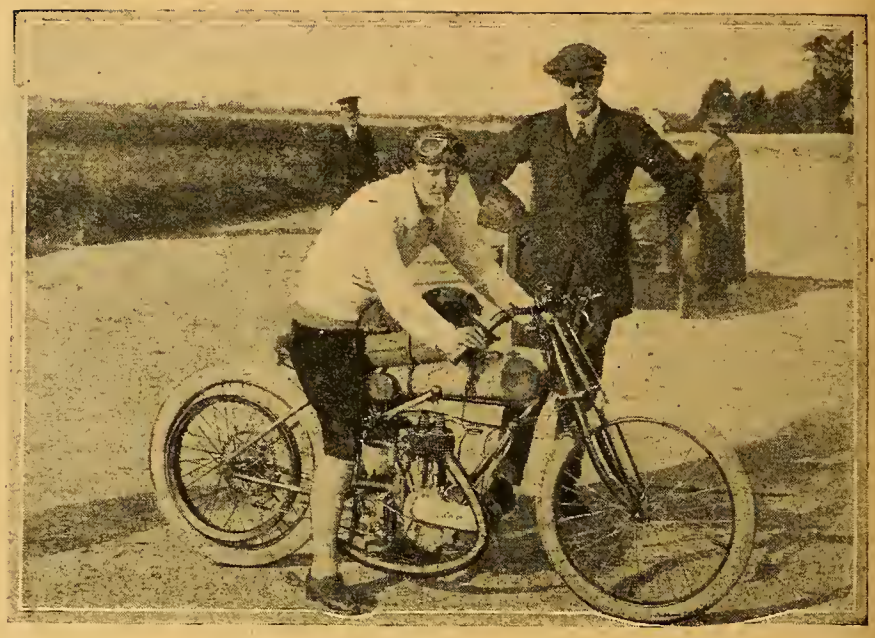
Mrs. Janson's 24 hour ride on a Trump-Jap.

ON Wednesday and Thursday of last week Mrs. G. M. Janson, riding a 249 c.c. Trump-Jap, gained the distinction of being the first rider to make a "double-twelve hour" record in this country.

The "double-twelve" method of covering a twenty-four hour ride permits the driver to rest for twelve hours between two twelve hour stretches on the track; the machine is locked up during the resting period.

Mrs. Janson covered 43 miles 677 yards in the first hour and thereafter lapped Brooklands at over 40 m.p.h.; the three best laps being done consecutively at 46.46 m.p.h. At the end of the first twelve hours 515 miles 1,123 yards had been covered at 42.97 m.p.h.

On the next day the hourly speed never fell below 44.12 m.p.h.; and two hours' riding were done at 46.37 m.p.h., and the grand total mileage was brought up to 1,071 miles 1,180 yards at a speed of 44.65 m.p.h., this constituting the first British "double-twelve" record.



Before commencing her successful attempt on the double-twelve hour record. Mrs. Janson and the 249 c.c. Trump-Jap on which she rode 1,071 miles, 1,180 yds. in 24 hours at an average speed of 44·65 m.p.h. Lt.-Col. R. N. Stewart is in the background.

In addition to the above record Mrs. Janson also made world's records in Class A (250 c.c.) as under:—

11 hours .. 506 miles 695 yards (46.03 m.p.h.).
12 hours .. 556 miles 57 yards (46.33 m.p.h.).

No trouble was experienced throughout the run except for oil on the magneto contact breaker. On the whole the weather was good, as there was sunshine without the temperature being too warm, and there was little wind. It was a remarkable performance, and Mrs. Janson showed wonderful pluck throughout. Her mount was equipped with an M.L. magneto, Hutchinson tyres, a Lodge plug, a Sturmey-Archer gear box, and Renold's chains. Castrol oil and Pratt's motor spirit were used.

KEEN RACING AT ESSEX BROOKLANDS MEET.

Good Handicapping provides some excellent finishes. Three Events for Motor Cycles.

AS there were but two events for motor cycles only in the programme of the Essex Motor Club's Brooklands meeting on Saturday, the chief interest centred on the cars. Nevertheless these two races were well worth watching, especially as the finishes were so close as to make it almost impossible to judge who had won until the numbers went up. Additionally there was a passenger machine race in which cars and sidecars competed together.

As seventeen machines started in the 500 c.c. handicap, the field soon spread out until it was almost impossible to distinguish either the individual riders or the leaders; and, right until the last lap, the track was covered with motor cycles in an almost continuous string. W. H. Sheraton (Norton) at first gained the lead, and, by the last lap, had an advantage of nearly half a mile. Behind him, however, R. E. Dicker (Rudge) and J. L. Emerson (Douglas) were coming up at a great pace, and for a while it seemed as though they must catch the Norton. Time, however, proved too short, and Sheraton had a handsome win, averaging 66.25 m.p.h. The riders of two competing machines which had fallen out caused consternation by wobbling along the straight as the leaders finished at speed.

	Handicap.
1. W. H. Sheraton (490 Norton)	1m. 27s.
2. R. E. Dicker (499 Rudge) ..	1m. 6s.
3. J. L. Emerson (499 Douglas)	scratch

From the spectators' point of view few races could be better handicapped than the 1,000 c.c. event, as some twelve riders entered the finishing straight at the same time, the ensuing *melée* being most exciting. It is true that the scratch man, C. F. Temple, failed to catch the leader, but his passage through most of the field when the Harley was really going alone provided very definite thrills.

Pullen Again.

As it was C. G. Pullin achieved victory with the Douglas at a speed of 86.5 m.p.h., just passing R. E. Dicker (Rudge) on the post. G. Mannd (A.B.C.) would probably have caught Dicker had the race run a little longer. Unfortunately C. Waterhouse had a spill just after the members' bridge, due to the exhaust pipe of his Sunbeam coming loose. For a moment he lay tangled up in his machine while a surprised photographer was apparently too scared to help him though within a few yards. Happily the incident closed with no more than a bad shock and some grazes.

Though the latest Brooklands ukase states severely that motor cycles are too noisy and promises dire things if silencers are not fitted, one would never have imagined that anything had been said when the field for the passenger handicap went to the post. Some, at all events, had a bark like a machine-gun.

It was almost impossible to follow the race accurately from the stands owing to the fact that some eighteen machines on an 8½ mile course spread out a long way when the scratch man departs 3m. 36s. after the limit man.

The cars—a Temperino, Eric Longden, Salmson, and Mathis—were completely outclassed, only one of them, the tiny Temperino, making any showing at all. Right at the end F. W. Dixon shot to the front on a Harley-Davidson, travelling well, O de Lissa (Motosacoche) following, with a crowd of machines behind, from which R. Charlesworth (Zenith-Jap) just managed to gain third place.

	Handicap.
1. F. W. Dixon (989 Harley-Davidson sc.)	18s.
2. O. de Lissa (994 Motosacoche sc.)	33s.
3. R. Charlesworth (987 Zenith-Jap sc.)	1m. 21s.

Insurance Problems.

A Special Feature in which Motor Cycle Insurance Questions are Answered and Discussed.

After Twelve Months' Wear.

Mr. E. W. Larby, South Norwood, writes: "With reference to the inquiry of Mr. C. Canthall, of Croydon, in your issue of the 29th June, wherein he asks what amount an insurance company would pay on a machine stolen twelve months after taking out the policy.

"I do not agree entirely with your remarks *re* the amount stated in proposal form. What it amounts to is this: The insured states what he considers the value of the machine, and also what he paid for same, say £100. The company says: 'All right, we shall charge you so much.' After a time the insured is unlucky enough to have his machine stolen or burnt, and has to get a new machine. Does the company fulfil the contract that has been paid for? Oh, dear no! Being very generous (?) it will perhaps merely pay £65.

"In view of this, one is inclined to ask, why pay a premium on an amount that the company has no intention of paying?

"I had a policy with a company for three years and paid a premium on an amount of £110. One day I was looking at my policy and realised what I had let myself in for. I wrote to the company and asked them what they would pay if my machine was lost, but could not get any satisfaction—they would not, in fact, promise to pay even twenty shillings!

"I may say I cancelled this policy and now have one which is worded as follows:

> "In the event of the motor cycle insured being totally lost or destroyed by fire, accident, or theft, the *insured value* will be paid."

"This policy actually cost me less than the other."

The principle involved in this particular instance is one which is not novel to insurance, but is one of the fundamental principles on which insurance has been based from its inception.

A policy of insurance is never intended to be a means of profit. At the time of insuring, a value is stated for purposes largely of convenience to both parties to the contract, and does not necessarily mean that the value as stated in the proposal is the actual value of the machine proposed to be insured.

It will be clearer, perhaps, if it were put this way: A machine is purchased, say, to-day at a cost of £150, and is proposed for insurance at that amount, and at the end of, say, six months, is totally destroyed or otherwise lost, and a claim is then made by the policy holder against the company with whom he insures. The machine at the time of insurance is worth £150. Between the time of insurance and time of loss, six months' usage has taken place, so that consequently it must be obvious that the value after six months' usage cannot be the value at the time of insurance, a certain depreciation having certainly taken place in the meantime.

Several other readers raise this same point in one form or another, and instance in almost every case that the company with whom they insure "accepts the value they stated at the time of proposal." This is not the actual case, and there can be no verification of value unless an inspection of the machine takes place by the company proposing to insure it. It is impossible for such an inspection to take place without considerable increased charge being made for the insurance, so that the assumption from the outset on the part of the insurance company is that the proposer is acting honourably, and stating what is the actual value at the time of proposal, and that in so stating the proposer implies that in the event of a total loss arising at any time during the currency of the policy, that this total loss cannot exceed the value stated by him.

However, a loss arising, say, in the sixth or subsequent months' currency of the policy must mean that the value is less than at the time of proposal. The prevailing practice amongst established offices is not to issue an agreed value policy, and one of the reasons against their so doing is that it is contrary to all the principles of equity, unless the agreed value is such at the outset of the insurance as shall be less than the actual value is likely to be at any time during the currency of the policy.

On the 364th day of a policy's currency, a loss may arise in connection with a machine insured at a certain value twelve months prior to that date. If an agreed value is to be the basis of the insurance, it will be seen that such agreed value must be an amount which, from the insurance company's standpoint, provides for every contingency likely to arise during the course of the full twelve months while the policy is in operation.

A policy of insurance is a policy of indemnity, not of profit, and if both parties approach the contract bearing this essential principle in mind, no difficulty at all need arise. A total loss is dealt with on the basis of fair market value at the time of the loss. This basis, it will be seen, provides for a payment which shall at any rate equal the cost of a similar machine in every respect being replaceable by the insured out of the money paid by the insurance company.

* * * *

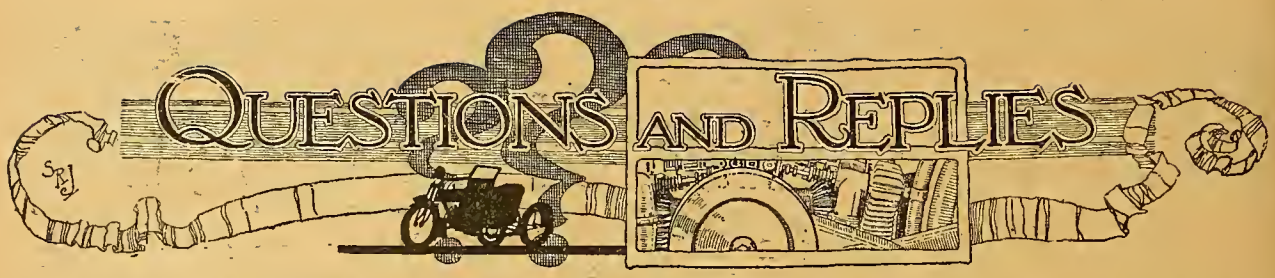
Loss of a Coat.

Mr. L. C. Studeley, writing from Peterborough, says: "My machine, which is fully insured, catches fire, and in a successful endeavour to put out the flames, I irretrievably ruin a £6 waterproof coat. Will a reputable insurance company pay for a new coat? Or should I have let the machine burn out and draw my cheque for £120 from the insurance people.

It would certainly appear to be a hardship were an insurance company to refuse to pay for a waterproof coat in circumstances such as are set out in this enquiry, and we are quite sure, on the circumstances being proved, that most companies would treat a claim of this nature very sympathetically indeed.

On the other hand, however, we would point out that there is no implied or expressed indemnity of this nature under a motor cycle insurance policy, and obviously there cannot be any such indemnity as a matter of right, because it would be extending the limits of a policy to an extent to which motor cycle insurance, as such, should not go.

The last sentence in this enquiry calls for a little comment, perhaps, and that is that an insured is supposed to exercise reasonable care and precaution, and we take it that common honesty would impel a motor cyclist placed in such circumstances to do all he possibly could to minimise any possible loss.



A selection of questioos of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisatioo. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

GEAR SLIGHTLY TOO HIGH.

My 557 c.c. 1917 chain driven B.S.A. and sidecar goes splendidly on the level but picks up very badly on slight gradients. In fact, I have to change down on to second gear on hills that smaller machines can roar up. I am inclined to think that it is geared too high. The sprockets are thus: Engine sprocket, 16 teeth; gear box, 35 teeth and 16 teeth; back wheel sprocket, 35 teeth (26in. back wheel). Do you think this is too high for touring purposes? If so, give me your suggestion as to what alteration to make. Will you let me know my present gear ratio, as I make it about 4⅜ to 1?—H. P.

Your present gear ratio is approximately 4⅜ to 1, which should be about correct for light sidecar work. If you carry very heavy loads you might try an engine sprocket with one tooth less, which you could obtain from the manufacturers. To calculate the gear ratios, multiply together the numbers of teeth on the driving sprockets, and also multiply together the numbers of teeth on the driven sprockets. Then divide the latter product by the former. If you wish to measure by a simple method, put a chalk mark on the engine sprocket to correspond with a similar mark on the crankcase, engage top gear, mark the wheel rim and chain stay, raise the exhaust lifter and turn the rear wheel one complete revolution, counting meanwhile the revolutions of the engine.

HEAVY FUEL CONSUMPTION.

Petrol consumption on my 348 c.c. Douglas averages 42 m.p.g. with a Binks carburetter (jets 000, 2, and 5). The engine has been recently overhauled and new valves, guides, and pistons fitted. Would lagging the induction pipe improve matters, as this is always very cold? I would be grateful for advice with a view to improvement.—G. B.

The consumption you mention is obviously unduly high, although the jets would seem to be about correct. You should get at least 100 m.p.g. Try fitting a hot air intake to the carburetter and lagging the pipe near the cylinder connections. This will serve the double purpose of preventing air leakage and aiding the conduction of heat from the cylinder to the pipe. Make sure, of course, that the jets are in their correct holes, that the leather damping pads in the throttle are functioning correctly, that the jets are screwed firmly into their seatings, that the petrol level is correct, and that all joints in the petrol supply system are free from leaks.

Important Dates.

Sat., July 29th, North-Western Centre A.C.U. Open Hill Climb.
Sat., July 29th — Scottish Speed Championships.
Thurs., Aug. 3rd, to Wed., Aug. 9th—International Six Days Trials.
Sat., Aug. 5th, and Mon., Aug. 7th—Irish Two-day Open Trial.
Mon., Aug. 7th—West S. Wales Centre A.C.U. Open Speed Trials at Pendine.
Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.
Sat., Aug. 12th—Motor Cycle Races in Phœnix Park, Dublin.
Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.
Sat., Sept. 16th—The Scott Trial.
Sat., Sept. 23rd—500 Mile Race at Brooklands.
Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.
Sat. Nov. 25th, to Dec. 2nd.—Olympia Motor Cycle Show.

WORK FOR A SKILLED MECHANIC.

Since decarbonising my New Hudson two-stroke it has lost a great deal of power. I have given the cylinder joint extra care. I then decided to fit new piston rings, which when fitted caused an uncanny rattle inside which I attributed to the big-end being worn; I therefore replaced the old rings. When the cylinder is off I can rock the connecting rod backward and forward a quarter of an inch each way. (1) Should this be so? The slackness of the big-end is easily felt by up-and-down motion. (2) Do you think that this loss of power is caused by the worn rings, and if I took up the big-end would it stop the rattle when the new rings were fitted? (3) Do you think this job could be managed by me, as I have never taken a two-stroke engine down, but I have seen car engines overhauled, and understand the use of engineers' tools? (4) What are the parts of the crankcase assembly which need special care in assembling to prevent air leaks? I may state that before decarbonising the machine ran well, and I have not touched the timing. (5) How is the big-end taken up, and do the rings need any special fitting?—C. H.

In a short paragraph it is impossible to describe the whole of the processes connected with the taking up of the big-end and the fitting of new piston rings. Apparently in your engine the trouble is caused by excessive play in the big-end bearings; the rings also may be badly worn, and if so they would account for a certain amount of noise when the engine is running. Both the replacement of rings in a worn cylinder and (especially) the taking up of bearings is a highly skilled fitter's job. When reassembling the crankcase the joint between the two halves of the case must be very carefully made and the crankcase bolts evenly tightened, each bolt being screwed up a little at a time to ensure an absence of air leaks between the faces of the two portions. Seccotine is a good jointing material, and so also is Metalastene. Great care must also be taken that the joints between the cylinder base and the top of the crankcase are clean; a brown paper washer coated on both sides with Seccotine is advisable. As your engine appears to be generally out of order, we would recommend that you obtain a copy of "Two-stroke Motor Cycles."

RELATING TO THE FOUR-VALVE TRIUMPH.

(1) Is the cylinder head of the o.h.v. Triumph removable for valve grinding, or are the valve seatings removable? (2) If not, it will be necessary to remove the entire cylinder. Is there sufficient room to do this without taking the engine out of the frame? (3) Is the possibility of compression leakage due to four valves a serious objection in a machine intended for touring, and not for racing.—A. R. P.

(1) The cylinder head is removable and may be detached for valve grinding and decarbonisation. (2) It is not necessary to remove the entire cylinder. (3) The possibility of compression leakage at the valves may be ignored, and it is no more likely to be objectionable than it is in the case of a two-valve engine.

MEANING OF W.D.

What is meant by the abbreviation W.D. so often seen in connection with advertisements of motor cycles, spare parts, and accessories?—M.C.

The abbreviation you mention stands for War Department, and is applied to goods made for the War Office and which are now sold to the public as "surplus stores."

POTENTIAL SPEED OF OLD SINGLE.

What is the bore, stroke, and cubic capacity of the 1914 3½ h.p. 3-speed (hub) Premier? Also, about what speed should I obtain with this machine, solo. At present I am unable to exceed 28-30 m.p.h., although everything seems in order (top gear 5 to 1).—R. C. S.

The machine had an 85 × 88 (499 c.c.) engine, which should be able to accomplish a speed of at least 40 to 45 m.p.h. if everything is in order. Without a personal examination it is difficult to give you any guide to the trouble.

MECHANICAL PUMP ON A B.S.A.

When the eccentric of the Best oil pump which I fitted to my 557 c.c. B.S.A. is set at just over half throw, the oil overflows into chain case, but the sparking plug keeps quite clean and I cannot make the engine smoke. Can you tell me if I can adjust the oil level in the crank case at all? I do not know if I am giving too much or whether the oil level in the engine is too low.—T. H.

If your piston rings are in good condition it is quite likely that your engine will not smoke, even if you are supplying more oil than is necessary. You do not state if the engine smoked previously to fitting the Best mechanical pump. If the oil is overflowing into the chain case you are obviously getting a steady flow. The half-way setting of the pump regulator should be about correct.

A NOVICE AT 59.

(1) Do you think that I am too old to ride a motor cycle? I am 59 years of age, and for the last 30 years have ridden a push cycle to and from business in London all the year round, but am beginning to find it rather tiring. (2) Should you not think that I am too old what type of mount would be the most suitable for the above purpose, and for little week-end outings? I do not fancy any motor attachment.—N. C.

Certainly you are not too old to ride a motor cycle; there are many enthusiastic riders who are older than yourself. Almost any of the lightweight machines on the market would be suitable for your purposes; you should choose a two-speed model, with clutch and kick-starter. For obvious reasons we are unable to recommend any one particular make of machine, but if after careful thought you care to submit your final choice to us, we shall be glad to tell you if it is suitable for your needs.

MOTOR CYCLE POLICE. To facilitate their work in the outlying districts of Calcutta, the police authorities have formed a motor cycle squad. The British trade should note that American machines were selected.

TUNING AND A PERSISTENT KNOCK.

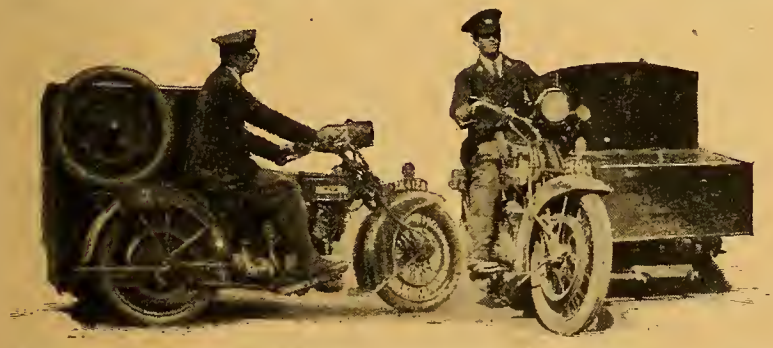
(1) What is the correct valve timing for a 1913 hub-geared Triumph? (2) The correct ignition timing? (3) What makes my engine knock? It has been rebushed and new big-end and small-end fitted, but it knocks when accelerated.—J. McL.

(1) and (2) Time the exhaust valve to close as the piston reaches t.d.c. and the inlet valve to open immediately afterwards. Set the spark control at two-thirds retard, the piston on top dead centre, and couple up the magneto with the points just separating. (3) Possibly your engine requires decarbonising. Provided there is no perceptible play in the bearings, the trouble is due either to carbon deposit, worn piston, or ignition too far advanced.

A TWO-STROKE RATTLE.

Peculiar rattle becomes apparent after running my two-stroke for a considerable time or on ascending a slight incline (this latter will bring it on a few minutes after the engine has started from cold). This is a rattle as distinct from a knock caused by ignition or faulty bearings, and will continue for some time after the throttle is closed and the engine turning over without firing. It also seems to me to occur on each stroke of the piston, and not merely every revolution of the engine, and sounds as if the gudgeon pin had come loose and was catching in the inlet port each stroke. The engine, however, appears to be in perfect order, and the rattle does not appear to affect the power at all, although it gradually becomes louder and louder until almost like a hammer. What would happen if it was allowed to continue *ad lib.* I do not know, but it gradually disappears if the engine is allowed to continue very gently. Speed seems to have no particular influence on its appearance or disappearance. Can you suggest a remedy? Sparking plug in use is a special two-stroke model.—H.K.S.

The rattle you mention is peculiar, for although there is a form of rattle common to some two-stroke engines, it is usually affected by speed to a very great degree; moreover, it does not wear off with further running. On the whole we should be inclined to think that the piston is too slack a fit in the cylinder, causing a definite slap until the engine warms up, when the increased temperature takes up the piston clearance to some degree. We should advise you to return the cylinder to the manufacturers, so that they may check the clearances and see if the dimensions of your piston are as standard.



HITCHIN POSTAL AUTHORITIES INNOVATION. A B.S.A. side carrier of ample capacity used for parcel delivery. The experiment has proved a success, saving both time and labour.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"H. N." (Croydon).—Volex dry batteries for solo lighting; W.S.R. variable jet on A.M.A.C. carburetter.

"C. S. B." (Reading).—W.S.R. jet on B. and B. carburetter (fitted with pilot jet) on a 490 c.c. Norton.

"J. S. B." (Walsall).—398 c.c. A.B.C.; 481 c.c. Scott Squirrel: speed, m.p.g., hill-climbing capability. A.B.C. spring frame.

"C. D." (Repton). 492 c.c. Sunbeam "sports" model; speed, m.p.g.

"C.F.A." (Edgbaston). — 490 c.c. Norton (16H); 349 c.c. A.J.S. "Sports."

"A.S" (Whitwell).—499 c.c. Sunbeam solo and with sidecar: m.p.g.; touring speed.

G. G. (Stourbridge). — Self-sealing tubes: durability and efficiency.

J. B. P. (Sway).—500 c.c. or 678 c.c. N.U.T. solo: comfort, speed, m.p.g., etc.

A. C. G. (Hammersmith).—225 c.c. Royal Enfield, K/G model: petrol consumption, efficiency.

"F.R." (Huddersfield). — Carden 2-seater.

SPARKLETS.

Oil-Cooled Engines.

As oil-cooled engines are being discussed to a considerable extent at the present time attention is drawn to the fact that the Bradshaw types of oil-cooled engine are protected by British patent, and also by patents and pending patents abroad. It is stated that the American patent issued on June 27th last contains remarkably broad claims.

Assistance for Tourists.

Motor cyclists in the Peak district will be glad to learn that Mr. E. F. Hurt, proprietor of the Darley Bridge garage, stocks spares for most of the leading makes of motor cycles. In addition to this, and on account of the difficulties sometimes experienced in this district when a breakdown occurs, arrangements can be made for assistance to be sent at the charge of 1½d. per mile, or in case where breakdown necessitates the machine being taken to the garage a fee of 2d. per mile will be charged.

Removing Tar.

Autoglass is the name adopted for a new preparation which not only removes tar, but produces a mirror-like surface on frames of motor cycles; it also rejuvenated a dulled coach-built sidecar. We received a sample of this preparation, which is cream-like in its substance, from the Midland Pharmacal Co., Market Street, Coventry. It is put up in handy tins in three sizes, 2s. 6d., 4s. 6d., and 8s. 6d. Apart from the uses of Autoglass already mentioned above, it is claimed to renovate and preserve leather.

Magneto Successes.

The Sunbeam ridden by A. Bennett in the 500 c.c. class of the recent French Grand Prix was fitted with an M-L magneto, adding a further success to the already large list credited to this make of ignition apparatus.

Found on the Road.

A motor cycle silencer outside the High Barnet Engineering Works, 45, High Street, Barnet, on the 16th inst., by Mr. A. J. Drake, of this address. The silencer will be returned on application to him.

A Miniature Automatic Pulley.

For the very smallest of fixed gear belt-driven machines of the motor-assisted bicycle type a miniature edition of the Philipson automatic governor pulley has been evolved by Philipson & Co., Ltd., Astley Bridge, Bolton.

Distribution in Northern Counties.

Mr. S. W. Phillpott, of 1, Oakdale Road, Mossley Hill, Liverpool, has undertaken the distribution of Excelsior motor cycles and Bayliss-Thomas light cars for the counties of Cumberland, Westmorland, Lancashire, Staffordshire, Cheshire, Derbyshire, Nottinghamshire, and the Isle of Man.

Price Reductions.

The following reductions in the prices of Sheffield Henderson motor cycles, manufactured by Henderson Motors, Ltd., 73, Fitzwilliam Street, Sheffield, are announced:—349 c.c. standard touring model, £80; 349 c.c. "sports," £80; 349 c.c. o.h.v. type, £105; 550 c.c. touring model, £105; 349 c.c. standard touring sidecar machine, £97 10s. These prices took effect as from July 17th, 1922.

Plugs on the Grand Prix.

Both the winner and the second man in the Grand Prix motor cycle race used K.L.G. plugs.

Tyres in the French Grand Prix.

Machines gaining chief places (1st and 2nd in the 500 c.c. class, and 1st, 2nd and 3rd in the 250 c.c. class) were all fitted with Dunlop tyres. The fastest lap was put up on a Norton machine similarly equipped.

Business to Continue.

The representatives of the late Mr. P. J. Evans, who was unfortunately killed in an aeroplane accident on the 16th inst., state that the motor cycle agency business will be carried on as usual at 81/91, John Bright Street, Birmingham.

Catalogues Received.

J. Barbour and Sons, Ltd., South Shields: A catalogue of various articles of clothing, including the Beacon oil-skin suit for motor cyclists.

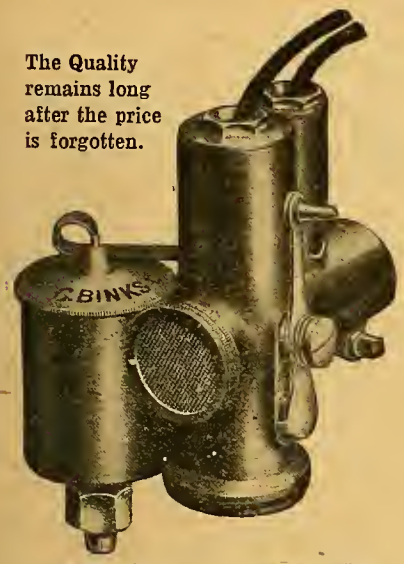
Reginald Samson, Ladywood Road, Birmingham: Catalogue of various motor cycle accessories, dealing with an excellent spare tube carrier, a repair outfit in a leather pouch, and numerous other accessories.

New Imperial Cycles, Ltd., Princip Street, Birmingham: A useful illustrated list of spare parts, in which all items are numbered and priced.

Jackson's Impervo, Ltd., 48, Dover Street, W.1: An illustrated booklet and guide describing the results obtained by treating tyres with the "Impervo" preparation.

After the Grand Prix at Strasbourg. Some well-known motor cyclists responding to "The Motor Cycle" photographer's "smile please." Left to right—T. Clibbery, the Amac representative; T. C. de la Hay, a Sunbeam T.T. winner; and A. Bennett, whose win on a Sunbeam completed his hat trick in big events. F. Buckley, of Dunlop tyres; H. Hassall, the Norton rider, who established a record for the Strasbourg course and beat it. Mrs. Hassall, J. W. Shaw and G. W. Walker, two other Norton riders of note, and the well-known Mr. J. L. Norton, with one of his assistants.

The Quality remains long after the price is forgotten.



The Patent 3-jet damping arrangement allows the carburettor to be controlled by a single lever. Yet an air valve is fitted for coasting down hill.

BINKS' CARBURETTORS

ARE A SOUND INVESTMENT.

REVISED PRICES:

FAMOUS TOURING MODEL - £4

New Model for light-weight two-strokes, without air valve - £3

Plus 2/- packing and postage.

IMMEDIATE DELIVERY.

Each instrument is sold on approval under a guarantee that has stood for 12 years, viz:—

To Give PERFECT AUTOMATIC FLEXIBILITY.
MARVELLOUS SLOW RUNNING IN TRAFFIC.
CERTAIN AND POWERFUL ACCELERATION.
GREATER SPEED.

IT IS THE MOST ECONOMICAL CARBURETTOR MADE

AND CANNOT FAIL TO INCREASE YOUR MILEAGE PER GALLON BY ANYTHING FROM 10 TO 50 PER CENT. (SOMETIMES MORE).

BEFORE TAKING YOUR HOLIDAYS, FIT A BINKS'

Mr. C. L. BINKS.

to your machine. It is easily done by yourself or your Agent in an hour.

Experience and Prove its Merits

whilst on tour, knowing that if you are not completely satisfied you may return the carburettor to us and we will undertake to return your purchase money, less 7/6.

IT WILL PAY YOU TO DO SO, BECAUSE you will spend less on petrol and add to the pleasure of driving.

Mr. H. BINKS.

IMMEDIATE ATTENTION IS GIVEN TO ORDERS.

Please send for descriptive catalogue—prices and book on carburation free.
Carburettors to suit all machines. Carburettors fitted at our works.

Here is a selection amongst numerous testimonials:—

TRIUMPH. 27/4/22.

Gentlemen,

I have great pleasure in giving you my experience with the "Binks" carburettor. This is the third instrument of your make I have purchased. For easy starting, good petrol consumption and all round reliability, it cannot be beaten.

Funny thing, but a friend of mine who uses a well-known 4 h.p. countershaft machine cannot pass me on mine, although they are identical machines. The "Binks" carburettor gives that little extra burst of speed when occasion demands.

W. G.

MORGAN. 1/5/22.

Sirs,

I have no hesitation in stating that your promises are entirely justified in all particulars, as to easy starting, running and economy in petrol consumption. I can now make my Morgan do as I like; hitherto she seemed to do as she chose.

I venture to prophecy continued success for the "Binks" carburettor. F. L.

DOUGLAS.

Sturminster Newton.

Gentlemen,

Now with regard to the carburettor which I recently purchased from you, let me say that I am perfectly satisfied with it.

When I had it fitted to my 4 h.p. Douglas, I was at first certainly sceptical, and somewhat suspicious of it fulfilling what your firm claimed for it to be capable of doing.

However, I persevered, and am now, as I have already stated, perfectly satisfied with what it has done. I have nearly doubled my m.p.g. from 35 to 65, which is not at all bad, and there is no doubt that the acceleration is great. I am very glad I bought it. W. W.

RUDGE. 28/6/22.

Dear Sirs,

The carburettor you sent me for my 3½ h.p. Rudge-Multi has proved a great success, and runs like a Twin. Starting is easy, and the engine takes hills on top gear now which it absolutely refused to do before. A Rudge-Multi fitted with a "Binks" carburettor is indeed a joy to ride and drive. F. B. L.

2¾ h.p. A.J.S. 15/6/22.

Dear Sirs,

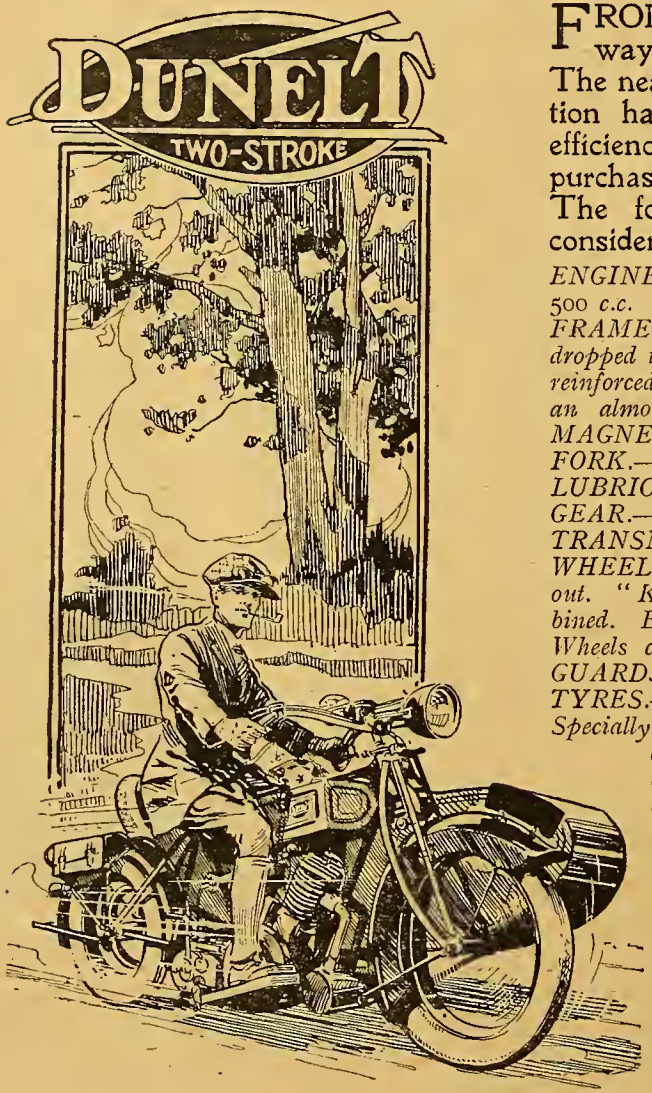
Please forward a set of your printed matter relating to Motor Cycle Carburettors. I want them for a friend owning a Scott combination. The carburettor that you fitted to my solo mount 2¾ h.p. A.J.S. at your works a few weeks ago is giving every satisfaction. The machine is now a pleasure to drive. The control levers also are a decent size, and work very sweetly.

J. B. C.

Use Binks' Sparking Plugs 3/6 each in tin box; they are reliable.

C. BINKS (1920) LTD., Phœnix Works, Eccles, MANCHESTER.

BANK ON A



FROM its inception the Dunelt has quickly forced its way into the forefront of public esteem.

The neat design, excellent comfort and sound construction have appealed strongly to those who require efficiency and economical running coupled with low purchase price.

The following points are worthy of your closest consideration:

ENGINE.—Patent 4 h.p. single-cylinder two-stroke, air-cooled 500 c.c.
FRAME.—Specially designed strong section loop frame, with straight dropped top tube, giving low saddle position. The lugs are heavily reinforced throughout where the maximum strain occurs, thus ensuring an almost unbreakable frame. Front and back stands fitted.
MAGNETO.—M.L. CARBURETTER.—A.M.A.C. SPRING FORK.—Laminated spring, specially designed.
LUBRICATION.—Slight drip feed to cylinder walls.
GEAR.—Sturmey-Archer three-speed and clutch.
TRANSMISSION.—$\frac{5}{8}$" roller chain to gear and 1" belt to back wheel.
WHEELS.—26"×2$\frac{1}{4}$", easily detachable and interchangeable throughout. "Knockout" spindles. Improved footboards and rest combined. BRAKES.—Front and rear brakes, operating on belt rims. Wheels can be removed without interfering with brakes. MUDGUARDS.—6" wide, giving protection in all weathers. D Section TYRES.—Hutchinson Heavy, 26"×2$\frac{1}{2}$". COMBINATION.—Specially designed Sidecar, allowing interchangeability of wheels complete with apron and spare wheel. FINISH.—All black and heavily enamelled: nuts, bolts and small fitting being treated with an Anti-Rust process.

Finally, on price the DUNELT scores above all others—it costs 108 GUINEAS, which makes it unquestionably the greatest value and QUALITY combination on the market. Why not come and examine these machines for yourself? Get the best at Allen-Bennett's and reap the benefit of "Real Service after Sales."
All models in stock of the "Matchless" and "Dunelt."

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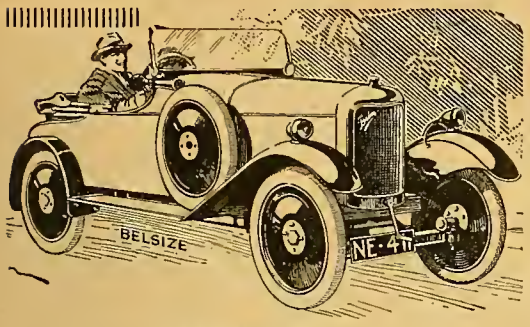
'Grams: "Track, Croydon."

ALLEN



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London to Edinburgh Reliability Trial,
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DO YOU KNOW

that the 9 h.p. Belsize-Bradshaw offers the finest value on the Light Car Market to-day ?

Designed by Mr. Granville Bradshaw, one of the leading motor-cycle designers, and manufactured by the Belsize Co., who have been making motor cars for 26 years, it has the "ginger" of a high-powered combination, with the comfort of a big car.

40 m.p.g. of petrol, 2,000 m.p.g. of oil. May we send you full particulars and arrange a demonstration run? Deferred payments arranged.

Standard 2-3 Seater Model.
9 h.p. £9 Tax.

£275

90° "V" Type, 85×121, 1370cc., complete with Hood, Screen, Spare Wheel, Dynamo Lighting, Tools, etc.

DELIVERY FROM STOCK OF ALL MODELS. NO WAITING.

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"Brooklands" HELMET

In fine selected skins. Neat fitting flap, opening or closed as desired, and can be neatly rolled. Buckle and strap chin fastening. Fleecy lined. Our price 5/6 Post 4d.

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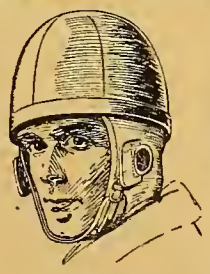
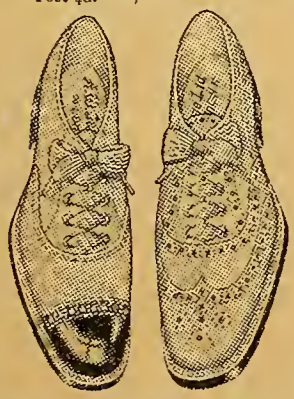
Successfully used at the T.T. Races, Isle of Man, 1914, 1920 and 1921. Price Complete 32/6





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Made in Finest Quality Black Glace Kid fully Chromed, soft and flexible. Smart PATENT TOE CAPS. Goodyear Welted. No socks to ruck up or hurt the most sensitive feet.

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Post Free.

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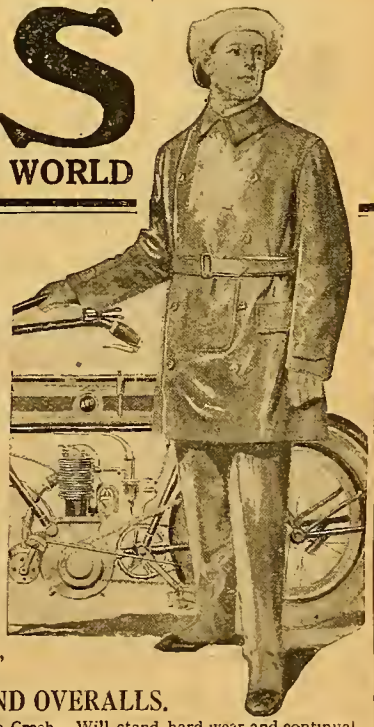
Consists of double breasted jacket with belt all round and leggings with gaiter front. Made in a strong durable double texture waterproof cloth, all seams sewn and taped, and every suit is guaranteed waterproof and perfect fitting Jacket and Leggings Post Free **37/6**

All sizes in stock. When ordering please give size round chest over waistcoat and length inside leg.



The "GAMAGE" DUST COAT AND OVERALLS.

Made in strong durable Crash. Will stand hard wear and continual washings. No Motor Cyclist should be without one of these suits, for they are ideal for Summer Touring. They protect fully from dust and keep one cool. The suit consists of easy fitting jacket, without belt, and overalls with gaiter front. Price complete, post free **25/-**

GAMAGES, HOLBORN, LONDON, E.C.1.

SILICO ENAMEL CO., STRATFORD, LONDON.

3/-

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CLUB COLOURED ENAMEL.

Dries in 24 hours. Does not crack or chip.

Motor Cycle size Tins	1/9
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Made in: Royal Mail Red. Black. Elswick Green. White. Emerald Green. Cream. French Grey. Brown. Light Blue. Lavender. Dark Blue. Primrose.

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THE TAPLEY GRADIENT METER

MOTOR CYCLE TYPE.

The only instrument that measures the gradient as you go.

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Vertical Face—Brass	.. ..	73/6
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9 events only entered during 1921 and were awarded
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Only one machine entered in each event.

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No More Punctures!

OWING TO DIFFICULTIES WITH THE WORKS, DELIVERY OF TUBE PROTECTORS WILL BE DELAYED UNTIL FURTHER NOTICE.

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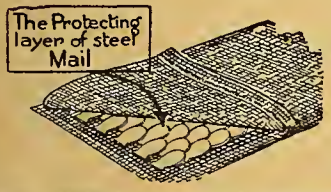

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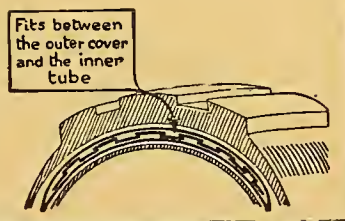
PROTECTORS for MOTOR CYCLES, 17/11 each.



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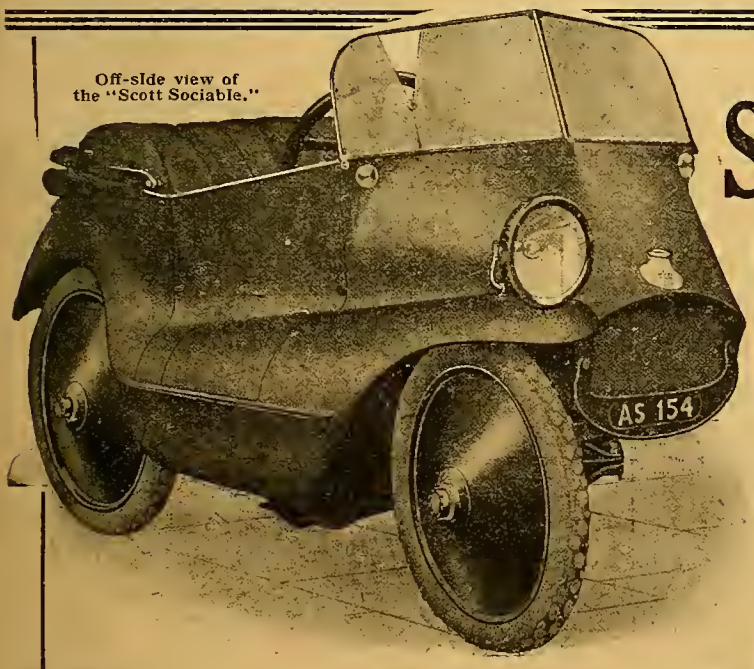

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SCOTT SOCIABLE *for* SPEED & SAFETY.

Mr. H. Mortimer Batten, writing in "The Motor Cycle" of June 22nd (page 832), *says* :—

"As regards maximum speed, the machine will accelerate to over 40 m.p.h. on any good high road. The efficiency for the engine size is marvellous, for it must be borne in mind that the capacity is approximately the same as that of the ordinary 4 h.p. single."

BRIEF SPECIFICATION:

ENGINE: 5-6 h.p. Scott Two-stroke, two cylinder, water-cooled, roller bearings.
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CLUTCH: Metal frictional contact, combined cone and expanding ring.
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WHEELS: Disc, detachable, all interchangeable.
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TAX £4. **FUEL:** 70 m.p.g.

Price complete, £215

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You are certain to require Replacements for the Bowden Brake and Control Fitments on your Machine—now, or later.

Then, the "Bowden Motorcycle Replacement Parts" List No. 146, will prove invaluable. It gives illustrations, prices, and distinguishing numbers of all

BOWDEN MOTORCYCLE REPLACEMENT PARTS

for Bowden mechanism, completely-fitted handlebars, etc., and will gladly be sent post free on request

A Special Department facilitates their quick supply, also the prompt repair and renewal of all Bowden Fitments. Let us know your requirements—NOW

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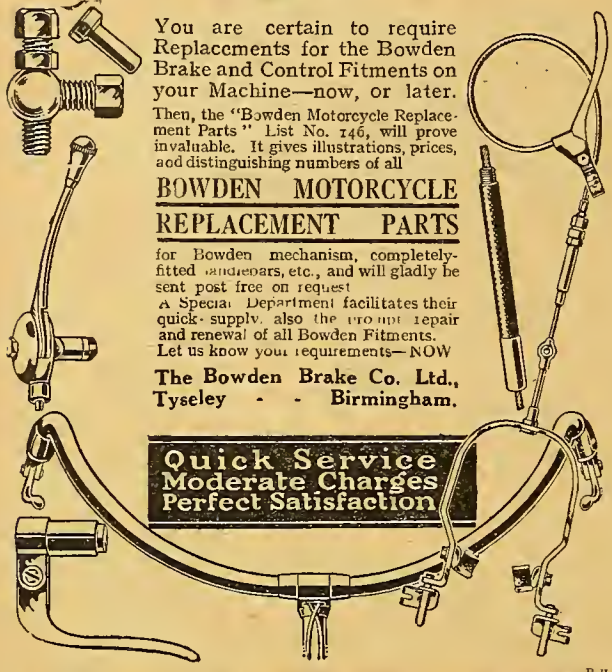

Quick Service Moderate Charges Perfect Satisfaction

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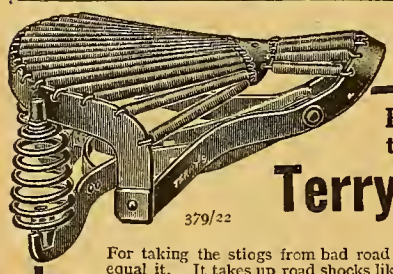

379/22

For speeding or touring it's "A1."

Terry's Spring Seat Saddle

(Patents pending)

For taking the stiogs from bad road riding there is nothing to equal it. It takes up road shocks like a sponge takes up water. Ask your agent to order one for you. If it does not suit—your money back.

Heavy weight, **63/-** Light weights, **57/6** each.

Give rider's weight and name and year of machine.

Herbert Terry & Sons, Ltd., Redditch, *Established* 1855. Eng.

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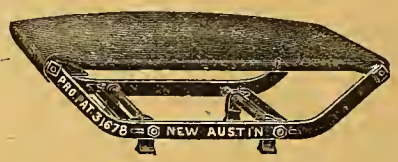
The "NEW AUSTIN" PILLION SEAT

LOW SADDLE POSITION.

Latest Method of Springing. No Side Rocking whatever. Light, Neat and Comfortable. Finished in Solid Saddle Leather. Weighs only 6 pounds.



Seat - - - - 26/6 each
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Old Pattern "Austin" Seat.

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Fitted with Sliding Clips, will suit all makes of Motor Cycles.

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12×	8 ..	8 4 ..	6 0	17	5	0
14×	8 ..	8 7 ..	6 3	21	0	0
16×	9 ..	8 9 ..	6 4	26	0	0
18×	9 ..	8 9 ..	6 4	31	0	0
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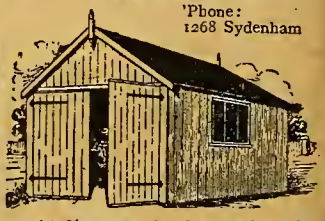

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Cuts down Petrol costs 25%

Fam=O is a wonderful invention which is going to be of great service to the whole motoring community. Its use saves at least 25% of the cost of Petrol, and already there are well authenticated cases investigated by us, where a fuel economy of 50% has resulted. The first 8=oz. can of Fam=O clears the engine of all carbon deposit, and the regular use of Fam=O, in the proportion of 1=oz. to every 5 gallons, prevents further carbonisation and improves the flexibility and general running of the car.

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AGENTS WANTED EVERYWHERE.

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After all has been said and done, the

REAL TEST

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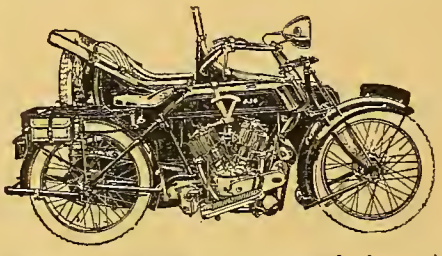
As Sole London Agents and largest suppliers of the A.J.S. range of motor cycles—we extend to you a hearty invitation to call and inspect them at our spacious South Kensington Showrooms or write for catalogue and full particulars. We can supply all good makes of motor cycles for Cash or on Easy Payment terms spreading over 12, 15 or 18 months at slight additional cost.



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Including free delivery in the British Isles.

7 h.p. Comb.	–	£175
(With detachable and interchangeable wheel)		
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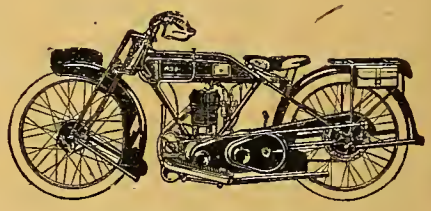
Also Sole London and District Agents for Excelsior and Dunelt Motor Cycles.



Write or phone for proposal form if unable to call, stating make of machine that interests you.

H. TAYLOR & CO., Ltd., 52-53, Sussex Place, Sth. Kensington. (*For Cars and Motor Cycles.*)
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A limited quantity of this wonderful boot for disposal to the readers of "The Motor Cycle" at

30% Less than any previously quoted prices

Every boot is brand new, Absolutely Waterproof, and easy to slip on and off. Far more serviceable than similar articles of vastly inferior materials sold elsewhere at equal prices

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TRENCH BOOTS.

Our Price - 25/-

Postage and Packing, 1/6. **In Brown or Black.** All sizes. Guaranteed to be made of the finest Government Leather. Sizes from 4 to 12. Smaller sizes suitable for ladies. These boots reach to the knee, and have full length tongues and side buckles, which effectively prevent any water penetrating through the lace holes or over the tops of the boots. The uppers are strong and stout, and yet extremely soft and pliable. **The SMARTEST and MOST COMFORTABLE Trench Boot procurable.**

BRITISH ARMY BOOTS 17/6

OFFICERS' BLACK or BROWN BOOTS 27/6

Send Postal Order or Cheque, and state size required.

LONDON ARMY BOOT CO.,
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(Adjoining Bishopsgate Street Police Station.)

A Special Line in Motor Cycling Suits.

We have no hesitation in claiming that our "Draperstyle" Motor Cycling Suits have no rival at the price. Satisfaction guaranteed or money refunded in full.

C 60.—Motor Cycling Suits, made from stout dark fawn material dustproof and rainproof, double-breasted Jacket, sleeves with storm straps at wrist. Slash pockets. The Leggings have special gussetted sides and straps to go under boot.

"All British" Factory Price. **23/6** Carriage Paid to your Door
The Suit Complete.

Stocked in sizes (Breast over Jacket)
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C 80.—Motor Cycling Suit, comprising Man's full-cut double-breasted coat; double texture material storm collar, stormproof tab cuffs to tighten up when driving, thoroughly proof, rubber-proofed insulated edges. Seams sewn and taped. Detachable belt with slide buckles. Leggings of same double texture material spat front shaped—understrap for instep—tab tan shaped gussett outside, patent clip fasteners at side. The gussett prevents either wind or rain from penetrating. Light in weight, thoroughly wind- and weather-proof, tailor-made, nothing on the market to equal it. THE PROOFING IS GUARANTEED. Price 32/6.

Sizes.							
Chest	36	38	40	42	44 ins.		
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Suit complete, 32/6. If required with seatless trousers, 3/6 extra.
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MOTOR CYCLES FOR SALE.

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ARIEL late 1920 3½h.p., 3-speed, equipped, taxed; 82 gns., photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2725

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ARIEL 3½h.p. Combination, 1920, 3-speed, clutch, kick-start, decompressor, windscreen, lamps, guaranteed like new; £80.—39, Anglesea Rd., Ipswich. [2999

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ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0804

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ARNO 4h.p., Tan-sad, speedometer, good condition, fast; £22.—Macklin, 19, Boundary Rd., Wood Green. [2701

Atlas.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Atlas; unequalled service, repairs, etc. [3563

SOUTHPORT.—1922 Atlas lightweight, like brand new; 26 gns.; exchanges.—Kents, 417, Lord St., Southport. [3001

Bat.

5-6h.p. Bat-Jap, sidecar, in good running order; cheap.—Mayhew, Pettaugh, Suffolk. [2380

6h.p. Bat-Jap, N.S.U. gear, Binks (94 m.p.g.), lamps, horn; £22.—33, Springdale Rd., N.16. [2919

SPORTING Bat-Jap 5-6h.p., very fast, perfect, single gear; £50, or nearest.—Smith, 14, Wyndham St., Brighton. [2398

1920 6h.p. Bat-Jap Combination, splendid condition, complete; £90, or nearest.—Box 2717, c/o *The Motor Cycle.* [3483

BAT-J.A.P. 6h.p. Sports Model, 2-speed, perfect condition; ride away; £45, no offers.—Mosely, Ivanhoe Rd., Westgate. (P) [2472

1921 Bat Combination, new condition, mileage 1,000, electric lighting; £125, or part exchange lightweight.—Cook, Jeweller, Newark. [1309

1921 6h.p. Bat-Jap, as new, 3-speed, spring frame, mileage 1,000, fully equipped, tax paid and insured; owner going abroad; £90, or nearest.—Seen 64B, Heath St., Hampstead. [2509

1921 8h.p. Bat-Jap Combination, electric lighting, Cowey speedometer, detachable and spare wheels, Easting, tax paid; £125; would consider lighter machine part.—7, Norwood Rd., Herne Hill, S.E.24. [1437

Beardmore.

BEARDMORE-PRECISION.—1922 models for immediate delivery. Cash, exchange, or deferred payments.—Kays, 8, Bond St., Ealing. [4833

1921 Beardmore-Precision, 2-speed, kick-starter, spring frame, equipped, taxed, photograph; 47 gns.—284, South Lambeth Rd., S.W.8. [3560

1921 Beardmore-Precision, 3½h.p., 2-speed, clutch, kick-start, spring frame, all on, tax paid, small mileage; first reasonable offer.—Tutt, 144, Rushey Green, S.E.6. [2858

Blackburne.

1920 3½b.p. 3-speed Blackburne, K.S. and clutch; £65.—Ross, 86, High Rd., Lee. [2626

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Deposit.		12 Instalments of	Cash Price
£20	**DIAMOND, 1921.** 2¾ h.p. J.A.P., 2-speed, K.S., clutch, Lucas accessories, tax paid, new condition	£3 2 9	£55
£25	**B.S.A., 1917.** 4½ h.p. and sidecar, 3-speed, equipped, tax paid	£4 0 8	£70
£15	**BRADBURY.** 3½ h.p., and C.B. sidecar, N.S.U., 2-speed, equipped, tax paid	£1 18 10	£35
£30	**HARLEY-DAVIDSON, 1920.** 7-9h.p., electrically equipped Combination, speedometer, screen, tax paid	£8 1 3	£120
£12	**NEW-HUDSON.** 3½ h.p., T.T. model, single speed, fast	£1 12 3	£30
£15	**HOBART, 1920.** 2½ h.p., 2-speed, fully equipped	£1 12 3	£33
£15	**HOBART, 1914.** 4 h.p., Twin C.B. sidecar, fully equipped, Easting, tax paid	£1 12 3	£33
£25	**SCOTT, 1919.** 3¾ h.p. model, fully equipped, very good condition	£3 11 8	£65
£25	**P. & M., 1920.** 3½ h.p., 2-speed, K.S., C. B. sidecar, fully equipped, Bluemel screen, tax paid	£4 9 7	£75
£20	**INDIAN, 1914.** 7-9 h.p. Combination, Milford sidecar, electric lighting, discs, tax paid, good condition	£4 0 8	£65
£15	**TRIUMPH.** 2½ h.p. Baby, fully equipped, tax paid, as new	£2 13 9	£45
£15	**RUDGE, 1919.** 3½ h.p. multi, equipped, tax paid, good condition	£2 13 9	£45
£25	**RUDGE, 1922.** Combination model, fully equipped, tax paid, unscratched	£4 6 0	£73

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Blackburne.

£70, bargain.—Blackburne 4h.p. late 1920 combination, all accessories, taxed, splendid condition.—143, Ravensbury Rd., Earlsfield, S.W.18. [3271

£65.—1920 Blackburne combination, 4h.p., 3 speeds, clutch, kick-starter, fully equipped, splendid condition; exchanges.—63, Solon Rd., Brixton. [3171

1922 8h.p. Blackburne Combination, lamps, horn, tools, small mileage, condition as new; £93. Seen by appointment.—King, 4, Willow Walk, Cambridge. [3499

Spare Parts:

BLACKBURNE.—All engine spares from stock; list on application.—Maudes', 100, Gt. Portland St., W.1. [3298

Bradbury.

£18.—4h.p. Bradbury, 2-speed, clutch, lamps, tax paid.—King, Egrove Farm, Oxford. [3019

3h.p. Bradbury, good running order, licensed; £13/10.—Chappell, Sketchley, Hinckley. [3011

4h.p. Bradbury Combination or Solo, excellent condition, any offer.—Call 246, Lordship Lane, Wood Green. [2702

4h.p. Bradbury Motor Cycle, discs, T.T. bars, copper exhaust; sell £25, or exchange anything.—E. Evans, 52, Vicarage Rd., Camberwell. [2782

BRADBURY Combination, powerful, 2 speeds, clutch, lamps, etc.; £30; excellent condition, used daily.—Girling, Newport, Shenley, Herts. [2928

BRADBURY 4h.p. Combination, 2-speed, countershaft, hand clutch, Binks, Cowey, spares, overhauled, any trial; £60.—34a, Fieldhouse Rd., Balham. [2705

1920 Bradbury 4h.p. (solo), 3-speed, good condition; best offer—To view and try, apply Eksap Motor Co., 14, Marylebone Mews, New Cavendish St., W.1. [2849

BRADBURY 6h.p., new 1921 model, 3 speeds chain drive, K.S., Millford-Rock latest chassisless sidecar; £115.—Eagles and Co., 275, High St., Acton, London, W. [3230

Brough.

BROUGH 1920 5-6h.p., with Mills-Fulford, lavishly equipped, recently overhauled; £75; photo stamp; owner buying car.—11, Rutland Park, Sheffield. [3015

BROUGH 1920, 5/6h.p., Model G combination, electric lighting, full equipment; £82/10.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone, Avenue 5548. [0065

BRAND New 1922 3½h.p. Overhead Valve Flat Twin Sports Model Brough, 3-speed chain drive, slightly shop-soiled; reduced to £90; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [2204

Brough Superior.

DO You Want a Machine—

THAT will pass everything on the road?

THAT will let everything pass you without changing down?

THAT can be driven by a child?

THAT takes a man to hold?

THAT always looks clean?

THAT never breaks down?

THEN its a Brough-Superior you want.

COME and chat with us and have a ride.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [3656

BROUGH SUPERIOR 8h.p., 1922; just one machine at the special price of £137/10 cash; approval anywhere.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [3337

MANCHESTER, Oldham, Bury, Stockport, Stalybridge, Rochdale, Huddersfield, etc., etc.—We are sole agents for Brough Superior.—Brough Superior Northern Services, 198, Manchester Rd., Oldham.

BROUGH SUPERIOR Northern Services.—As our name implies, we are Brough Superior specialists. All models in stock. Mark I., 90×77½ mm., o.h.v., £160; Mark I. side valve, £150; Mark I. sporting combination, with screen, step, mat, and apron, £180; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. sporting combination, £150. Demonstration runs by appointment. Catalogues post free on request. We are the Brough Superior representatives for whole of Lancashire and Yorkshire (exception Leeds and Sheffield), and greater part of Cheshire and North Stafford. Showrooms, 198, Manchester Rd., Oldham.

IS Yours Going to be a Brough Superior? If so, don't forget Brough Superior Northern Services. Let us give you a trial run. [0380

BROUGH SUPERIORS.—Order your new mount from us. We are the Brough experts. Specially tuned to order. Mark I., 8h.p., side valve, £150; sporting combination, with screen, step, mat, and apron, £180; Mark I., 90mm. bore o.h.v. £160; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. combination, £150. Special Service Agents; lists.—G. and J. Dawson, The Ideal Garage, Cambridge. 'Phone: 993. [0834

MOTOR CYCLES FOR SALE.

Brough Superior.

ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½ o.h.v., 3-speed, clutch, and kick starter, £160; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

Brown.

BROWN 3½h.p., low, fast, powerful, sporty, £22; also 2¾h.p., as new, £25; take pedal cycle part either.—57, Kenbury St., Camberwell, London. [2899

B.S.A.

1916 B.S.A. 4¼h.p., 3 speeds, K.S.; £30; tax paid.—Butler, Silver St., Tamworth. [2382

1921 B.S.A. 4¼h.p., chain drive, tax paid, insured, splendid condition; 79 gns., or offer.—49, Rosslyn Hill, Hampstead. [2591

4¼h.p. 1919-20 B.S.A. Combination, 3-speed, free engine and kick-start; £75.—Wauchope's, 9, Shoe Lane, London. [3400

1918 B.S.A. 4¼h.p. All-chain Combination, Dunhill sidecar, screen, hood, lamps, tax paid, insured; £68.—87, Gore Rd., Hackney. [3160

B.S.A. 1919 4¼h.p. Combination, splendid condition, fully equipped, tax paid; £78, or near offer.—Tippen, Marden, Kent. [2812

£40.—1920 T.T. B.S.A., never been used; snip.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [3471

1920 4¼h.p. B.S.A. Combination, Henderson sidecar, £65; ditto 1916 combination, £43.—24, Balliol Rd., North Kensington. [2950

B.S.A. Combination, countershaft model, lamps, horn, new tyres, like new; £95.—Bunting, 58, Eaton Park Rd., Palmer's Green. [3351

1920 4¼h.p. B.S.A., practically new, mileage 500, lamps, horn, licensed; £58.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [2908

1922 B.S.A., chain solo or combination, ridden 250 miles, new chain belt, bargains, customers buying cars.—Hussey, View St., Stafford. [2560

1920-21 B.S.A. 4¼h.p. Combination, perfect condition, tax paid; £70, or near offer.—Zouch, 11, Manor Park Rd., Harlesden, London. [2643

1913 3½h.p. B.S.A., clutch model, perfect condition, tax paid; £25.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [3658

1921 (late) 6-7h.p. B.S.A. Combination, perfect, Lucas lamps, licence paid December; £135; bought car.—Townsend, Wootton-Bassett. [2445

B.S.A. 4¼h.p., 1922 K.2, 3 speeds, clutch, K.S., brand new, slightly soiled; £97.—Eagles and Co., 275, High St., Acton, London, W. [3278

B.S.A. 3-speed combination, overhauled; sale, exchange with cash late Douglas combination.—Rudgwick Cottage, West Horsley, Leatherhead. [3049

B.S.A. 4¼h.p. Combination 1922, speedometer, electric horn and lamps, smart and well kept; £85.—Northwood Motor Works, Middlesex. [2787

B.S.A. 4½h.p. Combination, 1921, excellent running, tax paid, insured to February, 1923; £95, cash.—Mayers, 12, Meadway, Golders Green, N.W.11. [3570

55 GNS.—1919 B.S.A. Combination, 30536, F.R.S., Easting, leg shields, tax paid, spares, faultless.—Garage (opposite Fire Staton), Acton, London. [2751

6-7h.p. B.S.A. Combination, new July, 1921, spare wheel, grid, all accessories, mileage 3,000; £130.—Symonds, 16, Weymouth Mews, Portland Place, W.1. [3121

B.S.A. 1921 4½h.p. Combination, all chain, done 500 miles, Easting, aluminium legshields, like new, Newry district; £130 cash.—Box 2699, c/o *The Motor Cycle.* [2712

1921 B.S.A. Combination de luxe, chain cam belt, magneto, dynamo set, Binks carburetter, spare tyre, as new, offers.—Cranbrook, St. Peter's Avenue, Kettering. [2697

B.S.A., 1920, 4¼h.p., 5,000 miles, Millford sidecar, electric lighting, speedometer, Easting, insurance tax paid; £95.—35, Wincanton Rd., Southfields, S.W. [2772

B.S.A. Coachbuilt Combination, 1920, all-chain drive, condition as new, fully equipped; £80, or exchange higher power.—Jarvis, 113, Camberwell Grove, Camberwell. [2766

B.S.A. 4¼h.p. countershaft combination, electric light, new Dunlop, extras, fully equipped, excellent condition throughout; £60, consider Harley exchange.—8, Craven Park, N.W.10. [2600

FOR PURCHASE BY CASH EXCHANGE OR DEFERRED PAYMENTS.

NEW 1922 MODELS.

ARIEL, 3½ h.p., Sports mode, 3 speeds and clutch	£87	10
ALLON, 2¾ h.p., 2 speeds, clutch and kick-starter	£60	0
B.S.A., 4½ h.p., Model K2	£107	0
DOUGLAS, 2¾ h.p., 2 speeds, all on	£68	0
DIAMOND, 2¾ h.p., Model F, 3 speeds, clutch and kick-starter	£65	2
HAWKER, 4½ h.p., Blackburne engine, 3 speeds, clutch and kick-starter, all-chain drive	£89	5
HAWKER, 4½ h.p., Model C Combination	£110	0
MATCHLESS, 8 h.p., Model H Combination	£170	0
MATCHLESS, 8 h.p., Model H Combination, magdyno lighting	£183	0
MATCHLESS, 8 h.p., Family Combination, Model H	£175	10
N.U.T., 3½ h.p., twin, Model M	£100	0
N.U.T., 5 h.p., Mode M, all-chain drive	£120	0
NEW IMPERIAL, 2¾ h.p., Model 3	£73	0
ROYAL ENFIELD, 2¼ h.p., 2 speeds	£55	0
ROYAL ENFIELD, 2¼ h.p., 2 speeds, clutch and kick-starter	£57	0
ROYAL ENFIELD, 8 h.p. Combination, magdyno lighting	£158	0
RALEIGH, 2¾ h.p., model, 2 speeds, clutch and kick-starter	£68	0
RUDGE-MULTI, 3½ h.p., I.O.M. Sporting model	£77	0
RUDGE-MULTI, 3½ h.p., I.O.M. Touring model	£77	0
ROVER, 4 h.p., 3 speeds, clutch and kick-starter, all-chain drive	£100	0
SIRRAH, 2¾ h.p., 2 speeds, Blackburne engine, clutch and kick-starter	£67	0
TRIUMPH, 4 h.p., Model S.D., all-chain drive	£115	0
TRIUMPH, 4 h.p., Model H, chain-cum-belt drive	£105	0
TRIUMPH, 2½ h.p., 2-stroke, 2 speeds	£65	0
ZENITH-BRADSHAW, 3½ h.p., Model A, Gradu gear	£113	0

The above is a selection only, we can supply promptly any model of any make.

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These are guaranteed mechanically perfect.

ROVER, 1919, 3½ h.p., 3 speeds, lamps, horn, Millford sidecar	£81	0
ARIEL, 1920, 3½ h.p. Combination, 3 speeds, tax paid	£80	0
F.N., 1920, 2¾ h.p., 2 speeds, clutch and kick-starter, shaft drive, lamps and horn	£35	0
CLYNO, 1916, 6 h.p. Combiantion, 3 speeds, detachable wheels	£90	0
JUNO, 1918, 2½ h.p., Villiers engine, tax paid	£29	0
DOUGLAS, 1920, 4 h.p. Combination, 3 speeds, lamps, horn, tax paid	£90	0
O.K., 1921, 2¼ h.p., Junior, lamps, horn, tax paid	£30	0
ARIEL, 1919, 3½ h.p., 3 speeds, lamps and horn and Millford sidecar	£70	0
MATCHLESS, 1921, 8 h.p., 2-seater combination, dynamo lighting, horn, spare wheel, screens, leg-shields, sidecar step, tax paid	£135	0
N.U.T., 1920, 3½ h.p., 3 speeds, dynamo lighting, Swan sporting sidecar, tax paid	£90	0
RUDGE-MULTI, 1920, 3½ h.p., I.O.M. model, lamps, horn, tax paid	£48	0

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MOTOR CYCLES FOR SALE.

B.S.A.

£68.—1920 B.S.A. 4¼h.p. Combination, fully equipped, hand clutch, splendid condition, reliable, in grand tune.—Allen, Carlton House, Broad St., Seaford, Sussex. 'Phone: 12. [179

B.S.A. 4¼h.p. Combination, 1915, 3-speed, clutch, K.S., speedometer, all on, perfect condition, tax paid; 75 gns., nearest offer, quick sale.—Hodgson, 97, Lower Richmond Rd., Putney. [133

EXCEPTIONAL Bargain.—B.S.A. 1922 4¼h.p. model H2, all-chain drive, new 1st July, tax paid, better than new, not done 50 miles; accept £85.—Wilkins Simpson, opposite Olympia, London. [345

B.S.A. 1921 6-7h.p. Combination, Easting screen, lamps, horn, tax paid; £121; cash or extended payments.—Taylor's, 52 and 53, Sussex Place, South Kensington. 'Phone: Kensington 7260. [258

£64.—B.S.A. 1919 4¼h.p., chain-cum-belt, B.S.A. canoelet sidecar, excellent mechanical condition, lamps, spares, tools, licensed.—15, Garden Av., Mitcham, near Southcroft Rd., Streatham. [316

B.S.A. 4¼h.p., 3-speed, all-chain, 42 gns.; B.S.A. 3½h.p., 2-speed, countershaft, 29 gns.; sidecar (coachbuilt) for either, 7 gns.; exchanges.—Peter Gordon Ltd., 110, Upper Richmond Rd., East Sheen. [272

B.S.A. Combination 4¼h.p., 1919, lovely condition coachbuilt Canoelet sidecar, Cameo screen and side curtain, tyres good, lamps, horn, etc.; £55.—James, c/o Bradmore's, 482, Harrow Rd., Paddington. [362

B.S.A. 3½h.p. Sporting Combination, 1921, 3-speed gear box, kick-start, handle-bar, clutch torpedo sidecar, Oowey speedometer, very fast, excellent condition; £69, or near offer.—128, Roundwood Rd., Willesden. [255

B.S.A. new 1922 4¼h.p. all-chain solo, £110; 4¼h.p. chain-cum-belt, £107; sidecars supplied to any model; your old machine taken in exchange and treated as payment down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [340

B.S.A.—All models in stock for immediate delivery, exchanges and extended payments with pleasure, 2½% extra for 12 months and 4% only for 18 months, good modern S.H. Triumpba taken in part payment at highest possible valuation.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [333

HOLIDAY Bargain.—1919 4¼h.p. B.S.A. combination, Canoelet D4 sidecar, lamp sets and horn, tax paid till December, tyres and general condition excellent, a sound outfit, ready for a 1,000 mile holiday tour, £65; also another 1919 model, with very nice Empire sidecar, fully equipped and tax paid, outfit as new, £75.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [258

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [766

B.S.A. Spares can be had by return, post free, from Jones Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [080

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all B.S.A. spare parts always in stock. Write for free spare part list, stating year of manufacture. [075

Calthorpe.

CALTHORPE-PRECISION 2¼h.p., 2-speed, perfect, taxed; £19.—34a, Fieldhouse Rd., Balham. [270

£27.—Calthorpe-Jap 2¾h.p. Enfield 2-speed, tyres good, engine equal to new.—406, Garratt Lane, Earlsfield, S.W. [352

1920 2¾h.p. 2-speed Calthorpe-Jap, tank repainted, mechanically perfect, lamps, and horn; £35.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [337

SOUTHPORT.—Calthorpe 2¼h.p., 4-stroke, 2-speed, just overhanled, good condition, accessories, tax, 19 gns.; exchanges.—Kents, 417, Lord St., Southport. [300

CALTHORPE 4h.p. 2-speed Coachbuilt Combination, fully eqnipped, spares, licence paid, splendid condition; £35 for quick sale.—The Palmerston House, Chelmsford Rd., Walthamstow. [280

2½h.p. Calthorpe Motor Cycles, new 1922 models, £36; or £7 down and 12 monthly payments of £2/9/6; balance paid in 18 months if required.—Wauchope's, 9, Shoe Lane, London, E.C.4. [340

Chater-Lea.

BARGAIN, 4h.p. Chater-Lea twin, licensed, any trial; £20, or offer.—59, Kitchener Rd., E. Finchley. [268

8h.p. Chater-Lea-Jap Combination, all on, any trial, bargain; £40. Write appointment.—Case, 285, High Rd., Kilborn. [274

CHATER-LEA 8h.p., special 2-seater sidecar, hood, Triplex screen, speedometer, taxed 1922, pistons, rods, bearings, chains, tyres new, many spares; any trial; £75.—163, Vauxhall Bridge Rd. Victoria 5577. [239

NEW Chater-Lea 2-speed Countershaft Gear Box, £4; Gradua gear complete, £3/15; new Fellows single magneto, 50/-; 26×2½in. Avon Sunstone cover, 30/-.—Murray's, 37A, Charles St., Hatton Garden, Holborn. [267

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 4h.p. Combination 1918, exceptionally good condition, fully equipped, tax paid, real bargain; £65.—88, Gloucester Place Mews, Portman Square, W.1. [2883

2¾h.p., 2-speed, W.D., reconditioned machine, unused, nearly all new parts, tyres, belts, etc., lamps, horn; 39 gns.—Edwards, 101, Gt. Portland St., W.1. [3640

£16.—2¾h.p. Douglas, Bosch, Amac (variable jet), Zephyr pistons, special tank, tax paid, fast and reliable, a gift.—2, Downe Terrace, Richmond Hill (evenings). [3048

DOUGLAS Combination, in tip-top condition, 3 speeds, kick-start, Amac, Dunlops, fully equipped, tax paid; £63, or offer; photo.—Surridge, 17, Station Rd., Ilford. [3226

MOFFAT, Yeovil.—What we don't know about Douglas M.C.'s—nuf sed. New 1922 models, spares and repairs; exchanges. Agents since 1908. 'Phone: 50 [5724

DOUGLAS 4h.p., 1917, 3 speeds, clutch, kick-starter, renovated, £48; also 2¾h.p., 2 speeds, tax paid, £35.—Eagles and Co., 275, High St., Acton, London, W. [3277

2¾h.p. Douglas, 3-speed, 1914, magneto, cylinders, pistons, renewed 1921, lamps, spare belt, etc., perfect order; best offer over £25.—Satow, H.M.S. K6, Chatham. [2688

DOUGLAS 1922 Models: 2¾h.p. £68, 4h.p. solo £110, 4h.p. combination £135; prices include all accessories; delivery from stock.—Rivett, 236, High Rd., Leytonstone. [2680

2¾h.p. 1921 2-speed Douglas, all on, £60, solo; also 3½h.p. 1914 Douglas combination, 2-speed, £35; cash or easy tems.—Wauchope's, 9, Shoe Lane, Fleet St., London. [3404

GENUINE Bargain.—4h.p. Douglas, 2 speeds, fully equipped, just cost £30 renovating as new, perfect condition throughout; £50, carriage paid.—Dosser, Slingsby, Yorks. [2912

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful to you. The pioneer agent for Douglas motors.—196, Cheltenham Rd., Bristol. [0016

4h.p. Douglas Combination, excellent condition, lamps, etc.; bargain, £52/10; lightweight part exchange.—40, Linhope St., Upper Park Place, Baker St., N.W.1. Padd. 2854. [3165

DOUGLAS 1919 4h.p. Combination, beautiful order, 62 gns.; also another, 1919 4h.p. solo, 52 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2727

DOUGLAS, 2¾h.p., 1915, Binks, T.B., Dunlops, Miller 32H, Klaxon, Tan-Sad, recently overhauled and painted, perfect condition; £45.—Webb, 39, High St., Walthamstow. [2770

1919 4h.p. Douglas Combination, locker back sidecar, equipped, tax paid, condition and appearance guaranteed; £70; only wants seeing.—7, The Ravenscroft, Scrubbs Lane, Willesden. [2567

£27/10.—Douglas 2¾h.p., 2-speed, Amac Carburetter, tank in makers colours, good order, ready for use, few extra special; £30; carriage extra. —59, High St., Clapham, S.W.4. [2330

DOUGLAS Combination, 1919, electric light, speedometer, luggage grid, tax paid, etc., recently overhauled; £70. 1, Great Titchfield St., Oxford Circus, W.1. 'Phone: Mus. 6823. [2752

1920 Douglas 4h.p. Combination, Lucas dynamo lighting, speedometer, horn, tools, Ace disc wheels, luggage carrier; £86. Seen by appointment.—King, 4, Willow Walk, Cambridge. [3498

EXCEPTIONAL Bargain.—Douglas 1922. 2-speed, all-on, lamps, horn, licence holder, etc., tax paid, not done 30 miles, new 1st July; accept £58.—Wilkins, Simpson, opposite Olympia, London. [3452

1918 4h.p. Douglas Combination, Douglas screen, tax December, recently overhauled, costing about £20, offers; also Clyno-Enfield combinations.—Parkfield Garage, Perry Vale, Forest Hill. [1510

DOUGLAS, 2¾h.p., 1916, uncrated 1920, splendid condition, lamps, horn, tools, spare tube, belt, chain, valves; £33. After 6.—42, Eardley Crescent, Earl's Court. Kensington 881. (P) [2767

£45.—Douglas Combination 1918 (4h.p.), 1918 model (all on), new Dunlops throughout, excellent condition, 3-speed, clutch, kick-start, genuine bargain; no offers.—Edginton, 19, Lewis Grove, Lewisham. [2797

DOUGLAS Combination, 1920, 4h.p., condition excellent, screen, lamps, luggage carrier, spare belt, tax and insurance paid; £90; bargain; owner going abroad.—Payn, Shamrock House, Lymington, Hants. [3061

DOUGLAS new 2¾h.p. 1922, 2-speed models, fully equipped, £68; 2¾h.p., 3-speed, clutch and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £115; 6h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. [3405

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1922 3½	h.p. **ZENITH-BRADSHAW**	£119

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1916 Douglas Combination, overhaul costing £45 includes engine, gears, magneto, all new wheels, 2 new tyres, new coachbuilt body, 3 lamps, speedometer, Klaxon; bargain, £60.—92, Stapleton Hall Rd., N.4. [2820

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FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill. [0786

£55.—Late 1920 2¾h.p. 3-speed Douglas, cost £100, will literally climb mountains and freak hills, completely equipped, tax paid; having car, only occasionally used, tyres, enamel, etc., almost equal new, deliver free 100 miles.—Graff, Hayes, Kent. 'Phone: Bromley 532. [2571

KICKHAM, Stokes Croft, Bristol, the Douglas Agent with real experience and knowledge of a Douglas. Successes during 1920 on this mount: 38 firsts, 17 seconds, and 8 thirds, also 6 special trophies. Let me deal with your order. Unequalled service, repairs, etc. [3557

DOUGLAS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607 [7328

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DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7665

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [6077

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FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock, genuine guaranteed Douglas spare parts; prompt attention, immediate dispatch lowest cash prices. [4657

Dunelt.

BRAND New Dunelt Combination, with spare wheel, shop-soiled only; reduced from 108 gns. to £95.—Dan Bradbury, 224, London Rd., Sheffield. [2435

1921 Dunelt 3½h.p., 2-stroke, new tyres, M-L dynamo lighting, all accessories, tax paid, only wants seeing; £60.—3, Norwood Rd., Herne Hill, S.E.24. [1439

Duzmo.

NEW 3½h.p. o.h.v. Duzmo Sports, single speed, list £80, slightly soiled, £75, or offers; another with 2-speed gear, all-chain drive, specially tuned, winner of hill-climbs, guaranteed as new, done 50 miles, list £115, accept £100, or offers; both machines are exceptionally fast, will do 70 in the hands of a good rider; stamp for particulars; exchanges considered.—Stanworth Motors, Higham, Burnley. [3385

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£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks; for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

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£34.—Economic, variable gear model, finest value; call and inspect.—Pinn's Garage, 12, High St., Fulham. [8296

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EDMUND Spring Frame, Blackburne or Barr and Stroud engines.—Gourlay's, Fallowfield. [7670

Enfield.

TWIN Enfield, 2¾h.p.; £20, bargain.—25, Oxford Rd., Stroud Green, N.4. [2478

ENFIELD 2¼h.p., 1920, accessories, like new; £35—58, Thrale Rd., Streatham. [2855

ENFIELD, 2-speed, 1920, taxed, perfect; £36.—Parry, 15, High St., Battersea. [2704

1921 Enfield 2¼h.p., 2-speed, not done 300 miles; £40.—Coulson, Birstall, near Leeds. [2653

NEW Enfield Combinations in stock.—Bounds' Garage, 223, High Rd., Kilburn, N.W. [3238

SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD 2¾h.p., twin-cylinder, excellent condition, trial; £15.— 17, Heaton Rd., Mitcham. [3118

ENFIELD 1921, 2-stroke, equipped, licensed, as new; £38.—Mylam, 197, London Rd., Croydon. [3203A

1921 Enfield, 2-stroke, K.S., Lucas lamps, etc.; £45.—134, Meanley Rd., Manor Park, E.12. [2757

NEW Enfield lightweight sports model in stock.—Bounds Garage, 223, High Rd., Kilburn, N.W. [3240

ENFIELD 1921, 8h.p. combination, Lucas dynamo lighting, complete with spares, as new; £118.—Below.

ENFIELD 1920, 6h.p., dynamo lighting, hood, all accessories; £105.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

ENFIELD 3h.p. Twin, 2-speed, fine condition; £28/10.—Houchin, 188, High St., Peckham, S.E.5. [3642

29 GNS.—1920 Enfield lightweight, fully equipped and taxed, snip.—284, South Lambeth Rd., S.W.8. [3562

ROYAL ENFIELD 2¼h.p., 2 speeds, kick starter, £57.—Shepherd, Enfield Highway Tel.: Waltham Cross 31 [0879

1921 8h.p. Enfield Combination, many extras, cost £175, as new; accept £110.—3, Parker Lane, Burnley. [3624

£60.—Enfield Combination, 1917, mechanically perfect, all on, any trial.—26, Trafalgar Sq., Chelsea, S.W.3. [2516

1921 Enfield Lightweight, licensed December, 1922, horn, very smart; £35.—Bunting's Motor Exchange, Wealdstone. [3331

ENFIELD 3h.p., 1917, 2-speed, K.S., mechanical lubricating, lamps, horn; £30.—P. Willcocks, Datchet, Bucks. [3038

£32.—Enfield, 2-stroke, 2-speed, like new, fully equipped, tax paid, or exchange.—406, Garratt Lane, Earlsfield, S.W. [3523

ENFIELD Lightweight, 1921, 2-speed, K.S., all accessories, perfect; nearest £40.—97, Rosebery Rd., Muswell Hill, N.10. [2703

DAN GUY, Weymouth.—Enfield 1921 8h.p., Magdyno, double-seated sidecar, hood and screen guaranteed perfect; £125 [0819

£33.—1921 2-speed Enfield, perfect condition.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.1. Park 2071. [3473

1917 6h.p. Enfield Combination, in really excellent condition, lamps, horn, tax paid; £65.—Whitstock and Lingley, Woodbridge. [3093

1919 Enfield 3h.p. twin, speedometer, lamps, 2-speed, mechanical lubrication, fast; £37.—Goode, 68, High St., King's Lynn. [2917

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175a, London Rd., Croydon. 'Phone: 1619. [6299

29 GNS.—1916 Enfield, 3h.p., twin, 2-speed, clutch, K.S., equipped, licensed, splendid condition; trial.—68, Rattray Rd., Effra Rd., Brixton. [2847

£29.—Enfield Twin 3h.p. 1912, 2-speed, all-chain drive, fully equipped, will take sidecar, any trial.—406, Garratt Lane, Earlsfield, S.W. [3524

ENFIELD.—Complete range of 1922 models for immediate delivery; cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [2721

8h.p. Enfield-Jap 1918, Colonial pattern, tip-top order, nearly new tyres, usual accessories, speedometer; £90, or close offer.—37, Bonfield Rd., Lewisham. [2800

ENFIELD 1922 8h.p. Combination, never ridden, slightly shop-soiled; £120. Deferred payments arranged.—Motoria, Regent Parade, North Finchley. [2824

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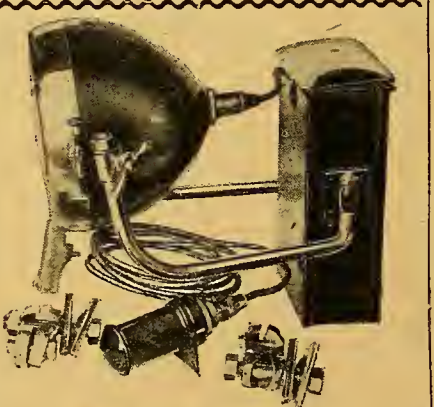

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Enfield.

ENFIELD-J.A.P., 1921, lamps, horn, tax paid, only wants seeing; 92 gns.; wanted, Matchless body.—67, Flaxman Rd., Camberwell, S.E.5. [2768

8h.p. Royal Enfield Combination, 1922, dynamo lighting; £137/10; cash or easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [3406

8h.p. Royal Enfield Combination, Lucas Magdyno, and horn, 1922 model; £158. Deferred terms.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3 [3379

3h.p. Enfield, believed 1918-1919, in top-hole condition, lamps, horn, Tan-sad, speeds, kick-start; £44; original tyre on front.—Hough, 750, Holloway Rd., N. [2408

ENFIELD 6h.p. Combination, in splendid condition, lamps, spares, hood, etc.; £58 cash, or exchange lightweight and cash.—34A, The Hale, Tottenham, N. [2474

NEW 1922 8h.p. Enfield Combination, Magdyno lighting, windscreen; £161; easy payments 4% extra; exchanges.—Premier Motor Co., Aston Rd., Birmingham. [3590

£15.—Enfield Twin 3h.p., 2-speed, Bosch, B. and B., T.T. bars, new tyres, tax paid, excellent condition, ride away.—A. Taylor, Moat House, Berkswell, near Coventry. [3211

£48.—Enfield 2-stroke, 2-speed, 1921, new this year, mileage only 300, all accessories, tax paid; any trial.—Langford's, 37, Broadway, Cricklewood, N.W.2. Hampstead 8616. [3600

ENFIELD 3h.p. twin, late 1915, 2-speed, perfect condition, just completely overhauled, tyres excellent, all on, tax paid; £35; after 6.30.—10, Palace Rd., Streatham Hill. [3175

ENFIELD 8h.p. J.A.P. 2-seater sidecar, Tan-sad, lamps, Klaxon, speedometer, hood, screen, spares, splendid condition, little used; £80.—15, Harris St., Markhouse Rd., E.10. [2422

ENFIELD Combination, 1916, 6h.p., splendid condition, Easting, hood, speedometer, spring seat, lamps, spares; any trial; bargain, £75.—15, Park Parade, North Finchley. [2471

1921 Enfield Combination, 8h.p., J.A.P., Magdyno lighting, screen, Bonniksen, etc., oversize tyres, beautiful condition, taxed; £118.—Walker, 769, Romford Rd., Manor Park, London, E. [2963

1920 6h.p. Enfield Combination, Magdyno, E.L. fittings complete, only done 3,000 miles, good as new, just overhauled; price £120.—Apply, Chanin-Thomas, Minehead, Somerset. Tel.: 103. [1177

EXCEPTIONAL Bargain.—Enfield 1922 Combination 8h.p., Magdyno lighting, tax paid, brand new 1st July, not done 50 miles; cost over £160, will accept £135.—Wilkins, Simpson, opposite Olympia, London. [3451

1917 Enfield 6h.p. Combination, 3 lamps, Easting windscreen, trip speedometer, Lucas horn, tools, spares, perfect running order; any trial; tax paid; £65 cash.—83, Penshurst Rd., Thornton Heath, S.E. [2840

ENFIELD, late 1921, 2½h.p., 2-stroke, as new, specially tuned, fully equipped, licence paid end 1922; £40, or close offer.—Brewis, Eildon, Ravensbourne Park, Catford, S.E.6. 'Phone: Lee Green 472. [2599

ROYAL ENFIELD Combination, late 1921, beautifully fitted up with extras, including 2 Easting windscreens, dynamo lighting, 2-seater sidecar, tax paid, low mileage, in excellent condition; £125.—Hartwell's Garages, Ltd., Oxford. [2574

ENFIELD 1920, 2-speed, 2-stroke, complete with lamps, tools, Klaxon horn, footboards, tax paid 1922, condition as new; cost £68; first offer £36 secures.—Tarran, 86, Vaughan Rd., Coldharbour Lane, S.E.5. (3 knocks). [3144

ENFIELD 3h.p., 1915, with light sidecar, M.A.G., twin, 2-speed, clutch, K.S., mechanical lubrication, fully equipped, splendid condition; £35, or nearest offer.—Apply by letter, James, 45, Falkland Rd., Kentish Town, N.W. [2495

ROYAL ENFIELD 8h.p. Combination, new last March, Lucas electric light, full list of spares, tax paid to December, and insurance to March, 1923, in absolutely perfect condition, small mileage; price £135.—Elsden and Co., Ltd., Holt, Norfolk. [2503

ROYAL ENFIELD Combination, delivered June, 1922, Magdyno lighting, once used in trial run, in absolutely perfect order and new condition, tax paid; £150 cash; or gradual payments arranged.—Seen at 248, Bishopsgate, E.C. (Juno Showrooms). [2107

1922 Royal Enfields.—All models in stock; extended payments at 2½% extra for 12 months and 4% only for 18 months; good S.H. Triumphs wanted in part payment, and top market value allowed.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [3339

ENFIELD Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [7324

MOTOR CYCLES FOR SALE.

Indian.

POWERPLUS Indian Combination, electrically equipped, indistinguishable from new and thoroughly sound, tax paid 1922; £60; exchange lightweight and cash.—88, Gloucester Place Mews, Portman Square, W.1. [2882

1919 7-9h.p. Powerplus Indian Combination, Montgomery sidecar with Bluemel screen and luggage rid, dynamo lighting and generators, the whole in perb condition; £89.—86, Church Rd., Upper Norwood, S.E.19. [2863

SOUTHPORT.—1920 (December) Indian Powerplus 7h.p. Combination, large bulbous back sidecar, lasting screen, dynamo lighting, luxurious outfit, gas.; another, 78 gas.; exchanges.—Keats, 417, ord St., Southport. [3009

1920 7-9h.p. Indian Combination (date guaranteed), electric, ammeter, speedometer, Eastiog, censed, original tyres, any trial; £90, offer lowered machine or combination and cash.—Hillside, ainworth, Mansfield. [2451

INDIAN Late 1920 Powerplus, complete with Swan sporting sidecar, discs all round, speedometer, echanical horn, electric and acetylene lighting, spot ght, tax paid, tip-top order; to clear, £80.—Clarke's, 3, London Rd., St. Albans, Herts. [2544

LATE 1921 Indian 7-9h.p. Powerplus Solo, electrically equipped, tyres hardly worn, unscratched, ear-drive speedometer, tax paid, in perfect mechanical rder; £90 cash; or gradual payments arranged.—Seen 248, Bishopsgate, E.C. (Juno Showrooms). [2106

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GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts lways in stock. Write for free spare part list, stating ear of manufacture. [0752

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd., London ('Phone: Brixton 3129), supply ll parts from stock, new and second-hand. They lso specialise in Indian repairs. [6301

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; rite, call, or 'phone; we can save you money.—angford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1867

Invicta.

GODFREY'S, Ltd.—Inviota 2¾h.p. 1919, J.A.P., 2-speed, accessories, guaranteed; £42.—208, Great ortland St., W 1. [2359

Ivy

1921 2½h.p. 2-stroke Ivy, 2-speed, clutch and K.S., Sturmey, all accessories, tax paid, better than ew; £45.—5, Norwood Rd., Herne Hill, S.E.24. [1440

IVY 1922 2-stroke, 2-speed, clutch, kick-starter, Model D; £47/10.—Elce, Ltd., 13-15-16, Bishopsate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

IVY 2½h.p., 1920, 2-stroke, Sturmey-Archer 2 speeds, clutch, kick-starter; £38, including accesories, tax paid.—Eagles and Co., 275, High St., Acton, London, W. [3279

3½h.p. Ivy-Precision, aluminium footboards, Klaxon, head and tail lamps, generator, extra large tank, rip lubrication, tools, spares, in daily use; any trial; 228.—Williams, c/o Non-Ferrous, Smith Hill, Brentford. [2666

SPORTSMEN.—1921 Ivy 3h.p., 3-speed, Moss gear box and clutch, close ratio; the winner of the 1921 200 mile race, capable of 60 m.p.h., lamps, horn, etc.; £45.—Croxford, 461, Upper Richmond Rd., East Sheen. 'Phone: Richmond 322. [3650

James.

JAMES 4¼h.p. Combination, 1916-17, excellent order; best over £35 secures.—43, King's Rd., Luton. [2689

JAMES 5-6h.p., 1919, Montgomery, hood, screen, trial; offers; solo wanted.—44, Dovercourt Rd., Sheffield. [2997

1919 James, 2-speed, 2-stroke, fully equipped, tax paid; 30gns.—11, Blechynden Mews, Lancaster Rd., W.11. [3563

JAMES-VILLIERS 2-stroke, 2¾h.p., 3 speeds, clutch; £29, or near offer.—Jenner, 11, Somerset Rd., Tottenham, N.17. [2409

JAMES Late 1920 2-stroke, 2-speed, lamps, horn, spare belt, Tan-Sad, taxed; snip, £38.—124, Melrose Av. Wimbledon Park. [2851

3½h.p. Twin James, late 1920, 3-speed, in perfect condition, very little used, any trial; £65.—Leach, Windsor Rd., Chorley. [2679

JAMES.—All 1922 models in stock; call and inspect. —The Agents, Storer and Tait, 20, Bourdon St., Bond St., W.1. Maylair 625. [3659

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MOTOR CYCLES FOR SALE.

James.

1913 James 3½h.p., 3-speed, free engine clutch, lamps, tax paid, etc., guaranteed sound, trial; £25.—52, Fioborough Rd., S.W.10. [2427

1920 James 2-stroke, 2-speed, all lamps, horn, knee grips, tax paid; £35, exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3459

1916 4h.p. James Combination, Lucas dynamo lighting, good running order; £52. Seen by appointment.—King, 4, Willow Walk, Cambridge. [3496

JAMES 2¼h.p., 2-stroke, 2-speed, rough-looking but perfect order, new chain, tyre, magneto; nearest £18; any trial; appointment.—21, King's Rd., Leytonstone. [3161

NEW 1922 model de Luxe James 7h.p. Combination; windscreen, spare wheel, child's dickey seat; £160; easy payments, 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [8614

JAMES Combination 4¼h.p., 3-speed, kick-start, all-chain drive, Tan-Sad, luggage grid, accessories and spares, excellent condition, any trial; £58.—33, St. John's Av., Harlesden, N.W.10. [3139

1922 7h.p. James Combination, spare wheel, dynamo lighting, dickey seat, all on, tax and insurance paid, cost nearly £200, done under 200 miles; sell £150.—253, Munster Rd., Fulham. [2808

1919 James Combination 4¼h.p., lamps, horn, speedometer, in splendid condition, insurance policy; £63.—Croxford, 461, Upper Richmond Rd., East Sheen. 'Phone: Richmond 322. [3651

JAMES 3½h.p. Twin, September, 1921, 3 speeds, clutch, kick-start, enclosed chain drive, semi-T.T. handle-bars, Lucas big head lamp set (lit twice), Lucas rear, separate generator, Stewart horn, Dunlop tyres, full tool kit, repair outfit, spare valve complete, chain links, plugs, ridden 3,000 miles, condition beautiful, licensed December 1922, insured February, 1923, examination, trial by appointment; £82/10.—Lomax, John St., Heanor, Notts. [2656

Spare Parts

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [4830

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. Lightweight, 1¾h.p., good condition; £10.—Surridge, Ongar, Essex. [3334

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

Lea-Francis

1920 Lea-Francis, 3½h.p. Twin M.A.G. engine, chain drive, kick-starter, good condition; £50.—Premier Motor Co., Aston Rd., Birmingham. [3592

49 GNS.—3½h.p. Lea-Francis, light sidecar, fully equipped, taxed; bargain.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [3472

LEA-FRANCIS 1920 3½h.p. Combination, detachable wheels, kick-starter, lamps, screen, speedometer, horn, etc., excellent order, low mileage, tax paid, insured, overhauled; £75.—Write, K., 69, Eardley Crescent, Earl's Court. [3638

Levis.

PREMIER Motor Co. for 1922 Levis.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S, 2¼h.p., 2-speed, clutch, £58; Model G, 247 c.c., 2-speed, clutch, £61; kick starter £2 extra; easy payments 4% extra; carriage paid to any address; all models in stock for immediate delivery.—Premier Motor Co., Aston Rd., Birmingham. [5881

LEVIS 1918 2¾h.p., spleadid running order; 24 gns. —1, Priory Rd., Kew. [2833

LEVIS 1921 2¼h.p., in perfect condition, all on.—Gifford, Overton, Hants. [3029

LEVIS 2¼h.p., 2-stroke, just overhauled by makers; £25, bargain.—Moss, Wem. [1954

GIBB, Gloucester, Sole District Agent for Levis; immediate delivery from stock. [7545

LEVIS late model, 2-speed, clutch, tax, insurance paid; £37.—48, Percy Rd., N.12. [2531

LEVIS, very low, fast, powerful; £28; trial.—57, Kenbury St., Camberwell, London. [2900

2¼h.p. Levis, perfect running condition; £25, bargain. —38, Almeric Rd., Battersea Rise. [2533

WE are the Agents for London, S.W. Choose from our stock.—Knight's, 126, Upper Tooting Rd., S.W.17 [0778

LEVIS, 2-speed gear box, nice condition, late model; bargain; accept £22/10.—Edwardes, 277, Camberwell Rd., S.E. [3180

LEVIS Popular, December, 1920, Lucas horn, W.S.R. jet, little used; £35.—63, Barnt Ash Hill, S.E. After 7. [2601

2½h.p. Levis, 2-speed, late model, fast, spleadid condition; first over £30 secures bargain.—29, Hendham Rd., Wandsworth Common. [3558

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1922 Levis, 2-speed, Sturmey, hand clutch, for immediate delivery; £58; exchanges or deferred 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3460

1921½ Levis, Stewart speedometer, Lucas lamp, horn, tools, footboards, good tyres, excellent condition, as new, trial, cost £71; offers.—Holt, The Bank, Kippax, Leeds. [2488

LEVIS new 1922 Models.—2¼h.p. Popular, £48; 2¼h.p., 2-speed and clutch, £58; Levis sports model, £51; all models supplied on easy terms and exchange, one-fifth down; also 2¼h.p. 1921 Levis, tax paid, all on, £37/10.—Wauchope's, 9, Shoe Lane, London. [3409

Spare Parts.

LEVIS.—All spares or complete 1922 model cycles from stock, carriage paid.—Jones' Garage, Broadway, Muswell Hill, N.10. [0807

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

Lincoln-Elk.

LINCOLN-ELK 2¾h.p., 2-stroke; £25.—Guivers, 37, Green St., Forest Gate, E. [2497

L.M.C.

1920 4h.p. L.M.C. Combination, lamps, horn, tools; £60. Seen by appointment.—King, 4, Willow Walk, Cambridge. [3495

Martinsyde.

MARTINSYDE 6h.p. Combination 1922, practically new; £135.—Kays, 8, Bond St., Ealing. [3256

1922 Martinsyde 6h.p. Combination; £150. Deferred terms.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [3380

MARTINSYDE.—Immediate delivery of 1922 models. Cash, exchange, or deferred payments.—Kays, 8, Bond St., Ealing. [4835

ROBERTSONS Motors, Ltd., are the London Martinsyde Service Agents; trial runs arranged; spares stocked.—157b, Gt. Portland St., W.1. [6080

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1920 Matchless, spring frame model, complete, and tax paid; £110.—Cross, Effingham Sq., Rotherham. [3313

MATCHLESS.—All models from stock; exchanges arranged.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7366

MATCHLESS Combination, 1919, 8h.p., splendid condition; any trials; £90, bargain.—6, Boyne Rd., Lewisham, S.E.13. [2446

MATCHLESS Combination 8h.p. M.A.G. 1921, equipped with lamps and speedometer; £105.—Kays, 8, Bond St., Ealing. [3257

LATE 1918 Matchless Combination, windscreen, speedometer, lamps, tools, etc., spare wheel; £75.—5, Villas on the Heath, Hampstead. [2758

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1921 Matchless-M.A.G., hood, screen, spare wheel, speedometer, good tyres, accessories, Binks, taxed; £120.—4, Torrington Rd., Berkhamsted. [2402

1921 Matchless-M.A.G. Combination, Magdyno, horn, speedometer, licensed, insured; £115.—Newenham, Midget, Raypark Av., Maidenhead. [2993

SHEFFIELD Agent for Matchless. All models in stock. Sporting models £130, standard models £170.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

£150 is the price of a new Matchless Combination, see our showrooms, all models in stock; cash or payments.—Knight's, 126, Upper Tooting Rd., S.W.17. [0759

1921 Matchless Combination, Magdynamo lighting set, electric horn, hood and hood cover, etc., mileage about 4,000, in perfect mechanical condition; £115.—Perrin's Motor Garages, Ltd., Marsh Lane, Southampton. [2442

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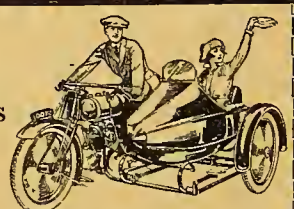

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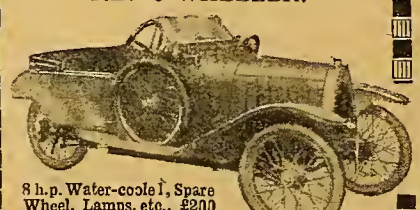

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£35 Secures Combination, fit and ready for any tour 1915 Matchless-Jap 6-8h.p. twin, hub gears, kick starter, wicker sidecar.—96, Bostock Av., Northampton [246

1921 dynamo lighting Matchless Combination magneto, dash, windscreen, exceptional condition cost £250, sacrifice 118 gns.—67, Fernlea Rd., Bal ham. [324

MATCHLESS. Matchless.—Seabridge can supply you and take your old machine in exchange.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [694

TASSELL, 1a Bloomfield Rd., Plumsteed, for Matchless Combination; deferred payments spares of all dates; trade supplied where agents no appointed. [224

MATCHLESS late 1920, spring frame, spare whee and tyre, equipped regardless of expense, complet combination as new; £109.—3, Norbury Parade, Nor bury, S.W. [324

1922 Matchless Combination, spring frame, sport model, new, unused, shop-soiled only, list price £165; to clear, £150.—Clarke's, 98, London Rd., St Albans, Herts. [254

3½h.p. twin Matchless-Jap, o.h.v. sports model, a used 1914 T.T., 3 speeds, clutch, too fast for owner; tax paid; trial, £35.—110, Cornwall Rd. Brixton, S.W. [354

MATCHLESS 1918 Combination, new 2-seater side car, Easting screen, spare wheel, new tyres, re liable touring machine; £95.—Hoar, 8, Atwell Rd. Peckham, S.E.15. [284

1922 Model J Matchless-M.A.G., speedometer, Easting, spare wheel, lamps, won 3 gold medals perfect condition, cost £200; lowest £140.—Rogers, 29 Sydenham Hill, S.E. [249

MATCHLESS 1920 Model H Combination, 8h.p J.A.P., dynamo lighting, electric horn, speedometer, hood, tax paid, perfect; £130.—Lucking, 15 Oxford Rd., Colchester. [239

MATCHLESS 6h.p. C.B. Combination, Tan-Sad, 3 speed Sturmey-Archer gear box, speedometer, electric lighting, just overhauled; £90, or near offer.—69 Tilehurst Rd., Reading. [266

MATCHLESS Model H Combination, 1922, licensed to December 31st, perfect and indistinguishable from new, mileage negligible; £150; approval anywhere; owner purchased car.—The Layton Garages 30, Holywell St., Oxford. [334

MATCHLESS 8h.p., Model H, 1921, Lucas Magdyno lighting, hood, screen, speedometer, horn 2 spare wheels, and fully equipped; £110; guaranteed perfect order, tax paid to December.—The Bat Motor Co., 2, Kingswood Rd., Penge. [320

MATCHLESS Combination, August, 1921, licensed December 31st, M.A.G. engine, spare wheel, wind screen, all accessories, perfect order throughout, privately owned; £135.—Can be seen at Garage, 18, Down St., Piccadilly, W.1., at any time. [250

MATCHLESS Combination, Sept., 1921, M.A.G engine, fully equipped, Magdyno lighting, speedometer, horn, spare wheel, hood, windscreen, etc., perfect touring condition, done 1,200 miles; £150, o near offer.—Box 2720, c/o *The Motor Cycle*. [348

1920 Matchless Model H Combination, recently overhauled, splendid order, Magdyno lighting Easting, latest Binks, speedometer, legshields, spare wheel, two new tyres; cheap, £110.—E. A. G., 31 Anerley Park, S.E.20. 'Phone: Central 2475. [343

NEW 8h.p. 1922 Matchless Combination, 2-seater model, spring frame, £187; 8h.p. standard model £170; sports model, £160; easy payments one-fifth down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane. 'Phone: Holborn 5777. [341

MATCHLESS 1919 Combination, just lately returned from Colliers, brand new special body upholstered in leather, etc., interchangeable wheels spare wheel, complete, equipped, all new tyres, spares etc., tax paid; £110.—Robini, 1, Tulse Hill, Brixton S.W.2. [343

MATCHLESS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, Eastbank St., Southport. 'Phone: 607. [732

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lea Green 774), will be pleased to take your orders for prompt delivery Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [566

1922 Matchless Combination, H.2, M.A.G., Binks Lucas dynamo lighting, rear drive speedometer legshields, Lucas horn, sidecar screen, spare wheel (unused), sidecar step, luggage carrier, spare petrol carrier, tools, tax paid and £12 insurance, absolutely as brand new and guaranteed perfect, mileage 1,700 any trial, just over 2 months old; cost £232; accept £155, rock bottom.—Stockwell, Elstree, Nutfield Rd. Redhill. [320

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1920 P. and M., splendid condition; £50.—Kays, 8, Bond St., Ealing. [3261

1920 P. and M. Combination, fully equipped; £75.—Kays, 8, Bond St., Ealing. [3260

P. and M., late, W.D., 2-speed, kick-start; £25.—1, Springfield Park Cres., Catford, S.E.6. [3136

1½h.p. 1919 P. and M. Solo, fully equipped; £55.—Wauchope's, 9, Shoe Lane, London. [3415

P. and M. 1919 Combination, excellent condition; £45.—Clark, 7, Exhibition Rd., S.W.7. [2183

P. and M. 1918 Solo, in good running order; £30.—Miles, 11, Chichester Rd., Kilburn, N.W.6. [3550

IMMEDIATELY From Stock, 1922 4-speed P. and M. combination; £130.—Gough's, Gloucester. [3052

1919 P. and M., 2-speed, clutch, lamps, and horn, tax paid; £38.—198, King St., Hammersmith. [2835

P. and M., late R.A.F.; £25; 2-speed, kick start.—Bailey's Garage, 25D, London Rd., Forest Hill, S.E. [2419

P. and M. 3½h.p., 2-speed, 1917, good condition, C.A.V. magneto; £26/10.—P., Willcocks, Datchet, Bucks. [3039

P. and M. Combination, 1919, overhauled perfect throughout, all on; £50.—50, Haverstock Hill, N.W.3. [2941

P. and M., 1918, lamps, horn, spares, tax paid; ride away; sacrifice, £35, or best.—43A, Tennyson Rd., Kilburn. [1062

1920 P. and M. 3½h.p., excellent condition; will take £27/10.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W. [2433

P. and M. Combination, 3½h.p., 1918, in good running order; accept £40, or nearest offer.—33, Market Sq., Leighton Buzzard. [2577

RENOVATED P. and M.'s 1918, guaranteed machines; £45; immediate delivery.—Inman, Durham Rd., Seaforth, Liverpool. [1011

1918 P. and M. Combination, speedometer, lamps, horn, excellent condition; £55.—244, Old Christchurch Rd., Bournemouth. [2450

P. and M. Combination, late, mechanically perfect, fast and reliable, fully equipped, coachbuilt sidecar; £50.—37, Rednall Ter., Hammersmith. [3123

A.O.C.H. have 1918 P. and M. combination, fully equipped, excellent condition; special bargain. 5, Heath St., Hampstead (near Tube). [2718

P. and M. Combination, 1918, 3½h.p., clutch, good order, running, tyres nearly new, enamel good, all on; £45, offer.—54, Ballater Rd., Acre Lane, S.W.2. [2708

P. and M., 1918, splendid condition, tyres new, tax paid; £37; any trial; after 7.30, if Sunday before 1.30.—66, Seaford Rd., West Ealing (Northfields Station). [2780

P. and M. Combination, 1920, electric, speedometer, Easting, beautiful condition, standard sidecar; bargain, £65, or near; after 5.—113, Browning Rd., Manor Park. [3552

P. and M. 1917 Combination, electric lighting, speedometer, etc.; £52.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

P. and M. Combination, 3½h.p., 2 speeds, clutch, kick-start, late model, tax paid, lamps, Klaxon, new tyres, excellent order; £40.—68, Gloucester Rd., Regent's Park. [2961

P. and M. 3½h.p., 2-speed, handle-starter, just renovated, taxed, lamps, tools and sidecar fittings; first cheque £27/10 secures.—S. Dickens, Manor Farm, Grimscote, Towcester. [3196

LATE 1919 P. and M. solo or combination, perfect, expert examination, engine No. A8045, tax paid, solo £50, combination £57/10.—31, Elm Street, Hebburn Colliery-on-Tyne. [2551

1917-18 P. and M. Combination, lamps, horn, tax paid, in good condition; private owner; £40.—Clark, c/o Shepherds' Garage, Enfield Highway. Tel.: Waltham X 31. [0906

P. and M., R.A.F. model, sports sidecar, footboards, kick-start, fully equipped, excellent condition; £45, or offer, or would consider exchange.—Write, G.H., 7, Trafalgar Sq., Chelsea. [2925

P. and M. 1919, overhauled by makers, new Millford sidecar, Binemel's screen, luggage carrier, all on, tyres perfect, licence paid; absolute bargain, 60 gns.—308, King's Rd., Chelsea, S.W. [3142

£38.—P. and M. 1918, excellent condition, lamps, Klaxon, aluminium chain guards, plated exhaust, spare sprockets, taxed to December; or exchange Wooler.—103, St. Albans Av., Chiswick. [3162

1919 P. and M. Combination, new condition, bulbous sidecar, little and carefully used, trial run, £59; also lightweight, 2-speed, £25; privately owned; no dealers; buying car.—35, Bective Rd., Putney. [2606

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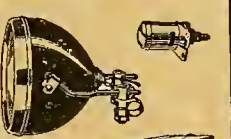

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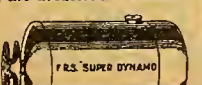

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1920 P. and M. Combination, renovated 1922 makers, 1922 sprockets fitted, Lucas fittings, Easting, Binks, mudshields, good tyres, condition as new; £87; exchange solo.—2, Ida Grove, Stourton, Leeds. [2385

1920 P. and M. Sporting Combination, Swan sidecar, fully equipped, tax paid, in excellent condition throughout; £70, or near offer.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, W.2. Padd. 1177. [3349

Spare Parts:

P. and M. Spares Specialist Stamp brings list.—Inman, Durham Rd., Seaforth, Liverpool. [1010

P. and M. Spares.—All parts in stock at low prices.—Bailey's Garage, 25D, London Rd., Forest Hill, S.E. [2418

P. and M.—All parts in stock for P. and M.'s; send stamp.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

Paragon.

1922 2½h.p. Paragon, 2 speeds, kick-starter, spring frame, lamp sets and tax paid, quite new; £40.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [2589

P. and S.

P. and S. 1920 Villiers, 2-speed, horn, electric head lamp, Tan-Sad, not done 3,000 miles, perfect; £42.—Dixon, 79, Carshalton Park Rd., Carshalton; or ring: Victoria 7042. [3204

Peugeot

£10.—5h.p. twin Peugeot, fine running order, spring forks, tax paid.—King, Egrove, Oxford. [3021

6h.p. Peugeot Combination, good condition, tax paid, drive away; bargain, £26.—Calvert, 164, Borough, S.E.1. [2646

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PREMIER 7-9h.p., cylinder and all fittings, guaranteed all new and perfect; £7 the lot.—Box 2711, c/o *The Motor Cycle*. [3489

PREMIER 3½h.p. Combination, Easting, accessories, £50; in perfect condition.—17, Victoria Rd., Kilburn, N.W. (2 knocks.) [2939

PREMIER 3½h.p., 2-speed gear box, Bosch, B. and B., quick detachable sidecar, Easting Royal windscreen, electric lighting, trial; £45.—Parsons, 21, Ryecroft St., Fulham. [2710

PREMIER, 1914, 2-speed, countershaft and clutch, coachbuilt sidecar, good condition, fully equipped, tax paid; great bargain, £32/10.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [3807

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QUADRANT late 1920 chain-drive Combination, scarcely used; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [2182

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1922 (May) Radco, 2-stroke, 2-speed, slightly used; £37; licensed.—Surridge, Ongar, Essex. [3333

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RALEIGH New 1922 2¾h.p. Lightweight in stock; no waiting; £68.—Moss, Wem. [1956

RALEIGH 2¾h.p. Demonstration Model, 3-speed clutch; £70.—W. Cowell, Northallerton. [2691

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RALEIGHS.—All models; delivery now.—Barlow and Son, Monton, Eccles. Tel.: 160 Eccles. [3693

RALEIGH.—Immediate delivery of 1922 models Cash, exchange, or deferred paymeots.—Kays, 8, Bond St., Ealing [4836

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RALEIGH Specialists.—All lightweight models actually in stock, including 3h.p. combination; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [3359

IMMEDIATE Delivery Raleigh, all models in stock: 5-6h.p. £130, combination £165; 2¾h.p. £68, £73; 3h.p. combination, £103; cash or deferred payments 4% extra.—Mitchell Garage, Roundhay Rd., Leeds. [0890

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1916 7-9h.p. Reading-Standard Combination, great bargain; £55.—Ross, 86, High Rd., Lee. [2632

READING-STANDARD Combination, 8-10h.p., 1921, dynamo, Plus One sidecar, single or double-seater at will, hood, screen, many spares; £95.—James, c/o Bradmore's, 482, Harrow Rd., Paddington. [3629

Rex.

REX 7h.p. 1920 Combination, perfect order; £90.—Ratcliffe Bros., 200, Gt. Portland St., W. [3288

6h.p. Rex Combination, new condition; bargain, £25.—Fisher, Springwell Rd., Heston, Hounslow. [2958

REX 6-8h.p Twin Combination, excellent condition, licensed, insured, hood, screen; £50.—14, Meyler St., Tonyrefail, Glamorgan. [2667

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3½h.p. Rover, 1914, single-speed model, road racer £37/10; easy terms.—Wauchope's, 9, Sho Lane, London. [341

T.T. Rover-Philipson, 1920, taxed year, lamps, tool belt, carrier, good condition.—Rodgers, Pipe Lan Staveley, Derby. [252

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ROVER 1920 3½h.p., 3-speed countershaft, clutch kick-starter, completely equipped, perfect; £60.- 180, Grangehill Rd., Eltham. [287

1914 3½h.p. Rover Combination, 3-speed, taxed, pe fect condition; £42; will separate, genuine.- Laing, 11, Rannoch Rd., Fulham. [312

ROVER 3½h.p., all-chain drive, 3-speed, new, or used, shop-soiled; to clear, £85.—Clarke's, 9 London Rd., St. Albans, Herts. [254

ROVER 3½h.p. Sports model, 3-speed, clutch, dis wheels, fully equipped, perfect condition; £47.- 15, Camden Grove, Chislehurst. [241

ROVER 3½h.p. Countershaft Combination, K.S clutch, little used; 55 gns., or exchange.—5, Te race Garage, Turnham Green Terrace, Chiswick. [33

£55.—Rover Combination 5-6h.p., all-chain, ful equipped, smart sidecar, windscreen, speedomete ready for holidays.—406, Garratt Lane, Earlsfield, S.W [352

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ROVER Spares. Immediate delivery.—Kays, Bond St., Ealing. [43

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ROYAL RUBYS.—Prompt delivery from Barl and Son, Monton, Eccles. Tel.: 160 Eccles. [36

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ROYAL RUBY Combination, hood, screen, etc perfect; any trial; £80 for quick sale.—L.M Claremont, Colnbrook. [26

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1919 Triumph, very fast, smart; £47/10.—67, Fernlea Rd., Balham. [3247

1916 4h.p. Triumph Combination; £52.—Ross, 86, High Rd., Lee. [2623

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1919 Triumph, 3-speed, K.S., clutch, all on, spare tube, belt, chain, perfect; £65.

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OFFAT, Yeovil, Official Triumph Service Agents.—1922 models from stock; exchanges; all spare rts. 'Phone: 50. [5725

ODFREY'S, Ltd.—Triumph 1919 4h.p., type H, excellent condition, guaranteed; £72.—208, Great rtland St., W.1. [2362

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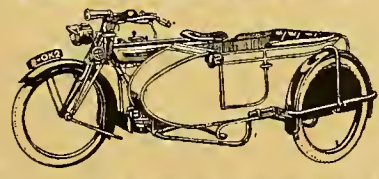

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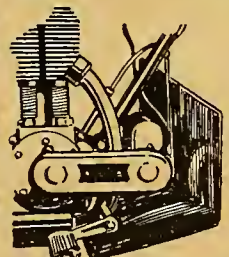

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1919 Triumph Combination, perfect condition, accessories, spares, tax paid December.—Thompson, 34, Windsor St., Rugby. [3189

TRIUMPH 3½h.p., 1913, clutch, kick-start, licensed, head lamp, thoroughly reliable; £26.—Craddock, 179, Chalkwell, Sittingbourne. [2598

3½h.p. Triumph T.T., Bosch, new tyres, in good order; £27, offer.—Edwards, Co-operative Terrace, Trimdon Grange, Durham. [2484

TRIUMPH 4h.p., late 1918, countershaft, 3 speeds, clutch, kick-starter, new condition; £55; exchanges.—63, Solon Rd., Brixton. [3173

TRIUMPH Countershaft, splendid condition, tax paid; £38, or exchange.—5, Terrace Garage, Turnham Green Terrace, Chiswick. [3376

TRIUMPH Combination 1921 tax paid, equipped, exceptional bargain; £82/10.—M. Hillier, 216, Portobello Rd., North Kensington. [1524

ROBERTSONS Motors, Ltd.—1922 chain drive Triumph combination, tax paid, all accessories; £148.—157b, Gt. Portland St., W.1. [3603

SEVERAL second-hand Triumphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1181

1918 Triumph, 3-speed Sturmey, all accessories, new Dunlop rear, tax paid; a bargain, £58.—1, Norwood Rd., Herne Hill, S.E.24. [1438

LATE 4h.p. Triumph countershaft, nice coachbuilt sidecar, lamps, horn, Tan-Sad, perfect condition; £67/10.—391, King St., Hammersmith. [3235

TRIUMPH 1916, renovated, 4h.p. countershaft, 3-speed, C.B. sidecar, splendid condition, any trial; £70.—104, Himley Rd., Tooting. [3232

TRIUMPH 1919 4h.p., 3-speed, good condition, lamps, and tax paid; 50 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [3606

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1921, model H. Triumph, large size C.A.V. accumulator lighting, mileage 400, tax for year; £80.—M. S. Fryar. West Wratting, Cambs. [2383

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TRIUMPH 4h.p., 1920-21, Gloria sidecar, windscreen, acetylene lighting, tax paid; £112.—Basement, 89, Gt. Portland St., London, W.1. [3446

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£55.—Countershaft Triumph, 4h.p., engine No. 58653, renovated, also others; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Stn.). [3324

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£24.—Triumph 3½h.p., clutch, Philipson pulley, new tyres, all accessories, taxed, splendid order; bargain.—143, Ravensbury Rd., Earlsfield, S.W.18. [3270

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GODFREY'S, Ltd.—Triumph 1919 4h.p., type H, Millford Empress sidecar, condition excellent, guaranteed; £84.—208, Great Portland St., W.1. [2364

1920 Triumph Combination, equipped every possible accessory, magnificent outfit, equal new; £78.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [3507

GODFREY'S, Ltd.—Triumph 1917 4h.p., type H, with sporting sidecar and windscreen, completely equipped, guaranteed; £74.—208, Great Portland St., W.1. [2363

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1914 Triumph Combination, K.S., clutch, 3-speed, exceptionally smart, fully equipped, tax paid; £35.—Ward, South Western Garage, New Malden, Surrey. [3034

1918 Countershaft Triumph, polished aluminium discs, foot and hand clutch, legshields, equipped and taxed; £48.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [2932

TRIUMPH W.D.B. Combination, D.A. lighting, speedometer, spares, etc., very trusty; owner going abroad; £70.—Bernard, 66, George St., Portman Sq., London. [2468

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1919 Triumph Combination, not W.D., screen, full equipment, Tan-Sad, many spares, tax paid, grand condition; £68; exchange; after 5.—Heath, 168, Wellington Rd. South, Hounslow. [2815

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GODFREY'S, Ltd.—Triumph 1919 4h.p., type H, with Middleton spring wheel sidecar, bulbous back, Easting windscreen, Rotax dynamo lighting, guaranteed; £96.—208, Great Portland St., W.1. [2365

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TRIUMPH 4h.p. Combination, late 1919, 3-speed countershaft, Lucas electric lighting, Gloria sidecar, hood, screen, luggage grid, all splendid condition; £92/10.—Byfleet Automobile Co., West Byfleet. [2480

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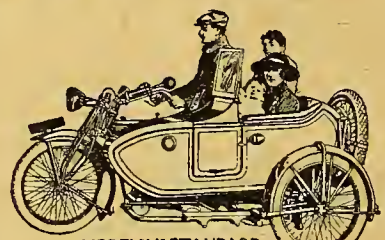

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ORKS Demonstration Trump models at greatly reduced prices:—350 c.c. sports model J.A.P., 3; 293 c.c. standard model J.A.P., £50; 500 c.c. rts model J.A.P., £90. All in new condition; r used for demonstration. Call at our works for pection and trial.—Trump Motors, Ltd., Foxlake rks, Byfleet, Surrey. 'Phone: Byfleet 126. [1366

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REMIER Motor Co., for 1922 Velocettes.

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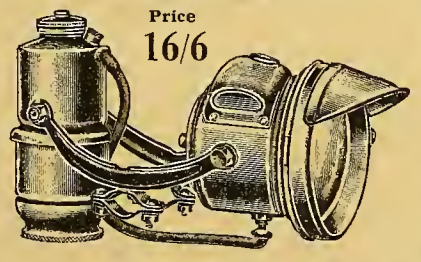

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ZENITH-GRADUA 4h.p., good condition (tax paid); £30.—Platts, 602, King's Rd., Fulham, S.W.6. [3111

SPORTS Zenith 8h.p. 1920, well equipped, in good condition; £65.—Loweth, 6, Mount Pleasant Rd., Ealing. [3054

1921 2¾h.p. Zenith, as new, registered, etc.; bargain, 42gns.; after 4.30 p.m.—4, Elm Gardens, Hammersmith. [3534

F.O.C.H. for Zeniths; new and second-hand in stock at tempting prices.—5, Heath St., Hampstead (near Tube). [2719

ZENITH Sports 8h.p., 1921, lamps, tax, etc., specially tuned and balanced; £60.—2, Madrid Rd., Barnes. [3321

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1922 Zenith-Bradshaw, slightly shop-soiled; £90, bargain.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W. [2431

ROBERTSONS Motors, Ltd.—1922 shop-soiled Zenith-Bradshaw, Gradua gear; £100.—157b, Gt. Portland St., W.1 [6082

1920 8h.p. Countershaft Zenith Combination, Millford de luxe sidecar; £67.—24, Balliol Rd., North Kensington. [2952

8h.p. Zenith Combination 1914, just overhauled by makers, licence paid; nearest offer £85.—Russell, North St., Melton Mowbray. [2534

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1921 Zenith sports 5-6h.p., Gradua gear, all lamps, horn, tools, taxed 1922, almost new outfit; £67.—391, King St., Hammersmith. [3253

ZENITH 8hp. 1920 Countershaft, Henderson sidecar, fully equipped, small mileage; £105.—18, Dorlcote Rd., Wandsworth Common. [2760

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GODFREY'S, Ltd.—Zenith-Bradshaw 1922 3½h.p., Gradua gear, condition as new, guaranteed; £87.—208, Great Portland St., W.1. [2366

ZENITH 8h.p. Combination, kick-start, new last November, fast, reliable, low mileage; cheap.—Hesling, Iwerne Minster, Blandford. [2676

ZENITH-GRADUA 1914 8h.p. Coachbuilt Combination, overhauled, new tyres, lamps; bargain, £47; after 6.—Sexton, 270, High Rd., Chiswick. [3203

ZENITH.—Official appointed agent. New 1922 models on easy terms; list on application; exchanges.—Wauchope's, 9, Shoe Lane, London. [3423

1922 3½h.p. Zenith-Bradshaw, all-chain drive, S.A., 3-speed; £119. Deferred terms.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [3381

ZENITH 8h.p., clutch model, 1920 Sports sidecar, fast and reliable, tools, licence, insurance paid; £115.—Collins, 69, Abingdon Rd., Kensington. [2425

£80, or near offer.—1916 Zenith combination, 5-6h.p. J.A.P., engine just overhauled by makers, clutch, kick-start, dynamo lighting; bargain.—Randall, Andover. [1271

ZENITH 8h.p., all chain, in stock; few 5-6h.p. countershaft models, new, guaranteed, £88; exchanges or deferred.—Clark, 7, Exhibition Rd., S.W.7. [3613

6h.p. Zenith, clutch model, nearly new Middleton sidecar, electric horn, speedometer, splendid condition; £75, or offer.—Peaston, 1, Station Rd., Epsom. [2957

LATE 1919 Zenith Sports Combination, taxed, fully equipped, kick, countershaft, new tyres, beautiful condition; £65.—3, Norbury Parade, Norbury, S.W. [3242

ZENITH Combination 6h.p., Gradua gear, clutch, K.S., pillion, Easting windscreen, Binks, speedometer, tax paid, perfect mechanical condition; £80; any trial.—Borroughs, 2, East View, Maltby, Rotherham. [2452

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ZENITH 8h.p. 1921 Combination, Gradua gear, clutch, all Lucas lighting, Cowey horn, Easting windscreen, spare belts and tubes, perfect condition; any trial; seen any time; £115.—21, Coombe Rd., Kingston. [2659

ZENITH 1921 8h.p. Combination, kick-starter, specially finished, with 1922 super sports J.A.P. engine, owner Cdr. Hillyard; seen by appointment; price complete, tax paid, £110.—Write, Zenith Motors, Hampton Court. [3374

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ZENITH Combination 1920 8h.p., clutch, F.R.S. lamps, speedometer, new Dunhill's limousette body, windscreen, insurance paid, condition and appearance perfect; £95, or exchange 1922 Morgan or light car, cash adjustment.—1, Austin Friars, Stamford. [2956

ZENITH Combination, 5-6h.p. J.A.P., Gradua gear, clutch, K.S., electric light, perfect running order, comfortable roomy Watsonian sidecar, almost new, good Dunlop tyres, tax paid.—Carter, "Dunkerry Lodge," 70, Upper Richmond Rd., East Putney. [2563

ZENITH 1920 8h.p. Sports, Sandum Elite bulbous back sidecar, Easting, electric and acetylene lighting, speedometer, perfect throughout; must sell; £85, or best offer.—Russell, Homestead, Woodfield Park Drive, Leigh, Essex. Business Phone: Bank 5136. [2682

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LADY'S Douglas 1914, 2-speed, kick-starter, in splendid condition, lamps, horn, etc.; £32/10.—Simister, Jordangate, Macclesfield. [3013

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3½h.p. Precision-Triumph, in running order, £12; also 2¾h.p. Premier, fast little machine, £16.—Ross, 86, High Rd., Lee. [2627

GENUINE Bargain.—6h.p. J.A.P. Combination; £50.—Owner, 115, High St., Lymington. [3186

PRECISION 3¾h.p., Mabon countershaft gear, Bosch, excellent condition, must sell; £18.—Smith, 53, Glenfarg Rd., Catford, S.E. [2929

HUMBER Combination, 3-speed, £45; Triumph combination, 3-speed, £45; take lightweight part.—57, Kenbury St., Camberwell, London. [2903

£25.—Calthorpe, 2¾h.p. J.A.P., Enfield 2-speed, condition good, mechanically perfect; combination wanted; offers.—373, Acton Lane, Acton. [3168

VILLIERS (1921), Mark 3, carefully used, excellent condition, also B. and B. carburetter; reasonable offer.—25, Old Lodge Lane, Purley, Surrey. [2875

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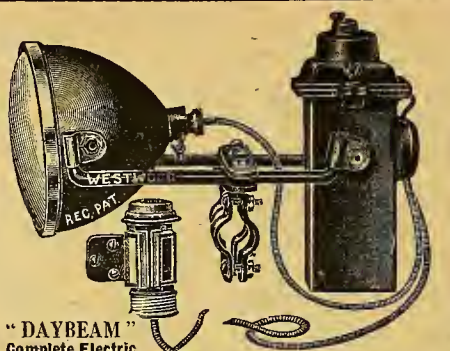

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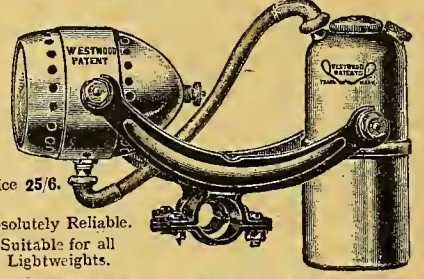

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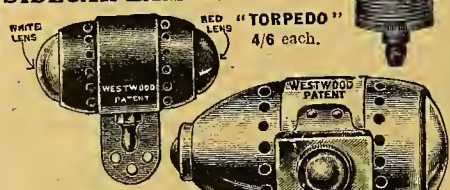

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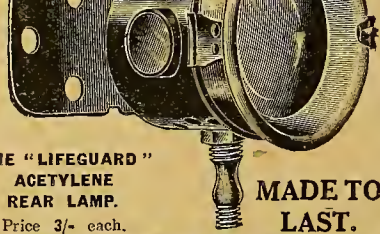

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Miscellaneous.

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WANDSWORTH.—1920 (July) Rover Combination 5-6h.p., 3 speeds, hood, screen; 85 gns.; terms.

WANDSWORTH.—Indian (late) 7-9h.p. 3 speeds spring frame, newly enamelled; 55 gns.; terms.

WANDSWORTH.—Hazlewood-Jap Coachbuilt Combination, 5h.p., twin, 3 speeds, lamps; 55 gns. terms.

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DEFERRED Paymeots.—Send for details of new scheme and big lists of guaranteed machines.

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JONES Garage.—Here you are lads! £35 hotstuff Indian and sidecar, fully equipped, full tax paid large exhaust, 7-9h.p. Special bargain of the week.

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JONES Garage.—Also Indian Sidecar for spring frame model, perfect; £15.

JONES Garage.—1919 4h.p. Douglas Combination £79/10.

JONES Garage.—1918 4h.p. Triumph Combination, luxurious sidecar; £75.

JONES Garage.—8h.p. Enfield Combinations, new Magdyno lighting, Vickers engines, mechanical lubrication, superb outfits; £140. Send for bargain list.

JONES Garage.—1919 3½h.p. Ariel, just fitted with 1922 brand new Ariel sidecar, unused; £79/10. Send for deferred terms form, etc.

HUGE stock of all makes from £25. Open all Saturday.

JONES Garage, Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. 'Bus from Highgate or Finsbury Park. 45 minutes from Tottenham Court Road. [3586

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Miscellaneous.

19 (late) Countershaft Combination, lamps, horn, etc., been garaged half time, owner going oad, condition as new; £65; seen any time.—S. cdonald, 20, Nelson St., East Ham. [2457

45.—4½h.p. Combination, 3-speed, kick-start, all chain, Chater fittings throughout, Palmer ds, all guaranteed perfect; tools, spares; real gain.—Rendall, 10, Jasper Rd., S.E.19. [3553

RECISION Combination, 2-seater, Enfield gear, Amac speedometer, P. and H. lamps, horn, ons, luggage grid, new tyres, tax paid, just over-led; trial willingly.—58, Kingsgate Rd., Kilburn, idon. [2508

LLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite station. L.S.W. Railway). one: Latchmere 4388. Terms, no extra with good osit. Immediate delivery; no inquiries; satisfac-n guaranteed.

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LLBER.—Levis 1916 2½h.p., 2-speed, all accessories, good order; £29.

LLBER.—Hmuber 1914 3½h.p., 2-speed, handle-start, all accessories, tax paid; £25.

LLBER.—Triumph 3½h.p., clutch model, all acces-sories, Philipson pulley, tax paid, good condition; 3.

LLBER.—Douglas 3½h.p., 2-speed, new tyre, all accessories, tax paid, in good condition; £35.

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LLBER.—1916 B.S.A. Combination, 4½h.p. counter-shaft. Easting, all accessories, in good order, tax d; £58.

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LLBER.—Chater-Lea, J.A.P. combination, specially built, 1921, 5-6h.p. S.-A., 3-speed, clutch, kick, iel coach sidecar, all accessories, tax paid; £55. [3441

LACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quad-nts, 1922 Royal Rubys. Quick deliveries. Good ce for your machine; exchange.—Booths' Motories, terloo Rd., Blackpool.

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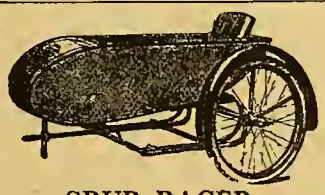

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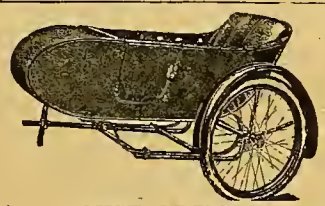

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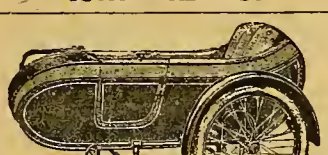

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Miscellaneous

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HALIFAX.—Cash Bargains.—1919 3½h.p. 3-speed Ariel, £49/10; Humber, 3½h.p., £10/10; Rex 2-speed and sidecar, £24/10; 2¾h.p. New Imperial, £22/10; Premier, 3½h.p., Grado gear, £22/10; Premier 2-speed, £27/10; Matchless Combination, £39/10.—Collier's Motories, Horton St., Halifax. [3580

1922 New Machines, slightly soiled, to clear.—2¼h.p. Triumph, list price £65, our price £57; 2¼h.p. Velocette, list price £65, our price £57; 2¾h.p. Velocette sports, list price £68, our price £60; 3½h.p. Rudge, 3-speed, list price £94, our price £85; 3½h.p. James sports, list price £105, our price £90; 2¾h.p. Ruby combination, list price £95, our price £85; 7h.p. James combination, list price £170, our price £155; 8h.p. Enfield Combination, list price £140, our price £125; 4½h.p. P. and M. combination, list price £130, our price £119; 8h.p. Matchless 2-seater combination, Magdyno, spare wheel, leg shields, etc., list price £205/19, our price £190. Write for second-hand bargain lists. Blackburne, Scott, Triumph, Villiers, and Sturmey-Archer service agents. —J. Hebden and Sons, 149, St. James St., Burnley (Tel.: 488), and 71, Scotland Rd., Nelson (Tel.: 91). [3585

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NER-A-CAR wanted, equal new, age, mileage, price, condition.—37, Ninian Rd., Cardiff. [2517

WANTED, good combinations and solos for cash.—Quadrant Garage, Winchmore Hill. [3274

WANTED, a Rudge, good condition, cheap for cash. —Box 2671, c/o *The Motor Cycle.* (D) [2505

GOOD Combination wanted.—Write or call, 143, Ravensbury Rd., Earlsfield, S.W.18. [3272

WANTED, really cheap solo or combination, any make; cash waiting.—King, Egrove, Oxford. [3024

MATCHLESS 1922 2-seater Combination, M.A.G.-equipped.—Drapper, 40, Royston Rd., Penge, S.E. [2948

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PALMER'S Garage, Tooting.—Catalogue free.—Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [3070

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WANTED, Combination Harley-Enfield, A.J.S., Sunbeam preferred, reasonable.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [9008

TRIUMPH Wanted, after 1915, complete or not, appearance immaterial; cheap for cash.—Box 2642, c/o *The Motor Cycle*. [2423

MODERN Motor Cycles and Combinations bought for cash or sold on small commission; send details first.—South Eastern Garage, Herne Hill, S.E.24. [1434

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WANTED, Countershaft Triumph, £25-£35 offered, one needing repairs not objected to. Sturmey-Archer 3-speed wheel, guaranteed sound, with top and bottom stays, all controls complete; £9.—Howick, Keepers' Corner, Burstow, Surrey. [2980

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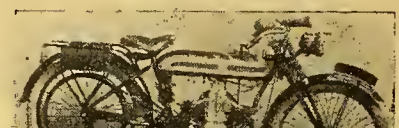

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The Spring in its normal position.

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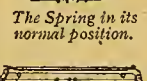

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ANY Number of Second-hand Machines and Combinations purchased for cash. A representative will be sent to any part of the country to inspect and complete the transaction after preliminary negotiations. Write, 'phone, or call.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [4564

SEND Your Motor Cycle to Palmer's Garage and Motor Auction Room, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station, Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [3067

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2590

AUTO-GLIDER 2¾h.p., built carry 2, practically new; £14.—Cooper, Poultry Farm, Rayleigh. [2443

A.B.C. Skootamota, new, unsoiled, latest model; £33, sacrifice.—Frank Whitworth, 139, New St., Birmingham. [4658

UNIBUS 2½h.p., clutch, 2 speeds, kick-start, electric lighting; £25; nearly new, excellent order.—S. M. H. Ors, 25, Camden Rd., near Tube. [2960

MOTOR Scooter, Dyonette, for lady or gentleman, as new, cost 37 gns.; will accept £25 or nearest; call, evenings.—10, Muncaster Rd., Clapham Common, S.W.11. [2668

MOTOR ATTACHMENTS.

CYCLE with Young Engine Attachment, as new, only ridden a few miles; bargain.—Bradheer, Minehead, Som. [2400

1½h.p. Young's Motor Cycle, special frame, quite new, tax paid; £17.—Smith, 175, New North Rd., Hoxton. [2743

1½h.p. Kenilworth Motor Cyclette, suitable for lady or gentleman; £27/10.—Wauchope's, 9, Shoe Lane, London. [3429

AUTO-WHEEL, B.S.A. model, and Humber 2-speed cycle, excellent order; £14/14.—Mylam, 197, London Rd., Croydon. [7203

CYCLOTRACTEUR, shop-soiled, makers' price £21. Send for terms; stamp please.—Edwardes, 277, Camberwell Rd., S.E.5. [3177

1h.p. Motor Attachment, fixed to a good B.S.A. pedal bicycle, 3-speed hub gear; £17/10 complete.—Wauchope's, 9, Shoe Lane, London. [3421

WALL Auto-Wheel for Sale, excellent condition, owner bought motor cycle; no reasonable offer refused.—Delmé, Courtland's Avenue, Hampton Middlesex. [2514

BRIGGS-STRATTON Auto-wheel, 2h.p. (American), very powerful, cost £35 last August, suit tradesman's tricycle; £25, or near offer.—33, Market Sq., Leighton Buzzard. [2578

HOODS, WINDSCREENS, ETC.

COLLINS and Son for hoods screen, and aprons hoods from 35/-.—Below.

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COLLINS and Son stock all known makes of wind screens; we have a few second-hand Standard Eastings, fitted with new celluloid, from 45/-.—Below.

COLLINS and Son fit celluloid panels to any wind screen in few hours, new aprons, side curtains etc.; open weekdays till 8.30, Sunday mornings til 1 o'clock.—Collins and Son, rear of 84, High St., Putney, S.W. (D) [6195

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SIDECAR Hoods, 30/- and 40/-, best quality materials; celluloid, 1/6 sq. ft.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [0855

EASTING Screens from £3; Sandum V screens, from £2/15. All makes of screens repaired. New panels fitted from 12/-; aprons supplied from 10/- hoods complete from 35/—Robini Mfg. Co., 1 and 3 Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585 [3435

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MONTGOMERY 1921 Sports Body, good condition offers; cheap.—95, The Grove, Wandsworth. [3151

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COLLINS and Son are actual manufacturers, and give twelve months' guarantee with every body made by them.—Below.

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TORNADO Aluminium Sidecars.—The last word in sporting and touring sidecar bodies, handsome roomy, and comfortable, light yet tremendously strong, adaptable to any chassis.—Catalogue post free from Greenwood, 198, Manchester Rd., Oldham. [3844

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

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The Featherweight Motor Cycle.

IT is not always particularly easy for the motor cyclist of to-day to appreciate the advantages of the ultra-light type of mechanically propelled cycle. The rider of a sporting mount is apt to look with scorn and derision on anything smaller than 250 c.c., yet the real miniatures are increasing in number, and there is a very definite reason for their increasing popularity.

Firstly, it must be remembered that the popularity of the motor cycle has not yet approached its zenith, and that by far the largest number of prospective motor cyclists will be drawn, not from the class of young rider with sporting proclivities, but from the business men who require a very moderately priced two-wheeler principally to take them to and from their daily work. Again, there are thousands of cyclists whose increasing years compel them to consider some form of mechanical aid on their pleasure trips into the country or on their journeys to or from the golf course. Such as these do not need fast or heavy machines, but rather the lightest and simplest possible type of mount. The motor assisted pedal-cycle, if properly devised, exercises a strong appeal to the habitual cyclist. For one thing he is able to retain his accustomed riding position and enjoys, rather than otherwise, the occasional light pedal assistance which may be necessary on the more severe gradients. Without doubt the motor assisted cycle is doing, and will continue to do, good propaganda work, and though we consider that the greatest future lies before the miniature motor cycle fitted, probably, with a tiny two-stroke engine and two-speed gear, yet both types are to be encouraged. Three points are of vital importance whichever type is to be considered, viz., price, weight, and mudguarding. The first item must be kept as near as possible to that of a high-class pedal cycle, weight should not exceed 80lb. to 85lb., and mudguarding should be sufficient to permit a business man to arrive at his office in a reasonable state of cleanliness, not a very difficult proposition when it is recalled that a speed of 20 miles an hour is the maximum desired.

Inexpensive Touring.

SOME people hold the belief that motor cycle touring is an expensive pastime. It is not. At the same time it may easily be made expensive, and it must be confessed that most of us live, as it were, on a higher scale during our holidays than we do during the remaining forty-eight or fifty weeks of the year. But it is not fair to blame the motor cycle for this increased expenditure.

There is really no reason why a tour should make a bigger hole in one's purse than a more prosaic fortnight by the sea. In fact, the reverse should be the case.

Perchance, however, the grumblers are content with a more or less modest boarding house when they spend a vacation *sans* motor, but, setting off awheel, their ideas of comfort alter, and nothing satisfies but a really elaborate hotel.

Sometimes, indeed fairly often, the big hotel provides the better value for money, but as a general rule the motor cyclist tourist should be content with the less imposing establishment. Even then his expenses will not be greater than with the seaside boarding house, and certainly infinitely less than in the big seaside hotel.

It is nevertheless very true that one cannot judge the relative value of an hotel until one is in possession of the bill next morning.

· An index to the advertisements in this issue will be found on the page facing the back cover.

The Camping Season.

A LOT of motor cyclists will be camping out during the next few weeks. I have no desire to hurt anybody's feelings, but every camper knows that when permission to use an old camping site is refused, the cause is almost always that "dirty campers" have been there in the interim. No landowner or land tenant cares to see one of his choicest plots defiled by a litter of paper, foul tins, grease, bacon rind, egg shells, and the like. It is not enough to chuck such rubbish somewhere out of sight. There may be a convenient ditch or patch of fern handy to cover up filth, but filth attracts vermin, and wasps, flies, and earwigs are the portion of the next camper to use that site. The decent camper always burns everything which is burnable before he strikes camp. He makes a point of burning out tins to remove grease, scraps of meat, fish, milk, etc., therefrom. What cannot be burnt he buries. Even his greasy washing-up water is strained into a shallow pit through a sieve of leaves and twigs. The Boy Scouts have very stringent rules on this subject. Let us motor cyclists see that we are at least as tidy and sanitary as small urchins can be. Some of my favourite sites are now closed to all campers, and others are so polluted that no decent man would use them.

Two Tent Tips.

THE camping motor cyclist may be interested in two small tips making for comfort and efficiency during an open-air holiday. Has your cottage tent a vertical pole at each end? If so, scrap it and substitute at each end two shear leg poles, lashed together at their upper ends. The first merit is that the doorway is no longer obstructed; even more precious is the fact that when a heavy shower begins at 2 a.m., instead of staggering out barefoot into the wet, cold night to slacken the taut guys, you just reach out a sleepy paw and alter the angle enclosed by the shear legs. A second tip of less value is based on the fact that a push is often as effective as a pull. The four main guys of the ordinary ridge-poled tent are generally extended far out from the tent at about 45 degrees, where their sturdy pegs have a nasty habit of stubbing one's bare toes, and causing one to rev. freely upwards from a datum line commencing with a handy but naughty little "d." These protruding obstructions may be eliminated by stretching the fore guys backwards and the rear guys forwards in X formation on either side of the tent; it stands just as firm, and the fairway at each end is cleared.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Knee Grip on Lady's Machines.

I DON'T know whether our fair riders grip the tank with their knees. In ancient days, when the paladin disguised himself as a woman to spy out the enemy's fortress, they used to detect him by tossing over a few links of gold chain, and watching whether he opened or shut his knees to catch it. Perhaps the same applies to motorcycling. But I have just been sampling a famous ladies' model, and I noticed that the colossal knob of the gearlever came just where the tenderest part of my thigh was. It didn't feel right, but perhaps petticoats make a difference. I believe that the design of ladies' machines still requires a great deal of attention to detail.

More Strange Trouble.

READERS may remember my carefully laid plans for a no-trouble season. Also how the demon of mischief who occasionally interferes in human affairs proved one too many for me. He's been at it again. What was it this time? Certainly. A high-velocity golf ball, smitten by one of those willowy knickerbockered blokes with universal joints at every hinge of his anatomy, encountered my tank at speed some thirty yards after quitting the club face. Result, new tank. I must study the literature of demonology, and learn what sacrifice will propitiate the powers of darkness. The culprit was merely demonstrating a perfect swing, and didn't mean to hit the ball at all.

A Home Truth.

ACCORDING to the A.C.U. the public are clamouring for more silent motor cycles. It may be so. Our village postmistress is not. I reproduce the conversation verbatim:—

V.P.M.: "So you've got a new motor cycle, Mr. Ixion?"

Self: "Yes, Mrs. Jones. Do you like it?"

V.P.M.: "To be sure I do, sir!"

Self (incautiously): "Now I wonder what's taken your fancy about it; I didn't know you were interested in machinery."

V.P.M. (without malice): "No more I be, sir. But it makes that much noise I have time to get the children in afore you comes past."

(Ixion kickstarts vigorously.)

Occasional Comments.—

Anywhere a Pony Can Go.

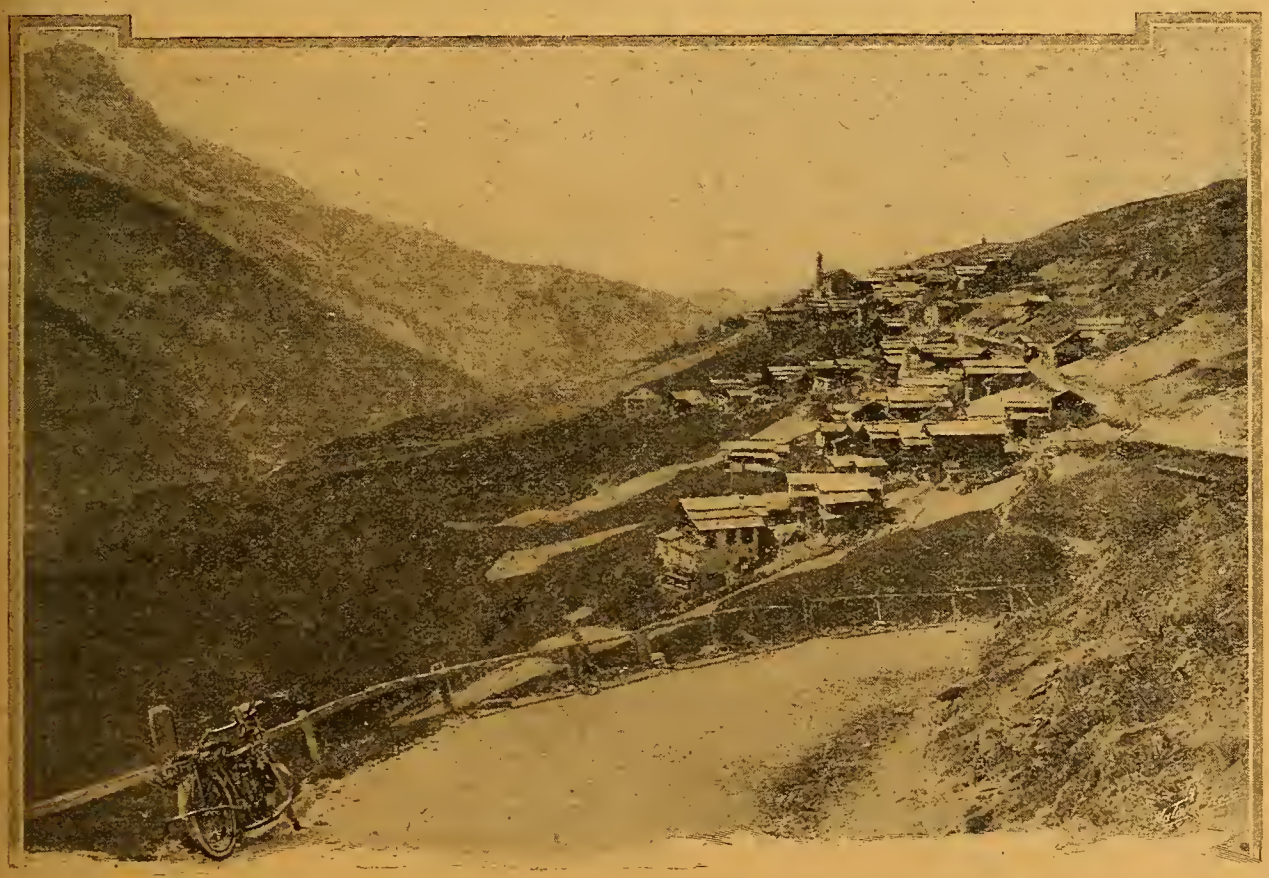
I THINK so highly of the motor cycle that I use mine in the country exactly as one would use a horse. I make it do everything except jump, especially in dry weather. With a low bottom gear and a handlebar clutch I caracole gaily over commons, through woods, across fields, and through fords. There are just two snags in this sort of riding, provided the surface is dry. Snag No. 1 is the familiar difficulty of opening a gate whilst supporting a machine which scales over 2½ cwt. Snag No. 2 is obviated by a prop stand with a disced spike at its business end—viz., the problem of propping up a machine on a soft flat surface.

An Impromptu Gymkhana.

WE have all heard of the gentleman who rode a motor bicycle backwards from somewhere to somewhere—I believe the feat was actually accomplished in Yorkshire just before the war, and I only pray that no topers of the night before were stricken with lunacy by the weird spectacle. But I have recently experienced an even more harrowing sensation. Some few motor cyclists were larking about on a deserted cricket field, when Jones bet Robinson that he couldn't ride his machine blindfold. Robinson was duly blinkered by tying a thick bag over his head, and off he went. He simply couldn't balance and fell off with agonised shrieks. Then we all tried Two or three experienced considerable difficulty in keeping upright; but one or two members of the party could not only ride with ease, but managed to take their machines decently near a mark sighted just before they were blindfolded. Try it, and test your sense of balance. Mine is only so-so with no horizon to act as a datum line.

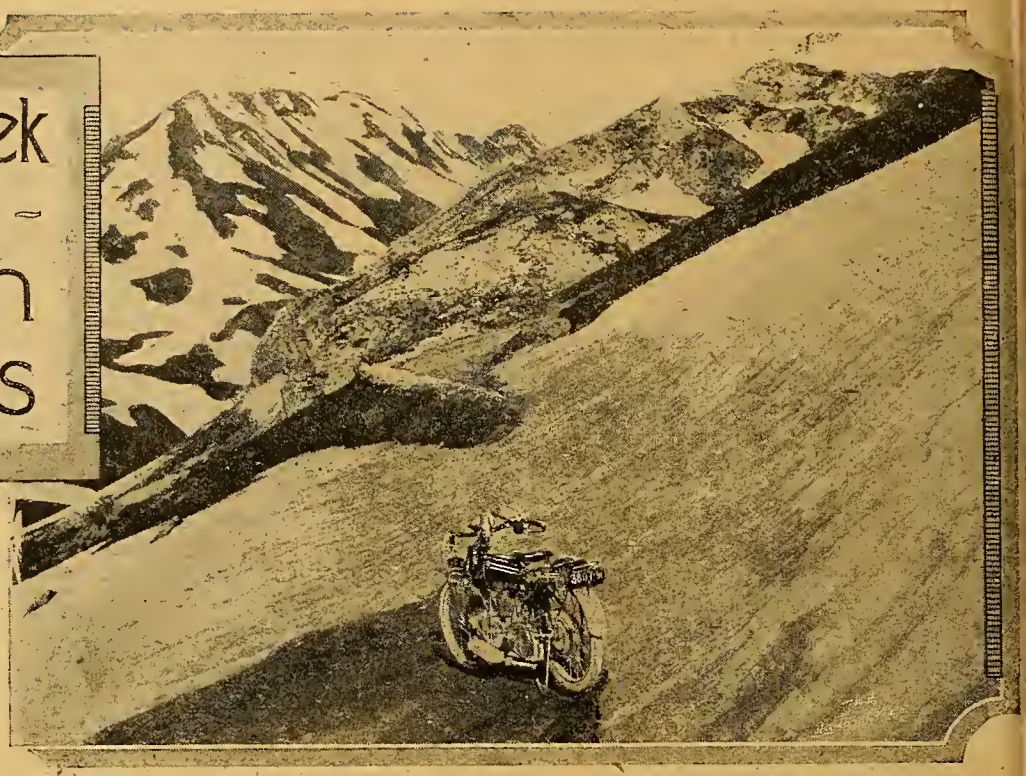
True Pathos.

THERE are plenty of pathetic individuals wandering about the planet—the gourmand whose purse only permits of feeding in teashops; the rosarian I once met, who earned his bread in the whaling industry; and many others. But for sheer tragedy commend me to the marine engineer whose hobby is motor cycling, and who spends about one month per annum ashore, for which a cruel and brutal Government compels him to pay a full quarter's tax, or may be two quarters if the month falls awkwardly. I have just had a letter from one such, who implores the trade to remember that seven riders out of ten are staid fellows, and prefer the "sit up and beg" riding position to T.T. attitudes. He has fitted a .02in. nipple and needle valve to the left transfer port cover of his Scott, and connected it up to a branch petrol line. He finds the engine will now start at the second kick from cold in any weather.



TOURING IN THE FRENCH ALPS. The quaint village of St. Veran, 6,690 feet above sea level and the highest commune in France. See article "A Week in the High Alps" (page 154).

A Week in the High Alps



One of Europe's Most Wonderful Touring Grounds. Amidst the French Alpine Passes with a Solo Lightweight.

By C. B. WATERLOW.

The limit of practicable road on the Galibier. A huge bank of snow confronted the traveller as late as June.

THERE is one respect in which a solo motor bicycle scores over all other self-propelled vehicles, and that is its ability to be turned round easily in awkward places. Many of the mountain tracks and snowy passes up which I penetrated early in June one would not have dared to attempt in a car, for fear of coming up against a bank of snow or an avalanche across the road with a precipice to one side and a cliff on the other, and being forced to proceed most perilously in reverse down perhaps five miles of narrow, steep and winding mountain track.

A motor bicycle on the Riviera is one thing, and in the high Alps in springtime it is quite another. On the azure southern shores of France it is apt to seem rather small, especially in the height of the season when Rolls-Royces and the like swarm everywhere; but once in the mountains, providing that it is sound and has a good three-speed gear, it comes into its own. Its rider has the freedom of the heights, and can lord it over all the cars that pass, or try to pass the highest *cols*, for they often get into difficulties before the roads are fully cleared for their summer traffic.

The Writer's Task.

To attempt to describe the high French Alps, with their wonderful roads in all the glory of fine June weather, is a heavy responsibility for the conscientious soul of one who, having travelled much, firmly believes this part of the world to be the most beautiful on earth and unsurpassed as a touring ground. If these notes induce but a few to follow in the writer's wheel tracks and to learn to know and appreciate the country and the people of the French Alps, they will, in his opinion, have served their purpose.

My little A.J.S. never feels the heat; but I did not allow it to mistake the magnificent coast road from Cannes to Nice for the T.T. course. The shimmering, bituminous surface seemed to exude heat like a casting fresh from the mould, and the sun beat down with merciless intensity as I left Cannes on the afternoon of June 1st. Turning to the left up the valley of the Var without entering Nice, the road, still broad and straight as an arrow, was in much better condition this year than formerly. It carries a very heavy industrial traffic for the first part of the way, and it was good to find that repairs had at last caught up with deterioration.

Surprising Contrast.

The change from a broad valley baking in the southern sun to a wonderful narrow mountain gorge comes with surprising suddenness when one is making good speed, and then, passing through numerous short tunnels, the convolutions of the road beside a great torrent in full spate makes one feel that one is on the real *Route des Alpes* at last. For years I have longed to explore this route, the course planned by the branch of government known as *Ponts et Chaussées* in conjunction with the Touring Club de France that leads the astonished traveller over all the highest passes from south to north, skirting along the Franco-Italian frontier. Now at last the dream has come true, and my one desire left in that direction is to go again.

A glance at the map would appear to indicate that the distance from Nice to Entrevaux in the Var valley

A Week in the High Alps.—

is about equal to that from the latter place on to Barcelonnette, whereas actually the latter stage is much longer owing to the fact that no map can show all the innumerable bends in the road.

It is a different world into which one emerges after passing the first barrier of the Alpes Maritimes through the Gorges du Var, a fresher air, a softer light and, in June, a land that is full of the scent of flowers and new-mown hay. The road rises steadily through Puget Théniers and Entrevaux, which is the most charming old town with an ancient castle perched apparently quite inaccessibly on a pinnacle hundreds of feet above the broadened river.

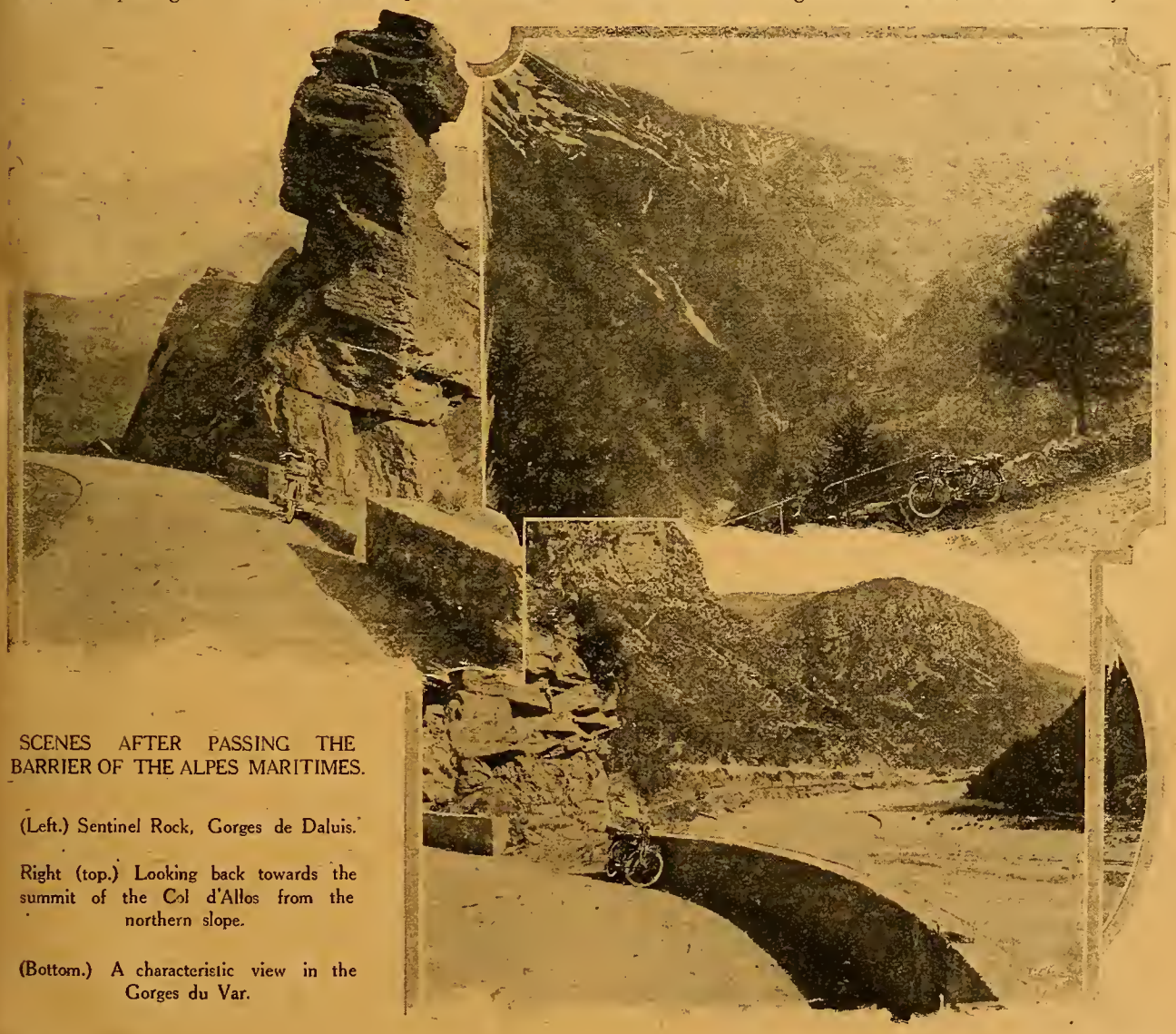
A Rocky Sentinel.

A little higher up, the route bends to the right, and then climbs, with a gradient that is for the first time noticeable, to the entrance of the Gorges de Daluis, a favourite excursion from Nice and a most wonderful mountain passage. A fantastic rock pinnacle stands sentinel at the southern end, and the road passes, by many bends and several tunnels, through a chaos of red cliffs and clefts whilst the torrent of the Var roars at an abysmal depth below one on the right.

What's in a Name?

Again the valley opens out as we descend to the level of the stream once more and arrive at a peaceful little town called Guillaumes, a name that French people now consider to be regrettable. Here there is a comfortable country hotel, and much to be seen of interest in the surroundings. It is the first stopping-place for motor coaches on the *Route des Alpes* in high summertime. I stopped for the night, my distance from Cannes now being 121 kilometres; the Col de la Cayolle, with its formidable elevation of 7,630 ft., was now before me.

The road leading up from Guillaumes to this *col* passes at first through a deliciously pastoral valley set off by rugged mountains closing the horizon to the north. The village of Entraunes, the last of any size



SCENES AFTER PASSING THE BARRIER OF THE ALPES MARITIMES.

(Left.) Sentinel Rock, Gorges de Daluis.

Right (top.) Looking back towards the summit of the Col d'Allos from the northern slope.

(Bottom.) A characteristic view in the Gorges du Var.

A Week in the High Alps.—

in this valley, is very picturesque and contains in the middle of its narrow street one of the most fearsome hairpin bends to be met with anywhere.

Above the last group of wooden chalets the climb begins in earnest with a gradient of about 1 in 10, stiffening sometimes to 1 in 8. The last trees are left behind, and vegetation, save for scraggy grass and rock plants, disappears from the scene, which becomes grim and forbidding and very grand. Clouds were gathering over the summits, and there was none of the brilliance of some of the passes, equally lofty, further to the north. The road surface was quite good, only a little stony in places, and I rose steadily towards the clouds at 15 m.p.h. on second until, when the top seemed quite near, there came an unpleasant surprise, a mass of boulders across the road, and workmen who told me that there were quantities of snow and avalanches higher up, and that the pass would not be practicable before the end of the month. It was most disappointing. The only thing to be done was to drop right down again through Guillaumes, thread the Gorges de Daluis once more, and, by a circuitous route via Annot, la Colle St. Michelle and Colmars, attempt the Col d'Allos (7,312 ft.), which might also be in the same state, though I had passed it in a car nearly a month earlier last year.

Snow Compels Detour.

This enforced change of route was not altogether to be regretted, for it gave me one more mountain pass, the passage of la Colle St. Michelle, a matter of barely 5,000ft., not to be compared with those on the real *Route des Alpes*, but presenting a view of indescribable beauty over the deep wooded valley of the river Verdon in which lie the villages of Colmars and Allos.

It began to drizzle, my back tyre was suffering from a persistently leaky valve, and my petrol was running low, so that I was never so glad of the night's repose as when I arrived at the little Hotel de France in picturesque Colmars, where a welcome was certain, as this is the third year in succession that I have stopped there in passing over the Alps.

Scoring over a Car.

A party in a new and racy Nazzaro car also put up at this hotel for the night, and we fell into conversation, as one does so easily in French hotels. Their engine gave 80 horse-power and untold speeds on the road. They talked gaily of reaching the Col du Lauteret, about a hundred miles further on, for lunch the next day, starting only at 9 a.m. However, they did not know the road, and were certain to be disillusioned. Actually I left at 8.30 a.m., whilst they were making their preparations, and I never saw them again.

The morning was wet, and it looked as though the experience was coming of endeavouring to cross a 7,000ft. pass in really bad weather; but the clouds dispersed as I rose steadily through Allos and up on to the heights where the surrounding snows became blindingly bright. The road on the southern side is narrow and stony, but not really difficult, first speed being required only for a few soft patches. There were flowers on the heights and the track was clear of snow on both sides of the summit. Stopping by the refuge house at the top, a wayfarer informed me that much work had been done this year in clearing the pass, and that it had cost 7,000 francs. Certainly the descent on the northern side was in much better condition than last year.

I found that it had taken just under an hour to reach the summit, 25 kilometres (14½ miles) from Colmars, and I had risen 3,330ft. without stopping, overheating or worrying in any way, the elevation of Colmars being 4,050ft. and that of the top of the *col* 7,380ft.

The upper air makes one feel alive on a different plane of existence from the normal. Gazing down from the top of the Col d'Allos over a vast tumble of peaks, rocky and snowy and clothed at their bases with dark pine forests, the perspective in which the earth and life in general appear is all changed. Then indeed one feels equal to fulfilling Kipling's somewhat difficult injunction :—

> "—— meet with triumph or disaster,
> and treat these two impostors just the same."

But what a marvellous land this is! How small Ben Nevis would look from these heights, and what a pimple Snowdon would be!

I descended very slowly to Barcelonnette, so as not to arrive too early for lunch there, which, from past experience, I knew would be good. It is a little town tucked away in the heart of the mountains, but with an entourage of trim, well-built villas the presence and origin of which is curious. Some few decades back much of the enterprising youth of the place emigrated to south and central America, and some returned having made fortunes which they expended in building really comfortable homes in their birthplace. These houses are known as the Mexican villas.

Local Road Warnings.

They told me that the Col du Vars the next barrier to be crossed over the range called the Chaine de Parpaillon, was "*peu praticable*," a phrase scarcely strong enough to deter an enterprising motor cyclist. I was able to fill up here with the exact quantity of petrol and oil required and also to buy more photographic films, of which I had already expended a surprising number.

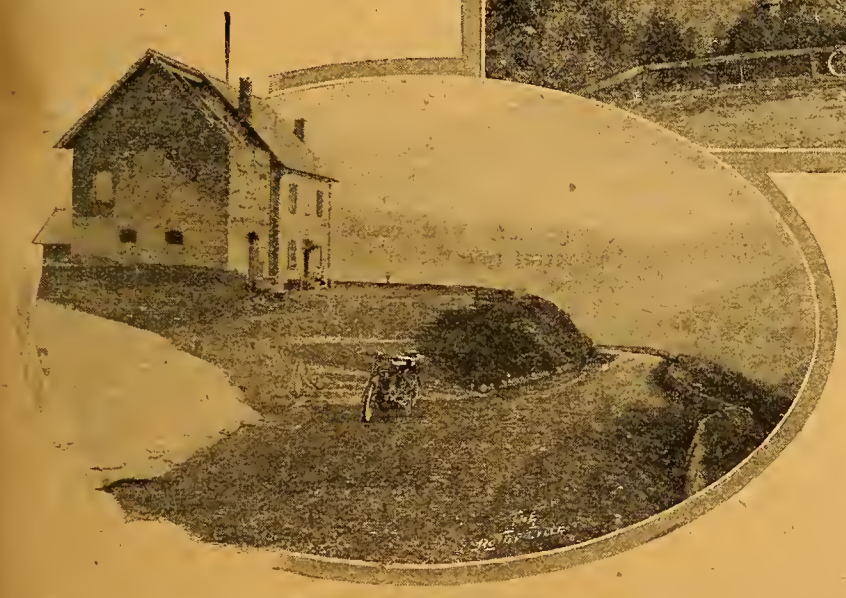
My only touring trouble, apart from tyres, was due to the smallness of the machine's petrol and oil capacity and to the fact that one can seldom induce dealers in country places to sell less than 5 litres (just over a gallon) of the former and two litres of the latter, which quantities my tank will only take when quite empty. It is obvious that this presents a serious difficulty when one is not radiating from a centre. Some form of auxiliary tank is really essential for long-distance touring in remote regions.

The afternoon was very hot, and as I breasted the steep southern ascent of the Col du Vars it seemed to get hotter instead of cooler as the height increased. Thunder clouds hung about the summits and flowers decorated the grassy slopes in a profusion that is marvellous to northern eyes. The road is bad, narrow, steep and very rough with vertical edges in several places. This pass, the top of which is 6,960ft., was constructed in 1891 by the 5th regiment of Chasseurs Alpins, and they probably began on the northern slope,

A Week in the High Alps.—

which is well engineered, and got rather tired of the job towards the end. It is considered to be one of the most difficult in the Alps from a motoring point of view. My only pauses on the ascent were of a photographic nature. It is a pity that the camera cannot render those dazzling little blue gentians that star the ground up there amidst rocks and stones and patches of melting snow.

The southern slope is very beautiful, with all the usual Alpine features of rich, flowery fields nestling at preposterous angles against dark forest-clad mountains, and with the lateral valley of the upper Ubaye leading straight to the Italian frontier past the delightful village of St. Paul. I once spent a night at the little inn there, where they have not even got electric light yet. One opens the front door and chickens run out of the parlour, and one catches a glimpse and a whiff of cattle reposing just beyond a second door, but upstairs it was clean, and I was given a meal that no ordinary human being could consume in its entirety. Owing to the proximity of the Italian frontier a passport is advisable.



The refuge house at the top of the Col d'Allos.

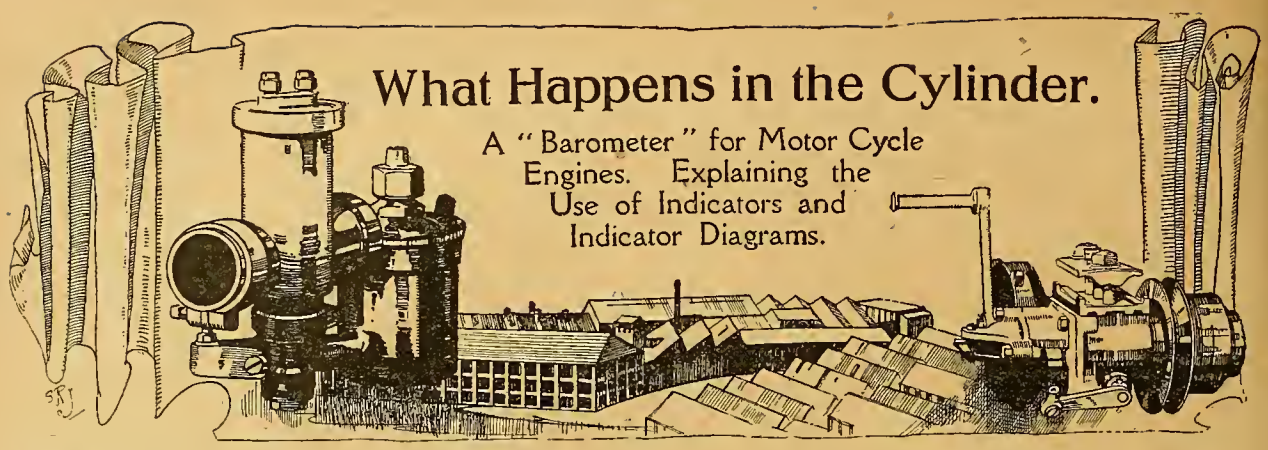
But the northern descent is glorious beyond all powers of description. At first the road winds downwards through a pine forest, the mossy turf of which in June is carpeted with flowers. Then the valley opens out to a spacious scene that is unique in the Alps. The broad valley of the Durance spreads itself far below, and, piling up on plane after plane of distance and elevation, the great snow mountains of Dauphiny rise into the skies, sometimes floating like ethereal islands above the earth and the clouds, sometimes losing themselves in unfathomable atmospheric depths. One is compelled to stop and gaze upon this vast magnificence. I wonder, if one built a house up there, whether it would be easy to live with that view every day, or whether one would be made to feel so minute as to render comfortable existence almost impossible.

By many convolutions the road descends upon Guillestre, another characteristic, peaceful old French country town with an ancient church and a passable hotel, and here we turn to the right to explore the Val Queyras down which flows the torrent of the Guil

View near the top of the road leading up to the Sommet Bucher.

from its source on Mont Viso and the Italian frontier. This is a detour that very few British tourists have as yet been accustomed to take; but they do not know what they miss. About 20 miles of excellent *route nationale* leads up the Val Queyras, and, in spite of all that has gone before, it is a revelation. It passes first of all through a gorge the vertical rock sides of which are fully a thousand feet high, and then emerges, as so often happens in these regions, into a broad and pastoral upper valley the flanking mountains of which are clothed entirely with forests of larch trees. The first place of interest, in the gorge itself, is *la Maison du Roi*, at which are to be seen souvenirs of Louis XIII., who passed that way on a journey to Italy. A little higher up a fine mediæval fortress, Château Queyras, stands across the valley and barred the way in ancient times. Then, passing Ville-Vieille at the confluence of the Guil with another mountain torrent, we come to Aiguilles, principal village of the *val*.

(*To be concluded.*)



What Happens in the Cylinder.

A "Barometer" for Motor Cycle Engines. Explaining the Use of Indicators and Indicator Diagrams.

MOST motor cyclists are acquainted with the self-recording barometer in which the fluctuations of the atmospheric pressure are indicated by an oscillating pen on a chart encircling a slowly rotating drum.

If instead of indicating the pressure of the atmosphere we have a moving pencil which records the ever-changing pressures in the working space of a motor cycle cylinder, and if the uniformly rotating drum is replaced by a flat plate which moves to and fro in such a way that it exactly reproduces the movement of the engine piston, the diagram drawn out will be known to the engineer as an "indicator diagram," and will prove of the greatest use in determining the efficiency of an engine under varying conditions of valve and ignition timing and with various settings of the carburetter controls or in comparing the results given by various designs of engine details or by various grades of fuel.

Resolving Cylinder Pressures Diagrammatically.

In order to realise fully the nature of an indicator diagram let us first imagine the stroke of the piston to be represented to a definite scale by a horizontal straight line, such as A H in fig. 1.

We may think of the point A as the "top dead-centre" and the point H as the "bottom dead-centre," and we may further imagine the stroke to be divided into a large number of parts at the points B, C D, E, and so on.

Now just as an ordinary thermometer records temperatures by the measurement of the column of liquid against a scale, let us imagine that it were possible to insert a pressure gauge into the cylinder of our engine which would read off, in exactly the same way, the pressure in the working-space for each of the piston positions corresponding to the points A, B, C, etc., throughout one complete cycle of the engine.

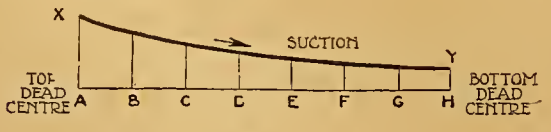


Fig. 1.

These pressures would be measured by the heights of the indicating column in our imaginery pressure-gauge, and these, in turn, could be represented by vertical lines drawn to scale through the corresponding points on the line A H.

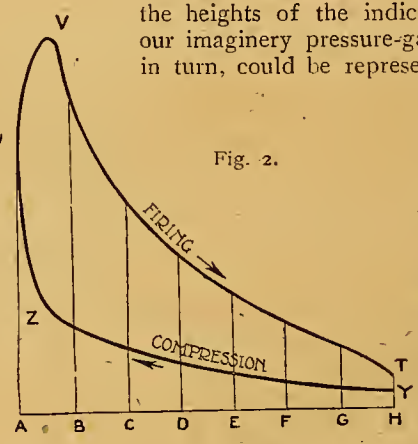


Fig. 2.

The Four-Stroke Cycle.

For the sake of simplicity let us deal with a four-stroke engine and first consider the suction stroke. As a general rule the pressure in the cylinder at the commencement of this stroke will be a little above that of the atmosphere, and will fall slightly as the piston moves to its "bottom dead-centre," so that the vertical lines representing the pressures will gradually diminish in length and the fluctuation is shown by the line X Y in fig. 1, which joins up the extremities of the pressure lines.

In a precisely similar manner the line Y Z W in fig. 2 will represent the fluctuation in pressure during the compression stroke as the piston travels back from "bottom dead-centre" (point H) to "top dead-centre" (point A), and here the pressures increase very considerably, and the vertical lines therefore increase in height to a corresponding extent. In practice the pressure increases steadily until the end of the compression stroke is very nearly reached. This is shown by the portion of the diagram between the points Y and Z, and at the latter point the pressure may amount to 100 lb. per square inch; ignition then occurs and the pressure jumps up almost instantaneously while the piston is moving over "top dead-centre" at the point W.

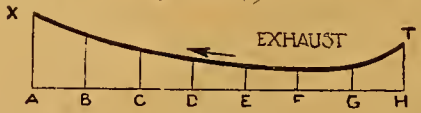


Fig. 3.

What Happens in the Cylinder.—

The firing or working stroke then commences, and the pressure continues to increase just beyond "top dead-centre" to a point such as V in fig. 2, and the maximum pressure may be as much as 450 lb. per square inch. It then falls off again as the piston moves to its "bottom dead-centre" as shown by the line V T, until, finally, the pressure represented by the height H T will not be greatly above that of the atmosphere.

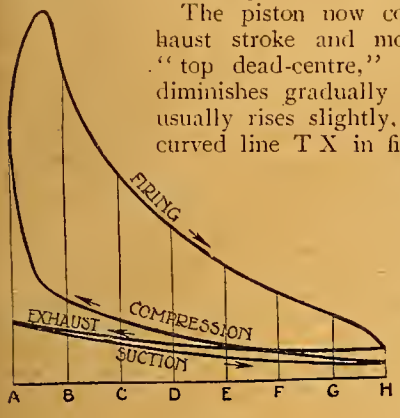


Fig. 4.

The piston now commences the exhaust stroke and moves back to the "top dead-centre," and the pressure diminishes gradually at first and then usually rises slightly, as shown by the curved line T X in fig. 3. The slight rise which is generally noticed, in practice, towards the end of the exhaust stroke is due to the back pressure which exists almost invariably in the silencer and exhaust pipe.

This completes the cycle of operation of the engine and another suction stroke then commences.

Owing to the fact that the variations in pressure during the suction and exhaust strokes are small compared with those during the compression and firing strokes, figs. 1 and 3 have been drawn to a different scale of pressure from that used in fig. 2, but if we combine figs. 1, 2, and 3, using a common scale of pressure, we obtain the peculiarly shaped area shown in fig. 4, which will be the complete "indicator diagram" for the engine under consideration.

Any four-stroke internal combustion engine, whether it be a large, slow-running gas engine or a small high-speed petrol engine, when working normally would give an indicator diagram roughly resembling fig. 4 in general outline.

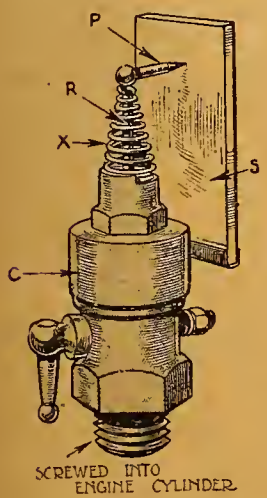


Fig. 5.

Indicators Actually in Use.

In the foregoing a purely imaginary method of obtaining the indicator diagram has been described, but several ingenious appliances have been constructed which, when attached to an engine, will trace out the diagrams automatically.

One of the simplest of such instruments is known as the "Micro-Indicator," and is shown diagrammatically in fig. 5. To the experimental engineer studying internal combustion engine phenomena, the apparatus conveys much information as to what is taking place inside the cylinder under observation.

It consists of a small cylinder C, fitted with a piston and having a bore of rather more than one centimetre, or roughly three-eighths of an inch, giving a piston area of one square centimetre. This small cylinder has a screwed boss at its lower end which fits the compression tap hole of the engine to be tested, while the piston carries a short rod R which protrudes

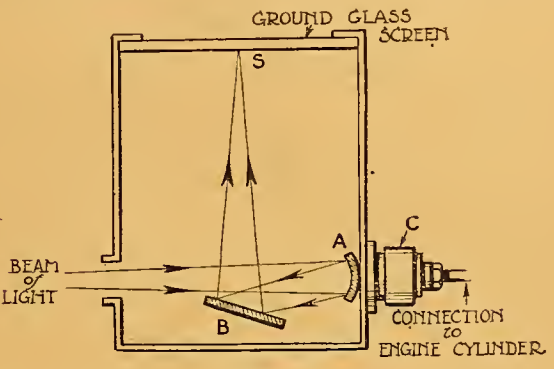


Fig. 6.

through the top of the cylinder C, and is fitted at its upper extremity with a fine horizontal pointer P. This just touches a detachable smoked-glass plate S, measuring about two inches by one inch. The piston is regulated by a strong external spring X, and as the pressures fluctuate in the engine cylinder the rod R and pointer P move up and down to a proportionate extent. The glass plate S is held in guides which are connected by rods, eccentrics, and gearing to an external portion of the engine crankshaft, but for the sake of clearness this mechanism is omitted from the diagram.

Direct Pressure Recording.

The backward and forward motion of the engine piston is, of course, converted into the rotary motion of the engine shaft by the connecting rod and cranks, and this rotary motion is reconverted back to "straight-line" motion by the above-mentioned mechanism, with the result that the glass-plate of the indicator exactly reproduces on a smaller scale the motion of the engine piston and in a direction at right angles to that of the pointer P.

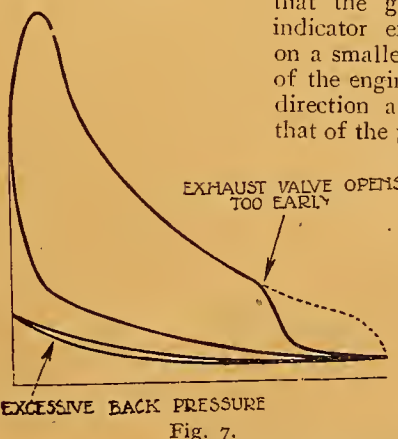


Fig. 7.

In this way the pressures in the working-space of the engine cylinder are automatically recorded throughout the cycle of operations, and an indicator diagram, similar in shape to that shown in fig. 4, will be drawn out on the smoked-glass plate.

What Happens in the Cylinder.—

Actually the size of the diagrams thus obtained is extremely small, and after "fixing" the plate by soaking in Canada balsam, they are either examined under a microscope or enlarged photographically.

Another interesting appliance enables the indicator diagram to be traced out on a screen by a rapidly moving spot of light, and as the carburetter controls or ignition timing are altered, so the diagram can be seen to change its shape.

The Watson Indicator.

This apparatus, known as the "Watson Indicator," is shown in a diagrammatic manner in fig. 6.

The engine pressures are recorded by the vibrations of a thin silicon-steel diaphragm enclosed in the casing C, which is connected up to a compression tap on the engine cylinder by means of a short tube.

The vibrations of this diaphragm are transmitted by a rod to a small mirror A, while a second mirror B rocks to and fro in exact harmony with the motion of the engine piston, being connected up by gearing, eccentrics, and rods with the engine crankshaft. Both mirrors are enclosed in a box having a ground-glass screen S at one end.

A powerful beam of light is projected on to the mirror A through an opening in the box, and is reflected back to the mirror B and thence to the screen S in the manner shown, and is focussed by lenses until it appears as a small bright spot.

The motion of the two mirrors is thus combined in the movement of the beam of light, and the spot on the screen moves so rapidly that the indicator diagram is traced out in the form of an illuminated line.

To the expert eye the indicator diagram tells at once what is happening inside the engine cylinder, and the area of the figure, combined with other data, gives a fairly exact measurement of the horse-power and efficiency of the engine.

In the case of two-stroke engines which depend on crank case compression, an indicator card, or diagram, can be taken for the crank case as well as for the working-space of the cylinder, and much useful data thereby obtained.

As an example of what an indicator diagram will reveal, let us examine fig. 7, which represents two faults in the engine under consideration.

Incorrect Valve Timing.

First it will be noticed that the curve corresponding to the firing stroke drops steeply at its lower end, the dotted line showing the more usual shape for this portion of the diagram. The steep slope points to the fact that the exhaust valve is opening too early and the area between the full line and the dotted line represents a loss in the efficiency of the engine.

Secondly, the curve corresponding to the exhaust stroke rises abnormally towards the end, and this shows the existence of excessive back pressure in the exhaust pipe and silencer.

The use of the indicator as a method of testing has long been in vogue for steam and gas engines, and its application in various forms to the high-speed petrol engine is becoming increasingly popular with the more scientific and advanced designers, proving as it does a quick, sensitive, and accurate means of testing and comparison.

B. G. MANTON (B.Sc. (Eng.), A.M.I.C.E.).

MISTAKEN VIEWS ON THE SIDECAR.

WHY does it so frequently occur that people who know least about a subject offer their opinions so readily? It would not matter if they were content with offering their opinions, but they are too apt to couch their opinions (usually wrong) as if they were facts.

Without wishing to appear in any way disrespectful, we cannot refrain from refuting the views expressed by a coroner in a recent case involving the question of the sidecar. In his address he said, "Of course motor cycles and sidecars are very dangerous, and lots of accidents have occurred with them all over the country." At this point a lady interrupted with the suggestion that they should be "done away with if you can't rely upon them," and further stated, with feeling, that "they ought not to be allowed." The coroner's next remark may explain why she was so decided in the matter. He said "If I were you I should not ride behind again." What he meant exactly it is difficult to say, unless she was guilty of the indiscretion of joy-riding on the pillion of the machine at the time of the accident. It is not at all clear, however.

But the most amusing part is yet to come; he went on to say that "those who have driven these machines tell me that when the driver of a motor cycle goes round a corner with any weight in the sidecar there is a tremendous strain on his arms. If the weight is considerable it pulls the driver over. It is very dangerous unless the rider drives very slowly around corners, takes the greatest possible care, and does not have too great a weight in the sidecar."

Unsatisfactory Theory.

It is quite obvious from this that the speaker has never driven one of these "dangerous machines" himself. "If the weight of the sidecar is considerable it pulls the driver over." Does he mean by this that the driver, exhausted and worn out by the strain of trying to get round the corner, rolls off the saddle in an agony of despair and is left behind? That sounds rather unsatisfactory from many points of view!

Certainly the driver should take every possible care, but then so should every user of the road, whether driving a six-cylinder car, a motor cycle, a donkey cart or a bath chair. All are equally dangerous at times. It might surprise the coroner in question to know that on most modern machines it requires very little skill indeed to drive without going through the usual formality of grasping the handlebars at all. Also, more accidents usually happen with a light sidecar, because of its greater instability, than with a heavy one.

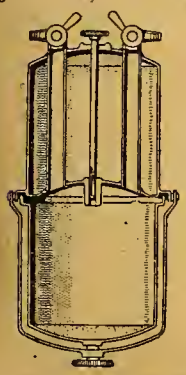
IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Two Good Generator Tips.

Although practically all acetylene generators are used for supplying more than one lamp it is rather surprising that no provision is made for this by the makers and that recourse must be made to outside connecting pieces. This fact suggested to "H.C.," of Bayswater, an alteration in a generator of the ordinary type, which has proved of real value.

As will be seen from the illustration an extra gas tube is provided, and on each tube there is a small tap such as is used on model engines. The original single tube was removed, for owing to its fine bore there was a tendency for water to condense inside it and cause irregularity in the supply of gas. Both tubes are now of $\frac{3}{16}$in. bore, and their fitting is quite a simple matter, for it is only necessary to drill or punch holes through the top and bottom of the water container and solder the tubes in position. The taps are, of course, optional, but they are found to be a great convenience. An alternative to the foregoing arrangement would be to provide a T-piece at the top of the existing tube, but it is just as easy to fit two tubes and the gas is under better control.



Supplying two lamps direct from one generator.

An additional improvement to the generator consists of filling the bottom of the carbide container with solder, as shown in the sketch. This obviates the tendency of the bottom to crush in if undue pressure is applied in an attempt to make the joint gas-tight. The bottom of the container should first be tinned in the ordinary way with a soldering iron and then a quantity of molten solder be poured in, and the result is a bottom that will withstand very severe pressure.

Flywheel Brake with Ratchet Lever.

On machines equipped with outside flywheels an excellent supplementary brake may frequently be rigged up, the retarding pad being on the flywheel rim. Mr. J. Taylor, of Glasgow, suggests a steel rod pivoted to the footboard and carrying a fibre shoe to fit the rim against which it is to be pressed. Clipped to the top tube is a notched plate against which a suitably filed portion of the rod slides. A metal or wooden knob finishes the fitment and makes it convenient to handle.

Re-Timing a Magneto.

The magneto chain should not be removed for re-timing. It is much simpler to loosen the sprocket, leaving the chain without disconnecting it.

Rusty Rims.

If the bead of a cover parts from the walls, rusty rims are sometimes to blame. Once in a season the covers should be removed and the edges of the rims sandpapered and re-enamelled.

Over the Rough Patches.

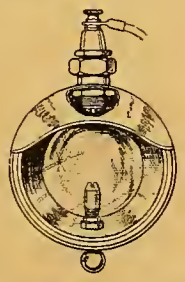
On nearing a patch of stones with a sidecar, work up a little impetus and then declutch to allow the outfit to roll over the new metal; the stones are not likely to cut the back tyre unless the engine is actually driving the machine.

The Spare Chain.

When two chains are used in the transmission it is a good idea to make up the spare chain in two lengths, of which the shorter length consists of the same number of links as the primary chain. With a few spare links one should then be proof against any emergency.

Utilising the Spare Plug.

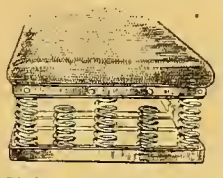
To prevent the spare sparking plug lying in idleness "C.S.M." drills a hole in the hood of his acetylene head lamp and passes the business end through into the interior, securing it inside by a thin nut of sparking plug thread. An insulated switch is fitted to the handlebar and the high-tension wire is led to this, two wires branching to the cylinder plug and to the spare respectively. When it is desired to light up, the water is turned on a few minutes in advance, and then the current diverted to the spare plug in the lamp, the spark across its points igniting the gas—and possibly blowing the glass out of the front if the precaution of slightly opening the door has not first been observed!



Lighting the acetylene lamp by electricity.

Supplementary Springing of a Pillion.

When a pillion seat "bottoms" in crossing potholes with a fairly heavy passenger, a reader signing himself "Bunny" recommends that a couple of old valve springs (A.J.S. in his case) be placed between the ordinary springs of the pillion seat. If the extra springs are rather shorter than the others no loss of resiliency occurs. This tip only applies to pillion seats with compression coil springs, of course.

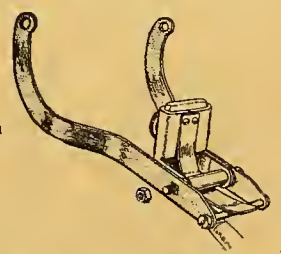


Utilizing old valve springs for a pillion seat.

Anti-vibration Lamp Bracket.

To those who suffer many broken filaments in electric head lamps a satisfactory spring bracket may be made very easily with some odd bits of steel plate and the usual handy man's tools. It is specially suitable for those machines equipped with a solid flat single tongue lamp bracket.

An oblong piece of plate is cut in from each side, so that a centre portion may remain the width of the lamp bracket



A device to prevent broken filaments.

The sides are bent backwards, the lower portions at right angles and the upper to enclose the bracket and slip over it. The two arms at right angles are drilled to take a bolt with squared ends, and one kept apart by a tubular distance piece. On the square ends of the bolt the two arms of the lamp bracket are secured. Two pieces of gramophone spring make up the spring which controls the movement of the bracket, the assembly being clearly shown in the sketch. On the flat back of the bracket clip a nut is brazed to receive a knurled head-locking screw and nut. This attachment was made by a reader who prefers to remain anonymous.

"HINTS AND TIPS FOR MOTOR CYCLISTS"—gives hundreds of useful "wrinkles." Price 2s. 3d. post free from "The Motor Cycle" Offices, Dorset House, Tudor Street, London, E.C. 4.

Insurance Problems.

A Special Feature in which Motor Cycle Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

A Question of Responsibility.

"Alverston," writing from Wallasey, Cheshire, says: "All garages, repair depots, and the like display a notice to the effect that 'they are not responsible for any damage done to a car whilst being driven by one of their staff.'

"It is quite feasible that a repair job of some nature cannot be tried out unless the vehicle is on the road. Should a smash happen and we assume that the garage man is in the wrong, how do I stand if he repudiates responsibility? My insurance policy only covers accidents when I am driving, or, perhaps, an extra named driver, and the accident may have been caused by gross negligence.

"Is this notice only 'bluff'? Surely all reputable repair depots are covered, despite their calm repudiation."

The notice referred to is binding on the owner of the car provided it can be shown that the owner knew of it at the time he gave the order for the repairs, and if the notice is conspicuously displayed the court might hold that he would be presumed to have notice of it.

* * * *

Insuring Accessories.

Mr. W. Watling, Hammersmith, writing on the question of insuring accessories, says: "When insuring an outfit the full value of accessories is included. This may easily be £50. In my own case it exceeded this amount. I understand, however, that I should not be re-imbursed, even though every accessory was stripped from the machine and stolen. Is this so?"

The theft cover in connection with motor cycle insurance is of a total loss nature, that is to say, in the event of the machine itself being stolen, all accessories are included and taken into account when paying the loss. Very considerable difficulty has been experieneed by insurance companies in connection with this theft section, and such experiments as have been made providing for the payment for stolen accessories irrespective of the machine being stolen have ended somewhat disastrously. Very often it is impossible for the unlucky owner to say whether an accessory has been stolen or merely lost, which, of course, is quite a different thing. It is to be hoped that motor cycle insurance will follow in the same stages of progress as private car insurance, and that eventually the business will get on to such a basis as will permit insurance companies to include the theft of accessories in the same way as this item is included in a private car policy.

Increasing the Value of a Second-hand Mount.

Mr. Pennell writes: "Last August I purchased a 1916 A.J.S. for £70. During last winter I completely overhauled the machine, fitting many new parts, which naturally enhanced the value of the outfit. I think it is worth at least £90 at the present time.

"Of course, I had to declare the purchase price when insuring the machine, and what I wish to know is how I stand in this matter to-day if the machine should be damaged or stolen."

If Mr. Pennell is reasonably certain that his outfit at the present time is worth £90, that, obviously, is the amount at which he should declare its value in his proposal to the company he names. In the event of a total loss arising during the currency of the insurance, little or no difficulty would be presented, as the fair market value at the time of the loss would be based with regard to the fact that such special work had been done by the insured himself to his machine, and he being a competent engineer, would be given the full benefit of the fact by any reputable insurance company.

* * * *

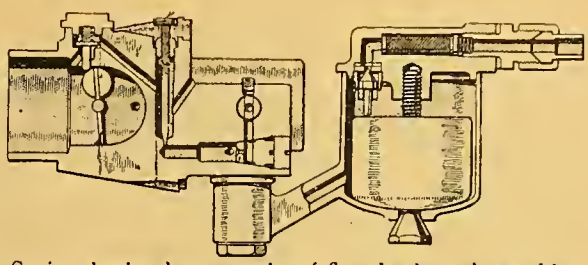
1,000 c.c.= 2½ h.p.?

Mr. Charles Hargreaves, Liverpool, is concerned about the insurance of a machine he is building, and says: "I am building a motor cycle at home, and when it is completed I intend to insure it. The engine, of my own design, will have a cubic capacity of nearly 1,000 c.c., but I, as the manufacturer, will rate it at 2½ h.p.—it may develop more, or it may not. Will the insurance company accept my rating, or will it be considered that this is a case where an exception should be made to the otherwise apparently irrevocable rule of basing premiums on manufacturers' horse-power ratings?"

Our enquirer here evidently proposes to set up an arbitrary distinction of his own when his home-made engine is completed, and whilst endeavours of this sort probably deserve success, we are afraid we cannot quite see any insurance company accepting an engine of 1,000 c.c. as 2½ h.p., for, as our correspondent states, it may develop more, or it may not. To begin with, the enquirer is not a manufacturer in the admitted sense, and this no doubt he will readily admit. An insurance, when it is granted to him, will be granted because he personally is considered a desirable risk, and the merits or demerits of his engine and his own horse-power rating of that engine will play a very little part indeed in the premium basis. It is not a case which would often happen.

A SIMPLE AUTOMATIC CARBURETTER.

Good All-round Results from the Ekon.



Section showing the construction of float chamber, submerged jet, pilot jet adjustment and throttle operated cut-off valve for pilot jet.

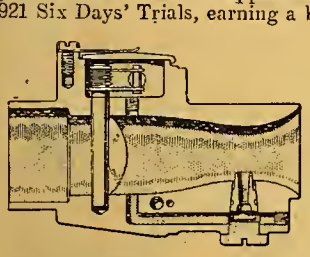
CONTENTIOUS literature and wordy arguments on the merits of single- and two-lever carburetters are almost wearisome in their constant recurrence.

For this reason it is not proposed here to enter into lengthy discussion on the advantages of either type. Let it suffice that experience proves that a first-class single-lever carburetter is at least as suitable for the average rider as any other type, and more than desirable for the absolute novice.

Our latest experience of an automatic carburetter has been with the Ekon, marketed by Geoffric & Keene, Ltd., of Broad Street Place, London, E.C. This instrument some of our readers will remember under the name of the "Eta" described in *The Motor Cycle* some two years ago.

Success of Earlier Models.

Manufacturing problems have delayed the production of this instrument, and though it made a meteoric appearance in the 1921 Six Days' Trials, earning a bonus



Sectional plan illustrating the injector cone and compensating passage.

of 30 marks for fuel consumption on a 993 c.c. Matchless sidecar, it is only now ready for the market.

Before going into details of the carburetter it may be stated that it is thoroughly well made, is simple to adjust, economical in use, provides a very wide range of flexibility with no flat spots, and appears to give a full power range. Like most accurate instruments, it is highly sensitive to air leaks, and users are recommended to pay special attention to their induction systems and inlet valve guides, but apart from this feature, which after all affects all carburetters to some degree, we have found the Ekon as near perfection as any mechanical device can be. It is simple and robust in construction, and with only one external adjustment, a screw-down needle for the pilot jet.

Controlling Action Described.

Fuel passes to a top feed float chamber and thence to a submerged controlling jet. In order to reach the main venturi the fuel then passes through an injector cone which, besides being acted upon by the air velocity in the normal manner, is also controlled by the action of the depression in the inlet pipe on a balancing tube leading to the back of the injector from a point on the atmospheric side of the throttle.

Without this tube the suction on the jet at high speeds with big throttle openings would be excessive but the compensating tube, acted upon at the point of greatest depression (suction), tends to draw a back current of air through the injector, thus limiting the amount of petrol issuing therefrom. It is claimed that by correctly proportioning the orifices an automatic compensation is introduced which ensures that the depression acting on the fuel will remain proportionate to the air velocity under all conditions.

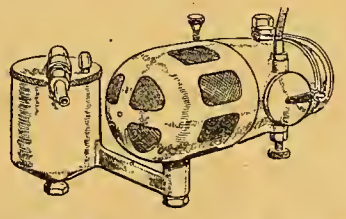
Main Charge Unaffected by Pilot Jet.

A pilot jet with its own air intake is employed for slow running purposes, but in order that the strength of the mixture supplied from this source shall not effect the main charge, the pilot is cut out of action as the main passage is opened up.

In the gas passage from the pilot jet there is a small valve chamber above the main butterfly throttle, and a spring-loaded disc valve has its seating therein. When the throttle is nearly closed a circular cam mounted on the edge of the throttle vane strikes the stem of the small valve and opens up the passage from the pilot jet, but as the throttle is opened the cam leaves this stem and the valve is allowed to drop, thus completely eliminating the action of the pilot jet.

Fitting and adjusting the carburetter is simplicity itself. After paying due attention to possible sources of leakage, the carburetter is flooded slightly and the engine started with the throttle about one-fifth open; the pilot jet previously should have been well opened out, then the throttle is closed down and the pilot screwed back until the engine runs evenly and slowly. This is all that is necessary, for although the metering orifice may be changed for a larger or smaller size, if desired, the instrument is calibrated before leaving the works and is not likely to need alteration. Our own experience in this respect is interesting. The Ekon was fitted experimentally just before a long-distance trial which involved the ascent of Bwylch-y-Groes and other severe hills. So promising were the results that we decided to retain the carburetter on the trial, but judging from previous experience with other instruments, we decided to fit a slightly larger jet. All went well, and excellent results were obtainable, but the consumption was very slightly above normal, so that on returning we decided to fit the original jet as supplied by the manufacturers. As a direct result consumption has improved to well below normal and the engine is livelier throughout its range of action, and if anything pulls better on hills.

In conclusion we may state that if any normal rider requires better results than those obtainable with the Ekon carburetter, to say the least of it, he is ambitious.



The Ekon carburetter, showing the large gauze-covered air inlet.

FRENCH ROAD RULES.

MOTOR cyclists in France are warned, under the new *Code de la Route*, that before proceeding on the road every driver must carry with him a grey card showing that the vehicle has been registered, a pink card showing that he is capable of driving the vehicle, and a driving permit for sidecars and cycle car drivers. On the machine itself there must be a licence disc (motor bicycles only)—or, if a passenger is carried on the pillion, two discs—and a plate bearing the owner's name, profession, and residence. In addition to this, the machine must carry two registration plates bearing the number issued by the Service of Mines (registration numbers).

Transverse Number Plates.

Motor cycles must have the front registration number fixed transversely and not in the direction of travel. Exhaust cut-outs are forbidden in towns and villages and when approaching animals on the road; in the open country a Klaxon horn, which can be heard at a distance of at least 100 metres, must be carried. In towns a bulb horn only is permitted.

From dusk sidecars must have two lamps showing a white light in front, and a red lamp must be carried at the rear on the left, clearly illuminating the registration plate also. In the country the motor cyclist must have at least one head lamp lighting the road at 100 metres, which must not shine more than a metre above the road. It must be extinguished on arriving in a town. Solo machines need only have a red reflector at the rear; in any case, the use of a powerful head light is forbidden in towns. The speed is unlimited only on the open road.

ROAD TESTS of NEW MODELS

The McKechnie Spring Frame Sidecar Outfit.

SPECIFICATION.

ENGINE: Coventry-Victor flat-twin, 75 × 78 mm. = 688 c.c.	*GEAR BOX: Jardine four-speed, 4·7 to 1 top.*	*TYRES: 28 × 3in.*
FRAME: McKechnie spring.	*LUBRICATION: Showell mechanical pump.*	*CARBURETTER: Cox or Amac.*
TRANSMISSION: ⅝ × ⅜ in. chains.		*SIDECAR: Millford.*
		PRICE: Solo £125, Sidecar £180.

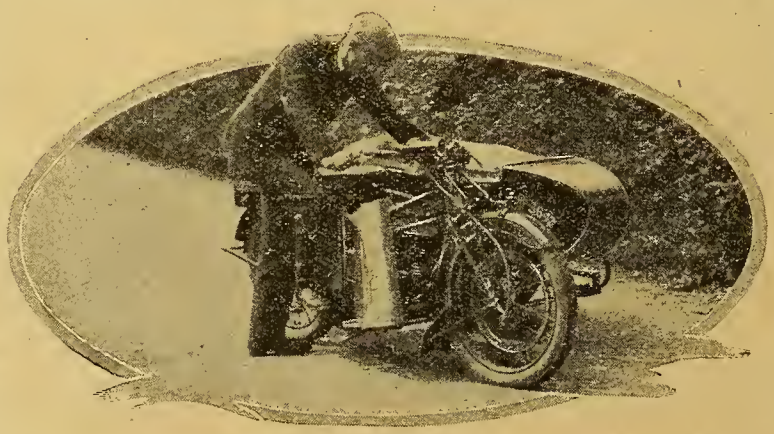
A DESCRIPTION of the McKechnie spring frame has already appeared in the pages of this paper, and, as considerable interest has been evinced by the public in its unorthodox design, it is only necessary to recapitulate the salient features of the frame.

It will be remembered that the head lug is attached rigidly to the rear fork ends by two tubes on each side; between these duplex members lies a unit composed of the engine, gear box, tank, footboards, saddle, etc. This assembly, in a subsidiary frame, is suspended by a leaf spring reaching from the head lug to the carrier, and pivoted torque tubes connect the gear box bracket to the back axle.

Comfort Well Assured.

In addition to the large range of action provided by the long spring, the designer has not fallen into the error of fitting a small saddle and tyres, for comfort is improved by a Terry spring saddle and 28 × 3in. tyres; front suspension is provided by a Montgomery fork.

On the occasion of our test we were offered either a solo or sidecar machine, but, having previously tried out a solo model over a course which included ridged and furrowed fields, we were anxious to test the machine under the most disadvantageous circumstances—that is, with a sidecar attached and over bad roads.



An outfit on which bad roads can be negotiated in comfort, the 688 c.c. McKechnie

On taking over the machine we found that it was equipped with aluminium leg screens which extended the full length of the engine and acted also as air scoops directing the main current of air over the cylinders. These screens proved most practical in service, keeping the rider absolutely clean, though naturally they are inclined to accentuate mechanical

Road Tests of New Models—

noises to some degree. The Coventry-Victor engine is not fitted with exhaust lifter mechanism, and just at first one notices the lack of this fitting when starting. However, after a few experiments it is quite easy to swing the engine over compression by the kick-starter.

Testing over Pot-holes.

Having once started the engine we took the road with the idea of searching out pot-holes. Such a search is not difficult even in these days, and within a few miles of Coventry we knew of a long stretch of rough road which served its purpose admirably. No attempt at avoiding bumps was made; rather were they sought out, and the machine was driven at speeds varying from a crawl to approximately double the legal limit over all surfaces. On no occasion was shock felt; the rider has the curious sensation of floating, though the wheels and main frame appear to be thrown about over bad roads in the normal manner.

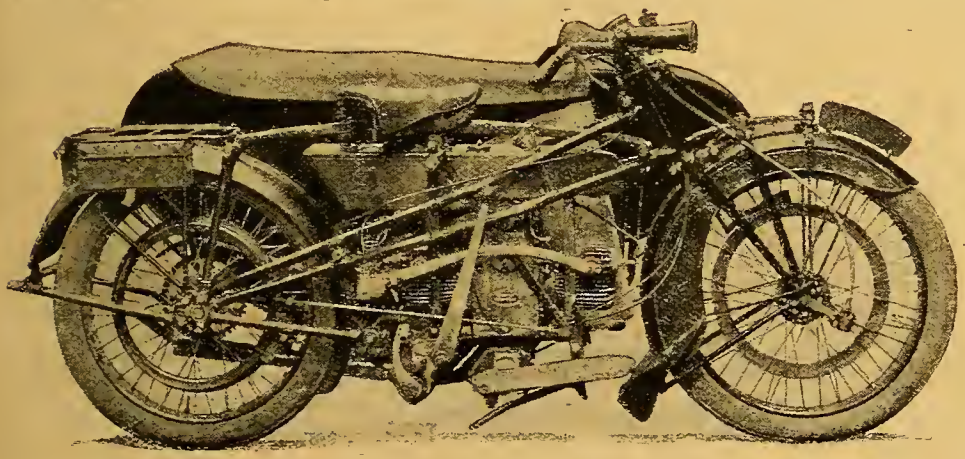
As is the case with many spring frame designs, the machine is at its worst at low speeds, but this "worst" is such an improvement on the jarring of a rigid frame that one cannot help feeling surprised at the lack of discomfort. The fact that the wheels are attached to a rigid frame eliminates the possibility of side play—a trouble which is too often in evidence in more usual designs.

Four Speeds with Medium Power.

With regard to the running of the engine and transmission, we were well satisfied with the pulling powers of the Coventry-Victor engine, while the four-speed Jardine gear provides a very convenient range of ratios. The fourth ratio permits the top gear to be somewhat higher than is usual for medium-sized engines so heavily laden; nevertheless, on the 4.7 to 1 ratio, the machine is quite capable of carrying its rider and passenger up normal main road hills; third speed is handy for the easier single-figure gradients, while second is usually used for starting purposes and really bad hills. This leaves first as an emergency gear which need never be used in ordinary circumstances.

Fitted with a Cox carburetter, the engine ran perfectly throughout our test, being very flexible and capable of pulling well at quite low speeds. A Showell mechanical pump relieves the rider of all anxiety with regard to lubrication. Our passenger testified to the comfort of the Millford sidecar, the chassis of which is rigidly constructed and stoutly attached to the main frame.

The only slight criticisms which we have to put forward are that the foot brake is not too conveniently arranged nor too powerful in action, and that the swish of the driving chains that is usual without side flywheels was slightly accentuated by the metal leg screens; this point, however, is having the attention of the manufacturers, and it is probable that in the near future it will be largely eliminated by the substitution of non-metallic shields. As regards riding position, the saddle is well forward, and the handle-bars are in a natural and comfortable position.



Rider tank, engine and gears are completely insulated from direct road shocks by the McKechnie system of springing. The near leg shield has been removed to show the frame lay-out.

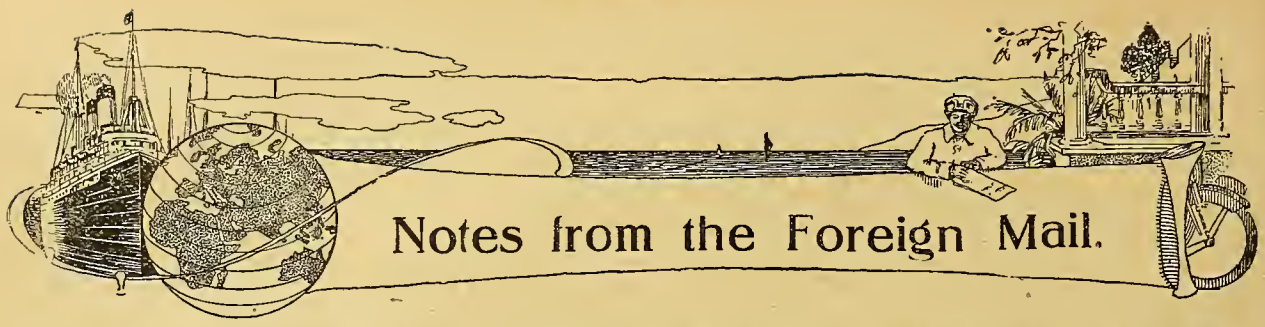
AS OTHERS SEE US!

IT is not often that a lay newspaper pays such specialised attention to a competition of its local motor cycle club, but the following amusing report of an Irish event is an exception and worth quoting. The writer says:—

"Some smart halts were observed (when the competitors began to arrive at the hill), many coming to rest with their front wheel almost on the threshold of the well-known pub. Within a short time over a score had assembled. The committee got busy with red flags and white tape. The welkin rang with a crackling assortment of exhausts. A blue haze rose from the assembled throng. In the distance a Scott whined like an overladen and self-satisfied bee. An A.J.S. banged herself out of sight over the hill to the south. Mysterious last minute adjustments were furtively performed. The time-keeper, smiling grimly, oiled up his split-second chronometer. An hour later the first man to start wheeled his machine to the tape.

"The procedure at the start is somewhat tame. In fact, the whole thing is tame only for the off-chance that someone will obligingly break his neck.

The total length of the course was about 200 yards, and the direction was uphill. The reason it was uphill is sufficiently obvious. The committee expect accidents, but do not deliberately arrange them. The first competitor, having whiled away another interval of time in mild repartee with the expectant spectators, starts. The flag drops, the stop-watch back-fires, and the breakneck artist covers the first one hundred yards of his journey at the alarming pace of four miles per hour. At the end of this he pauses to whisper a few sweet nothings to a long-suffering official who has to see that his front wheel is on the tape. On the word of command his right hand performs some lightning manœuvres among sundry levers, the engine suddenly screams in agony, a grating whirr, a cloud of blue-tinged dust, and he is gone. The sound of his exhaust dies away suddenly, and he has had his half-dollar's worth. And so the next."



Notes from the Foreign Mail.

Overseas and Continental News. Popularity of British Machines Abroad. France and Motor Assisted Bicycles.

Motor-Assisted Bicycles.

If the ordinary type of bicycle has become less popular in France, motor-assisted bicycles are the rage, and those who make them are hard put to it to keep the supply equal to the demand.

The Swiss-Italian Hill Climb.

There will be a day's rest, on August 6th, in the course of the International Six Days Trials, and on the same date will be held the Monte Bré hill climb near the resting point. This should be a most interesting trial, as it is likely to attract some of the best known Italian riders, since the *venue*, Lugano, is on the borders of Italy.

Motor Cycling in America.

One would hardly think it, but there is a great similarity between the position of the motor cycle in France and the United States, because in both countries it is considered bad form to ride a motor bicycle. While at the Grand Prix, a prominent French motor cyclist bewailed the fact that he did not know of a single man of his standing who would accompany him on his motor bicycle. Here is the American point of view: "We know that no person on earth is more gentlemanly than the Englishman, yet he is not too big nor too embarrassed to ride a motor bicycle." The American writer goes on to say: "that if the motor cycle can gain such a prestige in England, so it might in America. All we have to do is to get busy."

An Austrian Appreciation.

Referring to a Triumph ridden in some races at Baden, an Austrian paper says that "For weeks we heard reports of this fairy tale of motor cycles. One was enthusiastic about its four valves and other refinements; another praised the incomparable cool running of the single cylinder, its speed, and other virtues. All this gossip about the new Triumph made us sceptical about its performance, for all predictions have the same fate as predicted revolutions, but it was different last Sunday. Karl Kodric was the victor, how, when, and where he wished, and especially in the unlimited capacity class his triumphant feat was important in three respects: as a victory of a relatively small engine, as a triumph of the single cylinder, and as a proof of the highly successful motor cycle industry of the Island Empire.

Parisian Motor Cycle Police.

Starting operations not very long ago with only a dozen machines, the Paris police force now has eighty motor cycles in commission.

Motor Cycles in Denmark.

Machines well known on the British market figured prominently in the recent Fanöe race meeting. A Levis won the 275 c.c. class, an F.N. the 350 c.c., a Norton the 500 c.c., an Indian the 650 c.c., a Blériot the 800 c.c., an Indian the 1,000 c.c. class, while a Henderson was triumphant in the class for machines over 1,000 c.c.

A Novices' Competition in Natal.

Organised by the Maritzburg Motor Cycle Club, the Voler Trial was recently run off. The object of the competition was to induce novices to compete among themselves, so that they might acquire a keenness for competition riding. The first three riders were W. H. Anley (269 Sun-Villiers), G. Varly (989 Harley-Davidson), D. M. Smith (349 Douglas).

A New Italian Motor Cycle.

Apart from England, if one wishes to find originality in motor cycle design one must go to Italy; an example of this is the wonderful triumph of the Garelli in the Grand Prix.

The latest development is a four-cylinder 56×100 mm. (984 c.c.) water-cooled machine, known as the Garabello, built exactly on car lines, with a monobloc engine, honeycomb radiator, and shaft transmission.

An American on British Machines.

Owing to tariff duties, one naturally imagines that American motor cycle experts have few chances of testing British machines, but apparently they have only to go to Toronto (Canada), where Mr. W. J. Porter has a number of British machines in stock. An American's views of such machines as the French-made A.B.C. are distinctly interesting. Apropos this machine, he writes: "When the lowest of the four gears is engaged and the clutch let in, oh! boy, what a sensation." Again, when testing a Triumph he says: "I started off more interested in the sensation produced in the single-cylinder engine than in any other feature. The impression I received was that of gliding along in an effortless fashion with someone in the distance beating a tom-tom."

Motor Cycles in Calcutta.

According to Lord Ronaldshay, there were 863 motor cycles in Calcutta in 1918, and 1,385 in 1920.

Motor Cycles in Victoria.

It is worthy of mention that there are more motor cycles ridden in Victoria (Australia) than in the whole of Canada, there being 14,000 in Victoria and 9,902 in the whole of Canada. This shows what a remarkable influence good roads have on the development of motor cycling.

An Important Italian Race Meeting.

The Circuito Valle Ticino was won by the Italian champion rider Domenico Malvise on a Triumph. In the 350 c.c. class the victor was Visioli, who won the 350 c.c. class in the Grand Prix. A Triumph was second in the 500 c.c. class, and a Norton third, while the second machine in the 350 c.c. class was a Douglas.

Continental Racing Tracks.

Brooklands track is certainly the envy of all Continental nations; while in Strasbourg recently a prominent French official entirely attributed the victory of the British machines in the Grand Prix to the fact that the French had no track like Brooklands. A French racing track has been projected on several occasions, but has never materialised. Italy, however, bas the honour of having the first Continental racing track at the Parc Royal of Monza, about seven miles from Milan. The track is actually in construction, and will measure 10 km. (6¼ miles) per lap.

At Bloemfontein.

Handicap speed trials recently held in Bloemfontein by the O.F.S. Automobile Club attracted over one thousand spectators. In the solo class up to 600 c.c. the winners were H. Daubney (348 Douglas), P. C. Ferreira (348 Douglas), and J. Price (499 Triumph). In the unlimited solo class Daubney again won on the same machine. Mayhew (998 Indian) was second, and Kruger (490 Norton) third. In both the sidecar class up to 600 c.c. and the unlimited sidecar class J. L. Kruger (490 Norton sc.) was the winner. The fastest actual time was made in the sidecar events by E. H. Petersen (989 Harley-D. sc.), while E. L. Mayhew (998 Indian) made fastest time of the day in the unlimited solo class.

CLUB NEWS

A successful competitor in the Stourbridge, Kidderminster, and Wolverhampton clubs recent inter club hill climb. E. Wheeler (499 c.c. Sunbeam sidecar) starting in the 500 c.c. sidecar class.

Birmingham M.C.C.

One of the most successful events at the recent gymkhana at Knowle required the entrants—solo riders only—to ride to a certain point, then dismount, and push their machines backwards to the start.

Marlow and District M.C.C.

The route for the recent annual tour was through Somerset into Devon and Cornwall as far as St. Ives, returning along the north Cornish coast through Tintagel, Boscastle, Bude, and Taunton to Bristol and thence *via* Newbury and Reading to Marlow, approximately 600 miles. Very little trouble of any kind was experienced on the road. A portable wireless set was carried, which gave some excellent results.

Kingswood and District M.C. and L.C.C.

Eighty miles were covered in the course of the first reliability trial organised on the 15th ult. The event was an unqualified success. The results of the run, judged on points lost, were as follows: 1, C. H. King (348 Douglas), 1; 2, S. A. Hatherell (550 Triumph), 2; 3, A. J. Wood (348 Cotton-Blackburne), 5; 4, W. F. Moon (348 Douglas), 9; 5, A. East (633 Norton sc.), 11; 6, J. H. Williams (348 Douglas), 12.

Wallington and District M.C. and L.C.C.

The sporting trial which took place on Saturday, the 22nd ult., started from Cobham at 3 p.m., the course being over a circuit of 80 miles, divided into two sections of 40 miles each, and including about two miles of sand at Thursley, in addition to numerous severe hills. High Button Hill attracted a number of spectators, and some spectacular ascents were made. Results:

ALLAN GRUZELIER CUP.—Reg. Green (490 Norton).

GOLD MEDALS.—A. B. Lavy (499 Sunbeam), H. B. Browning (349 A.J.S.), and E. Barton (976 Matchless sc.).

SILVER MEDAL.—A. Headlam (498 Zenith-Bradshaw).

Doncaster and District M.C.C.

The speed trials held on the Sandall Beat Road, Doncaster, were a complete success, and, despite a strong wind, competitors recorded some good times. R .T. Cawthorne (490 Norton) made the fastest time of the day. Results:

SIDECAR MACHINES (500 c.c.).—1, R. Cawthorne (490 Norton), 27⅘s.; 2, E. Searle (499 Sheffield-Henderson), 29s.

SOLO MACHINES (250 c.c.).—1, R. L. B. Taylor (247 Levis), 37⅘s.; 2, H. C. Dobbs (211 Levis), 37s.

300 c.c.—1, R. Wood (249 Massey-Arran), 30s.; 2, F. Reynard (269 Monopole), 32⅕s.; 3, W. W. Wiltshire (292 Omega-Jap), 33⅗s.

350 c.c.—1, R. Lucas 349 Sheffield-Henderson), 26⅘s.; 2, R. Wood (249 Massey-Arran), 27s.; 3, R. Gray (348 New Scale), 27⅕s.

500 c.c.—1, R. Cawthorne (490 Norton), 24⅕s.; 2, R. G. Flint (490 Norton), 25⅘s.; three tied for third place with 25⅗s.—E. Searle (499 Sheffield-Henderson), R. Lucas (349 Sheffield-Henderson), and R. Wood (249 Massey-Arran).

750 c.c.—1, R. T. Cawthorne (490 Norton), 24s.; 2, R. G. Flint (490 Norton), 24⅗s.; 3, R. Lucas (349 Sheffield-Henderson), 26s. Winner's speed, 75 m.p.h.

UNLIMITED.—1, R. T. Cawthorne (490 Norton), 23⅖s.; 2, W. H. Rhodes (998 Indian), 24⅕s.; 3, R. G. Flint (490 Norton), 24⅘s. Winner's speed, 76.92 m.p.h.

Ipswich and District M.C.C.

Organised by this club, a joint speed event, in which some fifty riders represented Suffolk, Norfolk, and Essex, was held on Saturday afternoon, the 15th ult. Some excellent speeds were put up, and results of the event are as follows:

STANDING STARTS.

750 c.c.—1, E. C. Baldwin (499 Sunbeam), 37s.; 2, R. Thurlow (499 Triumph), 43⅕s.

TWO-STROKES.—1, J. Whisstock (247 Levis), 44⅗s.; 2, A. V. Adams (269 Excelsior), 47s.; 3, W. J. Coe (249 Velocette), 51⅖s.

500 c.c. SPORTS MACHINES.—1, R. F. Fenn (499 Triumph), 29s.; 2, A. G. Mann (499 Sunbeam), 30⅖s.; 3, K. S. Duncan (499 Sunbeam), 31⅖s.

350 c.c. TOURING.—1, W. J. Whisstock (247 Levis), 44s.; 2, C. Dansie (348 Douglas), 45⅗s.

UNLIMITED SPORTS MACHINES.—1, R. F. Fenn (499 Triumph), 23⅖s.; 2, A. G. Mann (499 Sunbeam), 30s.

500 c.c. TOURING MACHINES.—V. Revett (499 Rudge-Multi), 45⅖s.

350 c.c. SPORTS MACHINES.—1, W. J. Pretty (349 A.J.S.), 38⅗s.; 2, A. V. Adams (350 Diamond), 39⅕s.

UNLIMITED TOURING MACHINES.—1, E. C. Baldwin (499 Sunbeam), 36⅖s.; 2, B. B. Winter (998 Indian), 37s.

FLYING STARTS.

TWO-STROKES.—1, A. V. Adams (269 Excelsior), 34⅕s.; 2, J. Whisstock (247 Levis), 36⅕s.

350 c.c. SPORTS MACHINES.—1, J. F. Rose (350 B. Precision), 30s.; 2, W. J. Pretty (349 A.J.S.), 32s.

350 c.c. TOURING MACHINES.—1, C. Dansie (348 Douglas), 40s.; 2, W. J. Coe (249 Velocette), 42⅘s.

500 c.c. TOURING MACHINES.—1, E. C. Baldwin (499 Sunbeam), 31⅕s.; 2, V. H. Revett (499 Rudge-Multi), 41s.

500 c.c. SPORTS MACHINES.—1, R. F. Fenn (499 Triumph), 23⅗s.; 2, A. G. Mann (499 Sunbeam), 25s., and E. C. Rose (500 N.U.T.), 25s. (tied).

750 c.c. TOURING MOTOR CYCLES.—1, H. Beacon (293 New Imperial), 30⅗s.; 2, F. J. Rose (350 B. Precision), 31⅗s.

UNLIMITED SPORTS MACHINES.—1, E. C. Rose (500 N.U.T.), 24⅕s.; 2, R. F. Fenn (499 Triumph), 24⅖s.

UNLIMITED TOURING MACHINES.—1, B. B Winter (998 Indian), 30⅖s.; 2, E. C. Baldwin (499 Sunbeam), 30⅗s.

STANDING STARTS.

600 c.c. TOURING SIDECARS.—1, R. W. Tracey (770 B.S.A. sc.), 44⅘s.; 2, E. H. Mayhew (450 Triumph sc.), 47s.

UNLIMITED TOURING SIDECARS.—1, B. B. Winter (998 Indian sc.), 44⅕s.; 2, S. C. Butler (650 Zenith sc.), 50⅖s.

FLYING STARTS.

600 c.c. TOURING SIDECARS.—1, W. R. Tracey (557 B.S.A. sc.), 36⅕s.; 2, E. H. Mayhew (550 Triumph sc.), 40s.

UNLIMITED TOURING SIDECARS.—1, B. B. Winter (998 Indian sc.), 36s.; 2, S. C. Butler (650 Zenith sc.), 42⅕s.

STANDING STARTS.

600 c.c. SPORTS SIDECARS.—1, R. F. Fenn (499 Triumph sc.), 35⅖s.; 2, A. G. Mann (499 Sunbeam sc.), 37s.

UNLIMITED SPORTS SIDECARS.—1, R. F. Fenn (499 Triumph sc.), 36s.; 2, A. G. Mann (499 Sunbeam sc.), 38s.

FLYING STARTS.

600 c.c. SPORTS SIDECARS.—1, E. C. Rose (500 N.U.T. sc.), 28⅗s.; 2, R. F. Fenn (499 Triumph sc.), 28⅗s. (Rose winning tie).

UNLIMITED SIDECAR MACHINES.—1, R. F. Fenn (499 Triumph sc.), 29⅕s.; 2, E. C. Rose (500 N.U.T. sc.), 29⅕s.

R. F. Fenn (499 Triumph) made fastest solo time of day; E. C. Rose (500 N.U.T.) fastest sidecar time; and B. B. Winter (Indian) won the Novices' Prize.

Honiton M.C. and L.C.C.

A new club has been started here, and already the membership has reached as many as fifty enthusiasts. A short evening trial was organised recently and attended by satisfactory results. It is hoped to arrange a more elaborate reliability trial in the near future.

Redhill, Reigate and District M.C.C.

The winner of the cup in the President's Cup Trial held on Wednesday, the 26th ult., was Chaplin, riding a 494 c.c. Douglas solo; gold medals were awarded to Faulkner (550 Blackburne), Harris (976 J.A.P. sc.), Gunnell (557 B.S.A. sc.), and Headlam (498 Zenith-Bradshaw sc.).

Worcester and District M.C.C.

In company with the Worcester M.C. and the Malverns M.C.C., a visit was paid on the 20th ult. to the Austin Motor Works, at Longbridge, Northfield. Tea was provided in a specially allocated messroom, and afterward the members witnessed the final operations in building the cars. During the time the members were having tea the club was honoured by an address of welcome from Sir Herbert Austin. Mr. J. Howell responded on behalf of the members.

Connaught M.C.C. (Birmingham.)

A branch is being formed in Birmingham and district, and it is proposed to hold a reliability run devoid of freak features during late August or early September. All Midland owners of Connaught motor cycles are invited to become members of the club; the run will be held over a course approximately 100 miles in length, to be covered at 20 m.p.h. Communications should be addressed to the Bordesley Engineering Co., Ltd., York Mills, Witton Lane, Aston, Birmingham.

Surrey M.C. and L.C.C.

An average gradient of 1 in 10 for a third of a mile was chosen for the hill-climb held recently near East Worldham. Formula results:

300-600 c.c. SOLO.—1, S. W. Mansell (499 Rover); 2, W. J. Collis (499 Rudge); 3, F. P. Verney (500 N.U.T.).

Fastest time: S. W. Mansell (499 Rover), 33.8s.

UNLIMITED.—1, H. C. Mansell (349 A.J.S.); 2, H. Medcalf (Bugatti);

Fastest time: P. W. S. Bulman (650 Zenith), 29s.

UNLIMITED C.C. (Standing Start, Stop, and Restart).—1, R. M. S. Maxwell (398 A.B.C.); 2, W. E. Willson (Alvis).

Fastest time: P. W. S. Bulman (650 Zenith), 45.3s.

MACHINES OF 1914 OR EARLIER MANUFACTURE.—1, H. Medcalf (Bugatti); 2, W. J. Collis (499 Rudge).

Fastest time: W. J. Collis (499 Rudge), 34.6s

THREE-WHEELERS AND SIDECARS.—1, F. N. Edney (998 Indian sc.); 2, P. W. S. Bulman (650 Zenith sc.).

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address

THE CHARMS OF 12 M.P.H.

Sir,—Allow me to protest against the abolition of the speed limit. It is only in very rare cases that a speed in excess of 20 m.p.h. is safe on the road. My own machine, I know, is capable of more, but very rarely do I let it exceed that speed. In the last year I know I have not ridden more than 50 miles in all at above 20 miles an hour.

The charm of motor cycling is that it enables one to see the country. One cannot admire the scenery and drive at 20 miles an hour. Fifteen is possible, but not as safe as 12. If one wishes to go fast there is the train, but the motor cycle should not be allowed to blind along at 35 miles an hour.

Bishop's Stortford. "DIE HARD."

THE BATTLE OF TYPES.

Sir,—Your correspondent Mr. J. G. Newbigging seems to be labouring under a delusion when he makes the statement—"The woolly, petrol-drinking, noisy, ineffective average two-stroke."

One can scarcely call the average two-stroke "petrol drinking." 125 to 150 m.p.h. is fairly economical, I should think, but perhaps Mr. Newbigging can inform us how he tunes his "steady-plugging-pull-for-hours-without-getting-faster" P. & M. or B.S.A. to do this?

Again, I *have* heard noisy four-strokes.

The average two-stroke has a much softer purr than the bark of the average four-stroke.

Now to the ineffective stage!

Perhaps Mr. Newbigging has not heard of the T.T. races; if he has not, it may perhaps broaden his already highly fertile mind to get a copy of the T.T. number of *The Motor Cycle* and study the performance of the Levis and Scott Squirrel, also to read the wonderful performance of G. S. Davison in the Grand Prix races at Strasbourg and Spa.

J. Booth's performance in the Durban-Johannesburg might also enlighten him. T. E. J. MEADWAY.

CREDITABLE AMATEUR DESIGN. At a first glance one would imagine this racy looking vehicle to be a 100 m.p.h. Brooklands car instead of the true cyclecar which it is. An old Precision twin engine, Sturmey gear box and belt-cum-chain drive compose the "innards," while the chassis is ash reinforced with steel plates, the aluminium body, except the Ford radiator shell, being also home made. The owner who signs himself "Diplomat" wishes to remain anonymous.

"BREAKFALL."

Sir,—I was much interested in "Nautical Matthew's" letter, and I agree with him that a person with a knowledge of breakfalls will come through a nasty accident unhurt, while one with no knowledge of them may be severely injured.

About two years ago I learnt some breakfalls, and last summer while riding through a town on the South Coast I ran into a Ford van. I was travelling at 15-20 m.p.h. when the collision occurred, and I was flung over the bonnet of the Ford. I remember keeping my head tucked in, and the next thing I knew I was sitting by the side of the road quite unhurt, while my bicycle was lying under the Ford.

I am sure that if I had not known how to breakfall I should have landed on my head. AP-7536.

Windsor.

WHAT IT COSTS TO TOUR.

Sir,—I find the big hotels are not to my idea of comfort and satisfaction. The best way for the man of moderate means is to look for commercial hotels, *i.e.*, where commercial travellers are always staying. They are the most reasonable and the most comfortable. Many of these are temperance hotels and very homely. The quickest and best way to find the popular hotel in any small town is to call in a local shop, and the shopkeeper will always know where his travellers stay. The prices mentioned by your correspondent are most unreasonable for a motor cyclist to pay. 5s. for a dinner, 3s. 6d. for bed, and 3s. for breakfast for each person is quite enough. J. P. NEVILLE.

Sir,—Being an average motor cyclist with only moderate and limited means, but wishing to see and realise the benefits of my own country, I travelled according to my pocket, which, by the way, is the best place for one's pride if one wishes to be economical.

Roughly my tour was—London, Aberdeen, Inverness, Oban, Lake District, Carnarvon, Aberystwyth, Chepstow, Birmingham, Bournemouth, Littlehampton, London; which totalled 2,034 miles.

The outfit was a 1918 595 c.c. Douglas sidecar, and carried my wife and son age 14, for whom I was usually charged adult's rate. The time taken was 30 days, and cost in all £49 11s., from which £4 7s. could be deducted for tyre, tube, repair to frame, and several non-essential articles purchased. We were able to live well, saw all the interesting sights en route, and spent wet evenings in theatres or cinemas.

Forty-five pounds for 30 days works out at 30s. per day, of 10s. each, and includes petrol, oil, tolls, amusements, etc. How is it done? My advice is steer clear of all big hotels irrespective of the number of stars (I am an A.A. member and appreciate their advice and assistance, except in hotel accommodation). On entering a town enquire from the police as to where the commercial hotels are situated, they are usually homely and moderate. As for meals, you can generally obtain what you require at a time convenient to yourself, which enables you to spend a full evening

outdoors. If they cannot accommodate you or recommend you elsewhere, enquiries should be made at restaurants who can generally put you on the track of suitable "digs."

Our tour included accommodation at twelve commercial or temperance hotels, two inns, two restaurants, and the remainder at private houses. The charges varied from 30s. for two rooms, dinner, supper (light) and breakfast at the Woolpack, Doncaster, to 12s. 6d for one room, tea, supper, breakfast and lunch at a comfortable and spotless little cottage in Grantown, Scotland.

In 1920 we did a month's tour, and covered 14 hundred miles at approximately the same cost.

With one exception we were able to obtain suitable accommodation first shot. Accommodation is a bogey to many would be tourists, and I consider all motor cyclists throughout the country would do well by banding themselves together, forming a touring club and publishing a book which gives all the towns in the United Kingdom and addresses of hotels, restaurants, or private houses at which suitable and moderate accommodation could be obtained; a book of this nature should not cost more than a 1s., and would be almost invaluable to the tourist.

"EXPERIENCED."

Sir,—My wife and I had a fifteen-days' holiday tour with a 550 c.c. Triumph and sidecar at Whitsuntide, covering nearly 1,000 miles—from Yorkshire, through Somerset, Devon, Cornwall, Dorset, etc.—at an inclusive cost of £17—excepting wear and tear of machine, but counting petrol, oil, and slight repairs on the journey.

Our plan was to use hotels for bed and breakfast only, and these charges for the fourteen nights averaged 13s. 2d. per night. They varied considerably—from 24s. to 9s. for the two of us. The cost for two nights at Bournemouth was exceptional—being less than one average night, owing to special circumstances.

The hotels chosen were the smaller ones given in the "Michelin Guide" or one recommended by a local policeman, and all proved satisfactory so far as comfort and breakfast were concerned. On the two occasions when we stayed two nights we were fortunate in finding suitable boarding-house accommodation, and this slightly reduced the average cost.

We are easily satisfied with regard to meals. *En route* we purchased sandwiches, "Cornish pasty," cakes, fruit, etc., and enjoyed a midday lunch on the roadside, often followed by a nap (the weather was ideal); and the cafés or confectioners easily supplied our wants for teas.

Bradford. W. B.

Sir,—Your correspondent, Mr. A. S King, evidently makes the mistake of putting up in large towns. My practice has always been to make for the small country inns. In these one generally gets quite as well fed and looked after, and at a very much smaller cost. I have lately been touring with my wife and two small children and have found the cost for light supper, bed, and breakfast to be in the neighbourhood of 13s. for the whole crowd.

To take a concrete example, I have just put up at the "Golden Heart," about 2 miles east of Birdlip—a delightful old-fashioned inn in gorgeous surroundings, where we got plenty of wholesome country fare (home-cured bacon, new-laid eggs, home-made butter, etc.), and the bill for supper, bed, and breakfast only 13s. Our other meals we always take picnic fashion with the aid of a Primus stove.

London, S.W.11. XF 3039.

Sir,—I am very much surprised to read the figures quoted by Mr. King, and if he should care to communicate with me I think it quite possible that I can give him details which will enable him to tour successfully at a far smaller figure than £3 per day.

He gives no indication in his letter of the area which he covers, but I may tell you that our running by motor cycle and sidecar varies from 400 miles per week to as much as 700, and we run to schedule and keep an accurate account of all costs incurred—hotels, running expenses, tolls, and the like; such a figure as quoted by Mr. King is certainly not borne out in our own professional experience.

ROMAINE.

Liverpool. R. Bassett-Bullock, Director.

INFLUENCE MACHINES FOR I.C. ENGINES.

Sir,—In connection with the application of a small Wimshurst (a 3in. plate specimen can give ½in. spark!) plus condensers (Leyden jar or otherwise) to a motor cycle, it really looks as though *not one* has seriously rigged up some device (even with the machine on the stand) to test the efficacy. Are we waiting for the Germans to do the pioneering work?

I did not quite grasp the method of timing the spark to the engine in the suggestion given a few weeks ago. Wouldn't it be practicable to keep a condenser well charged by the machine and to lead the inner and outer coatings of the condenser to a very simple make and break, with advance and retard facilities (similar, I suppose, to the device on those truly ponderous magnetos of ours)? The Wimshurst would simply run all the time at a sufficient speed to keep the condenser well charged—and we all know that doesn't take much doing!

Can't some engineer rig up the necessary make and break device and run his machine on the stand (with connected Wimshurst tuned by a helper) and tell us how it turns out? One might reasonably expect—

(1) Better explosions with such a strong spark.

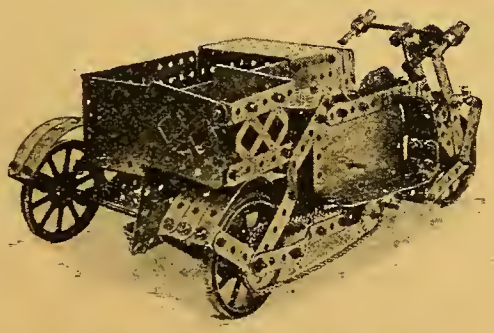
(2) Greater speed, if all goes well.

I, for one, would be only too pleased to lend my powerful little Wimshurst for any such purpose.

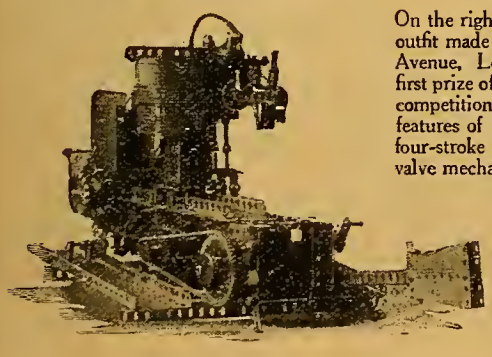
NON-ENGINEER.

Reading.

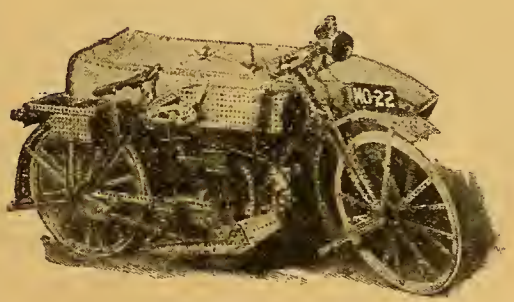
MECCANO ENGINEERING.



A clever little model made by a small Bristol boy. This miniature outfit is fitted with chain drive and clockwork mechanism.



On the right is shown a model sidecar outfit made by E. Wright, 1, Belgrave Avenue, Leicester, who shared the first prize of £20 in the recent Meccano competition. It possesses all the features of a modern outfit, having a four-stroke engine (shown on left), valve mechanism, contact breaker and cam, two speed gear box, clutch kick-starter, chain drive, pump and drip lubricator, and is driven by two electric motors. The model is half-size the wheels being 14 in. in diameter.



INCONSIDERATE MOTOR COACH PASSENGERS.

Sir,—Recently I was driving to Stratford-on-Avon with a passenger in the sidecar. We must have been travelling at about 30 m.p.h. and coming towards us was a bright red motor coach. Just as we passed I saw something flash across me, heard a loud bang, and saw my passenger duck her head quickly.

What had happened was that one of the "gentlemen" in the coach had thrown a tin overboard, which hit the windscreen on the inside and then bounced back out of the sidecar, narrowly missing my passenger's face.

I suppose we all get used in time to matches and cigarette ends being thrown out of motor coaches at random, but I think the limit is reached when it comes to tins. Perhaps, in the near future, we may have to dodge the empty beer bottle as we drive along! *Qui vivra, verra.*

W. LAWRENCE REID.

HAMPERING GOGGLES.

Sir,—I am of the opinion that eyes and ears must work in conjunction with each other.

On many occasions I have been travelling along at about 20 m.p.h. with my goggles (Triplex mask) in place, and on removing them the engine note seems to have become more lively. The roads on each occasion have been dead straight, etc. Experiences and opinions of other riders would interest.

London, S.E.23. OMEGA 3.

Sir,—A friend of mine and myself agree entirely with "Sutton Bank" on the matter of goggles.

The sensation is worst in that type which has separate glasses. We think your correspondent will find it a great improvement to wear the one-piece celluloid pattern, as this allows a far greater field of vision. It seems to be the reduction of the field of vision which destroys one's self-confidence in a tight corner. SCO'.

Cambridge.

WAR ASSOCIATIONS OF A BELGIAN RACE.

Sir,—With reference to your remarks regarding the Grand Prix course, I marched through Franchorchamps into Malmedy in November, 1918, on my way to the Rhine.

I was greatly interested in a map of the course, published last year, as it brought back very vividly that memorable and interesting march.

ARTHUR HIGGOTT.

HANDLEBAR WATCH DIFFICULTIES.

Sir,—If Mr. Awburn's handlebar watch is mounted similarly to mine, there is an easy way out of his difficulty.

In mine, the mounting is also of the so-called "thief-proof" type, the means of attachment being inside, and the method of opening not really obvious.

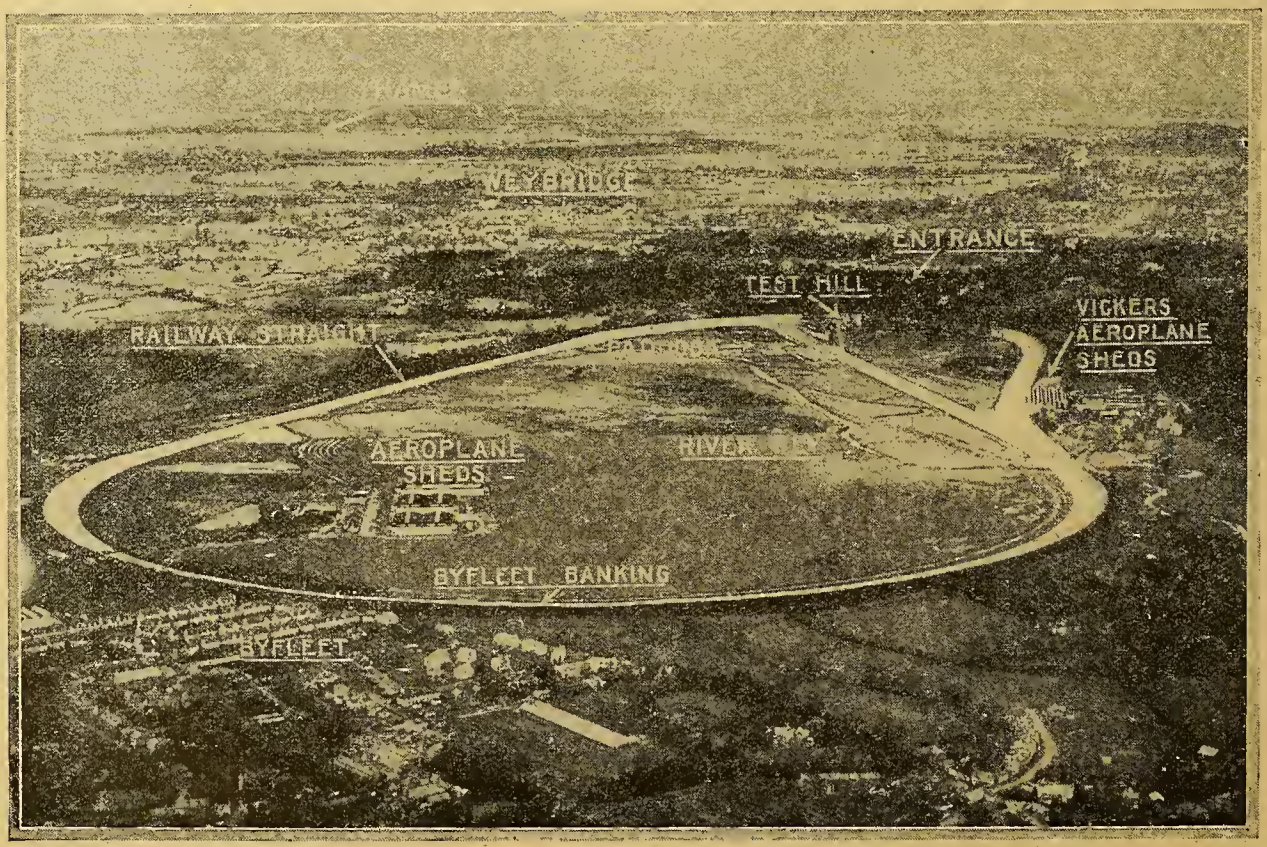
To enable adjustment to suit handlebars of different shapes, the back attachment has a swivel movement. This does not need to be immovably tightened up, and if left so as to be movable by hand, allows of a brisk back and forth rotational motion, which is sufficient to start the watch. I invariably use this method when my watch runs down, and find it quite convenient. T. S. BENTLEY.

"IXION'S" REMINISCENCES.

Sir,—May I express through the medium of this letter my great appreciation of our old friend "Ixion's" "Motor-cycle Reminiscences"? I consider this book great.

In these days of super-efficient engines and speed gears and general reliability, few realise the trials and tribulations of the pioneers. It is to the fortitude of these men that the sport has "made good." The most wonderful thing about these early machines is that they went. I'm afraid if some 1922 super-knuts and alleged speedmen were given 1905 "3½ singles" they would be found rather lacking. Those were machines for sportsmen and *drivers*, not lever manipulators.

London, N.17. DELIGHTED.



BROOKLANDS FROM THE AIR. A striking photograph of the great racing track, showing the various points of interest, familiar, by name, anyhow, to all followers of the motor cycle movement.

GEAR CHANGING PROCEDURE.

Sir,—I think "Triumph-4h.p." is hardly correct re gear changing. The exhaust lifter method is certainly neater and simpler from the operation point of view, but leaves much to be desired with regard to the "innards" of the gear box and sweetness whilst changing. Certainly for changing up, though not so good as the clutch method, it is passable; but to change down by means of the exhaust valve lifter is rank bad practice, as it is necessary that the speed of the driving "dogs" (engine) be increased to the speed of the lower ratio, or driven "dogs." As for clutch wear, the modern article will stand a great deal of ill-use.

Birmingham. "JAMES-3½h.p."

SOLDERING BOWDEN NIPPLES.

Sir,—Regarding the letter from the Bowden Wire Co., I can only say that I have seen large numbers of broken control wires and over 90 per cent. were broken near the nipple. The lever imposes a bending strain as well as a pulling strain, and the heat of soldering having softened the wire adjacent to the nipple is the cause of its breaking at this point.

It would be interesting to have the experience of other motor cyclists in this matter. A. E. BOTTOMLEY.

ALL IN PIECES.

Sir,—With reference to "Trusty Triumph's" experience with regard to his 1909 Triumph, which he states carried him 100 miles with broken gudgeon pin, piston rings, etc., I should like to mention a similar occurrence which happened to me last season on a 1913 clutch model Triumph.

Owing to my friend's machine having broken down at Colwyn Bay, N. Wales, we decided to finish our journey to Birmingham (119 miles) "two up" on the machine mentioned above; an average of 30 m.p.h. was attained, but the nearer to Birmingham we got the noisier the engine became; nevertheless it did its work unfalteringly, notwithstanding two hours' deluge of rain. On taking down the engine on the following day I discovered that the crank case splash platform had broken away, which in turn had smashed the "skirting" of the piston to pieces to within 1 in. of the gudgeon pin; the latter had come loose and scored the cylinder $\frac{5}{1000}$th in., the big end bush had fallen to pieces and dropped out of the connecting rod (no doubt due to some broken fragments having got into the bush), and on the top of everything the near spindle had seized and had been turning round with the nuts in the frame and had nearly worn the latter through!

Four weeks afterwards the same machine obtained two awards (a first and second) in the annual Levis Trial, the necessary repairs, reboring, new piston, etc., having been very efficiently carried out by H. Collins, of Shirley, near Birmingham.

I think as regards faithfulness of an old 'bus this case needs some beating; *and it is absolutely without exaggeration.* Usual disclaimer. "DIGGER."

London, S.W.1.

TEMPERAMENTAL ENGINES.

Sir,—My old Triumph on at least two occasions took hills and levels with wonderful stride, but my present mount—a belt-driven Norton—does the trick almost regularly, in the dusk of a dewy evening.

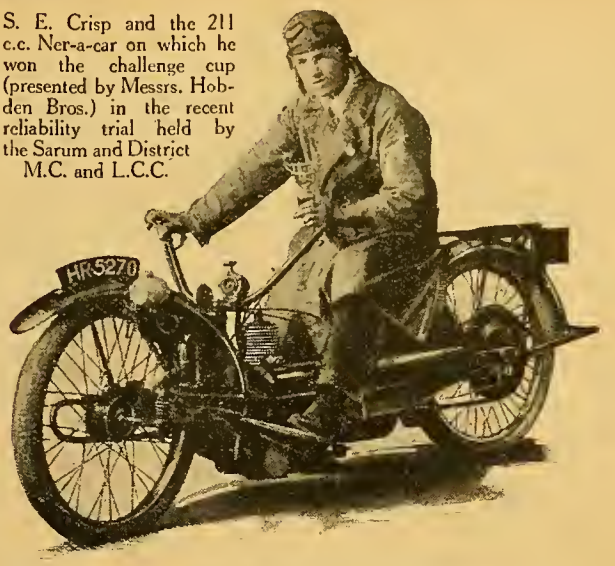
Does not this latter fact seem to indicate some particular condition of atmospheric pressure two or three feet above the ground, or, at any rate, at the same height as the carburetter?

In connection with this, one wonders whether carburetters with air intake facing the front give better results, or otherwise, than those with intake facing backward.

Reading. ENQUIRER.

AVERAGE SPEEDS OF SOLO MOUNTS.

Sir,—In regard to a letter from Mr. N. Williams on the probable performance of a 348 c.c. Douglas, at Whitsuntide I rode a machine of this type from Tunbridge Wells to Dover in 1¼ hours. According to the Bonniksen mileage indicator of a friend who accompanied me on an I.O.M.



S. E. Crisp and the 211 c.c. Ner-a-car on which he won the challenge cup (presented by Messrs. Hobden Bros.) in the recent reliability trial held by the Sarum and District M.C. and L.C.C.

Rudge, the distance is as near 50 miles as makes no odds. This is an average of 40 m.p.h. I was mostly all out on the straight-away, but took absolutely no risks on corners. In the evening of the same day I did the 75 miles from Broadstairs through Canterbury, Detling, Maidstone, to Bexley Heath in 1 minute over 2 hours, an average of approximately 37 m.p.h.

The machine was a 2-speed 1919 model, with standard cam, alloy pistons of two-thirds standard weight but of standard compression ratio, aluminium radiator caps over exhaust valves, and an 18 T. sprocket. Maximum speed on level about 55 m.p.h., all on.

I attribute the average to the *splendid cooling properties of the pistons and caps* and not to any great increase in maximum speed. L. W. E. HARTLEY.

DEFINING FREAK HILLS.

Sir,—I feel that I must take exception to your report of the Bristol and Bath inter-club trial, in which your correspondent terms Dundry, Ubley, and Burledge Hills "freak" hills, in the order named. The trials committee of the Western Centre A.C.U. included these gradients in the Arctic Trial of April 1st, and it is unanimously considered by this committee that in no way can these hills be termed freaks.

Neither the Bath nor Bristol Clubs participated in the "Arctic." J. A. NEWMAN,
Trials Secretary and Treasurer,
A.C.U., Western Centre.

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CURRENT CHAT

Time to Light Lamps

August 5th	.. ..	9.11 p.m.
„ 7th	.. ..	9.8 „
„ 9th	.. ..	9.4 „
„ 10th	.. ..	9.2 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

More American Supremacy !

"This issue is a humdinger, don't you think?" asks an American contemporary in very big type. One can only weakly confess that probably it is.

Growing Petrol Imports.

Double the amount of motor spirit was imported during last month compared with June, 1921.

2,550 m.p.h.

According to *The Times*, which does not often err, a Leyland car at Brooklands covered 8½ miles in 12 seconds—"101¼ m.p.h." A reader asks if this should not be 2,550 m.p.h.

The Dregs of Victory.

British manufacturers really must exercise more discretion in entering for Continental events. Several of *The Motor Cycle* staff wear an extremely grey look since hearing of English successes in the "first Gran Criterium Internazionale delle Prealpe Varesine."

Rubber Roads.

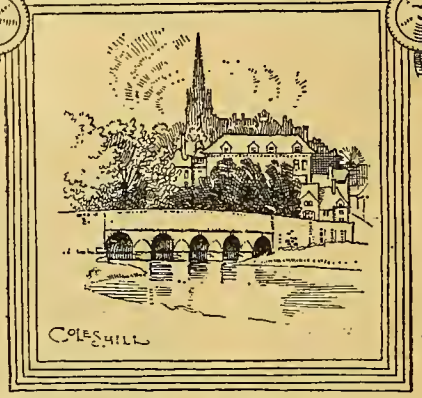
Some time ago the Ceylon Public Works Department used heavy blocks of scrap rubber to pave a bridge in the Chilaw district. The Director of Public Works now reports that the rubber blocks have stood heat and wear and tear very well, and the department intends to make further experiments of the same nature in the near future.

Echoes of the Belgian Grand Prix.

Since the report of the Belgian Grand Prix appeared in our last issue we have received confirmation of the results, some of which were delayed in transit. Stohbart (Saroléa) finished fourth in the 500 c.c. class, while Kieken (Gillet) was second in the 350 c.c. class. In the 250 c.c. class the time of Vermander (Griffon) was 4h. 32m. 35s., while the time of Woods (O.K. Junior), who finished fourth, was 5h. 16m. 25s.

International Six Days Arrangements.

No less than 600 marshals will be employed at the International Six Days Trials, starting to-day from Geneva. On August 9th the speed hill-climb will be organised on the road from Bruch to Fribourg, and there will be a kilometre speed trial on the race track at Laconnex. Numerous prizes have been given by the town of Geneva and the States of Geneva, Berne, and Fribourg.



The Sincerest Form of Flattery.

Feeling that there is a market in America for a real lightweight is proved by the reintroduction of a 225 c.c. two-stroke—extremely like a famous Coventry make of the same capacity—by one of the well-known big-twin firms over there.

As Others See Us.

Nobody will be more amused than Hubert Hassell himself at a French paper's description of the Norton rider losing first place in the Belgian Grand Prix "with rage in his heart."

Not Open, But Nearly So.

The ambitious claim is made by its sponsors that the Western Centre's hill-climb, to be held on the 17th inst. at Chatcombe, is a combination of two open climbs held during 1921. Although not "open" this year it is unlikely to suffer much by the fact, for almost all the well-known riders belong to one of the Western Centre clubs. Particulars may be obtained from Mr. F. R. Ware, St. Sidwells, Tuffley Avenue, Gloucester.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Special Features

A WEEK IN THE HIGH ALPS.
WHAT HAPPENS IN THE CYLINDER.

Wireless on a Club Tour.

On a recent club tour of Cornwall and Devon the Marlow and District M.C.C. carried a portable wireless set.

Silencers for Power?

The latest subject for controversy is the efficiency (or lack of it) of the "drain-pipe" exhaust. What a disillusionment for speed-merchants if someone proves that the straight-through pipe actually diminishes the engine's power!

What is it?

A weird three-wheeler has recently been noticed on main roads near London; it has front wheel driving and steering, and is propelled by a single cylinder engine mounted over the front wheel. When last seen, the machine was being piloted by one of the fair sex.

Juggernauts.

At the present time, in many parts of the country, travelling shows towed by enormous smoke-belching traction engines are encountered. These monsters completely block narrow country roads, and shower soot and cinders upon the motor cyclist who has the misfortune to be hemmed in behind them.

Modern Reliability.

"Every day we are getting better and better." The famous formula of Dr. Coué might well be applied to the efficiency of the modern motor cycle. A few years ago breakdowns were the order of the day; now one can ride daily for weeks on end without encountering a stranded rider. We have not reached the Millennium, however, so manufacturers have no excuse for resting on their laurels.

Dangerous Tramlines.

Many roads traversed by tramlines are in a deplorable condition, and the London Road between Twickenham and Brentford is no exception to the rule. In places the road has subsided, leaving the tramlines projecting some distance above the wood blocks. These projections are high enough to cause pronounced skidding in the case of solo machines, while it is quite evident that the sharp metal can do considerable damage to tyres.

Police Activity.

Motor cyclists passing through Richmond (Surrey) should be prepared for police curiosity regarding silencing arrangements, especially in the neighbourhood of the Hill and Park, where a number of riders have been pulled up and subsequently fined. We may add, however, that the offenders appear to have been, in most cases, members of a local fraternity which has been causing considerable annoyance to residents for some time past.

Sidecar Taxi in Bristol.

The first licence for a sidecar taxi for public service in Bristol has been granted. It is a standard twin B.S.A. outfit, and appears to be doing good business.

Novel Handicapping Procedure.

Entrants for the Public Schools M.C.C. Handicap at Brooklands, on the 12th inst., were invited to attend in person the handicapping meeting last Tuesday.

Specialises on Silence.

Professor Low, a well-known figure in motor cycle circles, is being considerably "ragged" about his new *rôle* of "Silencer of Undergrounnd Railways."

Successful British Big Twin.

George Brough and the Brough Superior are beginning to be factors to be reckoned with at Brooklands. On Saturday he won his race at over 85 m.p.h.

A Note of Gratitude.

On behalf of the East End children who were taken out by sidecar and car recently for a day in the country at Harpenden is sent "a very hearty 'Thank you' to all those who helped to give such a glorious, never-to-be-forgotten day."

A New Hill.

In the Bristol Club's 12 hour event of August 26th there is to be included a hill of unusual severity which has never before been used in a trial; it is understood to be in the Stroud district, but its identity is to be kept quiet for the present.

Brevity.

A certain London daily paper believes in abbreviation in small ads. thus :—

"Douglas comb., smart gen. turnout, replete every acces., inc. e. lt. sp. discs, etc., taxed, £— cash."

"8h.p. Blackburne comb., eqpd. lps. hrn. scrn. tools, etc., only run 400 mls. Montgoms scr. scrn. lugg. box, good ord."

Considerate.

In many of her main streets St. Louis (U.S.A.) has adopted what is termed "The White Line of Safety," consisting of white bands painted on the roadway about 4ft. from the curb. Cars and motor cycles will not be allowed to encroach within the border. This idea is solely for the safety of cyclists.

Coventry Club's Cricket Match.

In sending us the results of a cricket match in which the Coventry and Warwickshire Motor Club took part, wherein appears: "W. W. Brandish . . . bowled Till . . . 0," the secretary remarks that Brandish, who was second in the Senior T.T., does not appear to play cricket as well as he can ride!

Will they bring back the Cup?

Ten years ago the British Motor Cycle Manufacturers Union put up a cup for international competition in reliability trials. The first year the British team won; in the next event Switzerland secured the trophy, and has held it ever since. The 1922 International Trial started to-day from Geneva, and a strong British team is competing with the hope of bringing back the cup.

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Silencer Warning in Middlesbrough.

Motor cyclists should exercise special care in Middlesbrough, warns the A.A., and in particular assure themselves that the silencing devices on their machines are efficient.

Amateur Motor Cyclist at the Wheel.

Although not successful in the motor cycle events at Brooklands on Saturday, R. M. Knowles, the well-known amateur Norton rider, scored a useful win on his 30-98 h.p. Vauxhall car at over 73 m.p.h.

Riders Nominated for Six Days Trials.

F. C. Parkes, M. Bishop, and J. Johnson have been nominated as the three riders of the Sun motor cycles in the A.C.U. Six Days' Trials.

A New Record.

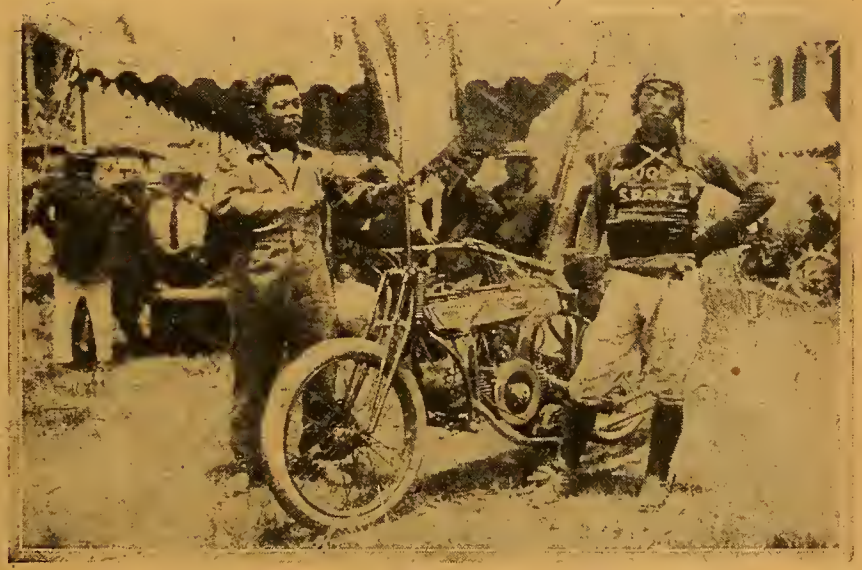
Victor Horsman was recently responsible for setting up a new flying mile record in the 600 c.c. sidecar class, covering the distance on a Norton and sidecar in 4m. 24.8s., equivalent to a speed of 67.97 m.p.h.

An Old-established Reliability Run.

One of the oldest of provincial long-distance club runs, the Bradford-London-Bradford trial of the Bradford M.C. and L.C.C., took place on July 29th and 30th, the Leeds, Hull, Wakefield and Dewsbury clubs also participating. Eighty of the 100 entrants started, amongst them being four ladies, two driving P. and M. and two Scott sidecars; of these three finished. Very few failed to complete the journey, which followed the main road. Much congestion occurred at Muskham, near Newark, where the old wooden bridge is being replaced.

Route of the "Six Days."

Probably the most difficult route of the whole of the Six Days Trials (August 21st to 26th) occurs on the first morning. Starting from York the direction is northerly into the Hambleton Hills, including Rosedale Abbey Bank. In the afternoon of that day industrial districts will be largely traversed, Burton-on-Trent being the objective. On the following days Shrewsbury, North Wales (Bwlch-y-groes and the Hirnaut Pass) and Central Wales, the Wye Valley, and the hilly Stroud district are traversed, finishing at Brooklands on the Friday, after sampling the Chiltern Hills (Alms Hill, etc.). On the last day the speed tests will be carried out at Brooklands.



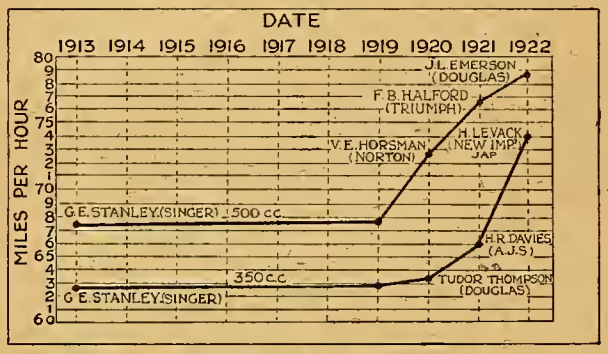
"Championship" meetings are now the vogue in Japan, the enthusiasm shown at the races being quite remarkable. The rider on the right won the Naruo championship on a 494 c.c. Douglas.

THE RISE OF THE 350 c.c. ENGINE.

New Class B Hour Record Figures.

ONE of the outstanding features of the motor cycle movement since the war has been the rapid rise of the 350 c.c. engine. The outcome of the Junior Tourist Trophy races, the present-day engine of this size is challenging the position held by the 500 c.c. type

In the 1921 T.T. a Junior machine won the Senior race. In 1920 the Junior winner was 11.05 m.p.h. slower than the Senior, while in this year's races the Senior event was won at a speed only 3.58 m.p.h. in excess of the smaller machine. Now a motor cycle fitted with a 350 c.c. o.h.v.



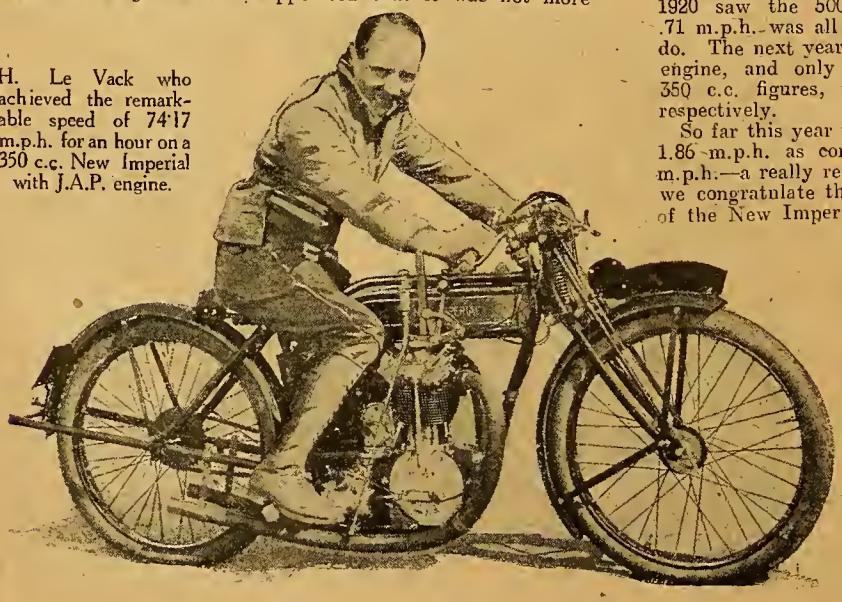
Graph illustrating the advances in speed year by year of 500 c.c. and 350 c.c. hour records.

J.A.P. engine has maintained the remarkable speed of over 74 m.p.h. for an hour. The following are H. Le Vack's records secured at Brooklands a few days ago on a New Imperial:—

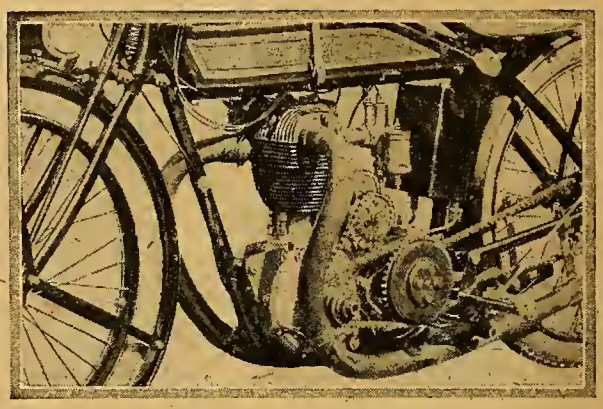
10 miles	...	73.52 m.p.h.
50 miles	...	74 ,,
100 miles	...	72.81 ,,
1 hour	...	74 miles 291 yards=74.17 m.p.h.

Less than two years ago the 500 c.c. hour record stood at 72.4. Le Vack exceeded this speed for a hundred miles and included a stop for full replenishment.

Ever since we first inspected the o.h.v. J.A.P. engine in May last, we have expected big things from it, and we confess we were somewhat disappointed that it was not more



H. Le Vack who achieved the remarkable speed of 74·17 m.p.h. for an hour on a 350 c.c. New Imperial with J.A.P. engine.



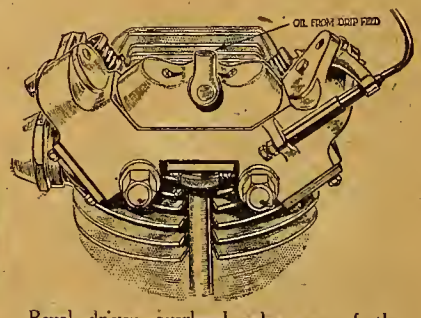
Neatness of design characterises the 350 c.c. o.h.v. J.A.P. engine which occupies very little more space in the frame than a side-by-side valve engine.

fortunate in the Tourist Trophy races, but both in the Junior and the Senior events the machine suffered troubles which we understand were not connected with the engine itself—a gear box in the one race and a magneto platform in the other. These defects—if defects they were—have evidently been rectified, for no trouble was experienced by Le Vack during his 100-mile run at Brooklands. That Le Vack's hour record of 74.17 m.p.h. is remarkable is best appreciated when compared with previous figures and those of Class C (up to 500 c.c.). These are shown graphically in the preceding column, from which it will be seen that while the post-war figures of the 500 c.c. class show a more or less steady improvement, Le Vack's record has given the 350 c.c. figures a rise of no less than 8 m.p.h.—raising the speed from 66.09 m.p.h. to 74.17 m.p.h., a "jump" which is probably unique in the history of record breaking. The following figures show the steps in the speed ladder of the two classes:—

	500 c.c.	350 c.c.
From 1912 to 1920	=5.04 m.p.h.	.71 m.p.h.
1920 to 1921	=4.26 m.p.h.	2.70 m.p.h.
1921 to 1922	=1.86 m.p.h.	8.08 m.p.h.
Total ...	11.16 m.p.h.	11.49 m.p.h.

It will be seen that the increase of speed since the war has been greater in the case of the 350 c.c. than in the 500 c.c. class, but only Le Vack's record has made this so. 1920 saw the 500 c.c. type advance 5.04 m.p.h., while .71 m.p.h. was all the extra speed the 350 c.c. engine could do. The next year gave a further 4.26 m.p.h. to the 500 c.c. engine, and only another 2.70 m.p.h. was added to the 350 c.c. figures, totals of 9.30 m.p.h. and 3.41 m.p.h. respectively.

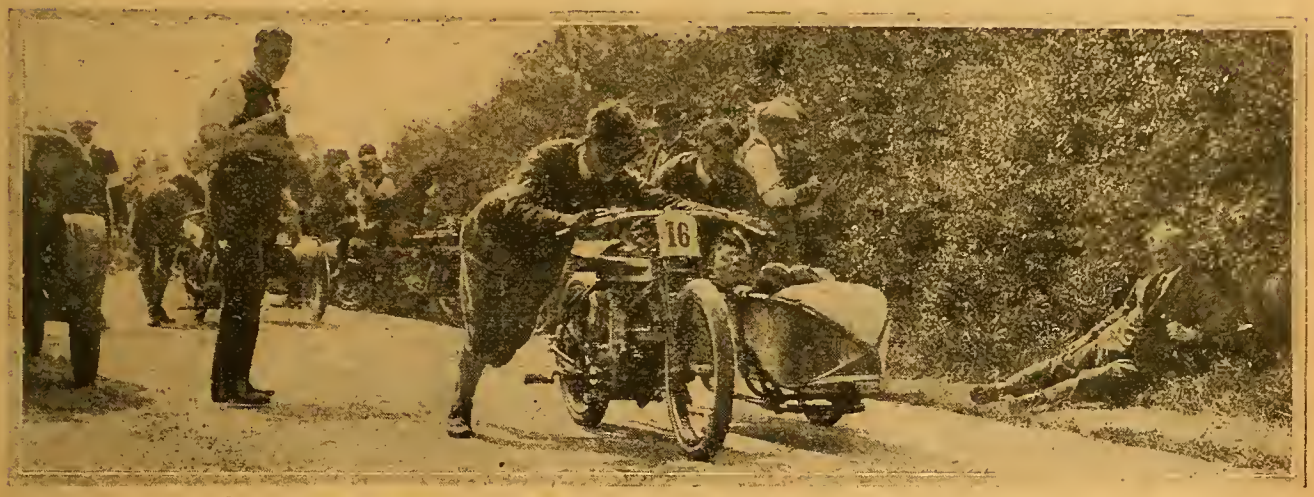
So far this year the Class C hour record has only advanced 1.86 m.p.h. as compared with Le Vack's "jump" of 8.08 m.p.h.—a really remarkable performance and one upon which we congratulate the rider, the J.A.P. firm, and the makers of the New Imperial.



Bevel driven overhead valve gear of the record breaking 350 c.c. J.A.P. engine. Observe the neat exhaust lifter arrangement.

OVER THE "100" MARK.

Consistently High Speeds attained at the East Midland Centre A.C.U. Clipstone Drive Speed Trials.



F. T. Hatton (748 c.c. Douglas sidecar) starting in the 750 c.c. sidecar class at Clipstone Drive.

FAVOURED by the good surface, the slight downward grade, and a fairly strong breeze which freshened steadily throughout the day, the hundred and twenty odd contestants in the East Midland Centre Speed Trials on Saturday achieved speeds no less astonishing to themselves than to the spectators.

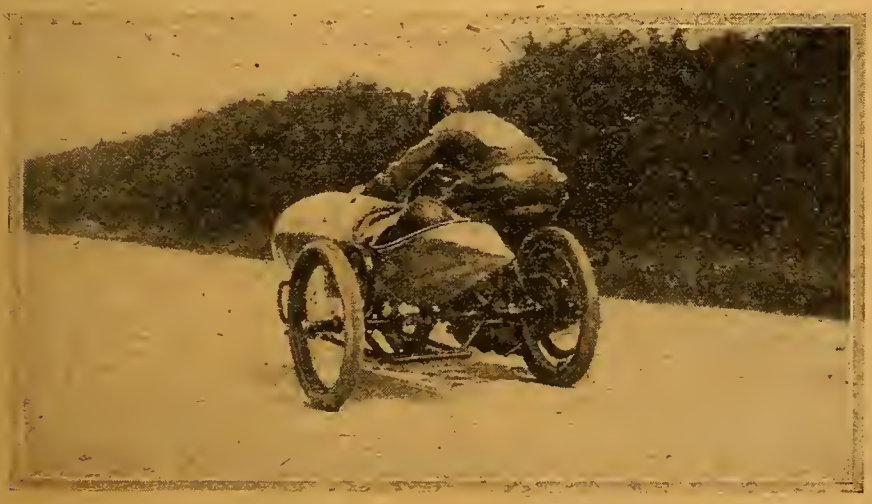
Clipstone Drive, a hard concrete-like metalled roadway through the derelict camp of the same name near Mansfield, is fairly satisfactory from all points of view other than in its provision of vantage points for spectators.

Fine Speedway Lacking a Grand Stand.

Over the measured half-mile, with ample flying start and pulling up distance, the road curves so slightly as to be scarcely noticeable, and the surface is practically free from waves or bumps. Unfortunately the road is narrow, and in consequence, with spectators concentrated on the one side alone available for them, and there being no elevated banking for their accommodation, there is a tendency for the width of the track to be still further reduced by craning sightseers who will not keep back.

Be that as it may, however, the riders hurtled unerringly down the narrow space and into what to them must have been a veritable bottle-neck by the finishing line, where the timekeeper's tent was faced by a long row of "orchestra stalls," otherwise the caterer's chairs, in which the public courted disaster at the comparatively low price of sixpence each.

Sidecar classes were run off first in the afternoon, and of these there were only three, with capacity limits up to 550 c.c., 750 c.c., and unlimited c.c. respectively.



Second fastest time of the day was made by I. P. Riddoch (998 c.c. o.h.v. Zenith-Blackburne). His speeds were: solo, 101·12 m.p.h., and sidecar, 87·38 m.p.h.

In the first two classes Searle and Padley, the Sheffield-Henderson exponents, distinguished themselves; but in the unlimited section the main duel was between I. Riddoch (998 Zenith-Blackburne sc.) and F. W. Dixon (989 Harley-D. sc.). The latter was the victor, his four-valve o.h.v. engine having a pistol-like exhaust and tremendous speed.

Sidecars at 90 m.p.h.

Dixon covered the half-mile in 20 secs., or 90 m.p.h., but this was to be marvellously outshone in the solo classes later.

Next came the East Midland Centre championship classes, competed for in teams of three (two solo and one sidecar). In this event occurred the only untoward incident of the day—H. Harvey (499 Triumph) getting into a bad wobble and having his front tyre come off (which caused which is difficult to say) near the finishing line. Fortunately missing the crowd, the rider was little hurt, but the machine suffered rather badly.

Out of teams representing Derby, Leicester, Loughborough, Nottingham, and Mansfield, the latter proved victorious.

Solo Classes.

So far the event had scarcely got into its stride, but now came the solo classes, each being divided into three sections, "A" for amateurs and previous non-winners of open first prizes, "B" for "non-expert" trade riders, "C" for experts.

Two classes for two-strokes provided an opportunity for Alec. Bowerman, a 15-year-old rider of a Velocette, to show his pace, and it proved that only the best Scotts could beat him; amongst riders of machines similar to his own he was invincible, and attained 69.77 m.p.h.

In the bigger solo classes the unwieldiness of the entry (there were 76 entrants in the 550 c.c., and 66 in the 750 c.c. categories) made detailed reporting impossible, and the winners' times must speak for themselves.

For the high speeds attained the course was all too narrow. High hedges and lack of raised banking confined the many thousands of spectators to the track. The rider approaching the finishing line (at 77¼ m.p.h.) is L. Padley (349 c.c. Sheffield-Henderson.)

A Chance for the Crocks.

Between these two classes was a most interesting one for machines of 1914 and earlier vintage and any capacity. These included B. Fellowes' ancient Minerva, a water-cooled Humber single, and other veterans. The winner, who covered the half-mile in 26s. (69.3 m.p.h.), rode an old Bat-Jap, fitted with two Schebler carburetters and a three-speed hub gear.

Hassall and his Norton appeared meteorically in the 750 c.c. solo class, his time being 20s., but on re-running in the unlimited class something went wrong and he just toured up the course. In the trade section of this class and in the Mansfield Club Championship following came the most thrilling spectacle of the day. Incidentally, there is every assurance that the times were accurate and the distance correctly measured, but the times recorded are certainly extraordinary.

Well over 100 m.p.h.

Riddoch, with his o.h.v. two-carburetter Blackburne-engined Zenith (three-speed), covered the distance in 17⅝s. (101.12 m.p.h.), and everyone waited to learn if Dixon could beat this. If, previously, police and marshals had struggled somewhat vainly to keep back the crowd, thoughts of Dixon's coming were much more effective. The popular favourite failed to make a win, however, and the Mansfield Club Championship, in which he alone of the two was entered, provided the only remaining opportunity in which to vindicate himself.

This he did, the demoniacally-crackling exhaust roaring nearer to the thrilled crowd around the timing tent at 103.45 m.p.h., the half-mile being covered in 17⅖s.

Dixon's ride concluded the meeting, which had progressed without a break in its excellent organisation from 2 p.m. until 7.40. Praise and bouquets should be handed freely to the competitors, the patient officials, and the many thousands of still more patient spectators who stuck to their posts with unwavering faithfulness during the whole proceedings.

Results, in order of class members, are as follows :—

E. MIDLAND CENTRE TEAM CHAMPIONSHIP.

WINNERS: Mansfield and District M.C. and L.C.C
F. Horbury (496 Douglas), 22s.
R. Lucas (348 Sheffield Henderson), 22⅖s
F. Sisson (490 Norton sc.), 26s.

CLASS 1.—TWO-STROKES UP TO 300 C.C.
SECTION A.—4 entrants.
Alec Bowerman (247 Velocette), 25⅘s.
S. Marshall (247 Velocette), 27⅗s.
R. Taylor (211 Levis), 29⅘s.

SECTION B.—6 entrants.
Alec Bowerman (247 Velocette), 25⅘s
H. Jennison (247 Velocette), 26⅘s.
S. Marshall (247 Velocette), 27⅗s.

SECTION C.—2 entrants.
Alec Bowerman (247 Velocette), 25⅘s.
J. Sylvester (247 Velocette), 34⅗s.

CLASS 2.—TWO-STROKES, UNLIMITED
SECTION A.—8 entrants.
E. Freear (532 Scott), 24⅘s.
C. Barnes (481 Scott), 24⅘s.
Alec Bowerman (247 Velocette) } 26⅗s
F. Nash (481 Scott) }

SECTION B.—7 entrants.
A. W. Thrush (481 Scott), 24⅘s.
E. Widdowson (481 Scott), 26⅕s.
Alec Bowerman (247 Velocette) } 26⅗s.
J. Nash (481 Scott) }

SECTION C.—4 entrants.
Alec Bowerman (247 Velocette) } 26⅗s
J. Nash (481 Scott) }
J. R. Sylvester (247 Velocette), 30⅕s.

CLASS 3.—SOLO UP TO 300 C.C.
SECTION A.—4 entrants
A Bowerman (247 Velocette), 26⅗s
S. Marshall (247 Velocette), 27⅗s
J Holdsworth (249 Massey-Arran), 30⅕s

SECTION B.—11 entrants.
A Bowerman (247 Velocette), 26⅗s.
J Heath (249 Coventry Eagle), 26⅘s
M. Jennison (247 Velocette), 27⅕s.

SECTION C.—4 entrants.
J Roberts (249 New Imperial), 29⅕s
J Sylvester (247 Velocette), 33s.

CLASS 4.—SOLO UP TO 350 C.C.
SECTION A.—11 entrants.
W. Aston (349 Diamond B.), 25⅖s.
D. Brown (349 Royal Ruby), 26⅘s.
A Bowerman (249 Velocette), 27⅗s.

SECTION B.—21 entrants.
O. Handley (349 O.K.), 22⅖s.
J. Nichols (349 Mars), 22⅘s.
R. Gray (349 New Scale), 23⅖s.

SECTION C.—7 entrants.
R. Lucas (349 Sheffield-Henderson), 22s.
O. Handley (349 O.K.), 22⅘s.
J. Nichols (349 Mars), 22⅘s.

CLASS 5.—SOLO UP TO 550 C.C.
SECTION A.—21 entrants.
W. Martin (499 Sunbeam), 21⅕s.
P. H. Turnhill (490 Norton), 22⅗s.
A. Thrush (486 Sunbeam), 22⅘s.

SECTION B.—22 entrants.
F. Horberry (496 Douglas), 21⅗s.
A. Bosworth (498 Brough), }
Harold Petty (490 Norton), } 22s.
F. Sisson (490 Norton), }
O. W. Redgate (499 Sheffield-Henderson), } 22⅗s.
J. Wilkinson (490 Norton) }

SECTION C.—11 entrants.
E. Searle (499 Sheffield-Henderson), 20⅖s.
F. T. Hatton (496 Douglas), 21s.
F. Horberry (496 Douglas), 21⅗s.

CLASS 6.—1914 AND EARLIER MACHINES, ANY CAPACITY.
H. Synyer (976 Bat-Jap), 26s.
B. Chatterton (654 Matchless), 27⅕s.
W. White (499 Rudge), 28s.

CLASS 7.—SOLO UP TO 750 C.C.
SECTION A.—31 entrants.
W. Martin (499 Sunbeam), 21⅖s.
R. C. Winn (496 Douglas), 21⅗s.
D. Jones (499 Sunbeam) } 22⅗s.
A. W. Thrush (482 Sunbeam) }

SECTION B.—25 entrants.
J. Richards (688 Coventry Victor), 21⅖s.
H. Petty (490 Norton), 21⅘s.
P. E. Norris (348 Sheffield-Henderson) } 21⅘s.
J. Wilkinson (490 Norton) }

SECTION C.—12 entrants.
H. Hassall (490 Norton), 20s.
F. T. Hatton (748 Douglas), 20⅗s.
E. Searle (499 Sheffield-Henderson), 21s.

CLASS 8.—SOLO, UNLIMITED.
SECTION A.—28 entrants.
W. Martin (499 Sunbeam), 21⅕s.
R. C. Winn (496 Douglas), 21⅗s.
D. Jones (486 Sunbeam), 22⅘s.

SECTION B.—24 entrants.
J. Richards (688 Coventry Victor), 20⅘s.
O. W. Redgate (499 Sheffield-Henderson) }
G. Hartwell (976 Brough Superior) } 21⅗s.
F. Sisson (490 Norton), 21⅘s.

SECTION C.—14 entrants.
I. Riddoch (998 Zenith), 17⅘s.
F. W. Dixon (989 Harley-Davidson), 18⅕s.
E. Searle (499 Sheffield-Henderson), 20⅕s.

CLASS 9.—SIDECARS UP TO 550 C.C.
SECTION A.—7 entrants.
H. M. Barron (490 Norton sc.), 25⅕s.
P. Cheston (490 Norton sc.) 27s.
F. Nash (481 Scott sc.), 29s.

SECTION B.—2 entrants.
S. Lawrence (499 Sunbeam sc.), 28⅗s.

SECTION C.—5 entrants.
L. Padley (348 Sheffield-Henderson sc.), 23⅕s.
E. Searle (499 Sheffield-Henderson sc.), 23⅗s.
S. Lawrence (499 Sunbeam sc.), 29s.

CLASS 10.—SIDECARS UP TO 750 C.C.
SECTION A.—7 entrants.
H. M. Barron (490 Norton sc.), 25⅕s
P. Cheston (490 Norton sc.), } 29⅖s.
F. Nash (481 Scott sc.), }

SECTION B.—3 entrants.
J. Richards (688 Coventry Victor sc.). 24s
F. Sisson (490 Norton sc.), 24⅗s.

SECTION C.—4 entrants.
E. Searle (499 Sheffield-Henderson sc.), 23s.
F. T. Hatton (748 Douglas sc.), 23⅖s.

CLASS 11—SIDECARS AND THREE-WHEELERS, UNLIMITED.
SECTION A.—7 entrants.
H. Barron (490 Norton sc.), 25s.
A. Grocock (976 Zenith sc.), 27s.
P. Cheston (490 Norton sc.), 28⅕s.

SECTION B.—5 entrants.
J. Richards (688 Coventry Victor sc.) }
F. Sissons (490 Norton sc.) } 25s.
G. Hartwell (976 Brough Superior sc.), 25⅗s.

SECTION C.—7 entrants.
F. Dixon (989 Harley-Davidson sc.), 20s.
I. Riddoch (998 Zenith-Blackburne sc.), 20⅗s
R. Stacey (989 Harley-Davidson sc.), 23⅗s.

CLASS 13.—MANSFIELD CLUB CHAMPIONSHIP.
SECTION A.—14 entrants.
R. Flint (490 Norton), 21⅖s.
A. Thrush (486 Sunbeam), 22⅘s.
R. C. Winn (496 Douglas), 23s.

SECTION B.—18 entrants.
*F. W. Dixon (989 Harley-Davidson), 17⅗s
F. T. Hatton (748 Douglas), 20s.
R. Stacey (989 Harley-Davidson), 20⅘s.

*Fastest time of the day (103.45 m.p.h.).

EALING CLUB AT BROOKLANDS.

Ladies' Day on the Track. Poorly Supported Handicaps. British Big Twins' Successes.

A speed impression of J. L. Emerson (499 c.c. Douglas) and A. S. Guthrie (347 c.c. Diamond B. and S.).

BROOKLANDS meetings resemble Ford cars. They are all very much alike, and you may call them by different names without altering them beyond recognition.

Last Saturday's event was run by the Ealing club, but except that the fields were smaller than usual, it might easily have been a B.M.C.R.C. affair; the same people were there, and, generally speaking, the same people won.

Lady's Win.

On the other hand, the afternoon was notable because of a lady competitor's win —Mrs. Janson (249 Trump-Jap) was first in the novices' handicap—and because of a more than usually pronounced atmosphere of gaiety about the proceedings.

Three races held over from the previous M.C.C. event opened the programme, the first a 1,000 c.c. sidecar handicap. It was a battle between three long handicap men, S. E. Longman (988 Zenith-Jap sc.), R. Charlesworth (988 Zenith-Jap sc.), and F. A. Longman (994 Ariel-M.A.G. sc.). The last-mentioned led for two laps, but his namesake gained his 12 seconds penalty in lap three, and Charlesworth retrieved ground lost at the start.

600-1,000 c.c. Sidecar Handicap.
1. S. E. Longman (988 Zenith-Jap sc.), 1m. 3s.
2. R. Charlesworth (988 Zenith-Jap sc.), 1m. 24s.
3. F. A. Longman (994 Ariel-M.A.G. sc.), 1m. 15s.
Winner's speed=66.29 m.p.h.

The M.C.C. Championship came next—a difficult-to-follow five-lap handicap, in which C. F. Taylor (Alecto), the limit man, was well beaten on the last lap by E. W. Spencer (499 Douglas).

M.C.C. Championship for Harry Smith Cup
1. E. W. Spencer (499 Douglas), 3m.
2. C. F. Taylor (345 Alecto), 7m. 45s.
3. H. Le Vack (345 New Imperial), 2m.
Winner's speed = 72.68 m.p.h.

The first of a series of three-lap Ealing events—a 350 c.c. solo handicap—saw two ladies on the starting line, Mrs. Janson (Trump) and Mrs. Knowles (349 A.J.S.). Mrs. Knowles led the field for a lap, but the less generously handicapped men crept up thereafter, and C. G. Pullin (346 Douglas) scored yet another well-earned win.

350 c.c. Solo Handicap.
1. C. G. Pullin (346 Douglas), 9s.
2. A. Fraser (348 Sheffield Henderson), 54s.
3. F. J. Youngs (348 O.K. Junior), 54 sec.
Winner's speed=73.69 m.p.h.

There were only four starters in the 500 c.c. race, and finishing order was also first and second lap order.

500 c.c. Handicap.
1. Lt. R. T. Grogan (490 Norton), 51s.
2. R. M. Knowles (490 Norton), 1m. 25s
3. R. Newitt (496 Douglas), 1m. 15s.
Winner's speed=70.58 m.p.h.

Five big twins, with only 45 seconds separating them all, now provided an excellent tussle. F. A. Longman (Ariel-M.A.G.) got well away from the limit mark and led for just two laps, but Geo. Brough (988 Brough-Superior) was 18 seconds per lap faster, and neither Baldwin's Matchless nor Col. Stewart's Trump-Anzani) were quite able to catch up the machine with the big plated tank.

500-1,000 c.c. Handicap.
1. G. Brough (988 Brough Superior), 18s.
2. O. M. Baldwin (994 Matchless), 9s.
3. R. N. Stewart (994 Trump-Anzani), 15s.
Winner's speed=85.07 m.p.h.

Of the four starters in the novices' handicap, two were ladies; but Mrs. Janson's track experience gave her a decided advantage over Mrs. Knowles, and her greatest danger was from the scratch man, G. H. Ruscoe (348 Ruscoe-Blackburne). He failed, however, by about 250 yards to overtake her; and Mrs. Knowles made a good third.

Novices' Handicap.
1. Mrs. G. Janson (249 Trump-Jap), 1m. 33s.
2. G. H. Ruscoe (348 Ruscoe-Blackburne), scratch.
3. Mrs. O. M. Knowles (349 A.J.S.), 1m. 33s.
Winner's speed=53.70 m.p.h.

Mrs. G. M. Janson (249 c.c. Trump-Jap) and Mrs. O. M. Knowles (349 c.c. A.J.S.) at the start of the 350 c.c. Ealing Handicap.

Ealing Club at Brooklands.—

A rag-time inter-club team race followed; it was won very decisively by a strong team representing the B.M.C.R.C.

There were twelve starters in the three-wheeler event for Professor Low's cup, but the race was very much a procession in starting order. V. Baxter (346 Holroyd sc.) won comfortably, S. E. Longman (988 Zenith-Jap sc.) gained much ground in reaching second place, and L. F. Peaty (348 Hawker sc.) had to go hard to prevent another big twin from being third. W. D. Hawkes on a single-seated Morgan with an eight-valve M.A.G. engine was handicapped out of the picture.

THREE-WHEELER HANDICAP.
1. V. Baxter (346 Holroyd sc.), 3m. 36s.
2. S. E. Longman (988 Zenith-Jap sc.), 1m. 15s.
3. L. F. Peaty (348 Hawker sc.), 2m. 51s.
Winner's speed=50.18 m.p.h.

Down on the programme as an impromptu handicap, the next event attracted a wonderful field, ranging from 30-98 h.p. Vauxhall and 15.9 h.p. Bentley cars down to a solo Harley-Davidson. The handicapping was as comic as the entrants looked on the starting line. C. W. Johnston on the same flat twin Harley-Davidson machine that *The Motor Cycle* "road-tested" at the beginning of the year up to a maximum of 45 m.p.h., won comfortably at 54.31 m.p.h.—which was also rather funny! Evans-Greaves on a Brough-Superior sidecar was second.

In the last race of the day S. E. Longman (988 Zenith-Jap sc.) won the Ealing club championship, after lying second for two laps to V. Baxter (348 Holroyd sc.). The solo riders were dealt hardly with, although Col. Stewart (Trump-Anzani) made an excellent fourth from very near the scratch mark. O. De Lissa (M.A.G. sc.), who was third, was heavily penalised. The winner's speed was 66.65 m.p.h.

SCOTTISH SPEED CHAMPIONSHIPS.

New Imperial, Douglas, Norton, and Harley-Davidson Successes.

SCOTLAND'S big speed event of the year—the Championship Meeting at St. Andrews—was held on Saturday and resulted in several keenly-contested races in which local men and well-known English riders divided the chief honours.

There were many hundreds of spectators, and the weather conditions were favourable. Nearly 300 entries were received.

Interest centred on the championship races. D. B. Calder (248 New Imperial) won the 250 c.c. event with some ease and A. H. Alexander (349 Douglas) was not very hard pressed in the 350 c.c. race, winning by 800 yards or so; his time for the twenty miles was 23m. 25⅘s., an average speed of 51.2 m.p.h. for a ten-lap, twenty-mile course.

No less than thirty competitors lined up for the medium-weight (560 c.c. championship, and by superior cornering, C. P. Wood (532 Scott Squirrel) came home first, only to be disqualified in favour of Graham Walker (490 Norton). Wood's disqualification is said to be due to the length (or shortness) of his exhaust pipe.

There was a regrettable accident owing to D. S. Alexander and D. B. Calder, on Nortons, colliding. Both were seriously injured.

Only ten started in the 1,000 c.c. race, also over the twenty-mile course, and Geo. Grinton (989 Harley-Davidson) won easily from F. A. Hunter (976 Brough Superior) and R. J. Braid (998 Indian), who finished in the order stated. Grinton's speed was 56.8 m.p.h.

Three one-lap races followed. The 350 c.c. class needed two preliminary heats, the final placings being: 1, J. J. Lawcock (348 Sheffield Henderson); 2, C. Norman Sadler (348 Sheffield-Henderson); 3, A. A. Porter (348 New Gerrard). G. W. Walker (490 Norton) scored two further successes in the 560 c.c. and 1,000 c.c. classes.

C. Norman Sadler (348 Sheffield-Henderson), D. Adamson (490 Norton), and J. G. McEwan (490 Norton) were respectively first in the 350 c.c., 560 c.c., and 1,000 c.c. experts barred three-lap races.

Graham Walker (490 Norton sc.) was allowed a walk-over in the 600 c.c. sidecar class, and the only other sidecar race—1,000 c.c.—was won by G. Grinton (989 Harley-Davidson sc.).

For the third year in succession the Edinburgh team won the inter-club race.

AN IRISH CLIMB.

BY reason of the fact that the district in which the event was originally fixed to be held was the scene of a good deal of "Irregular" activity, the Dublin and District Motor Cycle Club was compelled to change the venue of its open hill climbing handicap on Saturday last to the de Sally Quarry Hill, near Tallaght. The success of the event did not suffer because of the change, and good competition was seen in the various classes. The fastest time of the afternoon was made by A. A. Wayte (499 Sunbeam), 45 secs., but the surprise of that class was furnished by J. Healy, who, on a twin 500 c.c. James that he had procured for the postponed Tailteann road race, did a wonderful performance by getting within 1⅘ secs. of the scratch man's time, despite a handicap of nearly four stone extra weight. He was an easy winner of the handicap. R. Humphreys (249 Velocette) won the two-stroke class, tieing with the scratch man's fastest time, and T. V. Murphy (348 Coventry Eagle) proved the winner of the 350 c.c. class. The placings and times of the winners in the four classes were as under:—

250 C.C. (TWO-STROKES).
1. R. Humphreys (249 Velocette), 2s., 58⅕s.
2. T. F. Slevin (249 Velocette), scratch, 60⅕s
3. J. G. Burney (225 Enfield), 5s., 62⅘s.

350 C.C. (FOUR-STROKES).
1. T. V. Murphy (348 Cov. Eagle), 8s., 53s.
2. H. McNally (249 New Imperial), 54⅘s.
3. F. A. Wallen, Jun. (349 A.J.S.), 2s., 55⅕s.

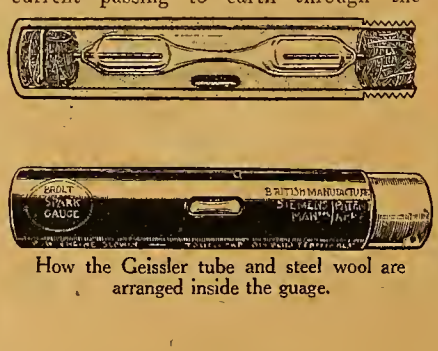
500 AND 600 C.C.
1. J. Healy (500 James), 12s., 34⅘s.
2. A. Carton (490 Norton), 4s., 42⅕s.
3. T. E. Greene (494 Douglas), 5s., 43⅕s.

SIDECAR CLASS.
1. D. Allen (490 Norton sc.), 2s., 63⅕s.
2. C. D. Maguire (976 Matchless sc.), 5s., 65⅘s.
3. E. Ashton (998 Indian sc.), scratch, 66⅘s.

DIAGNOSING IGNITION FAULTS.

IT is a somewhat difficult matter to ascertain the precise condition of a sparking plug without first stopping the engine and then removing the plug; the Brolt Neon spark gauge has been designed to obviate this. Without short-circuiting, it utilises a very small amount of current to produce a luminous discharge of sufficient colour value to demonstrate the exact condition of a sparking plug, the bright red glow being obtained by an electrical discharge through a tube containing a rare gas called Neon.

The device simply consists of a vulcanite cylinder containing a glass Geissler tube packed at either end with steel wool and having a brass cap at one end. It is held in the hand by the insulated end, and the brass cap is placed against the terminal of the sparking plug, when, if the plug is in order, a bright glow is shown through the window provided, the current passing to earth through the body of the motorist without producing any shock.



How the Geissler tube and steel wool are arranged inside the guage.

In its method of operation the appliance resembles a miniature condenser. If the plug is faulty or the points are too close together the potential is immediately reduced, and the tube will flash only feebly or intermittently; if the gap is wide the potential is raised and the flash is lurid in colour.

The gauge may also be usefully employed for testing the continuity of the electrical circuit, and for locating any leakage which may occur in connection with the high tension leads by simply tracing the gauge along the outer covering.

The gauge is obtainable from Brolt Ltd., Rood End Road, Olbury, price 6s.

CLUB NEWS (continued from p. 167)

Rotherham and District M.C.

The annual reliability trial has been arranged to take place on August 20th, when a special prize for lady riders will be offered. Entries for this event close on August 13th.

Weston-super-Mare and District M.C.C.

A 72 mile course including five different hills was selected for a reliability trial held on the 22nd of last month. Silver cups were awarded to E. G. Fersy and A. R. Passey, both driving G.N. light cars. Gold medals were awarded as follows: J. Tucker (293 New Imperial), F. C. King (550 Triumph), G. O. Scampton (499 Dunelt sc.), and F. G. Mann (998 Harley-Davidson sc.).

Dolgelly and District M. and M.C.C.

A successful reliability trial and hill-climb took place on Wednesday of last week, when 14 competitors started and 11 completed the course. Good performances, despite unfavourable weather conditions, were made by the following riders: Mrs. Gillmore (550 Triumph sc.), W. James (269 Metro-Tyler), O. W. Chambers (490 Norton), R. James (557 B.S.A.), and Wynne Williams (698 Raleigh).

Matlock and West Derbyshire M.C.C.

At a meeting held at headquarters, the Darley Bridge Garage, Matlock, on July 22nd, Mr. E. F. Hurt, South Darley, Matlock, was elected hon. general secretary, Mr. G. Davis, Tor House, Matlock, branch secretary for Matlock and district, and Mr. C. Spencer, Post Office, Rowsley, branch secretary for Bakewell and district. It was agreed to affiliate to the East Midland Centre of A.C.U. The opening meet and club run was held on the 29th ult. The club would be glad to hear from secretaries of clubs within a radius of 30 miles with a view to arranging an inter-club rally.

Tiverton M.C. and L.C.C.

The results of the recent gymkhana held on the old race course at Tiverton are as follows:—

RIDING THE GREASY PLANK.—S. Courtney (269 Wolf).

EGG AND SPOON RACE.—1, L. Stagg (499 Sunbeam); 2, S. W. Jordon (292 O.K.).

RIDING BLINDFOLD.—1, W. C. Treloggan (998 Indian); 2, R. Barrington (375 Royal Ruby).

BUN-EATING COMPETITION.—S. Courtney (269 Wolf).

PICKING UP ORANGES.—1, A. B. Hannell (375 Royal Ruby); 2, L. Stagg (499 Sunbeam).

SLOW RACE.—1, E. Thorne (398 A.B.C.).

RELAY RACE.—L. Stagg (499 Sunbeam), S. Parmiter (499 Triumph), and E. Thorne (398 A.B.C.)

Week-End Club Events.

Aug. 5th.—Coatbridge, Airdrie and District M.G.C.—Social Run to Pebbles.
Aug. 5th.—Coventry Triangle M.C.—Run to Kineton.
Aug. 5th.—Middlesbrough and District M.C.—Speed Judging Competition.
Aug. 6th.—Coventry Triangle M.C.C.—Run to Tewkesbury.
Aug. 6th.—Prestwich and District M.C.C.—Social Run.
Aug. 6th.—Kelso and District M.C.C.—Social Run.
Aug. 6th.—Newcastle and Northern M.C.—One-day Reliability Trial.
Aug. 6th.—Leeds Motor Union.—Run to Grassington via Burnsall.
Aug. 6th.—Rotherham and District M.C.—Run to Scarborough.
Aug. 6th and 7th.—Ilkley M.C. and L.C.C.—Social Event.
Aug. 7th.—Eastbourne and District M.C.C.—Impromptu Gymkhana.
Aug. 7th.—York and District M.C.—York-Edinburgh-York Trial.
Aug. 7th.—Barrow and District M.C.—Social Run.
Aug. 7th.—Gloucester M.C. and L.C.C.—Social Run to Burnham.
Aug. 7th.—Sheffield and Hallamshire M.C. and L.C.C.—12 Hours' Trial to the seaside.
Aug. 7th.—Doncaster and District M.C.C.—Saltburn Trial.
Aug. 7th and 8th.—Bulwell M.C.—Run to Skegness.
Aug. 8th.—Neath and District M.C.—Welsh T.T. Races, Pendine Sands.
Aug. 9th.—Exeter M.C. and J.C.C.—Supper Run to Chudleigh.
Aug. 9th.—Ashford M.C. and L.C.C.—Picnic Run to Perry Woods.
Aug. 9th.—Leeds Motor Union.—Impromptu Run from City Square.
Aug. 9th.—Reigate, Redhill and District M.C.C.—Speed Trials.

Southport M.C.

The reliability trial for the "Rudge" cup and other special prizes will be run off on the 13th inst. A race meeting is also being held on the sands on Saturday, the 19th inst., over a straight course approximately one mile in length, commencing at 3 o'clock. Further particulars are available from Mr. Rowland Hill, 75, Selton St., Manchester.

Ipswich and District M.C.C.

Fastest time of the day in the hill-climb at Belstead Brook Hill on the 22nd ult. was made by R. F. Fenn (499 Triumph), both in solo and sidecar events. The slow hill-climb was won by R. O Clarke (247 Levis).

Ilkley M.C. and L.C.C.

Considerable interest was displayed in the contest for the Trade Trophy run off on the 30th of last month, and the fairness of the handicapping resulted in some very close finishes. In the final A. Fieldhouse (499 Sunbeam) beat J. S. Whitley on a similar machine. W. Clough (532 Scott) gained a special prize in a contest with E. R. Hall, who was driving a Bugatti car.

Midland C. and A.C.

Results have now been announced for the 24-hour trial to Holyhead, already described in *The Motor Cycle*.

M.C. AND A.C. TROPHY.—F. W. Giles (799 A.J.S. sc.).

JORDISON TROPHY.—F. W. Giles (799 A.J.S. sc.).

GOWCH TROPHY.—R. F. Turner (293 New Imperial).

B.N. BOWL.—G. Butcher (490 Sunbeam).

TRADER TROPHY.—A. Rollason (994 Ariel).

TEAM PRIZE.—New Imperial (R. F. Turner (293 New Imperial), L. Horton (249 New Imperial sc.), B. Uzzell (976 New Imperial sc.).

MEMBERS' SOLO PRIZE.—R. F. Turner (293 New Imperial).

MEMBERS' SIDECAR PRIZE.—L. Newey (994 Ariel sc.).

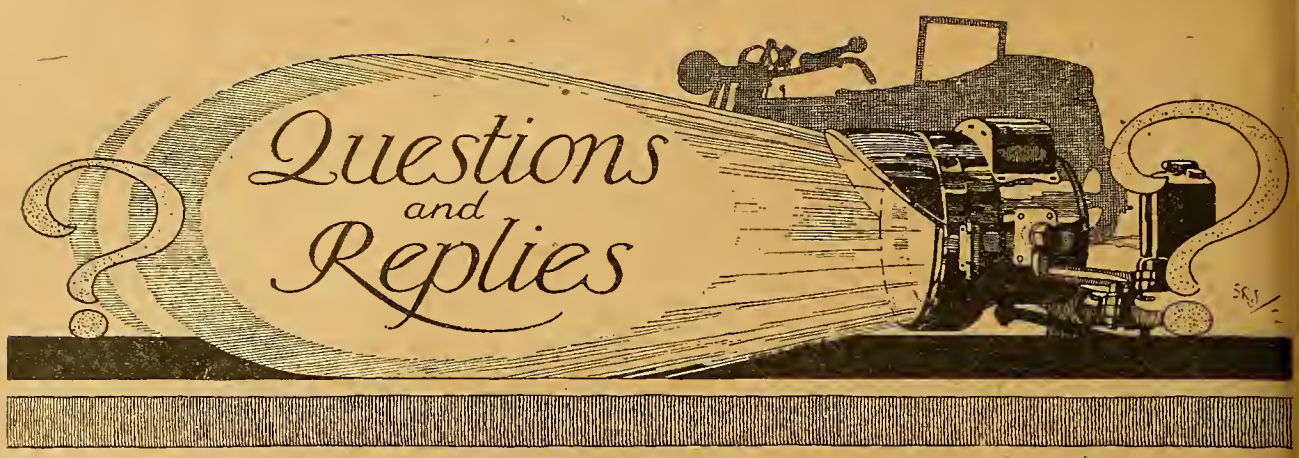
GOLD MEDALS.—R. C. Cooper (269 Allon), L. E. Clules (269 Allon), A. Rollason (994 Ariel), G. Butcher (490 Sunbeam), R. F. Turner (293 New Imperial), F. W Giles (799 A.J.S. sc.).

SILVER MEDALS.—E. A. Barnett (346 Francis Barnett), H. Harris (349 A.J.S.), L. Horton (249 New Imperial), A. R. Evans (499 Sunbeam), J. J. Sykes (599 Sunbeam), W. Woodcock (498 Ariel), R. W. Duke (499 Triumph), L. Newey (994 Ariel sc.), H. G. Uzzell (976 New Imperial sc.), H. F. S. Morgan (8 Morgan).

BRONZE MEDALS.—N. Hall (292 O.K.), H. Greaves (350 Beardmore-Precision), S. W. Lewis (598 Beardmore-Precision), W. B. Gibb (494 Douglas), C. L. Reading (498 Ariel), F. H. Brown (550 Rex Acme sc.), J. W. Meredith (8 T.B.).

Alec Jackson, a prominent Yorkshire club man, who won the Belgian Grand Prix on a 492 c.c. Sunbeam.

Competitors in the Harrogate and District Motor Club's recent reliability trial. G. W. Hill (532 c.c. Scott sidecar) and W. Atkinson (550 c.c. Triumph) at Occaney water splash.



A selection of questions of general interest received from readers and our replies thereto.—All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

RIGHTS IN STOLEN MACHINE.

A few months ago I bought a motor cycle and sidecar from an auction room. After I had the outfit a few weeks I was summoned for its return or its value, and had to give it up as it had been stolen. I asked the auctioneers to refund the amount paid them for the outfit, but they refused, repudiating all responsibility, as they only acted as agents. Do you think I can recover the amount?—S.S.

No one has any title to a stolen machine other than the rightful owner, and it remains with you to obtain the price you paid from whoever received the money; no doubt the auctioneers merely acted as agents for the person in whose possession the machine then was, in which case they should give you every facility for tracing this person.

GAS-TIGHT LAMP CONNECTIONS.

Has any gas-tight method of conveying acetylene from generator to front lamp yet been devised?—J.R.M.

Good quality rubber tubing of suitable bore should be perfectly efficient. If the generator, however, is a long way from the lamp you might use brass tubing with rubber connections at each end. It is unusual for any serious difficulty to arise in keeping these connections reasonably gas-tight.

VALVE TIMING TERMINOLOGY.

I often see it stated in *The Motor Cycle* that the exhaust valve of an engine closes 10° late. I understand this means degrees. Taking an engine of 75 mm. stroke, does this mean the tenth part of 75 mm?—R.I.

When an exhaust valve is stated to close 10° late it means that the valve closes when the crank pin has rotated 10° or 1-36 of a revolution past the top dead centre.

DESIGNING A SPECIAL SPEED MODEL.

Will you give me the correct wheel-base for a speed machine fitted with 250 c.c. J.A.P. engine, Sturmey lightweight three-speed gear, and 26 × 2¼in. tyres? I understand that large tyres reduce speed. Also what would be suitable gear ratios for such a machine with 11 st. rider? Would there be any objection to raking the handlebars forward and placing the saddle well up the tank, providing the machine was built for this—the obvious reason being weight distribution? Again, do you think that supposing softened cast steel bolts were used to secure a duplex frame machine at all main lugs, they would fracture with continual use, unless annealed periodically?—Lex-Locus.

It is quite impossible to give you definite figures in answer to the questions you raise. If it were possible to state without qualification that such and such a wheel-base was the most satisfactory one, and certain gear ratios would give the best results, there would be no longer any need for the experimental staffs which are retained by most of the leading manufacturers. The solutions to your questions depend entirely upon the results of experiment which you would have to conduct yourself. It does not follow necessarily that a machine steers well if it has a comparatively short wheel-base. 26 × 2¼in. tyres would be quite large enough for racing purposes, but for touring 26 × 2⅜in. would be preferable. The placing of the saddle and handlebars again will need to be determined by experiment. If the results were satisfactory, the disposition which you suggest would be justified, but we cannot say whether it will be successful or not, as we have not tried such an arrangement ourselves. In the ordinary way it is most likely that bolts of mild steel would be used for the purpose suggested, and it is doubtful whether it would be worth while going to the considerably greater expense of using annealed cast steel.

Important Dates.

Thurs., Aug. 3rd, to Wed., Aug. 9th—International Six Days Trials.
Sat., Aug. 5th, and Mon., Aug. 7th.—Irish Two-day Open Trial.
Mon., Aug. 7th—West S. Wales Centre A.C.U. Open Speed Trials at Pendine.
Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.
Sat., Aug. 12th, Motor Cycle Races in Phœnix Park, Dublin.
Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.
Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.
Sat. Sept. 16th—The Scott Trial.
Sat., Sept. 23rd—500 Mile Race at Brooklands.
Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.
Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.
Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

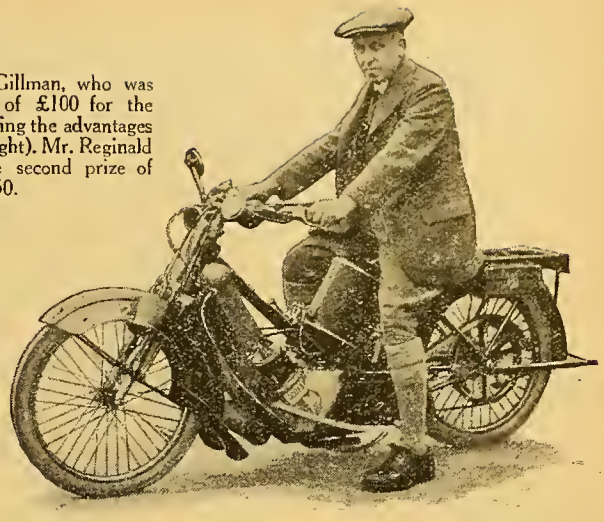
BULB AND ACCUMULATOR VOLTAGES

Having heard that a 4-volt lamp might be advantageously used on a 6-volt accumulator with quite satisfactory results, I adopted this plan some time ago; but my experience was that the accumulator required charging much more frequently—only lasting about one-third of the usual time. Would this be the natural result or have I a "leak" somewhere?—W.J.B.

Using a 4-volt bulb on a 6-volt circuit is almost bound to cause quick running down of the battery, as naturally the resistance is lower than that for which the circuit is designed. As a general rule, however, electric bulbs of low voltage are not very accurately calibrated, and it is possible that you were fortunate in obtaining some so-called 4-volt bulbs of comparatively high resistance.

WINNERS IN THE A.C.U. MEMBERSHIP COMPETITION.

(Left). Mr. A. C. Gillman, who was awarded first prize of £100 for the best ideas demonstrating the advantages of membership. (Right). Mr. Reginald Beal, who won the second prize of £50.



CONDENSATION OF INLET PIPE.

What is the cause of condensation on the inlet pipe, as this has happened on my machine once or twice just lately? It was never noticed during the cold winter months. Would too strong a mixture cause it?—H.L.E.

Condensation on the inlet pipe is caused by the temperature drop associated with the rapid evaporation of the fuel, and is usually a sign of good carburation. It is curious that this has occurred during the summer months only; of course, it is most marked when the atmosphere is humid. If the condensation is excessive, perhaps the mixture is very slightly weak, and a warm air intake or hot jacket on the induction pipe would be an improvement.

BALANCE.

I have a Brown engine fitted to a cycle from which I get fair running, but I think it requires balancing, also it overheats. The bore is 83 mm., the stroke being the same. The reciprocating parts are 2½lbs., rotating parts ½lb. The weights on the flywheels are 17oz. (1.) How much more weight would require to be added to balance correctly. (2.) If pieces of lead were drilled and bolted on to the flywheel and then riveted, would the lead work off, causing damage to the crank case?—R.I.

(1.) If the figures you give are correct you would require approximately 11oz. extra to be added to the balance weights opposite to the crank pin and at a mean distance of 41.5 mm. from the main shaft. (2.) You would find lead unsatisfactory as a balancing material unless it is filled into recesses. If the additional masses must be bolted or riveted on, steel or bronze would be more suitable.

MISFIRING WITH VARIOUS SYMPTOMS.

About a month ago a T.B. magneto on a J.A.P. single developed bad misfiring, and on examining the contact breaker I found a spark was occurring at the platinum points, caused, I thought, by the fibre on the crank arm having worn so that the metal came in contact with the cam. Rectifying this cured the misfiring and the machine was then run successfully for five hours in a Welsh downpour, but on trying the machine a few days later only a sharp shock could be felt intermittently on the contact breaker cover and the cycle frame, while a spark was obtainable between the H.T. cable and cylinder, but not at the plug points. (I have tried four different makes of plugs with no success.) Is this caused by water entering magneto or a defect necessitating its return to the makers?—G.A.

The first trouble would appear to have been due to faulty condenser or condenser connections. In the second case it is probable that water has entered the magneto down the high tension lead, and you might be able to dry this out by warming the parts or the whole magneto very gently in an oven, though the temperature of the instrument itself must never be allowed to reach the melting point of wax. An hour or so of this treatment should cure the trouble if it is due to water only, otherwise you should apply to the manufacturers. If the sparking at the contacts still persists, return the magneto for overhaul.

WILL MAGNETO OPERATE HORN?

I am thinking of fitting an electric horn to my Scott to be run from the magneto cut-out terminal, and shall be glad if you will tell me: (1) If this is practicable and advisable, and (2) what voltage horn to use?—G.E.F.

It is not practicable to work an electric horn from the magneto cut-out terminal of a Scott motor cycle.

A fleet of Bradbury machines which took part in a recent demonstration run from Oldham to Blackpool. Decorated with colours and bearing large cards displaying the maker's name, this string of two dozen or so machines of the same make attracted considerable attention.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

M.G." (Woking).—490 c. c. Norton (16H) with T.T. engine.

"L.G.B.D." (Bristol).—650 c.c. Excelsior single and sidecar.

"E.W.R." (Newark).—"Challenger" puncture proof tubes; Impervo puncture seal; and F.E.W. valve attachment for 499 c.c. Sunbeam.

"F.R.S." (Bristol).—247 c.c. Levis G.Z.K.S. model.

"E.M.D.B." (Hastings).—The Atomiser Co.'s (South Shields) No. 7. atomiser.

"V.D.L." (Glasgow).—654 c.c. Quadrant; 499 c.c. Dunelt.

"B.P." (Worcester).—532 c.c. Scott: intermittent metallic noise in vicinity of crank case.

"B.G." (Dublin).—398 c.c. A.B.C.

"S.J.T." (London).—398 c.c. A.B.C.: hints on tuning; extra air devices.

"E.A." (S.W.18).—998 c.c. Blackburne with Binks carburetter.

RECOMMENDED ROUTES.

BURSLEM TO CARDIFF.—F.W.

Burslem, Newcastle-under-Lyme, Eccleshall, Newport, Shrewsbury, Church Stretton, Craven Arms, Ludlow, Leominster, Hereford, Ross, Wilton, Whitchurch, Symonds Yat, Monmouth, Raglan, Usk, Caerleon, Newport, Cardiff.

WILLENHALL TO ABERYSTWYTH.—E.N.

Willenhall, Leamington, Warwick, Stratford-on-Avon, Alcester, Worcester, Bromyard, Leominster, Eardisland, Kington, New Radnor, Penybont, Rhayader, Llangurig, Dyffryn Castell Inn, Yspytty-Cynfyn, Aberystwyth.

MANSFIELD TO BLACKPOOL.—F.G.

Mansfield, Chesterfield, Baslow, Chatsworth Park, Haddon Hall, Bakewell, Buxton, Macclesfield, Chelford, Knutsford, Warrington, St. Helens, Rainford, Ormskirk, Rufford, Longton, Kirkham, Blackpool.

BARNES TO ST. AGNES.—J.W.C.

Barnes, Kingston-on-Thames, Surbiton, Esher, Cobham, Ripley, Guildford, Farnham, Alton, Chawton, Alresford, Winchester, Romsey, Salisbury, Wilton, Shaftesbury, Sherborne, Yeovil, Crewkerne, Chard, Honiton, Exeter, Okehampton, Lifton, Launceston, Bodmin, Indian Queens, Mitchell, Zelah, St. Agnes.

BRISTOL TO EASTBOURNE.—C.J.T.

Bristol, Bath, Warminster, Codford St. Mary, Deptford, Salisbury, Romsey, Winchester, Bramdean, Petersfield, Midhurst, Petworth, Fittleworth, Pulborough, Storrington, Washington, Steyning, Bramber, Old Shoreham, Brighton, Falmer, Lewes, Beddington, Polegate, Willingdon, Eastbourne.

British Tyres for Belgian Royalty.

The Coventry Victor engined machine, recently supplied to H.M. the King of the Belgians, has been equipped with Bates tyres.

Found on the Road.

The back rest of a pillion seat on the Bath road, near Midgham, on Wednesday, the 19th inst., by Mr. R. Stewart Knill, who may be addressed at West End Farm, Midgham, near Reading.

Clincher Tyre Successes.

At the recently held Essex Motor Cycle speed trials, S. M. Greening, who won forty-one first prizes, eight second prizes, and three third prizes on time and formula on his 248 c.c. Jap-engined Francis-Barnett, used Clincher de Luxe tyres.

A Foot-controlled Gear.

The 349 c.c. Weatherell, on which R. Weatherell recently won the 100 miles handicap at Brooklands, was equipped with the three-speed gear with foot control manufactured by the Moss Gear Co., Ltd., of the Crown Works, Thomas Street, Aston, Birmingham.

Amended Awards.

In the recent report of the Midland Centre A.C.U. reliability trial, it was stated that E. Foster, riding a 698 c.c. Raleigh motor cycle, had been awarded a silver medal. It has now been announced that his performance in this event won him a gold medal, not a silver one.

Cleaning Coachwork.

Motor cyclists who take a pride in the appearance of their sidecar bodies may obtain a free sample of Chemico car polish by applying to the County Chemical Co., Chemico Works, Birmingham. This preparation brightens up dull coachwork in a remarkable manner, and is claimed to remove tar stain.

Additions to Prize List.

Further trophies, bowls, vases, and sparking plugs (presented by the Manufacturers' Union; Capt. G. S. Jones, Ruthin; the Sphinx Manufacturing Co., Ltd.; and the Robinhood Engineering Works, Ltd.) have been added to the award list in the North Wales Open Trial to be held on the 12th inst.

Chain Spares.

Realising that some difficulty is occasionally experienced in obtaining chains and various chain accessories in London, arrangements have been made for stocking a complete range of Renold, Coventry, and Brampton chains, as well as spring, cranked, double and triple connecting links in all sizes, by The Service Company, Ltd., of 289-293, High Holborn, London, W.C.

Racing in Ireland.

The machines which secured first and second places in the Open Fifty Miles Championship of Ireland—and also those which gained first and third positions in the Fifty Miles Handicap Race (Unlimited c.c.), were all shod with Dunlop tyres.

Success of Rotary Valve Two-Strokes.

In all the recent open trials in which they have been entered, success has been attained by the rotary valve engined Sun Vitesse machines, and the list of awards gained by the Sun Cycle and Fittings Co., Ltd., of Aston, Brook Street, Birmingham, is an imposing one.

Birmingham Foundry Exhibition.

At the Foundry Exhibition at Bingley Hall, Birmingham, recently, a national competition for foundry employees was held. Men from the Midland Motor Cylinder Co., Ltd., Smethwick were successful in taking three prizes.

Tyre Works Success.

The Avon fire brigade at the works of the Avon Indiarubber Co., Ltd., at Melksham, in Wiltshire, won the Rowell Challenge Cup at the recent annual competition of the West Midland District of the Fire Brigades' Association, held at Abingdon, against ten other well-known brigades.

Grand Prix Echoes.

Dunlop tyres were used on the first three machines in the 500 c.c. class of the Belgian Grand Prix.

A. Jackson, who won the 500 c.c. class in the Belgian Grand Prix on a 499 c.c. Sunbeam, used an M-L magneto.

K.L.G. plugs were used by Bennett (Sunbeam) and Davison (Levis), who won the 500 c.c. and 250 c.c. French Grand Prix races respectively.

Price Reductions.

Reductions in prices are announced by Humphries & Dawes, Ltd., manufacturers of the O.K. Junior motor cycles. The prices are as follows: Sillocar outfit, £86 2s.; the XV. All Chain Solo model, £69 6s.; the XVI. Sports model, £67 4s.; the XII., £58 16s.; the XI., £53 11s. The fixed gear model remains at £39 18s., but it has been modified.

The prices of the O.K. Junior 4-stroke machine, fitted with Blackburne engines, now stand as follows: Chain-cum-belt drive, £73 10s.; all chain model, £75 12s.

Catalogues Received.

New Imperial Cycles, Ltd., Imperial Works, Princip Street, Birmingham: An illustrated list of spare parts for the "New Imperial light-tourist" all-chain drive models. Copies will be forwarded on receipt of a postcard.

Banshee Manufacturing Co., Ltd., Crown Close Works, Bromsgrove, Birmingham, manufacturers of Banshee motor cycles: An illustrated catalogue attractively designed, together with complete specifications of the various models shown.

T.O.M. Company, Ltd., 6, Princes Street, Hanover Square, London, W.: A catalogue entitled "Everything for Camping and Touring," containing full particulars of all camping requisites.

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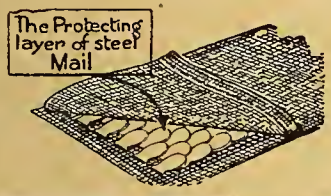

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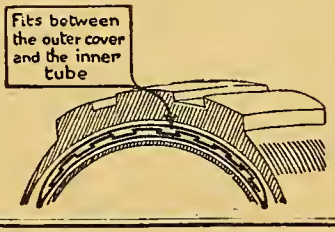

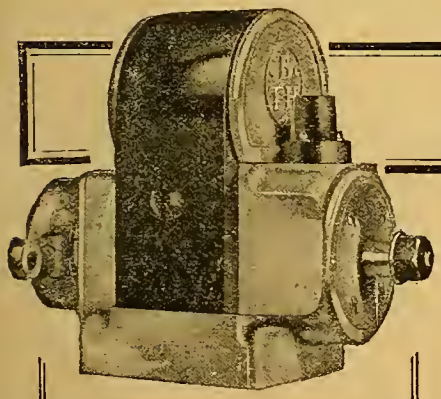

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B.T.H. Magneto Successes.

B.T.H. Magnetos were fitted to the Triumph machine that gained 2nd Place in the Senior Motor Cycles T. T., and to the Sunbeam Cars gaining 1st Place in the International T. T., and the cup for the fastest lap.

They also helped create all the World's Records recently established by Sunbeam Racers.

The British Thomson-Houston Co., Ltd.,

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B T-H

During the last few weeks we have been fortunate enough to obtain a large number of exceptionally good second-hand machines in exchange for new, and in order to reduce our stock we are offering these machines at actually under **cost price,** which is considerably below market value. Any machine may be purchased on our **Extended Payment System over a period of twelve or eighteen months** at a small additional charge, and for the benefit of Country Clients any machine is sent on twenty-four hours' approval. Here are just a few of the many bargains we have to offer that may be inspected in our Showrooms from **9 a.m. until 7.30 p.m., Saturdays included.**

MATCHLESS, 1920, model H, 2-sr., spare wheel, Easting windscreen.. **£125 0**
MATCHLESS, Victory model, Lucas dynamo lighting, spare wheel, Easting windscreen **£98 0**
DOUGLAS, 1921, 4 h.p. comb., lamps and horn, speedo., Easting windscreen **£95 0**
DOUGLAS, 1921, 2¾ h.p., 3-speed, clutch and K.S., lamps and horn, speedometer **£65 0**
DOUGLAS, 1919, 4 h.p. comb., all lamps and horn **£77 10**
DOUGLAS, 1916-17, 2¾ h.p., 2-speed, all lamps and horn **£42 10**
LEVIS, 1917, 2½ h.p., excellent cond. **£28 0**
ENFIELD, 1915, 3 h.p., 2-sp., T.T., very fast **£32 10**
ENFIELD, 1916, 3 h.p., 2-sp., fully equipped **£37 10**
TRIUMPH, 1922, 3½ h.p. Ricardo, tax paid, run 20 miles, unscratched **£115 0**
TRIUMPH, 1921, 4 h.p. all-chain comb., Lucas lamps, speedo., horn, Easting windscreen **£115 0**
TRIUMPH, Baby, 2½ h.p., 2-speed, thoroughly overhauled **£30 0**
TRIUMPH, 1912, 3½ h.p., clutch, lamps and horn, very sound .. **£28 0**
INDIAN, 1915, 3½ h.p. Twin, 3-sp., clutch and K.S., fully equipped .. **£42 10**
TRIUMPH, 1911, 3½ h.p., clutch, T.T. bars, very fast **£26 0**
HARLEY-DAVIDSON, 1920, 7-9 h.p., elec. model comb., fully equipped.. **£115 0**
NEW IMPERIAL, 1919, 8 h.p., and practically new, Watsonian R34 sidecar, fully equipped **£85 0**
NEW IMPERIAL, 1921, 2¾ h.p., 2-sp., cl. and K.S., elec. ltg., very fine condition **£48 0**
ROVER, 1913-14, 3½ h.p., 3-sp., cl. and pedal starter, all lamps **£37 10**
HOSKINSON, 1921, 2½ h.p., 2-sp., cl. and K.S., fully equipped **£37 10**
READING STANDARD, 1920, 8-10 h.p. comb., dynamo ltg., hood and screen, exceptional condition **£100 0**
ROYAL RUBY, 1917, lady's model, 2½ h.p., 2-sp., fully equipped, as new **£32 10**
SCOTT, 1921, Squirrel, 3½ h.p., Brooklands winner, many special fitments, rare opportunity..... **£77 10**
COULSON, 1920-1, 4 h.p. Blackburne, 2-speed, fully equipped **£48 0**
BAT, 1920, 8 h.p., spring frame, all-chain drive and Henderson Elite sidecar, fully equipped **£87 10**
SINGER, 1914, 4½ h.p., 2-sp. countershaft, cl. and K.S., very handsome, coachbuilt sidecar, practically new, fully equipped **£47 10**
BRADBURY, 1913-14, 3½ h.p. N.S.U., 2-sp., re-enamelled black and gold, very sound..... **£27 10**
B.S.A., 1919, 4½ h.p. comb., all lamps and horn, Easting windscreen, splendid order **£67 10**
OMEGA, 1921, 2¾ h.p., J.A.P., 2-sp. cl. and K.S., fully equipped **£45 0**
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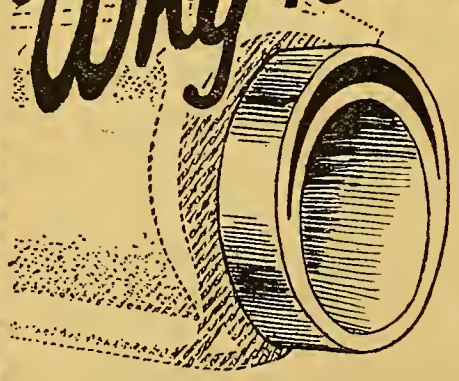

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ARIEL late 1920 3½h.p., 3-speed, equipped, taxed; 62 gns., photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2725

ARIEL 3½h.p., 3-speed, 1921, and sidecar, accessories, tax paid, unscratched; £77/10.—Owen, 94b, High Rd., East Finchley. [3910

ARIEL 3½h.p. Sports Model, brand new, but slightly shop-soiled; 78 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [8623

ARIEL 1921 6h.p. Standard Combination, Lucas Magdyno lighting, leg guards, tax paid; £130.—Basement, 89, Gt. Portland St., London, W.1. [3442

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

1920 Ariel 6-7h.p. Combination, perfect running order, tax paid, all on, sacrifice for cash; £65.—Garage, 17, Silchester Rd., St. Leonards-on-Sea. [3914

ARIEL 3½h.p., dropped back frame, Bosch magneto, adjustable pulley, any trial; £15.—28, Woodford Rd., Forest Gate. 'Phone, Maryland 2598. [4867a

1919 Ariel 6h.p. Combination, Easting, beautifully equipped, taxed, small mileage, new condition; £62/10.—51, Upper Richmond Rd., East Putney. [4120

ARIEL Combination 3½h.p., windscreen, Tan-Sad, tax paid, splendid order; £70; exchange Baby Triumph, or spares.—Waterloo House, North Cheam. [3811

ARIEL 3½h.p., sports model, 3-speed, clutch, kick-starter, chain-cum-belt drive, T.T. bars, shop-soiled only; £80.—Maudes', 100, Great Portland St., London. [4711

ARIEL new 1922 3½h.p. Sports Model Combination, 3-speed, clutch and kick-start; £115; easy payments and exchange.—Wauchope's, 9, Shoe Lane, London. [4678

ARIEL 1919 3½h.p., 3-speeds, clutch, kick-starter, lamps and horn and Millford sidecar, guaranteed; £70.—Eastern Garage, 418, Romford Rd., Forest Gate, E.7. [4028

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0804

Atlas.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Atlas; unequalled service, repairs, etc. [3563

Bat.

NEW 1921 B.A.T., 6h.p. J.A.P., 3-speed, spring frame; £70.—Snipe, 330, Euston Rd. [4853

1920 6h.p. Bat-Jap Combination, splendid condition, complete; £90, or nearest.—Box 2717, c/o *The Motor Cycle*. [3483

1920 Bat-Jap Combination, excellent condition, 3-speed, clutch, kick-start, owner bought car; 65 gns.—67, Fernlea Rd., Balham. [4348

BAT-J.A.P. 5-6h.p. Coachbuilt Combination, 3-speed, in perfect condition; £35; a real bargain.—249, Rye Lane, Peckham, S.E. [3734

BAT-J.A.P. 8h.p. Mills-Fulford Combination, 1914, model 3, fully equipped, very small mileage, perfect running order, any trial; £50.—Holland, Gordon Rd., Whitstable. [3695

1921 6h.p. Bat-Jap, as new, 3-speed, spring frame, mileage 1,000, fully equipped, tax paid and insured; owner going abroad; £90, or nearest.—Seen 64n, Heath St., Hampstead. [2509

1921 8h.p Bat-Jap Combination, electric lighting, Cowey speedometer, detachable and spare wheels, Easting, tax paid; £125; would consider lighter machine part.—7, Norwood Rd., Herne Hill, S.E.24. [1437

Beardmore.

BEARDMORE-PRECISION.—1922 models for immediate delivery. Cash, exchange, or deferred payments.—Kays, 8, Bond St., Ealing. [4833

Blackburne.

BLACKBURNE 1922 8h.p. Combination, lamps, horn, screen, tools, etc., sidecar fitted with cantilever springs, absolutely indistinguishable from new, only run 400 miles, cost £175; accept £140.—89, Balham Hill, S.W. [4063

BLACKBURNE 1920 8h.p., Henderson Elite sidecar, Easting, 3-speed, detachable cylinder heads, 28×3 tyres, spare interchangeable wheel, Lucas electric, leg-shields, Bonniksen speedometer, Klaxon, complete Tan-Sad, various spares, licensed 1922, splendid running order, engine just overhauled; £110, or nearest.—Salusbury, Hallsands, nr. Kingsbridge, Devonshire. [3957

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£20	**ZENITH, 1920.** 6 h.p. sports, fully equipped, tax paid, absolutely as new	£4 0 7	£65
£15	**BRADBURY.** 3½ h.p., and C.B. sidecar, N.S.U., 2-speed, equipped, tax paid	£1 15 10	£35
£30	**HARLEY-DAVIDSON, 1920.** 7-9h.p., electrically equipped Combination, speedometer, screen, tax paid	£8 1 3	£120
£10	**RUDGE.** 3½ h.p. multi, equipped, tax paid, good order.....	£2 4 10	£35
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Spare Parts:

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Bradbury.

4h.p. Bradbury, 2-speed, coachbuilt sidecar, tax paid; £40.—Blackman, Kingswood, Reigate, Surrey. [3868

£18.—4h.p. Bradbury Combination, clutch model, light sidecar, sound condition.—King, Egrove, Oxford. [4423

1920 Bradbury 4h.p. (solo), 3-speed, good condition; best offer—To view and try, apply Eksap Motor Co., 14, Marylebone Mews, New Cavendish St., W.1. [2849

£48/10.—4h.p. Bradbury coachbuilt combination, countershaft gears, kick-start, re-enamelled and plated, smart turnout.—Speechley, 86, Churchfield Rd., Acton, W.3. [4590

BRADBURY 6h.p. new 1921 model, 3 speeds, chain drive, K.S., Millford-Rock latest chassisless sidecar; £115.—Eagles and Co., 275, High St., Acton, London, W. [4620

BRADBURY Combination, overhauled, re-upholstered, re-enamelled, single cylinder, 4-stroke, 4h.p., new licence; £40, or near offer; money wanted.—Moss, Sawbridgeworth, Herts. (P) [3789

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BRADBURY 4h.p., C.B. sidecar, Parmore carburetter, Bosch, N.S.U., 2-speed, free engine, good running order, lamps, tools, tax paid Dec.; £30.—J. Higton, Holmedale, Station Rd., Ilkeston, Derbyshire. [4398

BRADBURY 6h.p. Combination, 3-speed, kick, Klaxon, mirror, lamps, screen, speedometer, Tan-Sad, overhauled, upholstered, perfect condition, take 3 anywhere; genuine bargain, £80.—Pugh, Prendwick Cottage, Bank Top, Bedlington, Northumberland. [3837

Brough.

BROUGH 1920 5h.p., 3-speed, all-chain, kick-start, hand clutch, Brough sidecar, Easting screen, all lamps; £90.—Maudes', Walsall Garage, Walsall. [4717

BROUGH 1921 3½h.p., T.T., overhead valves, close ratio gear box, clutch, exceptionally fast machine, complete lamps, horn, tools, licensed, in splendid condition; £65.—Motor Supply, 71, King St., Huddersfield. [3706

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BROUGH 1920 5-6h.p. Model G. Combination, electric lighting, full equipment; £82/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

BROUGH SUPERIOR, 1922 models, 6.5h.p. M.A.G., £125; 8h.p. (side valve engine), £150; 8h.p. side valve combination, £180; demonstration model in stock; call for a trial run.—Storer and Tait, 20, Bourdon St., Bond St., W.1. 'Phone: Mayfair 625. [4771

BROUGH SUPERIORS.—Order your new mount from us. We are the Brough experts. Specially tuned to order. Mark I., 8h.p., side valve, £150; sporting combination, with screen, step, mat, and apron, £180; Mark I., 90mm. bore o.h.v. £160; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. combination, £150. Special Service Agents; lists.—G. and J. Dawson, The Ideal Garage, Cambridge. 'Phone: 993. [0834

ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½ o.h.v., 3-speed, clutch, and kick starter, £160; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450 [0733

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Brough Superior

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—S. and J. Dawson, The Ideal Garage, Cambridge. [0835

Brown

BROWN 1914 3½h.p., Bosch magneto, Amac carburetter; £18.—Oakes, 67, Melrose Av., Mitcham. [3750

B.S.A

NEW 1921 B.S.A., 4h.p., T.T. model, single speed; £60.—Snipe, 330, Euston Rd. [4856

BRAND New Sports Model B.S.A., 4¼h.p.; exchange entertained.—Myatt's, Coalville. [3962

1919 B.S.A. 4¼h.p., tax paid year, perfect condition; £55.—9, Church Rd., Harlesden. [4056

NEW B.S.A. 1922 model, 4¼h.p., 3-speed, guaranteed; £95.—Tucker, Highbridge, Som. [3967

B.S.A. 3½h.p., 2 speeds, clutch, in good condition; £25.—Cooper, 63, Avenue Rd., Camberwell, S.E.5. [4820

B.S.A. Sports T.T., Bosch, B. and B., as new throughout; bargain.—41, Beechwood Av., Kew Gardens. [4089

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Deposit £17 13s. 5d., 12 monthly instalments of	£4	8	5
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Deposit £16 18s., 12 monthly instalments of	£4	4	6
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MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 1919 4h.p. Combination, beautiful order, 62 gns.; also another, 1919 4h.p. solo, 52 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2727

DOUGLAS 2¾h.p., just erected, all plating and enamelling as new. Zoom! Zoom! Exhaust, copper, lamps, horn, etc.; £32/10.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4289

EXCEPTIONAL Bargain.—Douglas, 1922, 2-speed, all on, lamps, horn, licence holder, etc., tax paid, not done 30 miles, new 1st July; accept £55.—Wilkins, Simpson, opposite Olympia, London. [4530

1920 4h.p. Douglas Combination, P. and H. dynamo lighting, Bluentel windscreen, speedometer, etc., condition guaranteed; owner gone to China; 80 gns.—14, Park Avenue, Palmer's Green, N.13. [4402

2¾h.p. Douglas, not W.D., recently enamelled, new pistons, timing gear, all accessories, oil-tight chain cover, splendid tyres; offers.—Heathfield, Merdon, Surrey, near Wimbledon. Wimbledon 633. [4518

1918 4h.p. Douglas Combination, Douglas screen, tax December, recently overhauled, costing about £20, offers; also Clyno-Enfield combinations.—Parkfield Garage, Perry Vale, Forest Hill. [1510

1917 2¾h.p. Douglas, not W.D., original enamel in perfect order, tyres almost new, excellent running order, complete, lamps, horn, and tools; £30.—Maynard, 161, Bowes Rd., Bowes Park, N.11. 'Phone: Palmers Green 19. [4384

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill. [0786

2¾h.p. Douglas, early, performance equals expensive mount, new belt, back tyre, Albion 2-speed, K.S., clutch, Palmer cords, projector, legshields, aluminium footboards, copper exhausts and tail-pipe, pan seat; £19.—Box 2795, c/o *The Motor Cycle*. [3820

DOUGLAS Combination, 4h.p., 1920, condition and appearance as new, mileage 4,000, hood, screen, lamps, horn, mirror, luggage carrier, new spare belt, tax paid; £80, genuine bargain.—Private Owner, 107, Kingsland Av., Earlsdon, Coventry. [3846

1919 Douglas Combination, 4h.p., electric lighting, new speedometer, new hood and Cameo windscreen, tyres nearly new, insurance and tax paid, guaranteed; 78 gns.—Smith, 9, Johnson St., Notting Hill Gate, London. 'Phone: Park 3447. [4829

DOUGLAS 4h.p. Coachbuilt 1917 Combination, smart, 3 speeds, free engine, clutch, kick-start, good tyres, guaranteed perfect; hood, windscreen, all accessories; trial any time; bargain, £48.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney. 'Phone: East 4542. [4216

KICKHAM, Stokes Croft, Bristol, the Douglas Agent with real experience and knowledge of a Douglas. Successes during 1920 on this mount: 38 firsts, 17 seconds, and 8 thirds, also 6 special trophies. Let me deal with your order. Unequalled service, repairs, etc. [3557

DOUGLAS 2¾h.p., 1917, lamps, mechanical horn, watch, Tan-Sad, aluminium footplates and number plates, long copper exhaust, polished aluminium discs, etc., a very striking machine, in perfect condition; £40.—Croxford, 461, Upper Richmond Rd. East Sheen, S.W.14. 'Phone: Richmond 322. [4769

DOUGLAS new 2¾h.p. 1922 2-speed models, fully equipped, £68; 2¾h.p., 3-speed, clutch and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. Sports model, £115; 6h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. [4684

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7665

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [6077

DOUGLAS Spares.—Large stocks of genuine Douglas spares. Dealers supplied at trade rates.—Rivett, 236, High Rd., Leytonstone. [2679

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock, genuine guaranteed Douglas spare parts; prompt attention; immediate dispatch, lowest cash prices. [4657

Dunelt

1921 Dunelt 3½h.p., 2-stroke, new tyres, M-L dynamo lighting, all accessories, tax paid, only wants seeing; £60.—3, Norwood Rd., Herne Hill, S.E.24. [1439

FOR MOTORING and EVERY-DAY WEAR.

WE have purchased 500,000 yards of Cloth in three shades, and two qualities from manufacturers who require ready-money, and we are now offering this to the public in garments at 50% LESS THAN TO-DAY'S COST PRICE.

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(Just the thing for Motor use).

Sizes, 42in., 44in., 46in., 48in., 50in. length.

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GENTS' HEAVY FAWN RUBBER SURFACE COATS AND HEAVY FAWN or NAVY RUBBER LINED COATS.

Sizes 34in., 36in., 38in., 40in., 42in. and 44in. Chest.

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THIS offer cannot be repeated when the cloth is sold We secured this cloth during the trade slump, and if bought to-day we could not offer the garments at ever double the price

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MACINCOAT HOUSE,

34, North John St., LIVERPOOL.

MOTOR CYCLES FOR SALE.

Duzmo.

NEW 3½h.p. o.h.v. Duzmo Sports, single speed, list £80, slightly soiled, £75, or offers; another with 2-speed gear, all-chain drive, specially tuned, winner of hill-climbs, guaranteed as new, done 50 miles, list £115, accept £100, or offers; both machines are exceptionally fast, will do 70 in the hands of a good rider; stamp for particulars; exchanges considered.—Stanworth Motors, Higham, Burnley. [3383

Economic.

£34.—Economic, variable gear model, finest value; call and inspect.—Pinn's Garage, 12, High St., Fulham [8296

ECONOMIC.—Immediate delivery of this wonderful low-priced machine; variable gear model, £34, or easy payments. Send for catalogue.—South Eastern Garage, Herne Hill, S.E.24. [4883

£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor cycles £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Edmund

NEW 1921 Edmund-Jap, 2¾h.p., 2-speed, spring frame; £60.—Snipe, 330, Euston Rd. [4857

EDMUND lightweight (spring frame), very comfortable, tax paid; £42.—A. W. Platts, 602, King's Rd., Fulham, S.W.6. [4471

Enfield.

SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

1920 8h.p. Enfield Combination; £105; Magdyno, fully equipped.—Forster, 72, Latimer Rd., Forest Gate. [3938

ENFIELD Combination, 1916, all accessories, any trial; £50, no offers.—65, Barking Rd., East Ham. [4183

1921 Enfield, 2-stroke, 2-speed, kick-start, tax paid, just overhauled; £35.—44, Carlton Rd., East Sheen. [4305

ENFIELD 6h.p. Combination, late model, excellent condition, very little used; £87.—17, Elliott Rd., Brixton. [3826

6h.p. Enfield Combination, hood, screen, lamps, overhauled by makers; any trial; £55.—88, Park Rd., Dulwich. [1735

ENFIELD 1921 2¼h.p., 2 speeds, accessories, guaranteed; £42.—Eastern Garage, 418, Romford Rd., Forest Gate, E.7. [4035

1921 2¼h.p. Royal Enfield, good condition, carefully used; £40, or near offer.—Merstham Garage, Merstham, Surrey. [4548

ENFIELD Lightweight, 1921, fully equipped, tax, not run 200 miles; £42/10.—Owen, 94b, High Rd., East Finchley. [3909

1920 Enfield 2-stroke, 2-speed, very little used, fully equipped, tax paid; £32/10.—406, Garratt Lane, Earlsfield, S.W. [4326

ENFIELD 3h.p., excellent condition, new tyres, tax paid; £42. After 6 p.m.—26, Turneville Rd., West Kensington. [3845

DAN GUY, Weymouth.—Enfield 1921 8h.p., Magdyno, double-seated sidecar, hood and screen, guaranteed perfect; £125. [0818

3h.p. 1919 Enfield twin, kick-start, maker's £9 overhaul, owner going abroad; accept nearest £45.—D., Sandall Hall, Wakefield. [3746

ENFIELD 2¼h.p., 2-stroke, 2-speed, all-chain drive, touring bars, shop-soiled only; £52.—Maudes', 100, Great Portland St., London. [4707

1920 Royal Enfield Combination, dynamo lighting, almost new, tax paid; £87/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [3988

1919 (late) 3h.p. Enfield, engine overhauled by makers 1921, not ridden since 1921; £40; after 7 p.m.—174, Muswell Hill Rd., N.10. [3693

ENFIELD Combination, Lucas Magdyno, Easting, 8 weeks old, licensed; £140 cash; bought car.—Ridgway, Pool Quay, Nr. Welshpool. [4410

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175a, London Rd., Croydon. 'Phone: 1619. [6299

ENFIELD 3h.p., 1914, 2-speed, new tyres, tax paid, good appearance, engine perfect; £30 or exchange.—148, Broadwall, Blackfriars. [4842

1922 8h.p. Royal Enfield Combination, lamp sets, Klaxon, tax paid, very slightly used; any trial; £132/10.—Willoughby, Merstham, Surrey. [4547

ENFIELD 3h.p., 2-speed, clutch, automatic lubrication, perfect; £26; exchange Cleveland, Clyno, —55, London Rd., Newcastle-under-Lyme. (D) [4529

ENFIELD 8h.p. Combination, accessories, very good order; £75.—Newnham Motor Co., 223, Hammersmith Rd., W.6 'Phone: Hammersmith 80 [4629

MOTOR CYCLES FOR SALE.

Humber.

HUMBER 6h.p. W.C. Combination, 3-speed, Hortz twin; £75.—5, Alexandra Pavement, Middle Lane, Hornsey, N. [3756

HUMBER Combination, 3½h.p., 3-speed, kick-starter; £28; late 1914; trial.—Chapman, High-bridge St., Waltham Abbey. [3884

Indian.

INDIAN 7-9h.p. Road Racer, excellent condition; £30 only.—17, Heaton Rd., Mitcham. [4925

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

1920 June Indian Powerplus Combination, dynamo, fully equipped; £85.—8, Exe View, Thorverton, Devon. [4564

INDIAN Combination 7-9h.p., 3 speeds, kick, about 8 months' wear; £75.—L. Firstbrook, Old Mill, Darenth. [4492

7-9h.p. Indian Combination, 1914, 3-speed, clutch, lamps, perfect condition; £42.—Tayler, Nash Court, Margate. [3728

7-9h.p. Luxurious Indian Combination, only wants seeing; £45.—Royal Garage, Castle Gate, Lytham Rd., S.S., Blackpool. [4520

EXCHANGE your present machine for new Indian Scout, high prices allowed. "Parwood," Agents, East Hill, Wandsworth. [4202

1921 Indian 7-9h.p., electric, T.T., perfect condition, any trial; £85, or nearest.—Ingham, Builder, Barrow-in-Furness. [4246

£77/10.—Indian Scout, almost new, in splendid condition, equipped, only wants seeing; after 4.30.—4, Elm Gardens, Hammersmith. [4825

1915 Indian Combination, lamps and speedometer, running order; £42; seen by appointment.—King, 4, Willow Walk, Cambridge. [4799

INDIAN Combination, 1920, 7-9h.p., electric lighting, dynamo set, splendid engine; £85; any trial.—Farringtons' Garage, Bridge St., Walsall. [3646

1921, dynamo lighting, big valve Indian combination, electric horn, Millford 50-gn. sidecar, condition as new; 85 gns.—67, Fernlea Rd., Balham. [4341

GODFREY'S, Ltd.—Indian Scout 1921 4h.p., dynamo lighting, Lucas electric horn, speedometer, guaranteed; £105—208, Great Portland St., W.1. [2354

INDIAN 7-9h.p. Combination, late 1919, dynamo lighting, speedometer, Easting, under 4,000 miles; £90 or nearest offer.—31, Overbury St., Liverpool. [3892

39 GNS.—7-9h.p. Indian Combination, electric light, speedometer, good tyres, nice engine; exchange considered; bargain; after 4.30.—4, Elm Gardens, Hammersmith. [4824

1914 Indian Combination, spring frame, 2-speed, K.S., clutch, fully equipped, good condition; £53; exchange lower power solo.—Mockford, Titchfield, Hants. [3895

GODFREY'S, Ltd.—Indian Powerplus 1916 7h.p., with Indian coachbuilt sidecar, disc wheels, speedometer, accessories, guaranteed; £88.—208, Great Portland St., W.1. [2356

1920 Indian 7-9h.p., dynamo, spring frame, T.T. bars, small mileage, original tyres on, owner bought car; no reasonable offer refused.—Grice Silecroft, Cumberland. [4904

POWERPLUS Indian 1919-20, dynamo lighting, speedometer, Klaxon, Easting, done 3,000, new condition, tax paid; £90, offers.—Davis, 1, Wellington Buildings, Bow, E.3. [3685

£55.—Indian 1916 combination (1920 sidecar), in good condition, 3 speeds, electric lighting and electric horn, tax paid till December.—Hartwell's Garages, Ltd., Oxford. [4039

INDIAN 7-9h.p. Coachbuilt Combination, spring frame, 2-speed, clutch, kick starter, lamps, tools, good order; any trial given; £45.—G. Sims, 22, Cottenham Rd., Holloway, N. [4239

SOUTHPORT.—1919 October Powerplus Indian, dynamo combination, speedometer ampmeter, Easting, good condition; 79 gns.; exchanges.—Kents, 417, Lord St., Southport. [4573

1919 Powerplus Indian Combination, brand new 1921, 3,000 miles, electric lights, new Coventry chain, tax, perfect, unscratched, drive to buyer; £100.—Carpenter, Belton, Doncaster. [3758

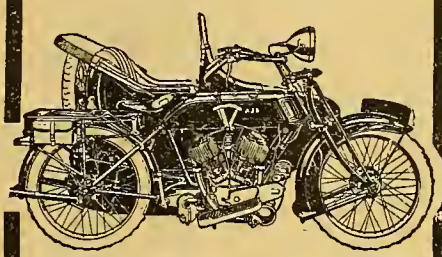
7-9h.p. Indian Combination, 2-speed, kick-start, fully equipped, new tyres and tubes, windscreen; sell £50, or exchange lightweight and cash.—4, Hobart Place, Langborough, Wokingham. [4129

1915-17 5-6h.p. Indian, 3-speed, handle-bar clutch, K.S., new English controls, handle-bars, B. and B. carburetter, etc., very docile; £45; or 2-stroke and cash.—Hayward, Campsea Ash, Suffolk. (D) [4604

INDIAN Scout, Milliford sidecar, windscreen, electric light and horn, speedometer, tax paid, insured, guaranteed, new April; price £110.—19, Clapham Court, King's Av., S.W., or 'Phone: 887 Holborn. [38

BAMBERS FOR EXCHANGES

NEW 1922 MODELS FROM STOCK.



7	h.p. **A.J.S.** Comb.	£175
8	h.p. **ENFIELD** Comb.	£140
8	h.p. **ENFIELD** Comb., dynamo	£158
4	h.p. **DOUGLAS** Comb.	£135
6	h.p. **DOUGLAS** Comb.	£165
8	h.p. **MATCHLESS** Comb.	£170
6	h.p. **B.S.A.** Comb.	£164
4½	h.p. **B.S.A.** Comb.	£142
3½	h.p. **ARIEL** Comb.	£125

SOLO.

2¾	h.p. **DOUGLAS,** all on	£68
2¾	h.p. **DOUGLAS,** 3-speed, K.S.	£82
3½	h.p. **DOUGLAS,** Sports	£115
2¼	h.p. **ENFIELD,** 2-speed	£55
3½	h.p. **NORTON,** 16H.	£115
3½	h.p. **ARIEL,** 3-speed, K.S.	£95
4½	h.p. **B.S.A.,** all chain	£110
4	h.p. **TRIUMPH,** Model H.	£105
4	h.p. **TRIUMPH,** all chain	£115
3½	h.p. **ROVER,** all chain	£100
3½	h.p. **ZENITH-BRADSHAW**	£119

NO WAITING: ANY MAKE SUPPLIED

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1922	8 h.p. **ENFIELD** Comb., as new	£125
1921	3½ h.p. **RUDGE-MULTI,** as new	£50
1921	6 h.p. **ROVER** Comb., perfect	£115
1921	4½ h.p. **ARIEL** Comb., all chain	£98
1921	3¾ h.p. **ROYAL-RUBY,** 2-speed	£45
1920	6 h.p. **A.J.S.** Comb., as new	£125
1920	6 h.p. **ENFIELD** Comb., elec. lamps	£105
1920	7-9 h.p. **INDIAN** Comb., speedom., etc.	£105
1920	5-6 h.p. **JAMES** Comb., equipped	£85
1919	4 h.p. **DOUGLAS** Comb., a gift	£75
1919	7-9 h.p. **INDIAN POWER PLUS,** equipped	£50
1917	3½ h.p. **P. & M.,** lamps, etc.	£40
	A.B.C. SKOOTAMOTA, equipped	£15

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R. BAMBER & Co., Ltd.,
2, EASTBANK ST.,
'Phone 607. **SOUTHPORT.**

MOTOR CYCLES FOR SALE

Indian.

GODFREY'S, Ltd.—Indian Powerplus Combination, 1920, 7h.p., spring frame, 3-speed, dynamo lighting, speedometer, bulbous back body, windscreen, hood, guaranteed; £105.—208, Great Portland St., W.1. [2358

POWERPLUS Indian Combination, 1918-19, 7-9 h.p., 3 speeds, hand and foot clutch, kick-starter, specially designed touring sidecar (cost £50), electric lighting, windscreen, licence, accessories; £75; exchanges.—63, Solon Rd., Brixton. [4350

1920 Indian Powerplus, Henderson Elite sidecar, electrically equipped, plated windscreen, unpunctured, mileage 3,500, indistinguishable from new, fully insured; cost £250, receipt shown; accept reasonable offer.—19, Shakespeare Rd., Hanwell, W.7. 'Phone: Ealing 1157. [4367

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Broad St., Ealing. [7668

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd., London ('Phone: Brixton 3129), supply all parts from stock, new and second-hand. They also specialise in Indian repairs. [6301

Invicta.

GODFREY'S, Ltd.—Invicta 2¾h.p. 1919, J.A.P., 2-speed, accessories, guaranteed; £42.—208, Great Portland St., W.1. [2359

1920 3½h.p. Invicta Combination, 3-speed, clutch, kick-starter, T.T. bars, lamps, horn, speedometer, screen, tax paid, new tyres, spares, excellent condition, illness reason selling; sacrifice, £90; near offer considered.—Perrins, The Hollies, Potton, Beds. [4566

Ivy.

IVY 2½h.p. 1920, 2-speed, accessories, tax paid, excellent condition; offers.—71, Manor Park, Lee, S.E.13. [4258

1922 Ivy Three Sports, as new, extra equipment; £65; exchange.—Merry, 168, Wellington Rd. South, Hounslow. [4218

1921 2½h.p. 2-stroke Ivy, 2-speed, clutch and K.S., Sturmey, all accessories, tax paid, better than new; £45.—5, Norwood Rd., Herne Hill, S.E.24. [1440

IVY 2¼h.p. 1920 2-stroke, Sturmey-Archer 2 speeds, clutch, kick-starter; £38, including accessories; tax paid.—Eagles and Co., 275, High St., Acton, London, W. [4619

IVY 1922 Model, 2-stroke, 2-speed, clutch, kick-starter, guaranteed as new, tax paid; £47/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

James.

JAMES 3½h.p. Sports, twin, 3-speed, K.S., 2½in. tyres; £50.—229, Maryvale Rd., Bournville. [4539

1921 James 7h.p. Combination, tax, insurance, lamps, screen, Benniksen; £115.—26, Webb's Rd., Battersea. [3715

JAMES.—All 1922 models in stock; call and inspect.—The Agents, Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [3659

4¼h.p. all-chain drive James combination, Lucas accessories, in fine order; sell £65, or lightweight taken part payment.—A., 7 The Vale, Acton, W.3. [4467

1920 James 2-stroke, 2-speed, all lamps, horn, knee grips, tax paid; £32/10; exchanges.—Hemac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2403. [4641

JAMES 1919 Combination, 5-6h.p., Orto screen, Watford trip, lamps, spares, splendid condition; £85.—Lancaster, 119, Dudding Hill Lane, Neasden, N.W.10. [4198

JAMES 1922 New 7h.p. Double-seater Combination, spare wheel, mag-dynamo set, legshields, insurance and tax paid; £165 or nearest offer.—A. J. Hooper, High Rd., East Finchley, N. [4134

1919-20 James 5-6h.p. Combination, full equipment throughout, mechanical, enamel, and appearance as new; £95, or offer, must sell; trial appointment.—39, Dundonald Rd., Leicester. [3710

NEW 1922 Model de Luxe James 7h.p. Combination, windscreen, luggage carrier, child's dickey seat; £160; easy payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4889

1918-19 3½h.p. Twin James Combination, 3-speed gear box, kick-start, hand and foot clutch, Binks carburetter, new lamp set complete, sprung footboards, knee grips, tool bags, tyres and tubes good, chain cases, 2 stands, mechanical horn, pump, tools, few spares, comfortable sidecar with new windscreen, general condition excellent, tax paid end 1922; £66; without sidecar, £56; privately owned.—55, Bulstrode Rd., Hounslow, Middlesex. [4500

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

James.

Spare Parts:

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [4830

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S., excellent condition; bargain, 10 gns.—67, Fernlea Rd., Balham. [4349

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

J.E.S. lightweight, recently overhauled by makers, tax paid; £18.—A. W. Platts, 602, King's Rd., Fulham, S.W.6. [4470

1920 J.E.S. Lightweight, fully equipped, splendid condition; £19.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [4334

Juno.

JUNO 1918 2½h.p., 2-stroke, Villiers engine, tax paid, new condition, guaranteed; £29.—Eastern Garage, 418, Romford Rd., Forest Gate, E.7. [4025

Kingsbury.

KINGSBURY, 2-speed gear with chain stays; offers. —34, Belgrave Gate, Leicester. [3700

Lea-Francis

NEW 1921 Lea-Francis Combination, 3½h.p. twin J.A.P., 2-speed; £85.—Snipe, 330, Euston Rd. [4851

LEA-FRANCIS, 1920, M.A.G., 3½h.p., hand-foot clutch, K.S., fully equipped, Watford speedometer, absolutely perfect, any trial; £65.—B., 11, Pleasant Place, N.1. [4394

Levis.

PREMIER Motor Co. for 1922 Levis.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S, 2¼h.p., 2-speed, clutch, £58; Model G, 247 c.c., 2-speed, clutch, £61; kick starter £2 extra; easy payments 4% extra; carriage paid to any address; all models in stock for immediate delivery.—Premier Motor Co., Aston Rd., Birmingham. [5881

GIBB, Gloucester, Sole District Agent for Levis; immediate delivery from stock. [7545

SINGLE Speed Levis 1921, fully equipped; £28. —Grimes, 18, Bruton Place, Bond St., W.1. [4751

WE are the Agents for London, S.W. Choose from our stock.—Knight's, 126, Upper Tooting Rd., S.W.17 [0778

LEVIS 2¼h.p. 1919, new condition, perfect running order; £25.—Moffatt, 14, Church Rd., Wimbledon. 'Phone: 2270. [4193

2½h.p. Levis, 2-stroke, fully equipped, splendid condition; £20.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [4866

LEVIS 1919 2¼h.p., equal to new throughout, taxed, fully equipped; photograph; £25.—128, London Rd., King's Lynn. [4366

1921 Levis, practically new, 2¼h.p., 2-speed, clutch, variable ignition, fully equipped; £40.—R., 60, King Edward's Grove, Teddington. [3774

FOR 1922 Levis, the most reliable and neatest 2-stroke upon the road, send or call at Jones Garage, The Broadway, Muswell Hill, N.10. [0788

1922 Levis, 2 speeds, Sturmey, hand clutch, for immediate delivery; £58; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408 [4642

LEVIS 1920 Single, thoroughly overhauled, top-hole condition, new tyre and belt; £30, spare piston and pulley for sale.—Apply at once, 35, Holmewood Gardens, Brixton Hill. [4102

LEVIS New 1922 Models; 2¼h.p. Popular, £48; 2¼h.p., 2-speed and clutch, £53; Levis sports model, £51; all models supplied on easy terms and exchange, one-fifth down; also 2¼h.p. 1921 Levis, tax paid, all on, £37/10.—Wauchope's, 9, Shoe Lane, London. [4666

SPECIAL Bargain.—New 1921 Model S Levis, 2-speed, clutch; reduced to £50; guaranteed new; this machine we have taken back from one of our sub-agents against a 1922 model, and guarantee same unused; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [4890

Spare Parts:

LEVIS.—All spares or complete 1922 model cycles from stock, carriage paid.—Jones' Garage, Broadway, Muswell Hill, N.10. [0807

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

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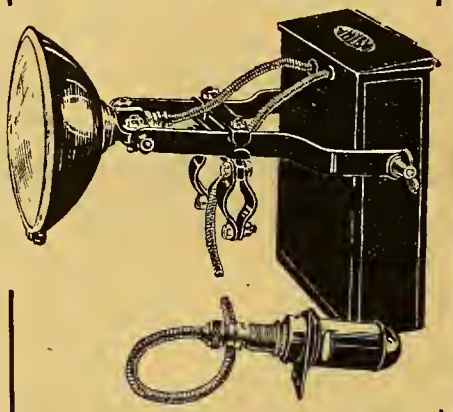

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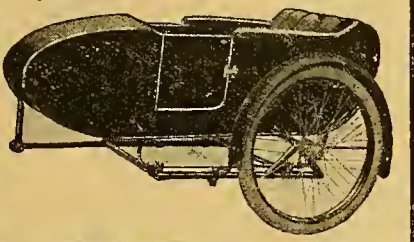

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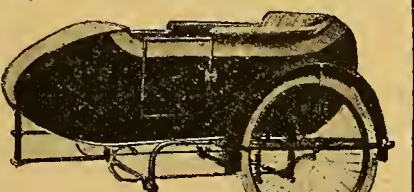

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Reading-Standard.

LATE 8h.p. Reading Standard Combination, 3-speed, hand, foot clutch, fully licensed; £55.—89, East Hill, Wandsworth. [4198

READING-STANDARD 2-seater Combination 1921, dynamo, many extras; £90.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4297

Rex.

REX 7h.p. 1920 Combination, perfect order; £90.—Ratcliffe Bros., 200, Gt. Portland St., W. [3288

REX Combination, 8h.p., J.A.P. engine; any trial; £45; after 6.—P. M. Pullan, "Artichoke," Elstree. [3694

REX 5h.p. Twin Combination, windscreen, head and tail lamps, new tyre, less carburetter; £22.—Jones, 132, Hornsey Rd., Holloway, N.7. [4223

£27.—Rex combination, 5-6h.p., 2-speed, coachbuilt sidecar, engine and gears thoroughly overhauled; any trial; only wants seeing.—406, Garratt Lane, Earlsfield, S.W. [4327

REX 6-8h.p. Combination, 1914, 3-speed, countershaft, all-chain model, as new throughout, fully equipped, tax paid; bargain, £55.—41, Gowan Rd., Saltley, Birmingham. [4601

5-6h.p. Rex, 2-speed, clutch, new gears, mechanical overhead inlet valves, perfect order; photo; licensed; offers; exchange Douglas or lightweight.—MacDonald, 39, Brougham St., Greenock. [3875

2¾h.p. Rex-Acme Combination, Blackburne engine, new, fast, just delivered ex works, 3 speeds, Sturmey-Archer gear, kick-starter and hand controlled clutch; £96/15; exchange and easy terms.—Wauchope's, 9, Shoe Lane, London. [4673

SPECIAL Bargain.—Brand new 1921 8h.p. Rex-Blackburne Combination, detachable wheels, spare wheel and tyre, Cameo windscreen; original list price £213, reduced to £130; guaranteed new and unused; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [4894

Roc.

ROC 3½h.p., new forks, magneto, etc., gear, clutch, running order; £20.—118, Cricklade Rd., Swindon. [3894

Rover.

ROVER 3½h.p., 3-speed, countershaft model splendid order; £55.—Moss, Wem. [4877

ROVER 1920 3½h.p. T.T. Philipson, fully equipped, perfect condition; £54.—Tinson, Ronalda, Station Rd., Netley. [3091

3½h.p. Rover, 1914, single speed model, road racer; £37/10; easy terms.—Wauchope's, 9, Shoe Lane, London. [4674

LATE 1920 Rover 3½h.p., 3-speed, chain drive, in excellent condition, with sidecar; £80, or near offer.—Sadler, Newhall, Nantwich. [3806

1920 Rover Combination, lamps, tools, tax paid, as new; £75.—Rhind and Co., Stone Place, Rusholme, Manchester. Exchange. [3993

ROVER 4h.p. 1920 Combination, 3-speed, lamps, horn, etc., splendid condition; bargain, £55.—Dennis, Tedburn St. Mary, Exeter. [3943

ROVER 4h.p., 3-speed, clutch and kick-start, April, 1922, mileage 150, unscratched; accept £87.—Freeborough, 1, Normanton Rd., Derby. [3784

1920½ (date guaranteed) 4h.p. Rover Combination, all-chain drive, Easting, lamps, excellent condition; £80.—Snow, Broadstone, Dorset. [4421

ROVER 1919 3-speed Combination, fully equipped, £66; 1914 3½h.p. 3-speed, overhauled, mechanically excellent, £28.—Clark, 7, Exhibition Rd., S.W.7. [2179

1920 Rover 5h.p. J.A.P., 3 speeds, 3in. tyres, nearly new Grindley sidecar, Easting, fine condition; £80; taxed.—T. Walton, 31, Oaklands Ter., Darlington. [4298

ROVER 1921 5-6h.p. Combination, guaranteed perfect order, sidecar older make; cheap at £100, no other offer considered; Scotland.—Box 2817, c/o *The Motor Cycle*. [3855

1917 Rover Combination, 3-speed countershaft, lamps, horn, Easting, date, condition guaranteed; £49.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [4332

ROVER 1919 3½h.p., 3 speeds, clutch, and kick-starter, lamps, horn, and Millford sidecar, guaranteed; £81.—Eastern Garage, 418, Romford Rd., Forest Gate, E.7. [4023

LATE 1920 Rover Combination, 3½h.p. Rover sidecar, Eastiue, Windscreen, tax paid, new tyres, recently overhauled, in good order; 58 gns.—7, Southgate St., King's Lynn. [4528

1920 Rover 3½h.p., all-chain, sporting Cancelet sidecar, fully equipped, in exceptionally good condition, present owner's hands since new, any trial; £85.—998, Garratt Lane, Tooting. [4293

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.
Triumph

1922 Triumph-Ricardo, £120; also 4h.p., all-chain drive, £115; in stock for immediate delivery; exchanges or deferred 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4644

TRIUMPH 3½h.p. sports model, with Phillipson pulley, accessories; very fast machine in new condition; £47.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4637

1920 (late) Triumph Combination, beautiful condition, every accessory, speedometer, Tan-Sad, Easting, luggage carrier, etc.; £85; any trial.—Jeweller, 605, Garratt Lane, Earlsfield, S.W.18. [4841

A GOOD Selection of Countershaft Triumphs always in stock from £40.—The Triumph agents and spare parts specialists, The Hackford Eng. Co., 33, Hackford Rd., Brixton. 'Phone: Brixton 3062. [4108

1920 Triumph Combination, screen, speedometer, lamps, horn, taxed, new condition, not renovated, guaranteed; £68.—Ward and Co., Triumph Specialists, 51, Upper Richmond Rd., East Putney. [4122

1920 Model 4h.p. Triumph, type H, mileage 3,000, with 1921 Gloria sidecar, lamps, tools and spares, really good condition; owner selling through ill-health; £85.—Thompson, 34, Quex Rd., N.W.6. Hampstead 7162. [3327

4h.p. Triumph and sidecar, 1918 model, Sturmey-Archer countershaft 3-speed gear, etc., £65; also 4h.p., 1914, 3-speed gear model, with clutch and kick-start, £45; easy terms.—Wauchopes, 9, Shoe Lane, London. [4656

TRIUMPH Outfit, 1919 model, luxurious 2-seater Rennoc sidecar, warranted as new, screen, Lucas lamps, horn, speedometer, licence paid; £85; terms arranged if desired.—Bunting's Motor Exchange, Wealdstone, Middlesex. [4739

1921 Triumph-Gloria chain-drive Combination, Lucas electric lighting, Cameo screen, leg-shields, Bonnikseo speedometer, perfect condition throughout, tax paid; £140.—Premier Motor Co., Aston Rd., Birmingham. [7351

TRIUMPH 1921, countershaft model, perfect mechanical condition, plating and enamel as new, all oo, new Dunlops back and front, new belt, long copper exhaust, 17-tooth sprocket; first cheque secures, £85.—Monckton, Dalmeny, Marlborough, Wilts. [3799

SPORTING Triumph 1919, countershaft, T.T. bars, brand new sporting Swan sidecar, dissolved acetylene lighting, spare cover, tube, etc., Bonniksen, excellent condition, with guarantee; £78. Owner buying Morgan.—Franke, 102, Buckingham Rd., Dalston, N.1. [4844

58 GNS.—Triumph 1919-20, model H, top gear change, just thoroughly overhauled, receipt shown, new tyres, belt and chain, mechanical condition equal to new, excellent appearance, licensed, equipped, spares, ready to go anywhere, after 5 p.m.—20, Treen Avenue, Hoggers Corner, Barnes. [4164

TRIUMPH Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [7326

OFFICIAL Croydon Agents for Triumph.—3½h.p. o.h.v. 1922 Triumph, tax paid, all lamps, slightly soiled, 75 m.p.h. guaranteed, bargain, £115; Type H., £105; S.D., £115 Spare part stockist and repairers of Triumphs.—The Winstan-Henney Motor Co., 63, South End, Croydon. 'Phone: 2431. [0895

TRIUMPHS.—Buy from official appointed agents. New 1922 4h.p. combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D., all-chain, £115; model H., chain-cum-belt, £105; K. Junior, 2¼h.p., £65; also several second-hand Triumphs from £40; second-hand machines taken in exchange, remainder on easy terms; value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [4657

TRIUMPHS.—We are Triumph specialists. Since May our second-hand Triumphs have won 19 awards in competition. Present stock: 1922 Triumph-Ricardo, 112 gns.; 1921 chain-drive Triumph, 84 gns.; 1921 chain-drive Triumph combination, 102 gns.; 1917 4h.p. countershaft Triumph, 52 gns.; another 4h.p. countershaft Triumph, 42 gns.; 1914 3-speed Triumph, 4h.p., 32 gns.; sidecars to suit; photographs free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2730

DO you wish to exchange your old machine for a brand new Triumph? We can arrange for you to have a new Triumph on 12 monthly instalments of £7 and a cash payment of £28 down, which in most cases is covered by what we will allow on your present machine. We carry a complete stock of Triumph spares, and offer you complete service. See our Miscellaneous advertisement for wonderful value in Triumph spare parts. Second-hand bargains: 1918 Triumph, accessories and tax paid, £50; 1913 3-speed and accessories, £35; 1912 combination, 2-speed N.S.U. gear, £33; 1912 clutch model and accessories, £21.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (½ minute from Brixton Skating Rink.) [4782

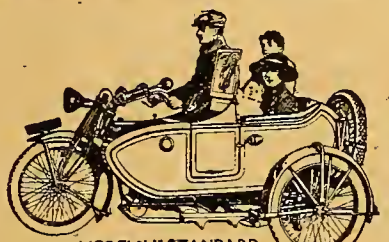
24 Months

to pay in, with a discount if you pay earlier.

RIDEEZI

will supply you with a Combination in time for the Holidays by paying a deposit and the balance in 24 months.

Matchless
THE PERFECT PASSENGER MOTORCYCLE



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From £150. All Models for Immediate Delivery

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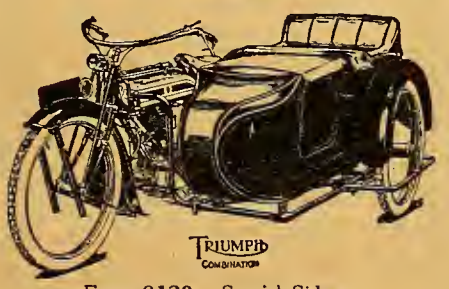

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From £129. Special Sidecars.

Connaught Combinations.

From £95. Very Special Sidecars.

Will intending purchasers kindly write or call and tell us exactly the Machine they require, Accessories, Insurance, etc., and just how they wish to pay for it? This does not place you under any obligation. We will willingly quote you by return.

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RIDEEZI SALES, LTD.,

5, Victoria Street, London, S.W.1

MOTOR CYCLES FOR SALE.
Triumph.

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kaya, 8, Bond St., Ealing. [7661

COMPLETE stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Agents since 1906.—All Triumph spares at new reduced prices from stock; principal Birmingham agents and service depot.—Premier Motor Co., Aston Rd., Birmingham. [0798

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

SEND to the Rhosha Motor Garage, South St., Romford, for Triumph and Sturmey-Archer spares. No disappointing delays; every part in stock. Repairs by skilled mechanics. We are official service agents.—Tel.: Romford 584. [7766

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

Velocette.

PREMIER Motor Co., for 1922 Velocettes.

IMMEDIATE delivery of Model E.2 2-speed, £65; E.3 3-speed, £72/10; E.L.2 lady's open frame, £68; all with clutch and kick starter; easy payments, 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4609

Verus.

1920 Verus, 4h.p. Blackburne, Stormey 3-speed, Tan-Sad, under 2,000, perfect; sacrifice £60.—J.G.O., 320, Victoria Park Rd., Leicester. [3740

£33.—1921 Verus-Sirrah, 2-stroke, 2 speeds, clutch, K.S., all accessories, tax paid, runs splendid; bargain.—143, Ravensbury Rd., Earlsfield, S.W.18. [4654

1920 Verus, 2¼h.p., 2-stroke, under 1,000 miles, equal new, electric light, good accessories, tax paid, insurance; £35.—25, Santos Rd., Wandsworth, S.W.18. [1462

VERUS-BLACKBURNE 1920 Combination, 2-speed, kick-start, tax paid, almost as new, ready go anywhere; cost £130; now selling at £55.—Garage, 12, Allsop Place, near Baker St. Station. [4249

Victory.

1921 Victory-Villiers, 2-speed, hand clutch, K.S., everything on, in A1 condition; £45, offers.—118, Cricklade Rd., Swindon. (D) [3893

Williamson.

£45.—Williamson Combination, 8h.p., water-cooled, Donelas engine, 2-speed, countershaft, perfect order, ride 50 miles to purchaser.—211, Garratt Lane, Wandsworth. [4439

Win-Precision.

WIN-PRECISION Combination, 4¼h.p., 1914: £38 cash.—Odell, 2, Princess May Rd., N.16. [3744

Wolf.

£14.—2¾h.p. Wolf, 2-stroke, splendid running order, taxed.—King, Egrove Farm, Oxford. [4430

Wooler.

WOOLER Motor Cycle, 1920, only done 200 miles; £50.—Beatley, 21, King Cross St., Halifax. [2738

WOOLER 2¾h.p., variable speed, clutch, lamps, horn, tools, speedometer, in splendid condition; £40.—Telford Garage, 47, Streatham Hill, S.W.2. [4016

Zenith.

H.
F.
EDWARDS and Co.,
50, Harrington Rd., South Kensington.

HAVE a few brand new 5-6h.p. Zenith countershaft models, clutch, kick-start, at 84 gns.; listed at £118.

1922 3½h.p. Zenith-Bradshaw, belt drive, brand new, shop-soiled; 82 gns.; listed at £113.

EXCHANGES or Deferred. [4047

ZENITH All-chain Eight; £130.

IMMEDIATE delivery from Allan Gruzelier, Ulster Chambers, 168, Regent St. We can supply any model Zenith immediately, and have to offer many second-hand bargains. New 1921 5h.p. clutch model, 84 gns.; a few of these still left. [3273

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue of Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH 3½h.p. Twin Sports, discs, Klaxon, etc.; £32.—21, Mayfield Grove, Harrogate. [3860

£99/10.—Zenith-Gradua Sports Model, shop-soiled, 8h.p.—Townson and Ward, Ltd., Barrow. [4011

1922 3½h.p. Zenith-Bradshaw, belt drive, shop-soiled only; 82 gns; list price £115.—Below.

NEW 1921 Zeniths at Bargain Prices.—8h.p. sports, Model G, £100; 8h.p., clutch Model H, £110; 5h.p., clutch Model D, £88.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [3662

ZENITH-GRADUA 6h.p., fast, just overhauled; snip; £32.—116, Sandmere Rd., Clapham. [4414

£92/10.—Zenith-Gradua, countershaft model, shop-soiled, 6h.p.—Townson and Ward, Ltd., Barrow. [4010

£30.—Sporting 4h.p. Zenith, taxed, T.T., 2in. exhaust, rebushed, fast.—280, High Rd., Balham. [4162

4h.p. Zenith Coachbuilt Combination, any trial, ride away; £45.—1, Bute Gardens, Petersham, Surrey. [3682

ZENITH 8h.p. Super Sports, guaranteed 60 m.p.h.; 52 gns.; must sell.—32, Stanley Rd., Islington. [3847

SPECIAL Sports o.h.v. Twin Zenith, unscratched; photograph; £55.—31, Halford Rd., Fulham. [4194

1921 Zenith 8h.p. Countershaft Combination, as new, all accessories; £95.—Stevens, Cowley, Middlesex. [4412

1922 Zenith-Bradshaw, chain drive, new but shop-soiled, what cash offers?—Pickering, Mardol, Shrewsbury.

F.O.C.H. for Zeniths; new and second-hand in stock at tempting prices.—5, Heath St., Hampstead (near Tube). [2719

ZENITH 1919 3½h.p. Single Sporting Model, perfect condition, all accessories; £50.—Tippen, Marden, Kent.

£99/10.—Zenith-Bradshaw, 1922, oil-cooled, Gradua gear, shop-soiled, 3½h.p.—Townson and Ward, Ltd., Barrow. [4009

ZENITH-BRADSHAW, Gradua, done 750 miles, faultless, equipped, tax paid; £85.—85, Wiverton Rd., Sydenham. [4140

ROBERTSONS Motors, Ltd.—1922 shop-soiled Zenith-Bradshaw Gradua gear; £100.—157b, Gt. Portland St., W.1. [6082

ZENITH-GRADUA K.S. Combination, enamelled and plated, tyres and belt new; £40.—73, Croydon Grove, W. Croydon. [4237

ZENITH 1922 All-chain Sports Combination, 8h.p., taxed, equipped, run 50 miles only; £145.—7, Exhibition Rd., S.W.7. [4879

ZENITH 8h.p., J.A.P., sports model, Gradua gear, touring bars, shop-soiled only; £80.—Maudes', 100, Great Portland St., London. [4703

NEARLY New 5-6h.p. 1921 Sports Zenith, full equipment, taxed 1922; a real bargain, £67.—391, King St., Hammersmith. [4551

ZENITH 3½h.p. J.A.P. Combination, Gradua, speedometer, fine condition; £40.—Write 20, Mazenod Av., Quex Rd., N.W. [3873

8h.p. Zenith Combination, sports model, in splendid condition; £30; cash needed; letters.—T. Marsh, 35, New St., Kennington, S.E. [3673

GODFREY'S, Ltd.—Zenith-Bradshaw 1922 3½h.p., Gradua gear, condition as new, guaranteed; £87. —208, Great Portland St., W.1. [2366

ZENITH-BRADSHAW, new, unused, 1922 model, Gradua gear, slightly soiled; 75 gns.—Eagles and Co., 275, High St., Acton, London, W. [4616

SPORTING Model V-twin J.A.P. 5h.p. Zenith, splendid condition, just overhauled, all accessories; £48. —75, Westmoreland Rd., Bromley, Kent. [3723

1920 Zenith 6h.p. Sports Model, Binks, knee-grips, horn, new spare tyre and tube 80 m.p.g.; £65.—Allin, 12, Bridge St., Cambridge. [3881

ZENITH Official Appointed Agents.—New 1922 models on easy terms; list on application; exchanges.—Wauchope's, 9, Shoe Lane, London. [4658

ZENITH Chain-drive Sports in Stock.—Few 5h.p. countershaft models, new, guaranteed; £88.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4880

ZENITH 8h.p., J.A.P., Gradua gear, clutch, kick-starter, Milliord Zenith sidecar, shop-soiled only; £125.—Maudes', 100, Great Portland St., London. [4702

ZENITH Combination, 1920, 8h.p., clutch Dunhill's sidecar, Easting, condition perfect; £95, seen after 6 p.m.—126, Upton Park Rd., Forest Gate, E.7. [4091

1922 5h.p. Zenith Sports Model, lamps, horn licence to end of year, low mileage; only £85.—Blake, Portland Ct. Garage, Gt. Portland St., W.1 [4380

ZENITH 8h.p. Combination, kick-starter, special J.A.P. engine, Lucas lighting, speedometer, new condition throughout; £95.—226, Venner Rd., Sydenham. [4253

Choose your Bank Holiday mount from the following list of second-hand bargains. These machines are all ready to ride away, or if you cannot call at Oxford we would arrange to DELIVER FREE within 100 miles. Each machine is perfectly genuine, and the buyer of either cannot fail to be pleased with his choice.

ARIEL, 3½ h.p., Sports, 1922, soiled. One only	£80	0
BEARDMORE PRECISION, 1921, and sidecar, as new, very small mileage	£75	0
BLACKBURNE, 1920, 4 h.p., and sidecar, completely equipped, very fine	£30	0
BLACKBURNE, 1921, 8 h.p., magdyno comb., speedometer and spare wheel	£125	0
B.S.A., Model K2, 1922, very slightly soiled, bargain at	£95	0
ENFIELD, 1921, magdyno comb., very small mileage and very fine order	£120	0
DOUGLAS, 1920, 2¾ h.p., 3-speed, clutch and K.S., fully equipped	£60	0
DOUGLAS, 1915, 2¾ h.p., 2-speed, fully equipped and licensed	£35	0
EDMUND, 2¾ h.p., O.H.V. model, special T.T. machine, very fast	£125	0
SCOTT SQUIRREL, 1922, completely equipped	£80	0
MATCHLESS, Model H, 1920 (late), Lucas magdyno, thoroughly overhauled and renovated, very smart and a bargain at	£110	0
OMEGA JAP, 1920, 2¾ h.p., 2-sp., clutch and K.S., excellent order	£40	0
TRIUMPH, Ricardo, very little used, exceptional bargain, equipped	£110	0
TRIUMPH, 1920, model H, and Mills Fulford sidecar, equipped	£80	0
VELOCETTE, 1920, 2-speed, fully equipped, very little used, sound	£42	10
ZENITH-BRADSHAW and Swan sidecar, very small mileage, smart outfit	£115	0
ARIEL, 1920, 3½ h.p. combination, lamps, horn and tax paid	£80	0
CLYNO, 1921, 8 h.p. combination, lamps, horn, screen, spare wheel, tax paid, excellent condition	£100	0
INVICTA, 2-stroke, single speed, lamps, horn, good order	£30	0
SCOTT, 1921, 3¾ h.p., fully equipped, excellent condition	£75	0
ZENITH, 1919, 4/5 h.p. countershaft model, lamps, horn, speedometer	£65	0
SUNBEAM, 1922, 4½ h.p., 3-speed clutch, K.S. and sports Canoelet sidecar, Lucas magdyno, licenced	£140	0

Every kind of proposition is catered for—New or Second-hand Machines—Cash or Extended payments—Exchanges. If you will kindly send us a post card stating your requirements, we will either write you fully, or arrange for our travelling representative to call upon you. You cannot be wrong in writing to us, as it is our motto to completely satisfy all clients who approach us.

Please write us on the subject of your machine—**NOW.**

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J. W. Tollady,
General Manager.

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH 1919 6h.p. Sports Montgomery Combination, excellent condition; absolute bargain, £55; sell solo; private owner.—Box 2830, c/o *The Motor Cycle.* [4006

5-6h.p. Sports Zenith, almost new, unscratched, electric light, kit, accessories, very fast and silent; £100, or nearest offer procures.—Taylor, 14, Corringway, N.W.11. [3726

ZENITH 6-8h.p. Sports Model with Swan Sidecar, speedometer, lamps, and horn; £75.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4625

ZENITH-BRADSHAW 1922, 3-speed all-chain drive model; not run 50 miles; £105.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4636

£55.—Practically new 90 bore sports Zenith-Gradua, special plating, fully equipped, taxed; exchange lower power; 20 miles to purchaser.—Hart, 133, Maybury Rd., Woking. [4361

ZENITH 1921 8h.p. Countershaft Combination, perfect after overhaul this month, taxed, equipped; owner going abroad; nearest £90.—Bynne, 1st Bn. K.R.R.C., Aldershot. [3925

ZENITH 3½h.p., dropped back frame, disc wheels, Gradua gear, in beautiful condition, very fast, any trial given; £28.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [4868

ZENITH 8h.p. 1920 countershaft, Millford sidecar, Easting, electric lighting, speedometer, horn and spares, tip-top order, tax paid; £100, offers.—Gainsborough Lodge, Leytonstone. [3785

ZENITH 1920, genuine, privately owned, Lucas head lamp, electric tail, Trip speedometer, Klaxon horn, knee grips, numerous tools and spares, tax paid; £78.—Hammond, 84, Highbury Hill, N.5. [4924

SOUTHPORT.—1922 special competition Zenith-Bradshaw, 3-speed, all chain, genuine sports engine, Lucas accessories; cost £130, gift, 87 gns.; exchanges. —Kents, 417, Lord St., Southport. [4571

1920 Zenith 8h.p. Sports Combination, fully equipped, low generator, absolutely as new, guaranteed perfect, fast, and powerful; £63.—51, Upper Richmond Rd., East Putney. [4117

ZENITH-GRADUA Combination 4h.p., just overhauled, coachbuilt sidecar, screen, hood, tax paid, test run; 38 gns., bargain; advertiser ordered rest.—5, Prout Grove, Neasden, N.W.10. [4852

ZENITH 1920 5-6h.p. Sports, fully equipped, mechanically excellent, appearance perfect, licensed for sidecar till December, fast, 75 m.p.g.; 62 gns., near offer.—3, Loris Rd., Hammersmith. [4227

ZENITH 8h.p. Countershaft, De Luxe Combination, cantilever spring to sidecar, Cameo windscreen, Dunlop Magnums, racing and touring sprockets, magnificent outfit, in splendid condition, any trial.—Tyler, 118, Kempe Rd., Kensal Rise (No. 6 'bus passes). [4805

ZENITH 1920 6h.p. Countershaft, Millford sidecar, with many 1922 improvements; just overhauled and re-enamelled; appearance like new; guaranteed mechanically perfect; hood, windscreen, luggage and petrol carrier, speedometer, Klaxon, mirror, new head lamp, D.A. cylinder, 4 new tyres, many spares, etc.; tax paid; insured to March, 1923; any trial-London; £85, or nearest.—Write Box 2862, c/o *The Motor Cycle.* [4838

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [4829

Ladies' Motor Cycles.

LADY'S Douglas 1914, 2-speed, kick-starter, in splendid condition, lamps, horn, etc.; £32/10.—Simister, Jordangate, Macclesfield. [3013

2¾h.p. New 1922 New Comet, lady's machine, fitted with Comet sidecar; £80; easy terms arranged. —Wauchope's, 9, Shoe Lane, London. [4668

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, distributing agents for the Lady's Ivy, daintiest of all ladies' machines; £62, complete. Send for list. [0724

VELOCETTE 1922 open frame models for immediate delivery: 2-speed, £68; 3-speed, £75; the ideal lady's mount, easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmiogham. [7354

AIROLITE Lady's Model, efficient, reliable, elegant, the only open frame lightweight motor cycle, starts with push of pedals; 31 gns; list.—Small Engines Co., 131, Coventry Rd., Birmingham. [4250

Miscellaneous.

4-STROKE Precision Junior, 2-speed, going order; £4. —H. C. Featherstone, Ightham, Sevenoaks. [3809

£33/10.—Genuine Bargain, Combination to be seen after 7 p.m.—23, Gloucester Rd., Kew Gardens. [4068

SPORTING 8h.p. J.A.P., very fast, dual lubrication, Bosch, done 76 m.p.h. Brooklands; £30; too fast for owner.—14, Phœnix St., Euston. [4523

MOTOR CYCLES FOR SALE.
Miscellaneous.

1922 Matchless, all models, immediate delivery; cash exchange or easy terms.—The Agent, Sam. E. Clapham. 'Phone: Greenwich 751. Also for

A.J.S., Beardmore, Connaught, Chater-Lea, Douglas, Edmund, Economic, F.N., Harley, Hobart, Hazlewood, James, Levis, Monopole, McKenzie, P. and M., Royal Ruby, Rex-Acme, Rudge-Raleigh, etc. All makes light cars.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4933

REGENT Combination, 7h.p. Convictor-Sturmey gear, perfect; £70. Also Swift 2-seater, dickey, smart lot, perfect; £65.—91A, Oakfield Rd., Penge. [4806

JONES' Garage, Broadway, Muswell Hill, N.10.—Huge stock, all prices, all makes and types, side-cars, spares, fittings, repairs, etc.; list of machines free.

JONES' Garage.—2¾h.p. 1914 New Hudson, 3-speed, K.S., clutch, equipped, tax paid, etc.; special price for cash, £20.

JONES' Garage.—3½h.p. Sports Abingdon (King Dick), tax paid, equipped, very smart; £27/10.

JONES' Garage.—7-9h.p. Indian, spring frame, countershaft gear, clutch, K.S. model; call and have a trial; £25; our special bargain of the week.

JONES' Garage.—1919 4h.p. Douglas Combination, first-rate condition; £75; another at £45.

JONES' Garage.—1918 4h.p. Triumph Combination; £69/10.

JONES' Garage.—3½h.p. Twin Lea-Francis-Jap, all chain, totally enclosed, countershaft gear, kick-starter, clutch, equipped and tax paid, beautiful condition; £40

DOZENS More 'Phone or call for big list.—Jones' Garage, Broadway, Muswell Hill, N.10. [4911

4¼h.p. Precision C.B. Combination, 3-speed, K.S., windscreen, apron, tools and spares, in perfect condition, powerful hill-climber, any trial.—11, Cottage Green, Camberwell, S.E.5. [4084

10h.p. Henderson Combination, speedometer, lamps, hood, etc., as new; £68. 2½h.p. Ivy 2-stroke; £22, a gift. 6h.p. Enfield Combination; £59.—Ayden, 159, Hornsey Rd., N.7. [4615

LIGHTWEIGHTS from £25 to £60; no easy payments under £30; all in good order and carriage paid by mentioning this advertisement.—Bunting's Motors, Wealdstone, Middlesex. [4743

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash; inspection cordially invited. 'Phone: Holborn 5777. [4664

1919 (late) Countershaft Combination, lamps, horn, etc., been garaged half time, owner going abroad, condition as new; £65; seen any time.—S. Macdonald, 20, Nelson St., East Ham. [2457

WARD AND CO., Putney, have the following bargains to offer.—1922 A.J.S. Combination, Magdyno, electric horn, spare wheel, taxed, insured, speedometer, special tyres, absolutely new; £172/10.

WARD AND CO.—Henderson 1920 de Luxe, Grindlay spring wheel sidecar, hood, dynamo lighting, absolutely new condition; £110.

WARD AND CO.—Zenith 1920 8h.p. Sports Combination, low generator, outfit as new, very fast, powerful; £63.

WARD AND CO.—Alldays-Allon, 2-speed, clutch, recent £10 overhaul at maker's, good condition, taxed, equipped; £27/10.

WARD AND CO.—Ariel 1919 6 and 7h.p. Combination, Easting, well equipped, taxed; £62/10.

WARD AND CO.—Triumph 1920 Combination, screen, speedometer, lamps, etc., taxed, new condition; £68/10.

WARD AND CO.—All above can be seen and tried any time, and are fully guaranteed by us. Our best advertisement is your satisfaction.

WARD AND CO., 61, Upper Richmond Rd., East Putney. 'Phone: Putney 2754. [4124

3½h.p. Combination, 3-speed, clutch, kick-starter, good order throughout, licensed September, trial; £25, bargain price, as unknown make, and owner bought car. Don't assume too cheap to be good, come and see.—10, Geneva Rd., Kingston-on-Thames. [4083

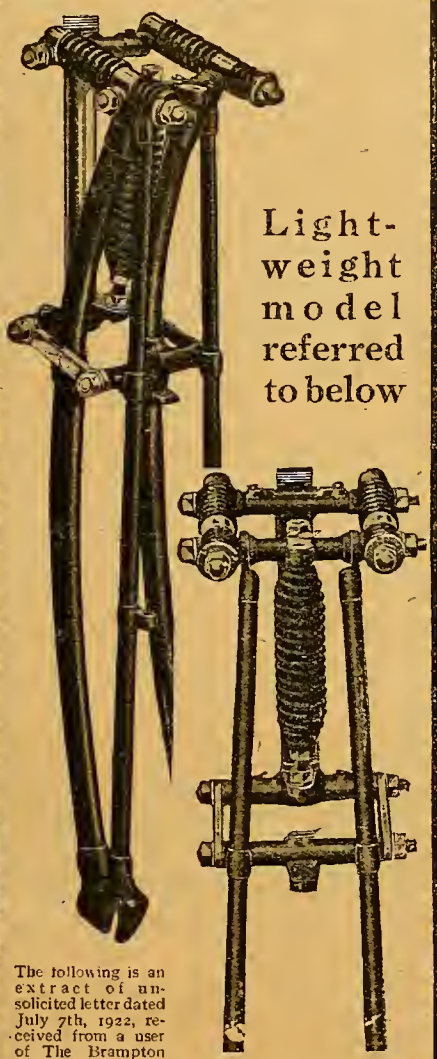
SPECIAL Notice.—Douglas 1918 2¾h.p., 3-speed, clutch, K.S., fully equipped; also Triumph, 1913, 3-speed Premier, 1914, 3-speed, clutch, K.S., countershaft; Radco 1915 2½h.p., 2-stroke. These machines must be sold; no reasonable offers refused; also several others.—61, Grand Parade, Harringay. [3439

1920 New Imperial Combination, as new, £85; 1920 Rover combination, as new, £75; 1919 B.S.A. combination, £80; 1921 Monarch-Jap combination, as new, £85; 1921 Monarch 2-stroke, 2-speed, clutch, etc., £37/10; Rudge-Multi, £28; Triumph solo, £47/10; 1919 Triumph combination, as new, £75; New Hudson combination, £45; Baby Triumph, £35; 1918 Triumph combination, £75. Motor cycles bought, sold, or exchanged.—Rhind and Co., Stone Place, Rusholme, Manchester. [3994

The

BRAMPTON

BI-FLEX SPRING FORK.



Light-weight model referred to below

The following is an extract of unsolicited letter dated July 7th, 1922, received from a user of The Brampton Bi-Flex Spring Fork resident in Ayrshire.

"For the past two years I may say your Fork has done something like 50-60 miles per day, over atrocious roads, and in a hilly district where pot-holes are the rule and not the exception. Nevertheless, riding has always been comfortable and not productive of the tired feeling so common to lightweight riders."

For comfort's sake choose a Motor Cycle fitted with The Brampton Bi-Flex Spring Fork. Measurement form and descriptive booklet illustrating models for Motor Cycles of 2¼ h.p. and upwards will be forwarded on request, applications for which are invited.

BRAMPTON BROS., Ltd.
Oliver Street, BIRMINGHAM.

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Miscellaneous.

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Bootha' Motories, Waterloo Rd., Blackpool.

BLACKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £95/10. Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination, spare wheel, £150; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel, £110/10/6; 1920 Tamplin, £59/10/6; Morgan de Luxe, £147/10/6; two 1920 Matchless combinations, £115/10/6 and £120/10/6; 1920 Rudge combination, dynamo lighting, £79/10/6; 1920 Rudge, £55/10/6; Indian Combination, £45/10/6; 1920 Sun, £35/10/6; another, £39/10/6; Alldays' Allon, £36/10/6; another, £42/10/6; 1923 O.K., mileage 600, £34/10/6; several others cheap, push cycles taken in exchange.—Booths' Motories, 241 Waterloo Rd., Blackpool. [1020

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or deferred payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). Phone, Hampstead 3752. Hours 9-7, including Saturdays. [1611

REAL Bargains.—1919 Indian Powerplus, handsome spring wheel sidecar, screen, lamps, horns, etc., £70; 1917 Harley, electric lighting, roomy sidecar, hood, screen, tax paid, £72/10; 4h.p. Triumph, countershaft, bulbous sidecar, overhauled, renovated, accessories, £65; 4h.p. 3-speed New Hudson combination, equipped, £30; Bleriot-Whippet cycle car, late 1920, reverse, fully equipped, as new, £100; Waverley light car, 10h.p., 4-cylinder, Bosch, Zenith, body damaged by fire, running order, £65 cash, snip; exchanges.—O.G., 59, Scholefield Rd., Upper Holloway. [2260

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272. [1519

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ROBERTSONS Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [6083

MOTOR CYCLES WANTED.

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EDWARDS and Co.,

101, Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

T.B.

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500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5564

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ACTUAL Buyers.

PLEASE Offer Us your Motor Cycle or Combination. We pay cash on sight. Write, call, or 'phone Museum 3606.—Snipe, 330, Euston Rd., N.W.1. [4860

MOTOR CYCLES WANTED.

WE

ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0332

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PRICES

GIVEN.

H. F. EDWARDS and Co., 50, Harrington Rd., South Kensington, will purchase for spot cash your motor cycle or combination. Call, write, or 'phone Ken. 3709. [0604

T.T. Norton, any model, if cheap, paying cash.—Green, Wine Merchant, Reigate. [4501

LIGHTWEIGHT, late model, kick-start, cheap, cash.—4, Gaywood Rd., Walthamstow. [3918

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale, a nominal auction fee is charged—for motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [4276

CASH Waiting for Best Bargain offered this week; no rubbish.—King, Egrove, Oxford. [4431

WANTED, good combinations and solos for cash.—Quadrant Garage, Winchmore Hill. [3274

DOUGLAS wanted, 2¾h.p., cheap for cash.—Particulars, Spencer, Potter St., Bishop's Stortford. [3953

MATCHLESS 1922 2-seater, equipped.—E. Butler, Paverest Farm House, St. Mary Cray, Kent. [4609

WANTED, Combination or solo, suitable countershaft, really cheap, letters.—Job, 221, Albert Rd., Croydon. [3931

£20 spot cash waiting for good modern 2-stroke, gears essential.—20, Treen Avenue, Hoggers Corner, Barnes. [4165

TRIUMPH Countershaft Wanted, late model, reasonable price.—107, Bannercross Rd., Ecclesall, Sheffield. [4302

HARLEY or A.J.S. dynamo combination, not earlier 1919.—Full particulars cash at 108, Church St., Edmonton. [3829

WANTED, powerful combination, late model; reasonable.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [4135

MOTOR Bike wanted, exchange modern typewriter, cash adjustment.—Bailey, Sunny Bank, Lythall's Lane, Coventry. [3891

WANTED, Enfield Combination, or any make; good price given.—Ayden, 159, Hornsey Rd., N.7. Phone: North 280. [4614

HARLEY-DAVIDSON or American X Combination, must be late model and price reasonable.—Pride, 156, Stockwell Rd., Brixton, S.W.9. [4400

MODERN Motor Cycles and Combinations bought for cash or sold on small commission; send details first.—South Eastern Garage, Herne Hill, S.E.24. [1434

ADVERTISER requires Good Combination, not earlier than 1920; immediate cash if price reasonable.—Letters only to Blackmore, 769, Romford Rd., Manor Park, London, E. [4507

WANTED, late combinations, solos, also Morgan runabouts, G.N.'s, and Rover 8's. Cash or exchange.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0076

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200, GT. PORTLAND ST., W

'Phone—Langham 1704.

Any make of machine can be supplied on our Payment out of Income Scheme. Write for full particulars, and state machine you are interested in.

JAMES No. 10.

Selection of Machines in Stock.

A.J.S. Combination	£175	0
ALLON, 2-speed, clutch	£60	0
B.S.A., K2	£107	0
B.S.A., H2	£110	0
B.S.A., E Combination	£164	0
CALTHORPE, 2½ h.p.	£36	0
DOUGLAS, 2-speed, all on	£68	0
DOUGLAS, 3-speed, all on	£92	0
DOUGLAS, 4 h.p. Combination, all on	£135	0
ENFIELD Combination 180	£140	0
ENFIELD Combination 190	£153	0
ENFIELD Lightweight 200	£55	0
ENFIELD Sports	£55	0
EDMUND (Barr & Stroud engine)	£96	0
JAMES, 7 h.p. Combination	£160	0
JAMES, 3½ h.p., Sports	£105	0
JAMES, 2¾ h.p., 2-stroke	£60	0
MATCHLESS Combination	£170	0
NEW IMPERIAL, 2¾ h.p., No. 3	£73	0
OMEGA No. 3	£66	0
OMEGA No. 28	£65	0
OMEGA No. 6	£39	10
RALEIGH, 2¾ h.p., 2-speed	£68	0
RALEIGH, 2¾ h.p., 3-speed	£73	0
RALEIGH, 3 h.p., 3-speed	£78	0
RALEIGH, 3 h.p., 3-speed Comb.	£103	0
RALEIGH, 5-6 h.p.	£130	0
RUDGE, I.O.M.	£77	0
SUNBEAM, 4½ h.p.	£141	15
TRIUMPH H	£105	0
TRIUMPH S.D.	£115	0
TRIUMPH, 4 h.p. Combination	£140	0
LIGHT CARS.		
B.S.A., 10 h.p.	£340	0
CITROEN, 7 h.p.	£262	10
COVENTRY PREMIER	£230	0
G.N. Touring	£225	0
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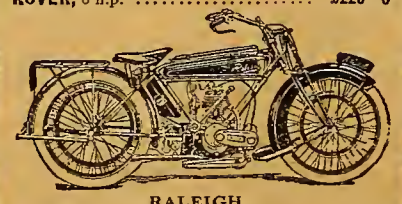

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RED Indians, Harley-Davidsons wanted.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4559

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F.O.C.H. always have cash waiting for sound machines of all types; highest prices and courteous treatment assured.—Fair Offer Car House, 5, Heath Street, Hampstead (near Tube). 'Phone: Hampstead 3752 Hours 9-7, including Saturdays. [1610

ANY Number of Second-hand Machines and Combinations purchased for cash. A representative will be sent to any part of the country to inspect and complete the transaction after preliminary negotiations. Write, 'phone, or call.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [4564

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A.B.C. Skootamota, new, unsoiled, latest model; £23, sacrifice.—Frank Whitworth, 139, New St., Birmingham [4658

AUTOPED, clutch, electric lighting, excellent condition; £7/10.—52, Vicarage Rd., Harborne, Birmingham. [4474

AUTOXO 1¼h.p., scarcely used, perfect order, footboards, licence paid; £16.—308, King's Rd., Chelsea, S.W. [4485

AUTOPED Scooter, wants adjusting, £12; take lady's cycle part.—Turton, Waverley Terrace, Marsh, Huddersfield. [3923

BRAND new Autoped Scooter, 1½h.p., single speed, complete with dynamo lighting; £15.—Snipe, 330, Euston Rd. [4851

KINGSBURY Scooter, almost new, motor cycle saddle, cost £45; sacrifice, £22; bargain.—Miss Bagnall, Ryall Hill, Upton-on-Severn, Worcestershire. [4181

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AUTO-WHEEL Scooter, very little used; what offers?—Willoughby, Merstham, Surrey. [4549

NEW unridden Young's motor attachment, bargain.—Wawn, 40, Chesnut Avenue, Hull. [3851

WALL Auto Wheel, good condition, spares; £9.—40, Beechill Rd., Eltham, S.E.9. [3689

AUTO-WHEEL, B.S.A., excellent condition, 1920; £10.—Woodward, 31, Sunnydene Rd., Purley, Surrey. [4282

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1921 Cycle with Young motor attachment, little used, tax paid; £12/10, after 7 p.m.—4, Willoughby Rd., Hampstead. [3825

WALL Auto-Wheel for Sale, in perfect running order, tax paid; £7/10, or near offer.—Mitchell, 52, Lake Rd., Portsmouth. [4131

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1921 Wall Auto-Wheel de Luxe, and Sunbeam bicycle, also new child's wicker sidecar; what offers?—F. Jones, Firwd House, Rhayader. [4459

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YOUNG special lady's cycle and attachment, absolutely as new, runs splendidly; accept £17/10; illness cause of selling.—Thomas, Photographer, Staplehurst, Kent. [3869

LATE 1921 Young motor attachment and special pedal cycle, separate or together, practically new and in perfect running order, with accessories; £20.—Apply, Reverend D. W. Murphy, United Methodist House, Drybrook, Gloucestershire. [4903

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COLLINS and Son for hoods screen, and aprons; hoods from 35/-.—Below.

COLLINS and Son.—Adjustable windscreens, complete with apron; 22/6, 30/-, and 35/-; sent on approval against cash; carriage 1/6 extra.—Below

COLLINS and Son stock all known makes of wind screens; we have a few second-hand Standard Eastings, fitted with new celluloid, from 45/-.—Below.

COLLINS and Son fit celluloid panels to any windscreen in few hours, new aprons, side curtains, etc.; open weekdays till 8.30, Sunday mornings till 1 o'clock.—Collins and Son, rear of 84, High St., Putney, S.W. (D) [6198

HIGH-GRADE Hoods, polished hoops, brass fittings, 30/-; hoops, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [3502

FAMOUS Sandum V-shaped Windscreens; £2/15 and £3/18, fitted free, or post free.—33, Hackford Rd., Brixton. 'Phone: 3062. [4109

SIDECAR Hoods, 30/- and 40/-, best quality materials; celluloid, 1/6 sq. ft.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [0853

BOWER screen, adjustable, complete with coverall apron, 30/-; Eastiog screens from £3; Sandham V screens £2/15; all makes of screens repaired; new panels fitted from 12/-; aprons supplied from 10/-; hoods complete from 35/-.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W. 'Phone: Brixton 1585 [4734

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COACHBUILT Body, good condition, green; £4.—48, Hollydale Rd., Peckham. [4137

NEW Body for underslung chassis, very roomy, bulbous locker; 50/-.—Holland, Gordon Rd., Whitstable. [3696

RENNOC Sidecar Bodies, actual manufacturers; 35 models; also several clearance, cheap to clear.

RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, London, N.19. [4932

COLLINS and Son for coachbuilt bodies, all models in stock, from lightweights to 2-seater.—Below.

COLLINS and Son are actual manufacturers, and give twelve months' guarantee with every body made by them.—Below.

COLLINS and Son repair, repaint and upholster at moderate charges, first-class work guaranteed; estimates free; send for catalogue.—Collins and Son, rear of 84, High St., Putney, S.W. [6199

MONTGOMERY No. 2 1922 Body, with screen, luggage grid, unused.—Browning, R.N. Hospital, Portland. [3866

QUANTITY of New Bodies, must clear, all sizes; call and inspect.—Edwardes, 277, Camberwell Rd., S.E. [4262

SIDECAR Body, family 3-seater (bulbous back); plenty of luggage capacity.—26, Monks Rd., Coventry. [3762

BASTONES for Sidecar Bodies, all latest models in stock from £4.—228, Pentonville Rd., King's Cross, London, N.1. [5131

FIT new Willowbrook body to your old sidecar and make it like new; prices from £5.—Willowbrook Body Works, Leicester. [0336

BEAUTIFULLY Finished Bulbous Bodies, £4/15; other models from £2/10; write for specification.—Burton, Sidecar Works, St. Peter's Park Rd., Broadstairs. [3637

A FEW Brand New Sporting and Touring good quality Bodies for sale; £6/15 each; cost to make £15/15; bargains.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [4698

50 BRAND New Chassis for Heavyweight, Indian, Harley, etc., with new bodies upholstered in leather; £22/15.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton. 'Phone: Brixton 1585. [4939

FIFTY bodies, second-hand, upholstered best pegamoid, touring shape, from £2 each; a few, new, at £7, exceptional bargain; also a few chassis to clear.—Sandums, 336, Gray's Inn Rd., W.C.1. [0871

COBB Speedman Sidecar Bodies, racing type, £3/10; touring, £4; streamline sports, £3/15; all handsomely finished, lined, and varnished; carriage and packing free; quick delivery.—Vernon Cobb, 18, Midland Rd., Carlton, Nottingham. [4142

TORNADO Aluminium Sidecars.—The last word in sporting and touring sidecar bodies, handsome, roomy, and comfortable, light yet tremendously strong, adaptable to any chassis.—Catalogue post free from Greenwood, 198, Manchester Rd., Oldham. [8840

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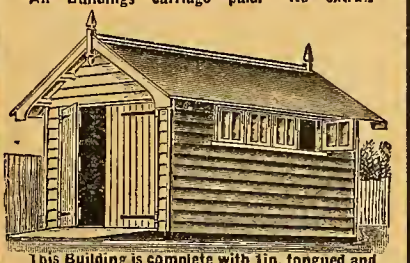

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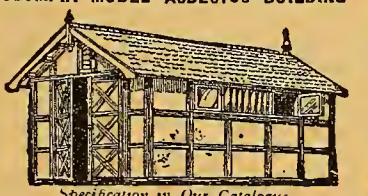

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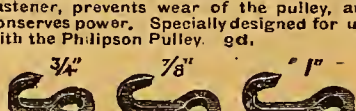

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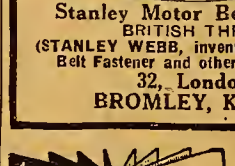

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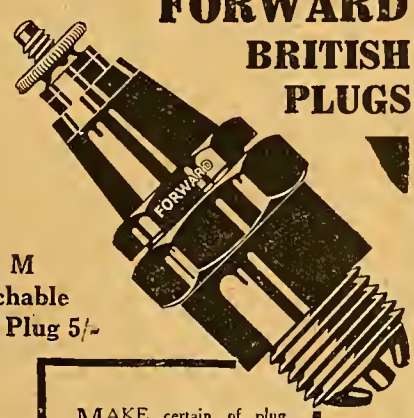

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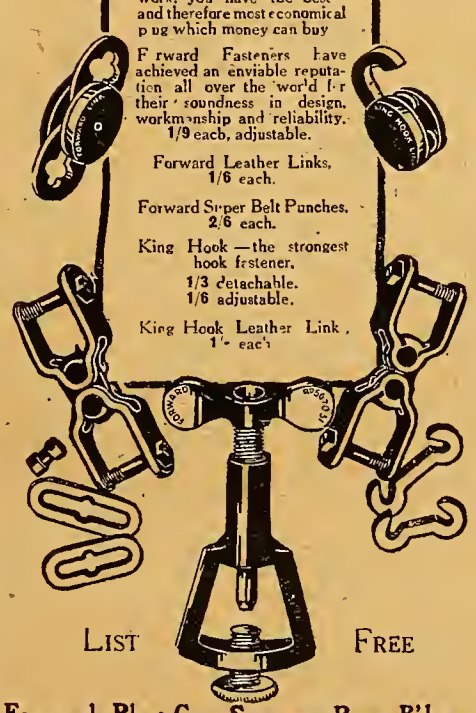

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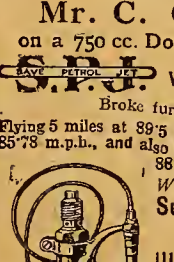

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HALIFAX.—1921 Coventry Premier 3-wheeler, £157/10; 7-9h.p. 3-speed 3-wheeler, £69/10.—Motor Exchange, 25, Horton St., Halifax. [4725

MORGAN Runabout, 1914 model, 8h.p. twin-cyl. J.A.P. engine, fully equipped, hood, screen, lamps, etc.; £55.—Wauchope's, 9, Shoe Lane, London. [4661

MORGAN 1921, M.A.G. engine, A.C. tools and accessories, perfect condition throughout; £130.—Newbery and Sons, 27, Charterhouse Square, London. [2511

T.B. 1922, J.A.P., water-cooled, 8-10h.p., 3-speed and reverse, handle start, maker's standard specification, shop-soiled; £175.—Maudes', Walsall Garage, Walsall. [4720

1921 Morgan de Luxe, 8h.p., water-cooled J.A.P., disc, speedometer, fine condition; £130.—Hillier, (side bell) 9, Wallingford Avenue, North Kensington. [4312

CARDEN 1921 2-seater, electric and acetylene lighting, hood, windscreen, accessories, licence, excellent condition; £65; exchanges.—63, Solon Rd., Brixton. [4363

COVENTRY Premier 4-wheeler, painted mauve, many extras, as new; £170, or exchange combination and cash.—James, c/o Bradmores, 182, Harrow Rd., Paddington. [4285

2-Seater 2-cylinder 2-stroke W.C. about 6h.p. Sporty little Runabout, wants overhaul. £35; also 8h.p. Renault 2-seater, £105.—Hughes, Carlisle Rd., Hampton, Middlesex. [4068

1921 Coventry Premier 3-Wheeler, dynamo, spare wheel, dickey, speedometer, small mileage; £145.—Hillier, (side bell) 9, Wallingford Avenue, North Kensington. [4311

1922 Morgan Popular, £150; Grand Prix, £180; 8h.p. Rover, £220; in stock for immediate delivery; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [0773

1921 (Sept.) Morgan de Luxe, water-cooled magneto engine, Lucas dynamo lighting, disc, only run 1,500 miles; £150.—Hillier, (side bell) 9, Wallingford Avenue, North Kensington. [4309

BAYLISS-THOMAS 1922 10h.p. Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; 300 gns.; immediate delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0736

HUMBERETTE 1914, a.c., electric lighting, oversize tyres, overhauled, rebushed, worn gears renewed, repainted, taxed; £70, or offer.—Campbell, 20, Addison Rd., Bedford Park, W.4. [4060

BLERIOT-WHIPPET, only run 420 miles, Lucas dynamo lighting, spare wheel, speedometer; £105, or exchange combination.—Hillier, (side bell) 9, Wallingford Avenue, North Kensington. [4310

A.V. 2-seater, late 1921, 2-speed and reverse, Magdyno, speedometer, hood, screen; cost over £180; mileage 2,500; accept £128.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [4599

COVENTRY Premier 1921 3-wheeler, all on, many extras, dynamo, spare wheel, finest value obtainable; £140, exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4284

1921 Cyclomobile 9h.p., friction drive, electric light; £70. Also sporting twin 2-stroke runabout; £45. Cheap motor cycle considered part payment.—Ashburnham, Litchfield Rd., Sutton, Surrey. [4283

A.C. 3-wheel cycle car, watertight magneto, 2-speed and clutch, hood, windscreen, side door, wheel steering, good tyres, complete with lamps; £30; sent carriage paid.—Box 2832, c/o *The Motor Cycle*. [4004

MORGAN-J.A.P., just overhauled, painted, good all round, hood, screen, lamps, any trial, no dealers, stored 4 years, mechanically sound; £80, genuine.—M., 41, Hickling Rd., Ilford, Essex. [4101

COVENTRY PREMIER 4-wheeled super runabout. 8h.p. water-cooled, spare wheel, dynamo, fully insured, etc.; £230. Motor cycles, etc., taken in part exchange; instalments if desired.—Frank Whitworth, Ltd., 139, New St., Birmingham. [6063

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1921 Carden 2-seater, electric lighting, tyres perfect, hood, screen, perfect order; £70; your present motor cycle taken in part payment.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [4646

1921 Bleriot Whippet, reverse gear, speedometer, electric light, spare wheel, in absolutely perfect condition; 88 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4050

1920 Morgan de Luxe, 8h.p. w.c. J.A.P., fully equipped, lamps, horn, tools, speedometer, discs, etc., tax paid; £130.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4645

59 GNS., exchange.—1919 Carden 2-seater, ready for a tour, 8h.p. J.A.P., 3 speeds, kick-start, disc wheels, screen, hood, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [3610

BRAND new 8h.p. Coulson 2-seater, 3-speed, hood, screen, D.A. lighting, Smith's clock, speedometer, taxed, absolute bargain; £105, solo combination part.—27, Wandle Rd., Wandsworth Common, S.W.17. [4905

49 GNS., exchanges a speciality.—1919 A.V. Monocar, 6h.p., hood, screen, electric light, disc wheels, smart. Many other cars at bargain prices.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [1001

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A.S. Monocars, J.A.P. engines, 2 speeds, dickey, lighting, windscreen, painted red with black mudguards, fast, reliable, sporty appearance; prices £50 to £70; also 10h.p. Blackburne A.V. Runabout, 3-speed and reverse, aluminium body, £130; exchanges considered.—A.V. Specialist, 103, Castelnau, Barnes. [4454

COVENTRY PREMIER, 1922, brand new, 8h.p., dynamo lighting, speedometer, free insurance, etc., £230; with self-starter, £250; also Rover 8h.p. standard, £220; Model de Luxe, £245; any motor cycle or car taken in part exchange; best prices allowed. Immediate attention upon full particulars. Distance no object. Call, write, or 'phone. Any make supplied. Authorised agents, also for B.S.A., Singer, Swift, Calcott, Bean, Humber, etc. Easiest of easy payments arranged. — Wilkins, Simpson, opposite Olympia, London. 'Phone: Hammersmith 238. [4535

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MORGAN Spare Parts Depot.—Spares for all models from stock. List free.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

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LATE 1921 8h.p. Rover Car, condition brand new; £155.—24, Balliol Rd., North Kensington. [4318

2-SEATER Car, water-cooled, tax paid; £65, exchange motor cycle.—Derrett, Orwell Rd., Clacton-on-Sea. [3928

LANCHESTER 6-cylinder Landaulet, over 20 m.p.g. guaranteed; £85.—77, Acre Lane, London, S.W. [4694

G.W.K. 2-seater 1914, excellent condition, licensed, insured: 110 gns.—15, Clareodon Rd., Margate. [3901

6h.p. 2-seater, modern, part exchange 4-seater or motor scooter.—Potter, 34, Lancaster Rd., South Norwood. [3840

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

SUNBEAM 15.9h.p. 1913 5-seater, most reliable; £125; tax paid.—Mrs. Lord, 39, Baytree Rd., Brixton, S.W. [4696

WEST Norwood! 60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, West Norwood. [1932

ROVER Cars.—The famous 8h.p. model in stock, £220; for immediate delivery.—Eagles and Co., 275, High St., Acton, London. [0761

1920 Emscote 2-3-seater as new, Lucas dynamo lighting, tax paid; £130; exchange.—Rhind and Co., Stone Place, Rusholme. [3995

HUMBER Car, 8h.p., single-cylinder engine, in sound order, taxed; £35; exchange good lathe.—Rout, Long Sutton, Wisbech. [3975

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STUDEBAKER-FLANDERS Touring Car, fully equipped, tax paid, new tyres, any trial; £45.—Ward, South-Western Garage, New Malden, Surrey. [4543

£195.—Singer, late model, 2-stroke, lighting, starting, tyres new, tax paid.—Herbert, 35, Cochrane St., St. John's Wood, N.W.8. 'Phone: Hampstead 4505. [4079

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COVENTRY PREMIER 3-wheeler, water-cooled, hood, screen, spare wheel, dynamo lighting; £135.—Relief Motor Co., Ltd., Cleveland St., Wolverhampton. [3797

MERCURY 1920 2-seater and dickey, dynamo lighting, new condition, many refinements; £170, or terms.—Bunting's Motor Exchange, Wealdstone, Middlesex. [4740

ROVER 8h.p. 1921, as new all through, speedometer and many extras; £165, or exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4291

HALIFAX.—1922 B.S.A., Calthorpe, Coventry Premier, Lagonda, and Rhode; latest models; cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [4726

£150.—Mercedes Limousine 30h.p. (live axle), body by Rothschild, mechanically sound, good hire car.—Herbert, 35, Cochrane St., N.W.8. 'Phone: Hampstead 4505. [4081

ROVER De Luxe, June, 1922, absolutely as new, side curtains, etc.; cost £270, sacrifice £210; painted peacock blue.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4286

A.B.C. 1922 Sports Car, dynamo lighting, spare wheel, electric horn, mileage negligible, unscratched, new; £252/10, or exchange motor cycle.—51, Upper Richmond Rd., Putney. [4121

G.N., 1922, Touring, £225; All-Weather, £250; fully equipped; inspection and trial invited. Deferred payments arranged. From Agents and Showrooms, 222, Gt. Portland St. Museum 2271. [1629

1922 Buckingham Ten, dynamo, spare wheel, dickey, unlicensed and unused, unable to take delivery; will sacrifice deposit £10 or best offer.—Andrews, Manor Farm House, Dry Sandford, Abingdon. [2693

ROVER Car, 1922 8h.p. standard, new in June, tax paid till 1923, not done 200 miles, condition better than new; a genuine bargain, accept £197/10 for quick sale.—Wilkins, Simpson, opposite Olympia, London. [4534

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J.A.P. Engine, 5h.p., 1919, perfect order; £10.—Hubbard, 10, Bridge St., Dunfermline. [4279

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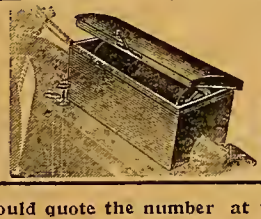

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WE guarantee we can supply you a magneto cheaper than anyone.

SINGLE-CYL. Anti-clock, M-L, 45/-; Splitdorf, 35/-; C.A.V., 38/-; U.H., 35/-; Berling, 30/-; Dixie, large type, 30/-; all above suitable for Triumph, B.S.A., etc. Below.

SINGLE-CYL. Clock, C.A.V., 38/-; Dixie, 30/-; Berling, 30/-. Below.

180° Anti Clock, C.A.V., 38/-; Splitdorf, 35/-; Dixie, 30/-. Below.

180° Clock, Thomson Bennett, 38/-; C.A.V., 37/6; Splitdorf, 35/-.—Below.

42°, 50°, 55°, Thomsoo-Bennett, Splitdorf, or Dixie; hundreds of others in stock. All guaranteed and sent on approval against cash.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. [2776

THE Central Ignition Works

FOR Magnetos,

ALL Guaranteed 12 months.

BOSCH for Triumph, B.S.A., P. and M., etc., £3/10; M-L for Triumph, B.S.A., P. and M., etc., £3; Bosch twins, all machines, all degrees, £3/10; Ruthardt, late type, specially designed for Douglas, £3/5; Thomson-Bennett twins, all machines, £2/7/6; motor cycle vulcanising sets complete, 7/6; all magnetos enclosed waterproof; carriage, 1/6.—The Central Ignition Works, 14, Loughborough Rd., Brixton, London, S.W. Tel.: Brixton 210. [4897

COUNTY of London Engineering Works, Ltd.

MAGNETO Factors and Repairers.

ALL Magneto Spares Stocked.

BOSCH Single, Type D.A.L., variable ignition; £3/5.

M-L Single, enclosed, waterproof, variable ignition; £3/15.

THOMSON-BENNETT, single or twin, enclosed waterproof, variable ignition, all degrees; £2/15 each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed waterproof, variable ignition; £2/15.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle, suitable for Rudge.

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required. Please state make of engine when ordering.

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed. Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade. Write for list.

COUNTY of London Engineering Works, Ltd., 27, Stockwell Rd., London, S.W. (1 min. from Stockwell Undergrond Station). T.A.: Ignitionac, Claproad, London. Tel.: Brixton 2841. [2717

IGNITION, LIGHTING, ETC.

H.B. 1. Co.

H.B. for new and second-hand magnetos; all spares stocked.

H.B. Specialise in Thomson-Bennett, complete for fixing to Triumph.

P.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

C.A.V., New, twin and single, clock and anti; £3.

DIXIE, single and twin, all degrees; £2/5.

H.B. Guarantee all magnetos one year.

H.B. will take your old machines in part payment.

H.B. Despatches all goods per return, carriage paid, on approval against cash, or through *The Motor Cycle* deposit system.

H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. 'Phone: Brixton 610. [0694

MAGDYNAMO Engineering Co., Ltd., for magnetos, spares, and repairs.

MOTOR Cyclists fit reliable high quality magnetos now and avoid certain failure of inferior magnetos.

BOSCH Enclosed Waterproof Type D.A.L. Magnetos. Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds, makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each, postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine. Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

ZENITH Owner writes: "Since fitting magneto have completed a run of 250 miles; highly satisfied; will certainly recommend these magnetos."

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch ZA2 magneto now, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P. and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos, latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting pounds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparking plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it, we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magnetos now.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row, E.C.2. 'Phone: London Wall 4570. (One minute from Brown Bros.) [2756

VALE Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3.

C.A.V. Single or Twin, clock or anti, 50/-; Thomson-Bennett ditto, 52/6; Bosch D.A.L. ditto, 60/-.

THOMSON-BENNETT and M-L's, Coventry, suitable for stationary engines, 35/-; variable ignition, 10/- extra.

THOMSON-BENNETT 4-cylinder, clock or anti, £4/10; fully guaranteed; on approval against cash.

VALE Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3. [0698

NEW 4-cylinder magnetos, Heco and Dixie: £3 each.—King, Egrove, Oxford. [4432

"IT'S A GRAND BUS."

"When I sent you my order I was doubtful of a little 2¾ H.P. Douglas doing 55 m.p.h.—your guaranteed speed; she actually touches 60 m.p.h.," writes J. R. L.

You'll be surprised if you place your order with me for my Special Model Douglas. It is fitted with Zoom! Zoom!! Exhaust System, Tony Combined Aluminium Footboards and Footrests, Special Radiated Pistons, Twin Rings, Alloy Valve Caps, Barrel Valve Springs, and guaranteed to do 55 m.p.h., and it does it. Price **£69 10s.**, delivered anywhere. Extended payments over twelve months if desired.

ZOOM! ZOOM!!

The most efficient exhaust system in burnished nickel nr copper, expansion chamber 9½ times the capacity of the cylinder. No back pressure, no "crackle," just an inoffensive Zooming. Adds £10 to the appearance of any Douglas. Price **30/-** copper, **33/6** nickel.

THE CORAM RADIATED PISTON

gives more power, less friction, keeps the engine cooler, bearings last longer, increases revs. at least 1,000, ozs. lighter than any other piston. Complete with twin rings and gudgeon, **14/6** each.

THE TONY PATENTED COMBINED FOOTBOARD AND FOOTREST.

Beautifully made in burnished aluminium with serrated footgrip and solid rubber footrest in ideal position, greatly improves the appearance of your mount, and is practically unbreakable and always tidy. Price **30/-** per pair.

Any Spare for Douglas or Williamson sent by return. Apart from my large stock I am right on the spot. **Repairs,** including complete renovating, enamelling and plating, in seven days.

W. G. Coram

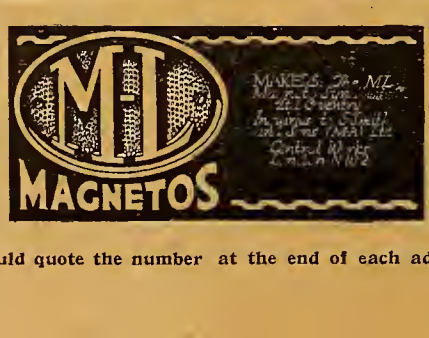
140, VICTORIA STREET, BRISTOL.
Tel. 3792. Official Douglas Agent.

Petrol & Oil Tanks

Tanks any shape to order. Repairs and re-enamelling from 15/6. Illustrated List free.

Auxiliary tanks, with filler, tap, T piece, piping, clips, complete, always in stock.

A. GREEN, Water St., off Chapel St., Salford, Manchester



IGNITION, LIGHTING, ETC.

MAGNETO repairs and spare parts, all types.—R. J. Lovelock, 151, High St., Itchen, Southampton. [3915

RELIANCE Magneto Repairing Co. (the largest London Repair Depot), for repairs and magnetos.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a 12 months' written guarantee against all defects.

RELIANCE test every magneto after repair, under all running conditions, and as we contract for many of the largest concerns, you need have no hesitation in placing your orders with us.

RELIANCE stock spares for all makes. Special line, genuine platinum screws for all types, 12/- per pair. Magneto work of every description is carried out solely on our premises. We are, therefore, enabled to give you quicker and more efficient service at the right price.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co. for new and second-hand magnetos. See following list.

THOMSON-BENNETT singles and twins, brand new, any degree, enclosed waterproof, variable; 55/-.

THOMSON-BENNETT, large type single or twin, enclosed, waterproof, variable, suit Harley, Indian, etc.; £3/10.

C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

E.I.C. enclosed, waterproof, variable, suitable for Triumph, B.S.A., or any Lightweight; £3.

BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern; ideal for Douglas, 2¾h.p. and 4h.p.; £4.

BOSCH D.A.L. twins, enclosed, waterproof, any degree, suitable for Indian, Harley, etc.; £4/10.

FELLOWS new magnetos always in stock, any degree for any engine; also a large selection of second-hand magnetos, all makes.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute.—Reliance Magneto Repairing Co. (1914), 283, St. John St., London, E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco. Isling, London. [9816

BOSCH and M-L Singles, 30/-; C.A.V., 37/6; variable ignition, guaranteed.—84, Greenside Rd., Croydon. [4185

MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton St., Camberwell. [3584

K.L.G. W.D. Plugs, 4 for 2/6, postage 9d., value unprecedented; money returned if dissatisfied.—Thompson, 59, Queen St., Wolverhampton. [8185

NEW C.A.V. Accumulator Lighting Set, complete with switchboard and dimming switch; cost £8/10; offers.—Box 2863, c/o *The Motor Cycle*. [4941

ACCUMULATORS. — Quality right; price right; write for list; trade supplied.—Adams Bros. (Longton), Ltd., Accumulator Manufacturers, Longton, Staffs. [1284

ANY Motor Cycle Magneto repaired, no matter what condition, provided complete, for 30/-; 24 hour service.—Kays, Electrical Dept., 8, Bond St., Ealing, W. [4838

DASH Switchboards, 4-way, with ammeter, 20/-; with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept. H.1), 9, Colonial Av., Minories, E.1. [0760

MAGNETOS Overhauled and Repaired from 15/- to 35/-; returned as new in 2 days and guaranteed for 12 months.—Turner Bros., Magneto Repair Service, Summerseat, Manchester. [3824

MOTOR Cycle Dynamo Lighting Sets (Wattilite), head and tail lamp, accumulator, dynamo, and drive, brand new; our price £6/10, list price £16.—H. W. Turner, 259, Warwick Rd., Kensington, W.14. 'Phone: Western 946. [2699

THE London Magneto Repairing and Winding Co., Ltd. (Managing Director, S. T. Boon), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Eusroad, London. [2445

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle, Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d per annum.

Misleading Comments on the Pastime.

OUR attention is frequently drawn to the fact that several daily and weekly lay newspapers are in the habit of publishing motor cycle notes which are misleading to an extreme. The humorous *faux pas* so often noted in our "Current Chat" columns are not primarily referred to; the unfortunate errors are those of exaggeration and the lack of a proper sense of perspective on the part of the writer.

To name one instance only, a motor cycling correspondent to a daily paper remarked that the small number of failures in a certain trial on Kop Hill was surprising. Now, as many of our readers know, it is really surprising that any machine should fail at all on the acclivity in question, which is "a second gear climb" of the most typical variety! Ignorant statements such as these are common; every week we have instances pointed out by readers.

Again, our great national dailies tend too much to be actually London dailies; and in their motor cycle notes this is particularly apparent. They lack knowledge of the respective values of trials, races, etc., and take it for granted that an event within easy reach of the Metropolis is necessarily more important than one in, say, Yorkshire or Wales, and consequently accord it undue prominence.

The Motor Cycle has always endeavoured, and we venture to think with every success, to avoid misleading impressions of this kind; North Country and Midland events irrespective of distance fall within our regular scope. It is regrettable therefore that the non-motor cycling public should be misled in any way as to the respective importance of events whether they are held North, South, East, or West, simply on account of the fact that, by reason of environment, the London newspapers single out "local" events for special attention in their motor cycle notes.

In the Rain.

FOR a great many people, the first sign of rain turns motor cycling from a pleasure into a penance. This should not be; and, in view of the discouraging weather of June and July, the comment may be worthy of greater emphasis.

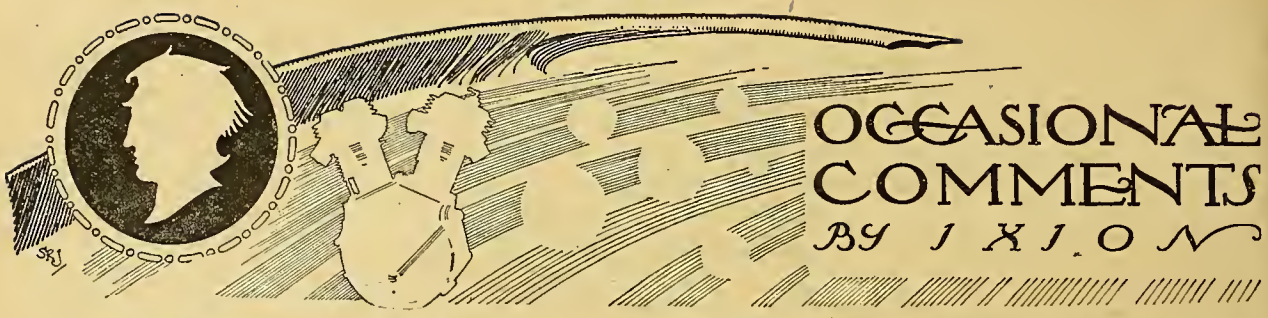
Actually when dark clouds promise to mar yet another week-end, the keen motor cyclist feels glad that he is a motor cyclist. He knows, especially if he is a city dweller, that his machine will save him from being compelled to spend his precious leisure hours indoors. He simply wraps up well in oilskins and waders and gets out on to the road.

Mudsplashing is a pleasant recreation only if the machine is well greased or possesses an all-weather finish and the rider is suitably clad. A long oilskin coat of good quality and a pair of waders fulfil the latter requirement; ordinary clothing may be worn underneath.

Too few machines, however, possess an all-weather finish, and many are none too easy to clean no matter how well they may have been greased before use. It is this that discourages all but the enthusiast from wet-weather riding. Lack of fully efficient mudguarding is quite a secondary consideration.

Huge mudguards and other necessarily unwieldy protective devices are not going to do nearly so much to popularise the motor cycle as an all-weather vehicle as is a rustless finish along with a minimum of mud-collecting nooks and crannies.

An index to the advertisements in this issue will be found on the page facing the back cover.



Weigh It—According to Law.

I AM receiving complaints from all over England that the licensing authorities are charging maximum tax for certain makes of machine which are advertised as coming out below the 200 lb. limit. The Scott Squirrel is a case in point. Weighed as the law demands, this machine scales just under 200 lbs.—198 lbs. to be precise in the several cases which I have personally tested, and is therefore amenable to the 30s. rating. What often happens is that a rider applies for registration, fills in the weight at 198 lbs. or thereabouts, and then fills his tanks and attaches crowds of accessories. A week later he usually receives from the licensing authority a demand for a certified weight ticket. Off he goes to the nearest weighbridge, and his ticket not unnaturally states 210 lbs. or more as the weight. Moral: get a certified weight ticket for any machine near the borderline before you start converting it into a gypsy caravan —local authorities are not fools, and require convincing in respect of those 190 lb. machines.

Dangerous Driving.

THERE are two ways of maintaining a satisfactory average speed across country. The commonest is never to let your speed drop below 25 m.p.h. or so, and incredible as the statement may appear to the unobservant, this is actually the everyday practice of perhaps seven riders out of ten. I stationed myself in a broad city street with a stop watch the other day. The timing was naturally rather of the policeman type, but approximately it was true that the majority of the riders under observation negotiated the quite heavy traffic at well over legal limit. I then hied me further out along the same main road, and roughly timed over fifty riders on a perfectly safe and straight stretch. Only one man was beating 30 m.p.h. The ordinary tourist and utility rider averages between 20 and 28 m.p.h., and he does it by keeping very close to his mean speed all the time. My own driving method is entirely different. I don't in the least mind dropping to ten or even five m.p.h. wherever the conditions suggest instantaneous control of the machine. In towns and villages I am perpetually being overtaken, even by Fords and baby two-strokes and 500 c.c. sidecar outfits, none of which are inveterate speedsters. When I have the road to myself I don't keep the throttle behind the 30 mark; in fact, I usually give my sports engine all it can take. Casual spectators at farmhouse windows doubtless ejaculate "Look at that ——fool!" as I streak past their lonely homesteads. But in sober fact I am a far, far safer driver than the man who never exceeds 30 and who seldom slows down below 25. Daily observation convinces me that most of us travel much too fast in trafficky places; and travel a good deal slower than we need on the genuinely open road. Nervous riders are among the worst offenders; traffic frightens them, and they push ahead hard in their subconscious eagerness to be clear of the town.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Motor Cycle Mania.

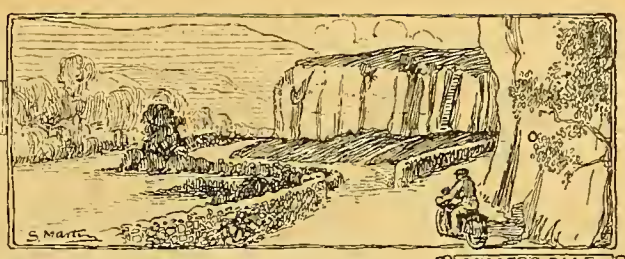
A DISTRESSED *paterfamilias* approached me this week requesting that I would wean his seventeen year old son from his perverse passion for motor cycles and all things connected therewith. I refused with oaths. Papa's grouse was that Sonny ought to have been concentrating on logarithms or something readily convertible into £ s. d. at a later stage of his career. My refusal was based on the fact that a growing lad usually spends a good many hours of his time in dreamland, and he may easily elect to dream of costlier and less healthy commodities than motor cycles. True, the motor cycle will certainly soil his paws; but there are worse alternatives. It is just the first edition of calf love—silly, perhaps; innocent, certainly; harmless, probably. I asked papa what was his leading interest in life at a similar age; and papa went rather pink. So that's that.

Lost His Piston?

I SUPPOSE you never did that, reader? Neither did I. I have dropped most parts of my machine and its equipment on the road at various times, including my pillion passenger. But young Fitz Wilkins actually contrived to lose his entire piston. The machine was originally a sports bus, and he proceeded to super-sport it. Took off everything removable. Balanced the road wheels. Streamlined the tubing of the frame. Finally he got to work on the inside of the engine with drills and file. The pace gradually rose from the manufacturer's 60 m.p.h. till two reliable observers timing with 17s. 6d. Ingersolls reported that he had done the flying mile at 78·2 m.p.h. "Just a little more drilling," mused Fitz Wilkins, "and I shall get 80 m.p.h.!" Perhaps he did. He found pieces of the bottom of the crankcase. Twisted relics of the conrod. Possibly one-third of the gudgeon pin. But nowhere even the tiniest portion of the piston.

Which indicates that amateurs should leave well alone.

DERBYSHIRE

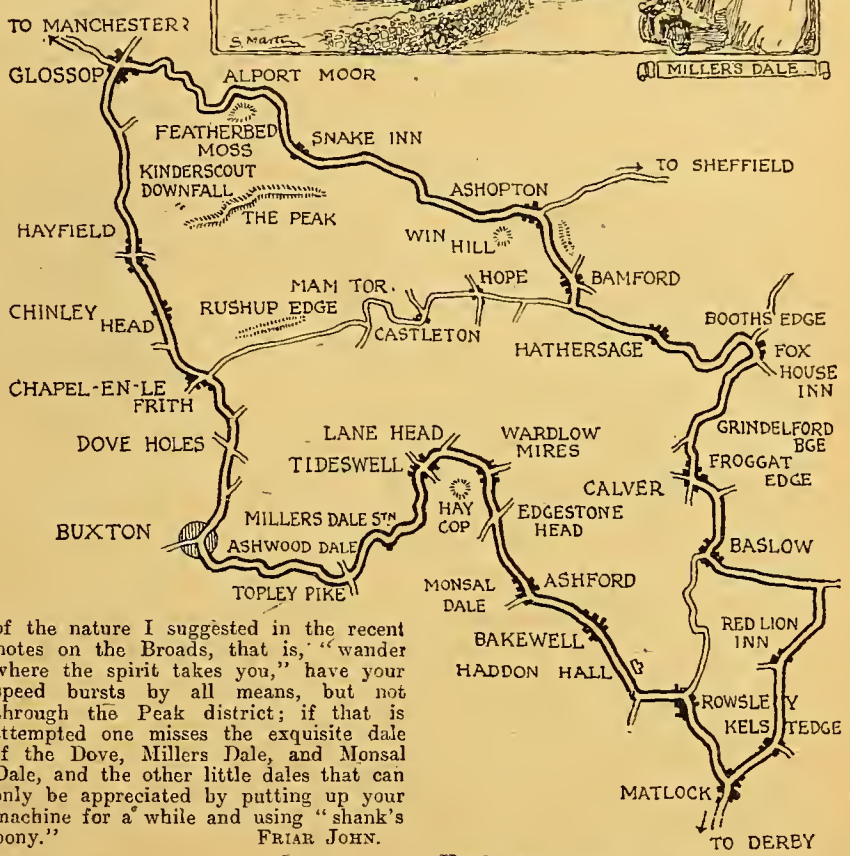


Notes on the Peak District, which offers Attractions for a Month's Exploration, yet can be encircled in a One Day's Run.

A COUNTRY of wooded vales with silver trout streams flowing over grey boulders, a land of well graded highways and awkward by-ways of unsurpassing beauty; of little sheep farms and great lime quarries—such is Derbyshire; but it is her dales that place the county among the beauty spots of Great Britain, so distinctive are they. No other landscape is like her's, except, of course, parts of the adjoining county of Yorkshire, but even Yorkshire has nothing to compare with High Tor, Matlock—that beetling cliff which towers over the straggling town and vale, dominating even in the bright summer time, but forbidding and majestic when the winter gales tear along the chasm below. The Peak district of Derbyshire is situated at the base of the Pennine Range, is surrounded on the south by comparatively uninteresting country, and is easy of access from many big towns; much of its beauty can be seen in one day. The district is compact, and no matter what spot you may select as a centre, the most interesting places can quickly and easily be reached.

On writing touring notes it is usual to give a route district from village to village, on no account forgetting the places of "interest" which frequently consist of some broken down ugly ruin or massive ancestral home of a duke, but I fancy the average motor cyclist when touring thinks more of a massive grey boulder set in a sheet of purple heather near to a trout stream—a likely luncheon spot—or of the state of his machine and the roads, or the hotel which is to shelter him that evening, than he does of show places *en route*.

In the run planned on this page, places and buildings which should not be missed are italicised, but commend me to a tour



of the nature I suggested in the recent notes on the Broads, that is, "wander where the spirit takes you," have your speed bursts by all means, but not through the Peak district; if that is attempted one misses the exquisite dale of the Dove, Millers Dale, and Monsal Dale, and the other little dales that can only be appreciated by putting up your machine for a while and using "shank's pony."

FRIAR JOHN.

DISTANCES OF THE BIG TOWNS FROM BUXTON.

	Miles.
Buxton to London	164
,, ,, Liverpool ...	53
,, ,, Birmingham ...	64
,, ,, Southampton ...	191
,, ,, Nottingham ...	49
,, ,, Leeds ...	62½
,, ,, Norwich	172½
,, ,, Cardiff	163½
,, ,, York	81½
,, ,, Newcastle on-Tyne	153½

A SUGGESTED ROUTE.

BUXTON is a good centre from which to explore the Peak; even within walking distance are to be found some of the finest views in Derbyshire.

BUXTON—HATHERSAGE (via TIDESWELL)—36 miles.

Leave by High St. and London Rd. Make the tour of Duke's Drive on to the picturesque road through Ashwood Dale and Wye Dale; ascend Topley Pike, then turn down Sandy Dale to Millers Dale Stn. (*from Buxton the gorges should be visited on foot*). Then on to Wardlow Mires (*waterfall on right*), Edgestone Head (*fine view of Monsal Dale*), and Ashford. The road then follows river bank to Bakewell. From the market place keep straight on, past Haddon Hall, to Rowsley (*grand view of the Derwent Valley*), on to Beeley, taking the South Lodge of Chatsworth Park. Cross the river immediately afterwards, and take the road to the beautiful village of Edensor; then on to Baslow. (*Instead of going from Rowsley direct to Baslow, Matlock may be included—see map*). Still following the Derwent Valley, cross the river into Calver, then on to Grindleford Bridge, Fox House Inn, Booths Edge (*The Surprise 1,050 ft. on left*), and Hathersage.

HATHERSAGE to BUXTON (via CASTLETON)—19 miles.

Take Castleton Rd. on left, following the river valley on to Hope, Castleton, and Mam Tor (*1,709 ft., magnificent view of the vale*), over Rushup Edge (*fine scenery*). Descend into Chapel-en-le-Frith, past Dove Holes, Fairfield, to Buxton.

HATHERSAGE — BUXTON (via GLOSSOP).—This is an alternative route of 34 miles through magnificent scenery. (see map)

A Week in the High Alps

The passage of the Col d'Izoard, which was traversed with the help of workmen on the road.

Previously the author described his motor cycle tour from Cannes to Aiguilles. This, the concluding instalment, details the journey over the Col d'Izoard, through Briancon, La Grave and on to Aix-les-Bains.

By C. B. WATERLOW.

IT is noteworthy that the remote region of the Val Queyras was first *discovered* as a touring ground and centre for Alpine climbing by an Englishman named Coleridge, so I was informed by the Mayor of Aiguilles. This amiable official presides over an enterprising little Syndicat d'Initiative for the district and does all he can to attract tourists.

The Val Queyras once visited will call you back again. Though pressed for time, I stopped three nights, and the days were brilliant and perfect. Three weeks would not exhaust the excursions to be made, but with a motor bicycle in three days one can cover most of the ground that is practicable for the machine, and here especially it scores over a car, for mountain tracks can be pursued to their limits without fear of getting into serious difficulties.

The next stage of my route lay over he Col d'Izoard (7,900ft.), the loftiest of all except the Galibier, and after the experience of he Col de la Cayolle, 100 miles further south, the possibility of passing it seemed somewhat doubtful. The proprietress of the Grand Hotel—*madame* is always far more important than *monsieur* in such establishments—said that, alas, the *col* was not yet quite clear, though they were working on it for a large party of British journalists due to arrive there about the 27th of the month; and what a pity it was, for the scenes up there had not their equal in the world. In the height of the season when motor coaches came over and stopped for lunch at her hotel, every day she was accustomed to hear forty or fifty people all saying that it was the most marvellous view on earth. In imagination I could hear these good tourists all saying it, all at once and at the top of their voices. Though a thorough Francophile, I do not appreciate the babel of their conversation when many are gathered together, and was thankful for the tranquillity of being the first tourist of the season. This was not to last, for several motoring parties arrived on my heels.

But the Col d'Izoard! At least I would try it, and would go as far as possible, returning *via* Guillestre and the valley of the Durance only if compelled to do so. Madame thought that I should be taking undue risks; perhaps she thought it mad!

It is the first duty and delight of the tourist to pursue the main road to its limit on the slopes of Mont Viso. The village of Abries, three miles further up the valley, is very interesting and dilapidated, but it also boasts a Grand hotel that was not open at the time of my visit. There is an old covered market in this village dating from 1259 and profusely inscribed with the most laudable sentiments, for the peasants in the high Alps are always very pious. Some of this writing still legible on its walls runs like this: "Good reputation is preferable to great riches and friendship to gold and silver. Be good to all, respect misfortune, love peace, honour merit, be kind and charitable." Peace is there to be loved, and who would not obey this injunction now except, alas, a few staff officers and profiteers?

Motor Cycling at 5,500 feet above Sea Level.

Continuing up the valley the road passes three small villages, becomes extremely rough and stony, and ends at an elevation of about 5,500ft. at a post erected by the Touring Club de France, indicating that twenty minutes' walk takes one to the full view of Mont Viso (12,602ft.). To see this view at its best one should rise early, for even in fine weather clouds soon begin to float about the gigantic crags of Mont Viso, which stands alone and unrivalled, dominating the whole of this region of the Alps. On the grassy slopes known

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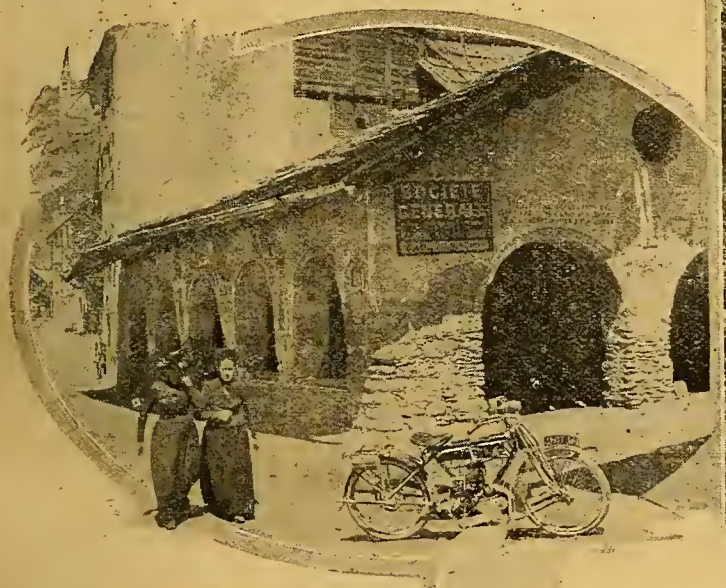
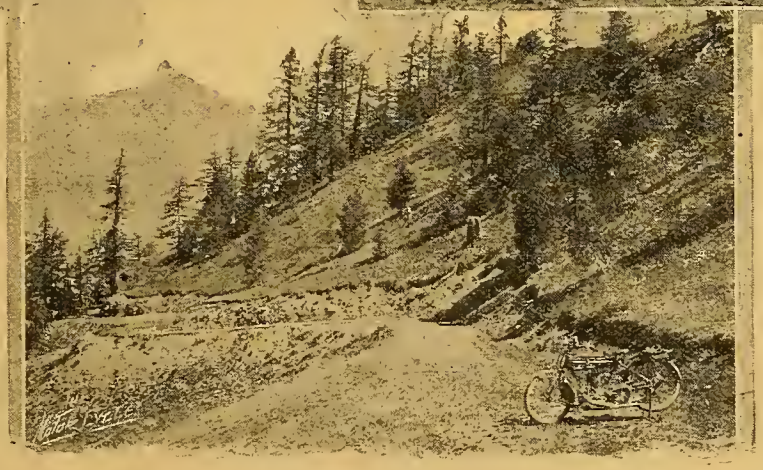
as the Belvédère de Mont Viso there is, in early summer, a wealth of flowers that cannot be believed unless it be seen. It is as though Paradise, leaving the earth at the fall of man and passing skywards, had dropped something behind on the way.

The lateral valley down which flows the torrent of the Aigue-Blanche has the honour of containing the highest *commune* in France, Saint Veran, which stands on a verdant southern slope 6,690ft. above the sea; and beyond this place the road continues upwards for a few miles in the form of a rough, boulder-strewn track to an old quarry from which the green marble was cut to make the tomb of Napoleon at Les Invalides in Paris. The whole ascent from the valley of the Guil is steep, almost as severe as the Col du Vars, and beyond the quarry a mountain track leads on to the little chapel of Cloisis, where, on the 16th of July, a pilgrimage is made by pious people both from the





(Left). The ancient market at Abries—Val Queyras.

(Right). Sheep cause a picturesque obstruction on the road up Mont Viso.

(Bottom). Looking down from the top of the road on the Sommet Bucher.

French and Italian sides of the frontier, which lies but a little way beyond this most lonely spot. I made the pilgrimage on June 4th, the A.J.S. taking me about half the way from St. Veran, until it was stopped by a stony bank with a gradient of about 1 in 2, where I left it and proceeded on foot. Up there by the little chapel was nothing but stillness, snow, and running water, with bright blue gentians starring the freshly uncovered turf. It stands in a ring of rugged peaks dominated by the Tête d'Etoiles (9,584ft.); there is not a house, not a tree in sight. The ordinary world, already somewhat remote at St. Veran, has now disappeared altogether. It is a good place for a pilgrimage.

There is one more excursion which must be made in the Val Queyras, for it is the best of all. On the southern side of the valley at Chateau Queyras stands a mountain called the Sommet Bucher (7,312ft.), up which has been constructed a military strategic road with quite reasonable gradients and a surface that is much better than that of the Col du Vars. The total rise, all through a great forest of larches, is about 2,900ft., and the road is 12 kilometres long, so that the average gradient works out at 1 in 13.9. The surface consists mostly of a smooth mat of pine needles, which by its softness throws extra work on the engine, but affords comfortable going. On a fine day the ride up this mountain is unique and unforgettable. There are glimpses all the way of an

expanding view of vast mountains fading into the distance, and, rising towards the summit, one catches up the spring until the trees are in their first tender green. From the top of the road, where a turning space is provided for cars, five minutes' walk takes one to the extreme summit, a grassy knob on which a little shelter has been built and from which there is a view in a complete circle of more than fifty Alpine peaks.

To climb a mountain like this, to be lifted easily to the top by a little motor bicycle, is a wonderful experience quite different from the ascent of a lofty *col*, where the view is always limited by the flanking mountains. One seems to be at the top of everything, and the valleys are so deep down below as scarcely to be visible. The world appears entirely as a scene of rugged peaks rising one behind the other indefinitely in every direction.

Each of the three excursions described in the Val Queyras can easily be made in a half-day without hurrying, but the mornings are usually preferable for clear views and cloudless skies.

The hour of departure and the attempt on the Col d'Izoard arrived. The distance to Briançon from Aiguilles by this pass is 43 kilometres, though a straight line drawn between the two places would probably not make more than half this length. It is a "concentrated *col*," making its distance in a comparatively small space, especially on the southern side. Passing the last village, Brunissard, in the beautiful valley of the Arvieux, they shouted to me that the *col* was very steep, a fact that I had guessed already. However, the general ascent proved to be no worse than the Col du Vars, and I acme to the famous scene near the top known as *la Casse Déserte* without any difficulty. Here the road drops slightly to pass round a vast amphitheatre formed by great screes thrown down from the heights of La Grande Rochebrune, the mountain to the right of this route. The place can hardly be described. It is different from anything to be seen elsewhere, either in pictures or in reality. The road here is at an elevation of some 7,500ft.; there is scarcely a vestige of vegetation and the air is so keen and clear that the shadows of towering needle-pointed rocks appear almost black.

Crossing a Snow Bank.

I passed some workmen on the road who looked as though they expected to see me back again. The last few bends were negotiated easily until, quite close to the top, I came upon the dreaded snow bank right across the road. There were only two of these on the extreme summit (7,900ft.), which I reached on foot in about five minutes. Just on the other side were two more workmen clearing the road. I said good morning, and what a pity it was having come so far that my little machine should be stopped just at the top. They at once offered to help me, and their sturdy pushing, backed up by heavily nailed boots, soon got the A.J.S. across the snow banks. I was somewhat generous, for the hotel bill at Aiguilles had been a pleasant surprise in its moderation. After that all was easy. I was indisputably the first tourist of the year to pass the Col d'Izoard, and I dropped down in triumph to the refuge Napoleon half a mile from the top by a short cut that was harder and drier than the main road, on which there was still much snow. This house at 7,700ft. I was told was open all the winter through. Chasseurs Alpins come there from Briançon for winter sports. The descent through great pine forests on the northern side is specially grand as regards the views looking back towards the summit.

Briançon, which was reached very comfortably in time for lunch, is the second highest town in France, and stands at an elevation of 4,350ft. There is the old town built up on the mountain side and a new industrial quarter in the valley of the Durance, the two being joined by a broad, straight road with a gradient of 1 in 7 for rather more than half a mile. It would be a fine venue for hill-climbs, but so far as I am aware none take place there. The old town is entered by draw-bridges and under ramparts, a form of protection somewhat out of fashion now, but which has served good purpose in old days as the inscriptions over the gateways signify. What pass for streets inside the walls are cobbled stairways with drains running down the middle, impracticable for wheeled vehicles. The view from the north-eastern ramparts is very beautiful. The town with its twin-towered cathedral lies far below one, and the eye penetrates into the distance up the valley of the Guisane towards the snowy mountains surrounding the passes of the Lauteret and the Grand Galibier, which were to be the crown and culmination of my journey.

A Beautiful Route.

The main road from Grenoble over the Col du Lauteret to Briançon passes on into Italy by the Col du Mont Génèvre, which is one of the best and most beautiful routes into that country. The eastern side of the Lauteret is nothing of a climb, the rise involved being 2,400ft. in 19 miles. The road is a fine piece of engineering with no sharp bends, and is protected at dangerous points by tunnels from avalanches and waterfalls. Although the Lauteret (6,750ft.) is less lofty than the other passes already described, it lies in the midst of very high mountains covered with everlasting snow; and it is, moreover, far more spacious than the other Alpine passes. There is not a vestige of vegetation save grassy slopes which in June carry such a wealth of flowers as can be seen nowhere else in Europe; and right up to the rugged summit of the Galibier, as soon as the snows melt, flowers bloom, wild anemones which grow larger the higher you get until you can scarcely believe your eyes, narcissus in incredible quantities, blue gentians, and wild pansies of many colours, together with innumerable rock plants.

There was much snow about the col this year on June 6th, the date of my arrival, and it could be seen at a glance that the Galibier, the road for which leaves the main Lauteret route about a mile before the summit on the eastern side, was impassable. The glorious peaks of La Meije (12,782ft.) were clear of cloud and dazzling in snow and sunshine. I installed myself at the Hotel des Glaciers in a little wooden room with a balcony and an outlook straight upon the glaciers and summits of this mountain, then took a run down the twelve kilometres of descent to La Grave to secure some more petrol for the morrow. There are two

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long tunnels just above La Grave which are very damp, slithery, and unpleasant inside. They are lit with electric light, but dimly. I met a mule being led through one of them—mules hate motor bicycles—and the scene that ensued was pandemonium.

La Grave nestles right under la Meije, so that the principal view is at an angle of 60° above one. It has two quite good hotels, and is a fine centre for climbing and excursions on foot, but it lacks the glorious spaciousness of the Lauteret.

Unlike the Col d'Izoard, the Grand Galibier had no intention of yielding to an attack from an impertinent motor bicycle. I was far from the summit when very early the next morning I met the first snow bank, and, proceeding on foot, found that higher up the road was entirely covered and almost indistinguishable. Even on foot the ascent was by no means easy. I made footprints in the snow to be followed on the descent. Let all who read these notes and who ever reach the tunnel at the top of the Galibier not be content with just passing through and descending the other side, but take the footpath that leads up to the summit above the tunnel, where a *table d'orientation* has been placed at an altitude of 8,870ft. In any case it should be noted that the passage of the tunnel, which is fully half a mile long, requires care, and it is essential to light one's lamp.

The view from the *table d'orientation* could exhaust all the superlatives in the English language. The panorama sweeps from Mont Blanc to Mont Viso. All the giants of the Alps are there; to the south the summits of the Dauphiny Alps, the splendid Barre des Ecrins (13,457ft.), the highest mountain in France outside the Mont Blanc group, the peaks of Mont Pelvoux and La Meije, and the heights of the Belladonna range to the north. This view sweeps over 200 miles of dazzling snowy summits and glaciers, but the sky must be clear to see it all.

This was the culminating point of the journey. I descended, left the Col du Lauteret, passed through La Grave, ran swiftly and easily down the lovely valley of the Romanche towards Grenoble, which city was avoided by passing through Uriage-les-Bains and entering the Isère valley just above it; then proceeded through Chambéry to Aix-les-Bains, the journey's end.

The *Routes des Alpes* is completed by passing on from Aix-les-Bains to Annecy, and over the Col des Aravis to Chamonix and Mont Blanc. But this section, better known than that which I have tried to put before the reader, cannot be described in a few words, and requires a further article.

	Distances. Kilometres.	Totals.	Hotels.
Cannes			
Guillaumes	121		Ginney Ollivier.
Col de la Cayolle	33	154	
Barcelonette	29	183	Du Nord et des Alpes.
St. Paul	21	204	Des Etrangers.
Col du Vars	26	209	
Guillestre	25	234	Imbert.
Aiguilles	26	260	Grand.
Abries	5		Grand.
End of Val Queyras from Abries	10		
St. Veran from Aiguilles ...	15		
Sommet Bucher from Aiguilles	20		
Col d'Izoard	24	284	
Briançon	19	303	Grand de Briançon.
Col du Lauteret	30	333	Des Glaciers.
Galibier from Lauteret ...	8		
La Grave	12	345	La Meije.
Aix-les-Bains	158	505	

NOTE.—Eight kilometres equals 5 miles (approx.).

A point that is of special interest to those considering touring in the French Alps is the question of expense. My running expenses including hotels, all meals and tips, and everything spent on the machine, petrol, oil, and 9 francs for tyre repairs being the only items, but excluding such things as Kodak films and cigarettes, amounted to 332 francs, which for seven days is less than £1 a day.

BEFORE THE TOUR.

IN the instruction books issued by manufacturers one often encounters the statement that such and such a part is "packed with grease" at the works, and will require no further lubrication for a thousand miles or more. The private owner, messing about with an oilcan which is not easily stored when on tour, often wishes he could pack certain parts with grease. In actual fact, this is easily done, and such items as the wheel hubs, fork spindles, and steering head can be so thoroughly stored with lubricant at the start of a long holiday that they may safely be neglected for a month or more. The writer's method is to melt down a quantity of Price's hub lubricant on a stove until it is as fluid as water. It is then poured into an oilcan with a fine spout, and injected into the parts till it oozes out all round the bearings. It cools rapidly as it encounters the cold metal, and after a wipe over the parts can be left to do a full month's hard work without further attention.

The chains should be removed, cleansed in two successive baths of paraffin, and immersed in a final bath of melted lubricant, after which they can be neglected for 1,000 miles; no matter how dry they become externally, the bearing surfaces will be greasy. They should be carefully adjusted, the tension being verified for ¾in. up and down sag after the gear box and drawbolt nuts are all tight.

Both engine and gear box should be flushed out with paraffin and relubricated, four full charges to the engine, and the gear box according to its maker's directions.

All the nuts and screws should be gone over for tightness, as the loss of quite a tiny part may be a sad nuisance on tour. Loose nuts may be fitted with spring washers, or the boltheads burred over with a punch and hammer, or anointed with thick, ropy paint. Small plated items should be protected with vaseline or celluloid varnish (*e.g.*, "Corrosine"), as nobody wishes to waste time cleaning on a holiday.

See that the tyre repair outfit is fully stocked; and do not start on a long ride with any dubious tube or cover.

Camping with a Sidecar

An ideal way of spending a holiday, given fine weather, care in selecting pitches, and the right sort of tent.

Making the Most of the Precious Summer Days. Hints on Equipment.

IT is difficult to imagine two pastimes that pair better than motor cycling and light-weight camping. The power of the motor cycle scorns the slight additional weight, and its speed brings the distant camp site within easy reach. Frequently, in the case of sidecar outfits at least, part of the equipment, in the shape of cushions, rugs, and picnic basket, is already carried. All that is necessary to render the motor cycle a complete and self-containing touring equipment is a tent and a down sleeping bag, weighing together only a few pounds. The modern light-weight tent is a cosy and comfortable sleeping apartment, about as far removed from the clumsy primitive canvas type as the modern motor-cycle is from its early ancestors. Pitched under right conditions it is dry and safe in any weather. A light-weight camp outfit enlarges at once the freedom of the motor cyclist to an extent it is difficult to estimate except through actual experience.

Why Barter Your Freedom?

Imagine for a moment the conditions under which camping is enjoyed. Thousands of touring motor cyclists this summer will find themselves at the end of a long day's ride sitting on a bank of heather, with the lake below reflecting the sunset lights and all around the towering mountains. Who would want to leave such ideal surroundings at the call of the necessity of finding accommodation for the night? With a light-weight tent, the tourist would be able to enjoy the long evening, and those silent hours when, in the open, something vastly interesting and arresting is happening every moment. This is no matter of mere economy; the question is whether we do not barter too valuable a portion of our leisure on a holiday when we shut ourselves away from that beauty of Nature which we came out to see.

No smelling oil lamps need be used if accumulators are carried in the sidecar. The illustration shows the wiring from the machine to the tent.

It requires little exercise of the imagination to picture the possibilities of the light-weight tent for week-ends. Every Saturday evening during the summer thousands of motor cyclists rush away from choice scenes back to town conditions. A light-weight camp outfit would enable them to spend the whole week-end by the river, or on some upland farm. Many, of course, have already discovered the healthy joy of "week-ending" with a light-weight tent, and their numbers are ever growing.

"TWO IN THE SHADE."

Of the two camping outfits shown that on the left is the motor cycle size and of a pattern known as the "Two in the Shade." Its ground sheet is made of oiled canvas and is part and parcel of the tent. Anyone can erect the tent in one minute and can pack it in one and a half minutes. It will hold three comfortably and is provided with a ventilated hood. The cost is 5 gns. The larger tent is intended for cycle cars and big sidecar outfits, and, of course, provides more accommodation. These are the productions of the T.O.M. Syndicate, 6, Princes Street, Hanover Square, London, W.1, which shortly hopes to institute an information bureau on camping.

Certain practical considerations will at once arise in the minds of motor cyclists who have not so far had experience of light-weight camping or camp touring: questions of selection of equipment, method of packing on the machine, choice of sites and suitable touring districts. The general equipment is now familiar to the majority of motor cyclists, and I need only mention here a word of warning. There are tents labelled and listed as "light-weight," and light-weight tents. Members of the A.C.U. will notice in the handbook this year a section on light-weight camping, and the A.C.U. will give them advice as to sources of supply. I have no doubt that the A.A. will do the same for its members. There is no need to waste money on heavy equipment which will afterwards be discarded as useless, while there are books dealing specially with light-weight camping.

Carrying the Outfit.

The sidecarist, if he has chosen his equipment with care regarding weight and bulk, will have no difficulty in finding accommodation for a complete camp outfit for two on his luggage carrier and in the sidecar locker. There is no need to buy experience in the shape of a ruined tent if care is taken to protect it against the effects of vibration. An old suitcase serves as a protection, and ought to hold both tent and sleeping gear. If occasionally the tent or flysheet has to be packed while still damp it should be carried outside the case, but strapped in such a manner that no part is subject to wear under vibration. As far as possible it will be found advisable to carry all equipment on the sprung portion of the sidecar, but *not*, of course, in the sidecar toe. The locker of the B.S.A. sidecar and similar outfits will take a full equipment for a camping pair. Needless to say, such articles as plates and cups should be packed as tightly as possible by wrapping them in soft paper serviettes or in the tea cloths. It will be found convenient to use rubber rings cut from an old inner tube to secure small items, if they are not to produce a travelling orchestra.

For the solo camper the problem is entirely different, and bulk assumes much greater importance. While the total weight of a solo camp outfit is only a few pounds, it is well to follow the lead of the designer of the Scott motor cycle and dispose of this weight as near the ground as possible. The stove reservoir should be clipped to the frame or packed in a special box *outside* the picnic outfit. For carrying the picnic outfit, a flexible telescopic bag or Japanese rush basket, the sides of which adapt themselves somewhat to the shape of the contents, will be found much more satisfactory than a stiff basket or fibre case. The art of packing neatly is quickly acquired if some thought and practice is given to rolling and cording the tent and sleeping bag before taking to the road. Yachtsmen with experience of a small boat will have little to learn.

Choice of Suitable Sites.

More enthusiasm for the joys of light-weight camping has been damped out by bad site selection, perhaps, than for any other reason. The rules of the game are easily acquired by campers who are keen and observant. The lightweight camper needs drinking water, shelter from wind, actual or possible, and turf of a quality to provide a grip for his pegs. Little else is essential, but if in addition he can secure a wide view, a bathing place and running water near at hand —then is the cup of his happiness filled to overflowing. Discovering these conditions eventually becomes an instinct, but an ordnance map will indicate the possibility of shelter, of running water and high ground. Ground likely to be flooded at any time of

Camping with a Sidecar.—

the year should be avoided, of course, and also overhanging trees. A slight slope away from the sheltering rocks or trees and towards the view is sought after, in what the estate agent would call "a most desirable site."

In England it is generally advisable to camp on private land with the permission of the tenant or landlord—a much easier matter than non-campers frequently suppose. In over twenty years of camping in all parts of Britain, the writer remembers only one point-blank refusal, and that was from a farmer angry because, in approaching the house, our engine had disturbed his game. It is important to convince the farmer or land owner at once that you genuinely share his anxiety about crops, cattle and closed gates. If, in addition, you can interest him in the camping game, and make him curious to see how a tent that rolls into next to no space can provide adequate shelter for two or three people, your case is won. Point out the stove, promise not to light fires without permission and to leave the site as clean as when you entered it, and you will find that farmers and land owners are quite reasonable and even sympathetic folk. It is for campers themselves to see that they do not abuse the trust, and so foul their own nest.

Members of the A.C.U. can now obtain from the Union headquarters particulars of camping sites throughout Britain. This is a useful innovation, but the list may be extended by personal experiment.

Recommended Areas.

Camp touring is possible almost anywhere in the British Isles that motor cyclists penetrate. There is a string of camp sites along the south coast, and in the West Country. Mountainous or hilly country, where there are swift-flowing streams and uncultivated land, forms the ideal ground of motor cycle campers. Ullswater and Borrowdale, in the Lake District, Dolgelley and the Gwynant Valley in North Wales, the Yorkshire Dales and along Lomondside provide examples. For its wide choice of glorious sites the Highlands of Scotland cannot be equalled in Britain.

When motor cyclists learn what enchanting holiday playgrounds await their mastery of camping, we shall have waiting lists for permits to camp on the better sites. Meanwhile the pioneers can find considerable joy in blazing the trail into some of the more remote beauty spots of Britain.

HENRY J. STONE,
Author of "Camp Touring and Light-weight Camping."

A well sheltered site for the week, showing two types of tents suitable for motor cycle camping.

CAUSES OF STREET ACCIDENTS.

DURING a recent inquest held by the City Coroner the fact was disclosed that in the first quarter of this year there were as many as 130 fatalities in London alone caused by street accidents, many of which were, in his opinion, unnecessary and preventable. With the present increase of motor traffic of all kinds it is certain that more care will have to be taken both by pedestrians and drivers alike. Far too many accidents are caused through people stepping into the roadway before making sure that the way is clear, and although the motorist is so frequently blamed for the sometimes inevitable accident which follows, he is often by no means guilty of negligence. Time and again accidents have been caused by cyclists turning in the road without any proper warning to oncoming traffic, and this applies very strongly to deaf cyclists. It has been suggested in various quarters that persons afflicted in this way should carry some distinctive mark to warn other drivers, an idea that would, without doubt, avert many disasters.

Passenger Machine Topics

By Friar John.

Which Side for the Sidecar? Watch Police Signals. Where can Sidecars be most Improved?

MR. MORTIMER BATTEN raised a hornets' nest when he contended that the right side of the machine was best for the sidecar. Judging on evidence from both sides, the obvious summing-up should be in favour of the existing method. Not having driven a machine with the sidecar attached on the right-hand side one can only theorise, whereas Mr. Batten speaks from experience of both methods. "Safety First," however, stated the case clearly in the issue of July 20th, and his argument should be sufficient to convince anyone that the left side is the safer side on which to fix the sidecar, for driving in traffic at any rate. Anyone who rides on busy roads cannot help but agree. "One great fault," says "Safety first," "of all left-hand drives is the enormous danger present when a left-hand driven machine is overtaking and wishes to pass a heavy vehicle which is travelling slowly and completely obliterating the view of traffic coming in the opposite direction. To overtake the other vehicle the driver of the left-hand machine must swing out nearly his whole width beyond the rear off side of the vehicle he is passing before he can even see if there is any vehicle coming in the opposite direction. On narrow roads the danger in doing this is very acute with modern fast motor traffic, and even on wide roads there is considerable danger."

The extreme care that has to be exercised in passing slower moving vehicles on roads near cities makes it imperative that nothing should be done to add to that danger. I think this argument alone counter-balances the points brought up in favour of the right-hand sidecar.

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REPLYING to a recent article entitled "Runabout and Sidecar," by A. F. J., "Rayon de Soleil," in the correspondence columns, says the author appears to be willing to make the best of the present-day sidecar outfit, and "Rayon de Soleil" objects to A. F. J.'s assumption that the desire which comes to all sidecarists sooner or later for more comfort is "merely a passing affliction like measles."

Making "the best of things" is often retrograde policy, and so is the spirit of compromise—sometimes. Yet either may be virtuous on occasions. Whether A. F. J. is a hero or coward in making the best of "bumping and banging" sidecars, to use "Rayon de Soleil's" words, I am not sure. I dare say he could have shouted from the housetops that all sidecars need spring frames and air cushions, but probably, like the rest of we ordinary mortals, he took the line of least resistance. In not embodying in his article a vindictive, slashing criticism of sidecar outfits, he evidently missed an opportunity of pleasing "Rayon de Soleil" and maybe thousands of others who are sick of being shaken to pulp on bumpy roads.

◈ ◈ ◈ ◈

TALKING to a manufacturer of sidecars recently I gathered that he thought his productions as near perfection as possible. The remark invited an attack, but this particular maker is such an enthusiast and has made such great efforts at improving his models that I had not the heart to offer adverse criticism. As a matter of fact, the criticism I could have offered would have applied to nearly every sidecar, and not to this make in particular.

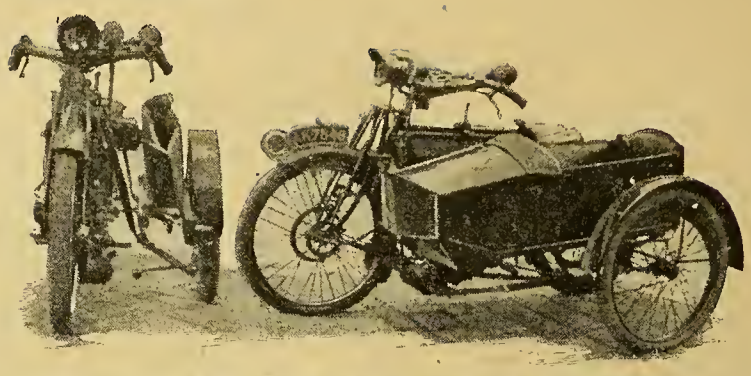
It would be easy to tabulate what I think the greatest failings in the present-day sidecars. But instead I will ask readers where they think there is most room for improvement in sidecars. Purely destructive criticism is often readable, but suggested remedies for failings are what we all desire. Where *can* sidecars be most improved?

◈ ◈ ◈ ◈

SIDECARISTS on tour—or not on tour for that matter—beware of the signals of policemen on point duty. Curb your haste to get along, and do not be fooled by a signal that is not clear to you. Sooner *stop* in error than *proceed* in error. I need not recount a recent happening, sufficient it is that one has to obey the law—as it is laid down at

Passenger Machine Topics.—

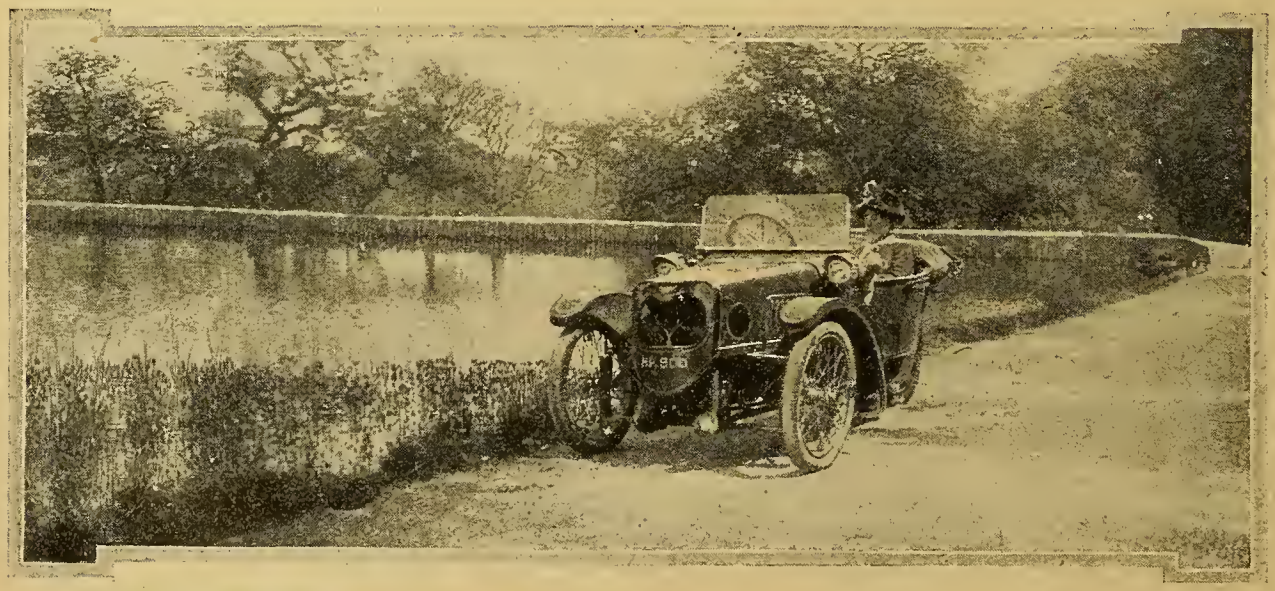
street corners. And if you interpret a slovenly waving of the arm for you to proceed to cut across a main thoroughfare, when the waving is meant for the other man to proceed along the main thoroughfare, then do not be surprised at what follows at the right angle. Watch the signals.



FOLDS RIGHT UP! Folding sidecar chassis are not uncommon, but a collapsible *body and chassis* certainly contains an element of novelty. An outfit embodying this feature is now being tried on the road by its designer, Mr. Edward Bracewell, 12, Greengate, Keighley, and so far has proved satisfactory. The chassis is constructed of spring steel and, excepting the detachable bottom, the body is also of steel.

MOTOR cycle camping can no doubt be thoroughly enjoyable. I have promised myself a long camping holiday many times, once going so far as to take a small tent and a few blankets with me on a tour. But I must admit they were never used. Curiously enough, near all the spots where we decided to stay there happened to be an inn or hotel, and one went there of course for dinner or tea (call it what you like) before erecting the tent. While dining in the ancient oak-panelled room with its old sporting prints and engravings, or maybe in the other sort of room with its hair-stuffed sofa and "Battle of Waterloo," we discussed the pros and cons of tent erecting, generally finishing the specious arguments whilst on a stroll round the village, always agreeing that it was "not worth the bother" considering we should be striking camp early next morning. The same old pros and cons were brought up and discussed each day, and the ending was always the same—a wretched admission, no doubt. But, some day I am going to do the thing properly. That is, I am going to persuade two other owners of sidecars—who are temperamentally fitted for the job, of course—to make up a party. Luggage could then be divided and the work of erecting and cooking divided. The only thing that would not have to be divided would be opinion.

STEERING a sidecar for the first time is usually a disconcerting experience, especially if one has driven a solo machine for any length of time. Quite recently I saw a sidecar driver steer directly into a hedge instead of taking a left-hand bend in the road. A more stupid happening one could not imagine. Afterwards I conversed with the owner, who luckily had suffered no damage either to himself or outfit. He said he had only just taken up sidecarring, but had ridden a solo machine for many years, and could not account for his lapse. Of course, one steers almost subconsciously on a two-wheeler, and a decided and conscious effort in turning the handle-bars is not noticed. But there is little excuse for such a lapse as that described, even though this subconscious steering had become an ingrained habit. Possibly the real reason for the accident was the age-old fear of the sidecar wheel lifting; a week or two on three wheels and one gets over this.

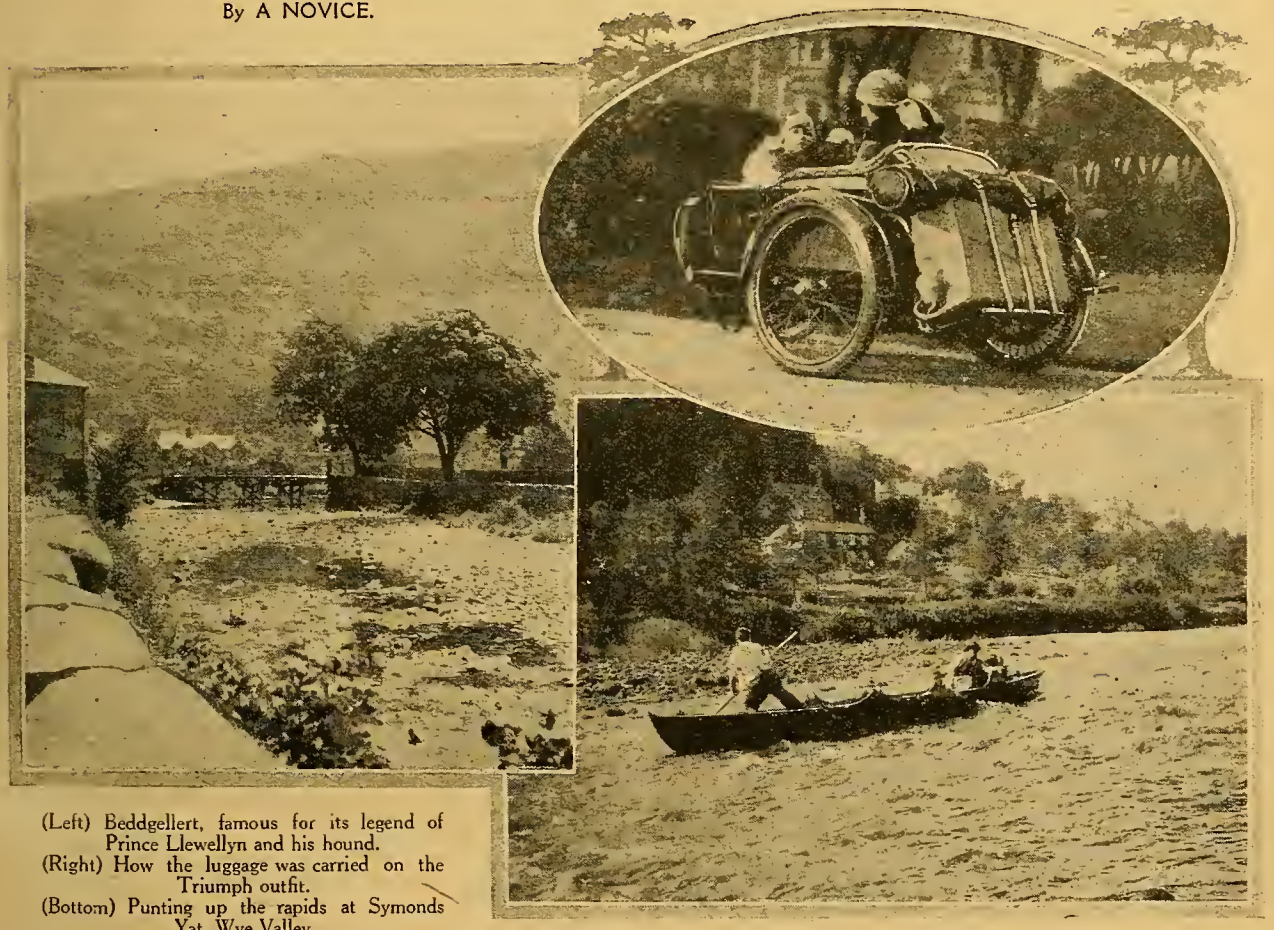


A pretty scene not many miles from the heart of Birmingham. This peaceful retreat is in Sutton Park an open expanse of many acres to the north of the great Midland city.

A 1,000 MILE HOLIDAY FOR £20.

Economy and Freedom on a Sidecar Tour for Two—with a Little Refrain on Trouble-free Riding.

By A NOVICE.



(Left) Beddgellert, famous for its legend of Prince Llewellyn and his hound.
(Right) How the luggage was carried on the Triumph outfit.
(Bottom) Punting up the rapids at Symonds Yat, Wye Valley.

THE slump, low funds, and little possibility of the latter increasing made the question of a holiday something of a problem. It became a question of how much one could do for a certain sum—and that sum a very limited one.

How much would it cost to travel by train to South Wales *via* Oxford and the Wye Valley, up to North Wales, then back to London *via* Chester, Buxton, Derby, Stratford-on-Avon, and Oxford? Trying to work it out resulted in the conclusion that at present rates such a tour would be impossible except for multi-millionaires, but by providing my own transport the trip was actually done by two people for less than £20, including all hotel expenses, smokes, pin money, and an occasional round of golf.

A Faithful Single.

I happen to be the proud possessor of an all-chain drive 550 c.c. Triumph sidecar—one of the first, I believe—and this fact, of course, solved our problem at once.

Starting from London, three up, two suit cases and two bags of golf clubs, we ran to Oxford comfortably in three hours by way of Staines, Runnymede, Windsor, and Henley, by far the prettiest route. At Oxford the third and smallest passenger was dropped for a stay of ten days with friends, and on the following day my wife and I continued the journey with the idea of reaching Ross-on-Wye for the night. Starting at about 10 a.m., we travelled by way of Woodstock, Broadway—the most delightful old-world village in the kingdom—and Worcester, spent a couple of hours on the Malvern Hills, and ran into Ross about six. "Big" hotels were "taboo," and we finally fixed up at a little inn where we were most comfortable. We then prospected for the golf course, and, having found—and approved—it, turned in.

Next morning we played a round of golf and settled our modest account (15s. for bedroom, supper, and breakfast). Our inclination then ran in the direction of Hereford, *via* Symonds Yat, the Wye Valley, Chepstow, and back again, and it was our intention to spend the next night at Hereford. We were, however, persuaded to spend some hours on the Wye at Symonds Yat, a truly glorious spot, and, with the aid

A 1,000 Mile Holiday for £20.—

of a most entertaining boatman, went some distance down the river and back over the rapids.

The boatman offered me £10 if I could punt the boat up the rapids, but many, having flattered themselves as to their prowess in this, had failed, so I thought discretion the better part of valour and took a photograph instead.

By this time it was about five o'clock, and after tea we proceeded through the most delightful scenery to Chepstow, *via* Tintern Abbey, and, having given up all hope of getting to Hereford, discovered a beautiful little village on the Wye called Redbrook, where we stayed with the postmaster, a delightful person.

Along the Welsh Borderland.

We were now badly behind schedule, and it behoved us to get a move on next day; the necessity for so doing, however, did not make us leave this little bit of heaven before 10.30 a.m., but when we started we moved and ran right through to Bettws-y-coed in the day, stopping to see Hereford Cathedral, and to admire the delights of Leominster, Ludlow, Shrewsbury, and the country round Llangollen. At the latter place a house called "The Maids of Llangollen's House" is worth a visit, the exterior carving being marvellous.

So far no punctures, no bursts, no spanner used; just oil and petrol.

We stayed on the top of the Conway Falls, just outside Bettws, at a little house of great reputation—if the visitors' book may be taken as a guide—for two days, during which time we visited Colwyn Bay, Llandudno, and the surrounding country, and on the eve of the second day got out the map to see where to go next. Criccieth struck us as just our mark, so off we went next morning through "Snowdonia," our first call being Beddgellert, then down the Aberglaslyn Pass to Tremadoc and Criccieth. Truly the Prime Minister has chosen a delightful spot for his leisure moments; we spent three days basking in the sunshine, enjoying the wonderful bathing and playing golf.

We visited Pwllheli and rounded the point to Nevin and Trevor, but came back to Criccieth in the end. We reluctantly left Criccieth to go *via* Carnarvon, Llanberis, Capel Curig, and Rhyl to Prestatyn, but being unsuccessful in getting accommodation there we pushed on towards Chester, and finally stayed in the mining district at a little village called Mostyn. Not being used to this sort of country, we got out of it early next morning, spent a few hours in Chester, and then away over the moors to Buxton. After Buxton and Bakewell we left the main road to go to Chesterfield and Baslow, intending to spend the night at Matlock. On arriving we found we had landed in the middle of an agricultural show, but after endless enquiries managed to get in at a farm where we were made most comfortable.

The Recurring Refrain.

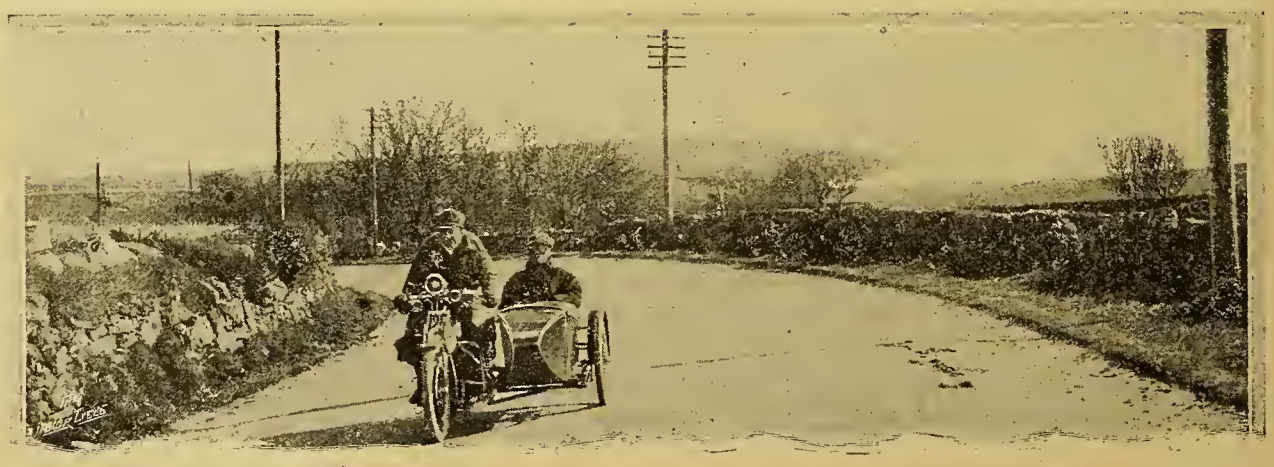
So far no puncture, no burst, no spanner used; just oil and petrol.

Our next stage was to Stratford-on-Avon, passing through Lichfield, where we visited the Cathedral. This proved an easy run, and we arrived in time to run out to Anne Hathaway's cottage. Next morning was spent looking round Stratford, but time was short, and our holiday was drawing to an end. The run to Oxford from Stratford presented no difficulties, we picked up our third passenger and turned for the last lap.

The run back to London was an easy one, and the road perfect all the way.

We had started out on a Saturday morning and returned on Sunday, fifteen days later. Two week-ends had been spent at Oxford, but the rest of the time we were on the road.

On arriving home our speedometer showed that 1,012 miles had been covered, and our expenses, including every conceivable item, came to under £20, a fraction of the cost of what the journey by rail would have been; but "comparisons are odious," and to compare a "bike" with a train, well! Right up to the end of the trip there was no puncture, no burst, no spanner used—all the machine wanted was just oil and petrol.



SCOTIA'S VARIED CHARM. Scotland is not composed entirely of mountain passes and rugged glens. From Stonehaven to Aberdeen a wide finely surfaced road runs over undulating country; and glimpses of the grey North Sea compensate one for the lack of lochs and bens.

SIMPLICITY IN SIDECAR DESIGN.

An Improved Model of the Holt Patent Spring Wheel Chassis. Left or Right-hand type at Will.

TO the man of moderate means, the sidecar outfit of "4 h.p." and under offers a real solution of his transport problems.

The essentials demanded by sidecarists of this type are comfort, cheapness, and light weight, coupled with strength; to satisfy all these demands is not too easy a task, but so far as the sidecar itself is concerned, the Holt Motor Manufacturing Co., of Albany Road, Earlsdon, Coventry, have gone a long way towards this end.

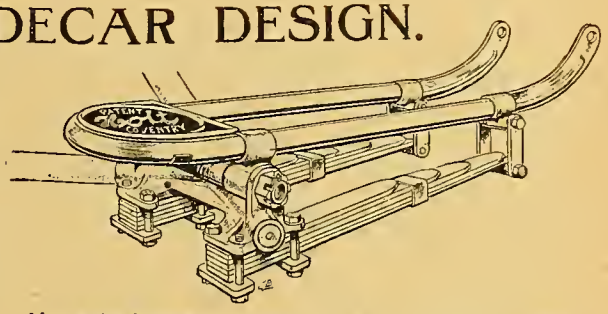
The chassis we illustrate is a modification of, and in many ways an improvement on, a previous production, and, while the principle remains the same, the construction is greatly different. One tube only now forms the chassis; this is bent into the form of an equilateral triangle, the two ends being joined by a single lug, which forms also the housing for the springs upon which the wheel is suspended. Mounted on this housing is the bearing for the wheel fork, a hollow axle acting as an oil reservoir.

The wheel springing is almost unchanged and is in every way efficient. It will be noticed, however, that the wheel fork is upswept at the rear to give a lower chassis position. The mudguard is attached direct to the knock-out spindle while its forward end is supported by a spring clip to the wheel fork; thus in no way does it interfere with the removal of the wheel when tyre repairs become necessary. The body is supported on three coil springs operating through levers; by this system the body is at all times upright and free from side sway. Either three or four points of attachment may be employed.

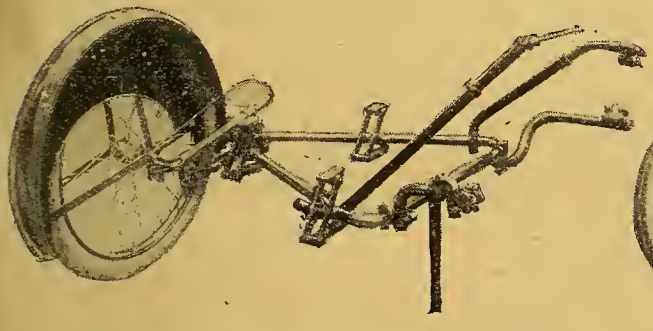
It will interest Continental and Colonial readers especially that the wheel fork and spring unit may be reversed and the chassis mounted on the right-hand side of the machine without obtaining additional parts.

Simplicity is the keynote of the Holt chassis; including the wheel fork and three-point connections to the motor cycle, six tubes only are employed in the entire construction. The body will be of the semi-sporting type of ample dimensions to give comfort, while appearance will not be forgotten.

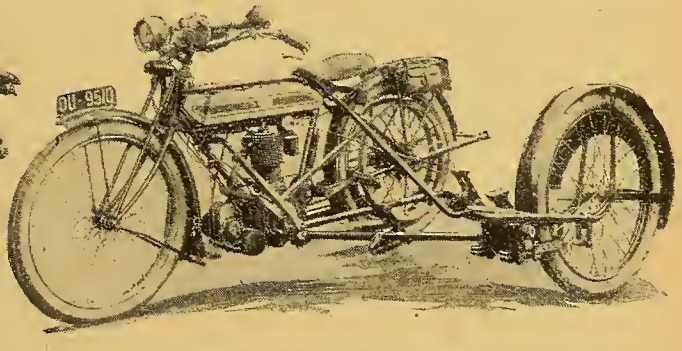
After an extended test on the road we are able to speak highly of the behaviour of the sidecar. It gives a degree of comfort hitherto associated only with the larger and far heavier outfit, while the light weight makes high average speeds possible even when used with a low-powered machine. The action of the wheel leaves nothing to be desired, nor is there any lack of lateral rigidity. Deliveries commence immediately, various models complete with bodies being priced at £21 and upwards.



New spring housing and upswept wheel fork of the Holt chassis. A neat step is fitted into the bend of the fork.



Although stoutly constructed and possessing great strength, an excellent impression of its light weight is gained from this view.



Low manufacturing costs and interchangeability of parts are feature of the Holt chassis.

FROM THE FOREIGN MAIL.

British Mount Wins Swedish Race.

In recent Swedish races over a distance of 250 km. (156 miles), an O.K. Junior finished first.

Mont Cenis Hill-climb.

Such a hill climb as can never take place in this country was held on the Mont Cenis recently. The course is fourteen miles long of continuous gradient, mounting in zig-zags, and no steeper than 1 in 9-10.

In the 350 c.c. class, Rossi (Motosacoche) was first, time 23 min. 47⅗sec. In the 500 c.c. class, Jolly (Alcyon), 22 min. 34⅕ sec.; Léoni (Della Ferrara), 22 min. 58⅖ sec.; Peracchio (Galloni), 27 min. 7⅘ sec. In the 1,000 c.c. class, Mancini (Indian) was the winner, time 20min. 40⅖sec., beating the former record created by the late Biaggo Nazzaro, whose time was 21 min. 25 sec.

A Good Place for the Generator.

A French contemporary suggests that in the case of a twin-cylinder the acetylene generator may be clipped to an exhaust pipe. This is not at all a bad idea, and it should be useful in the winter time, as in such a position the water could not freeze.

Speed Trials in Spain.

A flying kilometre speed trial was recently organised by the Royal Spanish Motor Cycle Club. The fastest time in each class was as follows:—

250 c.c.: Bourbon (225 Enfield), 68.25 km.p.h. (42½ m.p.h.).
500 c.c.: Lucos (496 Zenith), 95.5 km.p.h. (59½ m.p.h.).
750 c.c.: Blanco (582 Indian), 98.9 km.p.h. (61½ m.p.h.).
1,000 c.c.: Fuentes (989 Harley-D.), 139.5 km.p.h. (87 m.p.h.).
1,000 c.c. Sidecars: Maure (989 Harley-D. sc.), 120 km.p.h. (78 m.p.h.).

Examination for Driving Licences.

Before granting driving licences to motor cyclists, the Queensland Traffic Department has decided that a test will have to be passed. A letter has been written by the Department to the Queensland Motor Cycle Club asking for a suggestion for a practical examination to be given to applicants which would be suitable for all classes of machines.

A Close Race.

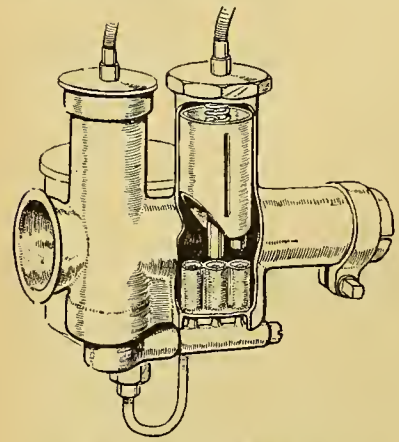
The 300 miles National Championship Race, at Wichita, Kansas, held on the 4th of last month, was won by R. Hepburn on a 998 c.c. Indian, his time being 4h. 18m. 54s. Higley gained second place riding a 998 c.c. Harley Davidson, his time for the distance being 4h. 37m., beating Kreiger who finished third with a 998 c.c. Indian by only 30 seconds.

DEVELOPMENTS IN CARBURATION.

Three-jet, Two-lever Instrument.

OF all the many details connected with petrol engines perhaps the carburetter receives the most attention at the hands of designers.

In the past few weeks we have had no less than four experimental instruments on test, and each of these has given good results in its own particular sphere. By this we mean that one carburetter may be designed as a single lever instrument for normal touring purposes, and functions admirably as such; another is turned out to give maximum power and acceleration at the expense of automaticity and petrol consumption; and a third is designed particularly with the idea of giving good all-round results, but particular stress is laid on low petrol consumption. The two-lever instrument under review comes into the last mentioned category.



"Cut-away" view of the Reece carburetter, showing the arrangement of jets, shrouds and dampers.

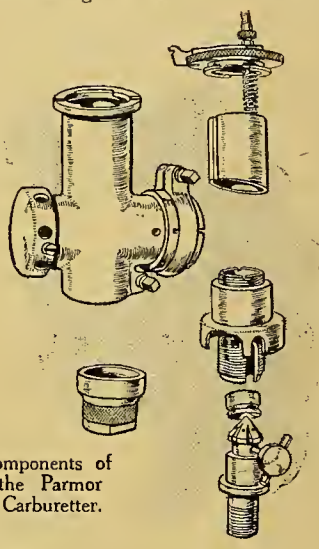
As will be seen from the sketch, which is self-explanatory, there are three jets placed in line. All three are shrouded by tubes, and the two nearest the engine are prevented from coming into action until the throttle is partially opened by small tubes which coincide with the shrouds; these tubes are carried in the throttle barrel.

In action, as soon as the throttle is slightly opened the rearmost jet is opened up, and with this fuel supply it is possible to attain a speed of approximately 25 miles per hour; when the throttle is raised slightly further the foremost jet comes into action, and still further movement opens up the middle jet. An air slide is mounted in a second barrel behind the throttle chamber; a slot in the throttle barrel is engaged by a set pin in the outer casing of the mixing chamber, so keeping it in its correct position.

It is claimed by the inventor that petrol consumption up to 120 m.p.g. can be obtained regularly with a 500 c.c. engine, and as far as our tests have proceeded we should judge that the claim is accurate, although, since the model we are testing is a hand-made experimental instrument not easily tuned to varying machines, it is difficult to arrive at accurate results. Nevertheless, the carburetter gives excellent slow running and acceleration, and is almost automatic in action, the consumption being particularly good. The carburetter is the design of Mr. J. R. Reece, 63, Henry Street, Ashted, Birmingham.

Floatless Single-lever Carburetter.

A FLOATLESS single lever carburetter, somewhat of a novelty, is being produced in Birmingham by Parmor Carburetters, Ltd., Carlton House Extension, Birmingham. Known as the "Parmor No. 2," the carburetter under examination has several features of interest. First, it is of the floatless type, the spraying nozzles being covered by a conical cap when the machine is at rest. Suction of the engine raises this cap and permits the mixture to be drawn into the carburetter body, its outlet to the engine being controlled by a normal piston throttle. In addition to a rotatable air inlet which may be closed for starting purposes, there are two main adjustments, (1) a tap controlling the amount of fuel which reaches the jet, and (2) a screw-down adjustment limiting the lift of the jet covering valve.



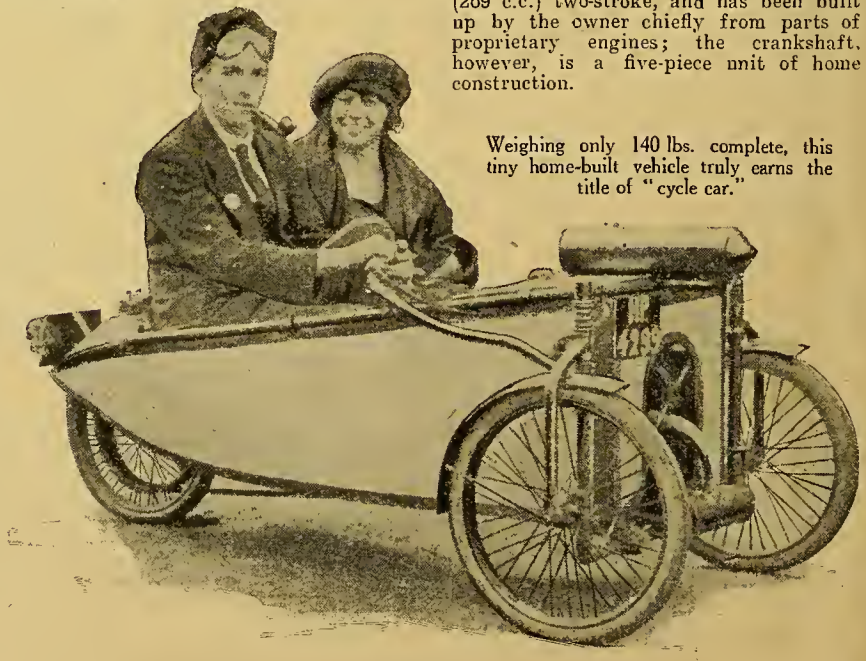
Components of the Parmor Carburetter.

A FEATHERWEIGHT THREE-WHEELER.

SOME interest has been aroused in the Midlands by the appearance on the roads of a tiny three-wheeled vehicle propelled by a two-stroke engine and carrying two passengers. The owner and manufacturer of the machine is Mr. J. Wainwright, of 53, Barras Lane, Coventry.

Weighing only 140 lbs. complete, the vehicle has a light tubular frame. The 20×1¾in. front wheels are mounted on vertical sliding tubes, the motion of which is controlled by coil springs; steering is direct through a tiller. The rear of the chassis is unsprung, but the seat frame is suspended on ash laths giving a certain amount of flexibility.

The power unit is a 70×70 mm. (269 c.c.) two-stroke, and has been built up by the owner chiefly from parts of proprietary engines; the crankshaft, however, is a five-piece unit of home construction.



Weighing only 140 lbs. complete, this tiny home-built vehicle truly earns the title of "cycle car."

READY FOR THE HOLIDAY—AND ALL THE ROAD MAY HOLD

His mount "tuned up" and running sweetly; in his pocket a book of Dunlop maps to guide him on his way—and on his machine a pair of trusty

DUNLOP TYRES

that will take him wherever he wants to go—with comfort, speed and safety.

OBTAINABLE FROM ALL MOTOR-CYCLE DEALERS,
IN A COMPLETE RANGE OF SIZES.

TRADE MARK

In answering this advertisement it is desirable to mention "The Motor Cycle."

RECORDS OF CONSISTENCY

SPEED

RELIABILITY

WORLD'S RECORDS

Mrs. JANSON, riding TRUMP-J.A.P.
11 HOUR
12 HOUR
DOUBLE 12 HOUR.

Mr. H. LE VACK, riding NEW IMPERIAL-J.A.P.
Class B 350 c/c
10 MILE 73·52 m.p.h.
50 MILE 74·00 m.p.h.
100 MILE 72·80 m.p.h.
1 HOUR 74 miles 291 yards.

Mr. E. B. WARE, driving MORGAN-J.A.P.
Class H 1 Class H 2
50 MILE 77 m.p.h.

M.C.C. MEETING, BROOKLANDS.
Passenger Handicap.
ZENITH-J.A.P. 1st
ZENITH-J.A.P. 2nd

EALING CLUB MEETING, Brooklands
1,000 c/c Handicap.
BROUGH SUPERIOR-J.A.P. .. 1st
Novices Handicap.
TRUMP-J.A.P... .. .. .. 1st
Passenger Handicap.
HOLROYD-J.A.P. 1st
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EALING CLUB CHAMPIONSHIP.
ZENITH-J.A.P. 1st
ZENITH-J.A.P. 2nd

J.A.P TRADE MARK ENGINES

Sole Manufacturers:
J. A. PRESTWICH & CO., Ltd.,
Tottenham, London, N.17.
Established 1895.

Above Records subject to A.C.U. confirmation.

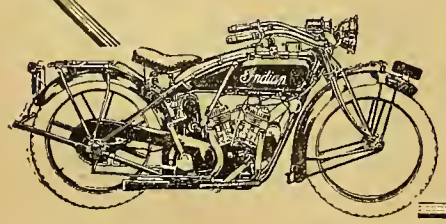
SIMPLY PERFECT TO RIDE

The Indian Scout

The acknowledged best designed Motor Cycle in the World.

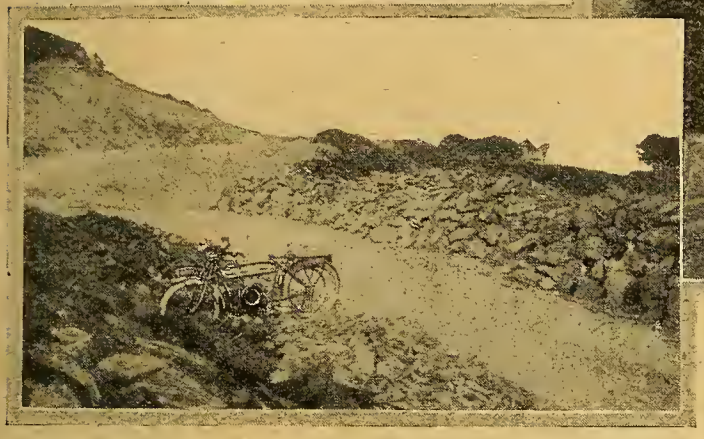
Prices from £112 Solo, £134 Combination.

Send for Catalogue which gives illustrations and full particulars of this fascinating mount.



HENDEE MANUFACTURING CO.,
"Indian House,"
366–368, Euston Road, London, N.W.
Telephone—Museum 1643.
Telegrams—"Hendian, Eusroad, London."
Agencies throughout the world.

A New Coast Road



Part of the new Ilsham road, which will afford unbroken views of the sea.

At work on a bad bend. The new road, too, is very hilly but picturesque.

A Picturesque Coast Road, affording Tourists a glimpse of Devon's Remarkable Scenery.

SOUTH Devon gives promise of one of the finest motor roads in our country. It is the Ilsham road at present under construction right along the coast. It would be difficult to find on any part of our shores a more delightful road than this, with the Devon hills inland and the outward view across the Channel to the south.

Torquay has great ambitions, and she knows well that her natural virtues are an irresistible attraction to motorists, who look to South Devon with ever-increasing eagerness. There is no meanness about the outlay in the provision of facilities, and the opening up of choice ways in this beautiful neighbourhood, and the extension of the Ilsham road is a case in point.

To follow the Coast Line.

An inspection of a road map of South Devon shows that already the coast line is followed closely from Dawlish to Brixham, but an actual tracing of this road shows that the map encourages an expectation which is not fulfilled. The road does not by any means afford an unbroken view of the sea. It bends frequently inland and for miles has a barrier of trees between itself and the open sea. It is on the promontory east of Torquay, which ends in the rocky point of Hope's Nose, that the new road is being made, and the sea views are especially fine from the headland. A visit to the scene of operations shows what a vast amount of labour and energy is being expended, and with what thoroughness the extensive work is being carried out.

Just off the land in this vicinity are three rocks which rise from the sea and afford a quiet resting place for sea birds. They are known as the Thatcher Rock, Shag Rock, and Crestone Rock, and charming views of them may be obtained through the fir trees that are grouped along the cliffs.

The new road will not be without its gradients, but gradients mean vision, and are therefore not to be condemned. No one expects to find long level stretches in Devonshire. It is a land of climbs, and drops, and they are part of the interest of the district.

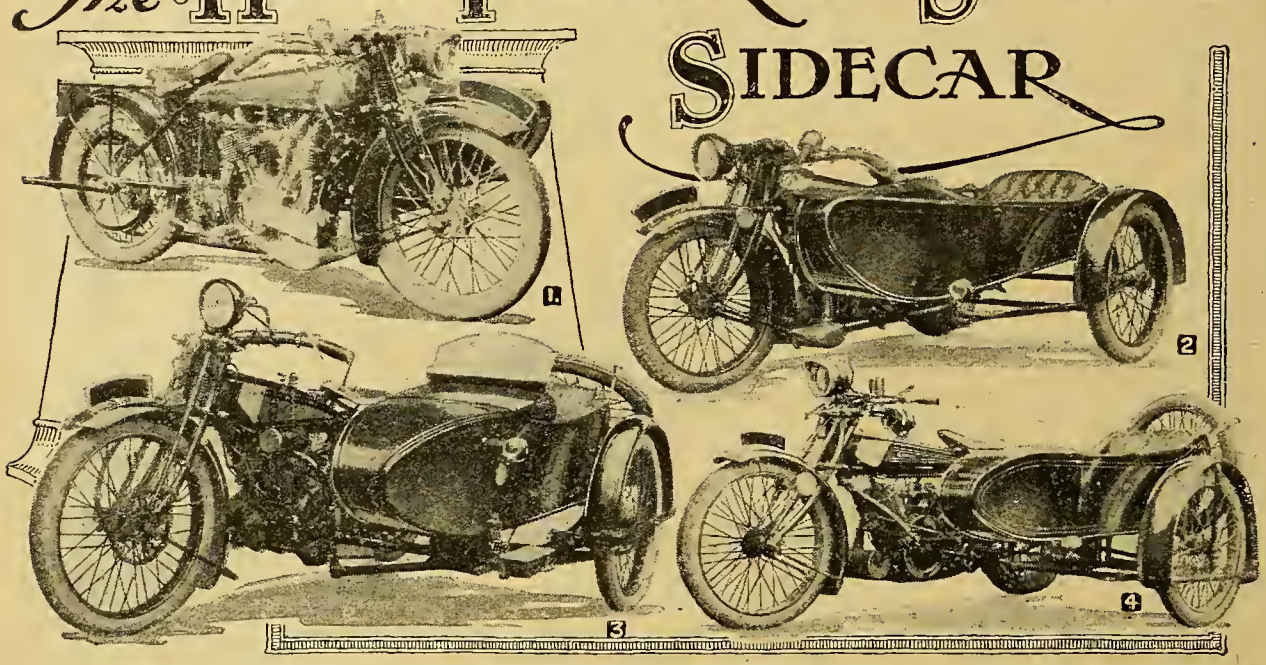
Another Coast Road.

One word of warning in this connection may not be without advantage. Motorists travelling west from Exeter will reach, a mile or so from the city, a dividing of the ways, where a very distinct notice points right to Torquay and left to Dawlish. The former is the inland road and runs over the hills. There is on this route one very stiff climb some two miles in length, over Telegraph Hill. It is said to be the worst hill anywhere in the district. The surface is good, but it is a somewhat trying ascent, and there is nothing to be gained by taking this way. Torquay must then be reached through Newton Abbot; but the coast road by Dawlish and Teignmouth is much to be preferred.

Dartmoor's Attractions.

If the sojourner at Torquay or thereabout wishes to experiment in climbing, he will find ample opportunity on Dartmoor. A run through Newton Abbot to Ashburton, and thence to Two Bridges near Princetown, will convince him that Dartmoor is not to be lightly considered. These great hills are, however, well within the range of the average mount, and it is only by a little daring and adventure that one can derive the fullest enjoyment from the remarkable scenery that has made central Devonshire famous. Let it, however, be borne in mind that the sunny weather that clings along the coast is no guarantee that the high moors may not be shrouded in an impenetrable mist or even undergoing heavy rain, and these are points one cannot easily ignore.

The High Powered Sports Sidecar



(1) 976 c.c. Brough Superior—side valve J.A.P. engine
(2) O.H.V. Brough Superior and Montgomery sidecar.
(3) 998 c.c. Rex with Blackburne engine.
(4) 998 c.c. Blackburne with Matchless sidecar chassis.

Experiences and Opinions of a Well-known Competition Rider.

POSSESSED with the love of speed, coupled with an intense dislike for trains, and a purse too slender to "run" a fast car, I have owned a rather striking series of fast sidecar outfits during the last few years, a brief but candid criticism of some of which might prove useful reading to the prospective owner of this type of machine.

Short of a powerful two-seater car, there is, to my mind, no type of vehicle so eminently suited to long-distance fast touring as a good big twin with medium-weight sidecar. Solo machines are pleasant enough in their way, but the extra luggage accommodation of a sidecar is an undeniable advantage, and I for one strongly object to finding my best suit full of holes or covered with tooth powder, such as frequently results from carrying one's suit case on an unsprung carrier. Likewise, being a methodical person, I like to carry a spanner to fit every nut on the machine, and the tool-bag has yet to be designed which will accommodate the resulting toolroll!

Misconceptions.

That the sports sidecar is comparatively seldom met with on the road is possibly largely accounted for—apart from the question of initial cost—by a rather prevalent ignorance on the part of soloists as to the speed capabilities of a fast outfit.

There is also a common belief that an empty sidecar is a source of danger, necessitating great care in negotiating corners. No idea could be more mistaken provided that intelligent forethought is shown in choosing a sidecar of suitable weight for one's choice of mount; its general build makes all the difference to a machine's behaviour with empty sidecar. A low-built "bus" with centre of gravity well down will corner safely with quite a light sidecar, whereas a top-heavy machine will require a far heavier attachment to attain the same degree of stability.

More important than appearance.

Of far greater importance than the appearance of a sidecar body is the strength of its chassis and connections, and this is a point which must be gone into very carefully when choosing a sidecar for a big twin, especially if it is to be light. It need hardly be said that one of the old-established firms should be patronised, since chassis design is a matter of experience rather than theory, and the maker's advice should be sought as to the most suitable chassis for the purpose.

Of the various types of motor cycles I have owned, the Harley-Davidson, Henderson, Blackburne, Rex-Blackburne, Brough Superior (o.h.v. and side-valve), and "sports" New Imperial are perhaps best suited for the purpose of illustrating this article, the aim of which is to give some idea of the road performance of a fast outfit, its steering-stability, and speed capabilities.

HENDERSON.—1,072 c.c., four-cylinder, two-speed, short wheelbase model, with "Fitsu" light sidecar, the chassis of which was not to my liking. This machine was standard but for flat T.T. bars and single-lever control. It is a pity that the English

The High Powered Sports Sidecar.—

market is not offered an alternative bar of this type, since the steering—especially solo—was much improved thereby.

The outfit was exceedingly fast but overgeared, so that speed had to be got up downhill. The speedometer was accurate to within a mile or two, and on one occasion actually registered 63 on the level. It steered really well and was stable with light sidecar.

BROUGH SUPERIOR.—Designed primarily as a *de luxe* speed mount to an ideal specification rather than to a figure, one naturally expects a lot from the Brough Superior. After nearly a year's experience of one of these mounts I am bound to say that my expectations have been fully justified. Equally good service, too, has been obtained from the sporting Montgomery sidecar recommended for use with these machines by their maker.

The power unit for the first 5,000 miles was an o.h.v. J.A.P. of 986 c.c., the chief attraction of which lay in the extraordinary power given off at low "revs.," enabling an abnormally high gear (3.25 to 1) to be employed. There is no denying the fascination of a really high gear; it quite upsets one's judgment of speed, and 40 feels like 28! The speed of this outfit was no less than 65, recorded by a speedometer accurate to fine limits.

A side-valve "sports" J.A.P. was substituted later, but, being an engine that loves to "rev.," the gear had to be lowered. Thus the chief charm of the o.h.v. engine was lost, but the side-valve scores in its greater accessibility and reliability. So far the maximum speed recorded is 61 m.p.h., but I hope to improve upon this later.

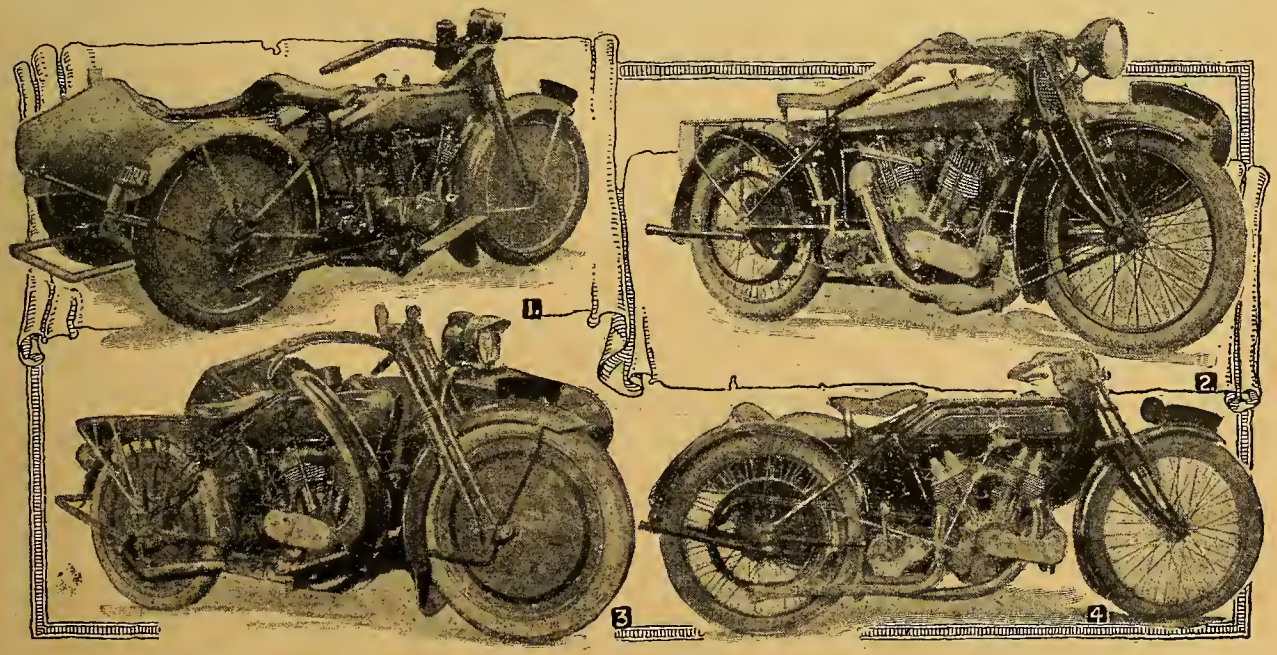
Perhaps the most outstanding feature of the Brough Superior as a sidecar machine is its amazingly light steering, and this in conjunction with an ideal riding position renders it the most comfortable long-distance mount I have yet experienced. Moreover, it holds the road remarkably well.

For sidecar work I frankly prefer Brampton forks to the now standard Montgomery; the former steer lighter, are more sensitive, and, above all, look neater. Montgomery forks have the advantage for solo work, however.

REX-BLACKBURNE.—The only machine of this make that need concern us is a very imposing outfit I owned. Encumbered with dynamo lighting and a very heavy sidecar, it was not well equipped for speed, but by dint of faking the engine the maximum speed had been improved by the previous owner, Mr. J. D. Martin, to the tune of 53 m.p.h. The Rex sporting body has most pleasing lines, and this, in addition to a pair of long plated exhaust pipes and T.T. bars, gave a rather cumbersome outfit quite a sporting appearance. In spite of an abnormally long wheelbase, the steering was excellent.

BLACKBURNE.—The 998 c.c. Blackburne is not, as a rule, particularly fast or lively, but one of mine had both qualities, the maximum speed being 52 m.p.h. The chassis was the Victory Matchless, standard until recently; this was strong, but heavy, and too wide in the track. The coil rear springing was given to bouncing with the sidecar empty, but behaved well under load. T.T. bars and footrests gave this outfit a distinctive appearance. The steering and front springing I did not like, and this is a point on these otherwise delightful machines which needed attention. The forks had a pronounced rake, and there was too much trail, which, in conjunction with the wide chassis, made cornering laborious.

HARLEY-DAVIDSON.—These delightful machines need no praise from me, since their merits are well known, but a word of warning might be advisable,



(1) 1916 Harley-Davidson with Millford chassis and Rennoc body. (2) 986 c.c. Brough Superior with overhead valves.
(3) 1919 Harley-Davidson with underslung chassis and touring body. (4) 976 c.c. "sports" New Imperial.

The High Powered Sports Side Car.—since they are frequently delivered solo and so are to be seen with a variety of attachments, many of them quite unsuitable.

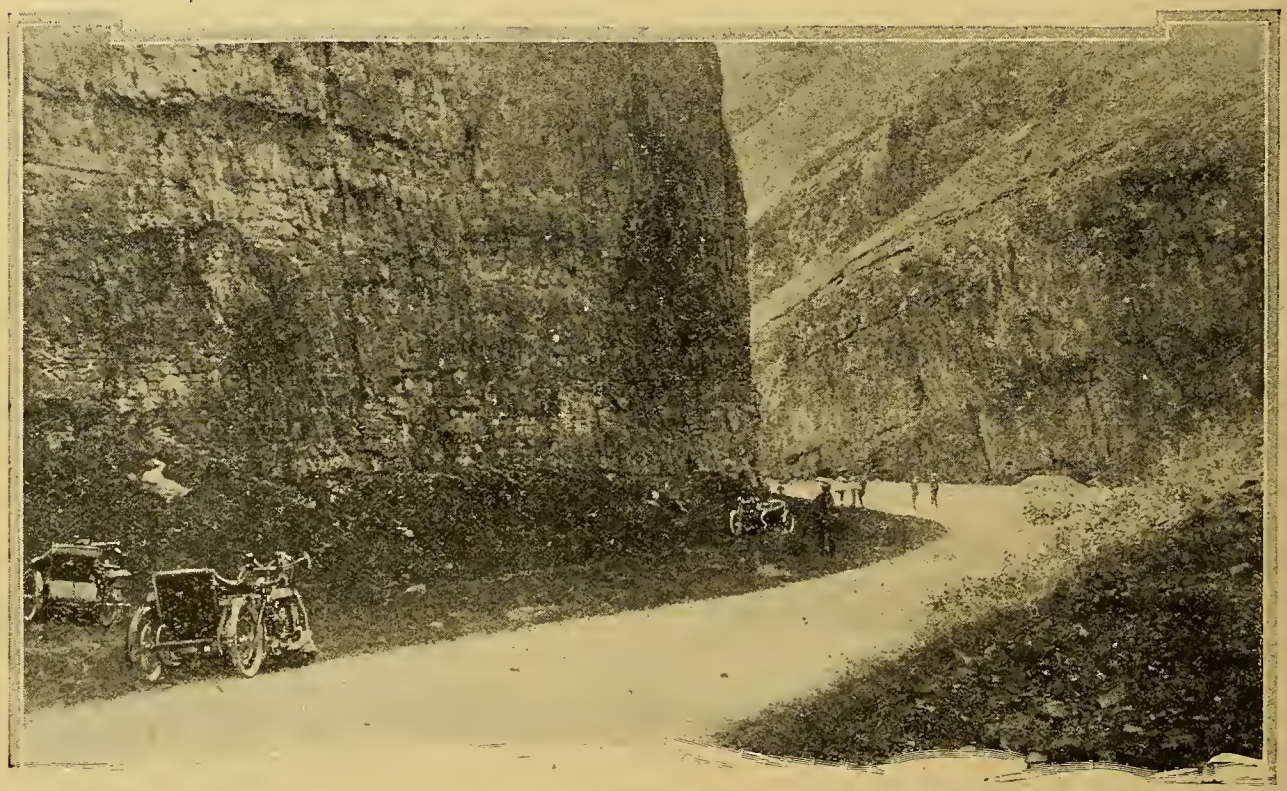
It is a mistake to fit an ultra-light sidecar to a Harley, since it is a rather top-heavy machine The sporting Montgomery or Grindlay suit this mount well and is as light as is compatible with safety.

The best Harley I had was an old grey 1916 model with Millford Empress chassis (which gave wonderful service), Rennoc torpedo body, and disc wheels. This outfit would do 52 m.p.h., and steered well. A later (1919) model fitted with a heavy touring body and underslung chassis was a shade faster, but the engine was not so delightfully "silky," and the chassis was very unsatisfactory for high speed work.

"Sports" New Imperial.—Introduced at Olympia last autumn, this new model attracted considerable attention from its racy appearance. The 976 c.c. Sports J.A.P. unit supplies the power, and the gear box is a three-speed Burman. It is intended purely as a speed mount, and so the makers have dispensed with carrier, toolbags, silencer, etc., and mudguarding is of the simplest. The frame, however, is on the lines of the standard production and is rather too high to give the best results for speed work either solo or with light sidecar.

Fitted with a light Grindlay sporting sidecar, this outfit was exceedingly fast, but the steering is rather heavy, and the sidecar tyre got very little wear, being seldom on the ground! Unfortunately, I was unable to try out the maximum speed very thoroughly before parting with the outfit, but it would do over 60 m.p.h. without a shadow of doubt, and the acceleration was positively sensational.

W. A. Fell-Smith.



Striking and unique in formation Cheddar Gorge forms an attractive destination for hundreds of motor cyclists living in the West Country. Situated between Axbridge and Wells these great cliffs tower over a road leading to the beautiful Mendips.

MOTOR CYCLES AND THEIR USES.

THE following ingenious paragraph appeared in a recent issue of a provincial paper at the end of a column on general motor cycle matters pertaining to the enthusiast, and is reproduced here as an example of the adaptability of the modern motor cycle. Probably few people realise how frequently, in the course of ordinary conversation, they make use of the names of some of the leading machines manufactured to-day:—

"Let theirs be a summer of Sunbeams, of many Triumphs, the Acme of all previous seasons, Alldays and every day a Diamond in their memories; may their speed excel the Aerial flight of the Bat; forbid that they ever come to a Blackburne they Connaught cross; may their purses ever contain a Bradbury for times of stress. Here's hoping we'll all stick together like the Ivy, a Matchless combination of O.K. chaps, ever ready to Raleigh to the help of some poor stranded Rover. Let's hope we Beardmore police traps without being copped, and reach our Zenith in avoiding with Precision any hard wall that threatens to make us Rex!".

CURRENT CHAT

Times to Light Lamps.

August 10th	.. ..	9.2 p.m.
„ 12th	.. ..	8.59 „
„ 14th	.. ..	8.55 „
„ 16th	.. ..	8.50 „

One number plate must be illuminated as above *ride* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

A Question of Tune.

From a provincial paper :—"A.B.C. Scootamoto, new appearance, scarcely used, £18, or exchange for a piano.———"

Riding an overhead eight valve Harley-Davidson, F. W. Dixon exceeded 103 m.p.h. at Clipston near Mansfield recently. This was the first occasion on which 100 m.p.h. had been attained in this country outside a racing track.

"Coueism" and "The Motor Cycle."

A reader writes that "Coueism" must be part of the routine at our editorial offices, since *The Motor Cycle* really gets "better and better" each week.

Visiting Zeebrugge.

Tourists travelling to Belgium by the G.E. Railway who disembark at Zeebrugge should spend half an hour on the famous Mole there. The scene of the greatest naval exploit since Trafalgar, it is well worth a visit, and complete details of the fight are given in a booklet obtainable on the spot.

Benzole Mixtures.

A ready mixed petrol-benzole fuel is now obtainable. It is a boon to those riders of heavy outfits who find that benzole is essential for cool running and absence of knocking.

Variable Pulley Gearing for Lightweights.

A countershaft infinitely variable gear (with kick starter) is shortly to be marketed for lightweight machines. One of our riders recently tested the experimental model amid the traffic of Fleet Street.

Observers for the Six Days.

Motor cyclists willing to act as observers and marshals during the first day's run of the Six Days Trials (August 21st) in the York and Thirsk, Kirby-Moorside and Sheffield districts should forward their names to Mr. W. A. Dovener, 26, Beamsley Avenue, Frizinghall, Bradford.

Catering at Speed Trials.

No one will deny that the average speed trial or hill-climb of 300-400 entries is a dull affair, only to be ameliorated by such adventitious aids as bands of music or a good caterer's stall. The latter invariably does good business, and is specially desirable when the proceedings are protracted.

Giving Old Machines a Chance.

Classes in all manner of competitions might be set aside for pre-1914 machines. They always provide interest, sometimes amusement, and in any case encourage riders to participate in club life who at present feel that possession of the latest type of machine is essential to success. Trials organisers and award donors please note.

Traffic Blocks.

Provincial motor cyclists seldom encounter traffic hold-ups so extensive as those which occur in London. Recently a member of *The Motor Cycle* staff found himself held up by the kerb just opposite the door of a well-known city accessory store, stopped his engine, went in and bought two chain links, returned and restarted just as the traffic moved on again.

Anglo-Dutch Trial.

As already announced in *The Motor Cycle*, the annual Anglo-Dutch motor cycle trial will be held in Holland from Friday, September 15th, to Monday, September 18th, inclusive. The British team will be selected and the detail arrangements made by the Eastern Centre of the A.C.U., and the British competitors and officials will journey to Holland on Thursday, September 14th. The Dutch motor cyclists are preparing a series of social entertainments for the British representatives.

The Popular Motor Cycle.

There were very few motor cycles in their garages during last week end, judging from the number on the roads.

Police Activity.

A correspondent informs us that there is police activity at Nether Wallop, between Andover and Salisbury.

Army Motor Cycles.

There are now 2,415 motor cycles in the control of the War Office, while in 1914 there were only 24. In the Royal Air Force the motor transport section has 512 motor bicycles and 316 sidecars.

Belgian Grand Prix Surprise.

The A.C.U. has received an official letter from the authorities responsible for the Belgian Grand Prix to the effect that Alec. Jackson, the Sunbeam rider who came in first in the race, was disqualified for changing a sparking plug.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Obstruction by Tractors.

Drivers of heavy tractors should note that one of their fraternity the other day was fined £4 and costs at the Buntingford Petty Sessions for obstructing the passage of a motorist who wished to pass him on the highway between Barkway and Hare Street.

A Motor Cyclist Author.

John Long has just published a novel by a motor cyclist author—John L. Carter. Its title is "Come Day—Go Day," and at least one chapter is full of mechanical matters of particular interest to the motor cyclist. Some day perhaps John L. Carter will give us a real motor cycling novel, and if he attains the same standard of humour as is revealed in "Come Day—Go Day" it will stand more than a sporting chance of being a best seller—among motor cyclists at least.

Light Traffic.

Two pedal cyclists riding side by side are as difficult to pass on the road as a motor coach.

Family Sidecars.

There is a marked increase in the use of double-seated sidecars, occupied apparently by parents who have purchased machines which their sons—and sometimes daughters—drive.

Picnics in the Wet.

The inclement weather of this summer has not deterred the family sidecar party from enjoying its midday picnic. A waterproof tent is now coming to be recognised as an essential part of sidecar equipment.

A Mobile Caterer.

Last week-end we saw a sidecar with a trailer. We quite expected to find that the latter was a portable caravan. When it was "opened out," we were invited to have a "cup of tea, price 3d."—a good idea and one appreciated by the fair sex.

Undesirable Pyrotechnics.

Why do some riders allow the exhaust systems of their machines to become choked with carbon and soot? At dusk machines are sometimes seen leaving a rocket-like trail of glowing sparks in their wake.

A Reminder to Parents.

It is a matter for regret that quite a number of thoughtless parents take out their young children in sidecars without providing a screen to protect them from grit and dust. Frequently outfits may be noticed on which the lady of the party is comfortably accommodated behind a screen, but a juvenile sits before it.

Pillion Riding.

Replying to a question in the House of Commons, the Secretary of the Ministry of Transport, Mr. Neal, said that he had no evidence that the number of accidents due to pillion riding was increasing, and that he did not think there was sufficient ground to justify legislative action.

Youthful Riders.

Apropos of Col. Brereton's article in these pages on "Motor Cycles for Boys and Girls," and the correspondence which followed, it is noticeable that fully 90 per cent. of the large number of youthful riders on the road to-day are among the most careful and considerate users of the highway.

Hand-signalling Extraordinary.

A reader tells us that while riding behind a large American car, nearing some cross-roads, the word "Left" appeared on a device over the rear number plate, and simultaneously a hand shot out from the off-side of the car; to crown this, the driver accelerated and kept straight on his original course!

Feminine Fashions.

The mere male will no doubt have noticed that lady sidecar passengers are this year wearing large hats in lieu of the leather cap or Tam o' Shanter once so popular. Our passengers inform us that the change is not entirely due to fashion, but that, with an efficient screen, the large brim shades the eyes and prevents headache.

Tea in Thermos Flasks.

A picnic basket tip is to carry milk for the tea in the Thermos, in a bottle; if mixed in the first place, the cup of tea loses its refreshing qualities.

Pottering in London.

Not the least enjoyable evening rides for the London motor cyclist is a potter through the quiet streets which are so congested during business hours.

A New By-pass Road.

Rapid progress is being made with the new relief road running between Chiswick and Staines. This road, constructed with the object of relieving congestion on the Chiswick — Brentford — Hounslow route out of London, is constructed throughout of asphalt, and is of unusual width. It is estimated that the work will be completed two years hence.

The Latest in Sidecar Equipment.

In the specially made dash of a *de luxe* sidecar recently seen on the road was a shelf containing a neat array of books. This sidecar library included "Motor Cycle Reminiscences," by Ixion; "Motor Cycles and How to Manage Them," "Tracing Motor Cycle Troubles," "The Motor Cycle Route Book," "Hints and Tips for Motor Cyclists," several of Charles G. Harper's works, a log-book and three novels.

Eastern Danger Spots.

There is a lack of road warning signs in the Eastern Counties. According to correspondents, Low Hill, near Royden, Essex, is "most dangerous," and so is the right-hand turn in the village of Weeley, between Colchester and Clacton; the former is unposted; the latter is so bad that the ordinary warning signal is useless.

Musical Two-Strokes.

Why does a two-stroke engine alter its exhaust note to a sharp, high-pitched "twanging" sound while fourstroking? Perhaps some two-stroke expert can explain.

Tracing Troubles.

It is not very often that one finds a motor cyclist by the roadside studying the maker's book of instructions, yet frequently one sees car owners diagnosing trouble by aid of the printed word.

Fire!

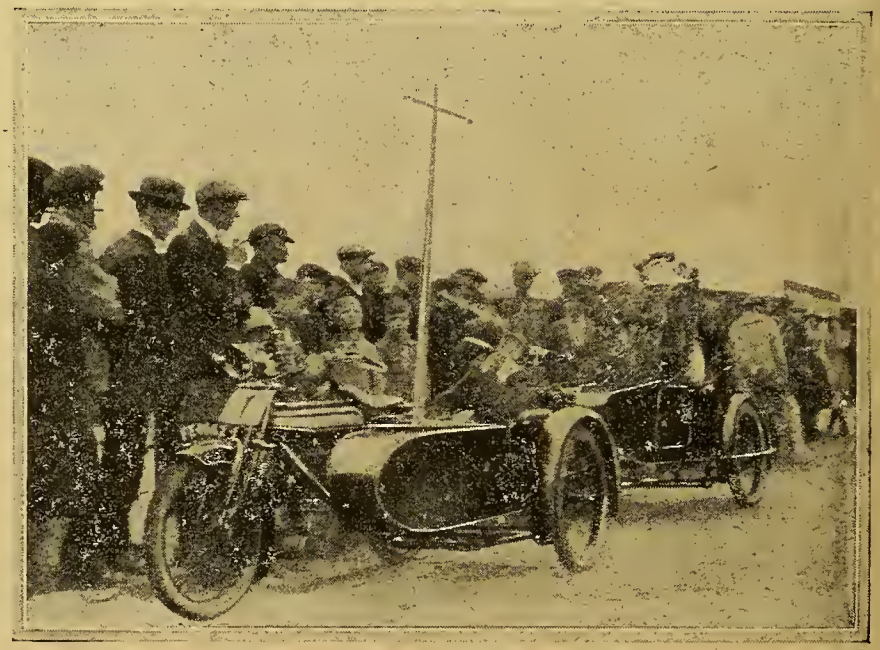
A pillion rider, by dint of striking many matches, managed to relight an extinguished rear lamp without having to call a halt. But "what was gained on the swings was lost on the roundabouts," for he had to dismount with alacrity when he found his nether garments smouldering!

Silent Brooklands.

When an L. and S.W. express train rattles along the railway straight at Brooklands, it is impossible to hear the cars and motor cycles running in the vicinity. Aggrieved track-men wonder if there is anything particularly soothing in a steam locomotive's roar and clatter to the Weybridge residents who have complained of the motors' noises.

Expert Evidence!

At the Leicester County Court "an expert in motor cycles" stated that it was a very risky thing to start a motor cycle by running along with it. Such a silly statement would not matter much if it had not been responsible for a motor cyclist being found guilty of negligence when his machine crashed into a shop window, judgment admittedly being swayed by the "expert's" opinion.



A sign of the times at the Bootle motor carnival. The owner of this Norton outfit—evidently a wireless enthusiast—conceived the idea of fitting his sidecar with a wireless receiving set instead of decorating it in the more orthodox way.

Yorkshire Holiday Event.

Fourteen solo and four passenger outfits started in the annual York-Edinburgh-York trial of the York M.C., and twelve and two respectively finished on Monday night. There were no serious hills, and the weather conditions were favourable.

The Other Japs.

The Japanese are taking up motor cycling with considerable enthusiasm, but, according to Mr. H. C. Lepper, the secretary of the Yokohama M.C.C., they favour, for some unknown reason, heavy American machines, which are much too high to allow the riders to touch the ground with their feet. Many spills and bruises are the result.

Mrs. Janson's "Double-twelve" record.

At an informal gathering at the Langham Hotel in celebration of Mrs. Janson's double-twelve hour record on the 249 c.c. Trump-Jap, that intrépid lady said that Col. Stewart of Trump Motors, Ltd., had confessed to thinking so little of the possibility of a woman completing the distance that he just handed over an ordinary stock machine for the ride.

Touring Equipment Overseas.

The motor cyclist who tours the British Isles frequently wonders what his Overseas brothers do in the matter of equipment. In this country there is generally a garage within five miles, or at the worst twenty miles. The tourist in South Africa, Australia, and New Zealand has to give closer attention to the question of spares and supplies. Perhaps some of our many overseas readers will let us know the main items of their equipment when on tour.

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"Hon. Sec." Translated.

We suspect that a native typist was responsible for the phrase "honorable secretary," in a letter received from the Far East.

750 c.c. Cycle Car Records.

On Wednesday, Augnst 2nd, the little A.V. driven by A. E. Taylor made a successful attack on Brooklands records. As the A.V comes under the F.I.C.M. definiton of a cycle car, the records attempted were those of Class J.1 (under 750 c.c.). From a flying start the kilometre was covered at a speed of 116.09 k.p.h. (72.10 m.p.h.), while the mile was covered at 71.43 m.p.h., and the five miles at a speed of 69.62 m.p.h. These are class records, and for world's records the mean speeds of both directions have to be considered, these being 115.34 k.p.h. or 71.67 m.p.h. for the kilometre, and 70.89 m.p.h. for the mile

Observers for the Six Days.

Local A.C.U. Centres have been asked to provide a complete staff of marshals and observers for each section of the course of the forthcoming Six Days Trials, and unattached motor cyclists willing to help should communicate with the nearest Centre Secretary. The addresses are: Yorkshire, Mr. W. A. Dovener, 26, Beamsley Road, Frizinghall, Bradford; East Midland, Mr. K. S. Topping, 64, Frederick Street, Loughborough; Cheshire, Mr. W. G. Hill, Hill's Garage, The Newgate, Chester; Midland, Mr. E. W. Winckle, 105, Colmore Row, Birmingham; North Wales, Mr. J. H. Davies, Bryn Golen, Ruthin; East South Wales, Mr. A. B. Adams, "The Croft," Clevedon Road, Newport, Mon.; Western, Mr. John Howell, 12, The Foregate, Worcester; South Midland, Mr. E. J. Pittock, 57, Gap Road, Wimbledon, S.W.

INTERNATIONAL TRIALS IN SWITZERLAND.

Teams from Britain, Sweden and Switzerland in Six Days' Contest. Forty-five Entrants Representing Five Countries.

IN England we have always been accustomed to judge the importance of a trial by the number of entries received.. Rather should we ascribe importance to the quality of the entries, and to the lessons the trial teaches.

For the International Trials there are but 45 entries. More is the pity; but our British representatives are first-class riders, who are mounted on the best machines the world can produce.

Included in our team we have two T.T. winners, who are pitted against the best Swiss motor cyclists who won the Cup in 1920, and who held it in 1921 against the strongest team we could put forward; moreover, they are competing on their own soil, and so have the advantage of our men, since no one in our team knows a yard of the very difficult course, which has not its equal in the British Isles.

Among the other British riders not in the team, Eric Williams (A.J.S.), and Hugh Gibson (Raleigh) rode last year, and so are conversant with the difficulties and peculiar nature of the country.

Whereas last year there were only two international teams, this year there are three, the third being that from Sweden. The Swedes have proved themselves to be true sportsmen, and sent their Husqvarna sidecar outfit by road, taking four days from the port of landing in Germany. The three international teams were composed as follows:—

ENGLAND.
G. S. Davison (249 Levis).
A. Bennett (492 Sunbeam).
F. W. Giles (800 A.J.S. sc.).

SWITZERLAND.
J. Morand (248 Condor).
A. Robert (496 Motosacoche).
E. Gex (994 Motosacoche sc.).

SWEDEN.
B. Malmberg (494 Husqvarna).
G. Göthe (494 Husqvarna).
P. Swanbeck (995 Husqvarna sc.).

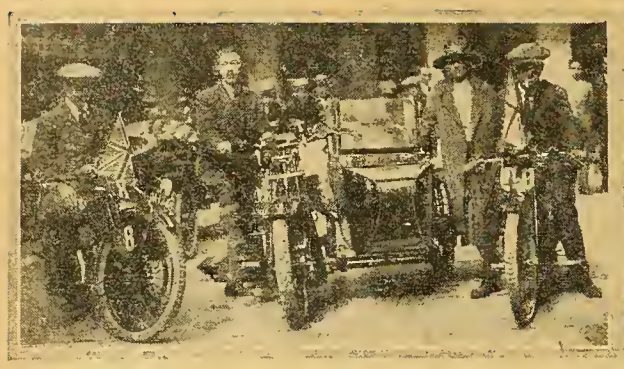
At the time of starting the entry list was composed of the following:—

H. Dinkel, Swiss (248 Condor).
J. Morand, Swiss (742 Condor).
V. Pittet, Swiss (248 Condor).
A. Clerc, Swiss (346 Condor).
J. Volzenlogel, French (346 Condor).
L. Divorne, Swiss (248 Condor).
P. L. Hurrelbrink, Dutch (498 Sarolea).
A. Bennett, English (492 Sunbeam).
J. Robmann, Swiss (999 Frera).
G. S. Davison, English (249 Levis).
E. Gex, Swiss (994 Motosacoche sc.).
F. Franconi, Swiss (496 Motosacoche).
A. Souvairan, Swiss (994 Motosacoche sc.).
L. Bouvin, Swiss (994 Motosacoche).
L. Pélissier, Swiss (994 Motosacoche).
A. Robert, Swiss (496 Motosacoche).
A. Rothenbach, Swiss (987 Harley-Davidson).
O. Sutter, Swiss (987 Harley-Davidson).
A. Leu, Swiss (987 Harley-Davidson).
B. Malmberg, Swedish (494 Husqvarna).
G. Göthe, Swedish (494 Husqvarna).
P. Swanbeck, Swedish (995 Husqvarna sc.).
O. Lambert, French (696 Viratelle).
D. Senning, Swedish (999 Husqvarna).
F. Egger, Swiss (499 Triumph).
Hugh Gibson, English (348 Raleigh).
E. Borsetti, Italian (348 Raleigh).
E. Sydney, English (348 Raleigh).
C. Laeser, Swiss (965 New Imperial).
A. Dement, Swiss (244 New Imperial).
E. Desfeux, Swiss (292 New Imperial).
G. Fuhrer, Swiss (994 Motosacoche).
R. Gay, Swiss (986 B.S.A. sc.).
W. E. Clarke, English (653 Quadrant).
Clifford Wilson, English (653 Quadrant).
L. Meyer, Swiss (994 Motosacoche).
F. W. Giles, English (800 A.J.S. sc.).
Erie Williams, English (348 A.J.S.).
N. F. Harris, English (348 A.J.S.).
Lt. Glen Kidston, R.N., English (499 Sunbeam).
G. L. Hamer, Dutch (736 Douglas).
A. Dunand, Swiss (499 Sunbeam).
A. Pictet, Swiss (1,098 Hinstin cycle car).
A. Bertschi, Swiss (499 Triumph).
E. Markiewicz, Swiss (749 Benjamin cycle car).

Even though the French who live on the Swiss border did not send a team, two French riders were entered. There were two Dutchmen, and one Italian, while practically one-fourth of the riders were English. As last year the examination was in the Electoral buildings, and was carried out with characteristic thoroughness. Great attention was paid to silence, and many a rider had to "fish-tail" the end of his silencer.

Scenes at the Examination.

Two days were taken up in the examination of the machines, which with their riders were weighed, while all-important portions, such as crank cases, wheels, frames, and tanks were sealed.



TWO OF THE TEAMS IN THE INTERNATIONAL SIX DAYS TRIAL.

Competing for Britain: A. Bennett (492 c.c. Sunbeam), F. W. Giles (800 c.c. A.J.S. sidecar) and G. S. Davison (247 c.c. Levis).

Swedish representatives' debut: they are all mounted on Husqvarnas, Sweden's leading motor cycle.

Three British club teams are competing for the Team Prize—the Worcester and District M.C.C. (F. W. Giles, Eric Williams, and H. F. Harris); the Bradford and District M.C.C. (E. Sidney, Hugh Gibson, and Clifford Wilson): and the British Motor Cycle Racing Club (G. S. Davison, A. Bennett, and W. E. Clark).

FIRST DAY'S RUN: GENEVA—CHAUX DE FONDS (124 MILES).

Last Thursday morning broke overcast and fresh, but with every prospect of fine weather.

The day's run was an easy one, just intended to introduce the riders to the type of country they would have to traverse during the remainder of the trial. It is not surprising, therefore, that all who started reached their destination to time.

The competitors were started in order according to a draw, and curiously enough the principal British riders got away first. F. W. Giles (A.J.S. sc.), then Hugh Gibson on the Raleigh, A. Bennett on his spotless Sunbeam, and G. S. Davison on his not quite so spotless Levis. "Truly," as a Swiss official remarked to us the day before, "you have sent us your 'aces.'"

Quite a remarkable feature of the day's journey was the excellence of the roads. On from Geneva the route lay along the shores of the beautiful lake, over a smooth, well-tarred highway for some 12 miles until Nyon was reached; it then turned abruptly "inland" up into the Swiss Jura, a beautiful country with wooded hills rarely raising their tops above the tree-line but over roads often exceeding Ben Nevis in altitude.

Once the blue-green waters of the lake had been left the competitors started to climb; first over the four miles climb up the Col de St. Cergue, rising nearly 2,000 feet but over smooth, gradually rising roads with easy bends. Then the road flanked the sides of the mountains overlooking the lake, descended a little, and then started to rise—the beginning of the Col de Marchairuz—the first observed hill. This climb was a long one, well over four miles of gradient, easy at first but with a final hairpin of about 1 in 7 on the inside. Both the British team and the other British riders looked perfectly happy. Giles on the 800 c.c. A.J.S. sidecar, with his wife as passenger, looked as if he were on a holiday tour. Our two "aces," Bennett and Davison, were seemingly just as content, while the Raleighs and Quadrants made light work of the hill. Naturally such a climb in no way worried the Swiss-born Condors and Motosacoches, while the Swedish Husqvarnas made excellent ascents.

A steep winding descent through the pretty uplands of the Juras followed, leading to the charming little Lac de Joux, on the road round which there was recently held the first Swiss motor cycle Grand Prix.

As the lake is approached two valleys appear, and the competitors, to their surprise, were directed up the one through which there appeared to be no exit. It was a short and pretty climb through almost a gorge, followed by a steep winding descent to Vallorbe, the luncheon stop.

Though one or two of the higher corners of the observed hill had been rough, the morning's roads were excellent, but after lunch came the ascent of Ste. Croix, which occupied a quarter of an hour, was somewhat steep and rather rough. The competitors then descended to Neuchâtel, getting a glimpse of its pretty lake, and made a long winding climb up to the Vue des Alpes, whence on a clear day can be seen the whole range from Mont Blanc to the Bernese Oberland. Needless to say, it was misty! The climb presented no difficulties, and on the summit we were interested to chat with a police lieutenant and his sergeant who arrived on a Motosacoche sidecar outfit.

A five miles descent brought the competitors to Chaux de Fonds, where the day's run terminated. All who started arrived without the loss of a single mark, despite several secret checks.

SECOND DAY'S RUN: CHAUX DE FONDS —ZURICH (174 MILES.)

Friday's run was considered to be the most difficult of any. It had not the enormously long climbs of Saturday's route, but judged from English standards the hills were both long and severe, averaging from three to four miles and comprising country roads of a nature which we call "colonial."

Despite blue skies, a hot sun and a cool breeze to temper its heat—in a word, ideal weather—the severity of the course told its tale of victims, and three were removed from the list of survivors. British and Swiss teams were both intact, though of the latter Robert (Motosacoche), the champion rider of Switzerland, was caught out at a secret control, the accuracy of the timing of which was indisputable, and so lost marks. During the second day, therefore, the British team was leading; still, with four more days to go much could happen. Of the gallant Swedes, Captain Svanbeck (Husqvarna) struck a boulder with his gear box and had to retire, L. Divorne (248 Condor-Swiss) and W. E. Clark (653 Quadrant) had to retire, while several lost marks.

(To be concluded.)

CROYDON HILL CLIMB.

Side-valve Single Makes Fastest Solo and Sidecar Times at Marlpit Hill.

MARLPIT LANE, Coulsdon, was on Saturday last the scene of a poorly orted but nevertheless interesting hill climb, open to members of the Croydon and District M.C.C.

A. Attwood (548 Hawker) made fastest time in both the solo and sidecar classes, his time in the former being 31⅘ seconds for the flying half mile.

Time results of the various classes were as follows:—

350 c.c. Solo.

Private Owners.—1, N. Peet (349 A.J.S.), 38⅖s.; 2, M. Jones (349 Douglas), 45⅕s

Trade.—1, N. Peet (349 A.J.S.), and C. M. Fairweather (250 Coulson), 37⅖s., tied.

600 c.c. Solo.

Private Owners.—1, G. Symonds (499 Duzmo), 34⅖s.; 2, N. Peet (349 A.J.S.), 37⅗s.

Trade.—1, A. Attwood (548 Hawker), 32⅖s.; 2, G. Symonds (499 Duzmo), 33⅕s.

Unlimited Solo.

Private Owners.—1, G. Symonds (499 Duzmo), 32s.; 2, I. P. Riddoch (548 Hawker), 32⅖s.

Trade.—1, A. Attwood (548 Hawker), 31⅖s.; 2, I. P. Riddoch (548 Hawker), 33⅖s.

600 c.c. Sidecars.

1, A. Attwood (548 Hawker sc.), 45s.

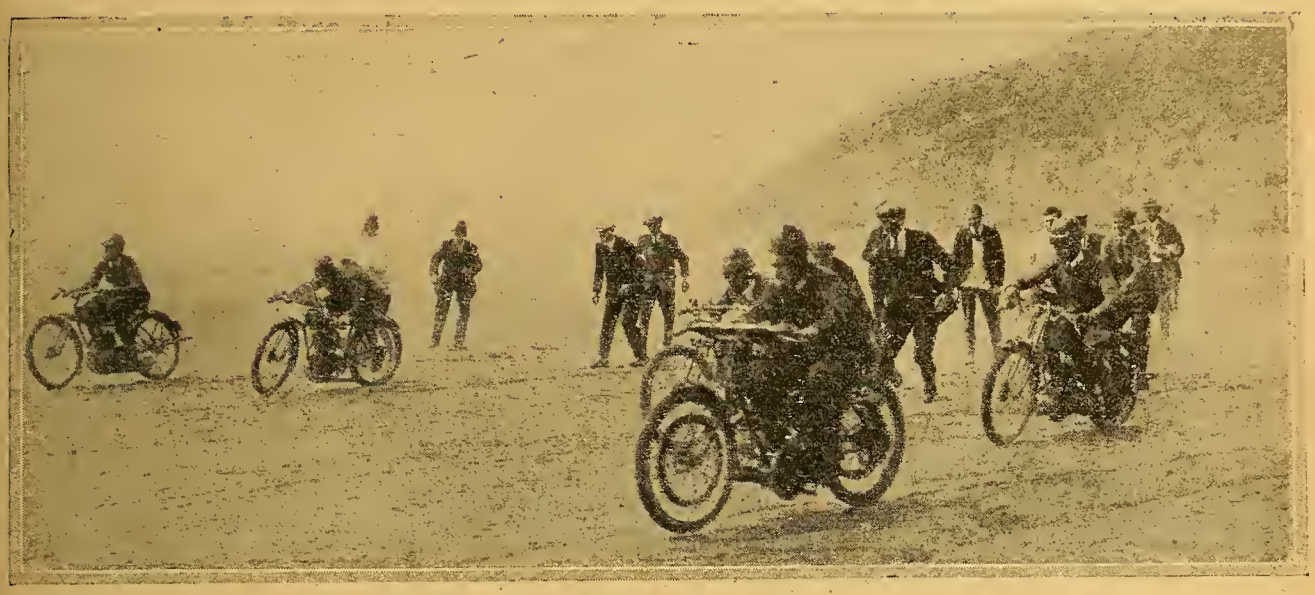
Unlimited Sidecars.

Private Owners.—1, W. Bucknell (976 Matchless sc.), 48⅕s.; H. S. Jerome (398 A.B.C.), 53⅖s.

Trade.—1, A. Attwood (548 Hawker sc.), 45⅕s.; A. E. Chittenden (976 Brough-Superior sc.), 49⅕s.

BANK HOLIDAY MEET AT PENDINE.

West Wales Centre Open Speed Trials provide Interesting and Varied Racing.



Competitors getting away in the 350 c.c. 4 mile race. Wet sand made the process an uncertain one.

ONE came away from the open speed trials at Pendine on Monday reassured that motor cycle racing *is* the finest of all sports.

Everything combined to make the day an enjoyable one—sunshine, a vast expanse of not-too-wet sand, satisfactory fields, thrilling racing, and—George Dance. Not that the Sunbeam wizard, now happily recovered from his accident at Catsash, monopolised everything—there were other exceptionally good men on good machines there—but he certainly won all the events in which he entered, including most of the Welsh championships for this year.

There was no split seconds timekeeping, formula calculating or handicapping, nor an endless procession of solitary riders whizzing by at irregular intervals; each class was a race—usually either twice or five times round a two-mile there-and-back course—and everybody started at once, or as nearly as readily-sinking wheels permitted.

Welsh Championships.

Championship events came first, all over the full ten miles except the lightweights and the sidecars.

Of the seven "275 c.c." starters, W. Edwards (Rex Acme) lost least time after the flag dropped, but Morris Isaac (New Imperial) quickly ousted him from the leading position, and Edwards had to be content with a second place, hardly won from L. I. Davies (Diamond) on the last lap.

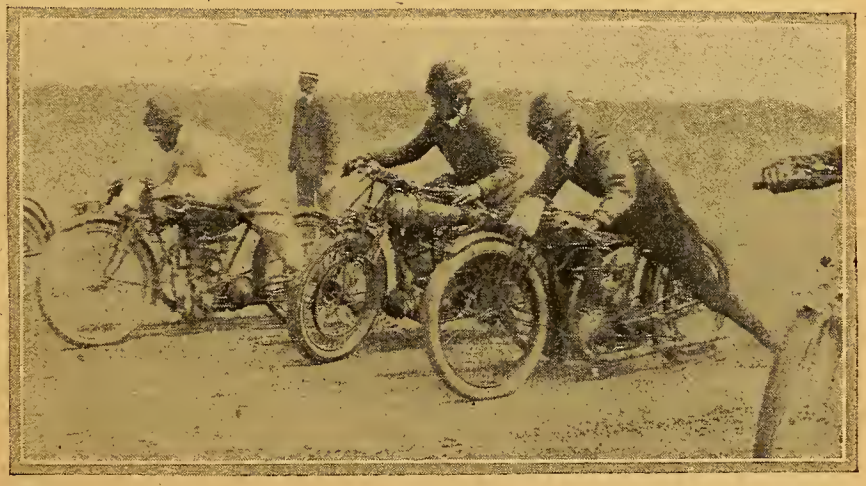
275 c.c. Championship (4 Miles).
1. Morris Isaac (249 New Imperial).
2. W. Edwards (249 Rex-Acme).
3. L. I. Davies (249 Diamond).
Winner's time = 4m. 43⅕s.

There was a like number of competitors in the "Junior" race, and when L. I. Davies (Cotton), W. Edwards (o.h.v. A.J.S.) and C. Sgonina (own-conversion o.h.v. A.J.S.) completed a lap almost neck-and-neck, a close finish seemed likely. However, the Cotton gradually lost ground, and Sgonina's machine was suffering from oil on the clutch, allowing the other A.J.S. to increase its lead steadily to the finish. Posters on the course advised us to "watch the Sheffield-Henderson"; as it turned out, we could not avoid doing so.

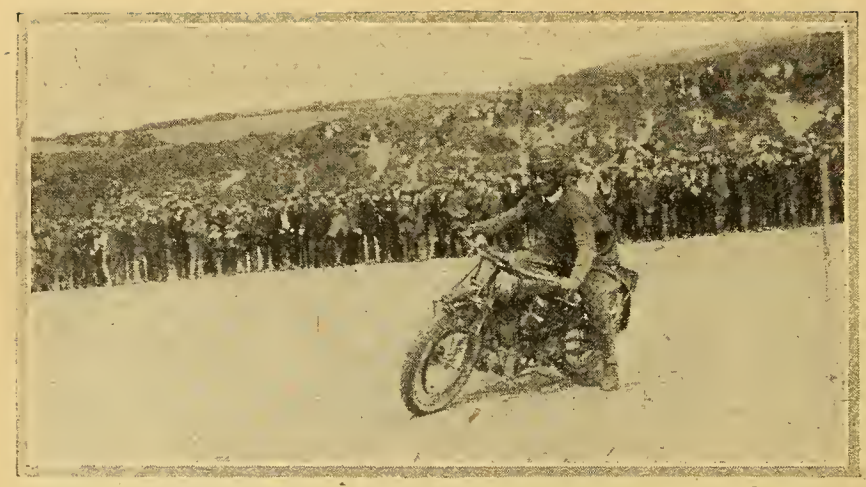
T. J. Thomas' machine of that ilk was at least as fast as any, but his skid-cornering was lurid to the extreme. It appeared to be a case of more haste less speed.

350 c.c. Championship (10 Miles).
1. W. Edwards (349 A.J.S.).
2. A. Bullock (349 Weatherell).
3. T. J. Thomas (349 Sheffield-Henderson).
Winner's time = 10m. 11s.

C. P. Wood (Scott Squirrel), H. Hassall (o.h.v. Norton), Sgonina (Sgonina-Special), and Dance (o.h.v. Sunbeam) were obviously the people who mattered in the 560 c.c. event, and although Dance was possibly most fancied, any one of the other three was entitled to consideration. Wood was left at the post with an oiled-up plug, and for four laps Dance and Hassall hurtled round together, with Sgonina never hopelessly behind. Dance steered an uncannily close course at the corners, but Hassall, if sometimes wider, was not one whit slower in getting round. Then, half-way up his last lap, the Wolverhampton man really opened out, led round the last corner, and sped down the straight about 100 yards in front.



Waiting for the starter's flag to drop in the championship sprint: from left to right—C. Sgonina (Sgonina-Special), Handel Davies (Brough-Superior) and George Dance (Sunbeam).



Handel Davies and the Brough-Superior proved an invincible combination in the closed events; and was always well placed in the championships. Davies cornering when leading the field in the unlimited four mile race.

His speed for the ten miles, including nine acute turns, equals 63.27 m.p.h., which he bettered slightly in another class.

560 c.c. Championship (10 miles).
1. G. Dance (499 Sunbeam).
2. H. Hassall (490 Norton).
3. C. Sgonina (Sgonina Special).
Winner's time=9m. 29s.

He had a slightly more difficult task in the unlimited event. for Wood had overcome his plug trouble and H. Davies (Brough-Superior) turned out to be a very speedy dark horse. Davies led first time round, followed by Dance, Wood, and Hassall, but he lost his position on the turn; it was Wood, Dance, and Davies for the following two laps—Wood's corner work being wide but amazingly sure and fast. Entering the last lap Dance had dropped to third, but, sure enough, less than two minutes later the craning spectators saw what they had more than half expected—the Sunbeam whizzing across the line at 80 m.p.h., with the Brough-Superior and the Scott relegated to second and third. There was a storm of applause. George Grinton, the Edinburgh Harley rider and Scottish "Heavyweight" champion, was hampered by gear box trouble in this race, or possibly things might have hummed even more.

Unlimited Championship (10 miles).
1. G. Dance (499 Sunbeam).
2. H. Davies (976 Brough-Superior).
3. C. P. Wood (481 Scott).
Winner's time=9m. 1⅘s.

A Right-hand Sidecar.

Although the open sidecar race did not actually come next, it nevertheless deserves description at this juncture. Wood, Grinton—with only top gear in action—Davies (Brough-Superior), and F. Bush (Harley-D.) were the starters. Since all the turns were left-hand ones the Scott's right-hand sidecar was distinctly advantageous, but the Brough-Superior, with a conventional attachment, kept just ahead until the finishing straight. Then the big twin oiled up a plug and coasted-in in neutral many yards behind the humming two-stroke. It was a pity, for the finish most assuredly would have been keen.

Unlimited Sidecar Championship (4 miles).
1. C. P. Wood (481 Scott sc.).
2. H. Davies (976 Brough-Superior sc.).
3. F. Bush (998 Harley-Davidson sc.).
Winner's time=4m. 18⅗s.

As last year, the West Wales Centre closed four-mile events, which followed, were as interesting as the open events, this despite the fact that all the competitors were genuine members of local clubs.

After a false start in the 300 c.c. race, all six competitors left the line as one man—an impressive sight. At half-distance Morris Isaac (New Imperial) and L. I. Davies (Diamond) cornered together, only occupying the space a sidecar outfit would have taken up. For a moment it almost seemed that they would crash. Still dead level, they screamed round for the second and last time, and in that formation they crossed the finishing line—a dead heat.

300 c.c. Closed (4 miles).
1. M. Isaac (249 New Imperial) and L. I. Davies (249 Diamond), tied.
3. W. Edwards (249 Rex Acme).
Winner's time=4m. 52s.

But slightly less sharply contested was the 350 c.c. affair. This time it was Sgonina (A.J.S.-Special) *versus* L. I. Davies (Cotton-Blackburne). Davies led until the second about-turn, when his rival gained fully 10 yards by a well-judged, neat loop, retaining the resulting advanfage, but hardly gaining on it, until the end. T. J. Thomas (Sheffield-Henderson) was never dangerous, but made a good third.

350 c.c. Closed (4 miles).
1. C. Sgonina (349 A.J.S.-Special).
2. L. I. Davies (349 Cotton-Blackburne).
3. T. J. Thomas (Sheffield-Henderson).
Winner's time=4m. 1⅘s.

Nine started in the 600 c.c. race, but Dr. Lindsay (Norton) early forged ahead, winning by over 300 yards.

600 c.c. Closed (4 miles).
1. Dr. A. Lindsay (490 Norton).
2. A. W. Nicklen (492 Sunbeam).
3. S. Bush (490 Norton).
Winner's time=3m. 52s.

Eleven "unlimited" machines lined up, incidentally all 500 c.c. mounts except Bush's Harley-Davidson and H. Davies' Brough-Superior. Davies steered his big machine in an exceedingly capable fashion, and all Dr. Lindsay could do was to hang grimly on to second place, Bush finishing less than 100 yards behind.

Unlimited Closed (4 miles).
1. H. Davies (976 Brough-Superior).
2. Dr. A. Lindsay (490 Norton).
3. F. P. Bush (998 Harley-Davidson).
Winner's time=3m. 41⅘s.

Interspersed among the later races were one-mile sprints for each capacity class. The detailed results, below, speak for themselves. Dance won his event without difficulty; Sgonina's mount beat the T.T. A.J.S.; Harris, Dr. Lindsay, and Davies were also distinctly quicker in accelerating than their competitors. Despite the short distance, the numbers of the first three "unlimited" machines were artistically chalked up on the scoring board before the rest of the field flashed past!

One-Mile Sprints.

Championship Unlimited Class.—1, G. Dance (499 Sunbeam); 2, C. Sgonina (Sgonina Special); 3, H. Davies (976 Brough-Superior).

300 *c.c. Solo* (closed).—1, H. Harris (249 New Imperial); 2, L. I. Davies (249 Diamond); 3, W. Edwards (249 Rex-Acme).

350 *c.c. Solo* (closed).—1, C. Sgonina (A.J.S. Special); 2, W Edwards (349 A.J.S.); 3, L. I. Davies (349 Cotton-B.).

600 *c.c. Solo* (closed).—1, Dr. A. Lindsay (490 Norton); 2, A. W. Nicklen (492 Sunbeam); 3, I. Parker (492 Sunbeam).

Unlimited Solo (closed).—1, H. Davies (976 Brough-Superior); 2, F. Bush (998 Harley-Davidson); 3, Dr. A. Lindsay (490 Norton).

There were two more sidecar races, as under, the feature of the second being the plucky fight of the Douglas against the much bigger Brough-Superior.

750 c.c. Sidecars Closed (4 miles).
1. V. Anstice (494 Douglas sc.).
Winner's time=5m. 11⅕s.

Unlimited Sidecars Closed (4 miles).
1. H. Davies (976 Brough-Superior sc.).
2. J. Anstice (494 Douglas sc.).
Winner's time=4m. 42⅕s.

A light car event and a grotesquely comic race for Ford cars concluded a meeting that provided varied sport for a big, but not record, crowd of spectators, and at least one win apiece for almost all the most popular entrants.

GLASGOW OPEN SPEED TRIALS.

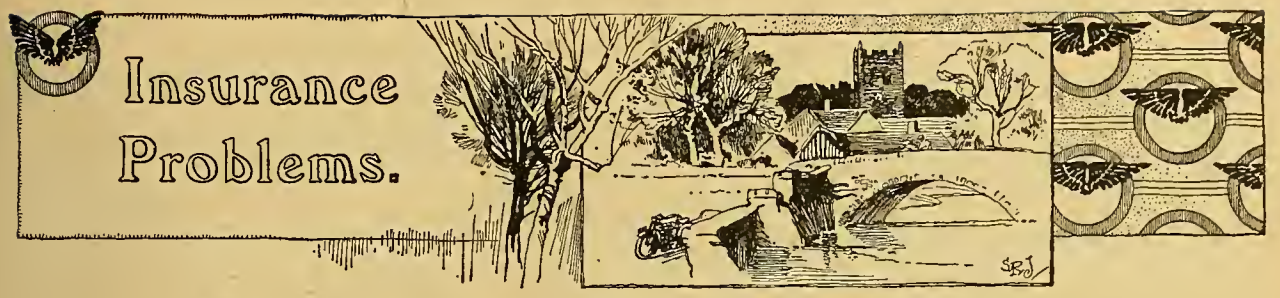
67 m.p.h for the Half Mile from a Standing Start. 175 Competitors.

ORGANISED by the Scottish Western Motor Club, Saturday's speed trials were open to both cars and motor cycles, and by permission of the Renfrew authorities were held over a straight half-mile of road at Inikinnan.

The Scottish Western people, who have proved themselves experts at running these events in the past, excelled themselves on Saturday. They electrically timed 175 competitors over the course of half a mile without a protest.

Fastest time of the day was made by A. L. Downie, of Edinburgh, on his o.h.v. A.J.S.; he covered the half-mile from a standing start at the amazing speed of 67 miles per hour. He, however, had no speed to spare in winning this coveted honour, his time being only fractions of a second better than Geo. King (another A.J.S. rider) and J. M. Philips (976 Dot).

No one man had it all his own way this year amongst the motor cyclists, but Geo. Kelly (A.J.S.), G. C. Walker (New Gerrard) and A. H. Alexander (Douglas) all won three classes each.



A Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Paying Premium on an Amount Never Recoverable.

Mr. J. L. Sailsbury, Glasgow, writes: "When one buys a new outfit the usual plan is to give the full retail price when filling up the form, and consequently paying the highest possible premium. Considering that the price of any machine depreciates 25 per cent. immediately it has been on the road, what sense is there in paying a premium on an amount one knows will never be paid out in case of theft?"

This question is interesting, because it brings to light the other side in connection with total loss settlement. However, depreciation to the extent named by our enquirer would not be enforced by any insurance company simply because the machine had just gone on to the road. Most companies would consider that for the first month or two, unless there were decidedly aggravating circumstances, no depreciation at all, or at any rate very little, had taken place. Indemnity is required by the motor cyclist, and it is up to him to see that he places himself in such a position as to obtain it.

Insured Twice.

Mr. W. C. Smith, Farmouth, says: "I am insured with a daily newspaper which includes in its policy 'Accidents whilst riding a Motor Cycle.' Would it pay out if it knew I was insured with a company covering motor cycle accidents?"

So far as we are aware, a company responsible for the accident insurance coupon which is now such a common feature with daily newspapers would not be concerned whether a claimant had a motor cycle policy covering similar accidents, neither would the company issuing the latter policy be concerned in any insurance benefits derived as the result of the newspaper coupon insurance.

* * * *

A Lesson for the Uninsured.

Mr. R. W. Atkins, Middlesbrough, writes: ". . . The shed in which my sidecar outfit was garaged was burnt to the ground and my machine absolutely destroyed. The owner states that on the night before the fire he saw that the place was all right and doors locked, but I know that is not true. The building was insured, but not the contents, neither was there a notice exhibited stating that customers left their machines there at their own risk, nor was any mention made to that effect when I arranged to garage my outfit there. I had not insured the machine myself, and the owner of the garage refuses to help me in any manner, so I wish to know how I stand, and if it is possible to claim anything from him."

The garage proprietor is not liable for loss sustained through fire unless it can be shown that such fire occurred through negligence, and there is nothing to support this view. Even if it were true that the door was not properly fastened, it could be said that a fire was the natural consequence of such act of negligence.

* * * *

Riding at Brooklands.

Mr. A. F. Atkins, Bournemouth, asks if he is covered should an accident occur whilst driving on Brooklands in the ordinary way and not in an event, race, or an attempt at record breaking.

The usual limit placed in policies covering motor cycles is that the insurance is not effective whilst the vehicle "is being driven in any speed test," so that, provided the insured can satisfy a company that, although the accident occurs on Brooklands Track, yet his purpose was not record breaking or racing, he would be covered by the ordinary policy. In the Six Days Trials, for instance, insured competitors are covered, although they have to make several fast circuits of the track.

* * * *

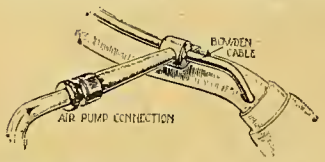
Pillion Riding.

A correspondent "J.J." says: "My motor cycle policy included third party risks up to £1,000 when I first took it out, and in addition I was insured against pillion riding. But when the next premium became due I discontinued the latter part of the insurance. Shortly afterwards I met with a slight accident, and the company says it is not entitled to pay compensation to the third party who is claiming damages, because I had a friend on the pillion seat at the time of the accident. Is this attitude of the company correct?"

You originally insured to include risk whilst a passenger was being carried on the pillion seat, and paid the extra premium for this. On renewal you did not include pillion riding risk, and, presumably, the premium payable was reduced accordingly. An accident has now occurred whilst a pillion passenger was being carried, and under the circumstances it appears quite obvious that this accident does not come within the cover granted by the policy.

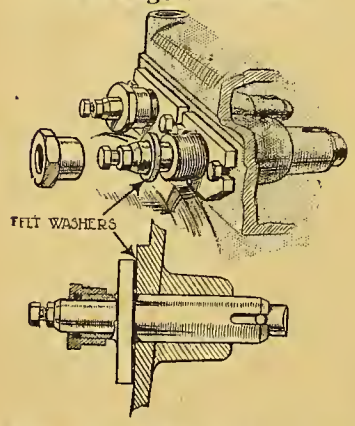
AMONG THE ACCESSORIES

Bowden Wire Lubrication.



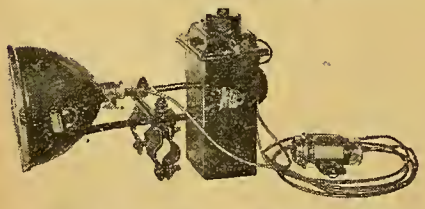
Silkily working controls are ensured by using Lloyd lubricators, the clamp portion of which is intended to be fitted permanently to a bared length of the Bowden cable: then the reservoir is filled with oil which is forced through by air pressure from an ordinary tyre pump. (T. Lloyd, 12, Bridge Street, Manchester.)

Oil Leakage Eliminated.



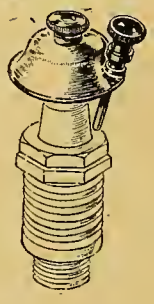
Oil leakage through and outside the tappet guides of old 595 c.c. Douglas engines is minimised by washers and packing glands, the fitting of which is undertaken by Eli Clarke, Cheltenham Road, Bristol, at a cost of 15s.

Self-contained Lighting Set.



Four-volt accumulator, tail lamp and a switch in each connecting plug are included in the W.T. self-contained lighting set marketed by the Service Co., Ltd., 289, High Holborn, London, W.C.2, at £4 17s. 6d.

Three-Purpose Plug Cover.

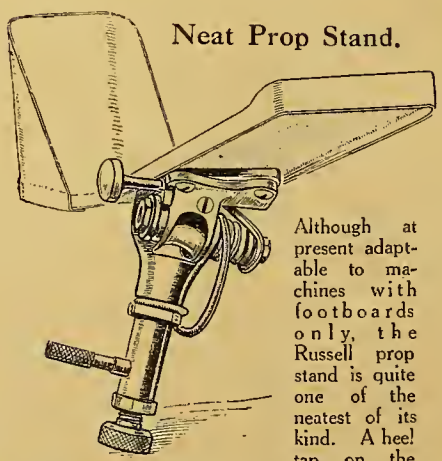


Acting as a radiator for the central electrode and a waterproof cover for the plug, the Fit Quick detachable bonnet also embodies a cut-out plunger useful for locating faulty sparking plugs on multi-cylinder engines. 2s. (The Fit Quick Motor Accessories Co., 68, Rochester Road, Rock Ferry, Cheshire.)

Labour-saving Pump Connection.

Although designed for car tyre valves, the Ideal push-on pump connection is adaptable to motor cycle sizes by inserting a piece of rubber tubing in the nozzle. 2s. (Quickways, Ltd., 30, City Road, London, E.C.1.)

Neat Prop Stand.

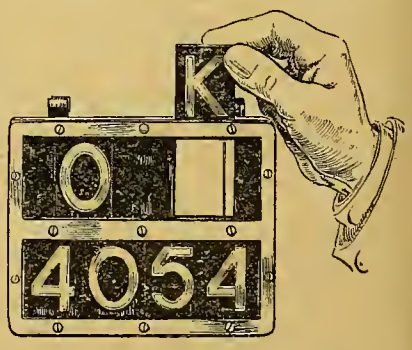


Although at present adaptable to machines with footboards only, the Russell prop stand is quite one of the neatest of its kind. A heel tap on the upper plunger releases a catch which allows it to spring out of action, while it may be brought back into use by foot pressure on the pin screwed into the leg. It locks automatically, has an adjustable prop, and weighs only 18 oz. (J. Russell, 25, Warwick Road, Earl's Court, London, S.W.5.)

Bowden Wire Adjustment.

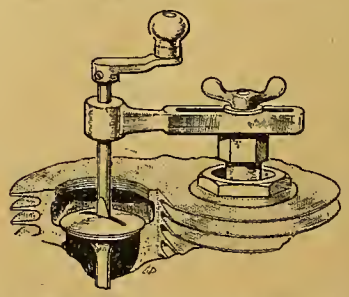
Control wire adjustment is facilitated by the Quickways method, which consists of baring a portion of the cable casing and substituting a sheath of coiled wire in which is threaded a stop, movement of which, of course, takes up slack in the wire. (Quickways, Ltd., 30, City Road, London, E.C.1.)

Built-up Number Plates.



If we ignore the obvious—and illegal—use, the chief advantage of the "Ever Ready" built-up aluminium number plate is that the local agent is able to hold a stock of numbers for use as required, and the customer may thus rely on instant delivery. (Adams Non-Ferrous Metal Co., Forward Works, Legge Street, Birmingham.)

Ensuring Valve Efficiency.

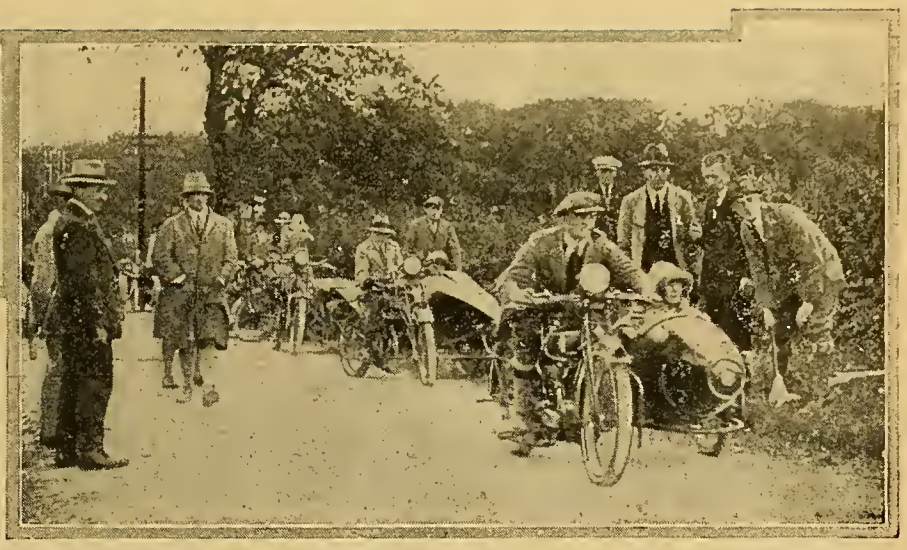


Valve grinding is a much less tedious task if some such tool as the Ewart (above) is used. The adjustable arm permits the brace to be centred and thus equalises pressure on the valve face. (New Ways, Ltd., 132, Middleton Hall Road, King's Norton, Birmingham.)

CLUB NEWS

Week-End Club Events.

Aug. 12th.—Public Schools M.C.C. Club.—Brooklands Handicap.
Aug. 12th.—Surrey M.C. and L.C.C.—Members' Team Trial.
Aug. 12th.—Middlesbrough and District M.C.—Hill Climb.
Aug. 12th.—Coventry Triangle M.C.—Run to Princethorpe Woods.
Aug. 12th.—Atherton and District M.C.C.—Speed Trials.
Aug. 12th.—Gloucester M.C. and L.C.C.—Run to Cotswold Hills.
Aug. 12th.—Sheffield and Hallamshire M.C. and L.C.C.—Hill Climb (Yorks Centre).
Aug. 13th.—West Kent M.C.—President's Cup Competition.
Aug. 13th.—Coventry Triangle M.C.—Run to Bentley Woods.
Aug. 13th.—Bristol M.C. and L.C.C.—Picnic at Brean Down.
Aug. 13th.—Wallington and District M.C. and L.C.C.—Run.
Aug. 13th.—Sheffield M.C.C.—Run to Harrogate.
Aug. 13th.—Ilford M.C.C.—Reliability Trial.
Aug. 13th.—Manchester M.C.—Hill Climb.
Aug. 13th.—Colne and District M.C.—Starkie Trial.
Aug. 13th.—Prestwich and District M.C.—Social Run to Manchester Hill Climb.
Aug. 13th.—Rotherham and District M.C.—Run to Boston.
Aug. 13th.—Exeter M.C. and J.C.C.—Run to Lydford Gorge.
Aug. 13th.—Leeds Motor Union.—Run to Cray.
Aug. 17th.—Western Centre A.C.U.—Hill Climb.



Speed judging at the Bristol M.C. and L.C.C. "mystery" trial. A competitor attempting to ride at 18½ miles an hour for an unknown distance, which in this instance turned out to be only 300 yards.

Isle of Wight M.C. and L.C.C.

Fastest time of the day at the club's recent hill-climb on a 1 in 4 rise was made by W. H. S. Collins on a Harley-Davidson.

275 c.c.—Two-strokes: 1, A. J. Rust (269 O.K. Junior); 2, C. Langford (269 Sparkbrook).

350 c.c.—1, J. R. Morris (348 Raleigh); 2, C. Langford (348 Douglas).

500 c.c.—1, C. F. Stagg (494 Douglas); 2, E. G. H. Morris (490 Norton).

750 c.c.—1, C. F. Stagg (494 Douglas); 2, D. Oliver (650 Zenith); 3, M. J. Rumsey (499 Triumph).

Unlimited.—1, W. H. S. Collins (989 Harley-Davidson); 2, H. W. Linington (976 Royal Enfield); 3, C. F. Stagg (494 Douglas).

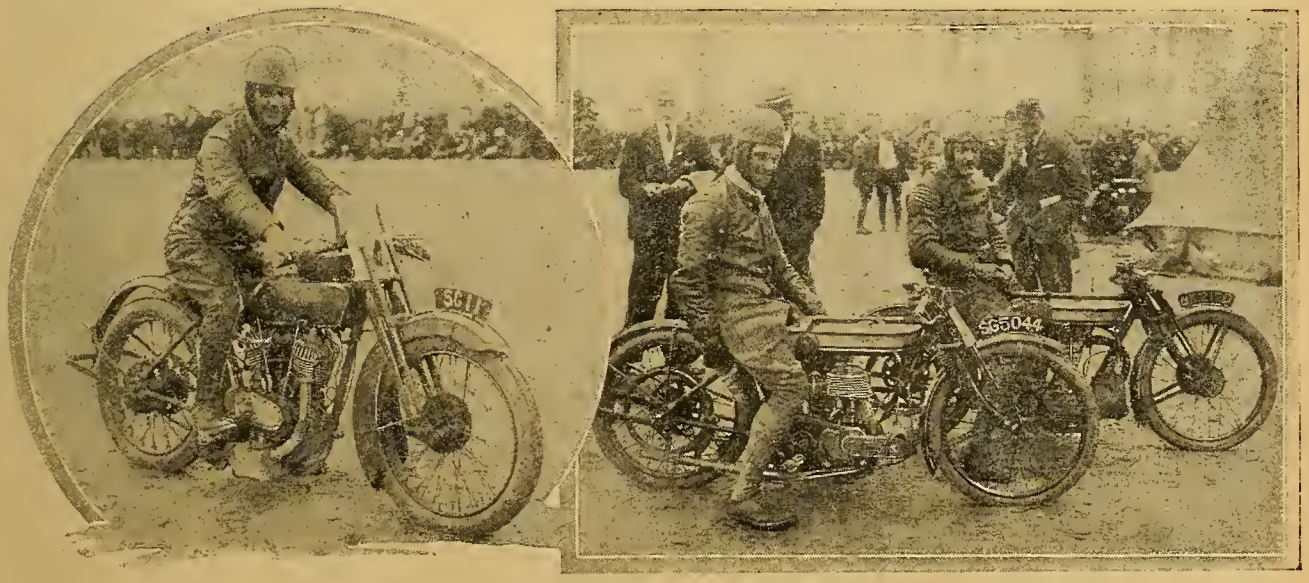
600 c.c.—Sidecars: 1, J. H. D. Allen (557 B.S.A. sc.).

Unlimited Sidecars.—1, C. W. Brannon (976 Royal Enfield sc.).

Oxford M.C.

Competitors in the "Stop-and-out-of-it Trial" had to cover a 30 mile circuit in the Chilterns—a route of some hills and many surprises—which brought them back to the starting point. Their time was taken in passing, and they were sent on to complete another lap of the same course, which had to be completed in the same time. This is no novelty, but an innovation was a secret check at which times were taken on each lap. This time again should have been the same as on other two for speeds and distance were the same on each circuit.

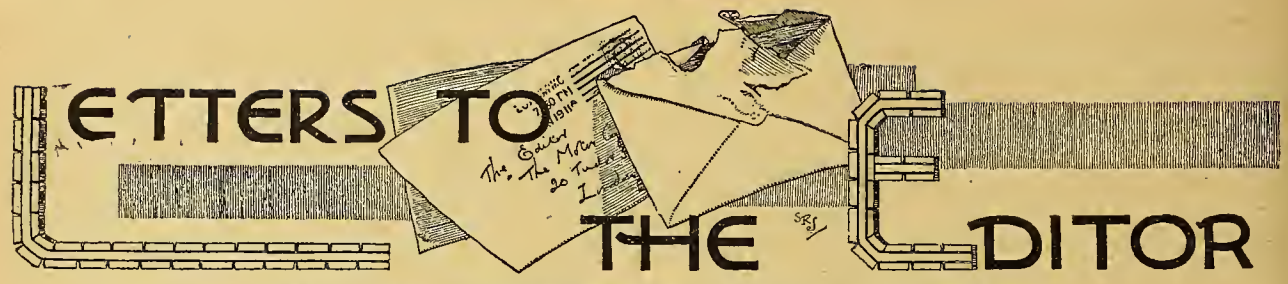
There were numerous mishaps. F. J. Findlater (Triumph), after completing the first circuit with a pillion passenger, punctured on the second. The star performer was S. Hancox (490 Norton), silver medal, total error 2m. 18s.; 1st bronze, H. Cripps (550 Triumph), 6m. 47s.; 2nd bronze, E. F. Sheldon (348 Raleigh), 15m. 3s. No sidecar machine finished the course. Several cars also competed with varying degrees of success.



SCOTTISH SPEED CHAMPIONSHIPS.

Geo. Grinton (989 c.c. Harley-Davidson), winner of the Heavyweight Championship.

Norton experts. On the left is Graham Black, who was unsuccessful against Grahame W. Walker (right) in the 560 c.c. handicap.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

350 SUPERFLUOUS C.C.?

Sir,—The speeds attained in the T.T. races, bringing home to us the possibilities of the small and medium modern machine, must surely make the thinking man wonder why anyone should want a 1,000 c.c. engine for solo use. The various letters on the subject that have appeared in your columns from time to time have struck me more as the efforts of men who are seeking to excuse themselves for the practice than as plain statements of their reasons.

For some years past I have ridden a touring 350 c.c. mount (on which I can easily do 60 m.p.h., even under slightly adverse conditions) whose acceleration is enough to slide me off the saddle if I do not grip the bars firmly; and more than ever I fail to see how any sane man can want an engine three times as big.

I should like any of your readers to give me one good reason why I should not continue to regard "big-twin-itis" as a form of lunacy which has, at present, no medical name.

S. Rhodesia. B. PYGSBOTHAM.

AVERAGE SPEEDS ON A 350 c.c. MACHINE.

Sir,—Having just completed a thousand-mile tour on my 350 c.c., 3-speed, clutch-model Douglas, I feel that, in fairness to the machine, I must set my experience against that of Mr. L. W. White. My machine had 2,000 miles to its credit before commencing the tour, but the only preliminary attention was to grind valves, put fresh oil in the crank case, and just to look over machine externally. The ground covered was practically all Devonshire, including North Devon, from Porlock to Clovelly, carrying a nine-stone pillion passenger. Never once did the engine lose power through overheating; it ran "like a train" all the time, and an excellent average speed was maintained. On returning from Devonshire, I did the journey of 130 miles (with passenger) in five hours, an average of 26 m.p.h.

Personally, I should not hesitate to attach a light sidecar to my machine if I wished, but I should not hope to *average* 35 m.p.h., although I think that for a "burst" the outfit would do "40" easily, and would average about 22 or 23 m.p.h. "DOUGITE."

Abingdon.

Sir,—Though not, at the moment, a motor cyclist, I am a regular reader of *The Motor Cycle*, and my experience, such as it is, dates back to 1905.

With regard to Mr. J. R. Jones's statement, that he can average 30-35 m.p.h. on a 350 c.c. Douglas with loaded sidecar, I fancy that it will need more than his unsupported word to convince your readers.

I believe that it has been stated that in order to average a certain speed for a journey of any length on the road, involving the passage of towns, etc., the rider's mount must be capable of a maximum speed approaching to double the desired average. A proportion of Mr. Jones's route, the road round Newport, is not in the best of condition, as I discovered to my sorrow on a recent trip from London to Spital, which is a few miles short of Birkenhead.

The A.A. gave the distance as 198 miles, which I covered in 6½ hours dead, thus averaging 30.4 m.p.h., my familiarity with the road alone enabling me to put up this modest performance, and on much of the road speed is impossible. Until I read of Mr. Jones's average I flattered myself that I had not done so badly. My mount was a 1920 Vitesse-G.N. F. L. B. DYNE.

Sir—I have read Mr. J. R. Jones's reply to Mr. Williams, and am, I am afraid, still sceptical. Is Mr. Jones riding a 1939 Douglas, or does he judge his speed by the apparent rate of the engine, *i.e.* by the noise?

I have owned nineteen different machines, many of them big twins, and on none of them have I been able to average anything like 35 miles an hour for a journey of 100 miles with loaded sidecar. Does Mr. Jones realise that in places on the route he mentioned he would have to travel for considerable stretches at 60 m.p.h. to keep up the average of 34.2 miles?

If his bike can do this it is "some" 'bus and has "some" rider. L. C. STUART.

Sir,—Mr. J. R. Jones's (the 350 c.c. Douglas rider) average reminds me of one run I made from Leicester to London. On leaving home my wristlet stood at 8 a.m., and on arrival in town it was 10.25 a.m. The fly appeared in the ointment when, half an hour or so later, I looked again—the watch still said 10.25!

Personally, I find that I get a good average by adding 10% to the distance I've been, and subtracting 10% from the time taken. B.I.A.J.S.

Leicester.

UNCERTIFIED ELECTRICAL TIMING.

Sir,—In regard to the electrical apparatus for use on hill-climbs described recently, and also the device used for short distance records at Brooklands, there is one point which seems to require some further safeguard.

Electrical indication of the precise moment of a vehicle crossing a line is no doubt advantageous, as there is no personal variation, no question of delayed observation, nor of premature reading, and, moreover, the indications are permanently on record for verification. But though the elimination of the personal element and the possible errors of observation is all to the good with a trustworthy recording device, surely it is important that the clockwork by which the interval between these accurately observed moments is measured should be of the highest class and certified as accurate?

It is insufficient to observe accurately the moment of the passing of the vehicle over two tapes if the recording instrument measuring the interval of time between those two moments is not accurate also. The electric signal may be a refinement on the human observer, but is the clockwork associated with these electric timing devices as high grade as the chronographs hitherto obligatory for official timekeepers to possess? Possibly it may be, but it would be more satisfactory to know that this vital part of the electrical timing system was the subject of an independent certificate of behaviour, and also subject to an annual revision of its continued good behaviour.

The watches of official timekeepers are quite rightly independently certified at the National Physical Laboratory as reaching a high level of excellence. The Kew test, as it is called, is vital before a watch may be used. But neither in regard to the clockwork at Brooklands, nor the clockwork now offered on loan by Messrs. Ferodo, Ltd., does it appear that any independent certificate of their behaviour or "rating" has been made.

If we are seeking for a higher degree of accuracy in the method of operating an instrument, we ought at least to make certain that the instrument to be operated is of the same level of excellence as the certified watches hitherto

compulsory for official timekeepers. It does not suffice to make a watch acceptable to say it was made by a good maker; it has to pass an independent examination. To make the clockwork mechanism on which the device depends equally acceptable, it should be subjected to a similar independent original examination and certificate of merit, and require a subsidiary annual revision. INTERESTED.

London, N.W.11.

HANDLE-BAR WATCH TROUBLES.

Sir,—In your issue of July 20th, you published a letter from Mr. D. W. L. Awburn, which greatly interested us.

We can understand a watch being damaged by excessive vibration, or driving over "pot-holes," etc., and, as a matter of fact this is the fate of most watches used on motor cycles.

It is surprising to learn that a watch in going condition would not start of its own volition, after being subjected to vibration from "pot-holes." If this watch happens to have been an Ingersoll, we shall be interested to hear direct from Mr. Awburn, who apparently has a curiosity.

During the war, a watch mechanism was required for a highly important defensive purpose. We understood from the authorities that most of the well-known brands of watches had been experimented with, but the Ingersoll was the only one found to be a self-starter. As a self-starter was the essential feature of the watch mechanism required, Ingersoll watches were exclusively used. We are, of course, unable to divulge what the mechanism was, but let it suffice to say that it could not be agitated in order to induce the movement to start. To use a motoring expression, the mechanism had to start from cold.

THE INGERSOLL WATCH CO., LTD.,
P. J. MORREN, Director.

WHAT IT COSTS TO TOUR.

Sir,—I beg to thank the various correspondents who have replied to my letter. The fact that motor coaches, lying practically idle all winter, can still make a profit for their proprietors by summer touring at 30s. downwards per day per head, "putting up only at the best hotels," shows that reasonable hotels are to be had if only one knew how to find them. And for the life of me I cannot understand why such hotels capable of catering for motor cyclists do not advertise in the paper read weekly by them all.

Since my first letter I have made a discovery which bids fair to solve the difficulty. It is the "Michelin Guide," published at 5s. This book not only gives plans of all towns of note with names of the streets, clearly showing one the way through them, and also the location of places of interest, but also gives a list of hotels with, in most cases, their tariffs.

With this book in hand a tour can be planned and the maximum cost of it known in advance. If cheaper accommodation can be found *en route* then so much to the good. Unfortunately, the tariffs of some hotels are not given, and these I should avoid, in which case if I were touring in the district mentioned by Mr. Scroggs I should have failed to avail myself of the two very reasonable ones he gives, as, although these are given in the guide, their tariffs are not.

When on the tour of which I complained, one night we came up to an A.A. hotel so tremendous that we dare not venture in; instead we chose one less pretentious. On looking up in the guide I find that if we had put up at the very large one we should have been a few shillings in pocket.

I figure it out that a tour can be planned with the help of the guide to cost for two persons: Bed, 6s. to 10s.; breakfast, 5s. to 6s.; lunch, 6s. to 7s.; *i.e.*, total, 23s.; so that tea, petrol, and all minor extras (leaving out wear and tear) can be met out of £2 per day.

I have to-day shown the guide to a non-motoring friend of mine who has often put up at some of these hotels when away on business, and he assures me that the price he has paid is much below the tariff as given in the guide. How much longer are mine host and others going to be before they realise that motoring is no longer the exclusive sport of millionaires? And that there are heaps of motorists who, like myself, have to deny themselves all other luxuries indulged in by their non-motoring friends, which in the aggregate come to more than the expenses of upkeep?

A. S. KING.

Sir,—Having recently completed a tour of 1,015 miles on a 770 c.c. B.S.A. sidecar outfit, I am able to record that my experiences on the subject of costs are entirely different from those mentioned by Mr. King. My tour was:

1st day, London-Birmingham.
2nd day, Birmingham-Hereford.
3rd day, Hereford-Bristol.
4th day, Bristol-Lynmouth.
5th day, Lynmouth-Camelford.
6th day, Camelford-Penzance.
7th day, Penzance-Plymouth.
8th day, Plymouth-Exeter.
9th day, Exeter-Bournemouth.
10th day, Bournemouth-London

The average petrol consumption being 50.4 m.p.g., this item works out at £2 10s., or 5s. per day; three quarts of oil for the entire trip is a negligible item.

From a point of view of economy, combined with convenience, my passenger and myself decided to adopt the plan of having a somewhat frugal lunch after the precaution of a substantial breakfast. Then, avoiding lavishness, on the one hand, and risk of discomfort, on the other, we chose two-star A.A. hotels, except on the fifth night, when the town only boasted one hotel, and that a one-star (but I am compelled to add that in this instance we were shown greater courtesy and fared more sumptuously than at much more pretentious places).

It will be seen by referring to a map that the daily mileage was 95-100, which allowed arrival in the early evening having visited show places *en route*. Dinner then proved welcome, but the grill-room was selected, where available, and in every case proved advantageous.

To sum up, we found at the end of our journey that we had spent roughly £1 per day each, excluding wayside "lubrication" as needed, but including petrol.

London, W.6. FIRST-YEAR TOURIST.

THE A.C.U. AND THE SOUTHSEA SPEED TRIALS.

Sir,—I gather that the A.C.U. in its wisdom has banned the motor cycle racing at Southsea on August 23rd. I should like some explanation of the motive, as to many of us here it seems but an effort to strangle the sport at its birth in this district.

The sport of organised motor cycling is non-existent in South Hants, which has 300,000 inhabitants, and a determined effort was to have been made after this event to bring ourselves in line with other parts of the country, and form a real, live sporting club. The A.C.U. has had the pleasure of killing that idea.

It meant great effort, against great prejudice, to get the races organised as an exhibition of what the modern motor cycle is capable of, and the educative effect would have been great.

All time, trouble, and effort has been wasted, and the local hospital robbed of a goodly sum.

I suppose the A.C.U. will trot out the Six Days' Trials.

Surely it is interfering with personal liberty, and also very childish, to say, "If you don't play with me you shall not play at all"?

Gosport. NOT A MEMBER OF THE A.C.U.

VALVES THAT CONTRACT WHEN HOT.

Sir,—In reply to your correspondents who write on the subject of valves which do not expand with heat, I think that I am correct in saying that all such valves are made from special material which gained strong favour during the war.

I believe that I was one of the first motorists to use valves of this kind. Somewhere about 1912 (after experimenting over a number of years with steel suitable for valves) I first used a steel containing "Wolfram," which we then called "unshrinkable steel." I found this was quite a success, so turned up a valve and took it to the Show, hoping to *give* some of the manufacturers a good tip, but I found these latter gentlemen knew all there was to know about steel, and I got everything from laughs to insults. A few years later that great alarum (war) went off and some people woke up.

Many years ago I had an engine—the product of one of our foremost engine manufacturers—that was the very dickens on valves. If I tried to overtake a rabbit, the indiscretion cost me the price of a valve. My pockets bulged with these most necessary parts when I turned out for a long run. I got so fed up that I began making my own valves, which were successful. I then wrote offering to *give* the manufacturers of my engine some forgings for trial; these were refused as they "turned all their valves from the bar." Ye gods! P. H. DUDLEY.

ROAD PATROL SALUTES.

Sir,—I am in full agreement with "40144 or Thereabouts." One *does* wonder if all is well when the patrols fail to salute.

If saluting is only "cheap homage," why are we told in the "A.A. Handbook" to stop and ask the reason why a patrol has not performed this duty? HARLEY-D.

Westcliff-on-Sea.

HAMPERING GOGGLES.

Sir,—I was interested to see "Sutton Banks'" remarks on this subject, for I, too, am troubled with slight loss of hearing when wearing goggles. I have now found an efficient substitute for goggles in the shape of "Pidko" cap fitted with a celluloid peak, which lets down over the eyes. This peak, when not in use, folds inside the main peak of the cap. Usual disclaimer. C. S. BURNEY.

Sir,—If "Sutton Banks" has not tried a C.G.P. screen I would unhesitatingly recommend him to do so.

I also like to maintain a fair speed, but until acquiring one of these eye screens had to be content with ordinary goggles, and suffered the same trouble as your correspondent.

Usual disclaimer. J. P. HOGAN.

GEAR CHANGING PROCEDURE.

Sir,—I agree with "Triumph-4 h.p." that changing gear on the exhaust lifter is much easier, but would qualify this, in that this is correct only when changing up.

Of course, the box under discussion is the Sturmey-Archer, in which that primitive device, sliding pinions, is eliminated. I also use one of these boxes, and find that changing up on the exhaust lifter is perfectly easy, noiseless, and can be effected without any jerk after very little practice. Changing down on the clutch, besides being theoretically correct, is also perfectly simple—and simply perfect.

However, I have had doubts as to the advisability of using the exhaust lifter, and, like "Triumph 4 h.p.," would welcome some authoritative advice on the subject. Perhaps the Sturmey-Archer people themselves would oblige us? I am sure the very large number of users of this fine article would much appreciate some guidance from its makers.

London, N.W.2. ZEBRA.

GUILDFORD HILL.

Sir,—Living in Guildford, and being a motor cyclist, I would like to protest against the text of the letter signed "Old Man Hep."

There are several nasty turnings into Guildford High Street, and the police are quite right in their attitude; they are, I may say, very lenient with the speed merchant, as I know well.

I should like to meet that famous single-gear Antoine that will go up the street in question at 12 m.p.h. I very much doubt if it would get up at all unless a speed of 20 m.p.h. was maintained. FAIRPLAY.

Guildford.

Sir,—With reference to Guildford Hill, I was of much the same opinion as "Old Man Hep" until I came to live in this town.

The famous High Street on closer inspection is found to contain numerous side alleys which are too narrow to be noticed when driving through. These are largely used by tradesmen's and carriers' vans on market days, and the speed limit is an endeavour to make the street safe on these occasions. Naturally the regulations must be enforced all the time or not at all. A detailed street plan would, I think, be a revelation to any casual week-end motor cyclist who has passed through the town.

Local chauffeurs have been known to declare that they would rather drive in London than in the High Street on a Saturday morning.

The police are quite human, and are apt to be misled by noise and appearance.

The activity here provides cases with witnesses at a minimum of trouble for the local sessions. Perhaps your valuable paper might compare "police activity" with a "law calendar," and give weekly forecasts of "unsuitable touring conditions" in various districts. NB-3235

Guildford.

REJUVENATING OPERATIONS THAT PAID.

Sir,—Perhaps some of your readers may be interested to know that I have been able by an expenditure of between £10 and £12 to improve very greatly the efficiency of a ten-year-old clutch model Triumph, such as may be bought second-hand for £25 to £30.

First, I fitted a Philipson pulley (touring strength) with a handle-bar control; the left-hand pedal was made to hang permanently down so that it could still be used for mounting. It could not be allowed to revolve, as it would foul the governor of the pulley, but the right-hand one was retained as a kick-starter.

I found the pulley had improved the machine's hill-climbing power, but still it was very awkward to get slow running in traffic with the old two-lever carburetter. I accordingly decided to invest in a Binks three-jet carburetter, and by using jets Nos. 000, 3, and 7 have now got a machine that will just tick over on a gear of 4.7 to 1, and goes with ease up hills in South-east Kent that were quite beyond its capacity before. A long exhaust pipe which I also had fitted has enabled me to do away with the large holes at the end of the silencer which when in use made the machine noisy.

Everyone knows what good machines these early Triumphs are, and I personally feel very pleased not to have had to spend at least £60 to get the results that I am now getting. I need scarcely say that I have no interest in either of the above firms. G. C. ROBERTS.

SUSTAINED HIGH AVERAGE SPEEDS.

Sir,—Having just purchased my seventeenth motor cycle since demobilisation in 1919, I think it may interest your readers to know why I decided this time on a Scott-Squirrel.

I have owned all classes of "'bus" from lightweight to 1,000 c.c. twin, and as my job entails a tremendous lot of travelling all over the southern part of the country, and usually well away from railway stations, it is absolutely necessary to have a *really reliable 'bus;* also, owing to the fact that I often exceed the 200 miles a day mark, besides making calls, I must have a machine that keeps up a sustained high average speed. I have found a Scott-Squirrel pretty well unique in this respect.

I do not suggest that it is the machine with the highest maximum speed by any means, but I do say that for really fast road work it is indeed a very fine rider who will corner regularly on an ordinary motor cycle at the same rate as an ordinary rider on a Scott. Further, a big mileage daily these days, with the roads in the state they are, makes comfort a *sine quâ non*, and here again a Scott with 3in. tyres stands on a level with any spring frame cycle on the market.

I am very keen on competition work, and regret that I cannot afford a stud of machines; but here again, with a Squirrel, I have a mount that will do the knots, maintain the knots day in, day out, and still win me medals when the opportunity offers.

I have no interest whatever in the Scott Company.

Cardiff. WATER-COOLED.

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A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

THE FIRST 4 H.P. TRIUMPH.

What was the date when the first 4 h.p. Triumph motor cycle appeared on the British motor cycle market?—C.M.

The 4 h.p. Triumph (550 c.c.) was marketed in the year 1914, being exhibited at the Olympia Show of November, 1913.

ENGINE POSITION.

Could you inform me as to the position of the engine in relation to the frame, wheel-base, etc., so as to get the correct balance. The engine is a 499 c.c. Blackburne single.—R.M.R.

There is no special position for the engine in relation to the frame and wheel-base which can be said definitely to be correct. The matter is one for experiment, and testing, and you should aim at keeping the centre of gravity of the whole machine, together with that of the rider, as nearly as possible in a central position between the two wheels, and as low as possible.

VARYING RATIOS FOR SOLO OR SIDECAR.

On my old twin I rode solo (4 to 1 top gear) almost as much as sidecar (4¾ to 1). I now contemplate buying a chain-cum-belt Triumph, and wish to use the best gear ratios for each purpose and to effect the change periodically with the minimum of difficulty, but the makers tell me that it necessitates changing the engine sprocket, probably the chain, and shifting the gear box, with consequent adjustment of belt. This is too much trouble. Is the belt pulley on the Triumph their own or a Sturmey-Archer production? Would it be possible and practicable to have an adjustable one in its place? There is little difference between Triumph solo and sidecar standard gears, viz., 5 to 1 and 5½ to 1; and I am inclined to think that a higher solo gear, 4⅔ or 4¾, might be used with advantage. If the choice has to fall on one set of gears permanently which, for my purposes, would you recommend?—J.E.

The belt pulley on the chain-cum-belt model Triumph is a part of the Sturmey-Archer gear box, and it would be quite impossible to fit an adjustable pulley in its place. We would recommend you to have a top gear of about 5¼ to 1, as the Triumph engine is more efficient when running at a fairly high number of revolutions. Even with this gear ratio you would find it quite fast enough for all ordinary solo purposes.

TECHNICAL FORMULÆ.

I understand that up to about 60-80 m.p.h. the following formula gives the air resistance of a moving body:—

$R = K A V^2$

where R = resistance in *lbs.*
K = constant
A = effective area in *square ft.*
V = velocity in feet *per second.*

Will you please let me have the following information: (1) Value of the constant K; (2) A reasonable value to assume for A in the case of (a) Triumph solo and (b) Matchless standard sidecar outfit; (3) What is a reasonable value in lbs. per ton for the road resistance to a motor cycle's progress on the level (a) on a good, dry tarmac road, (b) on a stony and dry surface, such as that of Kop Hill at the present time.—W. H. H.

(1) In the formula you wish to use—K=.0014 if V is in feet per second, or .003 if V is in m.p.h. These figures are approximate. (2) The figures for A are very uncertain; we would suggest 10 sq. ft. for (a) and 20 sq. ft. for (b). (3) Resistance = weight × T. T is very variable but we would suggest in example (a) that it equals 0.015 approximately. It is still more difficult to judge the value of T in the second case, as it depends so much upon a particular degree of roughness in the nature of the road surface. Try T=0.06.

INTERMITTENT MISFIRE.

How long should a magneto run before it requires remagnetising? Mine is a Bosch, and it has been running on a 976 c.c. J.A.P. engine since 1913. It has run very well and without trouble until recently, but now and again I get a misfire, and as I have tried various plugs, and everything else seems in order I begin to wonder if it could be the magneto. Has the carburetter (an Amac two lever) anything to do with this trouble? It has been working the same length of time. Would you advise me to try a new one?—J.H.K.

It is not likely that lack of magnetism is causing the temporary misfire, since, if the magnets were weak, you would get a poor spark all the time. It is more probably that you are suffering from an air leak in the induction pipe, a temporary choke in the petrol system, or an air leak in the petrol tank.

ENGINE RACING ON TOP GEAR.

When running an A.B.C. motor cycle in fourth gear at anything over 22 m.p.h., the engine runs perfectly, but below that speed it runs very unevenly, apparently missing every third or fourth stroke. The carburetter is the Claudel supplied by the makers. How can I improve the slow running of the engine on top gear? Would a change of carburetter effect an improvement? Of course in the lower gears I can get it to run well at low speed, but I do not like the grind of low gears.—J.W.D.K.

Probably your trouble is caused by air leaks in the induction system, or possibly by inlet valves which are slack in the guides, causing an exactly similar effect. Go over any pipe connections very carefully, and, if necessary, try the effect of binding with insulating tape, which should cure your trouble without the expense of changing carburetters. We take it that your magneto points are in good order, and your plugs are both of the same type and of first class make.

Important Dates.

Sat., Aug. 12th—B.M.C.R.C. Members' Meeting at Brooklands.

Sat., Aug. 12th—North Wales Centre A.C.U. Open Reliability Trial.

Sat., Aug. 12th, Motor Cycle Races in Phœnix Park, Dublin.

Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.

Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.

Sat. Sept. 16th—The Scott Trial.

Sat., Sept. 23rd—500 Mile Race at Brooklands.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

READER'S REPLY.

A TWO-STROKE RATTLE.

My own opinion is that it is now definitely agreed that the usual two-stroke rattle which occurs when the engine is revving is caused through slack connecting rod bearings, even a suspicion of play sometimes causing this; but there is another rattle which sometimes occurs, and it is quite distinct from the other.

I was at one time troubled with a rattle in my two-stroke engine exactly as "H. K. S." describes. If allowed to continue it rose in intensity until it could be felt through the grips. This was liable to occur at practically any speed over 10 m.p.h. It always occurred when driving against a head wind, and was persistent: but on hills it only lasted for a short distance and then died away. It usually could be cured either by closing the air lever slightly, or in some cases if noticed at once by retarding the spark. I should have put this down to a weak mixture knock but for the fact that for the 5,000 miles the machine was driven this last winter between two overhauls it was impossible to get a recurrence of the symptoms.

Since the last overhaul, about two months ago, the trouble has recurred. It is not caused by pre-ignition, slack bearings of flywheel, or sticking rings, while the same piston is still in use. If any readers have had any experience with a similar trouble I should be glad of their opinions, for it appears that the only definite way to locate the trouble is by elimination, i.e., alternately trying new parts such as piston, cylinder, etc., which is too costly for a private owner. H. B.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"E. P." (Norwich).—Suitable machine, running costs, equipment, etc., for a taxi-sidecar.

"N. E. R." (Leeds).—496 c.c. Martinsyde "Sports" model.

"H. J. F." (London).—Best mechanical pump; Binks' carburetter on 499 c.c. Sunbeam solo.

"J. H." (Dalston).—481 c.c. Scott Squirrel and sidecar; 499 c.c. Dunelt and sidecar: speed, m.p.g., hill-climbing capacity.

"G. A. S." (Hamilton).—976 c.c. Royal Enfield and sidecar.

"N. E. P." (Bristol).—557 c.c. B.S.A. and sidecar: carburation.

"R. F. B." (Weston-super-Mare).—349 c.c. A.J.S. solo and sidecar; 398 c.c. A.B.C.

"M. T. R." (Carlisle).—Ner-a-car: speed, m.p.g., reliability, etc.

"R. A." (South Shields).—398 c.c. A.B.C.: reliability, upkeep, specd.

Grand Prix Equipment.

Both Bennett (Sunbeam) and Davison (Levis) used K.L.G. plugs when they won the 500 c.c. and 250 c.c. classes, respectively, in the French Grand Prix.

Magnetos in the Grand Prix.

Riders in the Belgian Grand Prix, including G. S. Davison, the Levis exponent, speak highly of services rendered by the E.I.C. magnetos fitted to their machines.

32,000 Miles without Decarbonisation.

In an article entitled "Lubrication Tests," in the July 27th issue of *The Motor Cycle*, an Excelsior engine was described as having completed 3,200 miles without decarbonisation. The makers now tell us that the figure was intended for 32,000.

Sidecars and Accessories.

Readers interested in sidecars and accessories are invited by "Rideezi" Sales, Ltd., to visit their works at 5, Victoria Street, London, S.W., during the usual business hours. The firm have recently concluded arrangements with Coleford Motors (Sidecar Body Co.), 25, Upper Clapton Road, E., to absorb their entire output of complete sidecars, bodies, chassis, and accessories.

Price Reduction.

Dating from the 1st inst. the prices of Duzmo motor cycles are reduced by 13 per cent. The prices for the single-speed sports model, the three-speed touring, the three-speed super sports, and the big twin three-speed touring model are respectively £70, £100, £107, and £128. The machines are designed and manufactured by J. Wallace, Cedar Road Works, Enfield Highway, Middlesex.

Good Lubrication.

Price's Huile de Luxe was used by G. S. Davison, the Levis exponent, both in the Lightweight T.T. Race in the Isle of Man this year, averaging 50 m.p.h., and again in the French Grand Prix, when he succeeded in maintaining an average of 53 m.p.h. in the 250 c.c. class. His performances are reviewed in a booklet issued by Price's Co., Ltd, Battersea, London, S.W.11.

Wanted—A Passenger.

A correspondent is desirous of getting in touch with a passenger for a 14 days' tour of the Lake district, commencing on Saturday, August 26th. The writer is Mr. H. C. Jess, residing at 1, Eversley Terrace, Green Lane, Goodmayes, Essex, and any reader considering his proposal should communicate with him at that address. Mr. Jess adds that he is 33 years of age with 12 years' motor cycle experience.

Successes in Italy.

In the 631 mile race for the Ravelli Cup in Italy on July 22nd and 23rd F. Opessi and A. Tatici (499 Triumph) tied for first place in the 500 c.c. class; they were third and fourth in the general classification.

Found on the Road.

A lady's left-hand new kid glove on the Stratford Road, near Shirley Racecourse, on July 29th, found by Miss M. Jarrett, 218, Addison Road, King's Heath, Birmingham.

Trade Support Next British Industries Fair.

Having agreed to support the British Industries Fair (Birmingham). 1923, the British Cycle and Motor Cycle Traders' Union has now advised its members that they are at liberty to exhibit.

Revised Award.

L. E. Clulee, who rode a 269 c.c. Allon in the M.C. & A.C. 24 hours' reliability trial from Birmingham to Holyhead and back, has now been awarded a gold medal in place of the silver one as previously announced.

That Silencer —— !

C. P. Wood on a Scott Squirrel made fastest time in the Scottish Medium Weight Championship at St. Andrews on Saturday last, but was disqualified owing to the fact that his exhaust pipe did not conform to the Scottish A.C.U. regulations.

Building Extensions.

Owing to recent extensions in the factory accommodation, the Robini Manufacturing Co., of 1 and 3, Tulse Hill, Effra Road, Brixton, S.W., makers of sidecars and light car bodies, etc., are now able to carry out a greater amount of work at lower rates. In addition to the above-mentioned lines, the firm specialises in various renovations and accessories.

Road Improvements.

Volunteers are required by the Road Improvement Association to undertake survey work in connection with road improvements. The Association, the address of which is 15, Dartmouth Street, Westminster, S.W.1., is preparing schemes of road improvements for submission to the local authorities, and to the Ministry of Transport.

Change of Address.

As from the 1st of this month the address of Melchior, Armstrong and Dessau will be 15, Newman Street, Oxford Street, London, W., for showrooms, spare parts, stores and offices, whilst the registered offices have been removed to 111-113, Great Portland Street, London, W.1. All enquiries relating to "Henderson" or "American X" machines should be forwarded to Newman Street.

Catalogues Received.

Petro-Flex Tubing Co., Ltd., Cassiobury Works, St. Albans Road, Watford: A pamphlet detailing the advantages and uses of the Petro-Flex fuel and oil piping.

Denton's Specialities, 53, Newland, Northampton: Literature dealing with Denton's cast iron soldering fluid, cast iron brazing flux, and standard soldering fluid in three grades.

Douglas

Beats Them All!

THE WORLD'S FASTEST STANDARD MOTOR CYCLE and the FIRST TO DO 100 M.P.H. in the 3½ h.p. and 6 h.p. classes.

SCOTTISH CHAMPIONSHIP CAPTURED FOR THE FIFTH TIME,

against the world's best riders.

A. H. Alexander, riding a 2¾ h.p. Douglas, achieved an exceptionally fine performance against a field of 25 of the best of riders and many makes of machines, winning by no less than half a mile. The extraordinary consistency of the Douglas may be judged by the fact that in

1919 it won the **350 c.c. CHAMPIONSHIP.**
1920 ,, **350 c.c.** ,,
1920 ,, **500 c.c.** ,,
1921 ,, **500 c.c.** ,,
1922 ,, **350 c.c.** ,,
1922 second in the **500 c.c. CHAMPIONSHIP.**

It also holds the

500 c.c. BRITISH CHAMPIONSHIP,
750 c.c. ,, ,,
and the
1000 c.c. GERMAN CHAMPIONSHIP.

SENSATIONAL PERFORMANCES were also made at Brooklands, E. W. Spencer on his 3½ h.p. Douglas gaining the **CLUB CHAMPIONSHIP and GOLD CHALLENGE CUP** against all the cracks.

C. G. Pullin, **FIRST** in the **350 c.c. Handicap**, winning at an average speed of 73·01 m.p.h. from a standing start on a little 2¾ h.p.

FIRST in the **500 c.c. class Team Race.**
SECOND ,, **350 c.c.** ,, ,,
And R. Newitt **THIRD** in the **500 c.c. Handicap.**

Clipstone Speed Trials, Fred Hatton made third fastest time of the day, being beaten by only 1000 c.c. machines, covering the Flying Half Mile in 20 seconds, equalling 90 m.p.h.

Still upholding our claim that the Douglas is the fastest standard machine, and the first motor cycle to do 100 m.p.h. in the 3½ h.p. and 6 h.p. classes.

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No. 6.

Ease of Inflation

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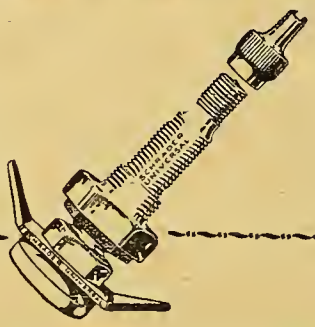
Schrader Universal BRITISH MADE TYRE VALVE



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(4) Variable capacity.
(5) Ingenious, yet fool-proof, bridal leather strapping.

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Messrs. Athill & Clark also make a case specially for us, complete with or without battens, and locking buckle strap, for use with our "Cant Slip" Luggage Fasteners on Carriers, Tan-Sads and car running boards.

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without battens .. **36/6**
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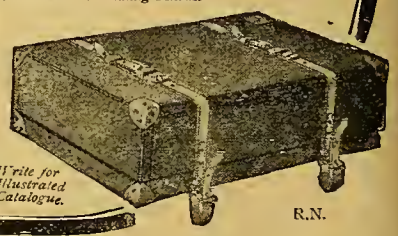
Webbing..... **10/6**
Good Leather.... **12/6**
Best Bridal Leather **15/6**



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THAT IS WHY CANOELET SIDECARS HAVE A WORLD-WIDE REPUTATION.

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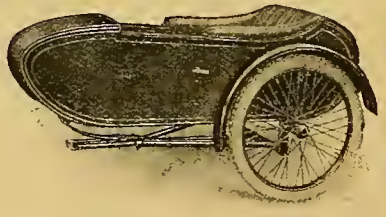

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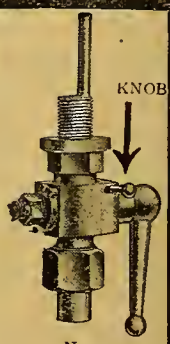

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With ALL-WOOL camel fleece detachable lining,

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OUR GUARANTEE should the garment purchased fall in any way to come up to expectations. WE GUARANTEE to refund remittance in FULL without further question, provided the garment is undamaged and returned in 7 days.

Don't miss this Unique Opportunity—Call or Mail To-day. State chest (over coat) and height measurements when ordering.

In Stock—Chest 34, 36, 38, 40, 42, 44.
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Made from Best Quality Hide, one-stud fastener at wrist.

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Pairs.		Per pair.
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3	"	2/11
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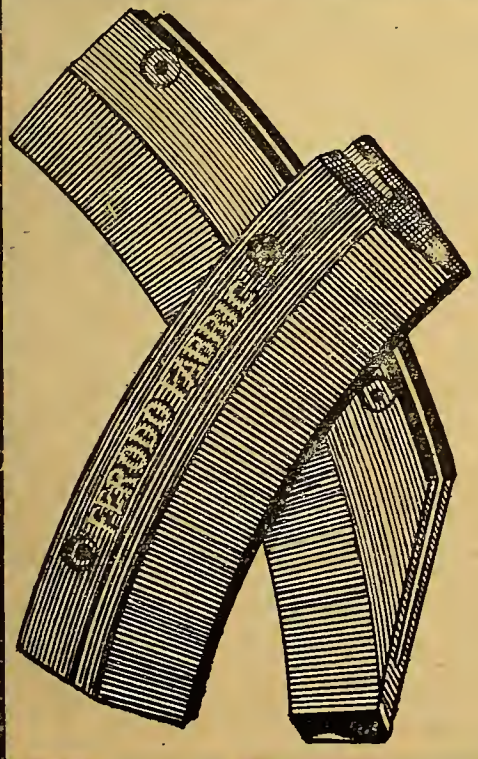

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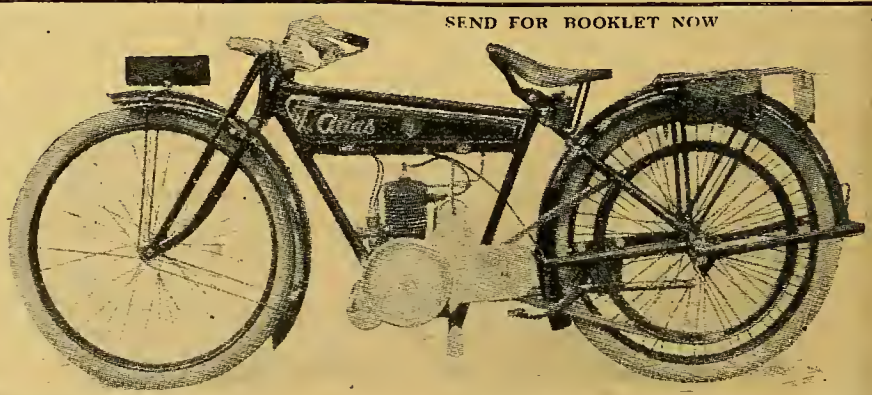

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9×	7 ..	8 0 ..	5 6	11	7	0
10×	8 ..	8 4 ..	5 9	12	19	0
12×	8 ..	8 4 ..	6 0	17	5	0
14×	8 ..	8 7 ..	6 3	21	0	0
16×	9 ..	8 9 ..	6 4	26	0	0
18×	9 ..	8 9 ..	6 4	31	0	0
20×	10 ..	9 0 ..	6 6	36	0	0

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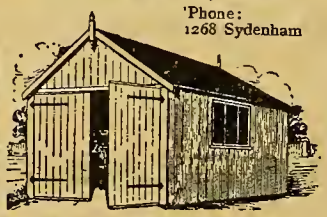

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Postal Orders and Cheques sent in payment for dvertisements should be made payable ILIFFE & SONS Ltd., and crossed & Co. reasury Notes, being untraceable if lost in ansit, should not be sent as remittances.

All advertisements in this section should be ccompanied with remittance, and be addressed the offices of "The Motor Cycle," Dorset louse, Tudor Street, London, E.C.4. To nsure insertion, letters should be posted in me to reach the offices of "The Motor Cycle." y the first post on Friday morning previous to he day of issue. Advertisements that arrive oo late for a particular issue or that are rowded out will automatically be inserted in he following issue unless accompanied by nstructions to the contrary.

All letters relating to advertisements should uote the number which is printed at the end of ach advertisement, and the date of the issue which it appeared.

The proprietors are not responsible for clerical r printers' errors, although every care is taken avoid mistakes.

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For the convenience of advertisers, letters may be ddressed to numbers at "The Motor Cycle" Office. hen this is desired, the sum of 6d. to defray the cost of gistration and to cover postage on replies must be added the advertisement charge, which must include the ords Box 000, c/o "The Motor Cycle." Only the number ill appear in the advertisement. All replies should be ddressed No. 000, c/o "The Motor Cycle," Dorset House, udor Street, London, E.C.4. *Readers who reply to Box No. dvertisements are warned against sending remittance through e post except in registered envelopes; in all such cases the se of the Deposit System is recommended, and the envelope ould be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box umber, as it is unusual for these to be sold without first ing inspected by the intending purchaser, advertisers will acilitate business by embodying in their advertisements me mention of the district in which the machine fered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons ay deal in perfect safety by availing themselves of our eposit System. If the money be deposited with "The otor Cycle," both parties are advised of this receipt. The time allowed for a decision after receipt of the oods is three days, and if a sale is effected we remit the mount to the seller, but, if not, we return the amount the depositor. Carriage is to be paid by the buyer, but the event of no sale each party pays carriage one way he seller takes the risk of damage in transit. For all ansactions up to £10, a deposit fee of 1/- is charged; on ansactions over £10 and under £50, the fee is 2/6; over 50 and under £75, 5/-; over £75 and under £100, 7/6 nd on all transactions over £100, ½%. All deposit atters are dealt with at Dorset House, Tudor Street, ondon, E.C.4, and cheques and money orders should be ade payable to Iliffe & Sons Limited. The letter "D" at the end of an advertisement is an dication that the advertiser is willing to avail himself of e Deposit System. Other advertisers may be equally sirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no swer to their enquiries are requested to regard the ence as an indication that the goods advertised have eady been disposed of. Advertisers often receive so any enquiries that it is quite impossible to reply to ch one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., 1922, with special Swan sporting sidecar, electric light, tax paid; £87/10.—Basement, 89, t. Portland St., W.1. [5443

WHEN GODFREY'S SELL
THE VERIEST NOVICE MAY BUY
WITH THE UTMOST CONFIDENCE

SOLE AGENCIES FOR INDIAN, SCOTT, AND LEVIS MOTOR CYCLES

1922 MODELS—SOLO.

A. J. S., 2¾ h.p. 3-speed K.S.	£88 0
ARIEL, Sports, 3½ h.p., 3-speed	£87 10
ALLON, 2¾ h.p., 2-stroke, 2-speed	£60 0
B.S.A., 4½ h.p., Model K2	£107 0
B.S.A., 4½ h.p., Model H2, chain drive	£110 0
B.S.A., 6 h.p., Model E, light touring	£132 0
COVENTRY-EAGLE, 3 h.p.	£80 0
DOUGLAS, 2¾ h.p., 2-speed	£68 0
EXCELSIOR-VILLIERS, 2¾ h.p.	£39 18
HAWKER, 2¾ h.p., Model A, 2-stroke	£52 10
HAWKER-BLACKBURNE, 4½ h.p.	£89 5
INDIAN SCOUT, 4 h.p., standard model	£112 0
INDIAN SCOUT, 4 h.p., with elec. equip.	£130 0
LEVIS POPULAR, 2¾ h.p., single speed	£48 0
LEVIS, 2¾ h.p., Model S, 2-speed gear	£58 0
LEVIS, 2¾ h.p., Model G2, 2-speed gear	£61 0
NEW IMPERIAL, 2¾ h.p., Model No. 3	£73 0
NEW IMPERIAL, 2¾ h.p., Model No. 5	£80 0
ROYAL ENFIELD, 2¾ h.p., Model 200	£55 0
ROYAL ENFIELD, 2¾ h.p., Model 201	£57 0
RALEIGH, 2¾ h.p., 2-speed clutch, K.S.	£68 0
RUDGE-MULTI, 2¾ h.p., I.O.M., T.T.	£77 0
RUDGE, 3½ h.p., 3-speed gear, all chain	£94 0
SCOTT, 3¾ h.p., 2-stroke, Touring Model	£110 0
SCOTT-SQUIRREL, 2¾ h.p.	£108 0
TRIUMPH, 3½ h.p., type R, O.H.V.	£120 0
TRIUMPH, 2¾ h.p., type L.W., 2-stroke	£68 0
TRIUMPH, 4 h.p., Type H	£108 0
TRIUMPH, 4 h.p., Type S.D.	£118 0
ZENITH-BRADSHAW, 3½ h.p.	£113 0
ZENITH-BRADSHAW, 3½ h.p., 3-sp.	£119 0
ZENITH, 5 h.p., Sports Model C	£110 0
ZENITH, 8 h.p., 2-speed gear	£130 0

1922 PASSENGER MACHINES.

A.J.S., 7 h.p., combination, 3-sp. gear	£175 0
A.J.S., 7 h.p., as above, with Magdyno	£195 0
B.S.A., 4½ h.p., Model K2, combination	£139 0
B.S.A., 4½ h.p., Model H2, combination	£142 0
B.S.A., 6 h.p., Model E, combination	£164 0
DOUGLAS, 4 h.p., combination, 3-sp.	£125 0
INDIAN SCOUT, 4 h.p., combination	£134 0
INDIAN, Standard 7 h.p. combination	£187 0
INDIAN, with elec. equip. and speedo	£175 0
INDIAN CHIEF, 8-10 h.p., combination, elec. equip. and speedo	£199 0
MATCHLESS, 8 h.p., Model H comb.	£170 0
MATCHLESS, 8 h.p., Model J, touring	£150 0
MATCHLESS, 8 h.p., Model H	£175 10
MATCHLESS, 8 h.p., Model H comb.	£190 0
NEW IMPERIAL, 8 h.p., standard touring combination	£145 0
QUADRANT, 4½ h.p., all chain	£108 0
ROYAL ENFIELD, 8 h.p., with Enfield sidecar	£140 0
ROYAL ENFIELD, 8 h.p., Model 180, family sidecar	£145 0
SCOTT, 3¾ h.p., Touring Model, standard sidecar	£145 0
SCOTT-SQUIRREL, 3¾ h.p., Sports sc.	£135 0
ROVER, 8 h.p., light car	£225 0

Any machine supplied on Easy Terms. For this 4 per cent. only added to purchase price.

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GODFREY'S, LTD.

The Service House for B.S.A., Indian, Scott & Levis Spare Parts.

208, Gt. Portland St., London, W.1.

'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

GODFREY'S.—1920 3h.p. A.B.C., dynamo lighting, spring frame, 4-speed, hand clutch, guaranteed; £80.—208, Gt. Portland St., W.1. [5525

1921 Sports A.B.C., excellent tune and condition, just overhauled; £64; will ride machine reasonable distance for inspection.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [5335

1921 A.B.C., Magdyno lighting, dashboard with voltmeter, Cowey horn, Tan-Sad, licensed, perfect condition throughout; 67 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5455

A.B.C. 1921 Combination (Henderson B sidecar), Lucas dynamo lighting, kick-start, new Easting, hand Klaxon, speedometer, tyres nearly new, in fine condition, tools, etc., licensed and insured; best over £80.—F. A. Y., 62, Atwood Rd., Didsbury, Manchester. [5249

Spare Parts:

A.B.C. Service Depot.—Spare parts lists now available; trade supplied.—Mandes', 100, Great Portland St., W.1. [4776

A.J.S.

A.J.S. 2¾h.p. to 7h.p. in stock.—Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [5069

A.J.S. 2¾h.p. Model B, 1922 model; £85.—Basement, 89, Gt. Portland St., London, W.1. [5441

A.J.S. 1922 2¾h.p. Sports and 7h.p. Combinations in stock.—Clifford Motories, Eastwood, Notts. [4763

A.J.S. Motor Cycles, deliveries from stock, all models. —Derby agents, H. Palin, Ltd., Bourne St., Derby. [5091

B.1, A.J.S. from stock; cash or deferred.—Clifford Wilson Co., 177, Westminster Bridge Co., S.E.1. [2199

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175; in stock. Dorset trade supplied. [0817

A.J.S. Motor Cycles on easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [5423

A.J.S. Combination, newly renovated 1914; Morgan or Triumph in exchange.—109, Moor Lane, Bolton. [5435

1921 A.J.S. Combination, dynamo lighting, £130; ditto, 1920, £110. 24, Balliol Rd., North Kensington. [5329

1920 A.J.S. Combination, spare wheel, hood, screen; £95.—Hillier (side bell), 9, Wallingford Av., North Kensington. [5348

LATE 1919 A.J.S. Combination, excellent order; low price for quick sale.—Arthur, Marchamley, Hawkstone, Shropshire. [4462

£70.—A.J.S. 1922 2¾h.p., Model B1, very small mileage, as new.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [5501

1920 6h.p. A.J.S. Combination, in splendid order, complete with spare wheel, all lamps, tax paid.—Churchill, The Grove, Dorchester. [4962

LATE 1921 2¾h.p. A.J.S., complete with Lucas lamps and horn, licensed, very little used; £70.—Escolme, Priest Hutton, Carnforth. [3821

A.J.S. 6h.p. Combination, June, 1920; price £130; spare wheel, etc.; full particulars on application. —54, Abingdon Rd., Kensington, W.8. [5102

A.J.S. 7h.p. Combination, £175; 2¾h.p., 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [5180

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

F.O.C.H. have 1916 A.J.S. combination, interchangeable wheels and spare, fully equipped; bargain.—5, Heath St., Hampstead (near Tube). [2717

1922 A.J.S. 7h.p. Combination, windscreen, hood, side curtains, spare wheel, Lucas accessories; £150.—Box 2955, c/o *The Motor Cycle* (Manchester District). [5371

A.J.S. 1914 2¾h.p., 2-speed, clutch, K.S., new cylinder and gears supplied by makers, thoroughly overhauled, good condition, tax paid; £40.—Downes, Thorpe Salvin, Worksop. [5096

IN stock 1922 7h.p. A.J.S. and sidecar, complete with spare wheel, £183; also immediate delivery of 2¾h.p. model, £85, cash or deferred.—D. and S. Autocar Co. 33, The Parade, Golders Green. [5004

A.J.S. 2-seater Combination, spare wheel, speedometer, battery, electric lighting, perfect condition; £125.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4623

A.J.S. 2¾h.p., Model B1, 3 speeds, clutch and K.S., fully equipped, mileage under 350, unscratched, tax paid; £80. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5142

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 1920 6h.p. Combination, spare wheel, luggage grid, Cowey speedometer, electric lighting, 2 horns, Terry spring seat, tip-top condition; any trial; £127/10.—Gibb, 100, Northgate, Gloucester. [5531

2¼h.p. A.J.S., B.1, used 26 miles; owner bought same make combination, complete with lamps, horn, licence paid to end of year; bargain, £77/10.—Timberlake's Garage (Tel.: 512-513), Wigan. [4041

A.J.S. Combination 1916-7, recently overhauled, £80; tax, insurance, screen, Klaxon, lamps, Cowey, speedometer, condition and appearance excellent, any trial by appointment.—F. F., 2, Lower Derby Rd., Watford. [5211

SHOP-SOILED 1922 A.J.S. 7h.p. Combination, spare wheel, windscreen, etc., never been used; reduced to £165; easy payments; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5503

90 GNS.—1919 A.J.S. 6h.p. Coachbuilt Combination, windscreen, spare wheel, tax paid, good order, driven by mechanic, bargain, quick sale, any trial by appointment.—177, Lewisham Rd., Lewisham, S.E.13. 'Phone: Lee Green 1716. [5498

A.J.S. 1921 Combination, spare wheel, Lucas electric lamps, Watford speedometer, pillion seat, spare valve and accessories, splendid condition throughout, unpunctured, tax paid; £145, or near offer; seen London.—Box 2971, c/o *The Motor Cycle*. [5490

A.J.S. Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5160

6h.p. 1920 A.J.S. De Luxe Combination, interchangeable wheels with spare, very completely equipped, screen, lamps, speedometer, mirror, etc., beautiful condition, small mileage; cost £225; accept £115; will ride machine reasonable distance for inspection.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [5336

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7662

Alldays.

ALLDAYS-ALLON 2-speed, fast, splendid running; £30.—Beams, West Ewell, Surrey. [5000

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Allons; unequalled service, repairs, etc. [3559

ALLON 2¾h.p., 2-speed, Tan-Sad, excellent condition, all on; £30; after 6.—132, Beechhill Rd., Highams Park, E.4. [4952

1922 Allon Combination, electric lighting, tax paid, original tyres, unscratched; £72.—8, Half Moon Lane, Herne Hill, S.E.24. [5400

WAUCHOPE'S, 9, Shoe Lane, London.—Allon 2-stroke new 1922 motor cycles, 2-speed gear model, £60; 3-speed gear model, £65; easy payments and exchange. [5424

29 GNS, Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452. [4773

1916 2¾h.p. 2-speed Allon, engine overhauled, guaranteed perfect, fully equipped, licensed, enamel good; bargain, £26.—Malvern Garage, Thornton Heath. [5256

1921 Alldays' Allon, 2¾h.p., 2 speeds, clutch and K.S., fully equipped, tax paid; £50. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5143

American X.

£24.—1914 7-9h.p. American X. 2-speed, clutch, K.S., fine running order.—King, Egrove, Oxford. [5232

AMERICAN X. Combination, new September, 1921, mileage under 600, Milford de Luxe sidecar, Easting Royal, Bonnilksen, Klaxon, etc., owner bought car; £110.—Write, C. Innisfail, North Park, Gerrards Cross. [5380

Ariel.

£14.—3½h.p. Ariel, Mabon countershaft gears, sound machine.—King, Egrove Farm, Oxford. [5236

ARIEL 6h.p. Combination, 3-speed, trial; £75.—Taylor, 31, Patterdale Terrace, Gateshead. [5097

ARIEL 3½h.p. Touring Model in stock; £95 cash or exchange.—Toshach, Cycle Depot, Woodbridge. [4417

3½h.p. 1921 Ariel Combination, very carefully used; £90.—Timberlake's Garage (Tel.: 512-513). Wigan. [4042

1922 Ariels; immediate delivery; best value; 6-7h.p. combination, £125.—Pinn's Garage, 12, High St., Fulham. [8297

ARIEL late 1920 3½h.p., 3-speed, equipped, taxed; 62 gns., photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2725

ARIEL 1921 6h.p. Standard Combination, Lucas Magdyno lighting, leg guards, tax paid; £130.—Basement, 89, Gt. Portland St., London, W.1. [3442

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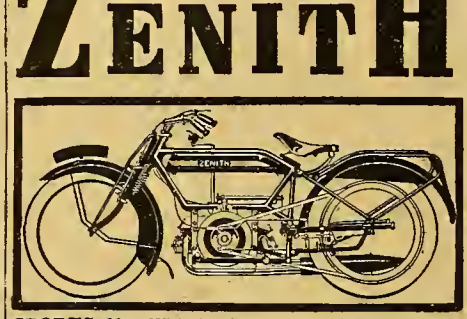


SPORTS 3½. With Bradshaw oil-cooled engine and GRADUA GEAR.

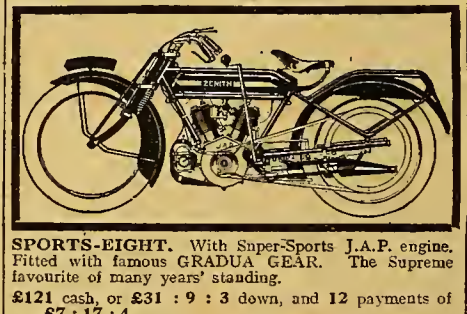
£113

(SHOPSOILED MODELS)
FOR

75 gns.

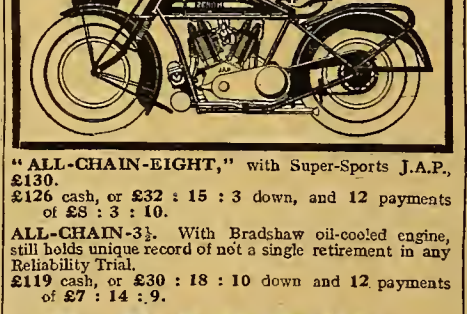
OR

£25 on taking the Machine away and 6 monthly payments of £9 : 4 : 5.



SPORTS-EIGHT. With Super-Sports J.A.P. engine. Fitted with famous GRADUA GEAR. The Supreme favourite of many years' standing.

£121 cash, or £31 : 9 : 3 down, and 12 payments of £7 : 17 : 4.



"ALL-CHAIN-EIGHT," with Super-Sports J.A.P., £130.

£126 cash, or £32 : 15 : 3 down, and 12 payments of £8 : 3 : 10.

ALL-CHAIN-3½. With Bradshaw oil-cooled engine, still holds unique record of not a single retirement in any Reliability Trial.

£119 cash, or £30 : 18 : 10 down and 12 payments of £7 : 14 : 9.

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MOTOR CYCLES FOR SALE.

Ariel.

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agents, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [02

ARIEL New 1922 3½h.p. Sports Model Combination, 3-speed, clutch, and kick-starter; £115.—Wauchope's, 9, Shoe Lane, London. Easy payments or exchange. [54

ARIEL 1919 Combination, very good order, electric lighting, etc.; £57/10.—Elce, Ltd., 13-15-1 Bishopsgate Av., Camomile St., E.C.3. 'Phone Avenue 5548. [00

1921 6-7h.p. Ariel Combination, Lucas Magdyn lighting set, horn, legshields, screen, perfect condition; £120.—Storer and Tait, 20, Bourdon St Bond St., W.1. Mayfair 625. [55

ARIEL 1920 Combination, 3-speed, kick-starter electric lighting, Tan-Sad, coachbuilt sidecar windscreen, hood, side curtains, luggage grid, speedometer, all tools; £65.—Holbrook Motor Co. Richmond 'Phone: Richmond 255. [51

Spare Parts:

ARIEL Spares for all models, post free. Ari Agents, and Spares Service Depot.—Jones Garag Broadway, Muswell Hill, N.10. [08

Arno.

4h.p. Sports Arno. new, fast, reliable clutch, beautiful exhaust; sacrifice £30; light sidecar, £3; offer —Squire, Wivenhoe. [49

Bat.

BAT-J.A.P. 5-6h.p. Coachbuilt Combination, 3 speed, in perfect condition; £35; a real bargain —249, Rye Lane, Peckham, S.E. [37

1921 8h.p. Bat-Jap Combination, electric lighting Cowey, detachable and spare wheels, Easting tax paid; £125; would consider lighter machine part.— 7, Norwood Rd., Herne Hill, S.E.24. [53

Blackburne.

Spare Parts:

BLACKBURNE.—All engine spares from stock; lis on application.—Maudes', 100, Great Portland St. W.1. [41

Bradbury.

£16.—4h.p. Bradbury, 2-speed, clutch, splendid running order.—King, Egrove Farm, Oxford. [523

1922 Brodbury 2¾h.p., 2-speed, clutch and kick start, cheap.—53, Market St., Hebden Bridge. [507

BRADBURYS from £50; deferred payments.—Knowsley Motors, 236, West End Lane, N.W.6. [500

NEW Bradbury Milford Combination, 4h.p.; £95 exchange lightweight part.—Boydell, Orford, Warrington. [524

BRADBURY, 2¾h.p., 1922, tax paid, 2-speed, clutch and kick-starter; £55.—Wauchope's, 9, Shoe Lane, London. [543

BRADBURY 4h.p. 1920, 3-speed, all-chain, clutch, K.S., fully equipped overhauled; bargain £53.—Ingle, Hilton, Hunts. [497

3½h.p. Bradbury, good running order, lamps, horn, taxed, photo; offers.—Barnwell, Berry Lane, Aspley Guise, Bletchley. [538

BRADBURY late 1920 6h.p. Combination, luxurious leather upholstered, screen, cape hood, windscreen, perfect, reliable; £75, bargain.—Becker, 26, The Parade, Golders Green. [497

4h.p. Bradbury Combination 1921, Sturmey 3-speed, clutch, kick-start, speedometer, lamps, new oversize tyre, just overhauled, Camber sidecar, Easting, tax paid, insured, ride away; £59.—Lunn, 14, Colby Rd., Upper Norwood, London. (D) [506

Brough.

1921 Brough Model G, Sporting, perfect, very fast, full equipment; £70.—Hurt, South Darley, Matlock. [513

BROUGH 1920 5-6h.p., Model G, Combination, electric lighting, full equipment, excellent condition; £82.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [006

1921 3½h.p. Brough, perfect condition, long plated exhausts, silencer if preferred, Cowey, lamps, close ratios, K.S., mileage low, exceptional 'bus; cost £145, sacrifice £80.—174, Oakbrook Rd., Sheffield. [546

5h.p. Brough Model G Combination, late 1920, engine just back from makers, electric light, Easting, etc., any trial; what offers? Must be sold.—Parfitt, Holly House, Peasedown, nr. Bath. [509

NEW 1922 3½h.p. Flat Twin Sports Model Brough, 3-speed, chain drive, slightly shop-soiled; reduced to £85; list price £110; easy payments if required, 4 per cent. extra.—Premier Motor Co., Aston Rd., Birmingham. [550

Brough Superior.

8h.p. Brough Superior o.h.v. Sports Combination, mileage 2,900, perfect and very fully equipped; £125.— 173, Park Avenue, Northfleet. [498

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 1922 Models: 2¾h.p. £68, 4h.p. solo £110, 4h.p. combination £135; prices include l accessories; delivery from stock.—Rivett, 236, High d., Leytonstone. [2680

¾h.p. Douglas, W.D., reconditioned machine, un- 4 used, nearly all new parts, tyres, belts, etc.; 0 gns.; all on, exchanges.—Edwards, 50, Harrington td., South Kensington. [5204

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful you. The pioneer agent for Douglas motors.—196, heltenham Rd., Bristol. [0016

DOUGLAS 1921 2¾h.p., 2-speed model, lamps and horn, tax paid, very small mileage; £45.—Newn- am Motor Co., 223, Hammersmith Rd., W.6. 'hone: Hammersmith 80. [4633

DOUGLAS 2¾h.p. 1920, 3-speed, lamps, mechanical horn, Cowey speedometer, knee-pads, spares, uaranteed perfect; approval deposit; £52/10.—Gibb, 00, Northgate, Gloucester. [5530

DOUGLAS 1919 4h.p. Combination, beautiful order, 62 gns.; also another, 1919 4h.p. solo. 2 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper ichmond Rd., East Sheen. [2727

DOUGLAS 4h.p. 1920 Combination, Triplex adjust- able windscreen, hood, speedometer, lamps, com- ete set tools, tax paid, all in perfect condition; hat offers?—N. Gibbs, 4, Weigall Rd., Lee, S.E.12. [5023

-SPEED 2¾h.p. 1920 Douglas, clutch, K.S., acces- sories, excellent condition; £54; will ride machine easonable distance for inspection.—Kinsey and Co., td., 350, Lower Addiscombe Rd., Croydon. 'Phone: 129. [5338

OR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London ents, and give you the best of service; all spares in ock; no W.D. rubbish.—Jones Garage, The Broad- ay, Muswell Hill [0786

¾h.p., 1920, 3-speed, hand clutch and kick-starter, 4 £55; 2¾h.p. 1921 2-speed Douglas, all on, 60, solo; also 3½h.p. 1914 Douglas combination, 2- eed, £35.—Wauchope's, 9, Shoe Lane, Fleet St., ondon. Cash or easy terms. [5430

DOUGLAS 4h.p. Combination, Binks carburetter, new chain, engine as new, new cylinders, pistons, rings, alves, guides, etc., complete with lamps, D.A. cylinder, lectric battery tools, mirror and speedometer; £53.— 04, Palace Rd., Tulse Hill, S.W.2. [5059

DOUGLAS Combination, 4h.p., 1920, condition and appearance as new, mileage 4,000, hood, reen, lamps, horn, mirror, luggage carrier, new are belt, tax paid; £80, genuine bargain.—Private wner, 107, Kingsland Av., Earlsdon, Coventry. [3846

ICKHAM, Stokes Croft, Bristol, the Douglas Agent with real experience and knowledge of a ouglas. Successes during 1920 on this mount: 38 sts, 17 seconds, and 8 thirds, also 6 special ophies. Let me deal with your order. Unequalled rvice, repairs, etc. [3557

DOUGLAS Specialists.—Wanted, your present motor cycle in part exchange for any new model from tock. No waiting. Distance no object. Best prices llowed for second-hand machines. Deferred pay- ents. (See column advertisement).—Bamber's, 2, astbank St., Southport. 'Phone: 607. [5163

1920 Douglas 4h.p. Combination, Triplex screen, hood, 6-volt. dynamo lighting, dash, ampmeter, ut-out, switch, accumulators, spot light, 3 lamps, imer, speedometer, mechanical horn, luggage grid, ew tyres, insurance, perfect engine, outfit absolutely x-showroom; £175 worth for £97/10.—Write appoint- ent, 18, Chatsworth Gardens, Acton, W.3. [5192

DOUGLAS New 2¾h.p. 1922 2-speed model, fully equipped, £68; 2¾h.p., 3-speed, clutch and kick- art model, all on, £82; 4h.p., all on, £110; 4h.p. mbination, all on, £135; 3½h.p. sports model, £115; h.p. combination, all on, £165. Your old machine ken in exchange and treated as payment down, e remainder in 12 equal monthly payments or more. Wauchope's, 9, Shoe Lane, London. [5431

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7665

DOUGLAS Spares.—Large stocks of genuine Douglas spares. Dealers supplied at trade rates.—Rivett, 36, High Rd., Leytonstone. [2679

FRANK WHITWORTH, Ltd., 139, New St., Bir- mingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare art stockists.—Jones' Garage, Broadway, Muswell Hill, .10. [0806

Dunelt.

1921 Dunelt 3½h.p., 2-stroke, new tyres, M-L dy- namo lighting, all accessories, tax paid, only ants seeing; £60.—3, Norwood Rd., Herne Hill, E.24. [5393

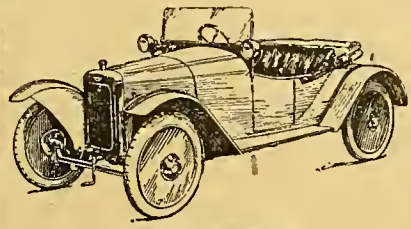
Economic.

£34.—Economic, variable gear model, finest value, call and inspect.—Pinn's Garage, 12, High St., lham. [8298

1922 COVENTRY PREMIER

REDUCED PRICE, £230.

8 h.p. W.C. 4-wheeler, dynamo lighting, spare wheel, hood, screen, speedometer, dickey seat and 12 months' insurance.



1922 MODELS

B.S.A., 10 h.p., dynamo lighting, starter, etc.	£340	0
CALTHORPE, 2-seater, all-weather body	£375	0
CALTHORPE, 4-seater, all-weather body	£395	0
L.S.D., 8 h.p., 3-wheeler, All on	£165	0
LAGONDA, 11.9 h.p. 2-seater, new model	£299	5
LAGONDA, 11.9 h.p. (Coupe or 4-seater)	£395	0
RHODE, 10 h.p. 4-cyl. light 4-seater	£275	0
B.S.A., 4½, 3-speed, All chain	£110	0
B.S.A., 4½, 3-speed, All-chain comb.	£142	0
B.S.A., 6 h.p., 3-speed, coach comb.	£164	0
DOUGLAS, 2¾, 2-speed	£68	0
DOUGLAS, 2¾, 3-speed, clutch	£82	0
ENFIELD, 2¾, 2-speed, All chain	£55	0
ENFIELD, 8 h.p., All chain comb.	£140	0
LEVIS, 2¼, 2-speed, belt and chain	£58	0
LEVIS, 2¼, 2-speed, model G	£61	0
MARTINSYDE, 6 h.p. comb., reduced to	£150	0
NEW IMPERIAL, 2¾, 3-speed, All chain	£73	0
NEW IMPERIAL, 8 h.p., comb.	£145	0
NORTON, 3½, 3 speed, 16 H	£115	0
NORTON, 3-speed, Big Four	£120	0
NORTON, Big Four, and family sidecar	£157	0
REX ACME, 2¾, 2-speed	£50	0
SCOTT SQUIRREL, 3½ h.p.	£105	0
SCOTT, 3¾, comb.	£145	0
SUNBEAM, 3½, 3-speed, new model	£126	0
TRIUMPH, 4 h.p., All chain, 3 speed	£115	0

SECOND-HAND BARGAINS

SOLOS.

A.V. MONOCAR, 1920, 8 h.p., J.A.P., 2 speeds	£75	0
ARIEL, 1920, 3½, 3-speed countershaft	£69	10
ARIEL, 1919, 3½, 3-speed countershaft	£55	0
B.S.A., 1919, 4½ h.p., 3-speed, tax paid	£60	0
EDMUND, J.A.P. 1920, 2¾, 2-speed	£49	10
HUMBER, 3½, wants attention	£14	10
NEW IMPERIAL, 2¾, tax paid	£25	0
PREMIER, 3½ h.p., 2-speed, spring forks	£35	0
PREMIER, 3½ gradua gear	£25	0
RUDGE, 3½, clutch model, wants attention	£19	10
RUDGE MULTI, late 1919, 3½, tax paid	£49	10
RUDGE MULTI, 1920, 3½ I.O.M.	£55	0
RUDGE MULTI, 1921, 3½ h.p., I.O.M.	£59	10
RUDGE MULTI, 1920, 5-6 h.p., tax paid	£62	10
RUDGE MULTI, 1920, 7-9 h.p.	£70	0

PASSENGER MACHINES

COVENTRY PREMIER, w.c., 3-wheeler	£157	10
RANGER, 2-seater, light car	£75	0
RICHARDSON, 1820, light car	£95	0
ARIEL, 3½, 1920, 3-speed comb.	£79	10
ARIEL, 1919, 3½, 3-speed comb.	£60	10
B.S.A., 1919, 4½, comb., tax paid	£79	10
COVENTRY VICTOR, 5-6, 1921, flat twin	£97	10
CHATER LEA, 8 h.p., 3-speed, comb.	£69	10
HARLEY, 1918, 7-9, 1920 Grindlay s.c.	£97	10
HARLEY, 1919, electric comb.	£105	0
MATCHLESS, 8 h.p. comb., wants attention	£39	10
MARTINSYDE, 1920, 6 h.p., comb.	£85	0
REX J.A.P., 8 h.p., 2-speed comb.	£52	10
RUDGE, 1920, 5-6, and sidecar, tax paid	£72	10
RUDGE, 7 h.p., 1920 comb.	£89	10
SUNBEAM, 8 h.p., M.A.G., 3-speed comb.	£92	10
TRIUMPH, 3½, 2-speed comb., tax paid	£39	10
TRIUMPH, 1921, all chain comb., tax paid	£110	0

DEFERRED PAYMENTS? YES.

Halifax Motor Exchange,

25, Horton Street, Halifax.

'Phone: 1400. 'Grams: "Perfection."

Economic.

ECONOMIC; £34; deferred payments.—Knowsley Motors, 236, West End Lane, N.W.6. [5010

ECONOMIC.—Immediate delivery of this wonderful low-priced machine, variable gear; £34, or easy payments; send for catalogue.—South Eastern Garage, Herne Hill S.E.24. [5398

£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor cycles £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Enfield.

SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD Twin 2¾h.p., good condition; £18, offers. —Bevis, 29, Queen's Rd., Basingstoke. [5194

1917 6h.p. Enfield Combination, perfect condition; accept £60.—Hey, Wormald, Rishworth, Yorks. [5345

1920 Royal Enfield Combination, as new, tax paid; £87/10, bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [5457

LATE 1916 6h.p. Enfield Combination, hood, screen, lamps, trial; £65, or nearest.—W. Baker, 47, Burnell Avenue, Welling. [5267

ENFIELD Combination, all accessories, in good condition; £80, or near offer.—Meadowbank, Rectory Rd., Farnborough, Hants. [4971

DAN GUY, Weymouth.—Enfield 1921 8h.p., Magdyno, double-seated sidecar, hood and screen, guaranteed perfect; £125. [0818

ENFIELD 1921 8h.p. and sidecar, dynamo lighting, all as new; a bargain, £125.—Povey Cross Works, Horley, Surrey. 'Phone: 117. [5090

T.T. 3h.p. Enfield, recently overhauled by makers, all accessories, excellent condition; £35.—A. Reeves, Church Rd., Broadstone, Dorset. [5268

ENFIELD 2¼h.p. 2-speed, new condition; £39; genuine.—Douglas Johnson, Greenfield Tarne Farm, Wattington, Oxfordshire. [4990

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175a, London Rd., Croydon. 'Phone: 1619. [6299

ENFIELD 1917 6h.p., perfect running order, mileage 5,500. 2-seater sidecar, fully equipped; £85.—Bevis, 3, Turle Rd., Tollington Park, N.4. [4949

1921 8h.p. Enfield Combination, Magdyno lighting, mileage under 2,000, perfect condition; bargain, £120.—Morris, 90, Other Rd., Redditch. [5134

ENFIELD 8h.p. Combination, accessories, very good order; £75.—Newnham Motor Co., 223, Hammersmith Rd., W.6 'Phone: Hammersmith 80. [4629

1918 3h.p. Enfield, 2-speed, kick-start, and clutch, horn, licence paid, in good condition; £28. Exchanges.—2, Eastbank St., Southport. 'Phone: 607. [5158

ENFIELD.—Complete range of 1922 Models for immediate delivery. Cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [5178

1921 Enfield, 2-stroke, 2-speed, with lightweight C.B. sidecar in perfect condition; £45 complete (separate, £37 and £10).—30, Westward Rd., South Chingford. [5132

ENFIELD 1919 8h.p. Combination, full equipment, tax paid, very good condition; £75.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

1921 Enfield 8h.p. Combination, Vickers engine, speedometer, electric light, 2-seater sidecar, screen, hood, specially built detachable taxi top; £110.—Richmond, Sunnybank, Monmouth. (P) [5248

ROYAL ENFIELD Combination 1920 model, speedometer, electric lighting, new tyres, hood, screen, etc., all perfect running order, as new; £95, quick sale. —E., Mount Cottage, St. Leonards-on-Sea. [5030

EXCEPTIONAL Bargain.—Enfield 1922, latest 2-stroke Sports model, tax paid, better than new, not done 30 miles, new in July; accept £47/17/6.—Wilkins Simpson, Opposite Olympia, London. [5439

ENFIELD 1921 8h.p. Combination, Lucas dynamo lighting, fully equipped, tools, spares, etc, perfect condition; £115.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

ENFIELD 1922 8h.p. Combination, dynamo lighting, speedometer, hood, and screen, tax, side curtains; condition as new; £135.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4622

ROYAL ENFIELD 8h.p. Combination, new last March, Lucas electric light, full list of spares, tax paid to December, and insurance to March, 1923, in absolutely perfect condition, small mileage; price £135.—Elsden and Co., Ltd., Holt, Norfolk. [2503

MOTOR CYCLES FOR SALE.

Enfield.

1921 Enfield, 2-stroke, mileage 1,100, absolutely as new, plus lamps, spare chain, new tube and tax paid; 45 gns.—Harmer Hadlow Down, Sussex. [5022

ENFIELD Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5159

8h.p. New 1922 Royal Enfield Combination, £140; dynamo lighting model, £158; 2¼h.p. model, £55; with kick-starter, £57. Your old machine taken in exchange and counted as first payment down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, Fleet St., London. 'Phone: Holborn 5777. [5432

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7666

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [6300

Excelsior.

1920 British Excelsior Combination, Lucas magdyno lighting, interchangeable wheels, absolutely in first-class running order, windscreen, spare wheel, etc.; £87/10, bargain; exchanges.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [5458

F.N.

5-6h.p. F.N., 4-cyl., single speed, good order; £15.—17, Heaton Rd., Mitcham. [5311

LANGFORD'S, F.N. Specialists, 37, Cricklewood Broadway, London, N.W.2.—What about shaft drive? May we send you particulars of the latest F.N. models? 8h.p. 4-cyl., £125; 3h.p., £72; 2½h.p. £55. Exchanges are our speciality. [5285

F.N.'s, 8h.p., new type, overhead valves, £125; with sidecar, £160; 3h.p. new type, overhead valves, with kick-starter, hand-controlled clutch, and 2-speed gear, £72; a 2½h.p. 2-speed hand-controlled clutch, and kick-starter, side valves, £55; easy terms and exchange.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [5413

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [5286

Francis-Barnett.

1922 latest Francis-Barnett, all-chain, 2¾h.p. sports; £68.—Clifford Motories, Eastwood, Notts. [5448

1921 2¾h.p. Francis-Barnett, clutch, kick-starter, acetylene lamps, speedometer, horn, done very small mileage; £45.—A. S. C., 166, Gt. Portland St., W.1. Tel.: Museum 6626. [5476

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

1919 Harley-Davidson Combination, Grindlay sidecar; £62/10.—24, Balliol Rd., North Kensington. [5327

1915 Harley Combination, unused, magneto ignition, perfect order; £80; any trial.—E. A. Cobb, Potters Bar. [4846

HARLEY Combination, 7-9h.p., 1918-19, 3-seater sidecar, Tan-Sad, screens, speedometer, good condition, cheap.—120, Inderwick Rd., Hornsey, N. [5499

£65, bargain.—Late Harley Combination (not W.D.), licensed, decent appearance, mechanically absolutely perfect, genuine turnout.—"Parwood," 89, East Hill, Wandsworth. [5260

HARLEY 1918 Combination, electric lighting, tax paid, fully equipped, perfect; £70.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

1919 7-9h.p. Harley, Henderson Elite sidecar, fully equipped, any trial, £75; also 1918 combination, hood and screen; £65.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [5373

HARLEY 2-seater Combination, electric lamps, Bonniksen speedometer, very fine outfit; £90.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4626

HARLEY-DAVIDSON 1920 electric Combination, hood, screen, speedometer, discs, very smart, and in excellent order; £110.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4630

1921 Harley Combination, dynamo lighting, speedometer, discs, hood, screen, back rest, legshields, electric and mechanical horns, mascot, licensed, indistinguishable from new throughout; 128 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5452

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7667

MANUFACTURERS' STOCK

MAKINKOT BRAND

TO BE CLEARED.

Fawn double texture, interlined rubber,

MOTOR SUITS

THESE suits are made of Fawn double texture cloth, interlined rubber.

The seams are cemented, sewn and taped, making these absolutely waterproof.

Will stand any amount of hard wear.

The jackets are made double-breasted, with belts and wind cuffs.

The Motor Leggings are made fastening with clips and straps, and have wind gussets in leg.

These suits actually cost over 30/- to manufacture without any profit, but we have several thousands to clear.

Every suit is guaranteed absolutely waterproof, and should these not meet entirely with your approval, we guarantee to return your money in full, if returned within seven days.

SPECIAL PRICE,

29/11 Carriage 1/- extra.

We have also several thousands heavy Twill Suits to offer. These are made of the heavy Twill used for making Motor Hoods, and are one of the finest suits made for motor cycling, interlined rubber. They are made with sewn and cemented seams, and taped, also the seams of these suits are striped, making these garments absolutely waterproof, and we are prepared to give a guarantee that these are absolutely impossible for water to penetrate through. The Motor Leggings are made in the same way with wind gussets, fastening with clips and straps. The Suits are in sizes 34, 36, 38, 40, 42 and 44 chest, lengths inside leg are 27, 29, 31. Please state when ordering by post, measurements of chest, length inside.

50/- Carriage 1/- extra.

Orders to be addressed—

The LANCASHIRE and CHESHIRE RUBBER Co.

MAKINKOT HOUSE,

30, Thomas Street,

LIVERPOOL.

'Phone 4891 Bank, Liverpool.

MOTOR CYCLES FOR SALE.

Henderson.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Hendersons; unequalled service, repairs, etc. [3560

BARGAIN.—Henderson combination, 4-cyl., lamps, licensed, kick-start, perfect order; £39/10 cash.—89, East Hill, Wandsworth. [5281

£38.—Henderson 1916, with sporting sidecar, 10h.p., 4-cylinder, 2-speed, clutch, kick-starter, lamps, horn, speedometer, requires attention, bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [5472

1920 Henderson Combination, dynamo lighting, electric horn, windscreen, licensed year, perfect throughout; any trial; 85 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5545

HENDERSON Combination 1921, 2,250 miles, large bulbous sidecar to match, Easting windscreen, Klaxon horn, real drive, speedometer, splendid condition, cost £260; £125, or nearest offer.—18, South St., Torquay. [5043

HENDERSON Combination, 1913-14, just re-conditioned by real engineer (not garage) and mechanically thoroughly sound, offered at bare cost repairs; £55, seen any time.—Gammon's Farm, Gammon's Lane, Watford (Watford Junction Station). [4085

Hobart.

HOBART-VILLIERS 2½h.p., 2-speed, good condition; £28, near.—Izzard, 21, Verona St., Battersea. [5039

HOTSTUFF 4h.p. O.H.V. 1916 T.T. Hobart Jap, Bosch B.B., copper drainpipe clutch, absolutely perfect appearance and condition; 28 gns.—60, Barrington Rd., Brixton. [4945

Humber.

£18 near.—Humber 2¼h.p. 3-speed, good order.—16, Daleham Mews, Hampstead. [4989

£12.—3½h.p. Humber, 2-speed, clutch, handle starter, good running order.—King, Egrove, Oxford. [5240

F.O.C.H. have 3½h.p. Humber, 2-speed, excellent; bargain.—5, Heath St., Hampstead (near Tube). [2716

1922 Humber 4½h.p. Flat Twin Sports, brand new, shop soiled; £95.—Shepherd, Enfield Highway. [0909

4h.p. Humber, never been used, 1921 machine, paid £135; £75.—Timberlake's Garage (Tel.: 512-513), Wigan. [4040

Indian.

INDIAN 5-6h.p., 2-speed, kick-start, perfect; £30.—17, Heaton Rd., Mitcham.

INDIAN 7-9h.p. Spring Frame Combination, kick-start; £40.—17, Heaton Rd., Mitcham. [5309

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

1920 Indian 7-9h.p. Combination, electric lighting, insured and tax paid; 90 gns.—24, Poulton Rd., Southport. [5230

1915 7-9h.p. 3-speed Indian Combination, lamps, good condition; £75.—Colebrook, 92, Hazelville Rd., N.19. [4948

1916 7-9h.p. Powerplus Indian Combination, sporting sidecar, good condition; £55.—Shoobridge, Hoo, Rochester. [5034

INDIAN Scout, electrically equipped, Bonniksen, fast, new condition; £70.—4, Hanover St., London, W. (P) [5104

INDIAN 1919, dynamo lighting and horn, excellent condition; exchange, or sell £60.—Turner, Stoneleigh, Anston, Sheffield. [5044

1920 7-9h.p. Indian, 2-seater sidecar, dynamo lighting; £70.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [5374

£40.—7-9h.p. coachbuilt Indian Combination, 2-speed, clutch, good condition, running.—30, Cunning Crescent, Wood Green. [5214

1919 7-9 h.p. Indian Combination, Watsonian sidecar, 3-speed, tax paid, ride away; £65.—Armitage, Naval Headquarters, Hull. [4980

INDIAN 7-9h.p. 1920 Combination, Henderson sidecar, electric, fully equipped, licensed; £110, or near offer.—Warde Brothers, Ashstead, Surrey. [5128

1921 Indian Scout, dynamo lighting, speedometer, etc., tax paid; £85. Exchanges.—Horne's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5150

7-9h.p. Indian Combination, complete, lamp, horns, windscreen, perfect running order, excellent condition; £38, bargain.—Seymour, Bull Plain, Hertford. [5040

GODFREY'S, Ltd.—Indian Scout 1921 4h.p., dynamo lighting, Lucas electric horn, speedometer, guaranteed; £105—208, Great Portland St., W.1. [2354

1920 7-9h.p. Indian Combination, electric light, horn, speedometer, 2 screens, discs, luggage grid and business body; £110.—Riley, 13, Daneshouse Rd., Burnley. [5365

MOTOR CYCLES FOR SALE.

New Imperial.

NEW IMPERIAL 1916 2¾h.p., 2-speed, 26 gns.; also another, 1918, 2¾h.p., 2-speed, clutch, kick-start, 33 gns.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2728

NEW IMPERIAL 2¾h.p., Model No. 3, 3-speed, kick-start, all-chain drive; £73. Immediate delivery. Cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [5181

1920 New Imperial Combination, J.A.P., 8h.p., 3 speeds, clutch, and K.S., all lamps, horn, Easting screen, an exceptional bargain, tax paid; £80. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5147

SPECIAL Bargain.—New but slightly shop-soiled 1922 Model No. 3 New Imperial 2¾h.p., 3-speed, chain drive; reduced to £65; with Maglita electric lighting, £73; easy payments 4 per cent. extra.—Premier Motor Co., Aston Rd., Birmingham. [5507

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's. Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

Norton.

PREMIER Motor Co. for 1922 Nortons.

NO. 9, 3½h.p., £80; 16H, 3-speed, £115; Big Four, 3-speed, £120; sidecars from £22; easy payments, 4 per cent extra, free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [0865

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

1922 Nortons, all models; deferred payments.—Clifford Motories, Eastwood, Notts. [5446

1921 Norton 16H., mileage 3,500, licensed, insured, lamps, etc., owner bought car; £75, offers.—Harris, Cains, Cambridge. [5073

1921 3½h.p. Norton Sports Model, fully equipped, speedometer, etc.; £65, or nearest.—E. Robinson, Welbourne, Lincs. [5125

16H Norton late 1920, special engine, very fast, many special fittings and spares, offers.—Ward, 81, Monks Rd., Lincoln.

F.O.C.H. have a 1922 Norton 16H Model, little used, excellent condition, licensed; bargain.—5, Heath St., Hampstead (near Tube). [2715

NORTON, 1922 (May), fully insured, licence paid, perfect condition, owner going abroad; first reasonable offer accepted.—Barrow, Green Lane, Bolton. [4966

NORTON, new, 1922, all models supplied. Big Four and de luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115; exchange and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [5418

1921 Norton, exceptionally fast, fully equipped, tax paid, in splendid condition throughout; £75, or exchange considered.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London, W.2. Padd. 1177. [5541

NORTON Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5162

SPECIAL Clearance Offer of new slightly shop-soiled 1922 Nortons; No. 9, 3½h.p., £70; 16H, 3-speed, £95; Big Four, 3-speed, £100; this offer cannot be repeated; easy payments only 4 per cent. extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [5506

N.S.U.

£30.—6h.p. N.S.U. Combination, 2-speed, Senspray, Bosch, quarter's tax paid, overhauled, low built; no offers.—Woodgate, Colliers End, Ware, Herts. [5101

N.U.T.

O.V.H. twin N.U.T. 1915, aluminium pistons, overhauled March; £35.—Darragh, 14, Courtfield Gardens, Earl's Court. [5057

£40.—N.U.T. 3½h.p. sports, overhead valve twin J.A.P., Sturmey 3-speed, clutch, kick-starter, licensed, accessories, sidecar for same; £5.—406, York Rd., Wandsworth. [5304

Omega.

GODFREY'S, Ltd.—1921 2¾h.p. Omega-Jap, 2-speed gear, machine in excellent condition; £48. 208, Great Portland St., W.1. [4919

O.K.

O.K.-J.A.P. 1916 2¾h.p., 2-speed, new Dunlop heavy tyres, belt, chain, tappets, perfect order, tax paid; £27/10.—Howe, Walsingham, Norfolk. [5362

1921 O.K., 2-speed, clutch, kick-start, Lucas lamps, horn, licensed, guaranteed; £35, lowest.—Beesley, 198, Dantzic St., Manchester. [5252

P. and M.

1920 P. and M. Combination, good condition, Easting, lamps; £65.—Bowers, 10, Autumn Terrace, Burley, Leeds. [5315

A Real Rubber Non-skid.

ELITE SUPER NON-SKID

The Tyre that is different.

THE BEST TYRE you can fit to Perfection

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F.O.C.H. have 1918 P. and M. combination, fully equipped, excellent condition; special bargain.—5, Heath St., Hampstead (near Tube). [2718

P. and M., brand new, 4½h.p., 4-speed model, in stock; £102.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4635

P. and M., 1917 engine, 3½h.p., 2-speed, kick-starter, overhauled, new Palmer tyres, newly enamelled, licensed; sacrifice 39 gns.—77, Arthur Rd., Wimbledon Park. [5361

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1917-18 P. and M. Combination, lamps, horn, tax paid, in good condition; private owner; £36.—Clark, c/o Shepherds' Garage, Enfield Highway. Tel.: Waltham X 31. [0906

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P. and M. 1920, mechanical oiler, ratchett brake, Binks, Cowey, speedometer, lamps, horn, perfect condition, as new, mileage 2,000; £55, bargain.—57, Falmouth Avenue, Highams Park, E.4. [5208

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£14.—4h.p. twin Premier, Bosch, B. and B., good running order.—King, Egrove, Oxford. [5234

PREMIER 3½h.p., 3-speed, countershaft, kick-starter, hand and foot clutch, recently overhauled; offers.—35, Church Rd., Upper Norwood, S.E.19. [5313

2½h.p. Premier, Albion 2-speed, drop frame, foot-boards, ahields, really good machine; nearest £22/10.—Bishop, Winkfield Row, Bracknell, Berks. [5227

PREMIER 3½b.p. countershaft gear box Combination, in good running condition; £27.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80 [4631

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QUADRANT 1922 Standard Combination, all-chain drive, soiled only, complete; £98/10.—Elce, Ltd., 13-16-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

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6h.p. Rex, 3-speed clutch; best offer; in fair condition.—Bainbridge, Witton, Gilbert, Durham. [4987

1913 Rex Combination, 8-8h.p., little used; £45; offer wanted, lightweight.—Marks, 1, Opal St., Lower Kennington S.E. [5140

2¾h.p. Rex-Acme Combination, Blackburne engine, new, fast, just delivered ex works, 3 speeds, Sturmey-Archer gear, kick-starter and hand-controlled clutch, £96/15; exchange and easy terms.—Wauchope's, 9, Shoe Lane, London [5420

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1922 (March) Rover 4h.p. touring, perfect, Millord sidecar; offers.—56, Lynn Rd., Ely, Cambs. [5271

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1922 2¾ h.p. **NEW IMPERIAL,** Sports Model. Winner 4 firsts Southend Speed Trials. As new, 6 weeks old, year's licence 74

1921 2¾ h.p. **NEW IMPERIAL,** 3-speed, equipped, excellent condition 49

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1921 Baby **TRIUMPH.** Fully equipped and taxed. New condition 42

1921 **B.S.A.** all chain, speedo., equipped, licensed, as new 65

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1921 5 h.p. Sports **ZENITH,** excellent condition, 2 months old 69

1921 **SCOTT,** Lucas lamps, speedo., Tan-Sad, mileage 490, indistinguishable from new 75

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1920 **RUDGE,** equipped 45

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ROVER 3½h.p. Countershaft Combination, 3-speed, kick-start, excellent condition; £65.—Hutley, 130, First Av., Manor Park, E.12. [5048

ROVER, genuine T.T. 3½h.p., Phillipson, absolutely perfect condition, complete with accessories, tools, spares, licensed; very fast; £40.—Monk, 5, Lemna Rd., Leytonstone, E.11. [4984

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ROYAL RUBY, 2¾h.p., 2-stroke Villiers, in thorough order, all on, spare belt; £30, or offer.—Mullock, 2, Musgrove Rd., New Cross. [4953

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1920 Rudge 5-6h.p. Combination equipped, spares, trial; £75.—49, Spital St., Dartford. [5139

1922 Rudges.—All models in stock.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0900

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1922 I.O.M. Rudge-Multis in stock at the latest reduced prices, £77.—Jones' Garage, Broadway, Muswell Hill, N.10. [0791

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RUDGE 7-9h.p. 3-speed, late 1921 model, practically new, only driven about 150 miles; £75.—C. A. Vandervell and Co., Ltd., Acton, W.3. [5027

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1920 3½h.p. Rudge Combination, as new, all accessories, owner buying car, £65; also 2½h.p. Singer T.T., new belt and tyres, good condition; 20 gns.—Capt. Martin, Heathfield, Broadstone, Dorset. [5013

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1921 (June) Rudge-Multi Combination, 5-6h.p., as new, 68 gns., or solo, 69 gns.; 1920 Rudge-Multi 7-9h.p. combination, 75 gns.; 1916 Rudge-Multi combination 3½h.p., 42 gns.; solo, 33 gns.; exchanges, photographs free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [2729

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RUDOE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

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SCOTT Combination (late 1920), Easting, tax paid, fine machine; £70.—77, Horton Grange Rd., Bradford. [5050

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1922 Zenith-Bradshaw 3½h.p., all chain, shop-soiled; £110.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [5198

1920 Zenith 6h.p. Sports Model, Binks, knee-grips, horn, new spare tyre and tube 80 m.p.g.; £65.—Allin, 12, Bridge St., Cambridge. [3881

ZENITH: Official Appointed Agents.—New 1922 models on easy terms; list on application; exchanges.—Wauchope's, 9, Shoe Lane, London. [5405

ZENITH 6-8h.p. Sports Model with Swan Sidecar, speedometer, lamps, and horn; £75.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4625

ZENITH-BRADSHAW 1922, 3-speed all-chain drive model; not run 50 miles; £105.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4636

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ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

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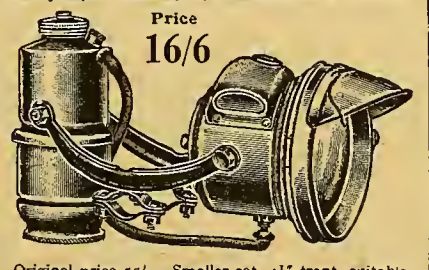
TUBES.—24×2, 24×2½, **4/8**; 26×2½, 26×2½ and 26×2⅛, **4/11**; 28×3 and 700×80, **6/6**. Post 9d.

BELTS.—Clincher clearance, not W.D., ¾", 6' 6", **8/2**; ⅞", 7' 6", **9/5**; ⅞", 7' 6", **9/5**; 8', **10/1**; 8' 6", **10/9**; 1", 7' 6", **10/4**; 8', **11/-**; 8' 6", **11/8**; 1⅛", 8', **16/-**; Bates short lengths, ¾", 5' 6", **5/-**; ⅞", 5', **5/8**; Leather belts ¾" at **1/6** per ft.; Belt fasteners **9d.** and **1/-**. Post **1/-**.

Great purchase of Genuine "BOBJON" LAMPS. Nickel plated on brass or black and plated. Large size, 5½" front, with powerful back lens, large generator sufficient for two lamps, suitable for a heavyweight machine, **25/-** complete, as illustrated.



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Original price 55/-. Smaller set, 4½" front, suitable for lightweight, **16/6**. The greatest bargain ever offered. When cleared can never be repeated at near the price. Postage and packing 1/6 extra. Special quotation for quantities.

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SPEEDOMETERS.—Slightly shop-soiled. Cowey with trip, **£4 10s.** Smith's with trip, **£4 5s.** Bonnikseo's in stock. Post 1/6. Speedometer replacements in stock.

TAN-SADS.—A few with back seat to clear, **28/6**. Original, 57/-. Carriage 3/6 extra.

GAUNTLETS.—Extraordinary bargains. Tan leather, unlined, **7/6**. Lined, **9/11**, new and fresh. Chrome leather gauntlets with finger and thumb and wrist strap, **2/11**. Gloves, leather, wool lined, **3/11**. Above lines are worth more than double. Limited quantities only. Postage 6d.

WATERPROOF SUITS.—Less than pre-war prices. Great purchase of manufacturers' stock, consisting of double-breasted coat with belt, storm cuffs, and collars, and seatless trousers with gussets, patent tasteners, and leather bound seats. Finest quality, extra heavy, double texture waterproof material, dark fawn, new and fresh, only been made recently, not half-perished W D. Our price to clear, **£2 2s.** Postage 1/6 extra. Could not be bought elsewhere under £4 10s. The greatest bargain ever offered. Order immediately to save disappointment. All stock sizes.

HORNS.—Reliable Electric, Motor Cycle, up to 4-volt only, complete with wire and switch; usual price, 29/6, our price, **15/6**. Postage 1/3 extra. Smith's Electric Horns, black and nickel, in 6, 8, or 12 volts, large size, suitable for heavy combinations; original price, £2 15s.; our price, **30/-**. Postage 1/5. The greatest bargain ever offered. All new and perfect.

We can supply every thing for the motor cyclist at competitive prices.

BANCROFTIAN CO.,
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'Grams: "Cbaikel.London." 'Phone: London Wall 969.

MOTOR CYCLES FOR SALE.

Miscellaneous.

WANDSWORTH Motor Exchange, London's leading Motor Cycle Exchange, for great bargains; cash, exchanges, easy terms.

WANDSWORTH.—When you buy your motor cycle from us you are dealing with an old-established firm, backed by 24 years' sound motor experience. Advice free. Satisfaction guaranteed.

WANDSWORTH.—Easy terms; the only firm to give immediate delivery any motor cycle first deposit.

WANDSWORTH.—Indian 4h.p., clutch model, chain drive, drive away; 22 gns.; easy terms.

WANDSWORTH.—Motosacoche Lightweight 2½h.p., variable gear, runs splendidly, fully licensed; 19 gns.; terms.

WANDSWORTH.—T.D.C. de Luxe 2¼h.p., 2 speeds, only wants seeing; 26 gns.; easy terms.

WANDSWORTH.—Royal Enfield 3h.p. Twin, 2 speeds, lamps, drive away; 29 gns.; terms.

WANDSWORTH.—Triumph 3½h.p., clutch model, dropped frame, runs well; 26 gns.; easy terms.

WANDSWORTH.—Triumph 3½h.p., magneto, good tyres, lamps, drive away; 22 gns.; easy terms.

WANDSWORTH.—F.N. 2¾h.p., 2 speeds, lamps, Klaxon, runs well; 25 gns.; easy terms.

WANDSWORTH.—Roc 5-6h.p. Twin, clutch, new tyres, lamps; only 28 gns.; easy terms.

WANDSWORTH.—P. and M., about 1917, 3½h.p., 2 speeds, kick, new tyres, newly enamelled; 39 gns.; terms.

WANDSWORTH.—Premier, splendid coachbuilt Combination, 3½h.p., Grade gear, kick; 35 gns.; easy terms.

WANDSWORTH.—Triumph Coachbuilt Combination 3½h.p., Grade gear, clutch, lamps; 39 gns.; easy terms.

WANDSWORTH.—Singer, beautiful coachbuilt Combination, 4½h.p., 3-speed, gear box, kick, lamps; 49 gns.; terms.

WANDSWORTH.—Henderson (late), roomy coachbuilt Combination, 8-10h.p., 4 cylinders, 3 speeds, lamps, speedometer; 59 gns.; terms.

WANDSWORTH.—Indian (late) 7h.p. Twin, 3 speeds, newly enamelled; 55 gns.; easy terms.

WANDSWORTH.—Hazlewood Coachbuilt Combination, 5h.p. Twin J.A.P., 3 speeds, lamps; 55 gns.; terms.

WANDSWORTH.—Douglas (genuine 1919) 4h.p., 3 speeds, clutch, kick, dynamo lighting; sacrifice, 55 gns.; terms.

WANDSWORTH.—Douglas, latest 1921, 2¾h.p., 2 speeds, lamps, speedometer, as new; 58 gns.

WANDSWORTH.—Coulson 1921, 2¾h.p. Blackburne engine, 2 speeds, spring frame; 49 gns.; terms.

WANDSWORTH.—Connaught, 1921, August, 2¾h.p., lamps, 2 hooters, speedometer; 42 gns.; easy terms.

WANDSWORTH.—1920-21 Royal Enfield 2¼h.p., 2 speeds, lamps, nearly new; 42 gns.; terms.

WANDSWORTH.—1921 Metro-Tyler 2¾h.p., 2 speeds, lamps, little used; 39 gns.; terms.

WANDSWORTH.—1920 Indian (November) Coachbuilt Combination, 7-9h.p., 3 speeds, dynamo lighting, lamps, speedometer, Easting, 2 hooters; 69 gns.; easy terms.

WANDSWORTH.—Indian, splendid Coachbuilt Combination, 7h.p. Twin, 2 speeds; 49 gns.; easy terms.

WANDSWORTH.—F.N., almost new, 5-6h.p., 2 speeds, clutch, beautiful enamelled, plated; 49 gns.; easy terms.

WANDSWORTH.—Indian 1915 T.T., clutch model, 7h.p. Twin, fast; 39 gns.; easy terms.

WANDSWORTH.—10 beautiful Coachbuilt Sidecars, Glorias, Grindlays, from 8 gns.; canes, 3 gns.; terms.

WANDSWORTH.—Exchanges. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [5444

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or deferred payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1611

1921 Monarch Combination, 6h.p. J.A.P., 3-speed Sturmey, Easting, as new, £86; 1920 British Excelsior, 6-8h.p. J.A.P., 3-speed, spare wheel, Gloria sidecar, Lucas Magdyno, £87/10; 1919 Triumph combination, lamps, tax, as new, £75; Baby Triumph, £35; Monarch, 2-stroke, 1921, clutch, kick-start, as new, £37/10; Rudge-Multi 3½h.p., £28, bargain; Triumph, countershaft, 1918, £55; 2-seater Emscote, 1920, £130; G.W.K., perfect, £85; exchanges arranged. Rhind and Co., Stone Place, Wilmslow Rd., Rusholme, Manchester. 'Phone: 776 Rusholme. [5460

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue 4
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.
Miscellaneous.

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite station, L.S.W. Railway). 'Phone: Latchmere 4388. Terms, no extra with good deposit; immediate delivery; no inquiries; satisfaction guaranteed.

ALLBER.—Clyno 1920 2-stroke, 2-speed, clutch, all accessories, tax paid, in new condition; £39.

ALLBER.—Humber 1914 3½h.p., 2-speed, handle start, all accessories, tax paid; £25.

ALLBER.—Triumph 3½h.p., clutch model, all accessories, Philipson pul'ey, tax paid, good condition; £28.

ALLBER.—Douglas 1914 3½h.p., 2 speeds, complete with all accessories, tax paid; £29.

ALLBER.—New Imperial 1918 2½h.p. J.A.P., 2-speed, sporting machine, all accessories, tax paid; £32.

ALLBER.—Blackburne 1920 4h.p., 3-speed, clutch, kick, all accessories; tax paid; £65.

ALLBER.—Triumph-Gloria 1921-22, all-chain model, Easting Royal, luggage grid, complete acetylene lamps, most beautiful combination, as new, tax paid; £120.

ALLBER.—1916 B.S.A. Combination, 4¼h.p., countershaft, Easting, all accessories, in good order, tax paid; £59.

ALLBER.—Chater-Lea-Jap Combination, specially built, 1921, 5-6h.p., S.-A. 3-speed, clutch, kick, Ariel coach sidecar, all accessories, tax paid; £55. [5502

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories, Waterloo Rd., Blackpool.

BLACKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £95/10.—Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination, spare wheel, £150; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel. £110/10/6; 1920 Tamplin, £59/10/6; Morgan De Luxe, £147/10/6; 1920 8h.p. Ruby combination. £79/10/6; 1920 3½h.p. New Scale, 2 speeds, K.S., £38/10; 6h.p. Bat, countershaft, 3-speed, £39/10/6; 1920 2¾h.p. Excelsior, £27/10/6; 3h.p. Enfield, £37/10/6; 6h.p. Indian, £32/10/6; 1921 Enfield lightweight, £39/10/6; 1920 Sun, £35/10/6; several others cheap; push cycles taken in exchange.—Booths' Motories, 294, Waterloo Rd., Blackpool. [5483

HALIFAX-RUDGES 3½h.p., clutch, £19/10; 1919 Multi, £49/10; 1920 Multi I.O.M., £55; 1921, £59/10; 5-6h.p. combination, £75; 1920 7-9h.p. twin combination, £82/10; deferred payments accepted.—Halifax Motor Exchange, Horton St., Halifax. [5485

A 1920 Pearson and Sopwith, 2-stroke, 2-speed, all on, etc., beautiful little machine; also a 3h.p. Grandex, 4-stroke, 2-speed, clutch, fully equipped, re-plated, enamelled, etc., like new, both perfect; offers wanted for either or both.—Walker, 769, Romford Rd., Manor Park, London, E. [5276

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HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272. [1519

MOTOR CYCLES WANTED.

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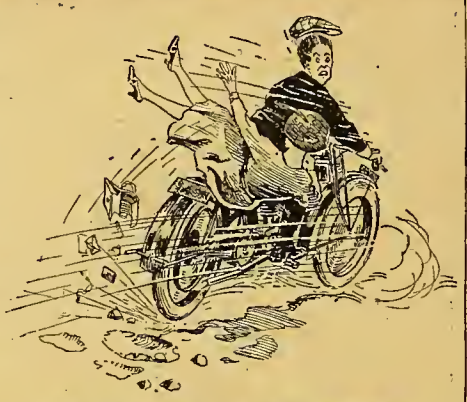
EDWARDS and Co.,
101 Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870



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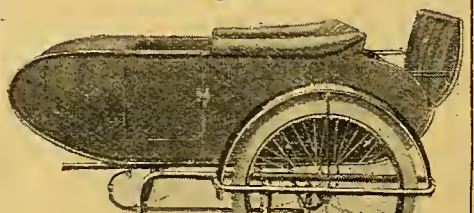
this skiddy weather.

Why not purchase one of our sidecars on our out of income plan? Your own dealer may supply you. Write for name of nearest Agent.



With child's seat £26 10 0

Call and inspect range of models or write for catalogue and form.

Any make of machine, Solo or Combination, supplied on a small deposit and terms to your convenience. No extras.

Write for form post free.

Immediate Delivery
Matchless
Triumph
Raleigh
Connaught, etc.

Call and talk it over or write and tell us all about it.

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LIMITED,
5, VICTORIA STREET,
LONDON, S.W.1.

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T.B.
WANT
500 COMPANIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5567

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ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0337

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GIVEN.

H. F. EDWARDS and Co., 50, Harrington Rd., South Kensington, will purchase for spot cash your motor cycle or combination. Call, write, or 'phone Ken. 3709. [0600

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale a nominal auction fee is charged: For motor cars, 20/-; motor cycles under £50 value 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free. Tel. 208 Streatham. T.A.: Palmer's Garage, Tooting. [5178

A.B.C. Solo.—Particulars and lowest price to Darjeeling, Downs Estate, Brighton. [5119

WANTED, good combinations and solos for cash.—Quadrant Garage, Winchmore Hill. [3274

WANTED, Solo or Combination, any make, must be really cheap.—King, Egrove, Oxford. [5240

HARLEY-DAVIDSON Combination; cheap.—S. Richardson, 78, Croydon Rd., Caterham Valley, Surrey. [4980

WANTED, countershaft, B.S.A., James, or similar combination; around £30.—Box 2973, c/o *The Motor Cycle*. [5240

WANTED, powerful combination, late model, reasonable.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [4130

4h.p. Triumph or Douglas Combination, good condition essential, price reasonable.—Box 2904, c/o *The Motor Cycle*. [5020

WANTED, countershaft Triumph, not earlier than 1918, up to £40 for good one.—406, York Rd., Wandsworth. [5300

£25 Cash plus 12 £3 monthly payments for 6-8 1919 combination offered; private.—Box 2953, c/o *The Motor Cycle*. [5160

WANTED, Victory model Matchless, sidecar, interchangeable wheel.—A. Stovell, 2, Battery Rd., Well Hall, Eltham, S.E.9. [5050

MODERN Motor Cycles and Combinations bought for cash or sold on small commission; send details first.—South Eastern Garage, Herne Hill, S.E.24. [5390

WANTED, modern 6 or 8h.p. commercial combination, open body preferred; reasonable price given for good machine.—Chauffeur, Garage, Wytham Abbey, nr. Oxford. [5100

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VANTED, late combinations, solos, also Morgan runabouts, G N.'s, and Rover Eights; cash or change.—Elce, Ltd., 13-15-16, Bishopsgate Av., mmile St., E.C.3. 'Phone: Avenue 5548. [0074

UNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We ndertake to do your business and give you satisfac-n. Distance immaterial.—Bunting's Motor Ex-ange, Wealdstone. [0828

PECIAL Cash Buyers: Triumphs, Enfields, B.S.A.'s, Douglasses, Matchlesses, A.B.C.'s, Scotts, Brad-rys, Martinsydes, Zeniths.—Wandsworth Motor Ex-nange, Ebner St., Wandsworth (Town Station). hone: Latchmere 4686.

-CYLINDER F.N.'s, Hendersons, T.A.C.'s, T.M.C.'s wanted.—Wandsworth Motor Exchange, Ebner St., andsworth.

ED Indians, Harley-Davidsons wanted.—Wands-worth Motor Exchange, Ebner St., Wandsworth own Station). [4559

ASH on Sight for new and second-hand motor cycles and combinations, any make or condition. Call, write, or 'phone, Short and Glass, Ltd., 485-3, Upper Richmond Rd., East Sheen, S.W. 'Phone: ichmond 2362 and 2363. [0372

.O.C.H. always have cash waiting for sound machines of all types; highest prices and cour-ous treatment assured.—Fair Offer Car House, 5, eath Street, Hampstead (near Tube). 'Phone: ampstead 3752. Hours 9-7, including Saturdays. [1610

MOTOR SCOOTERS.

INGSBURY Scooters and Spare Parts.—Beanfort Works, Richmond Rd., Twickenham. [2590

921 Kenilworth Scooter, tax paid, perfect order, suit lady or gent; £18.—7, Norwood Rd., Herne ll, S.E.24. [5401

UTOGLIDER, 1921, 2¾h.p. Union engine, little used; cost £60; nearest £30; licence July-Dec.—rrison, Braunston, Rugby. [5108

.B.C. Skootamota, new, unoiled, latest model, list £55; accept £23; wonderful bargain.—Frank hitworth, 139, New St., Birmingham. [5085

KOOTAMOTA, bargain, 20 gns., as new, perfect order; seen any time; trial allowed.—Box 29, H. Smith and Soo, School Rd., Sale. [5213

MOTOR ATTACHMENTS.

1h.p. Wall Auto motor cycle, perfect condition; £8/10.—Johnstone, Dovemount, Hawick. [5071

1h.p. Kenilworth Motor Cyclette, suitable for lady or gentleman; £27/10.—Wauchope's, 9, Shoe ne, London. [5410

AMES Cycle with Young motor attachment, suit lady or gent, nearly new; £25, or offer.—Mace, Wimbledon Park Rd., Wandsworth. [5035

h.p. Motor Attachment, fixed to a good B.S.A. pedal bicycle, 3-speed hub gear; £17/10 com-te.—Wauchope's, 9, Shoe Lane, London. [5409

YOUNG special lady's cycle and attachment, abso-lutely as new, runs splendidly; accept £17/10; ness cause of selling.—Thomas, Photographer, Staple-urst, Kent. [3869

921 1¾h.p. 2-stroke Young Attachment and special cycle, 120 miles to gallon, clutch model, en in store 9 months, practically new; cost £32; cept £18 for quick sale.—15A, Broadway Market, irlop, E. [4955

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OLLINS and Son for hoods screen, and aprons; hoods from 35/-.—Below.

OLLINS and Son.—Adjustable windscreens, com-plete with apron; 22/6, 30/-, and 35/-; sent approval against cash; carriage 1/6 extra.—Below.

OLLINS and Son stock all known makes of wind screens; we have a few second-hand Standard astings, fitted with new celluloid, from 45/-.—Below.

OLLINS and Son fit celluloid panels to any wind-screen in few hours, new aprons, side curtains, c.; open weekdays till 8.30, Sunday mornings till o'clock.—Collins and Son, rear of 84, High St., otney, S.W. (D) [6198

HOODS, plated fittings, 39/-; side curtains, 8/-.—Drury, 101, Halton Rd., Canonbury, London. [4970

V-SHAPED Sandum screen with apron, 55/-; large size £3/18.—Bright and Hayles, 78, Church St., amberwell. [5385

HIGH-GRADE Hoods, polished hoops, brass fittings, 30/-; hoops, twill, etc.—Henry Jones, 778, High d., Tottenham, London. [3502

SANDUM V windscreens fitted free or sent post free 55/- and 78/-; call and inspect.—33, Hackford Rd., Brixton, S.W. 'Phone: Brixton 3062. [5217

SIDECAR Hoods, 30/- and 40/-, best quality materials; celluloid, 1/6 sq. ft.—Hercules Hood o., 693, Seven Sisters Rd., Tottenham. [0853

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VALUE.—There is none finer than the Burlington Reconditioned Douglases. They are built up throughout with new parts—reliable in every detail—and equal in performance to new machines.

ECONOMY.—You'll find the Burlington Reconditioned Douglas is just the machine—at a moderate price and with low upkeep costs.

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BURLINGTON RECONDITIONED DOUGLASES.

2¾ h.p. 2-Speed Model, fully equipped.

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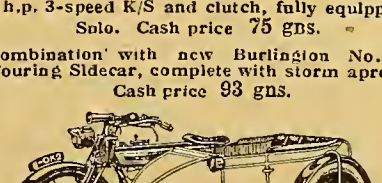

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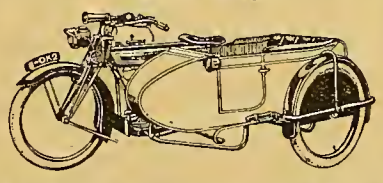
Combination with new Burlington No. 2 Touring Sidecar, complete with storm apron Cash price 93 gns.



We shall be pleased to forward you full specification of the above machines on request.

SPARES.—If it's for a Douglas, we have it.

TRADE SUPPLIED.

BURLINGTON MOTOR CYCLE Co., Ltd.

7, South Side, CLAPHAM COMMON, S.W.4.

Phone: Brixton 2417. Wires: Burlington Motors, Clapham
Just by Clapham Common Underground Station.

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DINLEY Sidecar Body for sale, perfect condition; £2/10.—Stafford, Penleigh, Westbury, Wilts. [5019

RENNOC Sidecar Bodies, actual manufacturers; 35 models; also several clearance, cheap to clear.

RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, London, N.19. [4932

COLLINS and Son for coachbuilt bodies, all models in stock, from lightweights to 2-seater.—Below.

COLLINS and Son are actual manufacturers, and give twelve months' guarantee with every body made by them.—Below.

COLLINS and Son repair, repaint and upholster at moderate charges, first-class work guaranteed; estimates free; send for catalogue.—Collins and Son, rear of 84, High St., Putney, S.W. [6199

MATCHLESS Box Carrier, without chassis, never used; £5/10.—52, Brenthurst Rd., Willesden. [4993

BASTONES for Sidecar Bodies, all latest models in stock from £4.—228, Pentonville Rd., King's Cross, London, N.1. [5131

FIT new Willowbrook body to your old sidecar, and make it like new; prices from £5.—Willowbrook Body Works, Leicester. [0336

DOUGLAS Body, new conditioned, bulbous back, re-enamelled, lined, and upholstered; £4/10, bargain.—Elderkin, 99, Greyhound Rd., S.W.6. [5209

GOOD quality sidecar bodies, a few to clear, semi-sporting and bulbous back touring; £6/15 each.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5475

BEAUTIFULLY Finished Bulbous Bodies, £4/15; other models from £2/10; write for specification.—Burton, Sidecar Works, St. Peter's Park Rd., Broadstairs. [3637

FIFTY bodies, second-hand, upholstered best pegamoid, touring shape, from £2 each; a few, new, at £7, exceptional bargain; also a few chassis to clear.—Sandums, 336, Gray's Inn Rd., W.C.1. [0871

HEPPELTHWAITE'S.—Old man Hep. for Douglas type bodies. £4/17/6, brand new (see Sidecar column), and send for photo. These bodies are painted lead colour. We have sold over 850 since August last.—17-19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [5320

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SALE, Norton De Luxe Sidecar, almost new, best offer.—4, High St., Pontypridd. [5020

FOR Sale, Dunhill's Limousette Sidecar.—R. Hale, Pinehill Rd. Crowthorne, Berks. [5124

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RENNOC Light Sporting, excellent condition, locker, apron, lamp, good tyre; £10.—41, Evelyn Rd., Wimbledon. [4956

WHITLEY Sidecars, Coventry.—Three models, £25, £29/10, £32/10. Nothing on one wheel to equal. Lists free. [0856

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COACHBUILT Sidecar, 1920, 3-point, Avon tyre lamp, Cameo windscreen, apron, off Triumph excellent condition; £15, or near.—140, Elsley Rd., S.W [509

GLORIA Sidecar, faultless throughout, Cameo wind screen, very strong luggage carrier, large ma waterproof apron; £12.—The Cottage, King's Rd Horsham. [527

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LANGFORD De Luxe Sidecar, windscreen, disappear ing hood, beautifully upholstered, good as new great bargain; £21, offers.—Write, Brown, 12, Wood bourne Av., Streatham. [622

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DORWAY Folding Sidecar saves garage. When folded (10 seconds) combination passes through ordinary doorway. Unnoticeable appearance when open, no freakishness; send for descriptions.—Frank Whitworth, 139, New St., Birmingham. [508

CANOELET K4, aluminium finish, for A.B.C., aluminium dashboard and waterproof apron, practically new, £15; A.B.C. sidecar sprocket, very little used, £1; racing Flexi carburetter for A.B.C., £2.—Pierce, "Westholme," Marsh Rd., Pinner. [507

PARAGON (patent) Folding Sidecar saves storage has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle and, when folded, combination will pass through a 30in doorway. Call and see it demonstrated.—Wm cycle Co., Ltd., 236, High Holborn, W.C 1. [038

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MORGAN de Luxe, 1922, good condition, licensed £140.—Main, 36, Parade, Leamington. [3818

MORGAN A.C., perfect order, overhauled and painted complete; £70.—1a, Crouch St., Banbury. [537

BEDELIA.—The new 1922 Model 8-10h.p., air cooled or water-cooled to choice. Immediate de liveries.

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BEDELIA.—Catalogue free from L. N. Palmer, Sole Concessionnaire for the British Empire, Palmer's Garage, Tooting. [517

A.V. Moncar, 1920, 5h.p., excellent condition, re painted, electric lighting, speedometer, tax paid; £67.—Below.

TAMPLIN 1921 Tandem, Staggered seating, tax paid, full equipment, excellent condition; £72.—Below.

COVENTRY PREMIER 3-wheeler, 1920, tax paid, dynamo lighting, fully equipped, excellent condition; £120.—Below.

G.N., 2-speed, belt drive, tax paid, good condition; £32/10.—Below.

G.N. 1921 Popular, excellent condition, mileage 3,000; £105.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

MORGAN Popular Model, fully equipped; £150, in stock.—Gibb, 100, Northgate, Gloucester. 'Phone: 852. [5532

BRAND New 3-wheeled Runabout, 10h.p. M.A.G. engine, coachbuilt body; sacrifice.—Gray, Winstanley, Malvern. [4994

7h.p. Composite Cycle Car, good engine, Bosch magneto; reasonable.—Hart, 16a, Stockwell Park Crescent, S.W.9. [5041

MORGAN De Luxe, 10h.p. M.A.G., water-cooled, fully equipped, in stock; £193/10.—Gibb, 100, Northgate, Gloucester. [5533

RUNABOUTS AND CYCLE CARS.

MORGAN.—New 1922 Models in stock.—Agents, Birkenhead Motor Works, Old Bideton Rd., rkenhead. 'Phone: 2047. [2389

TORGAN 1914 8h.p., Binks, lamps, horn, etc., just overhauled by maker's and repointed; £100.—bb, 100, Northgate, Gloncester. [5528

TORGAN de Luxe, 10h.p., air-cooled M.A.G., discs, fully equipped, in stock; £186.—Gibb, 100, rthgate, Gloncester. 'Phone: 852. [5534

DE Luxe Carden, 1921, fully equipped, 2-speed gear, clutch and kick-starter, condition almost like w; £77/10.—Wauchope's, 9, Shoe Lane, London. [5433

TORGAN Runabout, 1914 model, 8h.p., twin-cyl., J.A.P. engine, fully equipped, hood, screen, nps, etc.; £55.—Wauchope's, 9 Shoe Lane, London. [5408

WAUCHOPE'S, 9, Shoe Lane, London.—G.N., 1921 model, fully equipped, in excellent condition, are wheel and tyre; £150.—'Phone: Holborn 5777. [5412

HAMILTON Light Car, fully equipped, ready for service; early delivery; £175; write for booklet. Smith and Co., Ltd., Compton Works, Wickford, sex. [5449

1921 Morgan De Luxe, 8h.p. water-cooled J.A.P., speedometer, discs, lovely condition; £125.—llier (side bell), 9, Wallingford Av., North Kenigton. [5349

CARDEN 1921 7h.p. 2-seater, only done 750 miles, tyres as new, 40 m.p.h. guaranteed, hood, screen, ctric lamps, horn; £60.—Premier Motor Co., Aston l., Birmingham. [5513

HALIFAX. — 1921 Coventry-Premier 3-wheeler, £157/10; 7-9h.p., 3-speed, 3-wheeler, £69/10; 1920 chardson light car, £95.—Halifax Motor Exchange, orton St., Halifax. [5487

1922 Morgan Popular, £150; Grand Prix, £180; 8h.p. Rover, £220; in stock for immediate delivery; sy payments only 4% extra.—The Premier Motor Co., ston Rd., Birmingham. [0773

1921-22 Morgan De Luxe, water-cooled M.A.G. engine, Lucas dynamo lighting, discs, speedeter; £150.—Hillier (side bell), 9, Wallingford ., North Kensington. [5352

BAYLISS-THOMAS 1922 10h.p. Model, 4-cylinder water cooled engine, 3 speeds, Magdyno; 300 s.; immediate delivery.—Godfrey's, Ltd., 208, Gt. rtland St., London, W.1. [0736

HAMPLIN 1921 Monocar, perfect condition, fully equipped, domed wings, extra engine bearers, good ggage accommodation, tax paid; £80, offers.—Nisbet, sington, Castle Rd., Weybridge. [4986

MORGAN 1920 De Luxe A.C., new rear tyre, top gear chain and sprockets, recently repainted, discs, s and electric lamps, tax paid; £115.—Flt.-Sgt. yville, R.A.F., Biggin Hill, Westerham. [5224

A.V. Monocar, 1921, 8h.p., fully equipped, in perfect condition, mileage 4-500; £80, or exchange good motor cycle or combination.—K.G.S.H., Winchester House, E.C.2. Tel.: Wall 4343. [5133

1921 Carden 2-seater, electric lighting, tyres perfect, hood, screen, perfect order; £70. Your present achine taken in part payment.—Homac's, 243, Lower apton Rd., N.E. 'Phone: Dalston 2408. [5151

COTT Sociables.—Good second-hand ones in stock; prices from £155; will bring cars any reasonable tance for demonstration.—John R. Kinsey and Co., d., 350, Lower Addiscombe Rd., Croydon. [5339

1922 Bleriot Whippet, only run 420 miles, Lucas dynamo lighting, spare wheel, speedometer; 20, or exchange combination and cash.—Hillier (side ll), 9, Wallingford Av., North Kensington. [5350

1921 Bleriot Whippet, reverse gear, speedometer, electric light, spare wheel, in absolutely perct condition; 88 gns.; exchanges or deferred.—dwards, 50, Harrington Rd., South Kensington. [4050

9 GNS., exchange.—1919 Carden 2-seater, ready for a tour, 8h.p. J.A.P., 3 speeds, kick-start, c wheels, screen, hood, any examination, trial.—abridge, Hansler Rd., East Dulwich. Sydenham 52. [3610

BRAND new 8h.p. Coulson 2-seater, 3-speed, hood, screen, D.A. lighting, Smith's clock, speedoter, taxed, absolute bargain; £105, solo combina- part.—27, Wandle Rd., Wandsworth Common, W.17. [4905

A.N., 1921, now repainted and entirely renovated, Zenith triple diffuser carburetter, specially tuned d many improvements; sell £130, or exchange solo e and cash adjustment.—Allard, c/o Wicliffe Co., eltenham. [5113

1921 Carden 2-seater, in perfect mechanical order, 50 miles per gallon, complete with all accessories, ctric lighting; £80.—C. A. Hall, Carden Specialist, neensberry Mews East, Harrington Rd., South Kensing- n. Ken. 587. [5359

MORGAN de Luxe, M.A.G. engine, dynamo lighting, 2 horns, spare tube and chain, front starting ndle, speedometer, dashboard lamp, new August, 21, for sale, or exchange for 1921 twin Sunbeam nbination, owner leaving for Australia where Customs ty is same on 3-wheelers as cars.—Maclarlane, Innancha, Cannons Lane, Pinner. [5127

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MADE from hard wearing double texture material with an interlining of Rubber.

Double Breasted Jacket, with all-round plaited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof.

Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the trousers to be pulled off in a moment.

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Fig. 2.

(Fig. 2.) Fawn material, rubber lined, wind cuffs, guaranteed waterproof.

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COVENTRY-PREMIER 4-wheeled super-runabout, 8h.p., water-cooled, spare wheel, dynamo, fully insured, etc.; £230; motor cycles, etc., taken in part exchange; instalments if desired.—Frank Whitworth, 139, New St., Birmingham. [5082

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MORGAN Spare Parts from Stock; trade supplied.—Mandes', 100, Great Portland St., W.1. [5..

MORGAN Spare Parts Depot.—Spares for all models from stock; list free.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

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ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St., London, W.1. [0350

WEST Norwood! 60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, West Norwood. [1932

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PALMER'S Garage, 187-199, High St., Tooting, will accept your old car or motor cycle as part payment for any car in stock. For cash price deduct 10% from above totals. [5176

ROVER Cars.—The famous 8h.p. model in stock. £220; for immediate delivery.—Eagles and Co., 275, High St., Acton, London. [0761

COVENTRY PREMIER, 1922, 4-wheel model; £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash, deferred payments 4% extra.—Ratcliffe Bros., 200, Gt. Portland St., W.1 [0729

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8h.p. Single-cylinder Rover 2-seater, 3 speeds, reverse, new covers all round, in running order; bargain, £23.—8, Half Moon Lane, Herne Hill, S.E.24. [5396

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BRASIER 15-cwt. Covered Van, 15h.p., 4-cyl., Bosch, good tyres, splendid order guaranteed, lamps, tools; £55; exchange motor cycle.—Dawes, 45, Charles St., Exmouth St., Stepney. [5333

G.N., only just delivered new, 2-seater touring, dickey, dynamo lighting, detachable wheels, tax paid, must suddenly realise; what offers? Seen London.—Box 2959, c/o *The Motor Cycle*. [5477

EXCEPTIONAL Bargain.—Rover Car, 1922, 8h.p., new in July, not done 200 miles, tax paid till 1923, condition better than new; accept £197/10.—Wilkins Simpson, Opposite Olympia, London. [5440

G.N., 1922, Touring, £225; All-Weather, £250; fully equipped; inspection and trial invited. Deferred payments arranged. From Agents and Showrooms, 222, Gt. Portland St Museum 2271. [1629

ROVER: Buy from Official Appointed Agents.—1922 8h.p. light car, brand new and fast, just delivered ex works, £220; exchange or easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [5407

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A.B.C. New 12h.p. Light Car, efficiently equipped, hood, screen, etc, sporting model with spare wheel and tyre complete disc wheels, etc.; £295. Your motor cycle or sidecar combination taken in part, and the remainder in 12 equal monthly payments. [5406

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ANY make of cycle or any combination completely equipped; licensed, insured on 12, 15, 18 months' extended payments system.—Write for particulars, Rideezi Sales, Ltd., 5, Victoria St., S.W.1. [0830

HERBERT ROBINSON, Ltd., Regent St., Cambridge, supply any make of car on easy terms. We give a fair deal at a reasonable charge. Strict privacy, no unpleasant enquiries. Car delivered on payment of first instalment, any district. Full particulars by post. Exchanges arranged. [5188

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NEW 9h.p. M.A.G. Cycle Car Engine, air-cooled, carburetter and magneto, starting handle; £40.

J.A.P. 10h.p. Cycle Car Engine, air-cooled, 90°, complete with inlet pipe and magneto, as new; £30.

TWO 4h.p. J.A.P. Engines, air-cooled, as new, complete with magneto; £21 each.—Reynolds Bros., Peel St., Barnsley. [5182

N.S.U. 3h.p. unit, complete with magneto and carburetter.—Lancaster, Heeley Rd., Birmingham. [5342

P. and M. Engines, £4/10; overhauled and completed, £6/10; spares.—7, Hereford Rd., Bayswater. [6104

8-10h.p. Peugeot racing twin, Bosch, B.B., any examination; £14.—Turney, Sheep St., Winslow, Bucks. [5068

SPARE Parts for Villiers, Blackburne, and A.B.C. engines from stock; trade supplied; write for spare list.—Maudes', 100, Great Portland St., W.1. [4779

THE Broler 3½h.p. 2-stroke stands supreme for workmanship and efficiency. Unequalled at the price of £10/15, which includes cast aluminium silencer, magneto chain case, chain, and sprockets.

FRAME to suit, built of Brampton fittings and 12 and 14 gauge tubing; price complete with stand and tubular carrier, £4/17/6; order early for quick delivery.—Broler Motors, Narborough, Leics. [3328

HEPPELTHWAITE'S for all spares for the 8h.p. J.A.P., 4h.p. w.c. J.A.P. (new), £13; complete set of new parts to build 8h.p. (less flywheels), £10/10; second-hand engines, 2¾h.p. 1915 Douglas and M.A.G., £7/10; 4h.p. J.A.P., £10; 2h.p. Ixion, stationary, seen running, £5, suit push cycle; 3½h.p. Triumph, chipped fins, £5/10; 3½h.p. Humber and magneto, £8/10; 1921 3½h.p. L.M.C., £10; 5h.p. N.S.U., £4/10; 4-cyl. F.N. and magneto, £5; also others.—19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [5322

In the Centre of Northern Activity

The North of England Branch

of

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED,

Head Office: 77, CHEAPSIDE, LONDON, E.C.2

is situated at

Calvert's Chambers 8, Commercial St., LEEDS.

Telephone: LEEDS 26283.

—a convenient centre for the whole of this busy Commercial District.

Applications for "The Motor Cycle" and "The Autocar" policies are invited from North of England Agents.

These should be addressed to the Leeds Branch, the Manager of which will be pleased to give any information that may be desired.

Every assistance is rendered to agents in securing business, and the specialised organisation of the Company is placed at their disposal for the settlement of claims or difficulties.

N.B.—"The Motor Cycle" policy is authorised and approved by "The Motor Cycle," with which The Autocar Fire & Accident Insurance Company is closely associated. The conditions of the policy are complete and comprehensive, and the issuing Company enjoys a high reputation for generous and prompt settlement of claims, and for efficient service to policy-holders at all times.

WRITE TO-DAY.

ENGINES.

WHATEVER type of Engine you require we can supply. Special bargains: brand new Coventry Premier, pattern 1915, 4h.p., £12/10; 3½h.p. Premier, 1913, £9/10; 3½h.p. Rudge, £11/10; 2¾h.p. Calcott, £6/5.—Forfield Motors, Forfield Place, Leamington Spa. [5514

IGNITION, LIGHTING, ETC.

A REAL BARGAIN IN Magnetos can be secured from the Marble Arch Motor Exchange.

950 Motor Cycle Magnetos to be cleared. See below.

PLEASE note our stock consists of genuine Motor Cycle Magnetos, all variable ignition, and guaranteed not converted or reconstructed aeroplane starter mags.

WE guarantee we can supply you a magneto cheaper than anyone.

SINGLE-CYL. Anti-clock, M-L, 45/-; Splitdorf, 35/-; C.A.V., 38/-; U.H., 35/-; Berling, 30/-; Dixie, large type, 30/-; all above suitable for Triumph, B.S.A., etc. Below.

SINGLE-CYL. Clock, C.A.V., 38/-; Dixie, 30/-; Berling, 30/-. Below.

180° Anti Clock, C.A.V., 38/-; Splitdorf, 35/-; Dixie, 30/-. Below.

180° Clock, Thomson Bennett, 38/-; C.A.V., 37/6; Splitdorf, 35/-.—Below.

42°, 50°, 55°, Thomson-Bennett, Splitdorf, or Dixie; hundreds of others in stock. All guaranteed and sent on approval against cash.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. [2776

H.B. I. Co.

H.B. for new and second-hand magnetos; all spares stocked.

H.B. Specialise in Thomson-Bennett, complete for fixing to Triumph.

P.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

C.A.V. New, twin and single, clock and anti; £3.

DIXIE, single and twin, all degrees; £2/5.

H.B. Guarantee all magnetos one year.

H.B. will take your old machines in part payment.

H.B. Despatches all goods per return, carriage paid, on approval against cash, or through *The Motor Cycle* deposit system.

H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. 'Phone: Brixton 610. [0694

THE Runbaken Repairs and Spares Service.

IF you have a magneto, dynamo, starter, or battery for repair, don't let it fall into the hands of the botcher.

EVERY Make and Type CAN be speedily and thoroughly repaired by any one of our Service Depots. All spares in stock.

THE Runbaken Repairs and Spares Service: Manchester.—288, Deansgate. 'Phone: Central 7342. London.—142, Gt. Portland St. 'Phone: Museum 3905. Leeds.—94, Albion St. 'Phone: 27219. Liverpool—16, Colquitt St. 'Phone: Royal 605. Birmingham.—192, Corporation St. 'Phone: Central 2059. Bristol.—14, Colston St. 'Phone 3728. Glasgow.—134, West Nile St. 'Phone: Douglas 1605. Paris.—40, Rue Brunel. 'Phone: Wagram 50-11. Head Office and Works, Cheetwood Lane, Derby St., Manchester. 'Phone: City 8266 (3 lines). [0905

VALE Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3.

C.A.V. Single or Twin, clock or anti, 50/-; Thomson-Bennett ditto, 52/6; Bosch D.A.L. ditto, 60/-.

THOMSON-BENNETT and M-L's, Coventry, suitable for stationary engines, 35/-; variable ignition, 10/- extra.

THOMSON-BENNETT 4-cylinder, clock or anti, £4/10; fully guaranteed; on approval against cash.

VALE Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3. [0698

ANY Motor Cycle Magneto repaired, 30/-; guaranteed.—Magneto Works, Acton St., Wigan. [4981

MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton St., Camberwell. [3584

F.R.S. electric headlight, rearlight, accumulator in ebonised case, charged ready for use; 38/6.—40, Niston Rd., Cambridge. [5016

K.L.G. W.D. Plugs, 4 for 2/6, postage 9d., value unprecedented; money returned if dissatisfied.—Thompson, 59, Queen St., Wolverhampton. [8185

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

T.T. Machines for the Public.

ALTHOUGH the T.T. races remain but a memory for another year, the present is not an inopportune time to comment on the subject of offering to the public models which scored successes in the Isle of Man.

Many manufacturers are now considering their 1923 programmes; we think we echo the sentiments of an important class of motor cyclists when we urge those makers who have scored in this year's big racing events to include in their catalogues machines as nearly as possible identical with the honours-winning mounts which bore their transfers. Some do already, but one or two most certainly do not.

In accepting entries for the Tourist Trophy races, it is a stipulation of the A.C.U. that identical machines be made available to the public. Somehow or other this rule is not observed as it should be; and, since no mention of price is made, compliance may be avoided simply by quoting an absolutely prohibitive figure to the enquirer.

The average enthusiastic motor cyclist quite reasonably wonders why a firm should show any desire to refuse orders for a commodity very much desired by some of its clients. Correspondents continually suggest to us that the sole reason is that the commodity in question—the super T.T. model—would only injure the reputation of its manufacturers if allowed to reach the hands of the ordinary private owner, that it is simply a freak which holds together just sufficiently long enough to complete the course in a race at a very high speed, when it is returned to the factory to be rebuilt. It is not a pretty theory.

So long, however, as manufacturers continue to withhold from the public a model even resembling in type their record-breaking wonder machine, so long will the man in the street continue to harbour his suspicions.

Just how much truth there is in the assumption is another matter, for it must be admitted by the most jaundiced critic that a machine which makes an outstanding performance in such a strenuous race as the T.T. should require very little de-tuning and modification to convert it into a delightfully controllable and thoroughly roadworthy sports mount. If this were not so, the whole purpose of the T.T. race would be lost.

Therefore, to retain the confidence of the motor cycle public, it behoves those firms to whom our remarks apply, to market replicas or at least to offer models of the same type as those which have brought them so much fame in the competition world. It is not much to ask.

International Six Days Trials.

FOR the second time a British team has attempted to wrest the trophy presented by the British Motor Cycle Manufacturers Union from the Swiss, who have held it since 1920. It is greatly to be regretted that it has been unsuccessful, as it was beaten by one mark. It was a splendid team of first-class riders, and had it not been for one small technical failure they would have been successful. A broken saddle spring, for which marks were deducted during the final examination, caused the penalty which lost the trophy. It is hard luck indeed, but Britain's representatives rode well, their machines proved their reliability and hill-climbing capacity, and they proved themselves equal to, if not better than, their Swiss rivals, especially when it was considered that the total cubical capacity of their engines was less than that of the Swiss machines.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

by IXION

Side Roads.

THE various motoring organisations are obviously busy trying to find services worth rendering to their membership. Have they never noticed one of our most obvious needs, or is there some secret lion in the path? I refer to the shrieking necessity for safeguarding main road traffic from the idiots who turn into it at speed out of by-lanes. Within 25 miles yesterday I saved umpteen lives by driving very cautiously along one of our mainest main roads. At the first by-lane under notice, which entered at a right angle, a farmer's cart charged into the main road at speed along an arc which effectively blocked the full width of the road; and at the same instant some unspeakable ass of a motor cyclist dived out of the by-lane, overhauling the cart on the corner, and turning in his saddle to curse the farmer for sweeping so wide. At the next four blind corners Ford vans maintained by small local tradesmen were the offenders. At the sixth by-lane junction a big Daimler simply picked up a cheap small car and chucked it over the hedge. In no case could the culprits be under any misapprehension as to the respective standing of the two roads concerned. The big highway was one of our greatest trunk routes, and the side turnings were rough parish roads proceeding to tiny hamlets.

The Fosse Road.

IN this connection it is worth noting that many speedmen consider that the Fosse Road from Leicester to Newark affords a chance for one of the finest "blinds" in England. To my thinking it is a road which demands extreme caution. It is crossed at right angles rather blindly by a number of lesser roads and at least one important highway. Traffic on all these roads is rather sparse, and their users imagine that this sparsity confers a licence to take blind crossroads all out. I have experienced and seen so many narrow squeaks on this route that I personally drive slower over it than in most places. It is surely time that the law about main and side roads should be cleared up and strictly enforced. If this is impossible, it would be a palliative if a motoring body would erect skull-and-crossbone signs at the points where these side-lanes debouch into the big roads, and beneath them a board "MAIN ROAD—Beware of Fast Traffic!" The present perils arise from the fact that the fast through traveller doesn't know where the side roads occur, and trusts to a shadowy right of way, whilst the locals, having no more imagination than a mangold wurzel, see no harm in abutting into a stream of high-speed traffic at random until they are dead.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

A Holiday Warning.

MAY I appeal to those of our readers who are spending their summer holidays off the beaten track to drive with supreme care? There are several reasons why even an expert should not apply Portsmouth Road driving habits to the lanes of sea coast and mountain resorts. The first is that the holiday maker is on strange roads and cannot identify each and every danger spot at first sight. The second is that the local standard of driving (especially as applied to Ford cars) is not that of a London taxi man. The third is that the natives are accustomed to having their roads to themselves for at least half the year, and that doubling or trebling or quadrupling the traffic makes for difficulties, especially when the surplus motorists are drivers of the rather dashing type.

The Alleged Motor-Coach Peril.

I AM not one of those who consider that motor coach routes should be avoided for prudential reasons. It is true that none of us likes encountering a motor coach. That a couple of motor

Occasional Comments.—

coaches can pretty well block the widest road. That where motor coaches congregate, potholes usually abound. But conditions are generally improving each year. A vast deal of road widening has been done —*e.g.*, along the Dartmoor roads, which are once more safe and comfortable, despite the coaches. The potential perils of these cumbersome monsters are fully understood, and their drivers are nowadays picked men, as cautious and courteous as they are clever. Many motor cyclists have taken a vow to give motor coaching areas a miss as far as possible. If my experience goes for anything, they would find that this traffic has been very largely reformed within the past year.

A Curious Experience.

A READER asserts that after about 1,000 miles on an o.h.v. engine he finds a very peculiar deposit about ¼in. thick on his inlet valves. He describes it as a "spongy, rubber-like growth," and wonders whether it is connected with the masking of these valves on the particular engine which he uses. He further remarks how pleased he is with the cleanliness of his crank case, partially due to the absence of burnt oil oozing out of the exhaust valve guides.

The Solitary Fair.

IT is very gratifying to meet so many ladies riding alone. Not so long ago, if one sighted a lady riding solo, her attendant swain came along a few hundred yards behind. This week I have met at least a score of girls—well, some of them will never be girls again—absolutely by themselves. Several implications follow. A woman can feel safe unattended on British roads. Ladies' machines have acquired a good reputation for reliability. Should a puzzling trouble occur, a girl can rely on the comradeship of the road to see her through it.

Puncture Proof.

SEVERAL lady readers have recently asked me to recommend an absolutely puncture-proof tyre. They say they don't mind changing a plug, but repeated wrestles with tyres nauseate them. The request is often pointed by a demand for definite opinions about various anti-puncture specifics. I answer all these letters in the same way. The best safeguard against punctures is to be heavily overtyred, which means expenditure and weight. The various dopes marketed for insertion in standard tubes have never convinced me that they are more than palliatives, capable, often, of sealing a small hole, good to delay the leakage from a sizeable hole; but generally useless in the case of a big tear. I like the puncture-sealing tubes better than the dopes, but patent tubes are necessarily expensive. If Mrs. Ixion demanded a solo 'bus (I have trained her better), I should send her out on 3in. tyres, with nail-catchers and p.p. tubes, or some dope inside a standard tube.

Extremes Meet.

THE same post brings a letter from Irak. One of our keenest riders has forsworn the hobby. Not from poverty. Not from age. Not because of D.T. No, not even because of sandstorms or Mesopotamian roads or predatory Arabs. But merely because there is no shade. He remarks pathetically that in a country where the act of turning on the petrol induces a profound perspiration, and where there is no shade except at "heat-stroke stations" (otherwise mud huts by the roadside), the idea of mending a puncture in the open sun is fraught with suicide. So he has abandoned the sport until some kindly fate shall transfer him to Labrador. So, what with lazy ladies at home, and tired Tims in the tropics, and the indolent individuals of this country, the gentleman who can produce a non-puncturing tyre is assured big markets.

Goggle Deafness—

I HOPE some medical reader will tackle in earnestness the query propounded by "Sutton Bank" in our issue of July 20th. I have heard many riders assert that goggles made them so deaf that they preferred to expose their eyes to wind and dust. Analysing my own sensations without medical knowledge, I had rather come to the conclusion that sight and hearing work together; goggles usually limit one's field of vision; so, failing to *see* something, one imagines one has failed to hear it.

—And Helmet Whistle.

CLOSELY allied to goggle deafness is another motor cycling malady, which may be termed "helmet whistle." When one dons certain types of helmet, a formerly silent breeze suddenly becomes articulate, and creates a most annoying whistling in one's ears. A helmet manufacturer told me it could be stopped by making the helmet such a good fit that no wind penetrated between the sides of the helmet and one's cheeks. This is not as easy as it sounds, but when I at last managed it the whistling was still bad. A rider next informed me it could be stopped by having sufficiently large sausages in front of the ears. I increased the size of mine till the helmet was almost all sausage. But it still whistles.

Against the Bye-Pass Route?

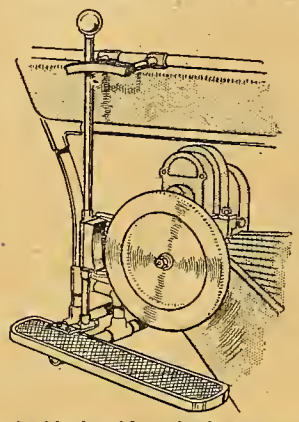
I HAVE been told that local tradesmen are always against the signposting of any switch or bye-pass route, on the ground that it deflects possible customers, and that garage owners are the chief obstructions, as they have installed themselves along the old routes, and would be outflanked if traffic were sent along new roads. Hence it is said that only at really perilous bottlenecks like the historic city of Durham can local opposition be fought down and the happy tourist be nursed along a safe, straightforward "way round." This objection is doubtless substantial in some cases. But it is very easy to exaggerate it. After all, the touring motorist is not a big shopper. He stops for meals. He stops for motor supplies. He stops for emergencies, such as drugs or a clean collar. But in the ordinary way he buys very little else along the road. Moreover, nine motor cyclists out of ten plot their tours to dodge as many of the big towns as possible, largely because of the difficulty of finding the way. Many a rider deliberately avoids Bristol or Birmingham solely for this reason, and would cease to do so (at any rate in dry weather) if pathfinding were simplified.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Bowden Wires.

NEVER cut a Bowden wire without first soldering the strands together, otherwise they are sure to unravel.



A flywheel brake with ratchet lever suggested by Mr. J. Taylor of Glasgow.

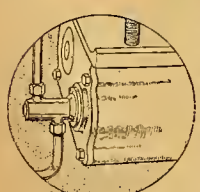
Lost Filler Cap.

IT is not absolutely essential that a replacement should be made, but the petrol will slop over very badly if the opening is not covered; on those tanks having an oil reservoir, transfer the cap therefrom to the petrol tank and fold a duster or a piece of an old tube over the oil opening, keeping it in place by a strap round the tank.

Driving a Mechanical Pump.

BEING blessed with a simple machine having no obtruding rotating parts, Mr. C. B. Browne found his desire to fit a mechanical oil pump thwarted until a special inspiration came his way.

The machine in question was a Villiers-engined mount, with flywheel magneto on one end of the crankshaft and clutch on the other, so that a drive from the engine itself was not reasonably possible. Only some transmission element remained to provide the necessary rotating element, and as the gear box was a Burman of the plain two-speed type, it was decided that the Showell pump, on account of its neat dimensions should be carried on the offside main shaft bearing housing. The shaft itself was slotted diametrically, so that the squared end of the pump spindle could engage to obtain the drive.



Showell pump driven off the mainshaft of a Burman gear box.

Hunting.

IF the two cylinders of a twin engine are not perfectly synchronised there is a loss of power. It is a simple matter to run each cylinder separately by removing the sparking plug cable in turn or by shorting each plug with a wooden-handled screwdriver.

Drastic Remedy.

A DESPAIRING rider who, miles from anywhere, required a cotter-pin for a valve took the risk of cutting a spoke out of the front wheel to obtain the necessary hard material. It worked excellently.

Valve Springs.

WHEN power falls off, it is important to see that the springs are of the right strength. If they are too weak, power will be lost through "valve bounce" and "tappet lag." If the replacements are too strong, great stress is put upon the valves, tappets, and cam gear.

Folding Stand for Sidecars.

TWO pieces of oak or ash about 12in. or 14in. long by 1¼in. wide and ⅝in. thick, a 5-16in. bolt and wing nut, a couple of screws and a hacksaw blade, are the materials in Mr. H. Towers' sidecar stand. The pieces of wood are drilled 5-16in. about 2in. from the end and secured by bolt and nut.

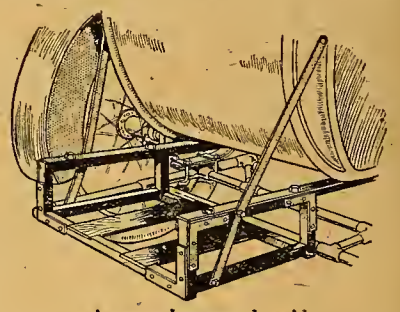
One hole in the hacksaw blade is brought out to the edge to form a hook-end by filing, and then the other end is fixed to one leg about 4in. from the bottom, and the hook dropped over a corresponding screw on the other leg.

A useful idea for owners of sidecars.

Mr. Towers, being a timber merchant, can afford to be reckless in the metal line, having saved on the wood; we ordinary mortals would use a bit of strap iron in place of that hacksaw blade.

Sidecar Luggage Grid.

A SUBSTANTIAL luggage grid, sprung with the sidecar body and capable of bearing a man's weight, was simply constructed by Mr. G. S. McCann, of Uttoxeter. Square oak bars were used, the two rectangular side frames being made first and then joined by the transverse bottom pieces, which in turn were bridged by the "floor" boards. All joints were halved and screwed, and the main corners strengthened by iron corner-plates bought from the ironmongers. The grid was suspended by bolts from two pieces of 1×⅛in. angle steel screwed to the bottom of the body, further support being given by two strips of steel, ¾×$\frac{1}{16}$in., screwed to the back of the body and the sides of the grid.



A strong home-made grid.

A Dope for Joints.

THERE are very few jointing media which are impervious to heat, oil, petrol, and benzole. It is worth knowing that seccotine is proof against all of them, whereas many of the dopes used by motor cyclists are sensitive to one or other of the above influences.

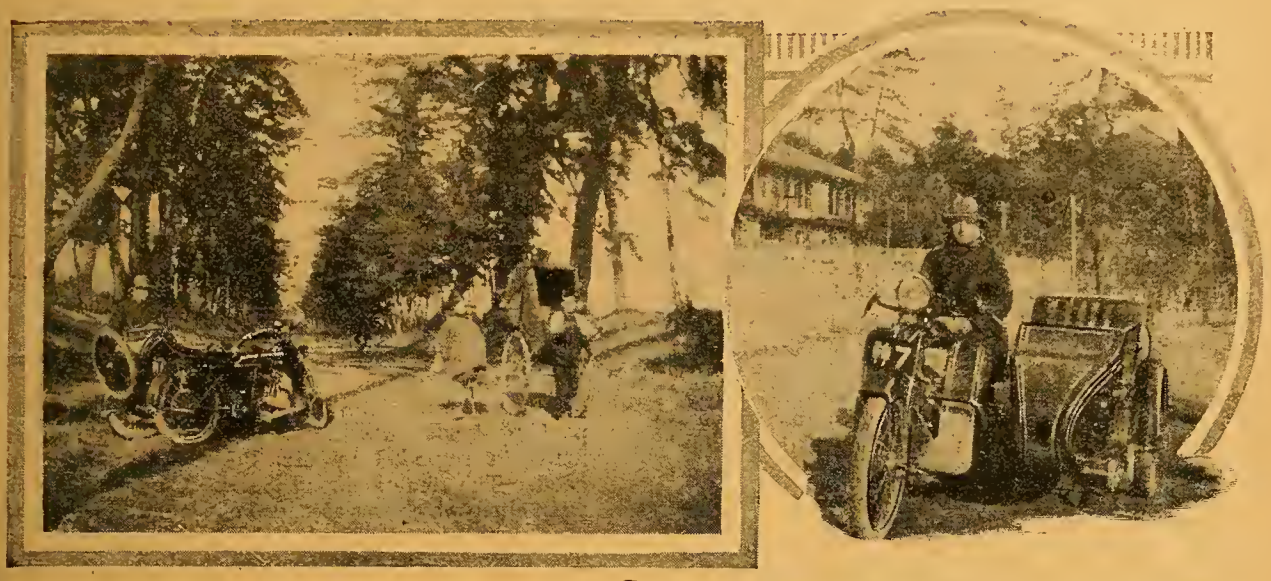
To Users of Rubber Grips.

IN common with many other riders, Mr. J. F. Bridge, of Liverpool, found that after fitting rubber grips he always had dirty hands after riding. This state of affairs he assumed to be due to the absorption of dirt by the grips after the hands had become soiled by adjustments on various occasions. The grips being of a peculiar composition, did not prove to be amenable to any ordinary cleaning process, but the trouble was finally eliminated by covering them with suitable lengths of cycle inner tube, thus giving them an easily cleaned surface of excellent rubber.

"HINTS AND TIPS FOR MOTOR CYCLISTS"—gives hundreds of useful "wrinkles." Price 2s. 3d. post free from "The Motor Cycle" Offices, Dorset House, Tudor Street, London, E.C. 4.

MOTOR CYCLES IN THE EAST.

Notes from Readers in Japan, Burma, Java, and the Malay Straits.



A 976 c.c. Excelsior on Japanese highways. Take away the characteristic rickshaw and the scenes might well be in Britain.

THE motor cycle is now the mount of every man, and is in use in every clime. True, we have not yet heard of any Eskimo running a machine on the shores adjacent to the North Pole, but from almost every other part of the world we have letters from readers who, irrespective of road or climatic conditions, use their machines for business and pleasure.

For long it has been recognised that the so-called colonial conditions are not general in the overseas markets, and that one may find roads just as good as those in this country in almost every country where the white man has taken charge. On the other hand, there is rough and bad going in these islands equal to the worst roads in Africa or the Antipodes. Hence the modern trials are developing motor cycles along lines which will render them suitable for every man's needs wherever he may reside.

A Long Ride.

Twenty years ago a well-known explorer cycled round the world viâ Siberia. While there are difficulties in a similar journey being undertaken at the present time, it may not be long before the feat will be attempted on a motor cycle.

Two intrepid motor cyclists have started to ride to the home country from Singapore. They are F. A. F. Johnstone and E. D. Hill, of Johore, and their route includes Siam, Burma, India, Mesopotamia, Asia Minor, Turkey, the Central European States, Italy, and France. They recently left Penang for Alor Star on the second stage of their journey. The couple do not anticipate any serious difficulty, except in Burma, where they may be confronted with the absence of roads. They are well provided with spares and maps, and are quite confident that they will accomplish the journey, which they estimate will occupy eight or nine months. Johnstone is riding a Triumph while Hill is mounted on a Douglas.

Zeniths and Nortons also appear to be well to the fore in Singapore. Quite recently a rider of a 654 c.c. Zenith (H. La Mothe) and a Norton exponent (W. P. Currie) rode from Singapore viâ Batu Pahat, Muar, Malacca, and Tampin to Serembau (220 miles) in 9h. 35m. actual running time. Neither men had to put a spanner to the engine of his machine, but both experienced tyre troubles.

The run was over typical colonial roads of loose metal covered with sand and unrolled. On several parts of the route the machines had to be ferried across rivers in native boats.

Good Opening in Burma.

A correspondent who signs himself "Anglo-Indian," writes that Burma is a very good market for motor cycles, in spite of the fact that there are very few roads, but most of the riding is done in the cantonment. For this reason small two-strokes have become very popular, and one may see hundreds of such machines as the New Hudson, Triumph, and M.T. The B.S.A., Triumph, Ariel, and other big singles are also very much to the fore as double purpose mounts. We are informed that Harley-Davidsons have a good sale in spite of the fact that they cost nearly as much as Ford cars.

Flat twin "sports models" are popular, there being many Harley Sports and Douglas two-speed models in use.

From Japan.

An Englishman resident in Japan is loud in his praises of the 976 c.c. Excelsior sidecar outfit, one of which he has recently had sent out to him.

"I think," he writes, "it is one of the best looking machines in this locality, particularly when placed alongside

Motor Cycles in the East.—

a typical Yankee outfit. The J.A.P. engine gives plenty of power for anything wanted here, there being very few stretches of decent road for even half a mile in length. The sidecar is A1. Thank heaven! I have the Brooks cantilever saddle on Japanese roads. On a recent run I climbed 1,400ft. in 4 miles, all on second gear. The road was a continuous corkscrew, and the scenery was very beautiful. Part of the ancient Tokkaido road from Tokyo to Kyoto is exceptionally good."

Motor Cycle Racing in Java.

Recent mails from Batavia (Java) brought news of a motor cycle race meeting which was held on the racecourse at Welterneden, a suburb of Batavia. The grass track had been rolled with a steam-roller and re-turfed in places, and some excellent racing was witnessed, though the first morning's programme had to be postponed on account of the wet going.

Strict police regulations were in force, and during practice no rider was allowed to exceed 80 km.p.h. (50 m.p.h.). Competitors had to wear racing helmets and to sign a declaration that they had previously ridden on the track and that none but themselves were responsible for their accidents. A European doctor was provided by the race committee.

The circuit was 1,600 metres (80 feet short of mile), and the results of the various classes were:

Class A. Max. capacity 400 c.c.—4 laps.

1. J. K. Fellner (A.B.C.) ... ... 48.6 m.p.h.
2. J. C. Meeuwenoord (A.B.C.) ... 45.2 ,,

Class B. Max. capacity 500 c.c.—5 laps.

1. de Raadt (Douglas) ... ... 60.66 m.p.h.
2. Fellner (A.B.C.) ... ... 56.9 ,,
3. de Stuuler (Douglas) ... ... 51.9 ,,

Class C. Max. capacity 750 c.c.—6 laps.

1. de Raadt (Douglas) ... ... 58.2 m.p.h.
2. Fellner (A.B.C.) ... ... 56.5 ,,
3. de Stuuler (Indian Scout) ... ... 54.0 ,,

Class D. Max. capacity 1,000 c.c.—8 laps.

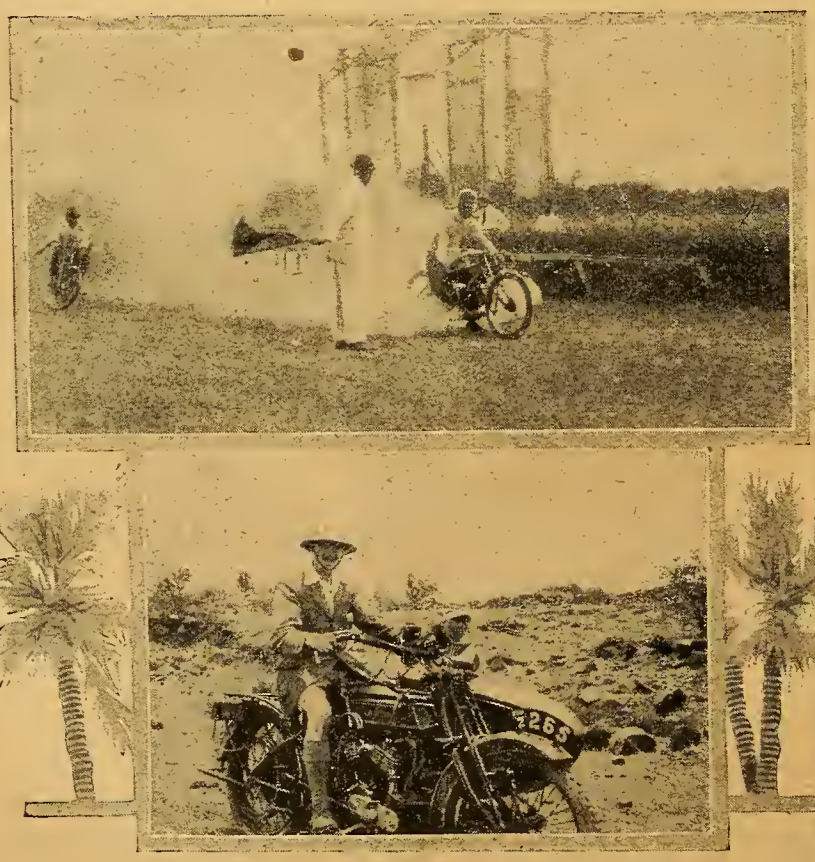
1. de Raadt (Indian) ... ... 61.9 m.p.h.
2. Rous (Harley-Davidson) ... ... 61 5 ,,

Class E. Max. capacity 1,250 c.c.

1. Van der Kop (Harley-Davidson) 49.7 m.p.h.

From Bombay.

Mr. Fraser L. Peradon of Bombay has found that in spite of the heat, 105° in the shade, and long treks in second gear, the engine of his New Imperial big twin sidecar shows no sign of overheating. He recently drove from Bombay to Lonaola on the Poona road. The journey was 76 miles and occupied 3¾ hours, which, considering the state of the roads, is regarded by Mr. Peradon as particularly good. The route included the Bor Ghat—a long and steep climb which was ascended on second gear, passing several big six-cylinder American cars in bottom gear. The petrol consumption for the round trip, 152 miles, was two gallons. Mr. Peradon concludes his communication by remarking emphatically that, in his opinion, the motor cyclists of the home country do not know what a bad road really is.



IN JAVA AND INDIA.

(Top.) An A.B.C. ridden by J. K. Fellner which secured first place in its class at a race meeting in Batavia (Java).

(Bottom.) F. L. Peradon, of Bombay, and his 976 c.c. New Imperial sidecar which he has found particularly suitable for use in India.

(Right.) An Indian scene near Bombay.

REJUVENATING AN AMERICAN BIG TWIN.

Describing a Thorough and Painstaking Overhaul carried out by an Enthusiastic Amateur Mechanic.

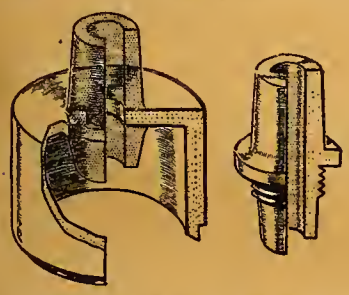
THE machine concerned in the following account is a 1920 model American X with magneto ignition, which had been in regular use for close upon two years.

Approximately 10,000 miles had been traversed without mechanical breakdown, but one or two new valves had been fitted and sundry exhaust valve springs, also periodical grinding-in of valves and decarbonisation attended to.

At length, however, power had been lacking and the carburetter had proved troublesome. In addition, oil in the combustion chambers was much more in evidence than conduced to clean plugs and regular firing, and the need for a thorough overhaul was very apparent; it might be added that all the work necessary was carried out in the course of six weeks.

Commencing to Dismantle.

Carburetter and inlet pipes were first detached, as also the inlet domes and rocker gear, then by gently levering through the plug hole and judiciously tapping the inlet cage guide and valve

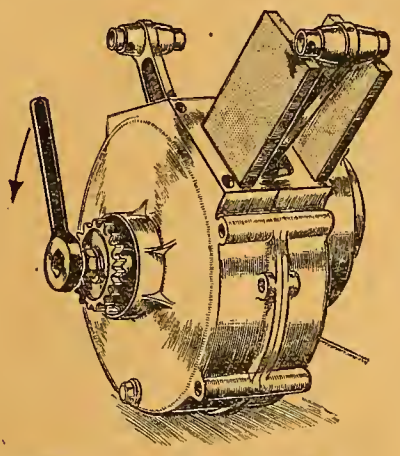


The shaded portion shows the old worn guide which was turned off the inlet cage. It was replaced by a new one (right) made of phosphor-bronze.

stem the cage was removed complete with its valve and spring. Care was observed not to damage the thin copper washer making the joint between inlet cage and cylinder.

All traces of carbon were removed from the inlet pocket and seating for the washer. Before removing the cylinders the plug in the top of the rear cylinder was removed, the contact breaker placed in the "full advance" position, and the engine rotated until the contact points were just commencing to separate for the back cylinder. A record of the piston position for full advance ignition was thus obtained by marking a wire inserted through this cylinder top.

Removing the cylinders and releasing the valve springs, very considerable wear in the exhaust valve guides was observed. As might be anticipated, the old guides proved difficult to unscrew until a good fitting box-key and a sturdy tommy pin were obtained and repeated dosings of paraffin, turpentine, and blow lamp heating were applied.



Method of using wooden packing blocks to lock crankshaft while unscrewing sprocket nut.

The new replacement guides were slightly eased on the screwed portion before being firmly screwed into place.

Decarbonising and Valve Grinding.

The condition of the exhaust valves being very fair the faces were ground in the lathe, using a fine emery wheel, afterwards grinding in each valve (with Richford fine compound) very slightly into its respective cylinder.

Chipping all carbon from the cylinder heads and about the valve ports and pockets, scraping away the old cylinder base packing, removing any burrs with a smooth file and washing the units thoroughly in paraffin completed the cylinder overhaul. New cylinder base washers were cut from 1-64 in. thick Hallite jointing.

Measurement of the cylinder bores by micrometer revealed almost imperceptible wear, and refacing of the valve seats was not necessary.

The inlet valve guides are integral with the cast-iron valve cages. Whereas the valve seats were excellent, the guides were hopelessly worn—this latter no doubt accounting for some of the erratic running previously referred to. As it was considered that the cost of new cages was hardly justified the following repair was carried out. The guides were cut off flush, the bore increased and tapped out $\frac{5}{8}$in. diameter by 24 threads per inch to accommodate phosphor-bronze guides, which were turned up.

Pistons Sent to Ring Specialists.

Turning next to the pistons, a fair amount of wear was evident, especially in an up and down direction.

The old rings were scrapped, and after cleaning a large amount of carbon deposit from the interiors the pistons were posted to a firm of piston ring specialists with instructions to true up the grooves and fix each piston with a set of rings.

At this stage as much oil as would drain out was got rid of by way of the crank case drain plug, afterwards pouring in about a pint of paraffin and well flushing. Wear on crank and gudgeon pin could then be felt appreciably.

Dismantling the Crank Case.

Of the connecting rod small ends the gudgeon pins were most worn. New standard replacements were obtained and tried and no appreciable wear was detectable in the bushes, which are plain phosphor bronze.

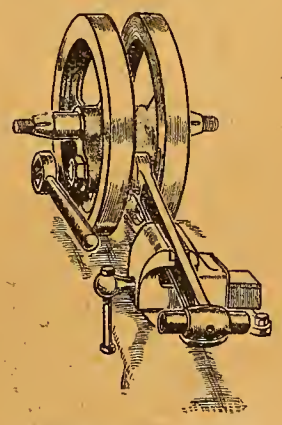
Trying each connecting rod for vertical play, sufficient was noticeable to indicate the desirability of a closer inspection, and this, of course, involved taking apart the crank case and flywheels. Removing the timing case cover and leaving the oil pump *in situ* for the moment, all the timing gear was exposed. It was noticed that the small main shaft pinion is marked (two dots) for meshing with the large cam wheel.

After washing all the parts in paraffin no appreciable wear was noticeable, but one of the rocker studs was loose in the timing-case wall.

The pinion and the sprocket being keyed on taper shafts, they were removed by prising with a screwdriver and at the same time tapping the shaft ends sharply but not heavily with a brass hammer.

Before detaching the crank case from the frame (the gear box had to be removed first), a wood block was placed in position to take the weight when the frame bolts were loosened.

Removal of the crank case fastening screws was next proceeded with. A powerful screwdriver, and, moreover, one which "fits" the slots of these recessed cheese-head screws was here very desirable, as the latter are of necessity tight with a view to keeping a good joint and correct alignment.



Holding the flywheels while the crank-pin nut is removed.

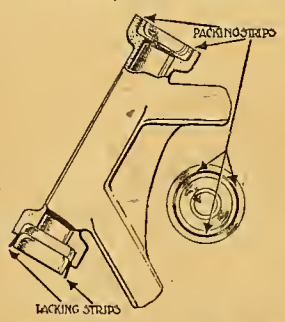
Rejuvenating an American Big Twin.—

Dealing with the flywheels, it was remembered that the crank pin nut nearest the timing-gear has a left-hand thread. The small locking screws found against the faces of the crank pin nuts were first removed by gripping one of the connecting rods carefully in the vice and allowing the flywheels to rest on the bench. A well-fitting type of key is, however, desirable, on account of the tightness of the nuts and their short depth.

By smartly tapping the crank pin end it was removed from the flywheels, and the connecting rod assembly taken apart, careful note being made of the order of assembly. (Forked rod is in front cylinder.) Using a micrometer, it was found that the crank pin was worn oval to the extent of 5-1,000in., so replacement was decided upon. It was further thought desirable to replace the roller assemblies by new ones, and these were accordingly obtained.

Overhauling the Cycle Parts.

Attention was now directed to the cycle parts. The front wheel was removed and the head dismantled, the latter being found to be fitted with cup and cone bearings. The cups showed slight indentation, but otherwise were in



Head races loose in their seatings may be firmly located by packing strips of brass foil.

good condition. To rectify, each cup was lightly ground on the flat portion with a high-speed emery-wheel of fine grade. Later, in re-erecting, it was observed that the cups were a slack fit in their housings, and a remedy was effected, using thin brass-foil packing strips and tapping the cups to their seats with a mallet and wood drift. Discretion as to the tightness of fit is, of course, necessary. On account of rust, the front fork spring was taken apart, each leaf cleaned and greased. To do this it is first necessary to remove the mudguard from the fork.

Turning now to the front fork rockers and clevis, considerable wear was apparent in the bolts of the latter. There was also sufficient wear in the rocker holes to permit objectionable play. As it was noticed that the rockers were in pairs, they were first marked for their own side of the fork before removing. It was decided, as the clevis on each side showed no signs of wear, to fit standard new bolts only, but to drill out and bush the rockers after truing the rocker studs and hardening. It was necessary first to soften the rockers, then drill out 1-8in. diameter, larger in all but the spindle hole. Tool steel bushes, approximately 1-16in. thick were made to fit the trued-up studs and new clevis bolts. These bushes were first pressed into position in a soft state and the grease hole drilled to reach both bushes. Next the bushes were removed, hardened, lapped to suit the studs and clevis bolts, and then pressed into place again.

Inspection of the front hub showed everything in good condition, cleaning thoroughly and repacking with hard grease being all that was required.

Advantage of Large Diameter Hub Bearings.

A preliminary to dealing with the rear wheel was a thorough cleaning of all parts in paraffin to free from grease and two years' accumulations of road surface. Examination then showed no necessity for new brake linings, and the spindle bearings required no attention beyond packing with grease and resetting. No doubt the ½in. diameter balls found here account to some extent for the good wearing properties of the cups and cones.

Passing to the sprocket side of the hub the cush drive was dismantled, using a soft steel punch to operate the lock-ring, a special key not being available. Several of the "cush" springs were found to be broken, consequently were replaced by makers' spares. After the usual cleansing, the cush drive reassembly was made, using an ample supply of grease, and as it was found that the sprocket had developed slight wear on the teeth, it was reversed on the hub so as to take the pull on the opposite tooth flanks.

Re-assembling.

The flywheel and connecting rod assembly was made much in the same manner as described for dismantling, but in the reverse order, great care being taken to keep the flywheels square with each other.

The spigoted crank case joint having been scraped free from old jointing and any burrs removed, the new joint was made with "Metalastene" and the screws thoroughly tightened up.

Having tapped the gudgeon pins into position, it was first necessary to flatten the safety washers which are fitted, then to dish them into a saucer shape with the gap more or less closed. Then inserting the washers in the gudgeon pin bosses the former were expanded into their recesses, using a taper punch, and finally flattening by tapping with a drift of approximately the same diameter as the gudgeon pin.

The front cylinder is best fitted, complete with exhaust valve and cover, at this stage, as with the magneto on its platform it is extremely awkward to tighten up the timing side front cylinder stud. The magneto should now be fitted to its platform, adjusting it to gear correctly with the intermediate timing wheel and tightening the base screws.

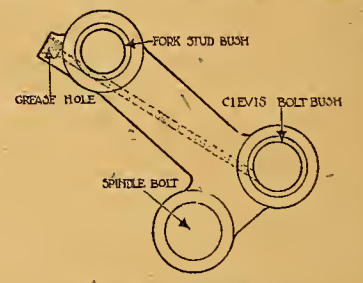
Should the refitting of the magneto to its platform be left until the engine is fitted in the frame it will be found more or less impracticable to tighten all four of the magneto base screws owing to the obstruction of the front frame lug.

Valve Tappet Clearances.

The inlet valves were refitted, leaving 2-1,000in. between rockers and valve stems. A clearance of 8-1,000in. was allowed between tappets and exhaust valves.

Thus far, it will have been observed, little mention has been made of the carburetter. This, a Schebler, had not for some time given satisfaction and, moreover, appeared somewhat heavy on petrol, and it was decided to fit a new instrument, a Binks being selected.

A special exhaust jacketed extension pipe was attached to the standard American X inlet pipe flange to carry the carburetter in the most accessible



Hardened steel bushings used to give the front fork rockers a new lease of life.

position and to avoid fouling the front cylinder with the float chamber, at the same time keeping clear of the gear lever and operating rod.

A stay under the float chamber fastened to the nearest cylinder holding-down stud was fitted to relieve the inlet pipe of undue weight due to overhang.

Whilst holding no brief for the carburetter makers, it is only fair to remark that the improvement in performance has fully justified the expense. Slow running and acceleration are especially good.

Here it is appropriate to insist how very necessary it is that all joints in the induction system, gaskets, etc., should be clean and smooth. The importance of this advice, so often reiterated in the columns of this paper, cannot be overestimated.

In conclusion, the procedure described in the foregoing, though concerned particularly with one make of machine, is in general applicable to sundry other machines of similar type.—H.B.

NEW ROUTE TO WALES.

A scheme has been adopted by the Cardiganshire County Council and the Rhayader Rural District Council for the opening up of an alternative route for motor traffic from Aberystwyth and Mid-Wales, to Hereford and the English border. By this route tourists from England will be able to take the present well-known road through Dyffryn Castell, and return by a reconstructed old coaching road passing through the heart of Wales, *via* Rhayader and Hereford.

GUIDE TO THE SIX DAYS TRIALS.

Thorough Testing Foreshadowed in Advance Maps of the Six Days Routes. Long, Tiring Hills are a Feature. 144 Entrants.

STARTING out from York on Monday morning, the "Six Days" competitors will embark on over 800 miles concentrated road work; the sixth day is to be devoted to speed tests on Brooklands.

Motor cyclists whose engagements will permit should make a point of being on the course at the various places where performances can be judged, for the best riders and machines will be engaged in the greatest test of the year. Together with the T.T., the Six Days Trials represent the most important contribution of the A.C.U. to the active development of the efficient motor cycle.

The competitors weigh in and submit their mounts for preliminary examination between 2 p.m. and 3 p.m. on Sunday next at the Bloffom Garage, York.

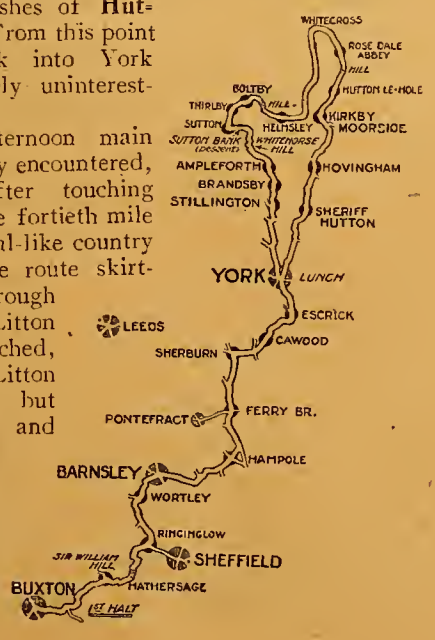
MONDAY: YORK TO BUXTON.

York (8 a.m.), Ampleforth, Boltby, Rosedale Abbey, Kirkby Moorside, Sheriff Hutton, York (lunch 1.8 p.m.), Sherburn, Ferry Bridge, Barnsley, Ringinglow, Hathersage, Buxton.

It is freely prophesied that Monday morning's run will be the stiffest one of the Trials. The route lies north of York, over fairly level roads for the first 20 miles. Shortly, however, comes the ascent of **White Horse Hill** and the immediate descent of Sutton Bank.

The route then lies through Thirlby and Boltby, when **Boltby Bank** is negotiated and a secondary road taken to Helmsley and east to one mile before Kirkby Moorside. From this point a detour is made right over the wild moorlands, the most northerly point being White Cross. A track is then followed down to **Rosedale Abbey**, out of which is the ascent of the same name, followed by a run across the moors to the water-splashes of **Hutton-le-Hole.** From this point the run back into York is comparatively uninteresting.

In the afternoon main roads are chiefly encountered, until just after touching Barnsley at the fortieth mile much more trial-like country is reached, the route skirting Sheffield through **Ringinglow.** Litton is shortly reached, the famous Litton Slack passed, but not ascended, and good main road taken into Buxton, where the first competitor is due to arrive at 6.51 p.m.



TUESDAY: BUXTON TO SHREWSBURY.

Buxton (8 a.m.), Congleton, Rudyard, Axe Edge, Rudyard Lake (lunch 11.19 p.m.), Oakamoor, Cheadle, Stone, Newport, Shrewsbury.

On Tuesday morning the main road is taken past the famous "**Cat and Fiddle,**" and then over excellent trials country east and south-east of Macclesfield. Some 30 miles of by-ways brings competitors to **Mow Cop,** after which hill the route takes a north-easterly direction towards **Axe Edge,** and then southwards to the beautiful Rudyard Reservoir.

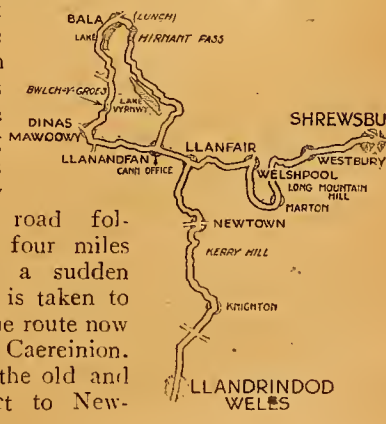
After lunch at the Lake Hotel, although the gradients are not severe, the nature of the course is such that any high speeds are impossible. A circuitous route touches Ipstones, Oakamoor, Cheadle, Hilderstone, Newport, and the outskirts of Wellington to the Wrekin. A magnificent test hill through the woody slopes of the **Wrekin** will be included, if possible, after which the remainder of the run into Shrewsbury is plain sailing.

WEDNESDAY: SHREWSBURY TO LLANDRINDOD.

Shrewsbury (8 a.m.), Westbury, Marton, Welshpool, Llanfair Caereinion, Cann Office, Dinas Mawddwy, Bala (lunch 1.30 p.m.), Cann Office, Newtown, Knighton, Llandrindod Wells.

Through Shrewsbury the main road is taken to near Welshpool, where a left-hand turn brings competitors to the village of Leighton and over the **Long Mountain** to Marton. The lower road is then taken back into Welshpool, soon after which the main road is followed through Llanfair Caereinion, Cann Office, Dinas Mawddwy, and up the now famous pass of **Bwlch-y-groes,** and down into Bala, the lunch stop.

The difficult road over the little-known **Hirnant Pass** is next taken, Lake Vyrnwy being skirted on its north-easterly side, and the road followed for some four miles beyond it, until a sudden turn to the right is taken to Cann Office. The route now runs to Llanfair Caereinion, and from there the old and hilly road direct to New-



Guide to the Six Days Trials.—

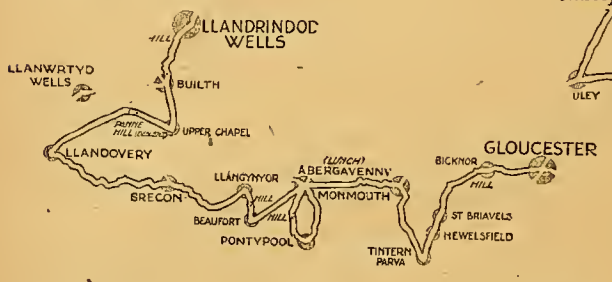
town is followed. After climbing the **Kerry Hills** the boundary road between Wales and England is traversed until Knighton is reached, whilst from Knighton there is an excellent fast run into Llandrindod Wells.

THURSDAY: LLANDRINDOD TO GLOUCESTER.

Llandrindod Wells (8 a.m.), Builth, Llandovery, Brecon, Llangynydr, Beaufort, Abergavenny (lunch 12.24 p.m.), Pontypool, Abergavenny, Monmouth, Tintern Parva, St. Briavels, Bicknor, Gloucester.

The main road is followed to Builth, after which the old coach road is taken towards Brecon, but is soon left after the summit is reached by a bye-road passing down Panne Hill and continuing over the mountain road south of the Sugar Loaf Pass into Llandovery. From Llandovery to Brecon the main road is followed and continued for another 10 miles towards Abergavenny until the climb over the mountains from **Llangynydr** is commenced, the road at the summit reaching an altitude of no less than 1,694ft.

The valley of the Usk is re-joined by way of Beaufort and Brynmawr, and lunch is taken at Abergavenny.



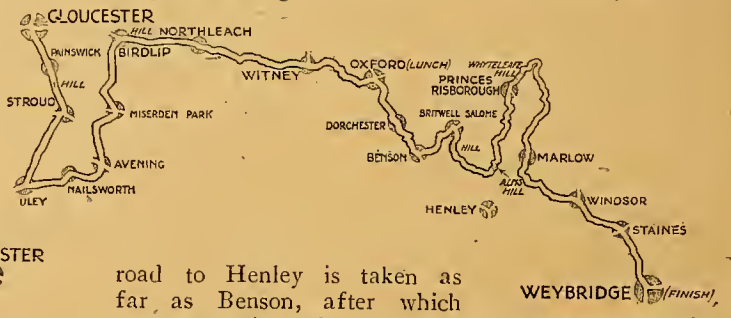
After the stop another long mountain pull is met with, this time being the direct route from **Abergavenny** to the colliery districts of Blaenavon and Pontypool. After passing Pontypool the route returns to Abergavenny, and from that town bears east to Monmouth.

Shortly after leaving Monmouth there is a peculiarly beautiful descent to the valley of the Wye, and this historic river is followed until Tintern Parva is reached, where the river is crossed and an ascent made to the opposite uplands and the interesting villages of Hewelsfield and **St. Briavels.** The route continues to traverse the romantic Forest of Dean, the next point of importance being the descent through the Forest and corresponding climb near **Bicknor.** From this point an undulating road is taken to Gloucester.

FRIDAY: GLOUCESTER TO BROOKLANDS.

Gloucester (8 a.m.), Stroud, Uley, Nailsworth, Miserden, Birdlip, Northleach, Oxford (lunch 12.46 p.m.), Dorchester, Benson, Britwell Salome, Princes Risborough, Marlow, Windsor, Staines.

Following the direct road to Painswick, the route traverses quite a number of interesting test hills in the **Cotswolds.** After reaching **Uley** a north-easterly direction is taken through Avening and then northwards through the wonderfully picturesque Miserden Park to the top of Birdlip. After leaving Birdlip another beauty spot is passed at Cowley Manor, and several more test hills encountered until the main Oxford road is reached at Northleach, from where it is plain sailing into Oxford. After lunch the main road to Henley is taken as far as Benson, after which an attempt is made to show that the **Chilterns** have as much of interest for the motorist as either the Cotswolds or the Forest of Dean. **Britwell Salome** is the first of a series of hills in this neighbourhood, the steepest of which is **Alms Hill,** out of the hamlet of Stonor, to which hill there will be an alternative route for those who are not prepared to face its gradient of 1 in 2.75.



THE COMPETITORS AND THEIR OFFICIAL NUMBERS.

CLASS A. (Not exceeding 250 c.c. solo).

No.		Gear Ratios. Min.	Max.
1.	P. L. Mayo (249 Coventry Eagle)	6.95	20
2.	R. P. Purnell (169 J.E.S.)	6.5	18
3.	B. Kershaw (249 New Imperial)	6	17
4.	L. Horton (249 New Imperial)	6	17
5.	J. Wilkins (249 New Imperial)	6	17
6.	G. S. Davison (247 Levis)	4.75	16
7.	A. R. Edwards (247 Levis)	4.75	16
8.	F. W. Applebee (247 Levis)	4.75	16
9.	G. Lovegrove (247 Radco)	5.25	18
10.	J. Johnson (247 Sun-Vitesse)	6	16
11.	F. Parkes (247 Sun-Vitesse)	6	16
12.	M. Bishop (247 Sun-Vitesse)	6	16
13.	*J. Graham Oates (248 Grindley)	6	16

CLASS B. (Not exceeding 350 c.c. solo).

14.	E. A. Barnett (346 Francis-Barnett)	5.9	17.2
15.	S. M. Greening (346 Francis-Barnett)	5.9	17.2
16.	Mrs. O. M. Knowles (349 A.J.S.)	6	16
17	*H. Gibsoo (348 Raleigh)	5.8	16.8
18.	W. H. Hadfield (348 Raleigh)	5.8	16.8
19.	C. F. Nott (348 Raleigh)	5.8	16.8
20.	R. Cooper (292 Allon)	5.5	16
21.	L. E. Clulee (292 Allon)	5.5	16
22.	W. Johnson (292 Allon)	5.5	16
23.	E. W. Choldcroft (349 A.J.S.)	6.4	16.4
24.	H. F. Harris (349 A.J.S.)	6.1	15.6
25.	Eric Williams (349 A.J.S.)	6.1	15.6
26.	F. C. North (292 O.K. Junior)	5	14.25
27.	N. Hall (292 O.K. Junior)	5	14.25
28.	W. Handley (292 O.K. Junior)	5	14.25
29.	E. Searle (350 Sheffield-Henderson)	6	14
30.	S. E. Longman (349 Zenith-Jap)	5	14
31.	C. H. Mocatta (349 Zenith-Jap)	5	14
32.	I. F. Anderson (293 Connaught)	5.5	18
33.	C. L. Sprosen (348 Connaught)	5	14
34.	A. G. Wall (348 Connaught)	5	14
35.	Mrs. G. M. Janson (349 Coventry Eagle)	6.2	18.1
36.	C. J. P. Dodson (349 Royal Ruby)	5.2	13.1
37.	P. N. Hills (349 Royal Ruby)	5.2	13.1
38.	G. Kimberley (349 James)	5	16.75
39.	J. Lidstone (349 James)	5	16.75
40.	H. Greaves (349 Beardmore-Precision)	4.5	16
41.	G. Packman (349 Packman and Poppe)	5.25	15.28

CLASS C. (Not exceeding 500 c.c. solo.).

42.	Geo. Dance (499 Sunbeam)	4.9	11.1
43.	A. Bennett (499 Sunbeam)	4.9	11.1
44.	C. Greenwood (499 Sunbeam)	4.9	13.71
45.	E. H. Gifford (496 Martinsyde)	4.5	15.25

Guide to the Six Days Trials

No.		Gear Ratios. Min.	Max.
46.	O. S. Bridcutt (499 Dunelt)	4	12
47.	B. H. Cathrick (499 Dunelt)	4	12
48.	R. M. Knowles (499 Norton)	5	14
49.	J. L. Hanman (494 Douglas)	4.8	11.4
50.	W. L. Gard (499 Rudge)	4.6	11.6
51.	F. S. Whitfield (499 Rudge)	5.3	14.8
52	W. H. Hardman (499 Wilkin)	5.25	14
53.	H. M. Beedon (499 Sunbeam)	5.25	14.3
54.	R. C. Winn (494 Douglas)	4.75	12
55.	R. P. Ranson (496 Lea-Francis)	5.5	13.2
56.	A. Lea (496 Lea-Francis)	5.5	13.2
57.	W. N. G. Phillips (499 Triumph)	4.75	13.75
58.	E. Cross (499 Triumph)	4.5	12.46
59.	A. Rollason (498 Ariel)	4.625	14.3
60.	F. A. Longman (498 Ariel)	4.625	14.3
61.	W. T. Woodcock (498 Ariel)	4.625	14.3
62.	J. A. Newman (494 Douglas)	4.5	13.5
	CLASS D. (not exceeding 750 c.c. solo).		
63.	*J. H. Davies (599 Sunbeam)	5	11.25
64.	G. E. Austin (688 Coventry-Victor)	4.25	11
65.	J. Westwood-Wills (547 Powell)	4.5	15.25
66.	G. F. Bainbridge (739 Martinsyde)	3.6	9.5
67.	D. H. Davidson (596 Indian-Scout)	5	13.
68.	W. Scott (532 Scott)	4.68	8.6
69.	G. Hill (532 Scott)	4.68	8.6
70.	W. Moore (532 Scott)	4.63	8.6
71.	E. Foster (698 Raleigh)	4.7	12.5
72.	F. W. Becker (688 McKechnie)	4.7	16.5
73.	J. M. Philpott (598 Beardmore-Precision)	4.5	14.75
74.	J. A. Leyland (555 P. and M.)	4.75	15.5
75.	H. G. Catterall (596 Indian Scout)	4.8	12.
76.	E. S. Burnett (700 Raleigh)	5	13.2
77.	G. E. Cuffe (698 Metro-Tyler)	4	12.5
78	T. Buckle (748 F.N.)	4.5	10
79.	T. Peck (665 Ariel)	4.625	14.3
	CLASS E. (not exceeding 1,000 c.c. solo).		
80.	E. J. Kehoe (998 Rudge)	4	12
81.	*Geo. Brough (976 Brough-Superior)	3.9	8
82.	W. D. Pugh (989 Harley-Davidson)	4.6	10.4
	CLASS B/s. (Sidecars not exceeding 388 c.c.).		
83.	M. C. Breese (349 Weatberell)	6.02	17.10
84.	I. P. Brettell (348 Connaught)	5.5	20
	CLASS F. (Sidecars not exceeding 600 c.c.).		
85.	P. Cunningham (555 P. and M.)	5.3	17.5
86.	R. Lewis (555 P. and M.)	5.3	17.5
87.	G. M. Towsend (555 P. and M.)	5.3	17.5
88.	T. C. de la Hay (599 Sunbeam)	5.25	15.75
89.	E. W. Bischoff (599 Sunbeam)	5.6	15.23
90.	P. Brown (599 Sunbeam)	5.6	15.23
91.	P. Pehrson (499 Dunelt)	4.5	14
92.	B. Bourke (595 New Hudson)	5.5	18
93.	F. B. Freeley (595 New Hudson)	5.5	18
94.	E. Munday (595 New Hudson)	5.5	18
95.	A. W. Hadley (499 Rudge)	5.3	12.8
96.	W. L. Danskin (499 Rudge)	5.3	14.8
97.	F. T. Sibley (499 Rudge)	5.3	14.8
98.	E. R. Jacobs (598 Beardmore-Precision)	5.5	18.5
99.	C. Dickinson (498 Ariel)	5.5	17
100.	J. Harrison-Watson (550 Triumph)	5.38	14.88
101.	J. W. Wildblood (494 Douglas)	5.5	15
	CLASS G. (Sidecars not exceeding 1,000 c.c.).		
102.	A. A. Symes (678 Martinsyde)	5.8	19
103.	J. T. Bashall (678 Martinsyde)	5.8	19
104.	W. H. Bashall (678 Martinsyde)	5.8	19
105.	E. A. Bridgman (998 Indian)	5.9	14.7
106.	E. Swaoton (998 Indian)	5.9	14.7
107.	V. F. Long (976 Excelsior (British))	4.5	12.8
108.	H. S. Perrey (770 B.S.A.)	4.9	17.3
109.	B. L. Bird (770 B.S.A.)	4.9	17.3
110.	J. H. Walker (770 B.S.A.)	4.9	17.3
111.	H. H. S. Harris (799 A.J.S.)	5	16
112.	W. Bucknell (993 Matchless)	5.25	14.68
113.	E. C. Barton (976 Matchless)	5.285	14.68
114.	G. E. Minett (750 Bradbury)	5.1	14.8
115.	P. Platt (750 Bradbury)	5.1	14.8
116.	W. A. Fell-Smith (976 Brough-Superior)	4.25	12.0
117.	F. Cotton (749 James)	5	16.75
118.	G. Baxter (989 Harley-Davidson)	5.2	11.7
119.	T. R. Allchin (989 Harley-Davidson)	5.2	11.7
120.	C. W. Johnston (989 Harley-Davidson)	5.2	11.7
121.	F. W. Giles (800 A.J.S.)	5.5	14.1
122.	H. Poole (800 A.J.S.)	5.5	17
123.	O. Wade (800 A.J.S.)	5.5	17
124.	F. O'Brien (964 Matchless)	5.25	14.5
125.	E. J. Ross (993 Matchless)	5.25	14.5
126.	F. J. Ellis (993 Matchless)	5.25	14.5
127.	W. E. Grange (750 Bradbury)	5.1	14.8
128.	T. F. Blumfield (994 Ariel)	4.625	14.3
129.	L. Newey (994 Ariel)	4.625	14.3
130.	F. J. Watson (994 Ariel)	4.625	14.3
131.	R. H. Bywaters (986 Zenith)	4.875	13.875
132.	H. Reed (986 Dot)	4.25	14.25
133.	R. C. Charlesworth (986 Zenith)	4.5	13
134.	G. D. Hardee (998 Matchless)	5.25	14.5
135.	F. Smith (926 Clyno)	4.85	16.3
136.	W. N. Clayton-Russell (633 Norton)	4.9	14.85
137.	J. Chater-Lea (976 Chater-Lea)	5	15.9
138.	*L. F. McCardle (989 Harley-Davidson)	5.2	11.7
	CLASS J 2 (2-seater cyclecar not exceeding 750 c.c.).		
139.	D. Rhodes (578 Scott-Sociable)	4.9	17
	CLASS H 2 (2-seater cyclecars not exceeding 1,100 c.c.).		
140.	G. W. Shepherd (998 L.S.D.)	4.3	12.0
141.	F. S. Spouse (980 T.B.)	4.6	14.8
142.	S. Hall (1,096 Morgan-M.A.C.)	4.5	11.25
143.	H. F. S. Morgan (978 Morgan-J.A.P.)	4.5	13.5
144.	W. Carr (1090 Morgan-Anzani)	4.5	14

*Denotes competitors representing centres in Premiership Competition.

WHERE TO SEE THE TRIAL.

MONDAY.

		Miles.		
8.00	YORK			
8.24	Sutton-on-the-Forest	8	8	
8.31	Stillington	2⅝	10⅝	
8.56	Ampleforth	8⅜	18¾	
9.35	Thirlby	11	29¾	
10.15	HELMSLEY	12	41¾	
10.37	Gillamoor	8	49¾	
11.54	KIRKBY MOORSIDE	20	69¾	
12.17	Hovingham	7⅝	77⅜	
12.47½	Strensall	10⅛	87½	
1.8½	YORK	6⅞	94⅜	94⅜
	Lunch at De Grey Rooms. (1h. 21½m.)			
2.30	YORK			
2.44	Naburn	4½	4½	
2.47	100th Mile Ruo			100
3.30	Burton Salmon	9¾	20	
4.10½	Brierley	13⅜	33⅜	
4.28½	BARNSLEY	6⅛	39½	
5.23	Ringinglow	18	57½	
6.28	Ashford	17¾	75¼	
6.51½	BUXTON	10⅛	85⅝	179¾
	TOTAL DAY'S RUN		179¾	

THURSDAY.

8.00	LLANDRINDOD WELLS			477½
8.35¼	Llangynog	11¾	11¾	
9.7½	500th Mile Run			500
9.8¼	Llangammarch Wells	11	22¾	
9.48¾	LLANDOVERY	13½	36¼	
10.34	Penpont	15⅛	51⅜	
10.51¾	BRECON	5⅞	57¼	
11.22	Llangynidr	10	67¼	
11.55	Gilwern	11⅛	78⅜	
12.24	ABERGAVENNY	9⅝	88	565½
	Lunch at the Angel Hotel. (1h. 36m.)			
2.00	ABERGAVENNY			565½
2.18	Blaenavon	6	6	
2.36	Pontypool	6	12	
3.09	ABERGAVENNY	11	23	
3.28¼	Crossash	10⅜	33⅜	
3.46½	600th Miles Run			600
4.04	MONMOUTH	8⅛	41¼	
4.41½	Ilewelsfield	12⅝	53⅞	
5.02	Park End	6¾	60¾	
5.36	MITCHELDEAN	11¼	72	
6.09	GLOUCESTER	11	83	647½
	TOTAL DAY'S RUN		171	

TUESDAY.

8.00	BUXTON			
8.52½	Wildboarclough	17⅝	17⅝	
9.00	200th Mile Run	1		200
9.30	Mossley Moss	12¾	30	
9.45½	Mowcop	5⅛	35⅛	
9.58½	Biddulph Moor	4⅜	39½	
10.48½	Axe Edge End	16¾	56¼	
11.07½	Meerbrook	6⅛	62⅜	
11.19	RUDYARD	3⅞	66¼	246¼
	Lunch at Hotel Rudyard. (1h. 41m.)			
1.00	RUDYARD			246
1.25	Ipstone	10½	10½	
2.20	Cheadle	13½	24	
2.42	Hilderstone	6¾	30¾	
2.55	Aston	4	34¾	
3.08	Gt. Bridgeford	4¼	39	
3.41½	NEWPORT	11¼	50¼	
3.51	300th Mile Run			300
4.05	WELLINGTON (outskirts)	7¾	58	
4 29	Longwood	8⅛	66⅛	
4.54½	SHREWSBURY	5¼	64½	321½
	TOTAL DAY'S RUN		130¾	

WEDNESDAY.

8 00	SHREWSBURY			321½
8.49	Buttington	16⅜	16⅜	
9.08	Marton	6⅜	22¾	
9.31½	WELSHPOOL	7⅞	30⅝	
10.23	Foel	17	47⅝	
10.54	DINAS MAWDDWY	10⅞	58	
11.35	Llanuwchllyn	12	70	
11.51½	BALA	5½	75½	397
	Lunch at White Lion Hotel. (1h. 38½m.)			
1.30	BALA			397
1.40½	400th Mile Run			400
2.13½	Llanwddyn	14½	14½	
2.32½	Pont Llogel	6¼	20¾	
3.04½	Llanfair Caereinion	10⅝	31⅜	
3.21	Tregynon	5⅝	37	
3.36	NEWTOWN	5	42	
4.13½	Beguildy	12⅜	54⅜	
4.56½	Bleddfa	6⅝	68⅞	
5.16½	Penybont	6½	75⅜	
5.21½	Cross Gates	1¾	77⅛	
5.31½	LLANDRINDOD WELLS	3¾	80½	477½
	TOTAL DAY'S RUN		156	

FRIDAY.

8.00	GLOUCESTER			647½
8.30	Pagan Hill	10	10	
9.21¾	TETBURY	17¼	27¼	
10.03	Bisley	3¾	41	
10.35½	Birdlip	10⅞	51⅞	
10.37½	700th Mile Run			700
11.06¾	Witbington	10¾	62¼	
11.25½	NORTHLEACH	6¼	68½	
12.14	WITNEY	16⅛	84⅝	
12.28	Evnsham	4⅞	89½	
12.46½	OXFORD	6	95½	743
2.00	OXFORD			743
2.28	DORCHESTER	9⅜	9⅜	
3.01½	Watlington	11⅛	20½	
4.23	PRINCES RISBOROUGH	14¼	47⅝	
4.51	800th Mile Run			800
4.57	HIGH WYCOMBE	11⅝	59	
5.26¼	MAIDENHEAD	9¾	68¾	
5.44	WINDSOR	5⅞	74⅝	
6 00½	STAINES	5½	80⅛	
6 09	Chertsey	2⅞	83	
6.17	Weybridge	2⅝	85⅝	
6.20¼	BROOKLANDS	1⅛	86¾	829¾
	TOTAL DAY'S RUN		182¼	

TEAMS IN THE TRIAL.

Twenty teams in all have been entered, aggregate performance prizes being competed for in Classes A, B, C, F, and G, as follows:

CLASS A.—New Imperial (competitors 3, 4, and 5); Levis (6, 7, and 8); Sun-Vitesse (10, 11, and 12).

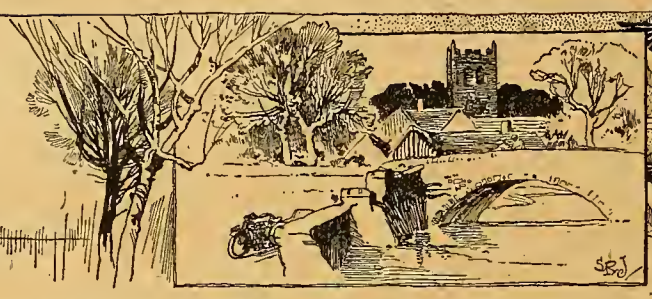
CLASS B.—Raleigh (17, 18, and 19); Allon (20, 21, and 22); O.K.-Junior (26, 27, and 28); A.J.S. (23, 24, and 25); Connaugbt (32, 33, and 34).

CLASS C.—Sunbeam (42, 43, and 44); Ariel (59, 60, and 61).

CLASS F.—P. and M. (85, 86, and 87); Sunbeam (88, 89, and 90); New Hudson (92, 93, and 94); Rudge (95, 96, and 97).

CLASS G.—Martinsyde (102, 103, and 204); B.S.A. (108, 109, and 110); Harley-Davidson (118, 119, and 120); A.J.S. (121, 122, and 123); Matchless (124, 125, and 126); Ariel (128, 129, and 130).

Two-Stroke Phenomena.



Original Views on Four-stroking and the Management of Two-stroke Motor Cycles.

HAVING ridden a single-geared Levis during the past twelve months, the writer presents for the consideration of motor cyclists his opinions on a number of points peculiar to the running of the two-stroke engine.

In the first place it must be a matter of surprise to the mechanic that so much popular misconception still exists upon the matter of four-stroking. Four-stroking is not necessarily a defect in the running of a two-cycle engine. That is to say, troublesome and annoying as the phenomenon is, it is to a great extent an inevitable and a natural one. It must be borne in mind that a profound contrast exists between the mode of action of a four-stroke valve and a two-stroke port.

Difference between Poppet Valves and Cylinder Ports.

The inlet valve of a four-stroke engine remains open during the whole of the induction stroke so that the gas has plenty of time to get in; but in the two-stroke engine the port is open for merely the briefest instant—when uncovered by the piston skirt. Therefore when the engine is working very fast at low throttle opening, as, for instance, when going downhill or before a strong wind, the gas simply hasn't time to get through the momentarily opened port in sufficient quantity to furnish a new charge. When the engine is working fast and the throttle is shut down only a whiff of gas can pass through the port in the brief instant available, and this is by no means the total quantity the crank case could suck in were the port open a little longer, as when the engine is not turning so rapidly. Indeed so little may enter that the crank case is still under suction when the piston descends, and if you compress a gas at low pressure to start with, the final pressure in the crank case when the transfer port is opened may not even attain one atmosphere, and hence none whatever will pass into the cylinder. Therefore the engine does not fire on the next stroke, but on the stroke after that another whiff will enter the crank case and add itself to the gas already there so that enough is now present to produce a snort through the transfer and charge the cylinder ready for the next spark. Often even two revolutions are not sufficient to get enough gas in and the engine takes three (six-stroking) or four revolutions (eight-stroking) and so on.

Inevitable and Accidental Four-stroking.

This natural misfiring then must be clearly distinguished from four-stroking due to excess of oil or too rich a mixture, though it may augment both. The engine, however well made and carefully designed, cannot help exhibiting the phenomenon, which will inevitably appear when the revolutions are in excess of what would be produced by a normal throttle-opening under load, which slows the revving and hence allows the ports to keep open longer. No amount of ingenious arrangement of the ports, or of accurate lubrication, or blaze at the plug, can persuade gas to fire which hasn't time to get in.

It is to be noted that the two factors involved in natural four-stroking are the *size* of the throttle opening and the *duration* of the port opening. Increase either and the firing improves, though the machine may travel faster than you want it. A two-stroke machine may descend a long hill firing only once every sixteen revolutions (sixteen-stroking—which is not a joke about some atrocious engine, but a fact to be observed and explained in the best). Now when the gradient lessens the engine is gradually put under an increasing load and the firing improves in a series of definite stages. First it fourteen-strokes, then twelve-strokes, ten, eight, six, four, and finally two-strokes. The change in beat can be observed through the series by the rider who is patient and interested enough.

It would be outside the province of this article to deal with four-stroking caused by over-lubrication or too rich a mixture. Curiously no very great loss of speed can be observed under such conditions. The machine seems to travel as fast with the engine four-stroking as when it is working properly, the beats when four-stroking being presumably of double the strength when two-stroking. It is this feature that renders four-stroking so harmful to the engine and irritating to the rider. When the charge is surfeited with fuel the chemical changes at explosion are different from normal, the difference being analogous to that between the gentleness of gunpowder and the violence of high explosive.

The Release Valve as a Tell-Tale.

A few miscellaneous phenomena of the two-stroke engine may now be referred to. The compression-release valve, when exposed and not fitted with a duct to lead the spluttering gas into the silencer, affords by the sound it makes when opened a ready means of detecting bad running of the engine. If the engine is running smoothly there should be a succession of sharp hisses from the valve when raised. Frequently, however, there can be heard a very harsh, grinding, or even rattling sound. As this noise is only apparent

Two-Stroke Phenomena.—

when the valve is raised the rider may be pardoned for concluding that the valve itself is the cause.

The cause, however, is insufficient lubrication. Indeed, the engine can be *felt* running badly, but not *heard* until the valve is lifted. The explanation is a simple one. It corresponds to opening the door of an engine-room containing some noisy machinery and being deafened by the sound, while if the door is kept closed it is comparatively quiet outside. The piston is really grating in the cylinder, but the cylinder is so hermetically sealed that you do not hear the noise till you open the valve and let the sound out. If the sound when the valve is raised is a soft hiss all is well, but if there is any harshness, however slight, it is a call for more oil. No two-stroke rider need ever suffer seizure if he understands the sound of the release valve.

An Incidental Advantage.

Before leaving the subject of release valves, I would suggest that the open valve, although it is alleged to splutter oil over the rider's clothing, has quite an important though incidental advantage over the closed kind. The intensely sharp hisses it makes are the most effective warning note devised in cases of emergency. Pedestrians and dogs may stand in your way, peacefully impervious to the sound of your horn, but the moment the hissing valve is opened they jump as if it were the Last Trump. And the point is that in an emergency you instinctively raise the valve—so that you stop the machine and give a last desperate warning into the bargain.

Running Backwards.

A curious feature of the two-stroke engine is its capacity to run backwards. This peculiarity may prove exciting under some circumstances. For instance, on a steep hill the rider may have occasion to paddle his machine backwards into the curb, and when he drops the valve to stop, the engine suddenly fires vigorously down the hill. On a machine with fixed ignition this property is capable of an entertaining application—in theory, at any rate. On a steep hill your small engine conks out, partly because you cannot retard the spark. You have got a heavy portmanteau on the carrier, and the engine cannot even manage this, even if you are prepared to run alongside. So turn the machine round and set it going backwheel first. Since the engine is revving opposite to normal the really advanced spark now becomes a retarded one, which is just what is wanted.

And if you are clever enough to guide the bike straight you can get up after all—by brains instead of brawn.

GEORGE F. SLEGGS (B.Sc.).

CHAIN TENSION ON SPRING FRAMES.

Small Effect of Chain Centre Variations on Well-designed Machines.

AN impression that pivoting the chain stays other than at the chain sprocket centre is detrimental in a spring frame seems to be current, and it is frequently brought to light in criticisms of fully sprung machines.

While admittedly not theoretically perfect, the swinging of the chain stays from a point not exactly coincident with the front sprocket centre does not

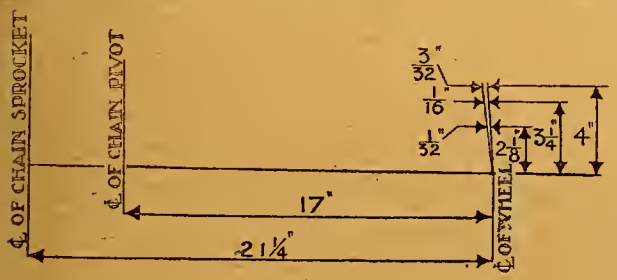


FIG.1

deserve all the adverse criticism it receives, and a true statement of the facts is only fair to the many excellent frames embodying this feature.

The alleged defect of course is the consequent variation of chain tension, but this proves on investigation to be almost a negligible objection in a well-laid-out frame design.

Fig. 1 is a diagram of the A.B.C. rear springing, showing that with a deflection of 2½in. (probably never exceeded under ordinary conditions) the reduction of the sprocket centre distance is only $\frac{1}{32}$in., while even under a 4in. deflection, the maximum given by the makers, the reduction is but $\frac{3}{32}$in.

A mathematical check is very simple. In the second figure :—

$A = 17^2 - 4^2 = 16.523.$
$B = 4\frac{1}{4} + 16.523 = 20.773.$
$C = 20.773^2 - 4^2 = 21.154.$
$X = 21.25 - 21.154 = .096$in. or a little over $\frac{3}{32}$in.

For the human individual who habitually distrusts mathematics the writer can testify that when the machine is loaded with one person in the saddle and another on the footboards, no slackening of the chain can be detected by the usual test for vertical play at the centre of its span.

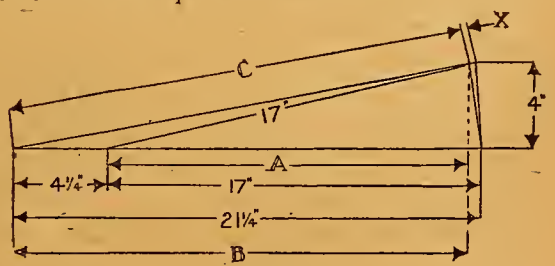


FIG.2.

The A.B.C. is chosen to illustrate this article only by reason of the machine being ready at hand. The figures on the diagram were obtained by accurately setting out the dimensions full size.

R. J. B.

CLUB NEWS.

Rochester, Chatham, and District M.C. and L.C.C.

A run will take place to Palm Bay, Margate, on the 20th inst. The reliability trial for "The Short Bowl," which had to be abandoned previously owing to insufficient support, will probably be run off during September.

Epsom and District M.C.C.

An enjoyable social run was held on the 30th of last month from Epsom to Bognor and back.

Inquiries from neighbouring clubs desirous of organising a joint reliability trial will be welcomed by the hon. secretary, Mr. Y. E. Himing, "The Laurels," Park Hill Road, Ewell.

North-Western Centre A.C.U.

Another gymkhana is being held on the 19th inst. at Blackpool, and members of all affiliated clubs are invited to take part in what should prove a very enjoyable event. Particulars are available from Mr. A. Taylor, "Sunnyfield," 84, Hornby Road, Blackpool.

Uxbridge and District L.C. and M.C.C.

The first annual competition for the Reeves Cup took the form of a reliability trial over a fairly easy course from Uxbridge to Marlborough and back, a distance of 120 miles. The premier award was gained by F. F. Hickman (550 Triumph), and a second prize of an electric lighting set went to R. Dalton (499 Sunbeam).

Bristol M.C. and L.C.C.

A hill near Clifton Suspension Bridge was the scene of considerable public interest lately when a variety trial was held. The best performances were made, in the acceleration test, by R. Houghton (349 A.J.S.); brake test, by C. W. Rankin (G.N.); speed judging, by F. G. Mann (998 Harley-Davidson sc.); and, in the fast and slow hill-climb, by H. Jacobs (976 Zenith), the club captain. Results, based on points, are as follows: (1) R. Houghton (349 A.J.S.), 327; (2) F. G. Mann (998 Harley-Davidson sc.), 312; (3) C. W. Rankin (G.N.), 311.

North London M.C.C.

In the club cup trial held on the 29th of last month the club cup and a gold medal were awarded to C. W. May (550 Triumph). The lightweight Radco Cup and a gold medal were won by R. H. Baxter (247 Radco), and silver medals were gained by the following: T. W. Sullivan (247 Levis), L. P. Walter (550 Triumph), C. L. Sprosen (293 Connaught), F. Roberts (596 Indian), B. Staley (550 Triumph), and J. Hyatt (398 A.B.C.).

S. F. Colman (770 James) and R. H. May (557 B.S.A.) both secured bronze medals.

Scottish Western M.C.

Full results of the speed trials, an account of which appeared in last week's issue of *The Motor Cycle*, are as follows:

275 c.c. Formula.—A. Best (249 New Imperial), time 30 13-16s., figure of merit 1180, m.p.h. 58.3.

275 c.c.—A. Best (249 New Imperial), time 31 3-16s., m.p.h. 57.8.

350 c.c. (Expert barred). Formula.—W. Kennedy (249 New Imperial), time 34 5-16s., figure of merit 1150, m.p.h. 52.5.

350 c.c. Formula.—A. H. Alexander (348 Douglas), time 30 7-16s., figure of merit 1250, m.p.h. 59.0.

350 c.c. (Expert barred).—G. C. Walker (348 New Gerrard), time 32 1-16s., m.p.h. 56.2.

350 c.c.—G. Kelly (349 A.J.S.), time 28 2-16s., m.p.h. 64.

600 c.c. (Expert barred). Formula.—G. C. Walker (348 New Gerrard), time 32 7-16s., figure of merit 948, m.p.h. 55.5.

600 c.c. Formula.—A. L. Downie (349 A.J.S.), time 28 10-16s., figure of merit 1173, m.p.h. 62.8.

600 c.c. (Expert barred).—J. B. Longmuir (499 Sunbeam), time 29 11-16s., m.p.h. 60.6.

600 c.c.—G. Kelly (349 A.J.S.), time 27 5-16s., m.p.h. 65.9.

UNLIMITED c.c. Formula. (Expert barred).—G. C. Walker (348 New Gerrard), time 33 5-16s., figure of merit 899, m.p.h. 54.0.

UNLIMITED c.c. Formula.—A. L. Downie (349 A.J.S.), time 26 15-16s., figure of merit 1330, m.p.h. 66.8.

UNLIMITED c.c. (Expert barred).—J. B. Longmuir (499 Sunbeam), time 28 14-16s., m.p.h. 62.3.

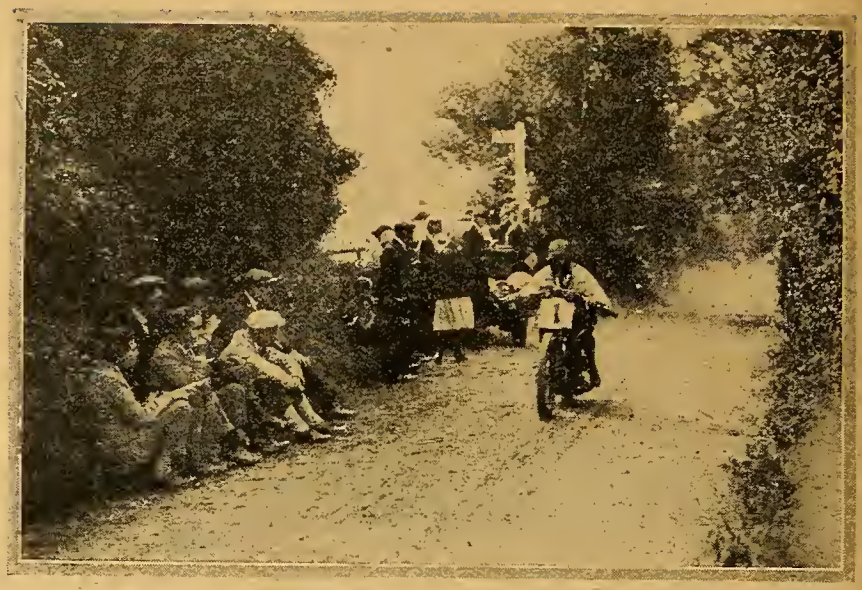
UNLIMITED. A. L. Downie (349 A.J.S.), 26 15-16s., m.p.h. 66.8.

600 c.c. Sidecars. Formula.—G. Kelly (349 A.J.S.), time 34 2-16s., figure of merit 1244, m.p.h. 52.7.

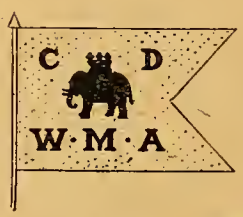
OPEN 600 c.c. Sidecars.—E. A. Small (499 Sunbeam), time 34 3-16s., m.p.h. 52.65.

UNLIMITED. Sidecars. Formula.—A. H. Alexander (499 Douglas), time 34 6-16s., figure of merit 1114, m.p.h. 52.3.

UNLIMITED. Sidecars.—A. H. Alexander (494 Douglas), time 33 3-16s., m.p.h. 52.7.



H. Symonds, who on a 499 c.c. Duzmo obtained two firsts at the recent Croydon Club's hill climb at Marlpit Hill.



Yellow and black are the colours of the Coventry and District Works Motor Association.

The badge of a prominent Northern club.

North-West London M.C.

The interclub hill-climb which had to be postponed owing to unfavourable weather conditions, will probably take place on Saturday, September 23rd.

Southport M.C.

Communications relating to the race meeting on Saturday next should be addressed to Mr. Rowland Hill, at 75, Sefton Street, Southport, and not at Manchester.

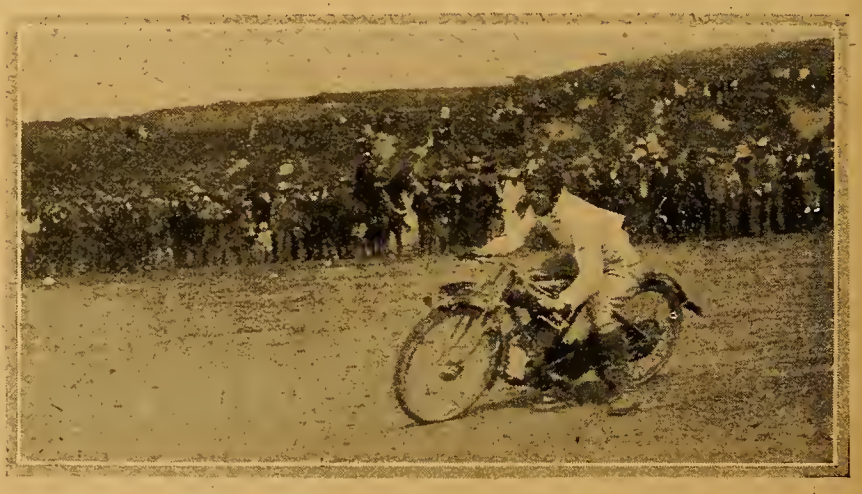
Sheffield M.C.C.

The weather was very unfavourable for the reliability trial for the Douglas Vickers cup, which was held recently over a course which included the famous Derbyshire Hill, Mam Tor.

H. Oscroft (976 Enfield sc.) was first with a loss of only 3 marks, whilst A. Bennett (770 Hazelwood sc.) came in second with a loss of 4 marks. J. Cox (976 Matchless sc.) and C. W. Potts (749 James sc.) tied for third place with a loss of 5 marks each.

Eastbourne and District M.C.C.

Speed trials have been arranged to take place at Eastbourne on Saturday, Sept. 9th, commencing at 2 p.m., when classes will be run for motor cycles, sidecars, cycle cars, and light cars (not exceeding 1,500 c.c.), and these will be open to members of the following clubs, in addition to members of the organising club:—Wallington and District, Brighton and Hove, Surbiton and District M.C.C., and members of the B.M.C.R.C. Entries for these events should be addressed to Mr. H. V. Warren, 73, Terminus Road, Eastbourne, and received by him not later than Sept. 6th.



Cornering at Pendine. C. Sgonina on the o.h.v. A.J.S. converted by himself.

Letters to the Editor

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

HAMPERING GOGGLES.

Sir,—Like your other correspondents, I have found goggles of all types an inconvenience, and now do not use them at all, but wear a pair of ordinary eyeglasses instead. These are made of clear glass, and while not restricting the range of vision protect the eyes sufficiently from wind and dust.

E. KUCHKOFF HEAD.

SOLDERED BOWDEN NIPPLES.

Sir,—With regard to Mr. A. E. Bottomley's letter, I have experienced similar mishaps with my Bowden wire controls.

Changing gear on my machine is effected by a wire cable (Bowden) and the wire has snapped four times in all (three times within the last month), and each time the wire parted near the nipple.

My opinion is that the nipple is too small to hold the wire. TWO-STROKE.

Durham.

Sir,—My machine is only one month old, and five strands of the clutch wire have become detached from the handlebar lever nipple.

If the strands are placed in position it can be seen that they just touch the nipple, showing that they have broken and not pulled through.

This is probably due, as Mr. Bottomley suggests, to the heat of soldering weakening the wire at this point. THOS. H. SALTER.

DOPE.

Sir,—For the benefit of other readers, I should like to give my experience of "Fam-O."

My machine is an Allon two-stroke, and my petrol consumption has been 112 m.p.g.

I used one dose from the 1oz. bottle of "Fam-O" to the gallon of fuel, and, although I did not expect that about a teaspoonful of this would give any increased mileage, I was agreeably surprised to find that I obtained 132 m.p.g. I find that for the same speed as before using "Fam-O" I do not require such a large throttle opening, and a smaller jet would no doubt bring about a 25 per cent. increased mileage, as claimed by the makers.

I have not used this mixture for the purpose of decarbonising my engine, so perhaps some reader who is carrying out trials will give us his opinion as to results.

I have no connection whatever with the firm responsible for the mixture. NOLLA SYADLLA.

BRISTOL'S FREAK HILLS.

Sir,—It was with great surprise, and with no little disgust, that I read the letter from Mr. J. A. Newman relative to the inter-club trial between Bristol and Bath.

I would point out to Mr. Newman that, in the recent trial organised by the Weston-super-Mare Club over a similar route, not one solo competitor made a clean climb; he himself failing about halfway up. I would also remind him of his performance on East Dundry in the first circuit of last year's Bristol and Bath inter-club trial.

Regarding Mr. Newman's comments relative to the Arctic Trial, the fact that the three hills in question were washed out seems to have been forgotten. The reasons why the two clubs named took no part whatever in this event are well

THE LIGHTER SIDE OF CLUB LIFE. Gymkhana events provide an excellent method of introducing the social element into club life. Hot-plug-changing competitions and the like provide amusement for the least technical or non-expert members and are never despised by the real enthusiast.

known to the Auto-Cycle Union, and in particular to the Board of the Western Centre. It suffices to say that these reasons occasioned the withdrawal of the Brisol, Bath, and Kingswood Clubs from this centre.

These clubs are three of the keenest organisations in the Kingdom, and approximate a total membership of 450 in all, Bristol and Bath possessing about 200 members each, and Kingswood about 50. The latter club has only recently been formed, but is very efficient and well organised. The trials organised by these clubs are not exactly the milk-and-water affairs inferred by your correspondent, and are always conducted and run off, both by organisers and competitors, in the most sporting spirit.

REX. FOWERAKER,
Hon. Secretary.

Sir,—The letter of Mr. J. A. Newman is hardly that of a sportsman. I am not a competitive motor cyclist, but know the hills in question to be undoubtedly well worthy of the description "freak."

There is a distinct difference between *East* Dundry Hill and the Dundry Hill mentioned by Mr. Newman, the latter being a main road hill, and the former a steep grass-grown cart track. True, neither the Bath nor Bristol Clubs participated *as clubs* in the "Arctic" Trial, but several Bristol Club members competed and carried off premier honours; to instance one member only, Mr. Walters, the first sidecar competitor.

W. H. GOODENOUGH.

Sir,—East Dundry, Ubley, and Burledge hills have been used frequently in Bristol, Bath, and Weston-super-Mare Clubs' trials, and are well known to many old hands in this district; under bad weather conditions they may be termed, quite frankly, freak hills; when dry, they are merely difficult. These three hills have figured in some six or more trials in the past two years, and the experiences of competitors, of more than average ability, leads them to the firm opinion that, Burledge in particular, in wet weather, is an impossible proposition without some additional aid in the shape of chains or special tyres; even then the solo rider's chances of keeping his balance on the atrocious surface are very small.

If further evidence is required, Mr. Newman's own performance (his exceptional experience and abilities in trial riding, are undoubted) in a recent trial of the Weston-super-Mare Club, reported in your issue of August 3rd, page 179, supplies it. On his usual make of machine, on which he has scored so many victories in the past twelve months, he failed low down on Burledge, and ultimately scrambled to the top, footslogging and with his engine knocking painfully, to arrive in the control in a temporarily exhausted condition. East Dundry followed later, Ubley was not included, but Mr. Newman does not figure in the list of awards. Couple this with his uninspiring performance on East Dundry in the inter-club trial of 1921, when that hill was in good condition, and there is, I think, sufficient proof of the freakishness of these hills. If they are not freaks, surely Mr. Newman, of all riders, should be able to climb them. He lives within a few miles of Burledge, and has every opportunity of studying the hill. General opinion places Burledge as the worst, Ubley next so, and East Dundry the easiest of three very bad hills.

His references to the "Arctic" Trial of April last have little to do with the point at issue: for reasons well known—abnormal weather—these hills *were not included* in the Western Centre A.C.U. Trial. Mr. Newman's letter would lead an uninformed reader to suppose that they *were included*, but the trial finished before they were reached, hence the Western Centre Trials Committee has no actual trials' experience to back its opinions as to whether they are freaks or not. It is interesting to note that Mr. Newman's knowledge of these hills was gained originally from his attempts in Bristol Club events.

F. A. SIMPSON,
Press Secretary,
Bristol M.C. and L.C.C.

STANDARD BELT LENGTHS CONDEMNED.

Sir,—A few days back I asked a garage owner at Sleaford if he had a belt to suit a c.s. Triumph; he told me that the length that was available was 8ft. I only required 6ft. 4in., and thus had to purchase 1ft. 8in. more than was necessary.

I would suggest that suitable lengths should be supplied for standard machines, or long lengths so that the required length can be cut, and I was informed that the makers will not do this.

S. C.
Sleaford.

INFLUENCE MACHINES FOR I.C. ENGINES.

Sir,—I have read with considerable interest your readers' letters on this subject. I may say right away that they may disillusionise themselves as to the probability of such machines in practical use.

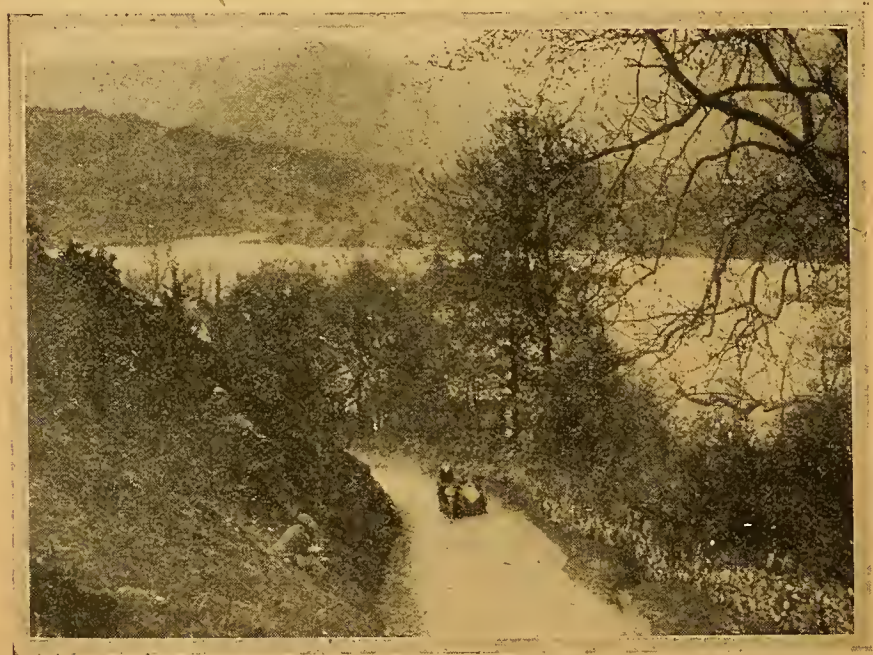
A magneto or coil ignition gives a current of several thousands of an *ampère*, which, although admittedly in excess of requirements, allows a margin for leaky insulation, etc.

A Wimhurst of large size (say, 20in. plates) will only give a current of a few millionths of an *ampère*, which is insufficient to cause ignition, as I satisfied myself many years ago. It is true that by storing the "juice" in a Leyden jar or condenser an adequate spark might pass from time to time, but for continuous sparking of a multi-cylinder engine a multi-plate machine would have to be used, which would be much more bulky than the magneto, even if not so heavy.

There exists even then the difficulty of timing as the spark would jump unevenly, thereby firing one cylinder relatively before another.

I had thought to overcome this by a distributor filled with oil, or by unshort-circuiting the current at each sparking plug segment, but I am afraid with all these difficulties the scheme becomes impracticable, fascinating though it is. I may say I am not prejudiced against the influence machine in so much as I am plotting out a 40-plate machine with 4ft. discs for X-ray work.

MORTIMER A. CODD, F.Ph.S.



August may not be the finest month for seeing the English Lakes at their best, but hundreds of motor cyclists are at present touring this mecca of the foreign visitor and pride of the North Country. A picturesque glimpse of Grasmere from the summit of Red Bank.

VEHICULAR TAXATION.

Sir,—Your correspondents, Messrs. G. J. Hickling and "3½ Triumph," who advocate the taxation of cycles, perambulators, scooters, toy engines, etc. (more or less), never appear to have given any thought to the subject of universal vehicular taxation. Let them ask themselves why a push-bicyclist—a good honest word, Mr. Editor, which is more derogatory to the lazy ones who don't (or ought not to) push their bikes than those who do—goes twice as fast and thrice as far in a day's journey than a pedestrian. Surely it is because he moves with less *friction*. And what destroys roads?

Furthermore, the damage done to the roads is roughly proportional to the tyre bill of the machine, given similar tyres. My tyres cost 30s. apiece, complete, and last me 10,000 miles. A humble push-bicyclist cannot estimate the motor cyclist's tyre bill; but I have seen it stated that it costs him ¼d. a mile: £10 per 10,000 miles. No, sir; I submit that pedestrians be taxed according to their boot bill, or cyclists be subsidised according to their tyre consumption.

I hold no brief for roller skates or toy engines, but am only an enthusiastic cyclist who would buy a motor cycle if he had the cash. M. E. L.

Cambridge.

"THE CHARMS OF 12 M.P.H."

Sir,—"Die Hard" protests at the proposed abolition of the speed limit and votes 12 m.p.h. ample and 20 m.p.h. road hogging.

I suggest he sells his machine and buys a pushbike; this would no doubt fill all his requirements at far less expense. Or, if motoring especially appeals to him, what about a motor bathchair? To drive in top gear at 12 m.p.h. is cruelty to motor cycles. QUIXIX.

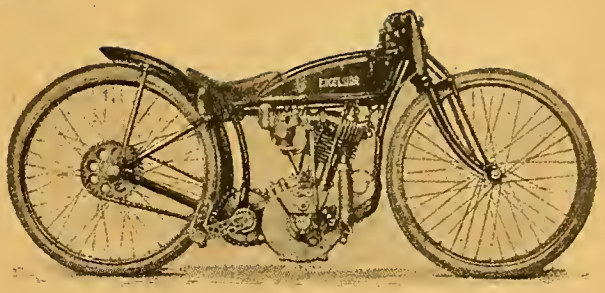
London, W.2.

Sir,—We would suggest that "Die Hard" travelling at 12 m.p.h. with his gaze fixed upon the scenery is blinder to the dangers of the road than the average motor cyclist at 30 m.p.h. with his eyes where they should be, and that therefore he constitutes the greater menace to the community at large. TWO OF THEM.

Windsor.

Sir,—There were very few roads where "25" is unsafe! Emphatically it is unsafe to drive at 12 m.p.h., as steering and steadiness are not so good; anyway, it is not comfortable, and the safest speed is always the most comfortable and the one at which steering is best. Either "Die Hard" has a deplorable lack of confidence in himself or else an equally deplorable lack of control of his machine. Motor cyclists who are continually doing 45-50 m.p.h. are rather a nuisance, but I would far rather have them than wobbling road-crawlers. One can look at scenery and be perfectly at ease at between 20 and 25 m.p.h., and, in addition, the machine is travelling fast enough to be properly controlled and balanced. The idea that speed is unsafe is a relic of the "red flag" days; we shall get over it one day! ROCKER.

Berks.



NOT FOR THE BRITISH MARKET. Clams and synthetic whisky are not the only products of America that seldom reach Britain; this single-cylinder, single-gear "American X" with rigid forks, for example, would be but slightly less useless on Brooklands, than on English roads. Yet it, no doubt, does well on the saucer-tracks of the U.S.A.

Sir,—I quite agree with "Die Hard" that it is not safe for him and others like him to exceed 20 m.p.h.; but why should not those capable of higher speeds indulge in them? Although my machine is not a track racer, I frequently touch "50" without danger to myself or others.

Lichfield. SPORTSMAN.

Sir,—Allow us to protest against the protest of "Die Hard" against abolishing the speed limit.

We admit that 12 m.p.h. is a fit speed for the nervous.

Winston. SCOTT SQUIRREL MERCHANTS.

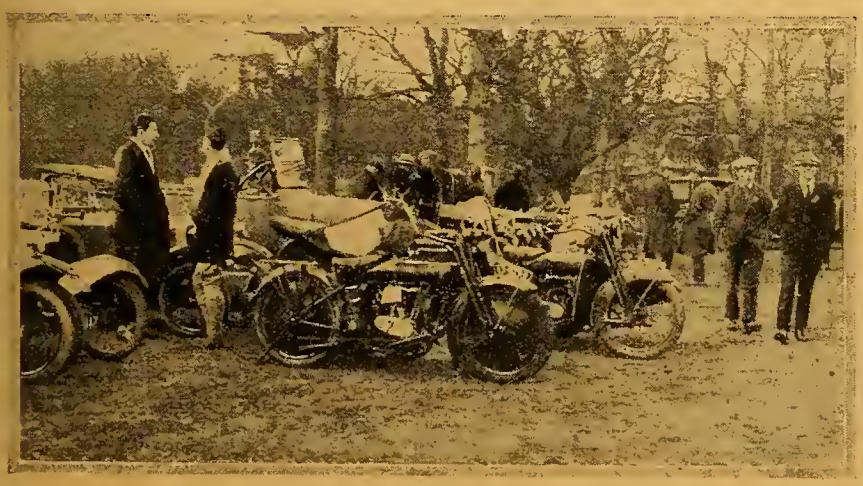
Sir,—Surely "Die-Hard" is not in earnest when he recommends motor cyclists to travel by train if they wish to exceed 20 m.p.h. Fancy trusting oneself to an unknown driver who hurtles along at from 50 to 60 m.p.h.! The train has not even a fair chance, for if anything gets in its way it cannot dodge, but has to run into it. And it is nearly always going somewhere where one does not want to go. And the fares—awful! And one is always reading of accidents on the railway. No! Give me a motor cycle every time.

Joking apart, however, I was out on the road with a sidecar outfit on Sunday, August 6th, and was travelling at what was an easy pace for my machine—25 m.p.h. on the main road, slowing to 20 for villages and country roads. There was a lot of traffic on the road, most of which I was meeting, for I seldom passed other motors, except 'buses or other heavy vehicles, and I myself was seldom passed. This shows, what I have often noticed, that the majority of motor cars and motor cycles travel on the main road at a speed of about 25 m.p.h., and, presumably, consider it a safe pace.

Given a reliable machine, there are plenty of roads where speeds of even 35 or 40 m.p.h. are quite safe, and where 12 or 15 m.p.h. would simply appear ridiculous.

Ipswich. H. W. B.

Sir,—"Die Hard" must have either a remarkable sense of humour or softening of the brain. At the present moment I am unable to decide which; but that anyone should write



SUNDAY ON THE TRACK. Any fine Sunday, nowadays, a certain number of London motor cyclists—who, incidentally, are quite a type to themselves, and entirely different from, say, Yorkshire enthusiasts—make Brooklands track their *rendezvous* for the day. A scene on the members' hill.

such a letter with anything approaching seriousness at all passes my comprehension. For that reason I imagine he must be a wag, and I am inclined to regard the letter as a "leg pull." On the other hand, if he in all seriousness means what he purports to, then I doubt whether his machine is capable of more than 20 m.p.h. Possibly, like a rider I once encountered, he has his throttle lever so arranged on the bar that it fouls another lever, when opened out sufficient to let the machine do 20 m.p.h.

For admiring the scenery, he would do infinitely better on a push-bike, I should imagine, and with a minimum of trouble. His allusion to blinding at 35 miles an hour is really too much of a good thing, and coupled with the statement that "fifteen is possible, but not as safe as 12" (presumably he always keeps one foot on the ground in case he falls), I think, conclusively proves that he wrote this letter with a contented chuckle and possibly "his tongue in his cheek.' So I take off my hat to "Die Hard," or rather, to his sense of humour.

Crewe. O.H.V. BROUGH SUPERIOR.

Sir,—May I heartily endorse "Die Hard's" opinion on the suitable speed for a motor cycle? The beauties of the field and hedgerow, the little wayside flowers, etc., cannot be properly appreciated when one is tearing madly along at 18 miles an hour. This modern passion for speed is, I fear, but only another sign of the same spirit which induces young ladies in sidecars to call "Beaver" as they pass me, doubtless, I suppose, on account of my long white beard, which sometimes flows out behind me. May I be allowed to subscribe myself "DIE HARDER?"

Cambridge.

Sir,—I myself can see all the scenery I want to see at 20 m.p.h. If "Die Hard" cannot, why does he not stop and then make up the speed in between the places with beautiful scenery? Also there are such places as the Great North Road, which has miles and miles of the dullest scenery possible.

"Die Hard" says that if you want to go faster go by train. This is absurd when you compare the cost with that of motor cycling. "MAGNETO."

Isle of Wight.

UNCONTROLLABLE VALVE BOUNCE.

Sir,—After experiments with springs I find that, after slamming a valve on its seating it cannot be prevented from bouncing, however strong the spring, and this theoretically means, in the case of the *exhaust* valve, that the bounce takes place during the induction stroke and the piston draws in some of the exhaust gases and also reduces the possible amount of mixture that could be induced into the cylinder; and, in the case of the *inlet* valve bounce takes place on the compression stroke and not only allows some of the mixture out again, but reduces the compression ratio. (I presume these ratios are measured by turning the engine over slowly—quite a different matter to what is happening at speed.)

After all, a cam does not *push* a valve up at speed, but knocks it up and the spring jumps it down again, and this is the cause of bouncing.

Another point: the sleeve valve is just developing, and engines so fitted probably can do better on a lower compression and a larger carburetter than in the case of the same sized engine with poppet valves.

The remarkable performance of a two-stroke in this year's lightweight T.T. seems to add weight to the above statements, especially as everybody must admit that this type of engine is very crude from the mechanical point of view.

I am only an amateur, but I would like to know what trade men do to overcome this sort of thing when racing.

Johannesburg. COLONIAL.

ALL IN PIECES.

Sir,—With reference to "Digger's" letter in which he eulogises the very sporty behaviour of his 1913 Triumph, I really must write and tell you about my 1902 super sports model machine.

This faithful old 'bus which, as I do not wish to raise an unseemly blush to the cheeks of its manufacturers, shall be nameless, has never yet let me down; and, on one memorable occasion, while on a holiday jaunt from Land's End to John-o-Groat's, not only the big end, piston skirt, etc., deserted me, but the complete engine fell out. In a superb determination to triumph over difficulties, my gallant mount pulled itself together and finished the journey in record time, the average speed for the whole trip being slightly under Bennett's time in the T.T. race this year.

I would add, in case the above remarks induce in your correspondent, "Digger," a desire to surpass even this performance, that having kicked up my machine for the last time on this journey, I had considerable difficulty in disengaging my foot from my iron bedstead, and have suffered from corns ever since. NIGHTMARE.

Birmingham.

Sir,—Probably many amused readers are wondering what "Digger" had for supper the night he wrote to you. The awards he mentions were: second in novices class, and private owners' prize (which he chooses to call first).

Birmingham. AMUSED FRIEND.

PILLION RIDING.

From Sir Harry Brittain, K.B.E., M.P.

Sir,—In the House of Commons on the 3rd inst. a member put up a question trying to prohibit pillion riding.

I see that Hansard somewhat misreports a supplemental question of mine, a correction of which I have sent in. That correction, however, will not be made until the bound copy of Hansard appears, and, in the meantime, I do not wish it to go abroad among my many motor-cycling friends that I am one of the kill-joys who wish to prohibit pillion riding.

I have during my life had the good fortune to take some small part in almost every game and sport. I rode on a motor bicycle (not for very many yards!) in 1895 in France, and have driven cars almost since they were invented.

There may be a small risk in pillion riding, but it is a very, very small one as far as the careful cyclist is concerned, and certainly no more than the risk entailed in such winter sports as ski-ing and tobogganing or fox hunting.

To the average Englishman a slight spice of danger detracts in no way from the sport, nor will it, I hope, ever do so.

I am a keen champion of the motor cycle, and the joy it brings to the boys and girls of England, and, as far as I am concerned, I will certainly do anything I can to resist putting up the German "Verboten" with regard to pillion riding. HARRY BRITTAIN.

Sir,—As I have ridden many thousand miles with a pillion passenger I should like to express my opinion through the medium of your paper on the subject of sprung pillion seats.

For controllability in emergency, freedom from fatigue, and for balance, I prefer to ride without a pillion seat at all. Many of my passengers prefer to ride without a sprung seat, as they complain of the swaying.

London, N.W.6 BWANA MKUBWA.

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CURRENT CHAT

Times to Light Lamps.

August	17th	8.49 p.m.
„	19th	8.45 „
„	21st	8.41 „
„	23rd	8.37 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Heart-braking!

Several Croydon motor cyclists have been fined recently for possessing "only a back-pressure brake."

Hush!

Ford has now turned out his six-millionth flivver. Now that everybody is supplied, suggests a weary American journalist, let's hear no more about the things!

Tank-Corps Motor Cyclists.

Presuming that all survivors of the original Tank Corps men who were at Bisley and then Thetford are still motor cyclists, a reader suggests a meet of the first five companies of the Heavy Section, M.G.C., as it was then called.

The Unappreciated Charms of 12 m.p.h.!

Such interest did the recent letter deploring the modern tendency to travel at speeds in excess of 18 m.p.h. arouse among our readers that one correspondent sent his indignant reply by express post, which cost five times the normal postage rate. It is curious, however, that few share the editorial view of doubting "Die-hard's" seriousness.

Is Brooklands Over-rated?

Opinions of provincial motor cyclists who have visited a Brooklands meeting might provide confirmation or otherwise of the theory we heard the other day that the Weybridge track is a much over-rated place, and that the bulk of its *habitués* would fail miserably when pitted against unknown local men on a course or hill with which they were previously unacquainted.

Something Wrong.

Lunching in Beaconsfield on his way to the Pendine Sands race meeting a member of *The Motor Cycle* staff witnessed the most amazing example of road-hogging in all his career. A large black touring car hurtled through the town towards Uxbridge at fully 35 m.p.h., keeping well into the right-hand side of the wide main street and forcing cars and motor cycles coming in the opposite direction on to their wrong side. Several smashes were avoided by some miraculous means. Either the driver was mad or he was a foreigner in ignorance of our rule of the road. In any case, there is something wrong with a law which permitted him to occupy a seat behind the wheel at all.

Wireless Sets for Motor Cycle Police.

Experiments are being made with a view to equipping all Michigan (U.S.A.) motor cycle police with wireless receiving sets.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light, car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

New Dimming Device?

From a London evening paper: "Rover comb., k.s., Easting, 3 spd lamps, as new; apply——."

Out of Action.

Where have all the scooters gone? There must be quite a number lying dormant, disregarded and dusty.

We Live and Learn.

Norton motor cycles, according to an American trade paper, are "made by Tom Norton, Glandrindod Wells, England." Italics would lose their value in a case like this.

Reassuring News.

We are pleased to hear that Douglas Alexander, the well-known Scottish rider, is on the way to a good recovery from his crash at the St. Andrews speed championships. He wishes to thank all those who helped after the accident.

Resource.

Recently a rider lost his tank filler cap whilst traversing a coast road. Nothing daunted, he made a short search along the high-water mark on the beach, and soon discovered a suitable cork to fill the vacancy.

Fuel Consumption Test in Open Trial.

In the Cheshire Centre A.C.U. open one-day reliability trial, to be held on September 2nd, a fuel consumption test on "A.C.U. formula" will be a deciding factor in arriving at the final results. The start will be near Knutsford, fuller particulars being available from Capt. W. G. Hill, Hill's Garage, The Newgate, Chester.

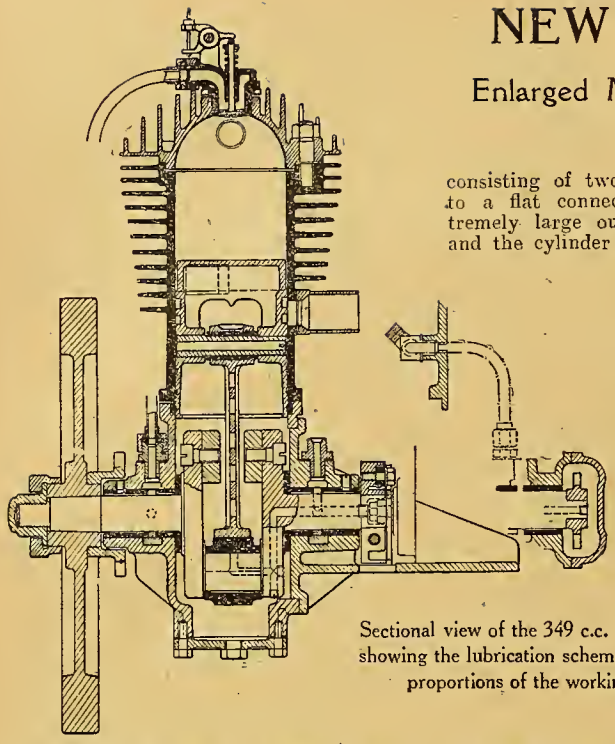
The Early Bird.

Considering the almost ideal conditions, it is surprising that so few motor cyclists go out for early morning runs. Before 8 a.m. roads are almost destitute of traffic, so that, given a sufficiently good surface, one may safely indulge in "more throttle" than later in the day.

Last week's floods caused considerable inconvenience to tourists and one does not wonder that the owner of the Raleigh outfit paused near Loughborough in order to take a photograph before taking the water.

NEW 350 c.c. TWO-STROKE.

Enlarged Model of the Union Engine. Detachable Head and Plain Bearings Throughout.



Sectional view of the 349 c.c. Union engine showing the lubrication scheme and massive proportions of the working parts.

THE Union engine has already made a good name for itself and is now well known in the two-stroke world.

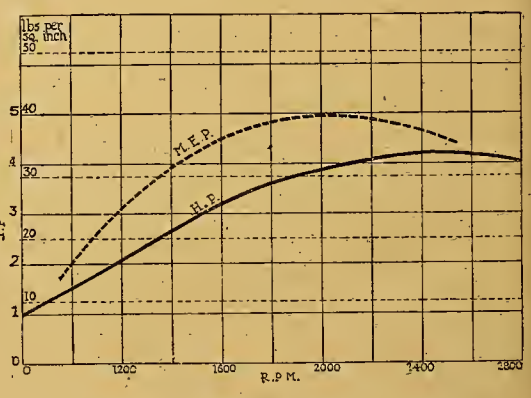
A later development has recently made its appearance and takes the form of a 350 c.c. three-port two-stroke engine of very robust construction. Having a bore and stroke of 75 × 79 mm. the engine is of 349 c.c. capacity; its salient features are a one-piece crankshaft and the employment of very large plain bearings, with lubrication leads direct to the cylinder, both main bearings and through the crankshaft to the big end.

The big end is of the marine type, consisting of two bronze castings bolted to a flat connecting rod base; an extremely large outside flywheel is fitted, and the cylinder has a separate cast iron head bolted to it.

In spite of the fact that only a few of these engines are yet on the road, they are by no means experimental, for in a modified form they have been operating pumping and lighting sets for a considerable period. We are able to reproduce a power curve of a standard engine which had been running for many months' continuous use previous to the test, though we are informed that a similar engine has maintained 9 b.h.p. at 3,500 r.p.m. for a period of 45 minutes. The main claims for this engine are that it is particularly cool in running and is very economical and flexible; its weight is only 50 lb.

On a machine which was tried by our representative, the engine proved to be capable of propelling the rider over any normal country with a top gear of 5½ to 1. It was possible to start on top gear quite comfortably and to climb a hill of 1 in 9 with the greatest of ease. A considerably higher gear might be used for solo purposes, the gear fitted being suitable for sidecar work, and with a higher gear a reasonably high road speed could have been attained in comfort. Lubrication appears to be perfectly satisfactory, and the engine two-stroked regularly over a wide range, fuel economy being a marked feature of the road running. The magneto drive may be arranged by chain in the normal fashion or may be direct from the crankshaft.

The address of the designer is Mr. E. H. Whaley, Coleridge Chambers, 177, Corporation Street, Birmingham.



M.e.p. and power curves of a 349 c.c. Union taken after a period of prolonged hard work.

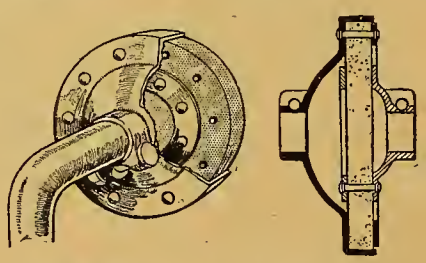
FLEXIBLE SIDECAR COUPLINGS.

A Device to Eliminate Frame Breakage or Contortion.

WITH the idea of providing a certain amount of flexibility between the motor cycle and sidecar and thus saving frame breakages, a modified form of the well-known Hardy flexible joint has been introduced under the name of the Hardy-Grew sidecar coupling.

This device takes the form of a fabric disc rivetted on one side to a large diameter cup, and on the other to a smaller but similar cup, while the unit can be attached to any one, or preferably to all, of the sidecar connections.

Considerable care is evidenced in the design, which is applicable to discs of any thickness to suit special circumstances, while the coupling can be fitted without any brazing. It is only necessary to cut a small length from any connecting tube, insert the coupling, and tighten up the clip bolts; these clip bolts pinch the coupling to the tube, and, as an additional safeguard, the bolts pass through the tube to the depth of 1-64th of an inch. In addition to saving frame breakages the Hardy-Grew coupling has another very marked effect, for when travelling over bad roads much of the shock which is usually transmitted to the cycle frame from the sidecar, is eliminated. This feature was particularly noticed under road test conditions, and the Triumph and sidecar on which the couplings were submitted for test was remarkably comfortable. As is the case with most flexible sidecar connections, the rider requires a short time to become accustomed to the slight "give" which permits the machine to lean to either side to a small extent, but it must be remembered that in the device under consideration this "give" is comparatively slight, being just sufficient to eliminate shocks without permitting the machine to roll to any very great extent. The manufacturers' address is E. J. Hardy and Co., 118, Queen Victoria Road, Coventry.



Part sectional and sectional views of the Hardy-Grew flexible sidecar coupling.

HUNDRED MILE RACE ON THE SANDS.

Neath M.C. "Welsh T.T." in adverse weather won by C. P. Wood (Scott Squirrel).

AFTER such glorious weather on the Bank Holiday Monday for the A.C.U. open event at Pendine (described last week), it was disappointing to the Neath club to find that the first Welsh T.T. would have to take place under unfavourable weather conditions.

Out of a very large entry few finished, and it is worthy of note that the little machines held their own for reliability.

The outstanding performance was that of the two Scotts, ridden by Clarence Wood and Ivor Thomas respectively. Wood, on a 532 c.c. Squirrel took the lead at the commencement, maintaining this position throughout.

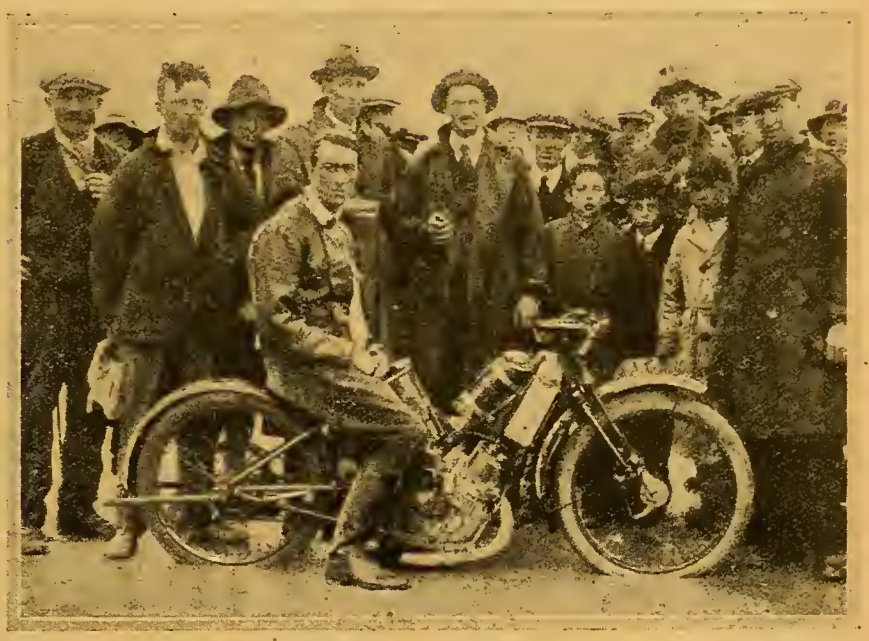
5-mile Laps.

Each lap measured 5 miles. In the first the Scott set the pace, Wood leading by 50 yards, followed by Hassall (490 Norton), Dance (499 Sunbeam), and Grinton (998 Harley-Davidson). Several competitors fell out even thus early, mostly due to plug and clutch trouble.

At 20 miles the positions were: (1) Wood, (2) Dance, and (3) Hassall, Grinton having previously run into the depot for replenishment.

Among the smaller (250 c.c. and 350 c.c.) machines, which had 50 miles to cover, Edwards, on his o.h.v. A.J.S., gained a remarkably fine lead, and was lapping most consistently. M. Isaac, Carmarthen (New Imperial), retired with eye trouble, but T. A. Jones (Ivy) still carried on, his little machine humming away in fine tune.

Owing to Dance's delay Wood became a lap in advance; Hassall had fallen behind with plug trouble. However, at 35 miles Wood stopped to refill, and Dance picked up lost time in a marvellous manner. On restarting, Wood literally screamed up the course, still maintaining the lead. At this time H. Davies (Brough Superior) completed his first lap, having been delayed with magneto trouble, and Edwards (A.J.S.), although he had stopped for a refill, led by a lap all the machines in his class.



Clarence Wood and his 532 c.c. Scott upon which he won the premier event.

Ivor Thomas (Scott) gradually crept into a position, running second to Dance in the 500 c.c. class. Wood completed half the distance in 53m. 10s., and led by four miles, while Grinton, who had apparently been having bad luck, now forged into third place. The positions at half way (50 miles) were: (1) Wood, (2) Dance, (3) Grinton.

At 65 miles Wood, still leading, visited his depot, being off the course for nearly four minutes. Simultaneously loud cheering greeted Edwards (A.J.S.); for he had completed his 50 miles, and thereby won the Junior Cup.

Winner of 250 c.c. Class.

The heavy downpour had now eased somewhat, and the positions were: (1) Wood, (2) Dance and Grinton (level), (3) Ivor Thomas, the latter receiving loud cheers from his club mates. Evans, on a 250 c.c. New Imperial, now finished, winning first position in the 250 c.c. class.

Hassall, dogged by plug trouble, returned to the fray. At 90 miles Dance, who was running second to Wood, had a remarkably quick fuel replenishment, and once more led the 500 c.c. class. However, "there's many a slip 'twixt cup and lip," and this was exemplified in Dance's case, for at 98 miles his magneto gave out and he was grateful to be towed in by Messrs. Pratt's representative.

Previous to Dance's misfortune Wood completed his run, doing the 100 miles in 108 mins., and it is remarkable that there was only a difference of 50 sec. in the times put up by him in the first and latter half of the race.

Owing to the retirement of Dance, Ivor Thomas, who had been lapping steadily and consistently throughout, now became the winner of the 500 c.c. class, with Hassall (o.h.v. Norton) second.

Full results:

100 MILES (UNLIMITED).
1st, C. P. Wood (532 Scott), 108m.

100 MILES (351 TO 500 C.C.).
1st, Ivor Thomas (Neath) (481 Scott Squirrel).
2nd, Hubert Hassall (490 Norton).
(No times taken.)

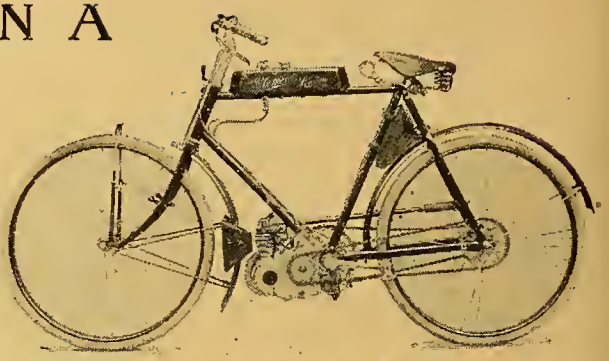
50 MILES (250 C.C.).
1st, Jack Evens (249 New Imperial).
2nd, J. N. Roberts (249 New Imperial).

50 MILES (251 TO 350 C.C.).
1st, W. Edwards (349 A.J.S.).
2nd T. A. Jones (349 Ivy).
3rd, L. F. West (349 Massey-Arran).

(Left to Right) T. A. Jones (349 c.c. Ivy) second in 350 c.c. class; J. N. Roberts (249 c.c. New Imperial) second in 250 c.c. class; and J. Evans (249 c.c. New Imperial) first in 250 c.c. class.

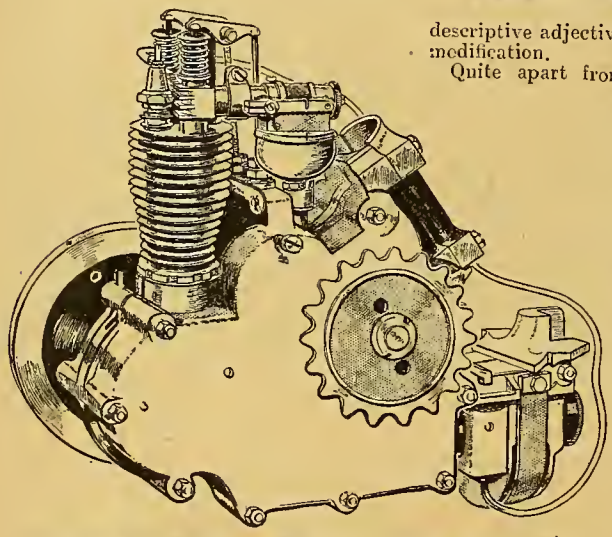
OVERHEAD VALVES ON A 43 c.c. ENGINE.

Cleverly Designed Miniature Power Unit for Attachment to Pedal Cycles.



Of German origin, this pedal cycle serves to show how the Clement unit is attached and also a wind scoop which is recommended as an aid to cooling.

WE are becoming accustomed nowadays to astonishing performances from tiny engines, but by "tiny" we generally limit ourselves to units between 150 c.c.—250 c.c. With the advent on the British market of the 43 c.c. Clement engine our scale of descriptive adjectives will have to undergo modification.



Careful detail design is apparent on the Clement 43 c.c. unit—probably the smallest i.c. road vehicle engine in the world.

Quite apart from its size—or lack of size—the Clement is quite a remarkable design, embodying as it does a steel cylinder, overhead valves, and an 8 to 1 reduction gear in the crankcase. Turned out of a solid steel bar, the cylinder is screwed into the crankcase, being held by a locking ring as on some aero engines. Ball bearings are employed for the main shaft and rollers almost everywhere else. There is an outside flywheel.

The carburetter has been designed specially for its task and consists of a float chamber and float enclosing a central jet, air being admitted through a gauze right above, and, if required, through an adjustable extra inlet; a butterfly valve throttle operates in the choke tube. The size of the sparking plug and the tension of the valve springs are to scale with the overall dimensions of the engine, and the bevel driven under-hung magneto is unobtrusive to the vanishing point.

For £17 the engine will be despatched to the customer by parcel post!

It is intended to be attached in front of the bottom bracket lug of an ordinary pedal cycle, and a rear sprocket and petrol tank have been evolved to fit. An oil-tank is unnecessary, the crankcase sump acting as a reservoir.

All the so-called minor details have received considerably more careful attention than one would expect on such a unit: for example, two petrol filters are provided.

The Belgian designer's London address is 26, Albany Street, N.W.1, but the manufacture, so far, has been carried out in Germany.

FRANCE'S SMALLEST ENGINE.

The 63 c.c. Micromoteur Auxiliary Motor with Friction Drive.

MOTOR assisted bicycles are becoming exceedingly popular in France, and every few weeks a new make is put on the market; numerous races and competitors are being organised for this class of machine.

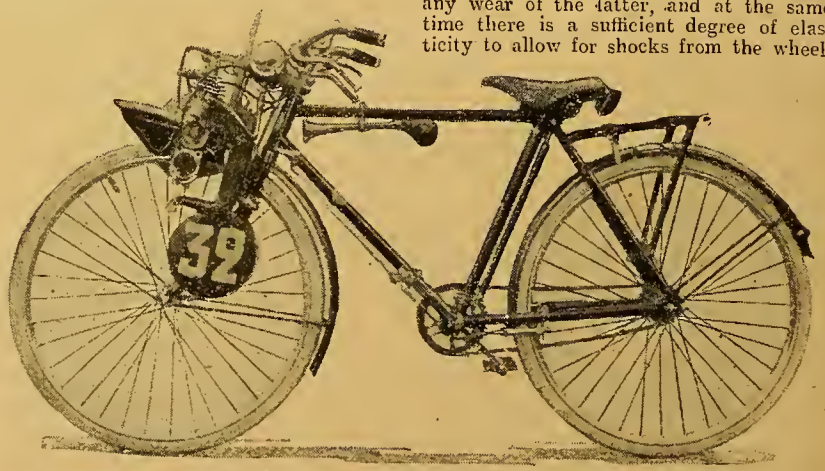
An interesting example recently introduced to the public is the Micromoteur, a single-cylinder two-stroke engine of 46×38 mm. bore and stroke, which embodies a piston displacement of only 63 c.c. This appears to be the smallest and lightest engine for a bicycle built in France, its weight with tank, but without fuel, being 16lb. The engine is said to develop ¾ h.p. at 3,500 revolutions.

Mechanical Features.

It has several distinctive mechanical features, among them being a die cast aluminium crank case with only one joint, ball bearings of unusual size for the main shaft, and an external (completely machined) steel flywheel. The little connecting rod is of bronze-aluminium alloy.

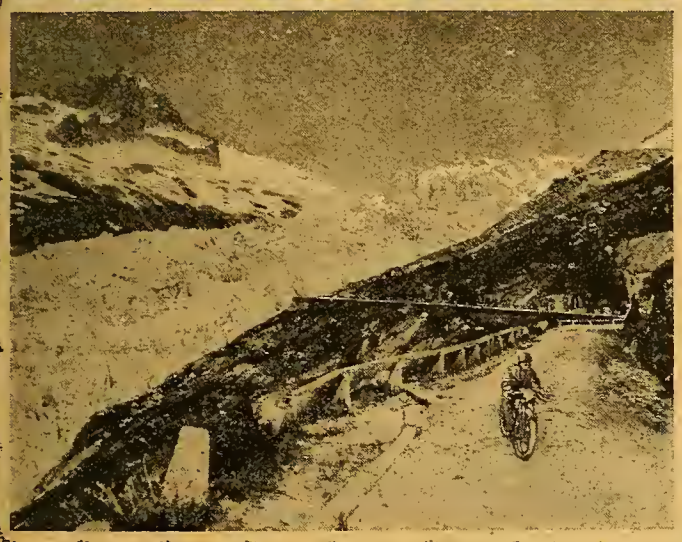
The Micromoteur is spring suspended to the steering tube and the front forks, and can be mounted on any bicycle. A cast-aluminium bracket clamped to the steering tube carries the petrol tank.

An original and patented type of friction drive to the front wheel is employed. The main shaft of the engine carries a drum having a series of cylinders around its periphery and parallel to its axis. The engine being pivoted, these cylinders bear on the tread of the tyre, frictional contact being maintained by means of an adjustable coil spring. There is excellent contact between the drum and the tyre, without any wear of the latter, and at the same time there is a sufficient degree of elasticity to allow for shocks from the wheel.



The diminutive size of the Micromoteur will be gathered from the illustration showing the unit mounted on a pedal cycle.

The International Six Days Trial



(Left) A river of ice, the Rhone Glacier from the Furka Road. (Right) As seen from the Grimsel Road, the magnificent Handeck Fall.

British Successes in Swiss International Event. Hills from Five to Fifty Miles Long.

ALTHOUGH only supported by 45 entries, the International Six Days Trial in Switzerland may be regarded as a success. The chief interest in the trial revolved around the three international teams competing for the trophy presented some years ago by the British Motor Cycle Manufacturers' Union, and held by the Swiss team, which won it in 1920 and held it in 1921.

The British team was composed of :—

G. S. Davison (249 Levis), winner of the 1922 Lightweight T.T. and the 250 c.c. French and Belgian Grand Prix Races;

A. Bennett (492 Sunbeam), winner of the 1922 Senior T.T. and the French Grand Prix of 1921 and 1922; and

F. W. Giles (800 A.J.S. sc.), representing the firm which has won the Junior T.T. so often and the Senior T.T. in 1921.

The Swiss team consisted of J. Morand (248 Condor), A. Robert (496 Motosacoche), and E. Gex (994 Motosacoche sc.), while a team from Sweden included B. Malinberg, G. Gothe, and P. Svanbeck, all mounted on Husqvarna motor cycles.

France not Officially Represented.

France did not nominate a team, but there were several French riders in the trial, in addition to two Hollanders and one Italian; while British riders constituted above 25 per cent. of the total entry.

As recorded in last week's issue of *The Motor Cycle*, the first day's run was from Geneva to Chaux de Fonds, a distance of 124 miles, when excellent roads were encountered along the shores of Lake Geneva. A 2,000 ft. climb up the Col de St. Cergue and the Col de Marchairez caused little trouble; in fact, all competitors arrived at the end of the first day's run without loss of a single mark, in spite of several secret checks.

The second day's run was considered to be the most difficult of any, the hills being both long and severe, and averaging three to four miles long, with surfaces of a "Colonial" nature.

Leaving Chaux de Fonds at 7 a.m., the competitors gently descended the pretty St. Imier valley, the centre of the clock-making industry. All day the competi-

The International Six Days Trial.—

tors journeyed through the great Jura range, the huge extent of which is not realised by those who are unacquainted with the district. After the Court control came the first "colonial section," the ascent of the Stierenberg, a narrow, long, and winding hill covered with stones and gulleys. Next followed a descent to the ancient town of Soleure, where Scintilla magnetos are made, and then the *pièce de résistance* of the whole trial—the Weissenstein Pass.

A Swiss Appiecross.

The observed climb was five miles long, rose some 2,500 ft., was over 4,000 ft. high, had a stony surface, and gradients of 1 in 6 in places. On the whole, the performances were better than last year, but it accounted for several failures. Here Robmann (Frera) had tyre trouble at the base, and C. Wilson (Quadrant) stopped with a choked jet. Viewed from the worst hairpin, the performances were distinctly interesting. Jex (Motosacoche sc.) came up fast, but his passenger was not normally seated; Pélissier (994 Motosacoche) only just managed to get round by slipping his clutch, Volzenlogel (346 Condor) foot-slogged, but many riders made quite clean climbs on just putting down a leg to balance themselves on the turn. Pictet (248 Condor) made an excellent ascent among the lightweights, Egger (o.h.v. Triumph) just succeeded, Sidney (348 Raleigh) was baulked and forced inside the curve, while Clarke (Quadrant) fell, and this incident appeared to be the beginning of the trouble which ultimately proved to be his undoing. Particularly good ascents were made by Eric Williams (A.J.S.), who remembered every yard of the course from last year, Malmberg (494 Husqvarna), and Giles (800 A.J.S. sc.). Giles, by the way, left the route the day before, which was not to be wondered at, as the arrowing, in parts, was none too good; he had

Francois Franconi (496 c.c Motosacoche) arriving at Vallorbe, the lunch control on the first day.

to make up time, and partially seized his engine in so doing. Göthe (494 Husqvarna) did well, while Wilson (Quadrant), Gibson (Raleigh), Davison (Levis), and Robmann (Frera) made excellent ascents. André Pictet, the driver of the only cyclecar, the 1098 c.c. Hinstin, came up well, but carried his passenger on the tail of the vehicle.

Difficulties Down Hill.

The difficulties of the Weissenstein are, however, not only as regards its up grade, but on the down grade also, which is not only steep, but is rough, winding, and traversed by gullies, and it was on one of these that Gibson took a nasty toss; his machine fell on him, and rather badly damaged his ankle, but he pluckily continued, and finished the journey, hoping to go on again the next day. After his tumble Bertschi (Triumph) came to his assistance. Hamer, the Dutch rider of a 736 c.c. Douglas, managed the Weissenstein well enough, but lost time through chain trouble and a loose hub.

Extremely Undulating.

However, the Weissenstein was not the end of the morning's difficulties, as there followed the ascents of La Scheulte and the Passwang, amounting, in all, to six crossings from one valley to another in the Jura range.

Lunch was served at Laufen, and thereafter the road, though easier, was quite stiff enough. It rose and fell among the valleys of the Jura, passing wooded hills, threading its way through gorges, and giving glimpses of old feudal

G. Fuhrer (994 c.c. Motosacoche) climbing the zig-zag up to the Vue des Alpes.

The International Six Days Trial.—

castles perched on inaccessible rocks, ancient strongholds of a bygone age. The last few miles into Zurich were over very badly worn roads. Used as they are to stiff country in their mother-land, the English riders, one and all, agreed that the day's run was really severe. In the morning it was evident that the mileage to certain of the checks was inaccurately given in the programme, and this matter received the attention of the officials. Among those who lost marks may be mentioned Lambert (Viratelle) 24 marks, who made a good climb of the Weissenstein, and on being told he had lost marks, said the officials were inexact; Demont (244 New Imperial), 13 marks; Robmann (Frera), 51 marks; V. Pictet (248 Condor), 48 marks, and Hamer (736 Douglas), 31 marks.

Swiss Team Loses Marks.

Robert (Motosacoche), of the Swiss team, was caught napping at a secret control, while Svanbeck (Husqvarna) retired after damage to his gear box through striking a boulder. Thus the British team was leading at the end of the second day.

THIRD DAY.—ZURICH TO LUGANO—181 MILES.

A long day's run was before the competitors as they left the beautiful town of Zurich at 5.30 a.m. on Saturday. The morning was overcast and cool, but the day promised to be fine. Gibson pluckily started, though he could not put his foot to the ground. As to Clarke (Quadrant), who fell five times on the previous day, which was the most severe of the trial, his various troubles delayed him so much that he had to retire.

Thursday's run was the first to bring the competitors among the High Alps, entailing the climbing of very long ascents, and passing through the most beautiful scenery Europe can produce.

Leaving Zurich, the competitors were taken over a small pass into the country south of the lake.

Types of Control.

The first control of importance was at Pfäffikon. Here it must be mentioned that the trial teemed with controls, which are of four kinds: *contrôles de passage*, controls at which the competitors do not stop, but which are there to ensure the correct route being taken; *contrôle fixe*, a control where the competitors stop and sign; *contrôle fixe et ravitaillement*, where competitors sign and fill up; and *contrôles secrets*, the meaning of which is obvious. After the Pfäffikon control the competitors very gradually ascended along the Linth valley, between two chains of high mountains, on which there was far more snow than last year, and proceeded to Linthal village, which marks the beginning of the Klausen Pass.

Talking to the hotel keeper about the pass, he said: "Do you see that mountain?" pointing to a cone-shaped peak which dominated the village. "Well, you will have to climb as high as that." It did not seem possible; but he was right.

Mounting *en lacets*—by zig-zags—with a fairly loose surface at every corner, the climb went up and up, then suddenly, just as the trees grew thinner and the

IN TYPICAL SWISS TOWNS EN ROUTE.
(Top) G. S. Davison (249 c.c. Levis), in Waldenburg on the second day.
(Centre) Starting on the second day's run from Chaux de Fonds. L. Pelissier (994 c.c Motosacoche) and E. Gex on a sister machine fitted with a sidecar.
(Bottom) W. E. Clarke, the Quadrant rider arriving at the Vallorbe lunch control on the first day.

ON THE WEISSENSTEIN PASS—A CLIMB OF 2,500 FEET IN 5 MILES.

A Dutch rider of a Sarolea P. Lamberts—Hurrelbrinck on one of the numerous bends.

F. Egger, a French Triumph rider, emerging from a leafy tunnel.

country assumed that grand air of desolation which exists just below the snow line, a smiling valley, at the end of which was Klausen village, dominated by beautiful snow mountains, was reached.

Far down in the valley could be heard the distant echo of the competitors' exhausts, doubtless disturbing the chamois in their lofty haunts, for these nimble and graceful beasts still dwell amid the high rocks. Despite the altitude attained—6,000 feet—the height of the summit is 6,344 feet—the gradients are not worse than 1 in 10, and the corners though loose, are quite flat.

The course of the Cassarate Brè Hill Climb—a rise of 1,649 feet in 5 miles—near Lugano, referred to on the next page.

Engines make Light of Passes.

All the machines came swinging round the zig-zags, and opening up thereafter sang up the pass as though their engines were as fresh as their drivers. Bennett (Sunbeam) soared up comfortably, while even Davison's little Levis did much on top gear and never needed a lower ratio than second; Clifford Wilson on the Quadrant, the Swiss-ridden New Imperials, the Swedish Husqvarnas, the little Condors, Dutchman Hamer's Douglas, the French Viratelle, the Motosacoche, and the Italian Frera all came up, making light of this lofty 14½-miles' long hill. Giles (A.J.S. sc.) and both Williams and Harris (349 A.J.S.) looked perfectly happy.

Nineteen miles an hour average in the Alps allowed little time for dawdling, and *à propos* of this limit, it must be mentioned that for the ordinary motorist the pass is controlled, and the legal average of 11 m.p.h. between the control posts must not be exceeded.

At the summit the competitors had to pass through two walls of snow, which had been cut to clear the road.

A magnificent descent, past gorgeous snow mountains, glaciers, and waterfalls, led to Altdorf, the end of the morning's run, and after lunch came the thirty miles' climb up the St. Gothard, reaching an altitude of 6,872 ft.

Storm on the St. Gothard.

Just as the competitors reached the summit a cloud suddenly formed on a mountain overlooking the Hospice and the two wild lakes near by. Others followed, and in a few minutes the sky was covered and rain fell.

L. Divorne (248 c.c. Condor) and L. Bonvin (994 c.c. Motosacoche) checking in at Vallorbe.

At Vallorbe—as at any English village—the competitors attracted the usual admiring crowd of juveniles.

Down, down went the riders, winding corkscrew fashion, down the sheer side of the mountain, slithering round the disgracefully loose corners, which rapidly became greasy with the torrential rain.

On the fourth "storey" down a Motosacoche rider fell in the loose surface and twisted his handlebars. Others passed looking miserable, and it seemed as if many marks would be lost before Lugano was reached, but it was not to be, as after Airolo, where the railway emerges 3,000 ft. below the summit, the rain ceased, and thereafter followed an easy run to Biasca, where a secret check was sprung upon the competitors. Here Eric Williams (A.J.S.), who had been riding with Sidney (Raleigh), who travelled slowly because of the grease, found himself well behind time and had to hurry to catch up.

After Bellinzona, one pretty little climb *en lacets* up the Monte Cenere was made, and the competitors then had an easy run to beautiful Lugano.

The Toll of the Third Day.

Few marks were lost on this, the third day, and none of the British team had any trouble. Führer (Motosacoche) had tyre trouble after Bianca; Lamberts-Hurrelbrinck, the Dutch rider of the Saroléa, lost much time owing to trying to trace a noise made by his chain cover, which he thought indicated something serious.

Other unfortunates were Egger (Triumph), 2 marks; Wilson (Quadrant), 1 mark; Bertsch (Triumph), 2 marks; and Führer (Motosacoche), 41. At the end of the third day the Swiss team had lost 2 marks, and the English 6, but a protest has been raised by riders of several nationalities who were said to have lost marks at the Hochwald secret control on Friday, since their speedometers show that the distances on the route laid were inaccurate.

A Day of Rest at Lugano.

Jour de repos (Day of Rest).—As such was August 6th described in the programme. It began well. Late on Saturday night it was announced that the Monte Bré hill-climb, organised by the Unione Sportiva Ceresio, would begin at 7 a.m., and all the Englishmen, keen as they are, vowed they would rest in their beds. Mr. Ebblewhite declared nothing would persuade him to be astir so early, but as he was official timekeeper he had to go. As to the others—well, at 4.30 a.m. motor cycles began to flit along the road by the lake, trams ground their wheels as they turned the corner by the hotel, at 5 a steamer whistled, and at 5.15 it seemed better to get up and dress than lie abed and listen to the noise.

Monte Bré is a wonderful hill; in fact, it is not a hill at all but one of those conical mountains rising sheer from the lake which stand as sentinels watching over the town of Lugano. The road which winds up its flank is in good order, is 5 miles in length, and rises to 1,649 feet above the level of the lake—not sea level, mark you! as that of the lake is already nearly 1,000 feet. It has ten hairpin corners and finishes just short of the mountain village of Bré. The following are the results of the climb:—

CLASS B. 350 c.c.—Rossi (Motosacoche), 9m. 18s. (32 m.p.h.); Gnesa (Garelli), 9m. 32⅕s.; Zaccheo (A.J.S.), 11m. 12s.

CLASS C. 500 c.c.—*Rossi (Motosacoche), 8m. 22⅗s. (35.5 m.p.h.); Bernasconi (Frera), 9m. 1s.; Dattaglia (Triumph), 9m. 6⅕s.

CLASS D. 750 c.c.—Ghezzi (Motosacoche), 9m. 36⅗s. (31 m.p.h.); Bernasconi (Triumph), 10m. 15s.; Urio (Indian), 10m. 34⅖s.

CLASS E. 1,000 c.c.—Visioli (Harley-Davidson), 8m. 47⅖s. (35 m.p.h.); Leoni (Indian), 9m. 27s.; Mattavelli (Indian), 9m. 39s.

CLASS G. 1,000 c.c. SIDECARS.—Widmer (Indian sc.), 10m. 38⅗s. (30.5 m.p.h.); Acerboni (Frera), 10m. 50s.; Perwangher (Sunbeam), 10m. 53⅗s.

*Rossi broke the record for the hill.

FOURTH DAY.—LUGANO TO BERNE—183 MILES.

An early start was made on Monday, the first man leaving at 6 a.m. in pouring rain.

It thundered and lightened as the competitors prepared for another arduous run, and before starting Giles (A.J.S. sc.) had to change a tube. Rain continued as far as Bellinzona and then ceased, but clouds obscured the mountain tops and the weather looked more than threatening. Actually from the bottom of Monte Cenera, the hill out of Lugano, to the top of the St. Gothard is 52 miles of steady up grade, with only one interruption, and there are as many hairpin turns as there are miles of hill. The motor cycles took the famous pass on its most difficult side with the greatest ease, notwithstanding the fact that the loose corners had been churned into greasy mud.

Hugh Gibson (349 c.c. Raleigh) going well on one of the long engine-trying climbs—the Vue des Alpes.

The International Six Days Trial.—

Near the summit the men were riding in the clouds and rain, which happily cleared off as they descended.

Despeux (292 New Imperial) was in trouble with his petrol tank, and at the control by the side of the lake started to mend it with soap. Dunand (499 Sunbeam) punctured on the St. Gothard. Down from the summit the weather became clearer and the temperature warmer.

On entering Altdorf the competitors had to turn sharply to the right to reach the control, and only those with a good memory reached their destination without trouble. Bossetti (Raleigh) wandered all over the town and protested in language (French) more forcible than polite. It was pointed out to him that it did not matter as he had arrived punctually, but even that did not pacify him.

Indifferent Route Marking.

The marking was very poor at times during the trial, and it is a wonder how the Englishmen found their way. This was especially noticeable in Lucerne.

After lunch at Altdorf the route lay along the famous Axenstrasse, which flanks the Lake of Lucerne, through the unique windowed tunnel hewn out of the solid rock through which wonderful views are obtained. The road was excellent but rather narrow, climbing gently at times; it led to Lucerne, after which place followed an easy, uneventful, but somewhat long run to Berne, the capital of Switzerland.

The principal features of the journey were the richness of the fertile country and the beauty of the numerous chalets with their windows and balconies decked with flowers. Rain fell towards the end of the run and became really heavy as the men arrived.

Determination.

Everyone, of all the nationalities, was filled with admiration at the pluck of Hugh Gibson (349 Raleigh). A day in bed at Lugano while the others enjoyed themselves had done him good, but the injury he had received on Friday would have caused the average individual to lie up for at least ten days. Nevertheless he started from Lugano on Monday morning and had no trouble until within about 20 miles of his destination, when an approaching car forced him on to a loose patch of road, causing him to fall, but fortunately without damaging his machine or bringing further injury to his ankle.

In Berne itself the excellently organised control was in the principal square, which was of great beauty and flanked by noble buildings. Police kept it clear of people, and only officials and competitors were allowed in its sacred precincts.

Thousands of inhabitants watched the final stage of the day's run, despite the heavy rain that was falling.

Bennett (Sunbeam) reported an excellent trip, but bewailed the fact that he had lost a spare cover and tube some miles back. He, like others of the English riders, had suffered punctures, and on Saturday had had three and saved another by pulling out a nail just in time.

Sutter (Harley-Davidson) pulled up suddenly to avoid a spectator, skidded and fell, while Harris (A.J.S.) gave a similar form of entertainment. He was approaching the control quite sedately when he suddenly saw fit to accelerate at the very moment when another competitor crossed his path. Result—an equally rapid tumble within a few yards of the checker. Fuhrer (994 Motosacoche), who was a member of the Berne Motor Cycle Club, received a bouquet of flowers on his arrival, and his fellow members were similarly honoured. Lamberts-Hurrelbrinck, the Dutch rider of a Saroléa which is five years old, reported a good run; but he has learned that riding among the High Alps is different to the plains of the Netherlands. Wilson (Quadrant) and Sidney (Raleigh) came in wet but happy, and Davison (Levis) arrived in as cheery a mood as ever.

So far as the day's results are concerned Bertschi (Triumph) retired, and marks were lost as follows: Hamer (736 Douglas), 41 marks. He was first penalised 26 for arriving late at a control, and then started to make up time, overdid it, and came in too early at the next, losing a further 15 marks. Dunand (499 Sunbeam) was mulcted 10 marks for arriving late.

FIFTH DAY'S RUN: BERNE TO CHATEAU D'OEX (192 MILES).

After the night's rain the roads were dustless as the competitors struck a southerly course from the Swiss capital towards Interlaken. As it was a market day, bicycles and farm carts thronged the route to Berne, but the road surface was good.

On the Klausen Pass—a long, gruelling ascent, which tests to the full the modern high-compression air-cooled engine.

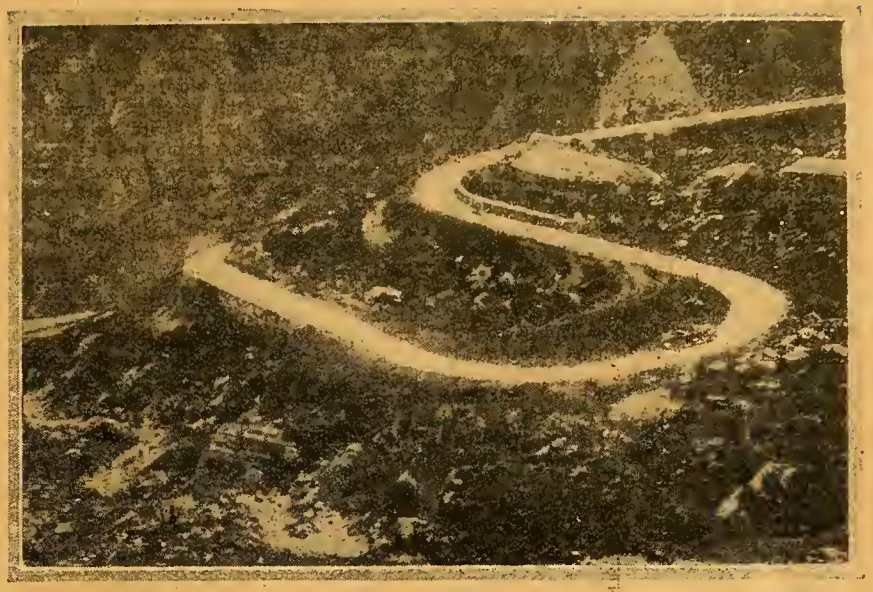
The International Six Days Trial.—

It was a journey of superb beauty. First the men skirted the beautiful lake of Thun, then passed through tourist-favoured Interlaken, with its famous view of the Jungfrau, then along the shores of the equally lovely lake of Brienz to the *pièce de résistance* of the long day's journey—the ascent of the Grimsel pass. This was through the grandest scenery, but though the day was fine clouds obscured the summits of the highest mountains, spoiling the distant view.

Checked at the Revolver's Point.

Only slightly inferior to the St. Gothard in altitude, the Grimsel, though it has a better surface, is quite as steep and was far more difficult to climb; on the St. Gothard the average speed was only 12 m.p.h., while that for the Grimsel was 19 m.p.h. and the sidecar machines had to work hard to maintain it. Motor vehicles are controlled on all the principal Swiss Alpine passes; a speed limit is set which must not be exceeded, and a toll is paid and a pass given at the foot which must be surrendered at the summit. Now the Swiss Motor Cycle Union had definitely arranged with the cantons concerned that these formalities should be waived during the trial. Notwithstanding a Swiss competitor, Souvairan (994 Motosacoche sc.), was held up at the inn near the summit by a gendarme who pointed a revolver at him. M. Delessert, clerk of the course, fortunately arrived in time, but could make no headway with the gendarme. He then saw the proprietor of the hotel, a former deputy, pointed out that this was not a courteous way to treat visitors of various nationalities, and persuaded him to telephone the cantonal government, with the result that humble apologies were offered. Souvairan lost 25 minutes, which was of course allowed him.

From the two pretty lakes adjacent to the hotel surrounded by grand snow-covered mountains the road ascended abruptly in zigzags to the summit, where the riders were very near the clouds. Then a fresh view of wonderful splendour was revealed, but was not so fine as last year owing to the weather conditions. To the left the Rhône glacier could be seen, from which trickled the tiny stream which feeds Geneva's great lake and becomes one of the proudest rivers in France. Steep zigzags, which had to be taken without loss of time, led the riders to the check at Gletsch at the bottom of the valley. The road, which was not so good as that over the Grimsel pass, and as narrow as an English lane, led down towards the Lake of Geneva, ending in abrupt and very sharp hairpins.



How the road turns and twists up the mountain side on the Klausen Pass.

Only one British Retirement.

All the men appeared to be travelling well, including Bennett (Sunbeam), Harris (A.J.S.), Giles (A.J.S. sc.), Wilson (Quadrant) and Davison (Levis). So far the English team were intact, but one English rider had retired. Gibson (Raleigh) was still pluckily continuing, but the failure of an unpuncturable tube and its refusal to retain a patch soon after the start added to his woes.

Infringement of Rules.

Brigue, the luncheon stop, is a picturesque and quaint place of some importance, as it marks the beginning of the Simplon pass and the entrance to the famous tunnel. An incident in the luncheon control led to the withdrawal of a competitor from the trial. Rohmann (Frera) was observed to change his jet, which of course was strictly against the rules. The matter was at once reported to the "jury," *i.e.* the Trials Committee, and he was immediately disqualified.

After Brigue a magnificent and very fast road lined with poplars and reminiscent of the great national roads of France was traversed for many miles. The weather was now intensely hot, and one of the features of the day's run was the extraordinary changes of temperature, first the chill of the early morning, the moderate temperature of the valleys, the cold on the summit of the pass, and then the tropical heat of the afternoon, followed later by a quite chilly climb over the Col des Mosses and an arrival at Château d'Oex, just as a thunderstorm heralded the approach of torrential rain. The ascent of the Col de Mosses was of no great severity, and the road surface was excellent. It was in no way inferior as to scenery to the others, and some glorious views of the Diablerets were obtained. Château d'Oex, where the night was spent, was the only mountain resort on the trial where the competitors stayed.

The Day's Toll.

Demont (244 New Imperial) retired owing to gear trouble, while Clerc (248 Condor) lost 51 minutes on the Grimsel Pass owing to a similar defect, the Hinstin cycle car was 4 minutes late, and Malmberg (494 Husqvarna) lost 2 minutes.

F. W. Giles (800 c.c. A.J.S. sidecar)—The passenger member of the British team—on the long ascent of the Klausen Pass.

The International Six Days Trial.—

SIXTH DAY: CHATEAU D'OEX TO GENEVA (176 MILES).

After the thunderstorm on the previous evening the clouds hung low on the mountains, and all the high peaks were blotted out as the competitors left Château d'Oex and dropped down the mountainside into the pretty Sarine Valley as far as Broc. Meyer (994 Motosacoche) had a nasty tumble at the start, and hurt his nose badly. After leaving the stopping place for the night the competitors climbed the Col du Brüch, the same observed hill as was used last year. First to arrive was Clerc (Condor), whose engine came to a standstill near the last bend, and he arrived pushing and much exhausted. Examination proved that a ball bearing had gone in his gear box, and he was compelled to retire. Borsetti (348 Raleigh) stopped owing to the carburetter drying up, and nearly baulked Pittet (Condor) as he did so. Eric Williams (348 A.J.S.) came up in splendid style, as did Gibson (348 Raleigh), while Giles and Bennett climbed in quick succession, the former making a comfortable ascent, while the latter travelled fast, riding beautifully and keeping as cool and collected as ever. Pélissier (Motosacoche) made a fast climb, and cut out at the corners. Hamer (736 Douglas) sat upright in the saddle and took the hill at touring speed. Sidney (Raleigh) and Wilson (Quadrant) both made good ascents. Robmann (Frera), whose disqualification was announced on the previous day, was allowed to start. He climbed the hill in excellent form. Gex (Motosacoche sc.), of the Swiss team, made a splendid ascent.

Many Lose Marks.

Meyer, whose accident is previously mentioned, arrived very late at the foot of the hill, and retired. The hill had to be taken as fast as possible, and any man who was more than 10 sec. behind the fastest in his class was penalised. Marks lost on the hill stand as follows:—Dinkel (248 Condor) and Morand (742 Condor) 0, Pittet (248 Condor) 15, Volzenlogel (346 Condor) 2, Lamberts-Hurrelbrinck (498 Saroléa) 12, Bennett (492 Sunbeam) 0, Robmann (999 Frera) 2, Davison (249 Levis) 0, Gex (994 Motosacoche) 2, Franconi (496 Motosacoche) 2, Souvairan (994 Motosacoche sc.) 4, Bouvin (994 Motosacoche) 1, Pélissier (994 Motosacoche) 0, Robert (496 Motosacoche) 6, Rothenbach (989 Harley-Davidson sc.) 0, Sutter (989 Harley-Davidson) 0, Leu (989 Harley-Davidson) 2, Malmberg (494 Husqvarna) 9, Goethe (494 Husqvarna), 10, Lambert (696 Viratelle) 3, Senning (999 Husqvarna) 1, Egger (499 Triumph) 4, Gibson (348 Raleigh) 4, Borsetti (348 Raleigh) 4, Sidney (348 Raleigh) 7, Desfeux (292 New Imperial) 17, Fuhrer (994 Motosacoche) 11, Clifford Wilson (653 Quadrant) 5, Giles (800 A.J.S. sc.) 4, Eric Williams (348 A.J.S.) 0, Harris (348 A.J.S.) 2, Hamer (736 Douglas) 15, and Dunand (499 Sunbeam) 4.

After riding the hill, the competitors descended a zigzag road to the Simme Valley, passing through gorgeous country, over which the weather was now attempting to clear, ascended the steep Col du Pillon, and returned to Aigh after having made a complete circle of mountain roads, reaching the Rhône Valley by the road ascended the day before. After Montreux, the luncheon stop, a detour was made into the high country dominating the Lake of Geneva. The riders then descended to the excellent road along the lake almost into Geneva, when a turn to the right was taken and a steep hill ascended.

Thereafter the road—excellently marked—wound in and out and round about after the manner of an A.C.U. one-day trials course, brought the competitors to the flat road over which the speed test was held in the reverse direction to last year, and on through more winding lanes to the Donzelle, the worst gradient in the trial.

Excellent Organisation.

The organisation of the first was excellent; the spectators were roped off from the course, and the surface was in fine condition. Only one incident marred the test, and that was the accident to Bouvin (994 Motosacoche), who fell and retired.

After the speed trial came the hill climb. West of Geneva lies a plain, but nevertheless it was possible to find there a really sporting little hill, quite short but with a gradient of about 1 in 4, and with a fair surface, for all the world like an English by-road. There were only two failures, Desfeux (New Imperial) and Jean (Condor). The latter, first stopped owing to his gear lever slipping out of engagement, made a second attempt, and ran to the top, arriving exhausted. All the English team climbed well, but Giles (A.J.S. sc.) swerved badly, as his back tyre was flat. There was a level-crossing at the bottom of the hill which could not be rushed, as it was approached after a right-hand bend, and naturally the level-crossing caused several delays. Crowds of people watched both the speed trial and the hill-climb. Six miles only separated the Donzelle from Geneva.

The Last Stage.

On arriving at Geneva last Thursday night the competitors' machines were stored in a school some little distance behind the Bâtiment Electoral, and there the officials toiled all day over the results, ably guided by MM. Delessert, Revilliod, Merle, Loughborough, and Ebblewhite. Then the machines were examined as to their condition, and finally the results were announced at a banquet held in the Kursaal.

M. Jules Neher, President of the Swiss Motor Cycle Union, occupied the chair. M. Neher had been the life and soul of the Trial, but had largely worked in the background. A delightful welcome was accorded to riders and officials by M. Guinand, who paid a handsome tribute to the former for their pluck and endurance, and the fact that certain had continued despite injury through accident. He was delighted to see two magistrates of the Canton and Town of Geneva at the Donzelle hill-climb; they were exceedingly pleased with the excellent arrangements there.

M. Neher made three excellent speeches, in English, French, and Swiss-German patois, and thanked both riders and officials. Other speeches were made by Col. Brereton, C.B.E., and M. Philippe, of the French Sporting Press. The prizes were then distributed by Mme. Neher, supported by MM. Delessert and Conchon.

OFFICIAL RESULTS.

Winners of International Trophy, presented by the British Motor Cycle Manufacturers' Union, by one mark.

I. THE SWISS TEAM.

J. Morand (742 Condor) ...	...	1,000
E. Gex (994 Motosacoche sc.)	...	998
A. Robert (496 Motosacoche)	...	992
		2,990

II. THE BRITISH TEAM.

G. S. Davison (249 Levis)	...	1,000
F. W. Giles (800 A.J.S. sc.)	...	996
A. Bennett (492 Sunbeam)	...	993
		2,989

III. THE SWEDISH TEAM.

G. Goethe (494 Husqvarna)	...	990
B. Malmberg (494 Husqvarna)	...	983
P. Svanbeck (995 Husqvarna sc.)		—
		1,973

TRADE TEAM RESULTS.

(1) A.J.S. (Giles, Williams, Harris), 2,994, or 4 more than the winning international team.
(2) Harley-Davidson (Rothenbach, Sutter, Leu), 2,993.
(3) Motosacoche II. (Souvairan, Franconi, Pélissier), 2,975.

CLUB TEAM RESULTS.

(1) Zurich M.C.C.: Dinkel, Rothenbach, Leu, 2,995 (Touring Club Suisse Cup).

(2) Worcester and District M.C.C.: Williams, Giles, and Harris, 2,994 (Lumina Cup).

(3) Motosacoche Club: Souvairan, Franconi, Pélissier, 2,975 (Maxim Cup).

Prize for the best performance of a foreign machine, offered by the Federal Police:— G. S. Davison (Levis).

Prize for the best performance of a Swiss machine:—H Dinkel (248 Condor), J. Morand (742 Condor). As Dinkel's mount had the smaller engine he was awarded the prize presented by the Swiss Automobile Club.

SPECIAL GOLD MEDALS.—H. Dinkel (248 Condor), G. S. Davison (249 Levis), Eric Williams (348 A.J.S.), J. Morand (742 Condor), A. Rothenbach (987 Harley-Davidson sc.).

GOLD MEDALS.—V. Pittet (248 Condor), H. F. Harris (348 A.J.S.), H. Gibson (348 Raleigh), E. Borsetti (348 Raleigh), — Jean (346 Condor), E. Desfeux (292 New Imperial), E. Sidney (348 Raleigh), F. Franconi (496 Motosacoche), A. Bennett (492 Sunbeam), A. Robert (496 Motosacoche), F. Egger (499 Triumph), G. Goethe (494 Husqvarna), B. Malmberg (494 Husqvarna), A. Dunand (499 Sunbeam), E. O. Sutter (987 Harley-Davidson), A. Leu (987 Harley-Davidson), L. Pélissier (994 Motosacoche), C. Laeser (965 New Imperial), D. Senning (499 Husqvarna), E. Gex (994 Motosacoche sc.), A. Souvairan (994 Motosacoche sc.), F. W. Giles (800 A.J.S. sc.).

SILVER MEDALS.—P. Lamberts-Hurrelbrinck (498 Sarolea), G. L. Hamer (736 Douglas), G. Fuhrer (994 Motosacoche), J. Robmann (999 Frera).

FLYING KILOMETRE SPEED TRIAL RESULTS.

CLASS A.—G. S. Davison (249 Levis), 44.56 m.p.h.; V. Pittet (248 Condor), 41.57 m.p.h.; H. Dinkel (248 Condor), 39.10 m.p.h.

CLASS B.—Eric Williams (348 A.J.S.), 52.02 m.p.h.; E. Borsetti (348 Raleigh), 50.83 m.p.h.; H. F. Harris (348 A.J.S.), 50.15 m.p.h.

CLASS C.—F. Franconi (496 Motosacoche), 58.86 m.p.h.; A. Bennett (492 Sunbeam), 58.56 m.p.h.; A. Dunand (499 Sunbeam), 54.42 m.p.h.

CLASS D.—J. Morand (742 Condor), 55.37 m.p.h.; O. Lambert (696 Viratelle), 48.63 m.p.h.; C. Wilson (653 Quadrant), 47.59 m.p.h.

CLASS E.—O. Sutter (989 Harley-Davidson), 66.8 m.p.h.; L. Pélissier (994 Motosacoche), 65.79 m.p.h.; C. Laeser (965 New Imperial), 59.80 m.p.h.

CLASS G (SIDECARS).—A. Rothenbach (989 Harley-Davidson sc.), 54.03 m.p.h.; E. Gex (994 Motosacoche sc.), 53 m.p.h.; A. Souvairan (994 Motosacoche sc.), 49.05 m.p.h.

WELSH RAIN ON WELSH HILLS.

Alt-y-Bady and Conquering Hero twice Encountered in North Wales Centre Trial. Local Riders' Outstanding Performances.

SIXTY entries were received for the North Wales Centre A.C.U. Open Trial, which was held last Saturday, and of the sixty all but four were solo riders. This fact indicated to some extent the general expectation of what the day would hold for the competitors.

There were only one or two defaulters on the starting-line at Denbigh, although rain was falling in that direct and peculiarly steady, coming-down-all-day manner so familiar to those who dwell amidst the mountainous places. Unfortunately, amongst the non-starters were two of the three ladies who had entered the event.

Two Short Circuits.

Comparatively, the course was a short one, actually just under 56 miles, but it included miles of "colonial" going, as well as the famous (or infamous) Alt-y-Bady, and the hill known as Conquering Hero between Rhewl (Llangollen) and Bryn Eglwys; this course, which was excellently arrowed, was covered twice.

First man away was J. W. Wills (547 Powell), a rider who knows the district and who put his knowledge to advantage, riding fast and well and subsequently qualifying for two of the principal awards.

The route followed the main road to Ruthin, and then went on to Llanfair Dyffryn Clwyd—usually written Llanfair D.C. to help the non-linguistic English. Shortly after passing this hamlet, the competitors were switched off down a narrow lane, and after several bends were precipitated into a narrow, leafy path which formed also the bed of a shallow stream.

Probably because everyone was already soaked by the drenching rain, the watercourse was treated with great contempt, not a single failure being recorded.

At Pentrecelyn some more colonial going was encountered, then for a short distance the road towards Llangollen was followed, the sheer descent to that holiday-thronged town, *viâ* Pentredwr, being taken instead of the more gradual but scenically wonderful Horse Shoe Pass.

The "Bady" in Rain.

Immediately outside Llangollen Alt-y-Bady was attacked, and although the rain had washed the surface clear of slime the wet, rounded rocks were tricky.

The hill, in fact, claimed twenty-one failures on the first circuit, but before mentioning these special attention must be called to the showing of J. W. Wills (547 Powell), C. M. Jones (347 Diamond B. and S.), G. F. Burns (499 Sunbeam), and R. O. Hughes (349 Raleigh). The latter's performance was specially wonderful because of his physical handicap. Hughes has only one arm, and "holds" the left grip by rubber bands attached to a steel "book."

Of the other competitors, A. Colcombe (596 Indian) was baulked, but climbed well on being allowed a restart. H. F. S. Morgan (1098 Morgan) made a fine ascent.

On Conquering Hero—second in severity to Alt-y-Bady. H. T. Williams (633 c.c. Norton sidecar).

G. W. H. Goodall, on a similar machine, failed through the carburetter drying up. G. W. Shepherd (986 L.S.D.) broke a valve, and L. A. Clowes (688 Coventry Victor) twice skidded completely round. Miss Cottle (550 Triumph) climbed well. Bert Kershaw (249 New Imperial) most unusually, ran into the bank.

O. Wade (749 A.J.S.), having his T.T. machine with I.O.M. mudguards, gave up and joined the spectators, who, incidentally, also were soaked by the downpour.

In the watercourse, near Llanfair Dyffryn Clwyd, F. E. Marsden (499 c.c. Sunbeam), C. M. Jones (347 c.c. Diamond-B. & S.), and J. W. Jones (348 c.c. Ivy).

From Alt-y-Bady the next hill, Conquering Hero, was reached. This hill, after a long, winding lane approach (where many met a motor 'bus, to their no small consternation), commences with a right-hand hairpin, then a further easy bend and a long, stiff pitch, stony and very greasy in places. Then comes a long greasy track over the mountains to Bryn Eglwys.

Rumour had been busy anent Conquering Hero to such an extent that it is said a surreptitious visit had been made by an amateur road-mending party to scrape the surface. Be that as it may, the ascent was comparatively easy, providing a narrow path first at one side and then at the other, was followed. Indeed, only two failures occurred, R. James (557 B.S.A.), who had to assist his machine, and H. R. Milling (482 Scott), who skidded broadside on for no apparent reason.

On Conquering Hero.

Of the good climbs on Conquering Hero Miss Cottle's ascent was excellent. Her old Triumph pulled well, and as she has a grease gun arrangement and pipes to deliver "belt grip" on to the countershaft pulley, she experienced no belt slip. A steady ascent was made by F. H. Hawkins (349 Raleigh), P. L. Mayo (249 Coventry Eagle) was most certain, and G. Fairly (245 Calthorpe) was slow but very sure.

The only sidecar running was H. T. Williams' 633 c.c. Norton, which came up with the passenger on the carrier and "conking" heavily. Undoubtedly the star ascent of the day was H. F. S. Morgan's, his three wheeler hurtling up,

Once more Alt-y-Bady proved a severe test and only two or three made clean ascents during the pouring rain. J. Knowles (499 c.c. Triumph) ready to put down his feet in case of a skid.

sending a perfect shower of mud and stones from the chain-shod rear wheel.

Back to Denbigh.

By circuitous route through narrow lanes, generally parallel with the main road, Denbigh was again reached, and the second circuit commenced. At Ruthin, however, the lunch stop was held at The Wynnstay Arms Hotel, where an excellent meal was provided.

Approximately one-third of the entry retired before lunch, some due to sheer disgust with the weather.

In the afternoon the conditions were very little different, but the water splash was slightly deeper, and there was a welcome cessation of the rain as Alt-y-Bady was again reached.

As in the morning competitors were dispatched up the hill at half-minute intervals, and the star climb was undoubtedly made by G. F. Burns (499 Sunbeam), the premier award winner of the same event last year. C. M. Jones (347 Diamond-B. & S.) repeated his previous good ascent, and J. H. Fox (633 Norton), after a preliminary wobble, made a perfectly steady "touring" ascent up the middle of the road, regardless of boulders or grease. Hughes, the one-armed Raleigh rider, again made no mistake, and Wills and Price on their Powells were excellent, the former being amongst the very best. H. F. S. Morgan again provided a thrilling display. Even after seeing the astounding performance of his runabout one felt inclined to say, with the old farmer who saw the giraffe at the Zoo, "it may be very nice, but it can't be true."

Other good climbs were made by Miss Cottle (550 Triumph), A. R. Evans (499 Sunbeam), G. L. Falck (499 Rover), and F. E. Marsden (499 Sunbeam). Failures, of course, were legion, even P. L. Mayo (249 Coventry Eagle), B. Kershaw (249 New Imperial), J. A. Newman (496 Douglas), and A. Colcombe (596 Indian), being amongst the vanquished.

The rest of the circuit was merely a scramble against time to hold the 20 m.p.h. average, and it was enlivened by two secret checks. Fine weather finally arrived as the riders finished at Denbigh, and long after everyone had checked in and many had gone home, a competitor rolled in calling for the timekeeper. It was J. W. Moxon (349 Monopole), who deserves a special mention. Delayed with tyre trouble early in the day, he had pegged away round the course, lost all the time available for lunch, and finally checked in about half-an-hour late. His persistence puts to shame all those who retire as soon as the "gold" is out of sight.

Provisionally the principal awards are as follows:—

North Wales Challenge Cup for best performance:—
J. Westwood Wills (547 Powell).

North Wales M.C.C. Amateur Cup (open):—
G. F. Burns (499 Sunbeam).

Powell Challenge Cup for best performance by N.W.M.C.C. member:—
J. Westwood Wills (547 Powell).

N.W. Centre Championship prize:—
W. J. Kellett (499 Sunbeam).

Silver Vase for best passenger machine:—
H. F. S. Morgan (1098 Morgan).

Club Team Silver Cup:—
N. Wales M.C.C. (No. 2 team).
J. R. Davies (499 Sunbeam).
W. J. Kellett (499 Sunbeam).
R. R. Bromley (499 Sunbeam).

Trade Team Silver Cup:—
W. Edwards No. 2 team.
W. Edwards (547 Powell).
S. W. Smith (532 Scott).
A. E. Hughes (550 Triumph).

Gold Medals.—J. Westwood Wills (547 Powell), W. J. Kellett (499 Sunbeam), W. J. Williams (600 Raleigh), A. R. Evans (499 Sunbeam), G. F. Burns (499 Sunbeam), H. F. S. Morgan (1098 Morgan).

MOTOR CYCLE RAILWAY RATES UNDER REVISION.

Possibility of Reduced Charges for Transport of Lightweight Machines by Passenger Train.

PROPOSITIONS have been laid before the Rates Advisory Committee of the Ministry of Transport by the British Motor Cycle Manufacturers' Union urging a reduction in the charges for transporting lightweight machines by passenger train.

The suggestion is that machines under 200 lb. in weight be put in a separate classification, since, considered as bulk, the average lightweight only occupied two-thirds of the cubic space taken up by a typical big single.

Moreover, it was contended that there was considerable variation, taken on a value basis, in connection with the relationship of transport charges by rail. For instance, on the heavy machines the percentage of value in relation to delivery transport charges was 0.8%, whilst in relation to the low weight machines the outside figure was about 3.74%.

It was urged that a 40% reduction in charges should be made for the lightweight machines.

Railway's Objection Easily Dismissed.

The Railway Companies have entered several objections to the proposal, the chief of which was that they were unable to weigh the machines, a large number of stations not being provided with proper appliances to weigh motor cycles, and therefore, however far they might feel disposed to come into line with the application, they did not see how they could very well do so.

It was pointed out that the weights of machines in use was clearly shown by the licence cards they were required to carry by law, and the Chairman, after the Committee conferred, announced the decision "that it would be a good plan to have the two classes."

— —

IMPROVED OVERSEAS TRADE FOR JULY.

BOTH imports and exports of motor cycles for July show a decided increase on the corresponding figures for June. The total value of imports has grown from £8,308 to £12,066, and of exports from £51,114 to £77,901. Incidentally as the following tabular excerpts from the Trade and Navigation Accounts show, the export figure is very nearly as high as it was in July, 1921. But it is less than a third what it was in 1920; and imports have fallen even more heavily.

MOTOR CYCLE IMPORTS.

	1920.	1921.	1922.
Value of machines ...	£40,872	£5,828	£4,750
,, parts	£10,307	£14,879	£7,316
Total value	£51,179	£20,707	£12,066

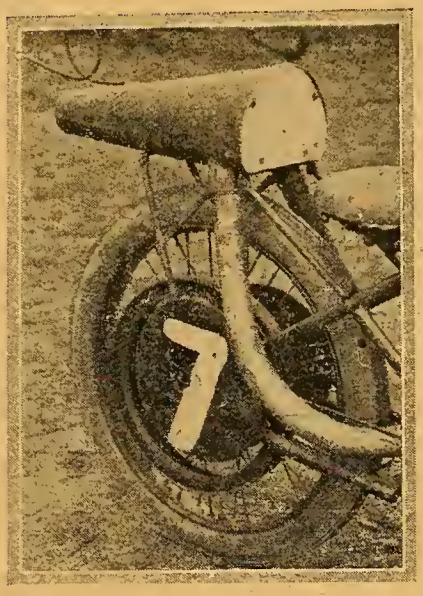
MOTOR CYCLE EXPORTS.

	1920.	1921.	1922.
Value of machines ...	£203,849	£54,834	£50,065
,, parts	£67,229	£23,904	£27,836
Total value	£271,078	£78,738	£77,901

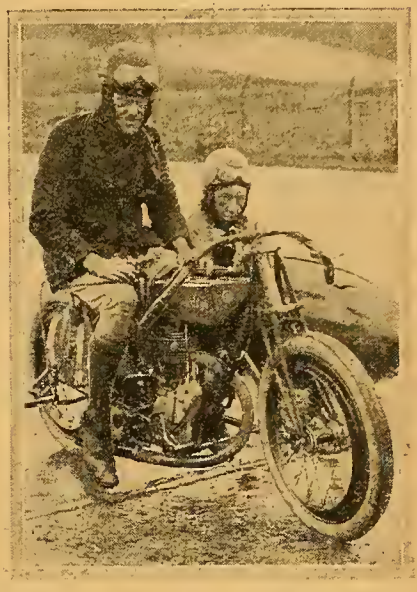
RAIN AGAIN STOPS BROOKLANDS MEET.

Four Races Only Decided at the Fifth B.M.C.R.C. Meeting on Saturday.

E. Remington (998 c.c Blackburne) who scored a win in the 1000 c.c. solo handicap.



Col. Stewart's silencing arrangements on his big twin Trump-Anzani.



R. E. Dicker (499 c.c. Rudge sidecar) winner of the only passenger event to be decided before the rain.

IN the short space of time between 2 p.m. and the opening of the heavens shortly after three, four heathily contested races were decided at last Saturday's B.M.C.R.C. Brooklands meeting.

It was a day out—or rather a half-day—for E. Remington and Blackburne engines; the combination scored notable wins in two events. A Zenith-Bradshaw and a 499 c.c. Rudge sidecar respectively surprised the handicappers by annexing the remaining first places. There were no scratch races on the programme, and several well-known riders were absentees because they failed to see eye to eye with the handicapping authorities.

In the first race Le Vack appeared on a new 250 c.c. New Imperial, instead of the 100 c.c. larger model which he had entered, and consequently he was moved from the scratch mark, being allowed 54s. This left R. Weatherell (345 Weatherell), E. Remington (348 Edmund-Blackburne), and G. H. Williams (348 Weatherell) on the back mark—quite a compliment to Blackburne engines generally. Remington rose to the occasion, although F. A. Longman (o.h.v. A.J.S.) made the very best use possible of 9s. start. The Curtis, ridden into third place from very nearly the limit mark, has a sleeve-valve Barr and Stroud engine.

350 C.C. SOLO HANDICAP.

1. E. Remington (348 Edmund-Blackburne), 21s. handicap.
2. F. A. Longman (349 A.J.S.), 30s.
3. G. L. Werts (350 Curtis-B. and S.), 2m. 3s.

Winner's speed=71.52 m.p.h.

Thirteen started in the 500 c.c. event, including two new-comers—G. Cowley, sen. (Sunbeam), who made an excellent get-away, to disappear for the rest of the afternoon, and P. Cunningham (P. and M.), who rode a good race into sixth position. The limit man, J. Carter, on an old single-cylinder Zenith, kept his lead for one lap, but R. A. Mallet, on the modern version of the same make, was ahead at lap two, with R. O. Lowe and P. G. Kennedy (Nortons) in pursuit. Mallet retained his place on the final lap, and R. E. Dicker squeezed some pre-war-like speeds from his Rudge, running it into a creditable second despite a 51s. penalty on the leader. Mallet, however, lost some time by employing a push-start at the commencement.

500 C.C. SOLO HANDICAP.

1. R. A. Mallet (496 Zenith-Bradshaw), 1m. 51s
2. R. E. Dicker (499 Rudge), 1m.
3. R. O. Lowe (490 Norton), 1m. 27s.

Winner's speed=67.10 m.p.h.

G. L. Werts, who introduced a new make at Brooklands—a 350 c.c. Barr and Stroud engined Curtis. He was third in the first race.

R. A. Mallet (496 c.c. Zenith-Bradshaw), who won the 500 c.c. event at 67·15 m.p.h.

Rain Again Stops Brooklands Meet.—

The 1,000 c.c. race was really exciting. Out of ten entries, nine started, 21 seconds separating them all except the two front men—G. Packman (Packman-Jap) and F. A. Longman (Ariel-M.A.G.)—who were both allowed 54 seconds. Col. Stewart, who had fitted a combined silencer and streamline tail to his Trump-Anzani, lost his chance by failing to start promptly; whereas Remington's big Blackburne accelerated in a positively astounding manner.

Although under-geared and misfiring, the Packman led the field for a lap, being followed by Longman. O. M. Baldwin (Matchless-M.A.G.), T. R. Allchin (Harley-Davidson), Remington and Col. Stewart, these five almost neck and neck. Remington obviously had gained most ground, and no one was surprised when he led next time round. C. F. Temple (Harley-D.) made a valiant effort to pass the Blackburne, but his luck seemed to have quite deserted him, and Remington hurtled home at over "ninety," unmolested.

1,000 C.C. SOLO HANDICAP.

1. E. Remington (998 Blackburne), 3s.
2. O. M. Baldwin (992 Matchless-M.A.G.), 9s.
3. T. R. Allchin (989 Harley-Davidson), 15s.

Winner's speed=89.10 m.p.h.

But for a burst tyre on his last lap, F. W. Jelpke (348 Weatherell sc.) would have enjoyed a runaway win in the 600 c.c. sidecar handicap. As it was, he ran from the aeroplane sheds to the finishing line on a flat rear tyre, and was only passed by two others, R. E. Dicker (499 Rudge sc.), who had allowed bim over a minute, and V. E. Horsman (596 Norton sc.), who started scratch and all but overhauled the field. Le Vack had fitted a sidecar to the wonderful 350 c.c. o.h.v. New Imperial-Jap, but a broken throttle wire prevented us from seeing how it behaved in double harness.

600 C.C. SIDECAR HANDICAP.

1. R. E. Dicker (499 Rudge sc.), 1m. 24s.
2. V. E. Horsman (596 Norton sc.), scratch.
3. J. L. Emerson (496 Douglas sc.), 6s.

Winner's speed=59.15 m.p.h.

SHEFFIELD HILL CLIMB IN THE RAIN.

Keen Rivalry and Great Enthusiasm Despite Downpour at Yorkshire Centre Speed Event.

THE Sheffield and Hallamshire M.C. and L.C.C. was very unfortunate on Saturday, for the Yorkshire A.C.U. Centre Hill-climb, organised by the club on the Ringinglow Road, was spoilt by incessant rain. But it was by no means an unsuccessful venture.

Despite the drenching rain an enthusiastic ardour pervaded the whole affair, and a good number of "mudlarks" made the journey out of the city, to be rewarded by some remarkably fine riding. Nortons were well to the fore, and registered many wins.

Good Organisation.

Every event was run off with clock-like precision, and not a single note of complaint could be registered against the organisation. The course was well marshalled by club officials and police, and additional precautions were taken by roping off either side of the road.

Mrs. Janson (Trump) was geared too high for the course, and F. W. Dixon (Harley) was troubled with misfiring, probably due to the heavy rains. Thrilling riding was exhibited in the premier event by R. T. Cawthorne and G. W. Walker (Nortons), and the local rider, E. Searle (Sheffield-Henderson). The course was a measured half-mile. Results:—

EXPERTS (SOLO UP TO 250 C.C.).

1, R. L. B. Taylor (Levis), 34⅕s.; 2, S. G. Gambles (Diamond), 36s.; 3, J. S. Jenkins (Velocette), 36⅖s.

EXPERTS BARRED (SOLO UP TO 250 C.C.).

1, H. J. Shuttleworth (Velocette), 41s.

EXPERTS SOLO (UP TO 350 C.C.).

1, E. Searle (Sheffield-Henderson), 30⅕s.; 2, J. Cooke (Edmund), 33⅖s.; 3, C. N. Sadler (Sheffield-Henderson), 35⅕s.

EXPERTS BARRED (SOLO UP TO 350 C.C.).

1, G. N. Sadler (Sheffield-Henderson), 32⅘s.; 2, J. Cooke (Edmund), 33⅕s.; 3, G. H. Craven-Phillips (Beaumont), 34⅕s.

EXPERTS SOLO (UP TO 500 C.C.).

1, R. T. Cawthorne (Norton), 26⅕s.; 2, G. W. Walker (Norton), 26⅘s.; 3, E. Searle (Sheffield-Henderson), 27⅕s.

A wet event. At the start of the Sheffield and Hallamshire club's hill climb last Saturday. E. Searle (Sheffield-Henderson) is the rider in the foreground.

EXPERTS BARRED (SOLO UP TO 500 C.C.).

1, F. Sisson (Norton), 27s.; 2, J. Cooke (Edmund), 29⅕s.; 3, J. H. Illingworth (Norton), 30⅕s.

EXPERTS SOLO (UP TO 600 C.C.).

1, G. W. Walker (Norton), 26⅕s.; 2, R. T. Cawthorne (Norton), 26⅖s.; 3, E. Searle (Sheffield-Henderson), 27⅖s.

EXPERTS BARRED (SOLO UP TO 600 C.C.).

1, J. Cooke (Edmund), 30⅖s.; 2, J. H. Illingworth (Norton), 30⅕s.; 3, W. H. Gillott (Norton), 32⅖s.

EXPERTS SOLO (UP TO 750 C.C.).

1, R. T. Cawthorne (Norton), 26⅘s.; 2, G. W. Walker (Norton), 27s.; 3, E. Searle (Sheffield-Henderson), 27⅕s.

EXPERTS BARRED (SOLO UP TO 750 C.C.).

1, J. Cooke (Edmund), 30⅕s.; 2, J. H. Illingworth (Norton), 30⅖s.; 3, W. H. Gillott (Norton), 32⅖s.

EXPERTS (SOLO UNLIMITED).

1, R. T. Cawthorne (Norton), 26 ⅗s.; 2, G. W. Walker (Norton), 26⅘s.; 3, E. Searle (Sheffield-Henderson), 27⅖s.

EXPERTS BARRED (SOLO UNLIMITED).

1, Frank Sisson (Norton), 26⅘s.; 2, G. E. Carnell (Harley-Davidson), 28⅗s.; 3, J. Cooke (Edmund), 30⅕s.

EXPERTS (SIDECARS UP TO 350 C.C.).

1, L. Padley (Sheffield-Henderson).

EXPERTS BARRED (SIDECARS UP TO 350 C.C.).

1, A. A. Fraser (Sheffield-Henderson).

EXPERTS (SIDECARS UP TO 500 C.C.).

1, R. T. Cawthorne (Norton), 31⅗s.; 2, G. W. Walker (Norton), 33⅗s.; 3, E. Searle (Sheffield-Henderson), 35s.

EXPERTS BARRED (SIDECARS UP TO 500 C.C.).

1, S. Ollerhead (Douglas), 41½s.; 2, J. H. Illingworth (Norton), 41⅘s.; 3, G. W. Horridge (Douglas), 42s.

EXPERTS (SIDECARS UP TO 600 C.C.).

1, R. T. Cawthorne (Norton), 32⅘s.; 2, E. Searle (Sheffield-Henderson), 32½s.; 3, G. W. Walker (Norton), 33s.

EXPERTS BARRED (SIDECARS UP TO 600 C.C.).

1, W. H. Gillott (Norton), 33s.; 2, J. H. Illingworth (Norton), 39s.; 3, G. W. Horridge (Douglas), 41⅗s.

EXPERTS (SIDECARS UP TO 750 C.C.).

1, R. T. Cawthorne Norton), 31s.; 2, G. W. Walker (Norton), 33s.; 3, E. Searle (Sheffield-Henderson), 33⅓s.

EXPERTS BARRED (SIDECARS UP TO 750 C.C.).

1, J. H. Illingworth (Norton), 38½s.; 2, S. Ollerhead (Douglas), 40⅘s.; 3, W. H. Gillott (Norton), 42s.

EXPERTS (SIDECARS UNLIMITED).

1, R. T. Cawthorne (Norton), 31⅗s.; 2, G. W. Walker (Norton), 33½s.; 3, E. Searle (Sheffield-Henderson), 33⅓s.

EXPERTS BARRED (SIDECARS UNLIMITED).

1, S. Ollerhead (Douglas), 39½s.; 2, W. H. Gillott (Norton), 41s.

FASTEST TIME OF THE DAY—SOLO.

G. W. Walker (Norton), 26⅓s.

FASTEST TIME OF THE DAY—PASSENGER VEHICLES.

R. T. Cawthorne (Norton), 31s.

Fastest time of the day by an amateur full member of the Sheffield and Hallamshire M.C. and L.C.C.: G. E. Carnell (Harley-D.), 28⅗s.

CURRENT CHAT (continued from p. 235).

Roadside Luncheons.

Perhaps it is the rapacity of mine host, a desire to save time, or pure love of the open air, but the practice of taking *al fresco* luncheons by the wayside is increasing in popularity.

Seaside Landladies.

Motor cycle camping is booming, more owners indulging in this kind of holiday than ever before—and no wonder, considering its cheapness. Seaside landladies are still seaside landladies in their charges.

The Late Sir Albert K. Rollit.

To the older readers of *The Motor Cycle* the name of Sir Albert K. Rollit, whose death, we regret to say, was announced last week, was chiefly known as president of the Stanley Show, an office which he held for many years.

A Fine Performance.

Whereas the Swiss team gained 2,990 marks during the International trial, the Worcester M.C.C. team—Giles, Williams, and Harris—all on A.J.S. machines, beat them as regards a total number of marks by 4. Bravo! Worcester.

What was it?

Returning from Denbigh to London with the report of the North Wales open trial last week-end, we saw at intervals throughout the country men apparently taking a census of the traffic on the roads. Were they disguised policemen, minions of the Transport Ministry, or Bolsheviks counting the motoring aristocracy?

Unsuitable Motor Coaches.

Much attention has been focussed in the Press on certain char-à-banc accidents during the holiday season. Some may think the occurrences have been accorded disproportionate prominence. With that point of view we are not so much concerned, says *Motor Transport*, but what does appear particularly disquieting is the fact that photographs of one of the accidents appear to show that the chassis of the vehicle concerned was of a make only intended for private car work, and an old model at that. True, the char-à-banc was but a small one, but even so, it is asking too much to expect brakes and other mechanism to deal with loads double those for which they were designed.

The late Viscount Northcliffe.

The motoring movement has lost another pioneer in the death, last Monday, of Alfred Charles William Harmsworth, Viscount Northcliffe. Lord Northcliffe, who was one of England's most successful journalists, commenced his newspaper career in Coventry with the proprietors of this journal. Long before the Emancipation Act permitted the use of motor cars in this country, Lord Northcliffe ran a car which he kept in France. A leading article in No. 1 of *The Daily Mail* predicted the revolution of transport which the motor car, then almost unknown, was to bring about. Aviation, too, owes something to the dead Peer, who encouraged its development by offering attractive money prizes for such pioneer efforts as the first Cross-Channel flight.

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Better Road Construction Wanted.

A few months ago the fine road between Sunbury and Staines was remade with tarred macadam. Already it is developing unpleasant waves. When will the even-surfaced road on solid, unyielding foundations materialise?

Baiting the Speed Merchant.

In the Surbiton Motor Club's circular advising members of the forthcoming South-eastern Centre Brooklands meeting, it is said that "this is an excellent opportunity for you to prove that you have the fastest 'bus of its kind on the road, and that you have averaged over '60' between 'the Talbot' and Kingston after a club supper."

A Benevolent Fund Cruise.

An evening cruise arranged on behalf of the Cycle and Motor Cycle Trades Benevolent Fund took place last Friday evening, when a party of over 500 left Glasgow by special train to Gourock, and sailed on the "Duchess of Argyll" down the Clyde to the Kyles of Bute and back.

What he Owes to the Police.

Prior to the start of the International Trial G. S. Davison was fined for exceeding the limit. At the end of the event he won a handsome gold watch presented by the Swiss Federal police, so now his feelings towards them have changed for the better.

Noise about Silencers.

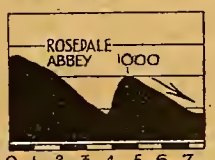
The activity of the police at Sunbury-on-Thames renders this district unhealthy for motor cyclists with second-grade silencing arrangements. A correspondent complains of a recent experience when, after riding his machine for nearly four years in the locality without any alterations to his silencer, he was suddenly pounced upon and fined.

F.I.C.M. Meeting at Geneva.

Following the conclusion of the International Six Days' Trial, the Summer Congress of the F.I.C.M. was held at the Swiss A.C. premises at Geneva. Delegates attended from Great Britain, Switzerland, Belgium, Holland, France, Denmark, Sweden, Italy and the United States, and several important decisions were made. Among these were, that motor cycle interests should be looked after at the International Traffic Congress by delegates from the F.I.C.M.; that racing helmets should be compulsory in all races held under the Federation rules; that in Class E (1,000 c.c.) records the minimum tyre size should be 65 mm.; that on the occasion of record attempts the only parts of a machine which might be changed were the plug, chain or belt, wheel and/or tyre; and that mile and kilometre records might be made from a standing start.

SEVEN OF THE MOST IMPORTANT HILLS IN THE SIX DAYS TRIALS.

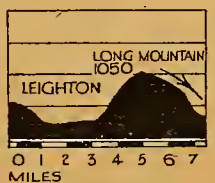
Monday morning. 24 miles from York.



Monday morning. 63 miles from York.

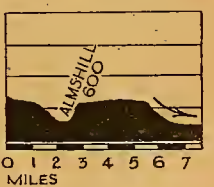
Tuesday morning. 35 miles from Buxton.

Tuesday afternoon. 61 miles from Rudyard.



Wednesday morning. 18 miles from Shrewsbury.

Wednesday morning. 65 miles from Shrewsbury.



Friday morning. 26 miles from Oxford.

CLUB NEWS (continued from p. 230)

South-Eastern Centre A.C.C.

Entries for the race meeting at Brooklands on September 2nd close by the last post on Saturday next. The event, which is being organised by the Surbiton M.C., is open to members and all clubs affiliated to the Centre, and entries will be received by Mr. W. B. Reeve, 25, Ditton Road, Surbiton.

Worksop M.C. and L.C.C. and Mansfield and District M.C. and L.C.C.

Joint speed trials at Clipstone Drive—the Mansfield course of 100 m.p.h. fame—will be held on Saturday, August 26th. Particulars are obtainable from Mr. A. E. Stafford, Campion Cycle Co., Worksop, or Mr. G. Mills, 16, Hall St., Mansfield.

Liverpool M.C.

Motor cycles, sidecars, and three-wheelers are eligible to compete in the non-stop "regularity and reliability" trial which is being held on the 27th inst. from Frodsham for the Colmore (Liverpool) Trophy. Entries, which close by the first post on Monday, the 21st inst., should be sent to Mr. V. E. Horsman, 7, Mount Pleasant, Liverpool.

Ross and District M.C. and L.C.C.

First place in the reliability trial held recently for the Triumph gold medal, for which there were 22 competitors, was won by W. A. Clark (596 Indian Scout). Silver medals were awarded to P. Little (293 Calthorpe), W. E. Smith (499 Sunbeam), A. Matthews (349 Coulson), and C. H. Wheildon (349 A.J.S.).

A hill-climb is being held at Sandford Pitch on the 22nd inst.

Ipswich and District M.C.C.

To be held under ordinary touring conditions, a joint reliability trial over a course approximately 200 miles is being arranged for September 10th, when the Beardmore Challenge Cup will be competed for. The following clubs are eligible: Bury and D. M.C.C., Colchester M.C.C., Ipswich and D. M.C.C., and Norfolk M.C. and L.C.C. Full particulars may be obtained from Mr. G. Bird, "Sandhurst," Friars Rd., Ipswich.

North Cheshire M.C. and L.C.C.

With the Blake Cup as premier award, the club held a reliability trial on July 30th, the course being laid in North Wales over a distance of 70 to 80 miles. The way was most exacting on account of rather dangerous descents, which caused most competitors to lose time. The observers were also kept pretty busy on Horsman Ladder. Results:—Blake Cup and Gold Medal: B. H. Davenport (G.N.). Medal for best Solo: L. K. Ward (490 Norton).

Week-End Club Events.

Aug. 19th.—Bulwell M.C.—Run.
Aug. 19th.—Coatbridge, Airdrie and District C.C.—Speed Trials.
Aug. 19th.—Mid Bucks M.C.C.—Flexibility Hill Climb.
Aug. 19th.—North Western Centre.—Gymkhana, at Blackpool.
Aug. 19th.—E. South Wales Centre A.C.U.—Reliability Trial.
Aug. 19th.—Dumfries and District M.C. and C.C.—Social Run.
Aug. 19th.—Public Schools M.C.C.—Annual Night Trial.
Aug. 19th.—West Kent M.C.—Members' Team Trial
Aug. 19th.—Southport M.C.—Race Meeting.
Aug. 19th.—Aberdeen and District M.C.—Cairn-o'Mount Hill Climb.
Aug. 19th.—South Mid. Centre A.C.U.—Gymkhana.
Aug. 19th.—Lichfield and District M.C.C.—Speed Trials.
Aug. 20th.—York and District M.C. Run.
Aug. 20th.—Exeter M.C. and J.C.C.—Run to Teignmouth.
Aug. 20th.—Barrow and District M.C.—Run to Tow Top.
Aug. 20th.—Atherton and District M.C.C.—Reliability Trial.
Aug. 20th.—Colne and District M.C.—Run to Morecambe.
Aug. 20th.—Sheffield M.C.C.—Run to Dovedale.
Aug. 20th.—Coventry Triangle M.C.—Run to Balby Woods.
Aug. 20th.—Newcastle and Northern M.C.—Run to Norham-on-Tweed.
Aug. 20th.—Middlesbrough and District M.C.—Run to Ridge Lane.
Aug. 20th.—Doncaster and District M.C.C.—Run to Cleethorpes.
Aug. 20th.—Woolwich and District M.C.C.—Gymkhana.
Aug. 20th.—Rotherham and District M.C.—Reliability Trial.
Aug. 20th.—Leeds M.U.—Run to Aysgarth.
Aug. 20th.—Bridgnorth and District M.C.C.—Rally.
Aug. 20th.—Rochester, Chatham and District M.C. and L.C.C.—Run to Margate.
Aug. 23rd.—Leeds M.U. Impromptu Run.
Aug. 23rd.—Worcestershire M.C. and District M.C.C.—Evening Main Road Trial.

First inter-team trial for clubs in the North of Scotland, when, as will be seen, the going was more than a trifle rough. Elgin and District M.C. and L.C.C. organised the event.

Aberdeen and District M.C.

The gymkhana held at Potarch on the 5th inst. was a good success, all the competitions arranged receiving good entries.

South-Western Centre A.C.U.

Saturday, December 14th, has been allotted by the Centre to the Taunton M.C. and L.C.C. for a Centre trial. The trophies will include the local Traders' Bowl, the Autumn Bowl, and the Team Cup, in addition to other awards.

Doncaster and District M.C.C.

Seventeen members took part in the Danum Cup trial, a run to Saltburn through the downpour on Bank Holiday Monday. Competitors were timed up Sutton Bank. Results:—

Gold Medal: 1st, H. Christian (490 Norton), with 12 bonus marks; 2nd, H. Moate (550 Triumph sc.), 10 bonus marks; 3rd, H. Dodds (211 Enfield), 6 bonus marks; 4th, G. Higginbottom (998 Harley-Davidson sc.), 3 bonus marks.

The "Danum Bowl," H. Christian.

The "Clark Cup," H. Dodds.

The best sidecar performance, H. Maote.

York and District M.C.

Results of the York-Edinburgh-York trial have been issued as follows:—

SOLO CLASS.

Rudge-Whitworth Cup and Gold Medal.—Billy Hodgson (499 Sunbeam).

Gold Medals.—W. Atkinson (550 Triumph), G. A. Reed (532 Scott), W. Marriott (350 Coventry Eagle), Mrs. Janson (350 Coventry Eagle), J. A. Watson Bourne (976 Brough Superior), G. F. Lazenby (350 Coventry Eagle), Wm. Westwood (499 Triumph), A. Winter (550 Triumph), J. Ford (748 F.N.), W. Turnpenny (499 Rudge-Multi).

Silver Medal.—G. W. Fryatt (370 Connaught).

SIDECARS AND 3-WHEELERS.

Silver Vase and Gold Medal.—Geo. W. Shepherd (L.S.D. three-wheeler).

Gold Medal.—W. Holloway (770 B.S.A. sc.).

Dublin Ramblers M.C.C.

This recently formed amateur organisation held a hill-climbing competition on Saturday last at the De Selby Quarry Hill, the results of which were as follows:—

250 C.C. (TWO-STROKE) CLASS.

	Hcap. times.
1. J. A. H. Waters (Enfield), 5s.	47⅘s.
2. W. R. M. Hewitt (Enfield), 6s.	48⅖s.
3. L. A. W. Orr (Enfield), 6s.	61⅓s

350 C.C. CLASS.

1. W. R. M. Hewitt (Enfield), 17s. ...	36⅕s
2. S. Woods (Cotton), scratch	36⅖s
3. G. Kennedy (Enfield), 17s.	38s.

600 C.C. CLASS.

1. S. Woods (Cotton), 2s.	33⅘s.
2. H. G. Ellerker (A.J.S.), 12s.	34⅗s.
3. J. F. Cathcart (Humber), 4s.	36⅖s.

Bradford M.C. and L.C.C.

The results of the 24 hours Bradford to London and back reliability trial, which took place on the 29th and 30th of last month, are now available. The competing clubs were: Bradford M.C. and L.C.C. (70), Dewsbury and District (13), Wakefield and District (11), Hull Motor Club (9), and Leeds and District (5), giving a total of 108 entries.

Solo machines.—The "Mitchell" Cup won outright: G. R. Grundy (499 Sunbeam), 246 seconds error. Gold medals: R. Turner (494 Douglas), F. Bray (550 Triumph), G. A. Reed (532 Scott), J. A. Leyland (555 P. and M.), W. Atkinson (550 Triumph), N. F. Brooke (678 N.U.T.). Silver medals: J. R. Grandison (496 Zenith), H. Askham (550 Norton).

Sidecar machines and three-wheelers.—The "Hodgson" cup won outright: G. Allan (499 P. and M. sc.), 84 seconds error. Gold medals: G. M. Townsend (555 P. and M. sc.), A. D. Thornton (499 P. and M. sc.), S. Jepson (799 A.J.S. sc.), P. Shaw (550 P. and M. sc.), A. E. Sellers (976 Matchless sc.), S. M. Haigh (555 P. and M. sc.), H. Moore (499 P. and M. sc.), J. A. Smith (499 P. and M.), G. Scott (976 Matchless sc.), W. A. Dovener (532 Scott sc), W. E. Anderton (499 P. and M. sc.), F. Smith (925 Clyno sc.), R. Lewis (555 P. and M. sc.), J. C. Neilson (998 Harley-Davidson sc.), D. Rhodes (Scott Sociable), G. W. Chambers (490 Norton sc.), G. W. Shepherd (976 L.S.D.), Miss I. Pickles (534 Scott sc.), C. N. Robinson (550 Triumph sc.), H. Firth (770 P. and M. sc), D. Brigham (680 Omega sc.), H. Hainsworth (976 L.S.D.), J. Robinson (976 L.S.D.), C. F. Swaine (976 L.S.D.), H. Graham (490 Norton). Silver medals: G. Early (532 Scott sc.), W. Wood (532 Scott sc.), E. P. Dodd (499 Sunbeam sc).

Lady drivers only, any vehicle.—The "Ida Pickles" cup was won outright by Mrs. K. Appleton (499 P. and M. sc.), with an error of 366, and a gold medal was awarded to Miss P. Barker (499 P. and M. sc.).

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle, Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

DRIP FEED ON SCOTT.

As I have just had my Scott engine overhauled and do not care to run any unnecessary risks, will you inform me how many drops of oil per minute are necessary? The "blue haze" from the exhaust seems to me to be rather unreliable.—A.H.P.

About 30 drops per minute at each lubricator.

AERO DYNAMOS.

Are ex-W.D. aero dynamos suitable for lighting the three lamps of a sidecar outfit?—D.McC.

Aero dynamos are not usually suitable for motor cycle lighting, as they are designed to run at very high speeds, and require special cooling arrangements when they are used on machines running at ordinary road speeds. On an aeroplane, of course, they are cooled by the rush of air to which they are exposed.

MINIATURE ON OBSERVED TEST. Recently G. A. Cade rode a 164 c.c. Economic from London to Edinburgh under A.C.U. observation. The Great North Road was followed, deviating through Wooler, Greenlaw and Lauder, and including the ascent of Carfrae Hill. The journey was done in three days and the average speed was about 17·02 m.p.h. There were only four involuntary stops, all of a minor nature. An official certificate is being issued.

Important Dates.

Mon., Aug. 21st, to Sat., Aug. 26th—A.C.U. Six Days Trials.

Sat., Sept. 2nd.—Cheshire Centre A.C.U. Open Reliability Trial.

Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.

Sat. Sept. 16th—The Scott Trial.

Sat., Sept. 23rd—500 Mile Race at Brooklands.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

FITTING BIGGER TYRES.

The tyres on my Excelsior machine are 650×65 mm. on the front wheel and 26×3in. to fit 2½-in. rim on the back. Both tyres fit either wheel. I should like to fit oversize tyres. Will 700×80 mm. fit my rims, and are they advisable?—F.J.

Tyres of 700×80 mm. dimensions fit 650×65 mm. rims, on which they are perfectly satisfactory.

DEFECTIVE PLUG INSULATION.

The plug of my old-type Minerva appears at times to spark not at the points but some distance higher up. What is the fault, if any?—A.P.S.

The plug is apparently shorting across the insulation. A new one is advisable.

NEW PISTON RINGS.

(1) What method should I adopt for grinding in new piston rings? (2) What measurement does 0.008 represent? (3) Can I purchase a feeler of above gauge at an engineer's shop or motor cycle accessory store?—A.W.

(1) It is unnecessary to grind in new rings if they are supplied either by the makers or by piston ring specialists. (2) 0.008 stands for eight thousandths of an inch. (3) You can purchase a set of feeler gauges at a good ironmonger's or engineering sundries shop.

SCOTT CHAIN ADJUSTMENT.

I have a 1921 Scott, and at present am having considerable trouble with the gear chains. If I run the machine with the low gear chain properly adjusted, the high gear chain tends to mount on the sprockets of the gear wheel, which makes driving very uncomfortable. If a cranked link is inserted in the high gear chain so as to give the correct tension in that chain, the low gear chain rubs the tray (or undershield), and ultimately jumps off the sprockets. How can I cure this trouble? The chains can hardly be worn yet as the machine has hardly done more than 800 miles, and except for one occasion (and that for a short burst) has never done more than 25 m.p.h. I have measured the chains with a new length, and no difference in length is apparent, and several friends to whom I have shown the chains say that no wear is apparent.—F.P.M.

It is most unusual for the chains to come off the sprockets if the countershaft is in alignment with the engine-shaft, even if the chains are run very slack indeed. You should get the maker's instruction booklet and pay particular attention to the alignment of the countershaft. It is quite easy to test this by measuring from the centre of the countershaft to the crankcase door strap bolts.

POWER OF SMALL TWO-STROKE.

What horse-power should an engine (two-stroke) of 2¼ in. × 2½ in. bore and stroke develop normally, and at its highest possible speed?—C.D.F.

It is almost impossible to answer your question with accuracy, as two-stroke engines vary to a very large extent, often intentionally. The average low speed of a two-stroke engine of the size you mention would probably produce about 2 to 2½ b.h.p. under normal conditions, with a maximum of 3 to 4 b.h.p. It should, however, be possible to exceed this figure quite considerably in the case of a high-speed engine.

FROM NEUTRAL TO LOW.

There is great difficulty in engaging low gear on my 1921 Indian when starting off. I can obtain a silent engagement only by sacrificing the gripping power of the clutch. Then when I adjust the clutch I fail to obtain an easy gear engagement. I need hardly say I push the clutch out as far as it will go before attempting to move the gear lever (it is not of the inter-connected type). Once on the move, I can change up or down all right. It would appear to me that the inner portion of the clutch nearest the gear box revolves, although the outer portion remains stationary, and that, of course, means that the main shaft is revolving.—G.A.C.

It would appear that the difficulty you experience when engaging low gear is due to the clutch dragging slightly. If you cannot correct the adjustment of the clutch so that it is fully disengaged you might find it possible to engage the low gear easily from the neutral position by giving the exhaust valve lifter a momentary flick as you pull the gear lever over; of course, the exhaust valve must not be raised long enough to stop the engine, and the machine should be held by the brake.

ELUSIVE WHIRRING.

I have a 348 c.c. Douglas (1915) which is apparently in perfect condition, having recently been overhauled; but when the engine is running there is a noise just like a dynamo working, and the faster the engine goes the louder it hums. It makes the same hum when engine is free as it does when in gear, so it is evidently not in the gear box. The engine is well oiled, and I cannot find any stiff parts in bearings when turning flywheel round. The chain is not catching on anything, nor is the flywheel. I have a C.A.V. magneto fitted, but I understand these do not require oiling. Would it make a humming sound if it did? It does not appear to come from valves or the guides, and I have fitted new high tension wires, but I have been unable to locate the humming up to now. Would you tell me of any part which would make a humming sound if not perfect?—H.H.

It is probable that the noise is coming from the timing gears, which may be worn, or the magneto driving gear may not be correctly meshed. This is a most likely cause of the trouble. We should advise you to try varying the mesh of the magneto gear by placing a thin packing (paper, card, or sheet metal) below the magneto before making other adjustments. Next make certain that your driving chain is not too tight. It would be most unusual if the magneto itself caused the noise, but if it has been running since 1915 it would be advisable to have the end plates removed and the bearing repacked with vaseline.

OIL LEAKS FROM GEAR BOX.

Oil escapes from the belt pulley side of my Sturmey-Archer three-speed box. Oil splashes on the belt and on the cylinder, etc. The belt pulley has recently been adjusted for slackness. Oil escaped, however, before overhaul, though in less quantity. I understand all bearings are in good order. Price's Huile de Luxe mixed with Hub lubricant has been employed for lubricating the gears. (Mileage—5,000 solo.)—E.D.B.

Other than that the gear box is over-filled with oil we cannot trace any alternative cause for the trouble you describe. If it persists with a smaller quantity of oil in the gear box, we would recommend that you write to the makers.

MATERIAL FOR LEG SHIELDS.

On fitting leg shields to my machine I find that being made of metal they accentuate by resonance the noise made by the partially enclosed engine. I require a sheet-like non-metallic material having the following properties:—Lightness, toughness, durability, capability of being moulded into the shape of the shields and rigid enough to remain as moulded; it must be fairly cheap. Can you tell me if I can procure such a substance?—W.E.M.

A material to suit your requirements is ordinary sheet fibre which has been used in body construction. It might require some slight stiffening, but this should not be difficult to arrange. A light metal beading would improve the finish and probably be sufficient for your purpose.

OWNERSHIP OF STOLEN MACHINE.

I bought a second-hand sidecar outfit from a private individual, and obtained an authentic stamped receipt for the purchase money. But the outfit happens to be a stolen one. Some days later the person from whom it was stolen identified the machine while I was riding it, and claimed it as his property. How do I stand in the matter?—O.D.L.

In the event of your unwittingly purchasing a stolen machine, the law would compel you to hand it over to the rightful owner. You can only claim against the person from whom you purchased the machine.

STARTING DIFFICULTIES.

I am troubled by difficult starting from cold on my 557 c.c. B.S.A. Can you give me any useful suggestions? — J.H.B. Lagos.

We should have imagined that in your climate starting the engine even from cold would be fairly easy. We would suggest the following points in order to make the starting easier. Open the adjustable jet on the B.S.A. carburetter one complete turn, advance the ignition almost fully, and place the gear lever in the third speed, releasing the exhaust valve, when the foot starter pedal is almost at the bottom of its stroke.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

D.R. (Hull).—348 c.c. W.D. Douglas; 976 c.c. Royal Enfield, sidecar.

S.R.P. (London).—398 c.c. A.B.C.: hints on tuning, etc.

L.B. (Chesterfield).—225 c.c. Triumph.

READER'S REPLY.

HEAVY FUEL CONSUMPTION.

Perhaps, "G.B.," you would like to know my experience, and how I have cured the similar trouble that I had with my Douglas. The jet in the Amac carburetter was a 27. I changed it to a 24, and the misfiring at once ceased and has never returned, and the petrol consumption changed from about 55 m.p.g. to practically 80 to the gallon! I have made quite sure that what I assert is correct, for I have been testing it for two months. J. H. Y.

HARD LUCK! Alec Jackson, of Keighley, who privately entered the Belgian Grand Prix and won. He had trouble with a plug, however, and, because he exchanged it for one offered by a spectator, he was disqualified.

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AND FURTHER—
Owing to its peculiar character, carbon deposit is considerably reduced.
The better lubrication MIRACLE OIL provides produces an engine condition which gives much smoother running with greater power output; improves compression and enables carburetter to be set for weaker mixture, thus giving more miles per gallon. The consumption of ordinary lubricating oil is also much reduced.
The better lubrication alone greatly increases life of engine and saves more than the oil costs.
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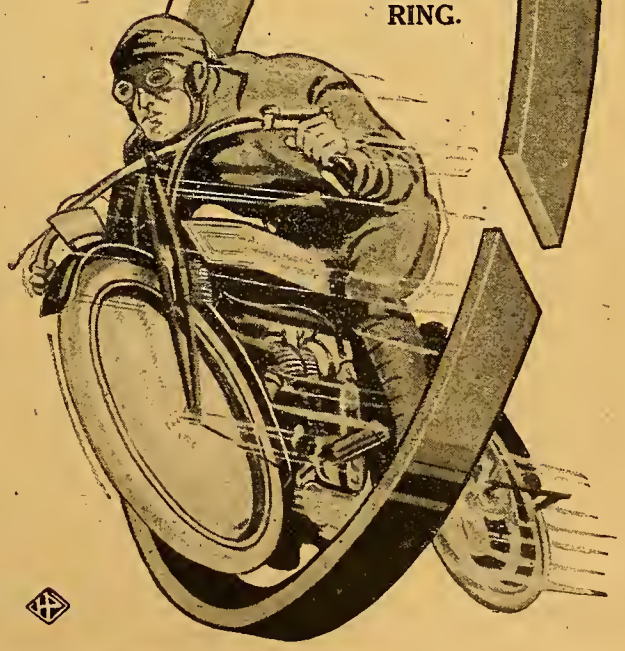

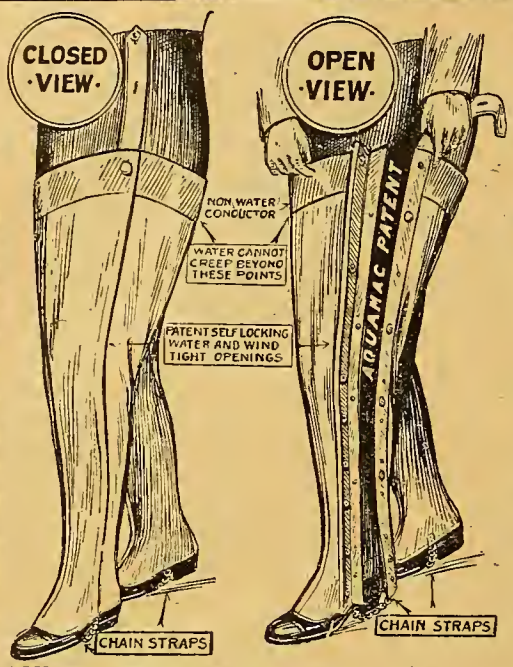

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All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box ooo, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. ooo, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes: in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, ½%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. Motor Cycle, just delivered, Standard model, specially tuned; £82.—Ramsden-Barber, Ltd., Feirford, Glos. [5611

The Sign of G Good Service.

To ADVISE HONESTLY, SERVE WILLINGLY, ACT FAIRLY,—— THAT'S **GODFREY'S**

A.J.S. ALLON ARIEL B.S.A. COVENTRY EAGLE DOUGLAS ENFIELD HAWKER INDIAN LEVIS MATCHLESS

WE CAN SUPPLY THESE NEW 1922 MODELS FROM STOCK FOR CASH OR ON EASY TERMS

NEW-IMPERIAL RALEIGH RUDGE SCOTT TRIUMPH ZENITH

Light Cars—

8 h.p. ROVER 10 h.p. BAYLISS-THOMAS 8 h.p. MORGAN

A selection from our list of Second-hand machines, every one of which carries the same guarantee as given with a brand new machine.

SOLO MACHINES.

NEW IMPERIAL, 1914, 2¾ h.p., 2-speed ...	£38*
INVICTA, 1919, 2¾ h.p., 2-speed.....	£42
P. & M., 3½ h.p., 2-speed	£48
OMEGA, 1921, 2¾ h.p., 2-sp. J.A.P. engine	£48*
A.B.C., 1920, 3 h.p., 4-speed	£80*
DOUGLAS SPORTS, 1922, 3½ h.p., 3-speeds	£80
SUNBEAM, 1921, 3½ h.p., T.T. model	£100
INDIAN SCOUT, 1921, 4 h.p., 3-speed	£105*

PASSENGER COMBINATIONS.

RUDGE-MULTI, 1920, 5-6 h.p., and sidecar	£58
B.S.A., 1914, 4½ h.p., and sidecar	£65
TRIUMPH, 1917, 4 h.p. "	£74
B.S.A., 1920, 4½ h.p. "	£88
INDIAN, 1916, 7 h.p. "	£88†
INDIAN, 1919, 7 h.p. "	£95†
TRIUMPH, 1919, 4 h.p.....	£96*
INDIAN, 1920, 7 h.p.....	£105

* Licence paid to December 31, 1922.
† Licence paid to September 30, 1922.

May we send you full descriptive list?

ACCESSORIES ARE INCLUDED WITH MANY OF THE ABOVE MACHINES.

GODFREYS allow utmost value for approved Second-hand Machines in part exchange.

GODFREY'S, LTD
208, Gt. Portland St., LONDON, W.1
'Phone: Langham 1300.

The Service House for B.S.A., Indian, Scott, and Levis Spare Parts.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1921 Sports, lighting, speedometer, tax, horn, complete, fast, as new; £60.—79, Castleton Mansions, Barnes. [5736

ROBERTSON'S Motors, Ltd.—1920 A.B.C. (new in 1921) standard, accessories; 55 gns.—157b, Gt. Portland St., W.1. [5938

GODFREY'S, Ltd.—1920 3h.p. A.B.C., dynamo lighting, spring frame, 4-speed, hand clutch, guaranteed; £80.—206, Gt. Portland St., W.1. [6925

FRENCH Model A.B.C., 4 speeds, hand clutch, kick-starter, lamps, speedometer, licence, accessories, new condition; £65; exchanges.—63, Solon Rd., Brixton. [6484

1920 A.B.C., dynamo model, lamps, horn, speedometer, Tan-Sad, all tools and accessories, spares, including piston, just overhauled, mileage under 1,700; bargain, £80.—Rowe, 51, Nightingale Lane, Balham. [6587

SUPER Sporting A.B.C., 2 electric headlights, spotlight, discs, Miller lighting set, plated tank, twin polished exhausts, Brooks' latest, mechanical horn, spare tube, watch, tax, etc., almost as new; genuine bargain, £65, or nearest offer; wanted, combination.—122, Lower Mortlake Rd., Richmond. [6519

OFFERS wanted for Special Competition Model A.B.C., winner of 12 firsts and many other awards in Brooklands and other open speed events, in perfect order, with full equipment and many spares, 80 m.p.h. guaranteed. We specialise in the repair and overhaul of A.B.C. machines, and can guarantee an increase of 10 m.p.h. on standard models without expensive alterations.—Jarvis and Sons, Ltd., Victoria Crescent, Wimbledon. [6544

Spare Parts:

A.B.C. Spare Parts.—London Service Depot for all parts.—Maudes' Motor Mart, 100, Great Portland St., W. [6762

Abingdon.

3h.p. Abingdon, new tyres, complete, smart, good; £10/10.—Walter Jones, Newport, Salop. [6256

ABINGDON-KING DICK 4h.p. Sports Model, fully equipped, tax paid; £15; bargain.—115, High St., Clapham. 'Phone: Latchmere 4290. [6462

Acme.

ACME 1921 8h.p., 3-speed, detachable wheels, spare wheel, handsome sidecar; £85.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [6604

A.E.L.

BRAND new A.E.L.-J.A.P. 2¾h.p., 2-speed, clutch, kick-start; call after 6 p.m.; £55.—158, Venner Rd., Sydenham. [6641

A.J.S.

A.J.S.—New 2¾h.p. in stock; £85.—Clark, 7, Exhibition Rd., S.W.7. [7013

1921 A.J.S. Combination; £120.—24, Balliol Rd., North Kensington. [6439

A.J.S., new 1922, 2¾h.p., sporting and touring models in stock.—Moss, Wem. [6869

A.J.S. Combination, hood, lamps, etc.; £58.—Miles, 11, Chichester Rd., Kilburn, N.W.6. [6853

A.J.S. 2¾h.p. to 7h.p. in stock.—Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [5069

A.J.S. Motor Cycles on easy terms.—Wanchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [6699

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175 in stock. Dorset trade supplied. [0817

A.J.S. 1922 2¾h.p. Sports and 7h.p. Combinations in stock.—Clifford Motories, Eastwood, Notts. [4762

A.J.S. Motor Cycles, deliveries from stock, all models. —Derby agents, H. Polin, Ltd., Bourne St., Derby. [5091

B.I. A.J.S. from stock; cash or deferred.—Clifford Wilson Co., 177, Westminster Bridge Co., S.E.1. [2199

£35.—A.J.S. 5h.p. Combination, countershaft, kick-starter; bargain.—66, Kingsgate Rd., Kilburn, N.W. [6212

A.J.S. 1922 2¾h.p. model B, mileage 500, lamps, horn, perfect; £75.—Lavin, Old House, Sonning, Berks. [5612

1922 2¾h.p. Model B A.J.S., fully equipped, only done 500 miles; bargain, £83.—Nixon, Kirkby Stephen. [6083

SOUTHPORT.—Instant delivery 1922 Standard Sports A.J.S.; £65; exchanges.—Kents, 417, Lord St., Southport. [5567

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Combination, 1920, as new, spare wheel, lamps, windscreen, tax paid; £115.—Flitt, Willington Rd., Watford. [5802

1922 2¾h.p. Sports A.J.S., lamps, horn, licence, mileage 350; £80.—Pink, 3, Winchester Rd., Swiss Cottage, N.W.3. [5565

A.J.S. Combination, 3½h.p., renovated throughout, topping condition; £60.—244, Old Christchurch Rd., Bournemouth. [5579

£70.—A.J.S. 1922 2¾h.p., Model B1, very small mileage, as new.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [5501

A.J.S. (April, 1922) Sports, lamps, Cowey horn, Tan-Sad, tax and insurance; £80.—104, Woodborough Rd., Nottingham. [6069

2¾h.p. A.J.S. 1916, 3-speed, clutch, K.S., thoroughly overhauled, fully equipped, licensed; £42.—17, Sussex Rd., New Malden. [6964

1920 6h.p. A.J.S. and Sidecar, lamps, horn, tools, screen, hood, spare wheel, excellent order; £95.—Box 3087, c/o *The Motor Cycle*. [6780

NEW A.J.S. Combination, £183 model, shop-soiled only; special price, £165.—D. and S. Autocar Co., 33, The Parade, Golders Green. [6391

A.J.S. Combination 5-6h.p., clutch, 2 speeds, kick-start, good order, countershaft gears; £33.—68, Gloucester Rd., Camden Town. [6295

1922 2¾h.p. A.J.S. in stock for immediate delivery; cash or deferred payments.—Ward and Co., 51, Upper Richmond Rd., East Putney. [6821

A.J.S. Combination, 1920, dynamo lighting, spare wheel, hood, speedometer; £112/10; no offers.—Day, 87b, Uxbridge Rd., Shepherd's Bush. [6171

1922 A.J.S. Combination, fully equipped, cost over £200, mileage 64; bought car; private, sacrifice; £155.—Bovsfield, Westbury, Wiltshire. [6257

1919 A.J.S. Combination, spare wheel, screen, speedometer, fine condition; £85.—Hillier (side bell), 9, Wallingford Av., North Kensington. [6422

A.J.S. 7h.p. Combination, £175. 2¾h.p., 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [6867

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

F.O.C.H. have 1916 A.J.S. combination, interchangeable wheels and spare, fully equipped; bargain.—5, Heath St., Hampstead (near Tube). [2717

2¾h.p. A.J.S. Sports and B.I. Models, with lamps, horns, and tax paid, mileage under 50, guaranteed as new; £75.—Tilleys, Esplanade, Weymouth. [6659

1922 A.J.S. 2¾h.p. Model B1, immediate delivery from stock; catalogues with pleasure.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6972

1921 (late) 2¾ A.J.S., mileage under 500, lamps, horn, insured August, 1923, genuine bargain, tax paid; £76, no offers; after 6.—30, Claremont Sq., Angel, Islington [6079

1920 A.J.S. Combination, special 8h.p. J.A.P. unit, S.A. gears, etc., electric horn and light, hood, Tan-Sad, all spares; £78, or offer; any trial.—56, Brookville Rd., Fulham. [5666

1914 A.J.S. 5-6h.p., coachbuilt sidecar, 3-speed, K.S., hood, windscreen, lamps, horn, new tyres; tax paid, insurance; bargain, must sell, £60.—W., 12, Ambleside Rd., Willesden. [6026

1920 A.J.S. Combination, hood, spare wheel, fully equipped first-class condition; £130; will exchange for 1922 Morgan, cash adjustment.—45A, Dunsthill Rd., Earlsfield, S.W.18. [6818

A.J.S. Combination, 6h.p., late 1920, complete with electric light, speedometer, driving mirror, luggage grid, spare wheel and tyre, tax paid; £115.—Box 3075, c/o *The Motor Cycle*. [6143

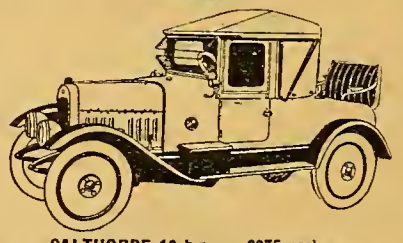
139 GNS., Exchanges.—1921 A.J.S. Combination, lamps, screens, spare wheel, luxurious turnout, any examination, trial.—Seabridge, Hansler Rd., East Dulwich, Sydenham 2452. [6966

1920½ A.J.S. Combination, hood, screen, side curtains, spare heel, accessories, overhauled, indistinguishable new; £125, or solo 4h.p. Triumph and cash.—Jenkins, Westway, Caterham, Surrey. [5663

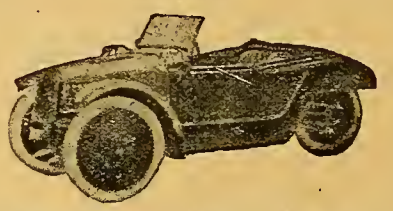
A.J.S. Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eosthaak St., Southport. 'Phone: 607. [5160

1922 7h.p. A.J.S. Combination, Magdyno, electric horn, spare wheel (nonsed), mirror, Bonniksen trip speedometer, tax, insurance, makers' guarantee, special oversize tyres; cost recently £212; absolutely unsoiled; owner bought car; £169/10, genuine bargain.—51, Upper Richmond Rd., East Putney [6820

EXCHANGE YOUR MOTOR CYCLE FOR

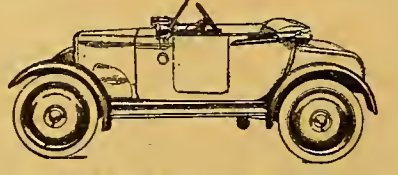


CALTHORPE 10 h.p. £375 cash, or
£97 6 0 down and 12 payments of .. £24 7 10
4-seater £20 extra.



MORGAN "Popular" Model. £150 cash, or
£39 0 0 down and 12 payments of .. £9 15 0

MAXWELL (New Series). £360 cash, or
£93 12 0 down and 12 payments of .. £23 8 0



ROVER "Eight." £220 cash, or
£57 4 0 down and 12 payments of .. £14 6 0
De Luxe Model £25 extra.

OVERLAND. £295 cash, or
£76 14 0 down and 12 payments of .. £19 3 6

DEFERRED PAYMENTS with option of discount.

LAMB'S Ltd

EUSTON ROAD LONDON, N.W. (Opposite Gt. Portland Street Station). 'Phone: Museum 4978. Open until 7.3. Monday to Friday. Open until 4 Saturday.

WOOD GREEN, LONDON, N., 50, High Road 'Phone: Hornsey 1956.

WALTHAMSTOW, LONDON, N.E., 151, High St. 'Phone: Walthamstow 169 (2 lines).

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Combination, delivered June, 1921, cost £220, small mileage, practically new, Tan-Sad, all accessories; price £150.—E. McNally, Standard Hotel, St. Oswald St., Old Swan, Liverpool. [6126

SHOP-SOILED 1922 A.J.S. 7h.p. Combination, spare wheel, windscreen, etc., never been used; reduced to £165, easy payments; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5503

2¾h.p. A.J.S. Sports, 1921, 3 speeds, C. and K.S., equipped, Bonniksen, mileage 349, unscratched, guaranteed perfect, tax paid; £75; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone Dalston 2408. [6894

A.J.S. 7h.p. Combination, new 16/9/21, guaranteed condition, mileage 3,146, Triplex screen, side screen, legshields, Bonniksen trip, F.R.S. headlight, electric side and rear, spares; £148.—Owner, 12, Lenside Avenue, Muswell Hill, N.10. [5756

PHOTOGRAPHS Free.—A.J.S. 2¾h.p., 3-speed, hand clutch, kick-start, equipped, 45 gns.; also. 1918 A.J.S. combination, detachable wheels, excellent order, taxed, equipped, 68 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6943

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7662

Alldays.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Allons; unequalled service, repairs, etc. [3559

ALLDAYS 2-stroke, 2-speed, clutch, K.S., legshields, accessories; £35; owner bought car.—Bately, 'Phone: Tott. 1784. [5736

ALLDAYS' Allon 1919 2¾h.p., 2-speed, clutch, Tan-Sad, fully equipped, taxed, splendid condition; £36.—R. Davis, Gobowen, Salop. [5021

1922 Allon Combination, electric lighting, tax paid, original tyres, unscratched; £65.—8, Half Moon Lane, Herne Hill, S.E.24. [6919

ALLON Lightweight Combination, coachbuilt sidecar, speeds, clutch, like new, tax paid; £48, bargain.—213, Putney Bridge Rd., Putney. [6065

1922 Alldays Allon Combination, S.A. 3-speed, C.K.S., extra large tyres, run 150 miles, licensed; £78.—14, Nelson Terrace, Stockton-on-Tees. [6218

ALLON 2¾h.p., 2-speed, clutch, electric light, legshields, and Tan-Sad, excellent condition; £40, or near offer.—Austin, 290, Haydon's Rd., Wimbledon, S.W. [6213

ALLDAYS Allon, solo, £60; combination, £80; in stock for immediate delivery; cash or deferred.—Levitt, 80, Streatham High Rd. 'Phone: Streatham 2701. [5642

WAUCHOPE'S, 9, Shoe Lane, London.—Allon 2-stroke new 1922 motor cycles; 2-speed gear model, £60; 3-speed gear model, £65; easy payments; any exchange. [6700

27 GNS., Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452. [4773

1921 Alldays Allon 2-speed, clutch, kick-start, legshields, speedometer, lamps, horn, tax paid, excellent condition; £45.—Hollington, 66, St. Leonards St., Bromley-by-Bow, London, E.3. [5808

1921 Allon, 2¾h.p., 2 speeds, clutch and K.S., fully equipped, tax paid, guaranteed as new; £50; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [6895

1921 Alldays Allon, 2-stroke, 2-speed, clutch, kick-start, disc wheels, tax paid, lighting set, horn, legshields, in practically new condition throughout; £39.—Walker, 769, Romford Rd., Manor Park, London, E. [6575

American X.

AMERICAN X Family Combination, screen, hood, electric; must be sold, going to Africa.—35, Park Rd., Ilford. [6304

AMERICAN X Combination 7-9h.p., splendid condition, expert examination welcomed; close of season bargain, £58.—"Roselea," Blenheim Rd., St. Albans [6042

AMERICAN X 1920 Combination, Dunhill limousette sidecar, Easting, excellent condition; £70 cash, bargain; exchange considered.—Derrington, Grafton Rd., New Malden. [6984

AMERICAN X Combination, new September, 1921, mileage 600, Millford de Luxe sidecar, Easting Royal, Bonniksen, Klaxon, Tan-Sad, 3½ tyres, taxed, etc., owner bought car; £100, or near.—Write C., Innisfail, North Park, Gerrards Cross. [6500

PHOTOGRAPH Free.—Magnificent American X combination, 1921, luxurious sidecar, electric lighting, very fully equipped and in perfect mechanical order; 89 gns.; cost over double; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6942

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. 1920 4¼h.p. Combination, all on, tax, insurance paid, Cowey speedometer, 2-seater car, bought for view within 100 miles; £70.—Shackel, Lameside, Wraysbury, Staines. [6060

1919-20 B.S.A. Combination, windscreen, horn, tools, Lucas dynamo lighting, not Magdyno, tax paid, good condition, ride 30 miles; £70, or near. King, Silverhill, Radbourne, near Derby. [6525

B.S.A. 4¼h.p. Canoelet Coach Combination, chain drive, kick-start, 2-speed, fully equipped, perfect condition, smart turnout; photograph; £30; bought car.—Mill House Farm, Salters Rd., King's Lynn. [6093

B.S.A. 6h.p. Twin, Lucas Magdyno lighting, 3-speed, clutch, kick-start, all-chain drive, Dunlop Magnum tyres, B.S.A. sidecar, screen, all lamps, shop-soiled only; £165.—Maudes', 100, Gt. Portland St., London. [6750

GODFREY'S, Ltd.—1920 4¼h.p. B.S.A. combination, Model H, chain drive, Binks carburetter, completely equipped, standard B.S.A. sidecar, and lasting screen, guaranteed; £88.—208, Gt. Portland St., W.1. [6940

1913 3½h.p. B.S.A., 2-speed, clutch, pedal start, new Dunlop tyres and belt, smart appearance, and condition, with the exception of one or two minor adjustments; absolute bargain, £21.—Coppen, Biddenden, Kent. (D) [6562

B.S.A. 1919 Combination, practically as new, not used since last August, perfect condition, equipped with all lamps, horn, speedometer, Easting screen, sliding luggage grid, tools and spares, genuine bargain; £82, or near; must sell, any trial week-ends.—Vancouver Rd., Catford. [5603

B.S.A. new 1922 4¼h.p. all-chain Solo, £110; 4¼h.p. chain-cum-belt, £107; sidecars supplied to any model; your old machine taken in exchange and rated as payment down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [6703

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7663

B.S.A. Spares can be had by return, post free, from Jones Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [0305

THE B.S.A. Specialists.—On the spot. Give our unrivalled Spares Service a trial; catalogue free.—County Cycle and Motor Co., Ltd., Broad St., Birmingham. [7011

GODFREY'S, Ltd., 208, Great Portland St. London, W.1.—Complete stock of all B.S.A. spare parts always in stock Write for free spare part list, stating year of manufacture. [0750

Calthorpe

NEW shop-soiled 1922 Calthorpe, 2-stroke, single speed; £32/10.—Snipe, 330, Euston Rd. [6911

CALTHORPE-J.A.P. 2¾h.p., late 1921, all on; £40. —Moffat, 14, Church Rd., Wimbledon. Tel.: 70. [7007

LATE 1920 Calthorpe, 2-speed, all off, new tyre, accessories; £35.—Hupfield, 27, Portland Rd., Finsbury Park, N. [6054

1919 Calthorpe, 3½h.p., 2 speeds, in splendid running order, complete with lamp, horn, etc.; £29.—Town Garage, Weybridge. [6556

22/10.—Calthorpe-Jap 1915 2½h.p., Enfield 2-speed, aluminium footboards, accessories, tax paid.—Delancey Street Garage, Camden Town, N.W.1. [6223

CALTHORPE, 4¼h.p. Precision, 2-speed, coachbuilt sidecar, good mechanical order, fully equipped, reasonable offer accepted, seen Hammersmith.—Wilcocks, 8, Willow Av., Barnes. [5748

CALTHORPE Combination, 1921, 3h.p., Sturmey-Archer 2-speed gear, hand clutch, K.S., M.-L. lighting set, as new; cost £105; must sell; £40.—Tupper, 13, Furber St., Crewe. [6336

1918 Calthorpe 2¾h.p., 2-stroke, 2-speed, fully equipped, splendid condition; £38; exchange Enfield, New Hudson, Levis, or similar.—Seyer, 213, Bury St., Pimlico, S.W.1. (D) [5725

1h.p. Calthorpe Motor Cycles.—New 1922 models, £2 £36; or £7 down and 12 monthly payments £2/9/6, balance paid in 18 months if required.—Wauchope's, 9, Shoe Lane, London, E.C.4. [6704

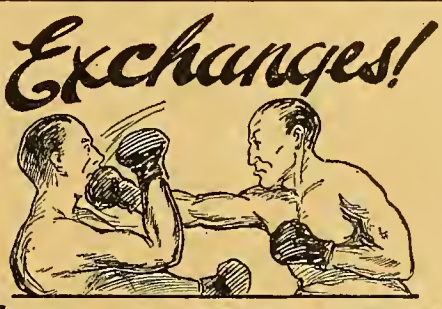
SOUTHPORT.—Calthorpe 2¼h.p., 4-stroke, 2-speed, just overhauled, good condition, accessories, tax, 3 gns.; also 1915 Calthorpe 5h.p. J.A.P. combination, 2-speed, all chain, excellent lot, £45; exchanges.—Vents, 417, Lord St., Southport. [5568

Campion

CAMPION-J.A.P. 4h.p., good tyres, fast; £18.—103, Moore Park Rd., Fulham. [5673

CAMPION 6h.p. Twin J.A.P. Combination, Bramble sidecar, all on, good condition; £37.—119, Risley Av., Tottenham. [5575

6h.p. Campion-Jap Coachbuilt Combination. 1917, just overhauled and as new, little used; £90; or change lower power and cash, B.S.A. preferred.—Wilson, Studfold, Settle, Yorks. [6062



NEW OR SECOND HAND.

Prompt quotations combined with expeditious delivery. Deferred payments quoted.

NEW 1922 LIGHT CARS.

B.S.A., CALTHORPE, COVENTRY PREMIER, LAGONDA, L.S.D. AND RHODE.

NEW 1922 MOTOR CYCLES.

B.S.A., BRADBURY, DOUGLAS, ENFIELD, EDMUND, LEVIS, MARTINSYDE, NEW IMPERIAL, NORTON, REX, ROYAL RUBY, SCOTT, SUNBEAM AND TRIUMPH.

SECOND-HAND BARGAINS.

SOLOS.

ARIEL, 1919, 3½, 3-speed countershaft....	£55 0
EDMUND, 1920, 2¾, spring frame.....	£49 10
FEATHERWEIGHT, 1½ h.p., spring forks .	£9 15
HUMBER, 3½, wants attention.....	£14 10
NEW HUDSON, 3½, 3-speed, tax paid	£35 0
PREMIER, 3½ h.p., 2-speed, spring forks ..	£32 10
RUDGE, 3½, clutch model, wants attention	£19 10
RUDGE-MULTI, 1920, 3½ I.O.M.	£55 0
RUDGE-MULTI, 1921, 3½ h.p., I.O.M.	£59 10
RUDGE-MULTI, 1920, 5-6 h.p., tax paid ..	£62 10
RUDGE-MULTI, 1920, 7-9 h.p.	£70 0

PASSENGER MACHINES.

ARIEL, 1919, 3½, 3-speed comb.	£69 10
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INDIAN, 7-9, 2-speed comb., tax paid	£57 10
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CHATER-PEUGEOT Combination, drop frame, 7-9h.p., 2 speeds, clutch, new tyres, running order; £26.—101, Eglinton Hill, Plumstead. [6417

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3½h.p. Chater-Lea-engined motor cycle, M.A.G. ignition; £12.—Durant, Bourne, Farnham. [6056

Chater-Lea Villiers.

1919 Chater-Lea-Villiers 2½h.p., 2-speed; £28, complete, perfect.—51, Plymouth Rd., Abbeydale, Sheffield. [6051

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1921 Cleveland, mileage under 100 miles, guaranteed absolutely as new, 3h.p., 2-stroke; list price, £86; sacrifice, £45.—Martin, 10, Herbrand St., W.C. Museum 6594. [5026

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CLYNO 2½h.p., 2-speed, hand clutch, fully equipped, tax paid, like new; £27.—91, Burntwood Lane, Earlsfield, S.W. [6599

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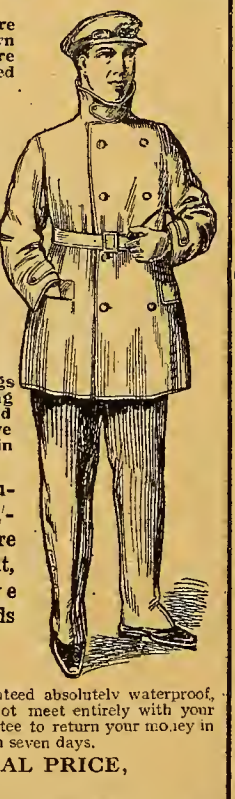

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Steele Publicity.

MOTOR CYCLES FOR SALE.

Harley-Davidson.

1919 Harley (50. gns. sidecar), overhauled, painted and plated; £95; solo part.—120, Sutherland Rd., Croydon. [5586

HARLEY-DAVIDSON 1917 Combination, handsome, perfect, not W.D.; sell or exchange.—1, Priory Rd., Kew. [6623

HARLEY-DAVIDSON 7-9h.p. 1920, elaborately fitted; £105, near.—244, Old Christchurch Rd., Bournemouth [5578

HARLEY 1918 7-9h.p. Combination, splendid order; £59.—28, Wondford Rd., Forest Gate. 'Phone: Maryland 2598. [6603

1915 Harley Combination, unused, magneto ignition, perfect order; £80; any trial.—E. A. Cobb, Potters Bar. [4846

1919 Harley-Davidson Combination, electric lights, Easting, hood, etc., splendid condition; £98.—15, Deal Rd., Tooting. [6579

1918 Harley Combination, in good running order, fully equipped, tax paid; £70.—Pinn's Garage, 12, High St., Fulham. [6536

1920 7h.p. Harley-Davidson, fitted Grindlay sidecar, electrically equipped; bargain £75.—Box 3084, c/o *The Motor Cycle.* [6777

1920 Harley Electric Combination, perfect, equipped; £95.—James, c/o Bradmores, 432, Harrow Rd., Paddington. [5705

7-9h.p. Harley Combination 1917, Canoelet sidecar, good condition, any trial; £70.—W. King, 63, Whitehorse Rd., Croydon. [5647

HARLEY-DAVIDSON Combination, all on, 7-9h.p., 1918, excellent condition; £70, or nearest.—9, Palmers Rd., E. Sheen, S.W. [5893

7-9h.p. Harley Combination, electric, with interchangeable magneto, good condition and tyres; £65, offers.—H. Yarnold, Huntingdon. [6342

1920-21 Harley-Davidson Combination, electric model, tax, insurance, all on, mechanically perfect; £120.—26, Ronalds Rd., Highbury, N.5. [6227

£85.—Genuine 1919 electric model Harley combination, discs, Easting, Tan-Sad, speedometer; by appointment or after 6 o'clock.—49, Dagmar Avenue, Wembley. [5555

1916 Harley-Davidson Combination, electric model, speedometer, overhauled and repainted, tax paid; £80 or near offer.—Stannard, 8, Burton St., Lowestoft. [6351

1916-17 7-9h.p. Harley-Davidson Combination, tandem sidecar, completely overhauled, all accessories; can be viewed Lincolnshire.—Write "Anchorage," Brightlingsea. [6377

HARLEY 1918 Combination, electric lighting, tax paid, fully equipped, perfect; £70.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

£50.—Late 1917 Harley 7-9h.p. 3-speed, speedometer, lamps, horn, good condition, new Millford Model de Luxe sidecar if required, £30.—Premier Motor Co., Aston Rd., Birmingham. [6968

1921 Harley Standard Combination, 7-9h.p., electric model, 500 miles, speedometer, horn, lighting, insurance and licence paid; nearest offer £150.—"Z.," 4, Median Rd., E.5. [6139

HARLEY-DAVIDSON and Sidecar, electric model, speedometer, all accessories; £110.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock on Saturdays. [6935

HARLEY-DAVIDSON Combination, 1916-17, overhauled July by makers (London), new parts throughout (engine forks, chains, tyres, etc.), perfect condition, smart appearance; £80, or near offer; owner buying car.—Seen Park Garage, Park Rd., Crouch End, N. [6071

1920 Harley-Davidson 7-9h.p., perfect condition, just overhauled by Harley-Davidson, London, Bonniksen speedometer, spares, Zenith exhaust pipe, new front forks, etc., lapped Brooklands 69-70 m.p.h.; owner abroad; price £93.—Wilson Purves, Horsham Garage, Horsham. [6104

1921 Harley Combination, dynamo lighting, speedometer, discs, hood, screen, back rest, legshields, electric and mechanical horns, mascot, licensed, indistinguishable from new throughout; 128 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5452

CAMBRIDGESHIRE.—Late 1920 Harley, electric model, tax paid, not run 2,000 miles, perfect mechanical condition, original enamel almost perfect, special extra large legshields, roomy sidecar with locker, 2 tyres as new, all accessories; bargain, £105. —Rowell, Trinity College. [5966

7-9h.p. Harley Combination, perfect condition, engine practically new throughout last Christmas, new magneto, carburetter, front forks, back wheel rebuilt 8-gauge spokes, acetylene head, electric side and tail, mechanical horn, just overhauled Harleys, owner buying car, reasonable price quick sale, trial Lichfield or Walsall by arrangement; what offers?—Black, Sandbills House, near Walsall. [5640

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Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing [7667

HARLEY-DAVIDSON.—We have a large stock of second-hand parts.—Maudes' Motor Mart, 100, Great Portland St., W.1. [6764

Hazlewood

NEW 1921 Hazlewood Combination, 5-6h.p. twin J.A.P., 3-speed; £100.—Snipe, 330, Euston Rd. [6905

BARGAIN.—5h.p. Hazlewood Combination, Jackes 3-speed countershaft gear, Senspray carburetter, running order; £60.—Rev. Lamplugh, Clayhanger, Bampton, Devonshire. [5653

HAZLEWOOD Big H 5-6h.p. Twin J.A.P. Combination, 3-speed gear box, K.S., 1917 model, Cameo, speedometer, electric lighting hood, luggage carrier, petrol carrier, side curtains, new tyres, perfect and guaranteed; will give purchaser 50 miles' test; nearest to £75 secures; also B. and B. carburetter, suitable for twin, 30/-.—Kinnaird, 268, Portobello Rd., W.10. [6008

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HENDERSON 1922, De Luxe model, with Millford sidecar, tax paid, as new; £175.—D., c/o 194, Balham High Rd., S.W. [5819

HENDERSON Combination, 1920, perfect condition; £90.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [5830

1920 Henderson Combination, dynamo model, thoroughly overhauled, ready for tour; £110; solo exchanges.—141, Neasden Lane, Neasden, N.W. [6268

£38.—Henderson Combination 10h.p., 4-cyl., speedometer, lamps, mechanical horn, requires attention; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [6698

1920 Henderson Combination, 4-cyl., 3 speeds, Henderson Elite sidecar, screen, beautiful outfit; £98; offers.—113, High St., Clapham. 'Phone: Latchmere 4290. [6464

1920 Henderson Sports Solo, special aluminium pistons, special induction pipe, Clandel carburetter, etc., very fast, in new condition throughout; £85.—114, Brixton Hill. [6475

1920 4-cylinder Henderson and sidecar, speedometer, Easting windscreen, electric light; £110.—Rey, 173, Great Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6994

HENDERSON, late 1921, Sporting Combination de luxe, electric lighting, full equipment, tax paid, mileage 500; £130, or offer; exchanges.—41, The Grove, Finchley. 'Phone: 868. [6771

HENDERSON, late 1920, Elite sidecar, small mileage, just completely overhauled, beautiful mechanical order, all accessories, luxurious outfit; £115.—Beilby, Desmond House, Cannon Place, Brighton. [6306

1921 Model K Henderson Combination, dynamo lighting, reverse gear, single or double seater at will; cost £300; accept £155 or near; or exchange 1921 Harley Combination.—307, Camden Rd., Holloway. [6627

1920 (late) Henderson and Grindlay de Luxe spring-wheel sidecar, dynamo lighting, separate accumulators, for solo riding, hood, trip speedometer, taxed, exceptional engine, absolutely new condition, guaranteed perfect; £110, or exchange Triumph and cash.—51, Upper Richmond Rd., East Putney. [6828

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Spare Parts:

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Hobart.

HOBART-VILLIERS 1921 2¾h.p., 2-speed; £40.—Bromley, Chemist, Whetstone, N. [5979

1919 Hobart-Villiers, 2-speed, all on, good condition; £28, near offer.—Olliver, 26, Enfield Rd., Acton. [6040

HOBART 2-stroke 1921, 2-speed, clutch and kick-start, excellent condition, as new; £40.—Read, 6, West Hill, Sanderstead, Surrey. [6678

Humber.

2¾h.p. Twin Humber, 3-speed, clutch; 15 gns.—Tegg, Dorchester, Wallingford. [6094

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F.O.C.H. have 3½h.p. Humber, 2-speed, excellent; bargain.—5, Heath St., Hampstead (near Tube). [2716

3½h.p. Humber Combination, 2 speeds, fine order; £16.—Fisher, Springwell Rd., Heston, Hounslow. [6554

1922 Humber 4½h.p. Flat Twin Sports, brand new, shop soiled; £95.—Shepherd, Enfield Highway. [0909

HUMBER 1916 Combination, 3-speed C. and K.S., speedometer, fully equipped; £50.—K.J. Motors, Bromley. [5900

£14, Near.—3½h.p. Humber Sports, good tyres, Bosch B. and B., tax, ride away.—Evers, Newton Rd., Burton-on-Trent. [6357

3½h.p. Humber Motor Cycle, Mabon clutch, horn, speedometer, lamps, tax paid; £29/10.—Box 3074, c/o *The Motor Cycle.* [6142

£23.—1913 2¾h.p. twin Humber, copper exhausts, D.R. bars, Bosch, drop top tube.—Warner, 55, Drewstead Rd., Streatham, S.W. [5973

HUMBER 3½h.p., countershaft gears, clutch, tax paid, guaranteed good condition; £15; seen after 5 o'clock.—68, Gloucester Rd., Camden Town. [5702

1920 4¼h.p. twin Humber Combination, 3-speed, K.S., H.C., quick detachable rear wheel, Lucas lamps, Smith speedometer, only done 2,700 miles; £90.—Mudgwicks, Knowsley St., Bolton. [5688

HUMBER 1922 4½h.p. Flat Twin and special C.B. Sidecar, completely equipped, lamps, horn, licensed, Easting and Bonniksen, almost new, and a sacrifice; £120.—The Layton Garages, 30, Holywell St., Oxford. [6885

4½h.p. Humber, Millford Family sidecar, new February, 1921, perfect condition, Lucas lamps, horn, hood, screen, grid, spares, licensed; examination, trial; £100; exchange for solo, cash adjustment.—Avery, Matlock Bath, Derby. [6445

Indian.

INDIAN 7-9h.p. road racer, £30; 2-speed, spring frame model, £34.—17, Henton Rd., Mitcham. [6596

INDIAN 5-6h.p., clutch model, £22; exchange.—Kennard, 78, Yerbury Rd., Holloway, N.19. [6200

1922 4h.p. dynamo model Indian Scout, as new; cost £135, accept 95 gns.—93, Ormerod Rd., Burnley. [6329

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

INDIAN 7-9h.p., clutch, T.T. model, good tyres, overhauled, lamps, etc.; £29.—P. Willcocks, Datchet, Bucks. [5623

7-9h.p. Powerplus Indian Combination, nice order, tax paid; 68 gns., or exchange.—3, Parker Lane, Burnley. [6331

INDIAN Scout, electrically equipped, Bonniksen, fast, new condition; £70.—4, Hanover St., London, W. (P) [5104

INDIAN, 3-speed, clutch, kick-start, Tan-Sad, tax paid, perfect; £50.—12, Clapton Square, Lower Clapton, E.5. [5801

INDIAN Combination, under 4,000, dynamo, speedometer, Easting; reasonable offer.—31, Overbury St., Liverpool. [6350

1921 dynamo lighting big valve Indian Combination, absolutely unscratched; 85 gns.—67, Fernlea Rd., Balham. [6836

1920 7-9h.p. Indian Combination, dynamo lighting, nice condition; 95 gns., or exchange.—3, Parker Lane, Burnley. [6328

£24.—1914 7-9h.p. Indian, 2-speed, clutch, K.S., sound condition, fine running order.—King, Egrove, Oxford. [6736

7-9h.p. Indian Powerplus, 3-speed, K.S., F.E.; £40, or offer.—Blezard, 130, Droylsden Rd., Newton Heath, Manchester. [6452

1922 Indians.—Immediate deliveries, deferred payment, exchanges.—Brown, 3, Parker Lane, Burnley. Tel.: 1032. [6332

1915 Indian 7-9h.p., clutch, discs, accessories, smart, fast, powerful, running well; £35; exchange.—Palace, Buckley, Flintshire. [6569

INDIAN Combination, 1915, 7-9h.p., 3-speed, Easting, accessories, excellent condition; £50.—2, Kimberley Rd., Chingford. [5740

INDIAN Combination 7-9h.p., spring frame, 3-speed, clutch and kick-starter; £55.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [6015

POWERPLUS Indian Combination, 7-9h.p., 3 speeds, equipped, tax paid, fine condition; 70 gns.—13, Vambery Rd., Plumstead, S.E.18. [6025

1920 7h.p. Indian and sidecar, innumerable accessories, condition excellent; £55.—Ealing Garage, Ltd., Ealing. 'Phone 1079. [5826

7-9h.p. Indian, gear box, countershaft, luxurious sidecar, hood, windscreen, going abroad; 35 gns.—Smith, 7, First Avenue, Blackpool. [5734

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Matchless.

SHEFFIELD Agent for Matchless. All models in stock. Sporting models £130, standard models £170.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS Model H/2 Family Outfit, hood, screens, lamps, speedometer, spare wheel, as new, perfect; £160.—64, Melrose Av., Mitcham. [6161

MATCHLESS, late 1920, all on, perfect condition, 4 spare tyres and inner tubes; trial; £125, or near offer.—Long, 8, County Grove, Camberwell. [6217

MATCHLESS 1922 Sports Combination, soiled only, complete; £138.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. Phone: Avenue 5548. [0065

1922 Matchless Combination, Model H2, dynamo lighting, spare wheel, etc., absolutely as new; any trial; £152, no offers.—Young, Bush Lodge, Epsom. [6531

MATCHLESS Combination, 8h.p., J.A.P. engine, 1914, electric lighting, hood, windscreen, etc., perfect condition.—18, Park View Terrace, Welling, Kent. [6137

1921 Matchless-M.A.G. Magdyno Combination, hood, screen, step, legshields, speedometer, 1 new cover extra; £115.—Builders Arms, Southfields, S.W.18. [6504

TASSELL, 1a Bloomfield Rd., Plumstead, for Matchless Combination; deferred payments; spares of all dates; trade supplied where agents not appointed. [2241

1919 Matchless Combination, not used 12 months, spare wheel, tyres, tools, overhauled; giving up; £85, or offer.—H. Tucker, Ashby-de-la-Zouch, Leicestershire. (P) [6049

1920 Matchless Model H Combination, 8h.p. J.A.P., Lucas lamps, spare wheel, hood, etc.; £98.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6974

MATCHLESS 1920 (late) Model H., Lucas Magdyno combination, thoroughly overhauled and renovated, as new; £110.—The Layton Garages, 30, Holywell St., Oxford. [6892

MATCHLESS 1921 Fully Licensed Combination, screen, hood, spare wheel, M.A.G. engine; 120 gns., or exchange Ford tonner or cycle.—115, Moor St., Borton-on-Trent. [5896

MATCHLESS Combination, Oct. 1920, first used 1921, Magdyno, Easting, Binks, spares, uncratched; any trial; £125 nearest.—Hill, 60, Marchmont St., Russell Sq., W.C.1. [6318

MATCHLESS 1921, model H, Combination, every accessory, dynamo lighting, beautiful machine; bargain, £140.—Smith (Motors), Ltd., High Rd., Goodmayes. 'Phone: Ilford 1082. [6688

MATCHLESS Combination, 8h.p., 2-speed combination, lamps, horn etc., overhauled, good running order; 40 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5545a

MATCHLESS 1921 Combination, M.A.G., dynamo lighting, electric horn, front band brake, spare wheel, new tyre, windscreen, hood, all accessories; £150.—Arnold 89, Crayford Rd., N.7. [5751

MATCHLESS Combination 8h.p., J.A.P., Magdyno, speedometer, electric horn, hood, screen, curtains, legshields, reflex mirror, perfect throughout; £100.—Lucking, 15, Oxford Rd., Colchester. [6298

MATCHLESS-J.A.P. Combination, 6-8h.p., 1913, 40 m.p.h., 80 m.p.g., Binks, Bosch, 2-speed gear, kick-starter, excellent condition; £50.—Apply, Sat. afternoon, Eldridge, 41, Cardrosa St., Hammersmith. [5806

1921 8h.p. M.A.G. Matchless Combination, Lucas lamp, horn, speedometer, windscreen, luggage carrier, spare wheel, mileage 2,600, perfect mechanical condition, tax paid, any trial; £100.—Kays, 8, Bond St., Ealing. [6618

1922 Matchless Combination, H/2, M.A.G., Magdyno, speedometer, legshields, screen, spare wheels, etc., small mileage, guaranteed perfect, as new, any trial; nearest £160.—Stockwell, Elstree, Nutfield Rd., Redhill. [5698

MATCHLESS 1921 8h.p., M.A.G., 3-speed, kick-start, foot clutch, 2-seater sidecar, 2 windscreens, hood, accumulator lighting, all lamps, spare wheel and tyre, tax paid; £135.—Maudes', Walsall Garege, Walsall. [6754

MATCHLESS Combination, August, 1921, licensed December 31st, M.A.G. engine, spare wheel, windscreen, all accessories, perfect order throughout, privately owned; £135.—It can be seen at Down St. Garage, Piccadilly, W.1, at any time. [0913

MATCHLESS 1920 Model H, M.A.G., dynamo lighting, electric horn, speedometer, hood, screen, curtains, legshields, front band brake, newly upholstered, insured, tax paid; £112.—Ambrose, 40, Stanmore Rd., West Green, Harringay, N. [5778

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lea Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [5669

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Matchless.

1921 Matchless-M.A.G., Lucas Magdyno, electric lamps and horn, spare wheel, mudshields, Easting screen and step to sidecar, licensed for year, good condition; £130 for quick sale; appointment.—"Matchless," 96, Church Rd., Richmond. [6516

1920 Matchless Model H Combination, recently overhauled, splendid order, Magdyno lighting, Easting, latest Binks, speedometer legshields, spare wheel, two new tyres; cheap, £105.—E. A. G., 31, Anerley Park, S.E.20. 'Phone: Central 2475. [6694

MATCHLESS Combination, Victory Model, just overhauled, lamps, hood, Eastings, spare wheel, 2 extra tubes, perfect condition, offers, any trial, selling through illness; also Bradbury and sidecar, cheap.—Williams Bros., Wholesale Newsagents, Guildford. [6773

MATCHLESS Super-Sports J.A.P. Combination, 1922, Lucas electric lighting, mechanical horn, Cowey speedometer, Pedley knee and handle-bar grips, Easting screen; cost £200; 6 weeks old; reason for selling.—C/o Findley, 88, Marchmont Cres., Edinburgh. [8023

NEW 8h.p. 1922 Matchless Combination, 2-seater model, spring frame, £187; 8h.p. standard model, £170; sports model, £160; easy payments one-fifth down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane. 'Phone: Holborn 5777. [6710

8h.p. Matchless Combination, 1922 model, complete with lamps, horn, speedometer, spare wheel, hood, hood cover, mirror, and all accessories, tax paid 1922, insured comprehensive, only ridden 249 miles; must sell; seen by appointment.—White, 63, Sheals Cres., Maidstone. [6333

1921 Matchless 2-seater Combination, speedometer, Lucas lighting set, 2 windscreens, Tan-Sad, spare wheel, luggage carrier, hood, side curtains, not used since October last, cost £237; will accept £145; appearance and condition as new.—Wadlow, Orpington, Kent. [6772

MATCHLESS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5164

MATCHLESS Model H 1920 Combination, perfect running order, little used, almost new condition, Magdyno, Easting Royal hood, new heavy Dunlop (unused) on spare wheel, accessories, tax paid, reasonable offer invited for genuine no-trouble bargain.—Rev. R. H. McCall, Thorne Rectory, Yeovil. [5643

Spare Parts:

MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

McKENZIE, the famous lightweight; £27/6, or fully equipped £29. Immediate delivery.—R. G. Houchin, 188, High St., Peckham, S.E.15. [5917

Metro.

£25.—Metro-Tyler 1920 Sporting Model, disc wheels, tax paid; any trial; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [6696

£22/10.—Metro 2½h.p., sloping tank, long exhaust pipe, tyres as new, tax paid.—Delancey Street Garage, Camden Town, N.W.1. [6224

Minerva.

£10/10.—Minerva 3½h.p., mechanical valves, Bosch, spring forks, 2-speed Roc fitted; gift.—Saunders, 49, Riverside, Kingston-on-Thames. [5969

Monarch.

1921 Monarch-Jap Combination, 3-speed Sturmey-Archer, H.B. clutch and kick-starter, Easting screen, beautiful condition; £85.—Rhind and Co., Stone Place, Rusholme, Manchester. [6072

Moto-Reve.

£16.—Moto-Reve 2¾h.p., clutch, new tyres, all on, tax paid.—Osborne, Shepherdswell, Dover. [6681

MOTO-REVE 2h.p., single, magneto, excellent condition; £12.—J. W. Brewer, Middleton, Pickering, Yorks. [5676

Motosacoche.

1914 Motosacoche, 3½h.p. M.A.G. engine, Enfield 2-speed, overhauled, fast; £26, or exchange 2-stroke.—66, Wardo Av., Fulham, S.W.6. [6153

Ner-a-Car.

NER-A-CARS.—The 1922 wonder, 2¼h.p., 2-stroke variable gear, electric and gas lighting, ready for road; £65; limited immediate deliveries.—South Eastern Garage, Herne Hill, S.E.24. [6920

New Comet.

2¾h.p. New 1922 New Comet, lady's machine, fitted with Comet sidecar; £80; easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [6711

MOTOR CYCLES FOR SALE.

New Hudson.

NEW HUDSON, 4h.p. J.A.P., less rear wheel; £18. —Kennard, 78, Yerbury Rd., Holloway, N.19. [6201

1921 New Hudson, 2-stroke, 2-speed, lamps, Klaxon, little used; £32.—Harvey, 6, Albert Sq. Mews, Clapham Rd., S.W. [5719

NEW HUDSON 3½h.p., fine sporting machine; £15 cash; ride away.—74, Brighton Rd., Surbiton. 'Phone: Kingston 3025. [6633

HUDSON Coach Combination, countershaft gear box, 3-speed, genuine sacrifice; 29 gns.—Smith, 7, First Avenue, Blackpool. [5733

1921 New Hudson de Luxe, 2-stroke, accessories and spares complete, sacrifice; £30.—May, 106, Wrottesley Rd., Harlesden, N.W.10. [6134

NEW HUDSON Motor Cycles.—London Depot, 45, Gray's Inn Rd., London, W.C.2. Immediate delivery all models. Spares stocked. Trade supplied. [0851

1922 2¼h.p. Hudson de Luxe, £63; one shop-soiled de luxe, £55; also Popular model, £50.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0911

PHOTOGRAPH Free.—1921 New Hudson, 2-stroke, 2-speed, new condition; 35 gns.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6950

NEW HUDSON 1916 Big Six Combination, Mills-Fulford coachbuilt sidecar as fitted to Sunbeam, 3 speeds, clutch, kick-start, countershaft, chain-cum-belt drive, complete equipment of accessories, lamps, horn, etc., tax paid for the year, all tyres very good, spare belt, tools; the outfit has just been overhauled, sidecar re-upholstered and coach-painted, and is in perfect condition throughout, a really good turnout; accept £45 for quick sale.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [6639

New Imperial.

1922 2¾h.p. New Imperial-Jap, mileage 900; £50. 24, Balliol Rd., North Kensington. [6442

NEW 1921 New Imperial Combination, 8h.p. J.A.P.; £105.—Snipe, 330, Euston Rd. [6904

NEW IMPERIAL, 2¾h.p. J.A.P., 2 speeds, very good condition; £29.—Crown Garage, Weybridge. [6558

2¾h.p. New Imperial, 2 speeds, as new, tax paid; £24.—Jones, 131, Beechcroft Rd., Upper Tooting. [6550

SHEFFIELD Agent for New Imperial Motor Cycles; all models in stock.—J. A. Stacey, Ecclesall Rd., Sheffield. [0813

LATE 1919 2¾h.p. New Imperial, 2-speed, clutch and kick-start, all on; £45.—60, Newbold St., Roohdale. [6537

2½h.p. New Imperial, Nov. 1916, splendid condition; any trial; £29.—Stringer, 46, Canonbury Rd., Enfield. [6270

NEW IMPERIAL 2¾h.p. J.A.P. 2-speed, practically unscratched and as new; 32 gns.—67, Fernlea Rd., Balham. [6831

NEW 1922 New Imperial 2¾h.p., 3-speed, makers' guarantee; £56; must realise.—391, King St., Hammersmith. [6471

NEW IMPERIAL-J.A.P., 2 speeds, fully equipped, taxed, splendid condition, fast; £27.—7, Cowdrey Rd., Wimbledon. [6503

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

1918 New Imperial, 2¾h.p. J.A.P., 2-speed, tax paid, fully equipped; £30.—4, Hobart Place, Langboro', Wokingham. [5745

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Japs, 1922, No. 3 £73, No. 2 £60; easy terms and exchange. [6712

1918 New Imperial-Jap 2¾h.p., 2-speed, fully equipped, tax paid; £28.—113, High St., Clapham. 'Phone: Latchmere 4290. [6459

1918 New Imperial 2¾h.p. J.A.P., 2-speed, fully equipped, licensed, exceptional condition; £28. —99, Cannon Hill Lane, Merton. [5718

GODFREY'S, Ltd.—1914 2¾h.p. New Imperial-Jap, 2-speed, lamps, speedometer, horn, guaranteed; £38.—208, Gt. Portland St., W.1. [6932

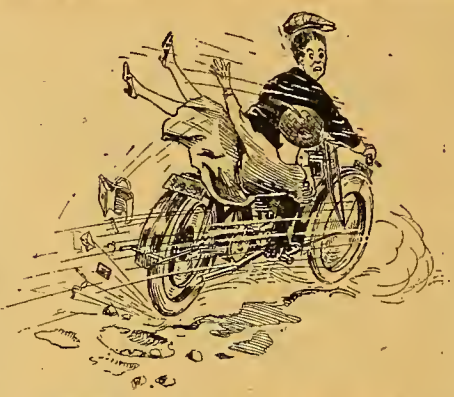
1919 8h.p. New Imperial Combination, practically new; exchange solo and cash.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [6252

PHOTOGRAPH Free.—New Imperial 2¾h.p., 2-speed, 25 gns.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6951

1920 New Imperial 2¾h.p., 2-speed, trip cyclometer, appearance, condition first-class; £38, nearest.—Cooke, 45, Sankey St., Warrington. [5662

£35.—Indistinguishable from new, 1920 New Imperial-Jap 2½h.p., 2-speed, tax paid; any trial; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [6695

1919-20 New Imperial-Jap Combination 8h.p., fully equipped, licensed, in absolutely new condition; £75.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [6368



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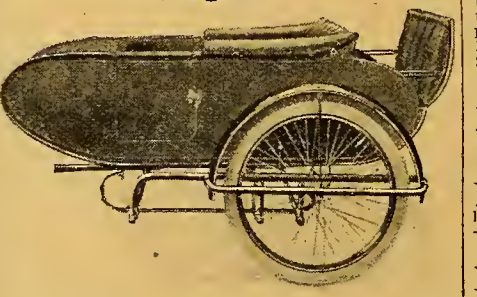

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NEW IMPERIAL, 8h.p J.A.P., 1919 Cancelet sid car, lamps, new tyres, etc., 3,000 miles, a trial.—Morgan, 47, Woodside Court Rd., South N wood. [58

NEW IMPERIAL 8h.p., 3-speed, all accessori double-seater sidecar, very little used, excelle condition, taxed; £80.—205, South Croxted Rd., D wich. [59

1921 2¾h.p. New Imperial (bought February, 192 900 miles, absolutely as new, lamps, Klaxo Tan-Sad, taxed; 50 gns., bargain.—154, Downham R Islington, N.1. [62

1921 New Imperial, 2¾h.p., 3-speed, all accessori £50; also 1921 2-speed, £40.—Rey, 173, G Portland St. 'Phone: Langham 1257. Open t 7.30; 4 o'clock Saturdays. [69

NEW IMPERIAL 1922 2¾h.p. Sports Model, speed, chain-cum-belt drive, B. and B. carbu etter, 26×2¼in. tyres, shop-soiled only; £60.—Maude 100, Gt. Portland St., London. [67

NEW IMPERIAL 2¾h.p., Model No. 3, 3-spee kick-start, all-chain drive; £73. Immedia delivery Cash; exchanges; easy payments.—P. Evans, John Bright St., Birmingham. [68

SPECIAL stocktaking clearance sale offer of new bu slightly showroom soiled 1922 model No. 3 Ne Imperial 2¾h.p., 3-speed, chain drive; reduced to £6 deferred payments arranged.—Premier Motor C Aston Rd., Birmingham. [69

1922 New Imperial 8h.p. Super Sports J.A.P tuned especially by Prestwich for 200 mil sidecar race, outfit speed over 65 m.p.h., conditio as new; cost £193; accept £150, or exchange low power and cash.—198, King St., Hammersmit 'Phone: 2474. [64

PHOTOGRAPH Free.—Late 1920 New Imperial 8h. coachbuilt combination, 28in. wheels, 3-spee beautiful combination, licensed till December, insur till March, fully equipped, purchased new last year present owner; 85 gns.; exchanges.—Peter Gordon, Ltd 110, Upper Richmond Rd., East Sheen. Tel.: Putn 2865. [69

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NEW RYDER Motor Cycle, 2-speed gear box, lamp horn, speedometer and mirror, tyres as ne latest New Ryder model, tax paid; any trial; £38/1 —Chambers, Preston Bissett, Bucks. [60

Norton.

NORTON, 1921, 16H, very special; 78 gns.—Clar 7, Exhibition Rd., S.W.7. [58

1922 Nortons, all models; free delivery to an address.—Gibb, Gloucester. [75

1922 Nortons, all models; deferred payments.— Clifford Motories, Eastwood, Notts. [54

1921 Norton, single speed, excellent order; any test best offer.—Dibben, King's Arms, Amesbury. [66

1921 3½h.p. T.T. Norton, lamps, horn, tools, first class order; £45.—Box 3081, c/o *The Motor Cycl* [67

T.T. Norton, Model 9, October, 1921, unridden thi year (proofs); £60, or offers.—135, Harvest Lane Sheffield. [61

1922 Standard Norton, shop-soiled only; £70 otherwise brand new.—Fox, 12, Conduit St Lichfield. [64

NORTON 4h.p., sidecar, 500 miles, Bonniksen, lamps horn, Tan-Sad; £135.—Knight, Broomfield Hall Chelmsford. [59

NORTON 1921 3½h.p., speed model, as new; a on; £80.—Moore, Park Hotel, Wood Vale, Hono Oak, S.E.23. [59

BROOKLANDS Special Norton, as new, full equipped, 75 m.p.h.; £48.—Green, Wine Mer chant, Reigate. [56

F.O.C.H. have a 1922 Norton 16H Model, litt used, excellent condition, licensed; bargain.— Heath St., Hampstead (near Tube). [27

1921 16H 3½h.p. Norton, condition as new, discs lamps, Klaxon, etc.; £85, or near offer.— Bailey and Harman, 25-7, London St., Reading. [60

NORTON Late 1920 Big Four Combination, splendi condition, mirror, muffs, Easting, Lucas lamps 700×80 tyres; £95.—Ridout, Lee Hall, Rugeley. [60

NEW 16H. 3½h.p. Norton, oversize tyres, close rati gear box; cost £117/10; makers' guarantee best offers; must realise.—391, King St., Hammer smith. [64

NORTON 16H, 1922, silencer, electric lighting Bonniksen, Klaxon, mileage 2,000; cost £130 bargain, £110; condition perfect.—3, Worcester Gar dens, Sutton, Surrey. [55

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Rex.

REX Combination 5-6h.p., 2-speed, in excellent condition, fully equipped, coachbuilt sidecar, any trial; £26, sacrifice.—406, Garratt Lane, Earlsfield, S.W. [6318

REX 6h.p. Combination, 2-speed, Binks 3-jet, Bosch, splendid mechanical condition, smart appearance, just re-enamelled; trial willingly; honestly worth £40. —Massey, 35, Padua Rd., Penge. [6276

2¾h.p. Rex-Acme Combination, Blackburne engine, new, fast, just delivered ex works, 3 speeds, Sturmey-Archer gear, kick-starter and hand controlled clutch; £96/15; exchange and easy terms.—Wauchope's, 9, Shoe Lane, London. [6715

Rover.

£17.—1912 3½h.p. Rover, clutch model, good running order.—King, Egrove, Oxford [6740

3½h.p. Rover 1915, Grado, discs, equipped; £42; exchange.—Ward, Frampton, Stonehouse. [6524

ONE 1922 3½h.p. Rover, complete with lamps and horn, shop soiled; price £90. Makers' guarantee.

1922 Rover, 6h.p. combination, shop soiled, maker's guarantee; price £135.—Rawlinson Motors, Ltd., Sudell Cross, Blackburn. Tel.: 6401. [6879

ROVER 1920 3½h.p., N.S.U. gear, all lamps, tax paid; £55.—Maudes', Walsall Garage, Walsall. [6758

ROVER 3½h.p. T.T., 1919, very fast, condition as new, tax paid; £40.—38, Cowley Rd., Oxford. [6246

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3½h.p. T.T. Rover, good condition all round, horn, licence paid; £28.—2, Eastbank St., Southport. 'Phone: 607. [5157

5h.p. Rover Combination 1919, 3-speed, C.S., in excellent condition, fully equipped; £55.—406, Garratt Lane, Earlsfield, S.W. [6319

1918 3½h.p. T.T. Rover, every possible accessory, condition as new; £37, or offer.—C. A. Blay, 192, Heath Rd., Twickenham. [6379

1914 3½h.p. Rover, 3-speed, B.B., Bosch, all on, stored during war, excellent condition; £45. —Squelch, Stoke Rd., Slough. [5884

LATE 1920 Rover 3½h.p., 3-speed, clutch, kick-start, condition perfect; nearest £60 secures.—55, Robinson Rd., Tooting, S.W.17. [5991

1918 3½h.p. Rover Combination, fully equipped, excellent condition; £60.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [5707

3½h.p. Rover T.T., 1921, hand controlled Philipson, good condition, fast, thoroughly overhauled; £60.—Denison, R.A.F., Duxford, Cambs. [5943

1920 Rover 3½h.p. Philipson, new July, 1921, perfect condition, fully equipped, copper exhaust; £50.—Baillie, 12, Redcliffe Square, South Kensington. [6066

ROVER, 1919, 3-speed combination, fully equipped, £68; 1914 3½h.p., 3-speed, overhauled, mechanically excellent, £28.—Clark, 7, Exhibition Rd., S.W.7. [5855

SPEED!—75m.p.h. Rover, 1921, 3½h.p., Philipson, all accessories, huge exhaust, perfect, owner broke paying off speed summonses; £65.—38, Elmbourne Rd., Balham. [5782

£50.—Rover combination, 1915-16, 3½h.p., countershaft, 3 speeds, clutch, kick-starter, original enamel, fully equipped, splendid condition; exchanges. —63, Solon Rd., Brixton. [6488

1922 3½h.p. all-chain Rover, actual show model, unscratched, run under 1,000 miles, original tyres as new, lamps, horn tax paid; first cash £67/10; seen by appointment.—Thompson, 13, Rayston Rd., Penge. [6893

3½h.p. T.T. Rover, converted 1921 at works from standard to T.T., only done 400 miles since, Philipson, sporty and fast; £60; exchange with cash for runabout.—127, Midland Rd., Wellingborough. [5781

1920 3½h.p. Rover Combination, countershaft 3-speed, clutch, kick-start, speedometer, windscreen, tools, lighting set, equipped and taxed, splendid condition, guaranteed sound; 68 gns.—186, St. James' Rd., Croydon. [6038

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ROVER Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [5081

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1922 3h.p. Royal Ruby, unscratched; 40 gns.—67, Fernlea Rd., Balham. [6842

ROYAL RUBY 1919 8h.p. Combination; any trial. —Lock, Trinity St., Dorchester. [6044

NEW 1921 Royal Ruby, 3h.p., 2-speed, spring frame; £60.—Snipe, 330, Euston Rd. [6913

1920 Royal Ruby Combination, 8h.p. J.A.P., Sturmey 3-speed, Easting, mileage 3,000, as new; £75.—Williams, 27, Finsbury St., E.C. [6148

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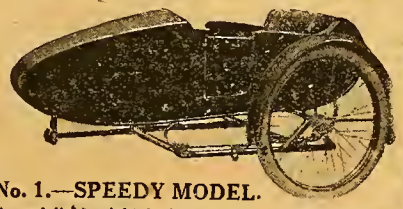

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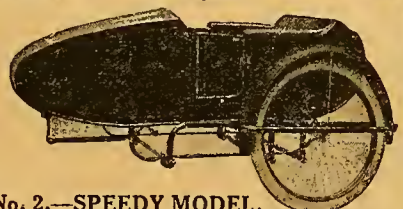

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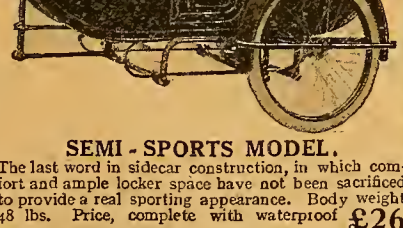

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1922 Royal Ruby, the spring frame combination, immediate delivery, cash, exchange, or easy terms. —Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4934

ROYAL RUBY 2-stroke, Villiers engine, 1916, overhauled, condition and tyres excellent; £20.—Stanley, 8, Warwick Square Mews, Clarendon St., Pimlico, S.W.1. [6196

ROYAL RUBY, 1920 model, 8h.p. combination, tax and insurance paid, complete with windscreen, lamps tools, etc.; £95; 2¾h.p. Douglas taken in part exchange.—Glover, 26, Holland Rd., Brixton. [5560

ROYAL RUBY Combination, 1919, 8h.p. J.A.P., 3 speeds, hand clutch, kick-starter, chain drive, Swan touring sidecar, lamps, licence, windscreen, Klaxon, accessories, splendid condition; £80.—63, Solon Rd., Brixton. [6489

Rudge

1921-1922 Rudge, as new, equipped; 52 gns.—19, Valnay St., Tooting. [6841

RUDGE-MULTI, 1922 shop-soiled; £72.—Clark, 7, Exhibition Rd., S.W.7. [5849

1921 Rudge-Multi, in perfect condition; £50.—Fox, 12, Conduit St., Lichfield. [6447

NEW shop-soiled 1922 Rudge, 3½h.p., 3-speed, chain drive; £82.—Snipe, 330, Euston Rd. [6910

1921 I.O.M. Rudge Multi, 3½h.p., trial by arrangement.—Burton, High St., Bridgnorth. [6000A

1919 Rudge-Multi, in perfect condition; any trial; £40.—Fox, 12, Conduit St., Lichfield. [6448

1921-22 Rudge-Multi Combination, bargain; must sell; 57 gns.—67, Fernlea Rd., Balham. [6839

1922 Rudges.—All models in stock.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0900

RUDGE-MULTI 3½h.p., good condition; £35.—Smith, Dinnington Village, Northumberland. [6414

1921 Rudge-Multi, fully equipped, licensed, excellent condition; £52.—14, Goodmayes Av., Ilford. [6163

GODFREY'S, Ltd.—1920 5-6h.p. Rudge and Sidecar, lamps and horn; £58.—208, Gt. Portland St., W.1. [6934

1922 Rudge-Multi, shop-soiled only; £70; otherwise brand new.—Fox, 12, Conduit St., Lichfield. [6450

1921 3½h.p. Rudge-Multi, unpunctured, all accessories; £55.—R. V. Foster, Hitcham, Maidenhead. [5684

WAUCHOPE'S, 9, Shoe Lane, London.—New 1922 Rudge 3½h.p., I.O.M.; £77; easy terms arranged. [6717

3½h.p. 1916 Rudge-Multi, nearly new condition; £38. Coachbuilt sidecar, £7/10.—21, Brent St., Hendon. [6456

RUDGE 5-6h.p., running order, coachbuilt sidecar; offers.—69, Gaskell St., Stockton Heath, Warrington. [5965

I.O.M. Rudge-Multi, 1921, not done 700 miles, guaranteed; offers, must sell.—Davies, Garage, Ellesmere. [5732

RUDGE-MULTI, condition as new; any trial after 5:30; only wants seeing; £37.—300, Portobello Rd., W.10. [5891

1920 Rudge-Multi and sidecar, all accessories, in excellent condition; £65.—8, Half Moon Lane, Herne Hill, S.E.24. [6916

RUDGE-MULTI 1915; £28; taxed, faultless running and condition, new Dunlops, equipment.—26B, Ingleton St., Brixton. [6479

£77 is the price of a new Rudge. Get it from the Agents; in stock; cash or payments.—Knight's, 126, Upper Tooting Rd., S.W.17. [0836

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3½h.p. Rudge-Multi, good running order and appearance; £25/10 for quick sale, first cash secures.—Hunt, Dairyman, Hunston, Chichester. [5677

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1920 (late) Rudge 3½h.p., I.O.M. picked engine, spare cams, very fast and economical; £50 or close offer.—Greenwood, 60, Beaconsfield St., Bedford. [6185

1922 Rudge 7-9h.p. Combination, never ridden finest combination extant, 3-sneed, chain drive spare wheel, splendid bulbous sidecar; £130 cash; deferred payments arranged; tuition free.—Motoria, Regent's Parade, North Finchley. [6787

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1922 Rudge-Multi T.T., exceptionally fast, very carefully tuned by expert, perfect throughout, like new, tax paid; £69.—61, Dingwall Rd., East Croydon. [6216

RUDGE 5-6h.p. Combination, perfect, speedometer, lamps, spares, tools, windscreen, taxed; trial; £60; after 6 p.m.—101, Narbonne Avenue, Clapham Common. [6588

1921 Rudge-Multi, I.O.M. model, 3½h.p., all accessories; £46.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays [6990

1921½ Rudge-Multi, equipped spare valves, belts, 2in. copper exhaust extension, original tyres, as new; £58.—J. Binfield, 20, Obelisk St., Camberley, Surrey. [5645

1921 Rudge Combination 7-9h.p., 3-speed, all-chain drive, spare wheel, windscreen, all accessories, perfect condition; £110, or offers.—Meech, Wanderwell, Bridport. [6348

1920 3½h.p. T.T. Rudge-Multi, with lamps, horn, handle-bar muffs, tyres and belt as new, excellent condition; £43, or near offer.—Monk, Gunmaker, Chester. [5667

RUDGE 1920, I.O.M. model, excellent condition, used very little, speedometer, lamps, and tax paid; 48 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6684

1922 Rudge, I.O.M., practically new, unscratched, lamps, speedometer, Klaxon, Tan-Sad, tools, taxed, privately owned; £65, must sell.—Newbery, 69, High Rd., Kilburn, N.W.6. [5713

7-9h.p. Rudge Multwin Combination, Amac carburetter, F.R.S. electric lighting, all in first-class condition; £110, any type good make solo part exchange.—16, Vernon Rd., Luton. [6144

1920 Rudge-Multi, electric lighting, horn, etc., licensed, good tyres, excellent mechanical condition; 45 gns; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5544

RUDGE-MULTI Combination, 1914 type, in excellent condition, mechanically and appearance, fully equipped, tax paid, coachbuilt sidecar, windscreen; £29.—406, Garratt Lane, Earlsfield, S.W. [6316

3½h.p. I.O.M. Rudge-Multi, mileage 3,976, condition new, with speedometer, P. and H., Klaxon, Tan-Sad, spare belt; 55 gns.; without equipment, best offer.—33, Yew Tree Rd., Uxbridge Rd., Hammersmith. [6014

1919 Rudge-Multi C.B. Combination, lamps, tools, Easting, hood, excellent condition, new belt, tyres, re-enamelled, very smart; £65, or best offer; would separate; tax year.—22, Osborne Ter., Clapham Rd. [5974

1920 Rudge-Multi Combination, 5-6h.p., tax paid, fully insured, born, no lamps, spares, new front wheel and tyre, rear frame, 3 tubes (new), 3 belts (2 new); £80, or nearest.—Pattison, 40, Mottram St., Barnsley. [6451

1922 Rudge-Multi I.O.M. model, under 50 miles, unscratched, tax paid, fully equipped; £65, or exchange considered.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London, W.2. Padd. 1177. [6801

1920 Rudge 5-6h.p. Combination, electric light, Klaxon, knee grips, etc., licensed year, excellent mechanical condition and appearance; 50 gns.; exchanges or deferred.—Edwards, 50 Harrington Rd., South Kensington. [6977

PHOTOGRAPHS Free.—Rudge-Multi late 1921 5-6h.p. coachbuilt combination, new condition, 68 gns.; also 1920 7-9h.p. Rudge-Multi coachbuilt combination, fully equipped, 78 gns.; also 1916 3½h.p. Rudge-Multi coachbuilt combination, bargain, 39 gns.; also 1916 3½h.p. Rudge-Multi solo, 32 gns.; all guaranteed; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6945

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3163

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£11.—5-6h.p. Sarolea, excellent order, electric lights, smart, splendid tyres (magneto needs slight repair); exchanges.—B. Talbot, 8, Darlington Rd., West Norwood. [6249

Scott.

JOHN R. KINSEY and Co., Ltd., Croydon, for Scotts. [4594

SCOTT, about 1912, overhauled; £17.—Davidson, 196, Gladstone Avenue, Wood Green. [5760

£35.—Scott 3¾h.p., 2-speed, K.S., good condition, tax paid.—G. Hawley, Masham, Ripon. [5960

1920 2¾h.p. Scott, 2-speed, K.S., in lovely condition; £70.—Magdwicks, Knowsley St., Bolton. [5687

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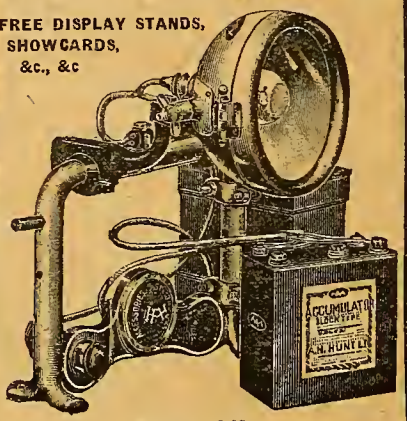

Display Stand No. 2.

Set A1—For Solo Machines.

Fig. 895—Head Lamp	60/-
Fig. 576—Rear Lamp, 1¼" Bullseye	4/9
Fig. 1150—Ebonite Accumulator 6 volt 25 amp	47/6
Fig. 378—Metal Carrying Case	10/6
Fig. 428—1 Way Screw Type Switch	2/-
Price Nickel Plated Head Lamp	123/6
" Black " "	128/6

Bulbs and Wire, 8/6 extra.

Set C1—For Medium Solo Machines.

Fig. 881—Head Lamp, 5¼" front	36/-
Fig. 574—Rear Lamp, 1¼" Bullseye	5/9
Fig. 1160—Accumulator, 4 volt, 20 amp.	24/-
Fig. 377—Metal Carrying Case	10/-
Price Nickel Plated Lamp	75/-
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H.A.H. Fig. 576, REAR LAMP.

(Bayonet type.)

BEST VALUE MADE.

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MOTOR CYCLES FOR SALE.

Scott.

SCOTT Service Depot, Cathedral Motor Works, Liverpool.—Scott Sociables and motor cycles. [6660

SCOTT Combination, 1921, good condition; no reasonable offer refused.—Hale, 7, Clarence Drive, Harrogate. [5880

£40.—Scott 3¾h.p., 2 speeds, clutch, chain drive, condition as new, guaranteed.—Beesley, 198, Dantzic St., Manchester. [6090

1 SCOTT Standard, also Squirrel; used less than 5 miles for demonstration; £100 each.—Gibb, Northgate, Gloucester. Service Agent. [7540

LATE 1920 Scott Combination, splendid condition, Easting, electric lighting, licensed, insured; must sell; offers.—After 6, 30, Union St., Barnet. [6195

1922 Scott Squirrel, direct from makers this week unpacked, firm's guarantee, unable take delivery; £99.—Box 3070, c/o *The Motor Cycle.* [6110

1915 Scott Sporting Combination, mechanical condition, tyres and appearance excellent, fully equipped; £45.—Ramsay, 93, Sussex Rd., Watford. [5620

1922 Scott Touring, not done 300 miles and in perfect condition, Lucas lamps and horn; cost £120, bargain £85.—Bowker, 21, Manchester Rd., Burnley. [5650

LATE 1915 Scott Combination, Easting, tax, insurance, excellent condition, seen evenings by appointment; £55.—Stewart, 29, Drayton Avenue, West Ealing, W.13. [5790

SCOTT Combination, 1920, Easting windscreen, Cowey speedometer, hood, complete lighting set, tools and spares, tyres and chains new.—Burton, High St., Bridgnorth. [6000

EXCEPTIONAL Bargain.—Brand new Scott Squirrel model, 70 miles per hour, new last week; cost £106/10; accept £90 quick sale; money urgently needed.—Box 3051, c/o *The Motor Cycle.* [6000

1922 Scott-Squirrel, competition model, speed 70, Ace discs, carrier with Brooks bags, electric horn, Lucas lamps, extra big tyres, flat base rims, £100.—C. J. Wheeler, Broadway, Newbury. [6430

PHOTOGRAPH Free.—Scott Combination, late model, good mechanical order but appearance rough, 48 gns.; would separate; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6950

SOUTHPORT.—1922 Scott Squirrel Combination, Squirrel sidecar, as brand new, fully equipped, fully taxed, 110 gns.; another 1922 Squirrel, fully equipped, fully taxed, fully insured, like new, 85 gns. exchanges.—Kents, 417, Lord St., Southport. [5570

Spare Parts:

WARD Motors, Ltd., 32, Hustler St., Bradford, for serviceable second-hand Scott parts on approval against cash. [0880

GODFREYS', Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0750

Silver Prince.

SILVER PRINCE, 2¾h.p., April, 1921, unscratched, all on, taxed, insured; £50, or nearest.—Wilmot, 12, York Rd., Kettering. [6400

Singer.

WAUCHOPE'S, 9, Shoe Lane, London.—2½h.p. Singer, 1910; £25. [6720

SINGER 2¾h.p., 2-speed, free, licensed Christmas, £19.—13, Clifton Rd., Norbiton. [6420

£22/10.—Singer 3½h.p., 3-speed, fast machine, fine condition, tax paid.—Delancey Street Garage, Camden Town, N.W.1. [6220

SINGER 3½h.p. Coachbuilt Combination, 2-speed, clutch and kick-starter, lamps, horn, hood and screen, perfect order; £40, or exchange lightweight and cash.—K. Pellant, 16, St. George's Mews, Regent's Park Rd., London, N.W.1. [6840

Spare Parts:

THE Promptest Firm for Singer Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3160

GENUINE Singer parts, "by return service."—Allen Holland, Hearsall Lane Corner, Coventry. 'Phone 1945. [6650

Sparkbrook.

2½h.p. Sparkbrook, 2-speed, new condition.—Pearce, Mayford, Woking. [6020

PHOTOGRAPH Free.—Sparkbrook-J.A.P. 6-8h.p. countershaft gears, clutch, kick-start, 2-seater sidecar; 52 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6950

GENUINE Bargain.—Sparkbrook late 1920, 2-speed clutch, long exhaust, W.S.R., fully equipped, many spares, mileage 3,400, as new in every respect, any examination, trial; 39 gns.—Kimberley, Worthing Rd., Littlehampton, Sussex. (P) [6060

Sun.

SUN-VILLIERS 2¾h.p. 1915, fully equipped, tax paid, tyres new, splendid condition; £25.—S. Hilda, Oagmar Avenue, Wembley. [5740

MOTOR CYCLES FOR SALE.

Sun.

1922 Sun-Vitesse, rotary valve engine, S.A. 2-speed, C.K.S., run 200 miles, licensed; £52/10.—9, Hartington Rd., Stockton-on-Tees. [6220

SUN-VITESSE, 1922, 2-speed, clutch, kick-starter, taxed 1922, as new, too fast for owner; sacrifice, £50.—Holt, 117, Tiverton Rd., Exeter. [4376

SUN-VITESSE 1922 2½h.p., 2-stroke, Maglita lighting set, S.A. 2-speed, clutch, kick-starter, chain-cum-belt drive, all lamps, shop-soiled only; £70.—Maudes', 100, Gt. Portland St., London. [6749

SUN-VITESSE 1922 2½h.p., rotary valve engine, Moss 3-speed, clutch, kick-start, all-chain drive, M-L Maglita lighting set, Canoelet light sporting sidecar, all lamps, shop-soiled only; £90.—Maudes', 100, Gt. Portland St., London. [6751

FOR Sun-J.A.P., or Sun-Vitesse, get in touch with the sole North London agents. Models in stock, single Special, 42 gns.; 2¾h.p. J.A.P., 2-speed, K.S., 60 gns. Send for catalogues. Trade supplied.—Jones Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM 3½h.p., run 5,000, first-class condition; £70, bargain.—Dosser, Slingsby, Malton. [6363

SUNBEAM 1921 3½h.p. Touring Model, brand new; £125, bargain.—Ginger Motors, Bambury. [6672

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Sunbeams; unequalled service, repairs, etc. [3558

1921 Sunbeam 8h.p. Combination, dynamo lighting, spare wheel; £135.—Cridland, Rodborough, Stroud, Glos. [5563

3½h.p. Sunbeam, 1919, new, enamelled; £60.—Moffat, 14, Church Rd., Wimbledon. Tel.: 270. [7008

SUNBEAM Combination, 3½h.p., splendid condition; £55.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [6016

1919 3½h.p. Sunbeam and sidecar, disc wheels, lamps, horn, etc.; bargain £75.—Walbro, Lynn Rd., Ely, Cambs. [5997

SUNBEAM 3½h.p., December, 1920, sidecar, Eastlug windscreen, electric lighting; £95.—27, Park View Rd., Addiscombe. [5977

3h.p. Sunbeam Combination, horn, and tax paid, mileage under 700; bargain, £145.—Tilleys, Esplanade, Weymouth. [6660

SUNBEAM, 1919, 3½h.p., 3-speed, taxed, insured, ride anywhere; £48.—Letters, Wilkins, 338, Brockley Rd., London, S.E. [6167

BARGAIN of the week; £35.—6h.p. Sunbeam, Gloria sidecar, hood, windscreen, etc., 1914.—Huntley, 46, King's Rd., Chelsea. [5942

1917 Sunbeam 3½h.p., licensed, 3-speed, clutch, kick-start, in excellent condition; £70, or exchange lightweight.—Winn, Bentham, nr. Lancaster. [6055

GODFREY'S, Ltd.—1921 3½h.p. Sunbeam, sporting T.T. model, excellent condition, capable very high speeds; £100.—208, Gt. Portland St., W.1. [6937

1920 3½h.p. Sunbeam, Watsonian sidecar, accumulator, electric lighting, tax paid, full insurance policy, guaranteed perfect; £100.—J. Bosworth, Dalkeith Place, Kettering. [6375

SUNBEAM 1920 3½h.p. sports and Watsonian sidecar, lamps and speedometer, good condition; London district; nearest £95.—Box 3077, c/o *The Motor Cycle*. [8208

SUNBEAM 8h.p. Combination, Lucas dyname lighting, every accessory, condition excellent; £105, bar offer.—Capt. Chambers, 138, Knights Hill, West Norwood. 'Phone: Holborn 4941. [6845

SPECIAL Sporting 3½h.p. Twin Sunbeam, delivered last year, cost £175, rock bottom, £90; torpedo sidecar, £15; A.B.C. cheaper machine part.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [5621

3h.p. 1921 Sunbeam Combination, Magdyno lighting, spare wheel, speedometer, watch, windscreen, etc., whole combination in lovely condition; first cheque £130 secures.—Walbro, Lynn Rd., Ely, Cambs. [5996

SUNBEAM 3½h.p. 1919 and Sunbeam sidecar, mechanical lubrication, electric and gas lighting, overhauled by Sunbeams Dec., 1921, perfect mechanical order; £85.—Hall, 91, St. Peters St., St. Albans. [6100

1920 3½h.p. Sunbeam Combination, fully equipped with Lucas accumulator, lighting set, bulb horn, Smith speedometer, mirror, Blumells screen, in grand condition; £115.—Madgwicks, Knowsley St., Bolton. [5689

SUNBEAM Combination 3½h.p., 1920, complete with lamps, screen, horn, speed indicator, Tan-Sad, accessories, perfect condition; bargain, £110; by appointment.—Maynard, 55, Elizabeth St., Blackpool. [6269

1922 3½h.p. T.T. Sunbeam, condition perfect, Cowey, Binks mouse trap, Amac, 4 sprockets, Miller lighting set, other spares, and kit complete; winner of many medals, including three firsts at Lipstone Drive at 85 m.p.h.; only used in four trials; cost £160; offers; buying car.—W. Martin, "Golden Lion," Market St., Kettering. [6607

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WHEN it comes to buying a machine on the easy payment system, it will be found that The Service Co.'s methods are the fairest and most generous of all.

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WE HAVE IN STOCK for immediate delivery: 1922 ARIEL, A.J.S., B.S.A., ENFIELD, ZENITH, TRIUMPH (all models), O.K. JUNIOR (all models), QUADRANT, NEW IMPERIAL, MATCHLESS, RALEIGH, McKENZIE, and, oh! almost every well-known make.

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SEND FOR OUR CURRENT LIST of second-hand and merely shop-soiled machines and combinations.

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LONDON ———— W.C. 1

R.H.

MOTOR CYCLES FOR SALE.

Sunbeam.

1921 Model 8h.p. Sunbeam Combination, tax, insurance, 1923, Magdyno spare wheel, every accessory, mileage 5,126; trial given; perfect condition; owner giving up.—Gold, 244, Vauxhall Bridge Rd., S.W.1. [6405

FOR Sale, 1922 T.T. Sporting Model Sunbeam, run about 3,000 miles; automatic lubrication, electric lighting, Bonniksen speedometer; nearest offer to £115 secures.—Bloomer, West St. Mary's Gate, Grimsby. [6398

1921 Sunbeam 3½h.p., as new, not run 300 miles, Lucas Magdyno and lamps, electric horn, speedometer, licensed to Dec.; cost £180; first deposit on £110 secures, subject to inspection.—Box 3071, c/o *The Motor Cycle*. [6111

SUNBEAM 2¾h.p., semi T.T., 2-speed, hand clutch, kick-start, enclosed chain drive, enamel and mechanical condition excellent, Lucas lamps, horn, etc., Jones speedometer; £40, no offers.—7, Birkbeck Mansions, Hornsey, N.8. [5668

SUNBEAM 8h.p. Combination 1919-20, low mileage and new condition throughout, fully equipped, including spare wheel, hood, Tan-Sad, speedometer, lamps, horn, etc., tax paid, insurance to September; £150 or thereabouts.—Woodall, 20, Belgrave Avenue, Victoria Park, Manchester. [6045

SUNBEAM 3½h.p. semi-sports, Dec., 1920, Magdyno lighting, electric horn, Brooks cantilever saddle, speedometer, Binks, Tan-Sad, tyres good, low mileage, guaranteed perfect mechanical condition; £80, or nearest offer; well worth investigating, inspection by appointment.—Brown, 99, Edridge Rd., Croydon. [6061

T.D.C.

1920 2¾h.p. T.D.C., perfect running order; nearest £25.—Tom Wood, Micklefield, Leeds. [5704

T.D.C. De Luxe, 2¼h.p., 2-stroke, 2-speed gear; £25, including accessories.—Eagles and Co., 275, High St., Acton, London, W. [5928

Triumph.

PREMIER Motor Co. for 1922 Triumphs.

IMMEDIATE delivery of type H, 4h.p., 3-speed, £105; type S.D., chain drive, £115; type R., 3½h.p., overhead valve, £120; type L.W., lightweight, £65; sidecars from £20 to £50; easy payments, 4 per cent. extra; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0867

1919 Triumph Combination, taxed, lamps, in new condition; £75.

1917 Model 4h.p. Countershaft Triumph, in excellent condition; £45.

1918 4h.p. Triumph Countershaft Combination, excellent outfit; £75.—Rhind and Co., Stone Place, Ruxholme. [6074

TRIUMPH, 1920, in absolutely new condition; £60.—91A, Oakfield Rd., Penge. [5916

1918 Countershaft Triumph, perfect; £47/10.—24, Balliol Rd., North Kensington. [6436

1919 Countershaft Triumph Combination; £55.—24, Balliol Rd., North Kensington. [6437

TRIUMPH, 1919, fully equipped, taxed, insured; 62 gns.—K.J. Motors, Bromley. [5901

1910 3½h.p. Triumph, in running order; first £14 secures.—Nixon, Kirkby Stephen. [6085

1922 Baby Triumph, all accessories, perfect; £45.—Jarvis, High St., Wheatley, Oxford. [6374

TRIUMPH-RICARDO, new 1922 model in stock, no waiting; exchanges.—Moss, Wem. [6372

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0863

1912 Triumph 3½h.p., single speed, sound order; £16.—Box 3085, c/o *The Motor Cycle*. [6778

TRIUMPH Countershaft, 1916-17, ten-hole condition; £48.—31, Mansfield Rd., Ilford. [6512

TRIUMPH 1921 Model H., with new 1922 special engine; £70.—25, Croydon Rd., Penge. [5915

1920 Triumph Combination, really excellent condition; £75.—53, East Av., East Ham. [6245

1910 Triumph-engined Bike, good tyres, very reliable; gift, £10.—26B, Ingleton St., Brixton. [6480

1919 Triumph and Sidecar, condition as new, tax paid; £78.—88, Bramptoe Rd., St. Albans. [6539

1921 All-chain Triumph, all accessories; £75.—Half-way Garage, Windsor Rd., Maidenhead. [5964

3½h.p. Triumph, N.S.U. 2-speed; exchange 2-speed 4-cyl. F.N.; sell £27.—11, Vorley Rd., Highgate. [6297

GENUINE 1918 countershaft Triumph, very fine condition, perfect £55.—9, Church Rd., Harlesden. [5554

TRIUMPH, new 4h.p. 3-speed countershaft model, kick-starter, unused; £98, bargain.—Moss, Wem. [6871

TRIUMPH 1912 2-speed, recently overhauled; £25—H. White, Buckman's Green, Smarden, Kent. [6052

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue of Motor Cycle advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Combination, electric lamps, etc., perfect; £60; would separate.—120, Sutherland Rd., Croydon. [5585

TRIUMPH Combination 1918, fully equipped; £47/10.—100, Elgin Crescent, North Kensington, W.10. [6483

1921 Triumph Combination, as new, with special Canoelet sidecar; £97/10.—Knys, 8, Bond St., Ealing. [6620

1915 4h.p. Triumph, Bosch, new tyres, all on, excellent condition; £50.—Squelch, Stoke Rd., Slough. [5886

TRIUMPH 1911, fitted 2-speed wheel, good order; £25.—Alf. Holland, Hearsall Lane Corner, Coventry. [6648

TRIUMPH 1919 4h.p. countershaft, taxed, insured, fast; £65; privately owned.—K.J. Motors, Bromley. [6182

TRIUMPH Combination, 1918, equipped, taxed, insured, perfect condition; £70.—42, Sunny Gardens, Hendon. [6037

TRIUMPH Coachbuilt Combination, renovated by makers 1921, perfect; 56 gns.—120, Sutherland Rd., Croydon. [6653

1920 Triumph, new Dunhill, equipped, spares, going abroad; £72/10.—44, Canterbury Grove, West Norwood. [6204

TRIUMPH Countershaft, nearly new, incomplete; £32.—4, Salisbury Terrace, Mytchett, Farnborough, Hants. [6541

BABY Triumph, tip-top condition, new, lamps, etc., fully registered; £37/10.—W. Wall, Codsall, Wolverhampton. [6205

3½h.p. Triumph Combination, 3-speed, 1913; £40; take lightweight and cash.—12, Trotyl Ter., Plumstead, S.E. [6194

TRIUMPH 1919 4½h.p., 3-speed, kick-start, hand clutch, Gloria sidecar; £100.—Maudes', Walsall Garage, Walsall. [6755

1922 Triumph Combination, only done 50 miles, Coupette sidecar, tax paid, guaranteed; £120; exchanges.—Below.

1920 Triumph 4h.p. countershaft, lamps, aluminium discs, long plated exhaust, exceptionally smart; £68/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6881

1920 Triumph Combination, full equipment, equal new; £69/10.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [6809

TRIUMPH 4h.p. Model H, late 1919, top gear change, new condition; bargain £58.—Pike, 102A, Church St., Chelsea. [6232

TRIUMPH, new condition, bought July, 1921, done 700 miles, lamps, etc.; £75, nearest offer.—9, Peascod St., Windsor. [6510

1922 4-valve Triumph and Whitley Sports Sidecar, all complete, almost new; £135.—23, King Richard St., Coventry. [7025

NEW Triumph, model H, shop-soiled only; special price, £95.—D. and S. Autocar Co., 33, The Parade, Golders Green. [6393

1922 Triumph, Model H, just delivered, tax paid, lamps, owner ordered car; offers wanted.—Cutts, Campden, Glos. [6412

1919 Triumph 4h.p., 3-speed, condition like new, fully equipped, guaranteed; £56.—406, Garratt Lane, Earlsfield, S.W. [6320

TRIUMPH Combination 1920, fully equipped; £67/10.—Skinner, c/o Hillier, 216, Portobello Rd., North Kensington. [6287

3½h.p. Triumph, modernised, Bosch magneto, electric lights, overhaul; £28, or near offer.—44, Lansdowne Rd., Dalston. [6807

TRIUMPH Combination, 1913, N.S.U. 2-speed, clutch, new tyres; £30.—12, Cavendish Rd., Higham's Park, Chingford. [6165

£29.—Triumph Coachbuilt Combination, 1913, 3-speed, clutch, pedal starter, tax, perfect.—239, Goldhawk Rd., Shepherd's Bush. [6844

4h.p. Triumph 1915, T.T. model, re-enamelled, nearly new tyres, C.A.V., excellent condition; £30.—P. Willcocks, Datchet, Bucks. [5522

1920 4h.p. Triumph, engine No. 72138, condition as new, fully equipped; £62/10.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [6594

TRIUMPH 3½h.p. 3-speed, countershaft, latest type tank and frame, lamps, horn, speedometer, tools, tax paid, perfect; £45.—Below.

1918 Triumph 4h.p., 3-speed, electric light, horn, speedometer, disc, tax paid; £59.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [6976

TRIUMPH renovated, 1916, Grindlay combination, fine condition, fully equipped; £70.—Oakford, Jordan Well Chambers, Coventry. [6400

TRIUMPH 1912, clutch model, Philipson Canoelet sidecar screen, taxed year; £30.—Garaged, 65, High St., Hounslow. 'Phone: 366. [6555

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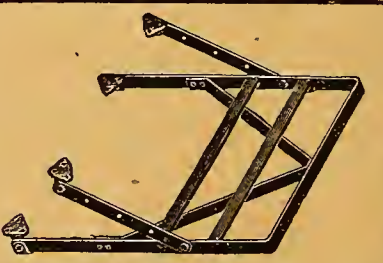
Genuine COWEY SPEEDOMETERS

(NON-TRIP.)

Another Large Purchase.
Brand New. Fully Guaranteed By COWEYS.

Carr. paid 55/-

Send make of machine and size of tyre.



Size, 18in. wide × 22 in. long. Will fit any Sidecar Body. Black finish **10/6**

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Sidecar fittings in endless variety.

180, 181, 182, Railway Approach

Est. 1901. **SHEPHERD'S BUSH, W. 12.** 'Phone: Hammersmith 2436.

MOTOR CYCLES FOR SALE.

Triumph.

SEVERAL second-hand Triumphs always in stock Triumph Service Agents for Sussex.—Caffyn Ltd., 56 Terminus Rd., Eastbourne. [11

TRIUMPH Combination, 1918, renovated 1922, perfect order, tax and insurance paid; £65.—Schlamp, 62, Lordship Park, N.16. [65

£30.—Triumph Combination, 1913, 3½h.p., clutch splendid condition, fully equipped, licensed; trial.—32, Lanfranc Rd., Worthing. [62

ROBERTSON'S Motors, Ltd.—1922 chain dri Triumph combination, tax paid, all accessorie £148.—157b, Gt. Portland St., W.1. [59

TRIUMPH Combination, 1914, good condition, ri away; must be sold this week; taken for deb £29.—8, Finden Rd., Shepherd's Bush. [60

TRIUMPH Chain-drive Combination in stock; £15 Can we help you to this beautiful outfit? Wri us.—Buntings Motor Exchange, Wealdstone. [58

CROYDON Agents Triumphs, all new models a large range of second-hand in stock.—Moor Presto Motor Works, North End, Croydon. [08

TRIUMPH Combination, 1918, fully equippe licensed until December, condition very good, n trial given.—Green, 202, Trinity Rd., S.W.17. [55

1922 Triumph, all-chain, and sidecar, electric ligh ing, mileage only 800; £110.—Hillier (si bell), 9, Wallingford Av., North Kensington. [64

TRIUMPH 1921 4h.p., chain belt, Montgomery sid car, fully licensed, lamps, horn, windscree splendid condition; £80.—Motor Mart, Yeovil. [57

GODFREY'S, Ltd.—Triumph 1919 4h.p., type Millford Empress sidecar, condition excellen guaranteed; £84.—208, Gt. Portland St., W.1. [69

TRIUMPH 1919 4h.p., 3 speeds, K.S., lamps, horn tools, tax, perfect throughout, any trial after o'clock; £56.—Fox, 37, Clonmel Rd., S.W.6. [64

£48.—Triumph 4h.p. 1918 countershaft, just ove hauled, renovated, perfect order; good sidecar suit 3½h.p.; £5.—406, York Rd., Wandsworth. [62

GODFREY'S, Ltd.—Triumph 1919 4h.p. type dynamo lighting, Middleton touring sidecar licence paid; £96.—208, Gt. Portland St., W.1. [69

TRIUMPH 1917-18 4h.p., 3 speeds, clutch, kick starter, new tyres, fully equipped, splendid con dition; £48; exchanges.—63, Solon Rd., Brixton. [64

1918 4h.p. Countershaft Triumph, condition ar appearance as new; £55; ride 60 miles to pu chaser.—2, Fortune Gate Rd., Harlesden, N.W.10. [64

SHEFFIELD Agent for Triumphs; all models stock for immediate delivery.—J. A. Stace Triumph Service Depot, 12, Ecclesall Rd., Sheffield. [08

ALL Triumph models always in stock; also full rang of Triumph Spares. Triumph Service Agents f Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [11

TRIUMPH 4h.p. Combination, 3 speeds, clutch renovated as new, fully equipped, tax paid; £3 —113, High St., Clapham. 'Phone: Latchmere 429 [84

TRIUMPH Late 1918 4h.p., 3 speeds, clutch, kick starter, thoroughly overhauled, new conditio throughout; £55; exchanges.—63, Solon Rd., Brixto [64

£55.—Countershaft Triumph, 4h.p., engine N 58653, renovated, also others; exchanges.—Smith' 86, Chalk Farm Rd (opposite Chalk Farm Tube Sta [09

TRIUMPH, clutch model, also sidecar and two bodi for same, passenger, tradesman's box, wood separate, car wanted.—59, High St., Hampton Hill. [56

£55.—1918 Countershaft Triumph, all accessorie new Dunlop rear, tax paid, perfect order throughout; bargain.—1, Norwood Rd., Herne Hill, S.E.24. [69

1922 Triumph, 4h.p., model H, shop-soiled only £97/10.—Rey, 173, Great Portland St. 'Phone Langham 1267. Open till 7.30; 4 o'clock Saturday [69

TRIUMPH.—Immediate delivery of all models liberal exchanges or deferred payments if desire —Edwards, 50, Harrington Rd., South Kensington. [69

1919 Triumph, latest gear change, equipped, taxe perfect condition, guaranteed, £54; with sid car, £62.—61, Upper Richmond Rd., East Putney. [68

GODFREY'S, Ltd.—Triumph 1917 4h.p., type H with sporting sidecar and windscreen, complete equipped, guaranteed; £74.—208, Gt. Portland St W.1. [69

TRIUMPH 1921, new December, 500 miles, owne going abroad, tools, lamps, etc., splendid condition £85.—R. Daniell, R.A. Mess, Lille Barracks, Alde shot. [57

TRIUMPH Specialists.—Wanted, your present mode cycle in part exchange for any new model from stock. No waiting. Distance no object. Best price allowed for second-hand machines. Deferred pa ments. (See column advertisement).—Bamber's, Eastbank St., Southport. 'Phone: 607. [51

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph

TRIUMPH 1921 countershaft, excellent condition, mechanically perfect, new tyres, speedometer, all accessories, Terry saddle; £69.—A. M., 31, Lessing St., S.E.23. [5600

TRIUMPH 3½h.p. Clutch Model, pedal start, equipped, fast, reliable, smart, taxed; £30, or nearest; not Sundays.—Post Office, Burgh Heath, Surrey. [6179

TRIUMPH 1918, enamelled black and gold, polished discs, copper exhaust, splendid condition; £55, or T.T. Rover and cash.—Siney, Hurstbourne Tarrant, Andover. [5588

TRIUMPH 4h.p. late 1920, in splendid condition, only ridden by owner since new; sacrifice £70.—Seen by appointment, Burbridge, Weare, Axbridge, Somerset. [6669

4h.p. Triumph, 3-speed, countershaft, renovated maker's, equal new, 1920, Millford spring wheel sidecar, excellent condition; about £60.—34, Friar's Rd., Coventry. [5728

TRIUMPH 3-speed Countershaft; £48. Exceptional condition, enamel, tyres, belt, etc., new, tax 1923, lamps.—88, Gloucester Place Mews, Portman Sq., W.1. [6128

TRIUMPH (1916) countershaft (1918) Combination, excellent condition, screen, grid, speedometer, tax; £55.—Berrylands Motor Co., Berrylands Rd., Surbiton. [6187

TRIUMPH, late countershaft, latest gear change, renovated, equipped, taxed, guaranteed, £48/10; with good sidecar, £56/10.—51, Upper Richmond Rd., East Putney. [6826

1918 Triumph Combination, 3-speed, K.S., Bosch magneto, all in excellent condition; call before 9 a.m. or by appointment; £58.—96, Hornsey Lane, Highgate, N.6. [5730

1920 Triumph, 3-speed, countershaft, speedometer, lamps, tools, tax paid, only ridden a few miles solo, unscratched; £70.—A. S., 15, Bramshott Av., Charlton, S.E.7. [6159

1921 Triumph 4h.p. Combination, mileage 800, perfect condition; sacrifice £90 for quick sale; owner going away; any trial.—Richmond, 82, Milton St., Fleetwood. [6353

TRIUMPH, 1922 Model H and C.B. sidecar, completely equipped, and very small mileage; cost £142/10, accept £112/10.—The Layton Garages, 30, Holywell St., Oxford. [6887

1922 Ricardo-Triumph, also 4h.p., all chain, in stock for immediate delivery; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [6901

1921 Triumph, with Sandum lightweight sidecar (new April, 1922), electric and acetylene lamps, tools; £97/10, or quick offer.—A. W. Frazer, 7, Mavorswell St., Durham. [6366

28 GNS.—Exchange 1913 Trimph. Gradua gear coachbuilt sidecar, lamps, windscreen, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [5536

TRIUMPH 1914, 3-speed, good condition, fully equipped, tax paid, 27 gns.; also similar combination; 30 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6683

1919 Trimph and Mills-Fulford sidecar, windscreen, P. and H. head lamp, Lucas horn, Cowey speedometer, new tyres and chain; any trial; £80.—27, Markham Crescent, York. [6323

3½h.p. Triumph Motor Cycle, believed 1913, cut down frame, footboards, 3½ years stored, 2-speed countershaft gear, splendid engine; £27, no offers.—2, Lucius St., Torquay. [5946

TRIUMPH.—Immediate delivery of all 1922 models. Sidecars to suit from £20. Write for catalogue and full particulars of easy payments.—P. J. Evans, John Bright St., Birmingham. [6866

1919 late Triumph Combination, Millford sidecar, screen, full equipment, Tan-Sad, tools, spares, tax paid, new condition; £67, exchange; after 5.—Heath, 168, Wellington Rd. South, Hounslow. [5661

TRIUMPH 4h.p., new April, 1921, Cancelet sidecar, Sports model, used very little, not used since October; selling owing death owner; 90 gns., or best offer; bargain.—Executor, Penrhyn, Enfield. [6082

1920 Triumph Combination, exceptional touring sidecar, Lucas lamps, horn, B.S.M. discs, legshields, petrol carrier, mileage 4,500, insurance November, 1922; £85; after 6 p.m.—54, Steele Rd., Leytonstone. [5606

59 GNS.—Triumph 1919-20 Coachbuilt Combination (not W.D.), 3-speed, clutch, K.S., guaranteed mechanically perfect, fully equipped; any trial; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [6409

TRIUMPH 4h.p., Model H, Watsonian Monarch sidecar, engine No. 72670, new Easter, 1921, Stewart speedometer, Lucas electric (accumulator) lighting, Easting screen, Tan-Sad, mileage 2,700, full of spares, tools, solo sprocket, perfect condition, practically indistinguishable from new, fully licensed, insured; £110.—63, Norrey'a Avenue, Oxford. [6573

LOOK SMART!

By wearing our

"ALL WEATHER" Waterproof Motor Cyclists' CLOTHING.

Fig. 1.

MOTOR CYCLE SUIT (Fig. 1)

With Plaited Leather Belt.

SPECIFICATION

MADE from hard wearing double texture material with an interlining of Rubber.

Double Breasted Jacket, with all-round plaited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof. Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the trousers to be pulled off in a moment.

SUIT COMPLETE

35/-

Jacket only 25/-

NO EXTRA CHARGE FOR CARRIAGE

OUR ILLUSTRATED LIST AND PATTERN BUNCH OF CLOTHS, TOGETHER WITH SELF-MEASUREMENT FORM, WILL BE SENT POST FREE AND WITHOUT ANY OBLIGATION UPON RECEIPT OF YOUR NAME AND ADDRESS.

Waterproof Trench Coat 25/-

Fig. 2.

(Fig. 2.) Fawn material, rubber lined, wind cuffs, guaranteed waterproof.

SEAT-LESS Trousers Fawn double texture material, rubber interlined, wind gusset & clasp fasteners. All sizes. Guaranteed Waterproof.

18/- per pair.

WATERPROOF OVERALLS.

Double texture material, clasp fasteners, perfectly waterproof.

per **12/6** pair

THESE GARMENTS ARE NEWLY MADE FROM FRESHLY PROOFED MATERIAL BY EXPERIENCED WORKMEN AND NOT HALF-PERISHED CLEARANCE LINES OR W.D SURPLUS

If you cannot call, send money with breast measurement and height.

POST YOUR ORDER EARLY

Satisfaction guaranteed or money refunded if garments are returned to us within 7 days

CARRIAGE PAID ON ALL ORDERS.

Actual Manufacturers:

Martin Waterproof Co.,

208, Oldham Rd., New Cross, Manchester

MOTOR CYCLES FOR SALE.

Triumph.

SPECIAL Bargain.—New 1922 Type H 4h.p. 3-speed Triumph, shop-soiled; reduced to £95; easy payments 4 per cent. extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [5510

TRIUMPH 1919 4h.p., speedometer, lamps, etc., extra comfortable leather upholstered sidecar, new 1921, splendid order, tax and insurance paid; £85, or near offer.—Sweet, 77, King's Rd., Leytonstone, E.11. [6157

1918 Triumph and Sidecar, countershaft, 3-speed, clutch, kick-starter, original enamel, plate, taxed, accessories, beautiful condition; after 8 Saturday or Sunday; £60.—Parker, 65, Clifton Avenue, Wembley Hill. [6499

TRIUMPH 1918 countershaft, with new Watsonian R34 sidecar, engine reground, new piston, rebushed, many spares, acetylene and electric, tyres new, insurance; £85.—45, St. Leonards Rd., East Sheen, S.W.14. [6630

1921 4h.p. Triumph, Model H, with Millford sidecar, hood, screen, electric lamp, Tan-Sad, variable jet, splendid condition throughout, any trial; £99; or exchange sports Sunbeam.—Clean, 52, Claremont Rd., Surbiton. [6285

EXCEPTIONAL end-of-season bargain.—Brand new 4h.p. countershaft Triumph, latest type, shop soiled, but unused; £95.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [7004

1921 W.D.B. coachbuilt Combination (3,000 miles), fully equipped, rear drive, speedometer, all accessories and spares, new Dunlop and Hutchinson covers; trial; £75, or near offer.—Write F. W. R., 4, Juer St., Battersea Park, S.W. [6506

PHOTOGRAPHS Free.—Triumph 3½h.p., 3-speed Sturmey countershaft, 42 gns.; another ditto, 4h.p., 48 gns.; 1922 Ricardo-Triumph, winner 30 events this season, 115 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [6952

TRIUMPH Combination 1918 4h.p., 3-speed, clutch, kick-start, Smith's speedometer, under 2,000 miles, lamps, horn, tools, etc., unscratched, and in perfect mechanical condition, as new; £65, after 7.—328, Hither Green Lane, Lewisham, S.E. [6132

OFFICIAL Croydon Agents for Triumph.—3½h.p. o.h.v. 1922 Triumph, tax paid, all lamps, slightly soiled, 75 m.p.h. guaranteed, bargain, £115; Type H., £105; S.D., £115. Spare part stockist and repairers of Triumphs.—The Winstan-Henney Motor Co., 63, South End, Croydon. 'Phone: 2431. [0895

4h.p. 1919 Triumph, 3 speeds, clutch and kick-start, £75; 4h.p. 1916 Triumph combination, £60; 4h.p. Triumph and sidecar, 1918 model, Sturmey-Archer countershaft 3-speed gear, etc., £65; also 4h.p. 1914 3-speed gear model, with clutch and kick-start, £45; easy terms.—Wauchope's, 9, Shoe Lane, London. [6725

TRIUMPH, T.T. bars, complete levers, £1; Albion 2-speed clutch, complete, £5; Matchless sporting underslung torpedo body, sprung wheel, £5; Douglas chassis, complete wheel, tyre, 50/-; coachbuilt sidecar chassis wheel tyre, 50/-; frame, wheels, tyres, spring forks, saddle, bars, suit 3½h.p., 50/-.—Perrin, 6, Etna Rd., St. Albans. [6571

1919 Triumph Countershaft Sporting Combination, model H, Canoelet K4 sidecar, torpedo windscreen, fully equipped, many spares, fast, splendid condition, 10 months' insurance, expert inspection, any trial; exceptional opportunity to purchase genuine bargain, £70, or nearest offer.—F. C., Eames, 155, Kensington High St., London. [5967

TRIUMPHS.—Buy from official appointed agents. New 1922 4h.p. combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D., all-chain, £115; Model H., chain-cum-belt, £105; Junior, 2¼h.p., £65; also several second-hand Triumphs from £40; second-hand machines taken in exchange, remainder on easy terms. Value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [6727

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7661

COMPLETE stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Agents since 1906.—All Trimph spares at new reduced prices from stock; principal Birmingham agents and service depot.—Premier Motor Co., Aston Rd., Birmingham. [0798

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

MOTOR CYCLES FOR SALE.

Triumph.

Spare Parts:

SEND to the Rhosha Motor Garage, South St., Romford, for Triumph and Sturmey-Archer spares. No disappointing delays; every part in stock. Repairs by skilled mechanics. We are official service agents.—Tel.: Romford 584. [7766

Trump.

1922 Trump-Jap 2¾h.p., horn, lamps, speedometer, licensed and insured December, good condition; cost £70; accept £45.—68, Riverway, N.13. [6812

Unibus.

UNIBUS, nearly new, £20; clutch, 2 speeds, spring frame, handle-start, electric lighting, excellent condition.—68, Gloucester Rd., Regent's Park. [5703

Velocette.

PREMIER Motor Co., for 1922 Velocettes.

IMMEDIATE delivery of Model E.2 2-speed, £65; E.3 3-speed, £72/10; E.L.2 lady's open frame, £68; all with clutch and kick-starter; easy payments, 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4609

1921 Velocette, in perfect condition, all accessories; owner bought combination; £47.—Nixon, Kirkby Stephen. [6084

VELOCETTE 1921, 2-speed model, completely equipped, lamps, horn, legshields, and tax paid, equal to new; £48.—The Layton Garages, 30, Holywell St., Oxford. [6882

1921 2¼h.p. Velocette, 2-speed gear, new, perfect, unscratched, mileage 70, Cowey speedometer, Lucas lamp set, horn, mirror, legshields, etc., tax and insurance paid; £65.—3, Rosemont Parade, North Finchley, N.12. [6149

VELOCETTE, late 1921, 2½h.p., 2-speed, chain-drive, Lucas lighting set, Cowey speedometer, horn, aluminium footboards, copper exhaust, appearance and mechanical condition open to expert examination, as brand new, mileage 2,000, tax and insurance paid; 40 gns.—284, St. James's Rd., Old Kent Rd., S.E.1. [5756

Wanderer.

WANDERER 3½h.p., 3-speed, countershaft; £28—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [6018

£15.—Wanderer 2⅝h.p., Bosch, B.B., splendid running order, 3-speed; cycle part.—Skinner, 29, Maldon Crescent, Chalk Farm. [6133

Williamson.

£45.—Williamson Combination 8-10h.p., water-cooled Douglas engine, 2-speed, clutch, handle starter, perfect running order, any trial.—406, York Rd., Wandsworth. [6263

Wolf.

3h.p. Wolf, 1915; a gift, £17; cash wanted.—Fairhurst, Back Mesnes St., Wigan. [5791

WOLF, 3½h.p. late model, 3-speed countershaft, kick-starter, splendid order; £49; sidecar for ditto, £6; bargain.—Moss, Wem. [6873

Wooler.

WOOLER 1920 2¾h.p., fully equipped, little used, splendid order; £37/10.—Pringle, Rozel, Hendon Av., Finchley. [5783

WOOLER 2¾h.p., 1920, smart mount, stored long period, good order, tyres almost new, lamps, horn, tools, speedometer; £40, great bargain.—Telford Garage, 47, Streatham Hill, S.W.2. [6107

Zenith.

H.
F.
EDWARDS and Co.,

50, Harrington Rd., South Kensington.

HAVE a few brand new 5-6h.p. Zenith countershaft models, clutch, kick-start, at 84 gns.; listed at £118.

1922 3½h.p. Zenith-Bradshaw, belt drive, brand new, shop-soiled; 75 gns.; listed at £113.

EXCHANGES or Deferred. [4047

5-6h.p. 1921 Zenith Sporting Model; £55.—Wanchope's, 9, Shoe Lane, London. [6732

8h.p. Zenith Countershaft, clutch, kick-start; £50 for quick sale.—Smith, 39, Wood Av., Folkestone. [5741

JUST Delivered, red, black and gold Zenith-Bradshaw, all chain; what offers?—Unity Motors, Egham. [6012

£38, bargain.—6h.p. Sports Zenith, splendid condition, lamps, horn, tax paid.—1A, Hearne Rd., Kew Bridge. [6585

F.O.C.H. for Zeniths; new and second-hand in stock at tempting prices.—5, Heath St., Hampstead (near Tube). [2719

In Busy and Populous South Wales

The South Wales Branch

of

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED,

Head Office: 77, CHEAPSIDE, LONDON, E.C.2

is situated at

15, High Street, CARDIFF

Telephone: CARDIFF 4156.

—a convenient centre for the whole District.

Applications for "The Motor Cycle" and "The Autocar" policies are invited from South Wales Agents.

These should be addressed to the Cardiff Branch, the Manager of which will be pleased to give any information that may be desired.

Every assistance is rendered to agents in securing business, and the specialised organisation of the Company is placed at their disposal for the settlement of claims or difficulties.

N.B.—"The Motor Cycle" policy is authorised and approved by "The Motor Cycle," with which The Autocar Fire & Accident Insurance Company is closely associated. The conditions of the policy are complete and comprehensive, and the issuing Company enjoys a high reputation for generous and prompt settlement of claims, and for efficient service to policy-holders at all times.

WRITE TO-DAY.

MOTOR CYCLES FOR SALE.

Zenith.

AN Opportunity for Speedmen!

ALLAN GRUZELIER Offers his Special Spo Bradshaw for sale at £127; winner of numerc firsts, and capable of a speed of 80 m.p.h.; in t pink of condition and as new throughout.

ANOTHER Similarly Equipped, and highly tun and costing the owner nearly £200, for £110

ALL-CHAIN Eight in Stock for immediate delive fitted J.A.P. Sports engine; £130.

BRAND New Gradua Gear Model Bradshaws 75 gns. to clear; a few left; brand new 5 h countershaft models at 84 gns. to clear.

WE are the Specialists; come to us for service Allan Gruzelier, Ulster Chambers, 168, Rege St., W. [61

ZENITH 6h.p. Sports (late), fully equipped; 50 gn exchange Douglas and cash.—101, Broxholm R West Norwood. [61

1921 Zenith 8h.p. sports model and sporting s sidecar, mileage 300; accept £85.—Box 3090, *The Motor Cycle.* [67

ROBERTSON'S Motors, Ltd. — 1922 shop-soi Zenith-Bradshaw, Gradua gear; £100.—157b, Portland St., W.1. [59

ZENITH, 1922, all-chain sports combination, 8h taxed, equipped, run 50 miles only; £145.— Exhibition Rd., S.W.7. [58

1919 Zenith-A.B.C. 3h.p. Sports, fully equipp tax paid, fast and perfect; £29.—113, High S Clapham. 'Phone: Latchmere 4290. [64

ZENITH-BRADSHAW New Unused 1922 Mo Gradua gear, slightly soiled; 75 gns.—Eagles a Co., 275, High St., Acton, London, W. [59

NEARLY New 1921 Zenith 5-6h.p. Sports, Grad gear, lamps, horn, tools, taxed 1922; real b gain. £65.—391, King St., Hammersmith. [64

ZENITH-GRADUA 6-h.p. J.A.P., kick-starter, f order; £35, bargain; 1922 sidecar if required Taylor, 637, Seven Sisters Rd., Tottenham. [61

ZENITH.—Official appointed agents. New 19 models on easy terms; list on application; changes.—Wanchope's, 9, Shoe Lane, London. [67

ZENITH chain-drive sports in stock.—Few 5h countershaft models, new, guaranteed; £8 R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [58

1919 Zenith, 6h.p., sidecar, and all accessories; £ —Rey, 173, Great Portland St. 'Phone: La ham 1257. Open till 7.30; 4 o'clock Saturdays. [69

1914 3½h.p. Zenith and sidecar, all accessories, n tyres and belt, in splendid condition; £33 Moffat, 14, Church Rd., Wimbledon. Tel.: 227 [70

ZENITH 8h.p. J.A.P. Sports Model, Gradua g Sensspray carburetter, 650×65 tyres, shop-so only; £80.—Maudes', 100, Great Portland St., Lond [6

ZENITH, 1915-16 4h.p. single, Gradua gear, perf running order; £40; seen by appointment.— J. Plummer, 211, Casewick Rd., West Norwood, S [59

ZENITH-BRADSHAW 1922 and Swan Sport Sidecar, completely equipped and equal to ne £115.—The Layton Garages, 30, Holywell St., ford. [68

1914 Zenith Sports, 5-6h.p., complete with la sets, thoroughly overhauled, fast machine; £ —Wargate Motor Engineering Co., Wellingborough R Rusbden. [58

ZENITH-BRADSHAW, 3-speed, all-chain, 19 brand new hut shop-soiled, cannot repeat; £1 list; my price £100.—Bradbury, 224, London R Sheffield. [62

SHOP-SOILED Zenith-Bradshaw, 3½h.p., £90; sh soiled 5-6h.p. countershaft Zenith, 1922 mo £100.—Motorists' Advisory Agency, Ltd., 89, Wigm St., W.1. [58

1921 Zenith Combination, clutch model, new c dition; £130, or exchange 2-seater car.—Fletch 2, Criterion Bldgs., Thames Ditton. 'Phone: 15 Kingston. [62

1920 5h.p. Zenith Combination, fully equipped s licensed, speedometer, Tan-Sad, Easting wi screen, owner bought car; £70.—Aylmer, Fiacha King's Lynn. [65

8h.p. Zenith Countershaft Combination, condit almost as new, Cameo windscreen, Dunlop M nums, for quick sale; £65.—Tyler, 118, Temple R Kensal Rise. [60

ZENITH, 8h.p. J.A.P., Gradua gear, clutch, ki start, Amac carburetter, Millford-Zenith side shop-soiled only; £125.—Maudes', 100, Gt. Portl St., London. [6

ZENITH 8h.p. Combination, winner gold me 1,000 miles trial, in perfect condition, run 6,(miles only, special Millford sidecar, all accesso lamps, etc., Cowey horn and speedometer, East windscreen, late 1920-1, tax paid and fully insu price £100.—Apply 5, Hook Rd., Surbiton.— [5

a33 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Zenith.

39 GNS, exchange.—1916 sports Zenith, 8h.p. Gradua gear, fully equipped, fast, smart; any examination.—Seabridge, Hansler Rd., E. Dulwich. Sydenham 2452. [6240

1919-20 8h.p. Zenith Countershaft, kick-start, speedometer, lamps, licensed, in exceptionally fine condition; £53.—37, Arlington Rd., Surbiton. Phone: Kingston 1274. [6251

SUPERB 1921 8h.p. Zenith, lapped Bronklands 82 m.p.h., perfect balance, racing and touring cams. Spares, tax paid, lamps, horn; £80, or offer.—161, Castelnau, Barnes. Hammersmith 1177. [5812

NEW 1921 Zeniths at Bargain Prices.—8h.p. sports, Model G, £100; 8h.p., clutch Model H, £110; 8h.p., clutch Model D, £88.—Storer and Tait, 20, Burdon St., Bond St., W.1. Mayfair 625. [5550

PHOTOGRAPH Free.—1922 Zenith-Bradshaw, run 500 miles only and indistinguishable from new; 39 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6947

1922 5-6h.p. Zenith-Gradua, Sports, guaranteed perfect, enamel, plating unscratched, fully equipped, tax paid, any trial; £75, or exchange lightweight and sidecar.—Bythesea Villa, Newtown, Trowbridge, Wilts. [6455

1920 8h.p. Countershaft Zenith Combination, bought 1921, fully equipped, registered, spares, new tyres, Montgomery sidecar and windscreen, beautiful outfit; £82; after 5 p.m.—4, Elm Gardens, Hammersmith. [6813

ZENITH 8-10h.p., 90-bore o.h.v., August, 1921, mileage 2,400, speedometer, Klaxon, spares, tools, new back tyre, Challenger tubes, racing Amac, over 60 m.p.h., everything as new; £90.—C. R. Catesby, Highfield, Croxley Green, Herts. [5625

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, New Bond St., Ealing. [5078

Ladies' Motor Cycles.

BRAND new lady's motor cycle frame, complete with guards, tanks, etc., cost £12/10; accept £9/19/6.—1, Meadow View, Newbridge, Wolverhampton. [5583

FRANK WHITWORTH (Agent), 139, New St., Birmingham, emphatically recommends special lady's model of famous Ivy, daintiest of all ladies' machines; £42, complete; send for list. [5086

LADIES 2¾h.p. 2-speed Douglas, 1911 good running order, £12/10; Humber 2h.p. lightweight, nice condition, £14/10.—Syd Pearson, Gate House, Cheylesmore, Coventry. 'Phone: 1639. [6415

CLEARANCE of Shop-soiled Models.—New 1922 Lady's Velocette, clutch and kick-start, 2-speed, reduced to £60; 3 speed, £65; cannot be repeated; easy payments 4 per cent. extra.—Premier Motor Co., Alston Rd., Birmingham. [5512

Miscellaneous.

BARGAIN.—2¾h.p. Single, Gradua gear; £15/10 complete.—11, Queen's Rd., S.E.15. [5827

TRIUMPH, N.S.U., good condition, £25; Radco £15.—42, Princes Rd., Holland Park. [6516

HARWOOD.—Douglas Combination, dynamo lighting, licensed, late model, new tyres, guaranteed; £58.

HARWOOD.—1917 Reading-Standard 10h.p. Combination, 3-speed, all chain, licensed; exchanges; £53.

HARWOOD.—1920 2-seater Tamplin, 3-speed, lamps, licensed, new tyres, hood, screen; £65.

HARWOOD.—Indian Scout Agents, new and second-hand in stock; exchanges; free runs.

HARWOOD.—Sporting 2-seater Darracq, licensed, electric light, 3-speed, reverse, sound; bargain £5.

HARWOOD.—1921 3-wheeler 4-cyl., hood, screen, electric light, licensed; snip £115, bargain.

HARWOOD Garage (Exchange Specialists), 89, East Hill, Wandsworth. [6326

2-STROKE Motor Cycle, 2 speeds, never been used; £25.—Knight, Rambler Cottage, Bourne, Farnham. [6057

HILLIERS 1920 2¾h.p., 2-stroke, 2-speed, footboards, lamps, etc.; £29.—R.V., 371, Earlsfield Rd., Earlsfield, S.W. [5989

1919 Sports J.A.P. 2¾h.p., 2-speed Albion gear box, only wants seeing; any trial; £29/10.—4, Martin Waye, Uxbridge. [5577

£45.—2¾h.p. J.A.P., new T.B. magneto, electric headlight, horn, footboards, running order, tax paid.—Tonkin, Circus House, Padstow. [6099

2-h.p. Combination, 3-speed, hand clutch, gas and electric lighting, latest Binks, etc., De Luxe sidecar, Sept., 1921; photo, trial; 75 gns. lowest.—Shaw, North Weald, Essex. [5720

5-6h.p. 2-stroke Lightweight, countershaft gears, handle-bar clutch, kick-starter, new running gear, guaranteed perfect; cost £60; sell £35.—Manse Woolsthorpe, Grantham. [5878

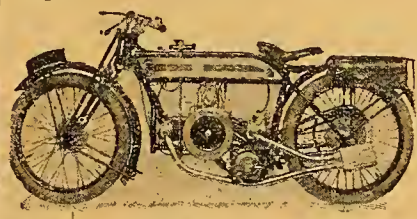
Of Interest to Speed Merchants.

One would naturally think that it is late in the season to think of getting a machine now for competition work, but that is where many make the mistake. **NOW IS THE TIME** to get the right machine for next year's events!

Have you ever considered that to get the very best out of any engine it is advantageous to run it a few thousand miles easily, so as to wear in each part thoroughly?

We are experts at tuning, and we are in a position to offer you the best and speediest, specially tuned.

The 3½ h.p. DOUGLAS Sports is the world's fastest 3½ h.p. twin and carries the distinction of being the first 3½ h.p. motor-cycle to exceed a speed of 100 m.p.h.



We are now booking orders for delivery in strict rotation of the 3½ h.p. Sports Douglas specially tuned and equipped under the personal supervision of our Mr. A. H. Alexander to the same specification as used by himself so successfully, with a guaranteed speed of 80 m.p.h.

Each machine supplied will be equipped as follows:—Special camshaft, special aluminium pistons, special valve springs and auxiliary rocker springs, 2 special Amac Carburettors with our own synchronised controls and special air box, complete engine specially assembled and lined up. Every machine specially tested on the road and supplied with a list of gears suitable for various purposes, with hints and tips, specially pertaining to this model.

List price of 3½ h.p. Sports Douglas - - -	£115 0
Extra for this special equipment and tuning - -	12 10
	£127 10

You will have a machine fit to compete with the best in any speed event. Our guarantee is 80 m.p.h., but that should easily be exceeded by any machine we supply, so equipped.

If you wish to shine in speed competitions get ahead of the other fellow and **Order your Douglas NOW—from ALEXANDER'S.** We may have to limit the number we can specially treat, and early booking is advisable.

ALEXANDER'S,
113-115, Lothian Road, EDINBURGH
(also at 272, Gt. Western Road, GLASGOW).

RIDE "AN ALEXANDER - TUNED" DOUGLAS AND SOAR TO SUCCESS.

MOTOR CYCLES FOR SALE.

Miscellaneous.

WANDSWORTH Motor Exchange.—Greatest bargains in motor cycles ever been known; cash, exchanges, easy terms.

WANDSWORTH, the old-established firm, always serves you well. Advice free. Satisfaction guaranteed.

WANDSWORTH.—Easy terms. The only firm to give immediate delivery first deposit.

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WANDSWORTH.—1922 Royal Enfield 2¼h.p., 2 speeds, like new; 46 gns. Easy terms.

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WANDSWORTH.—Singer beautiful coachbuilt combination, 4½h.p., 3-speed gear box, kick, lamps; 55 gns. Terms.

WANDSWORTH.—Henderson 1918 fine coachbuilt combination, 8-10h.p., 3 speeds, lamps; 59 gns. Terms.

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WANDSWORTH.—Premier coachbuilt combination, 3½h.p., Grado gear, kick, lamps; 36 gns. Easy terms.

WANDSWORTH.—Motosacoche 2½h.p., variable gear, lamps, hooter, overhauled, nice condition; 23 gns. Terms.

WANDSWORTH.—Royal Enfield 3h.p. Twin, 2 speeds, lamps, cheap; 29 gns. Easy terms.

WANDSWORTH.—Rudge 3½h.p. clutch model, sporting machine, disc wheels, lamps; 35 gns. Terms.

WANDSWORTH.—Triumph 3½h.p. clutch model, dropped frame, runs splendidly; 26 gns. Easy terms.

WANDSWORTH.—Triumph 3h.p., magneto, good tyres, lamps, drive away; only 19 gns. Terms.

WANDSWORTH.—Humber 3½h.p., 2 speeds, good tyres, lamps; cheap 25 gns. Easy terms.

WANDSWORTH.—Indian 4h.p. (clutch model), chain drive, good tyres; only 22 gns. Terms.

WANDSWORTH Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [6335

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash; inspection cordially invited. 'Phone: Holborn 5777. [6724

3½h.p. Sports Brough, full equipment, just overhauled, perfect running order, £45; 3½h.p. speed model Duzmo, exceptionally fast, condition as new, £57; Swan sporting sidecar, just repainted grey and black and upholstered grey Bedford, Triplex screen and disc wheels, £12/10.—Jarvis and Sons, Ltd., Victoria Crescent, Wimbledon. [6545

1917 Clyno, 3 speeds, kick-starter, 6h.p., slightly incomplete, £25; Hockley 2-stroke, like new, £16; Enfield 2¾h.p. Twin, £14; F.N. 4-cyl. 6h.p., £15; Antoine 3½h.p., £5; Kerry 6h.p. 2-speed countershaft, £14; Alldays car chassis, less engine, £10; Humber 8h.p. Twin engine, £5; sidecar chassis, £2; new J.A.P. 8h.p. engine, incomplete, £5; Bosch Twin, 30/-; 3-speed gear box, £2; 3-speed rev. £3; cycle frame, wheels, 15/-; several parts cheap.—Call or write (stamp), Capt. Collins, Sunbury-on-Thames. [6628

STARTLING Reductions in new 1922 Models: slightly shop-soiled 2¾h.p. Royal Ruby combination, 3-speed, list £95, accept £82/10; 2¾h.p. Excelsior-Blackburne, 3-speed, list £75, accept £65; 3½h.p. Rudge, chain-driven, list £94, accept £82; 3½h.p. James sports model, list £105, accept £90; 7h.p. James combination, list £170, accept £150; 8h.p. Enfield combination, list £140, accept £126; 7h.p. A.J.S. combination, Magdyno, spare wheel, etc., list £210, accept £185; 8h.p. Matchless combination, 2-seater, Magdyno, spare wheels, etc., list £207, accept £182; brand new 1921 8h.p. Enfield combination, £120.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [6398

MOTOR CYCLES FOR SALE.

Miscellaneous

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories, Waterloo Rd., Blackpool.

BLACKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £95/10.—Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination; spare wheel, £150; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel. £110/10/6; 1920 Tamplin, £59/10/6; Morgan De Luxe, £147/10/6; 1920 8h.p. Ruby combination, £79/10/6; 1920 3½h.p. New Scale, 2 speeds, K.S., £38/10; 6h.p. Bat, countershaft, 3-speed, £39/10/6; 1920 2¾h.p. Excelsior, £27/10/6; 3h.p. Enfield, £37/10/6; 6h.p. Indian, £32/10/6; 1921 Enfield lightweight, £39/10/6; 1920 Sun, £35/10/6; several others cheap; push cycles taken in exchange.—Booths' Motories, 294, Waterloo Rd., Blackpool. [5483

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or deferred payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1611

1914-15 4h.p. Wolf-Jap Combination, 3-speed, clutch and kick-start, new sidecar, £35; 1914-16 New Hudson coachbuilt combination, excellent condition, £45; 1917-8 4h.p. Triumphs, from £45; 1921 Monarch 6-8h.p. J.A.P. combination, as new, £85; 1920 British Excelsior combination, Lucas Magdyno, £87/10; 1920 Royal Enfield combination, £85; Rudge-Multi, in fine running order, £25; Baby Triumph, as new, £35; 1921 Monarch-Villiers, 2-speed, clutch, kick-start, £35, bargain. Motor cycles bought, sold, or exchanged.—Rhind and Co., Stone Place, Rusholme, Manchester. [6075

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272. [1519

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5956

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EDWARDS and Co.,

101, Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

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500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5564

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ACTUAL BUYERS.

PLEASE offer us your Motor Cycle or Combination. We pay cash on sight. Write, call, or 'phone Museum 5606.—Snipe, 330, Euston Rd., N.W.1. [6914

GIVE £20 for Douglas, New Imperial, or similar.—103, Moore Park Rd., Fulham. [5674

H. F.

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& CO.

101, GREAT PORTLAND STREET, W.1

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We have been appointed Sole Distributing Agents for London and 50 miles Radius for

The PRIORY

2¾ h.p. **J.A.P.** 2-Speed, Clutch, Kick Start

Price 52 Gns.

2¾ h.p. **PRIORY** 2-Stroke, 2-Speed.

Price £38

1922 3 H.P. 3-Speed RALEIGH Combination. Brand new.

Price £103

Specification on request.

Several Brand New 5-6 h.p.

1921 ZENITH COUNTERSHAFT

Models, Clutch, Kick-Start,

84 Gns.

Listed £118. Maker's Guarantee.

SECONDHAND COMBINATIONS.

1922 8 h.p. **ENFIELD,** magdyno, hood, screen, speedometer. Tax paid. As new. ..... Gns. 140

1922 **MATCHLESS,** spring-frame 2-seater sidecar, windscreen, hood, dynamo lighting, spare wheel, legshields. As new. Mileage 200. Cost £221 175

1921 Delivered March, 1922. **INDIAN** comb., 7 h.p. dynamo ltg., speedo., windscreen, licensed 94

1920 7 h.p. **READINGSTANDARD** comb., dynamo, screen, mascot, licensed, good order 64

1920 8 h.p. **BRITISH EXCELSIOR,** De Luxe s/c, spare wheel, hood, screen. Fully equipped and tax paid. Perfect order .. 92

1920 7/9 h.p. **INDIAN.** Electric model. Speedometer, screen. Taxed. Perfect order 82

1919 3 h.p. **ENFIELD** and Wicker sidecar, speedo., Lucas lamps, horn. Good condition 42

SECONDHAND SOLOS.

1921 2¾ h.p. **NEW IMPERIAL,** 3-speed, equipped, excellent condition 49

1921 3½ h.p. **SUNBEAM,** semi-Sports, magdyno lighting, speedometer, electric horn, knee grips, absolutely as new 109

1921 2¾ h.p. **KINGSBURY,** 2 speed, all chain, equipped, licensed, electric ltg., splendid order 33

1921 3½ h.p. **NORTON H 16,** all chain, Lucas equipment, excellent condition. Year's licence 80

1921 5 h.p. Sports **ZENITH,** excellent condition, 2 months old 68

1920 5 h.p. **ZENITH,** fully equipped, speedo... 50

1920 2¾ h.p. **COULSON-BLACKBURNE,** 3-speed, kickstarter, licensed, good condition 48

1920 **RUDGE,** equipped 41

1918 2¾ h.p. **DOUGLAS,** fully equipped, excellent condition 37

1917 4 h.p. **TRIUMPH,** 3-speed, clutch, kick start 48

1914 7/9 h.p. Clutch **INDIAN.** Equipped, taxed. Good condition 28

1911 3½ **RUDGE** Clutch Model. Tax paid. Binks 17

LIGHT CARS.

1921 **MORGAN, G.P.,** M.A.G. Engine. Lucas Dynamo. Speedo, licensed, repainted, perfect order 139

Deferred Payments & Exchanges on any of the above.

WANTED—SOLOS and COMBINATIONS.

Cash waiting.

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ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, wi 'phone, or call. If country, send to Lon terminus. We collect free and send best cash offe W. T. Dunn, Ltd., 326, Euston Rd., London. Muse 5391. [0

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H. F. EDWARDS and Co., 50, Harrington South Kensington, will purchase for spot your motor cycle or combination. Call, write, 'phone Ken. 3709. [0

PALMER'S Garage, Tooting.—The pre-eminent p for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a offer at sight.

PALMER'S Garage, Tooting.—You will be sure good cheque if you sell your machine at Palm Garage.

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PALMER'S Garage, Tooting, make a speciality motor cycles in the weekly auction sale Thursday at 2.

PALMER'S Garage, Tooting.—No garage charg incurred until 7 days' notice is given.

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PALMER'S Garage, Tooting.—You fix the price we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling mission, 7½%, not chargeable unless machin sold. If no sale, a nominal auction fee is charg for motor cars, 20/-; motor cycles under £50 va 5/-; ditto, over £50 value, 10/-. When we effe sale these charges are cancelled and commis charged.

PALMER'S Garage, Tooting.—Catalogue free. T 208 Streatham. T.A.: Palmer's Garage, Toot [6

WANTED, good combinations and solos for cas Quadrant Garage, Wiachmore Hill. [3

WANTED immediately, good Solo or Combinati must be bargain.—Oak House, Wallingford. [5

WANTED, Combination or solo; also 2-stro cheap; modern.—10, Baronsmead Rd., Bar [5

WANTED, Harley, standard dynamo combinati not earlier 1920.—Cash at 103, Church Edmonton. [6

WANTED, powerful combination, late mod reasonable.—Mosedale, 30, Canterbury Rd., burn, N.W.6. [4

HARLEY 7-9h.p. solo, Combination, 1919, lat cheap; electric preferred.—73, Windermere South Ealing. [5

WANTED, Lightweight J.A.P. or Levis; full deta reasonable price.—M. Hattie, 4, Richm Terrace, Aberdeen. (D) [6

WANTED, Combination, about 1920, exchange 4 Campion, cash adjustment.—Booth, 40, Will ham Rd., Market Rasen, Lincs. [5

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F.O.C.H. always have cash waiting for so machines of all types; highest prices and c teous treatment assured.—Fair Offer Car House, Heath Street, Hampstead (near Tube). 'Pho Hampstead 3752. Hours 9-7, including Saturdays. [1

WANTED, to purchase for cash, or sell on c mission, a number of really first-class m cycles and combinations. Representative will sent to inspect and complete transaction after liminary negotiations. Write, 'phone, or call.—L man Bros., 17, Bond St., Ealing. 'Phone: Ea 689. [6

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BUNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [0828

SPECIAL Cash Buyers: Triumphs, Enfields, B.S.A.'s, Douglasses, Matchlesses, A.B.C.'s, Scotts, Bradburys, Martinsydes, Zeniths.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686.

4-CYLINDER F.N.'s, Hendersons, T.A.C.'s, T.M.C.'s wanted.—Wandsworth Motor Exchange, Ebner St., Wandsworth.

RED Indians, Harley-Davidsons wanted.—Wandsworth Motor Exchange, Ebner St., Wandsworth Town Station). [4559

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition. Call, write, or 'phone, Shoit and Glass, Ltd., 485-93, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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PETER Gordon, Ltd., 110, Upper Richmond Rd., East Sheen, are cash buyers of modern motor cycles, or will take same in part exchange for new or second-hand machines or light cars; distance no object, and special attention given to the requirements of country clients. 'Phone: Putney 2865. [6962

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KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2590

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1921 Kenilworth Scooter, tax paid, perfect order, suit lady or gent; £18.—7, Norwood Rd., Herne Hill, S.E.24. [6922

BRAND New Autoped Scooter, 1½h.p., single speed, complete with dynamo lighting; £15.—Snipe, 10, Euston Rd. [6915

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NEW Economic Motor Set complete; £11; with all fittings.—106A, Great Moor St., Bolton. [6667

£10.—Young's motor attachment, hardly used, perfect condition.—King, Egrove Farm, Oxford. [6741

1921 Young Motor Attachment and James cycle, in new condition; £18/10.—114, Brixton Hill. [6473

£8/10 Auto-wheel, fast and powerful; tax and carriage paid.—Ross, Grocer, 249, Twyford Av., Portsmouth. [5694

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1917 Wall, 2-stroke, 2-speed, countershaft, 2¾h.p., horn, lamps, fast, reliable; £24.—Cable, 89, Sandy St., Poplar. [6521

CYCLOTRACTEUR, only shop-soiled, new price £21, my price £10/10, carriage paid.—Edwardes, 277, Camberwell Rd., S.E. [7000

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COLLINS and Son.—Adjustable wind screens, complete with apron; 22/6, 30/-, and 35/-; sent approval against cash; carriage 1/6 extra.—Below.

COLLINS and Son stock all known makes of windscreens; we have a few second-hand Standard fittings, fitted with new celluloid, from 45/-.—Below.

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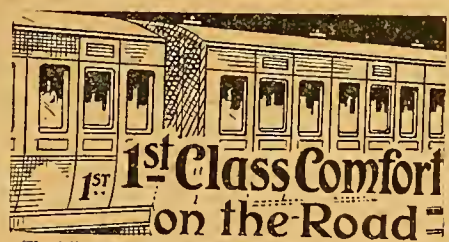


The following is a copy of **unsolicited** letter dated July 29th, 1922, received from a user of the "BRAMPTON" Bi-Flex Spring Fork, resident in Derbyshire:—

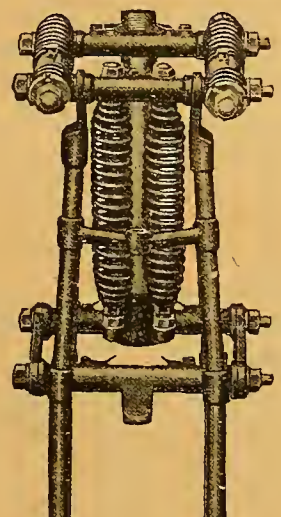
"Dear Sirs,

"I have given your Forks which you sent me recently a very good test, and I can find nothing but praise for them, and we have some roads in Derbyshire, I can assure you. In fact, the whole machine could drop into some of the holes I have been over, and I took them at speed just to see how the Forks would act, and they were, as you say in your advertisement, First Class.

"Yours faithfully."

The advertisement referred to by the above user appeared in "The Motor Cycle" on July 6th, page v of the Supplement.

If your machine is not fitted with the "BRAMPTON" Bi-Flex Spring Fork, let us send you a measurement form and descriptive booklet illustrating models for Motor Cycles of 2¾ h.p. and upwards.



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Bi-Flex

SPRING FORK.

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Oliver Street, BIRMINGHAM.

HOODS, WINDSCREENS, ETC.

EASTING Standard model, new, never used; £3/12.—152, Barcombe Avenue, Streatham Hill. [5990

EASTING Standard, complete, used three weeks; £2/17/6, nearest.—Frost, Bedford Place, Bridport. [6310

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BOWER Screen, adjustable, complete with coverall apron, 30/-; Easting screens from £3; Sandham V screens, £2/15; all makes of screens repaired; new panels fitted from 12/-; aprons supplied from 10/-; hoods complete from 35/-.—Robini Manfc. Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [7023

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RENNOC Sidecar Bodies, actual manufacturers; 35 models; also several clearance, cheap to clear.

RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, London, N.19. [4932

COLLINS and Son for coachbuilt bodies, all mode's in stock, from lightweights to 2-seater.—Below

COLLINS and Son are actual manufacturers, and give twelve months' guarantee with every body made by them.—Below.

COLLINS and Son repair, repaint and upholster at moderate charges, first-class work guaranteed; estimates free; send for catalogue.—Collins and Son, rear of 84, High St., Putney, S.W [6199

COACH-PAINTING.—Bodies painted and lined. First class finish.—Andrews, 123, Walworth Rd. [6092

BASTONES for Sidecar Bodies, all latest models in stock from £4.—228, Pentonville Rd., King's Cross, London, N 1. [5131

FIT new Willowbrook body to your old sidecar, and make it like new; prices from £5.—Willowbrook Body Works, Leicester. [0336

BEAUTIFULLY Finished Bulbous Bodies, £4/15; other models from £2/10; write for specification.—Burton, Sidecar Works, St. Peter's Park Rd., Broadstairs. [3637

SIDECAR Body, lightweight, re-upholstered, repainted, as new; bargain, £3/17/6.—Hockley Motor Co., 38A, Cecil St., Newtown Row, Birmingham. [6676

COBB-SPEEDMAN Sidecar Bodies.—Startling reductions to clear; bodies from £2/5; all carriage paid and packed free; list stamp.—Vernon Cobb, 18, Midland Rd., Carlton, Nottingham. [5790

FIFTY bodies, second-hand, upholstered best pegamoid, touring shape, from £2 each; a few, new, at £7, exceptional bargain; also a few chassis to clear.—Sandums, 336, Gray's Inn Rd., W.C.1. [0871

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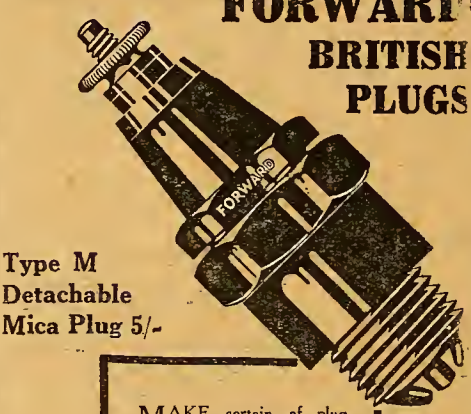

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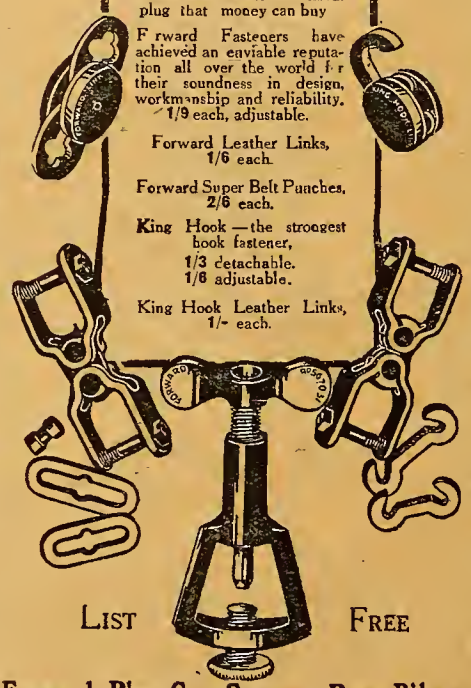

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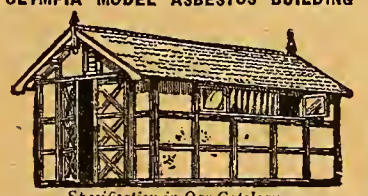

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GIBBONS Cycle Car, economical, reliable, condition absolutely faultless, climb anything; any trial; £25 (no offers).—Hood and Edwardes, 105, High St., Colliers Woods, Merton, S.W. [5954

HALIFAX. — 1921 Coventry-Premier 3-wheeler, £157/10. 7-9h.p. 3-speed 3-wheeler, £69/10. 1920 Richardson light car, £95.—Halifax Motor Exchange, Horton St., Halifax. [6102

TAMPLIN 1920 8h.p. J.A.P., 3-speed Sturmey, fine condition; 58 gns.; exchange motor cycle.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. Photograph. [6949

3-WHEEL Cycle Car, 2-seater, 3-speed, chain and belt, 8-9h.p. Blackborne, as new, not done 1,000 miles, complete hood, screen, and lamps, electric, any trial, photo; 100 gns.—P. Egerton, Gomshall Mill, Surrey. [5799

59 GNS., exchange.—1919 Carden 2-seater, ready for a tour, 8h.p. J.A.P., 3 speeds, kick-start, disc wheels, screen, hood, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [3610

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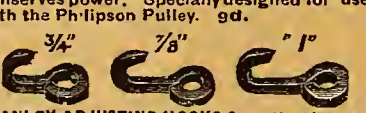

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SET of four cycle car wheels, 650×65, 10 G. spok 1in. belt rims, complete with brake drums a steering arms, new; gift, £7/10; cost double.—Hockl Motor Co., 38A, Cecil St., Newtown Row, Birmin ham. [66

A.V. Monocars, J.A.P. engines, 2 speeds, dickey, lig ing, painted red with black mudguards, fa reliable, sporty appearance; prices £50 to £70, changes considered.—A.V. Specialist, 103, Castlen Barnes. [59

1921 Castle Three 2-seater 10h.p., 4-cyl., water-cool dynamo lighting, many extras, tax paid for ye condition as new including tyres; bargain £150, exchange for motor cycle and cash.—159-161, Castelna S.W.13. [59

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FORD landaulet, 5 detachable wheels, electr lighting, splendid condition, any trial; £66. Below.

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ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St., London, W.1. [0350

2-SEATER, with dickey, 4-cyl., fully guaranteed; wanted larger car; sell, bargain; £50.—Arsenal, Hampton Hill. [5630

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A.C. 1915 Light Car, 10h.p., clover-leaf body, in perfect condition; £150, or best offer.—7, Gibson Sq., London, N.1. [6147

12h.p. Ruby-Windhoff, 2-seater, taxed, running order; £40, or nearest.—C. C. Stubbington, Great Munden, Ware. [6543

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COVENTRY-PREMIER, 1922, 4-wheel model; £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

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VAUCHOPE'S, 9, Shoe Lane, London.—G.N. 1921 model, fully equipped, in excellent condition, spare wheel and tyre; £150. 'Phone: Holborn 5777. [6723

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3h.p. Single-cylinder Rover 2-seater, 3 speeds, reverse, new covers all round, in running order; bargain, £23.—8, Half Moon Lane, Herne Hill, S.E.24. [6923

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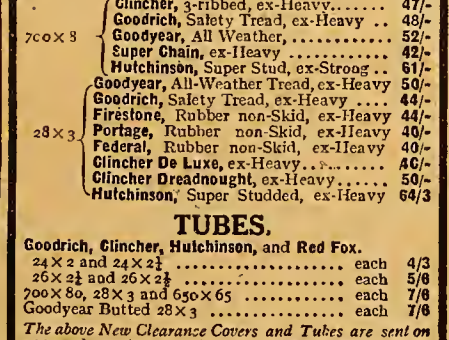

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£35 down and 12 monthly payments of £7/10 buys excellent running Waverley 2-seater, nice dickey, Warland rims; bargain.—Marlborough, 20, Finchley Rd., N.W.8. [6173

EXCEPTIONAL Bargain.—Rover car 1922 8h.p., new in July, not done 200 miles, tax paid till 1923, condition better than new; accept £197/10.—Wilkins, Simpson, opposite Olympia, London. [6792

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BRAND new 8-10h.p. J.A.P.; see also Miscellaneous column.—D.D.L., Red Roof, Ronndhay, Leeds. [5683

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P. and M. Engines, £4/10; overhauled and completed, £6/10; spares.—7, Hereford Rd., Bayswater. [6104

2¾h.p. J.A.P. Engine, new, £12; one ditto, good as new, £8 or near offer—Crowhurst, East Hoathly, Sussex. [5635

4h.p. Twin N.S.U. B. and B. Carburetter, Bosch magneto, ready to put in frame; £7/10, bargain.—25, West End, Brierley Hill, Staffs. [6497

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ECONOMIC.—26×2½×2¼ Goodyear All-weather, 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redfern heavy rubberstud, 27/6; Clipper Ideal, extra heavy, 35/-; tubes, 7/-.

ECONOMIC.—28×2½ American Clincher extra heavy de Luxe, 45/-.

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ECONOMIC.—650×65 Stepney Roadgrip, 39/6; Goodrich Safety, 39/6; Clipper, extra heavy, 32/6; tubes, 6/6.

ECONOMIC.—700×80 Beldam V-grooved, 50/-; Goodrich Safety, 46/-; Economic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warranted; 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26×2¼, 25/9.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E. 14 (near Town Hall). 'Phone: New Cross 1393. [6651

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26×2¼.—Palmer cord, 32/6; Beldam all-rubber, 25/-; Wood-Milne 3-ply, 22/6; Clincher de Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

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26×2½×2¼.—Palmer cord, 36/-; Beldam 3-ply, 30/-; 4 ply, 35/-; Wood-Milne 4-ply, 25/-; Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

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FRESH Surplus Stocks.—New Beldam covers, 26×2, 18/6; 26×2¼, 2⅜, 2½, or 3, 25/- each; 28×3, 35/- each; steel-studded in all sizes, 10/- extra; 650×65 Beldam Bulldog, 40/-; 700×80, 45/-; 650×65 Dunlop studded or grooved, 40/- each.—Homerton Rubber Works, 46, Brooksby's Walk, Homerton, E.9. [0331

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26×3.—Continental H., 35/-; E.H., 40/-; 26×3× Dunlop H., 54/-; E.H., 62/9.

28×3.—Clincher E.H., ribbed, 42/6; Dunlop sid 30/-; Macintosh chain tread, 25/-; Goody Diamond, 49/6; Firestone, 42/-; Goodrich, 45/-; Port 43/-; Continental H, 38/-; E.H., 41/-.

650×65.—Goodrich (guaranteed), 35/6; Hutchin H., 32/-; E.H., 37/6.

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TUBES.—Small size, 5/6; 28×3 and 700×80, 7

CENTRAL Garage always open; any covers sent 7 days' approval against cash, plus 1/6 carria —302, London Rd., Thornton Heath. 2237 Croydon. [6

LONG-DISTANCE Retreads, three-ribbed patte returned like new, 26in. tyres, 20/-; 28in. ty 25/-; burst tyres made perfect, chafed beads moulded, tube vulcanising, butt ends fitted; best w in the country.—Melton Rubber Works, Melton M bray. [0

TANKS.

TANKS enamelled and lined, latest colours, b finish, from 10/6.—Andrews, 123, Walwo Rd. [60

DOUGLAS pattern tanks, new, enamelled and fit with B. and L. pump; 55/- complete.—1 85, Cheapside, Birmingham. [7

TANKS renovated, makers' colours, from 1 frame and forks, 9/-.—De la Cour, Enamelli Works, 298, Kennington Rd., S.E. [65

TANKS Renovated, makers' colours, from 1 tanks made and supplied to order.—Robini Man Co., 1 and 3, Tulse Hill, Brixton, S.W.2. [70

P. and M., R.A.F. brand new tanks, maker's 19 colours, 48/6.—Kenneth Kemp and Co., 4, Bent Mews, Connaught St., Marble Arch, London, W.2 [68

TANKS Re-enamelled to Pattern; high-class wo only.—D. Jenkins and Sons, 6, Richard St., A kinson St., Deansgate, Manchester. Established years. [32

TANKS Made or Repaired, re-enamelled, h transferred; handle-bars, etc., plated. Est lished 30 years.—Attwood's, 86, Rosebery Av., L don, E.C.1. [70

TANKS.—We undertake partition leakage, lasti ings, and every repair, with re-enamelling make colours in six days.—Park Tank Works, 1a, Parad Rd., Highbury, N.5. [54

AVERY'S Make and Stock Tanks to suit machi of most the leading manufacturers, with pla fittings complete, at 35/-; guarantee for 12 mon with every tank supplied.—Gordon St. Tank Wor Coventry. 'Phone: 1774. [08

TANKS of every description replaced, repaired, re-enamelled at our own works; all kinds of tings stocked; quick service and reasonable charg Illustrated list free.—A. Green, Water St., Chapel Salford, Manchester. Tel.: 2191 Central. [02

1922 Tanks, brand new, latest pattern, taper roued edge petrol tanks to fit any Doug frame from 1913 upwards, finished standard Doug colours, complete with all the latest fittings, 2¾h. £3/3; 4h.p., £2/16; tanks only, 30/-.—Beechwo Stapleton, Bristol. [56

TANKS.—All kinds made to order, 32/6 each, cluding 2 plated fillers, 2 taps. Delivery days, carriage paid. Satisfaction guaranteed or mo returned. Enamelling, one colour, 10/6; two colo 17/6.—Order forms from H. Peel, The Liverpool T Hospital, 5, Smithdown Lane, Paddington, Liverpo [9

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

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The A.C.U. Six Days' Trials.

GREAT public interest is being taken in the A.C.U. Six Days' Trials, which started on Monday and are now proceeding. As an event it is the biggest and most important of the year and is probably better supported in the matter of variety of makes and types if not in numbers than ever previously.

Compared with last year, of course, the trials are infinitely more interesting, not only because of the more representative entry, but because of the greater difficulties of the road portion of the test.

In 1920 the freak hill policy was carried to an excess; in 1921 there were few hills worth mentioning at all; this year a happy medium has been struck. Only a sound machine will survive the first five days of road testing without a loss of marks, but the route has been so chosen that mere luck plus highly-skilled driving will not give certain entrants any great advantage over others whose machines are actually quite as reliable. Then, on Saturday speed tests will be held at Brooklands, when also marks will be deducted for defective general condition and so forth. Silence is being tested aurally during the whole week.

Taken altogether, therefore, it will be seen that a very serious effort is being made to supply concentrated tests of all the features most desired by the ordinary motor cyclist. *En passant*, it may be mentioned that, although there are no really freak hills, one of last Monday's chief tests was ruled out of the 1920 trials as impossible. Thus has the motor cycle improved in the short space of two years. Could one ask for more conclusive proof of the value of trials generally?

As always, a certain number of new models and improvements destined to appear next year are in evidence among the competing machines. There is, however, a noticeable absence of what, for want of a better word, we must call "gadgets," fitted by the riders themselves. This is a good sign, for it means that nowadays a motor cycle is ready for a strenuous trip just as it is delivered. Insulating tape has been relegated to the tool-kit, where it properly belongs.

Again, the question of silence has received very close attention, and many are the new designs of exhaust arrangements in the trials. This, again, is all to the good of the man-in-the-street motor cyclist, who is becoming tired of being summoned for noise when riding a standard, unaltered motor cycle as turned out by the manufacturer. If the trials are any guide—and, usually, they are—this sort of thing will not be so common next year.

Few technical novelties are being tried out. It is noteworthy, however, that re-designed cylinders with deeper radiating fins are fitted to two well-known makes of the single-cylinder class. Another entirely new model also possesses a very excellently cooled cylinder head.

Generally speaking, there is, as we have said, little change in design—in many cases the competing machines are absolutely standard models—but straws that show how the wind blows are the increased popularity of the four-speed gear box and the decreased popularity of belt drive.

Every class of motor cycle is represented, but it would be futile to attempt to draw any definite conclusions from an analysis of types. At the same time, the fact that the big (600 c.c.-1,000 c.c.) sidecar heads the list numerically—thirty-seven against the twenty-eight 350 c.c. solo machines which come next—cannot be lightly passed over. That there are sixteen 750 c.c. solo mounts is also significant.

An index to the advertisements in this issue will be found on the page facing the back cover.

Occasional Comments

BY IXION

What It Costs to Tour.

I OFFER no direct contribution to this discussion, but throw a sidelight upon it. I have just returned from my annual holiday of 14 days, spent at the coast in one of the most expensive South Coast localities. Our party numbered 34—two adults and 32 boys. The total expenditure, inclusive of everything—food, firewood, rent of camping site, etc.—was about £50, a sum which covered several quite expensive sailing excursions, visits to the cinema during frightful weather, unlimited mosquito dope, and so forth. In other words, a fair-sized party can camp at a cost of 14s.-15s. per head per week. Transport cost us nothing, as we tramped to our venue, pulling our stuff in trek carts. The implication is that a party of motor cyclists—all members of the same club, for example—might do the Highlands or Cornwall on a trifling expenditure if they substituted camp kit for hotel bills. I lay a heavy emphasis on the word "*party*." A *couple* who go camping must occupy a good deal of the day with work—cooking, washing up, shopping, pitching and striking tents, digging refuse pits, and other jobs for which many people have no special stomach. But if a *party* of six or eight pals travel on these lines, the jobs are subdivided, and can be compressed by proper organisation into a very few minutes. To give an actual example, the above party arrived at a meadow about 4 p.m. on August 11th. At 4.40 p.m. the five carts were unloaded, nine tents erected and tidy pits dug, and tea (including four hot viands) had been served. By 5.30 p.m. all work for the evening was concluded, apart from the boiling of any hot drink required to wash down a cold supper. I wonder that some of our go-ahead clubs do not organise camping tours, and believe that the practice would grow by leaps and bounds if it were once started.

Windscreens and Legshields.

THE B.S.A. people were the first to test public opinion by demonstrating a motor cycle which offered its rider practically the same weather protection as an ordinary car; and prejudice was certainly excited by its somewhat bizarre appearance. Nevertheless, the idea is worth continued experiment and persevering propaganda. Now we get cold (as compared with car passengers) because we wear too much clothing in the bad months. Our bodies evaporate a good deal of moisture. If our clothing is sufficiently ventilated, this moisture condenses on our skins or in the clothes, and presently chills us to the bone. Given such wind screening as the special B.S.A. model furnishes, we could keep perfectly warm with clothes light enough to ventilate themselves properly. I, for one, intend to try my luck this autumn with a big windscreen and efficient legshields.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Sleeping Out.

CAMPING novices seldom understand how to keep themselves warm at night, and the early hours of a summer morning can be chilly to a degree. The three main points are as follow:—

(i.) Waterproof under you.

(ii.) No waterproof over the bed—rely on tent or bush for protection from rain; a mackintosh on the bed spells moisture by condensation inside the bed.

(iii.) More blankets under you than over you.

Not the Only Pebble.

THE other week I described how an amateur hotted up a sports single till his engine remonstrated by dissolving its piston into thin air. He is not the only pebble on the beach, for a Scot who supposes himself to be the anonymous hero of the tale describes a similar incident. He, too, bought a 6c m.p.h. single, and tuned it up to 80 m.p.h., chiefly by lightening the reciprocating parts, though he also ground off most of the base of his cylinder to raise the compression. He now wants to know what went. The mechanic who took the flange off the cylinder asserts roundly that the connecting rod stretched till the piston hit the top of the cylinder. But the earnest owner succeeded in finding the top of the cylinder several fields away, and it wasn't even dented. Next, please?

Occasional Comments.—

Not for Us?

I HAVE just vastly enjoyed a 600-mile scurry with a member of *The Autocar* staff on one of the new "Baby Fours," viz., a small car fitted with a water-cooled four-cylinder engine no larger than the big twins which figure on some motor cycles. It was a real revelation of the perfect engine. Car, occupants and luggage together weighed nearly three-quarters of a ton, yet that infantile power unit played cup and ball with its load just as our 1,000 c.c. twins toy with a small rider. Fifty-five m.p.h. on the flat was easily within its compass, and on the steepest hills the pace never sank below 20 m.p.h. The fuel consumption at high speed was always better than 40 m.p.g. There was no engine vibration, and the only noise was a level purr most pleasing to the ear. I fell to wondering why the four-cylinder motor bicycle engine lingers so sluggishly—there are a few on the market, but they hardly ever appear in competition, and are rare birds on the road compared to singles and twins.

Cost is no doubt a main deterrent. Presumably the 8h.p. Talbot car engine costs about as much as a mid-quality motor cycle complete. But I cannot help thinking that the four-cylinder only wants exploiting on motor cycles to achieve a vogue.

A Lot of Levises.

I SPENT part of last week hundreds of miles from London in a holiday resort. On my way back I met in the course of a single day along a single main road eight brand-new Levises, each obviously loaded up with full touring kit for the summer holiday. I also noted the facial expressions of the riders. Not so long ago the tourist who rode a baby two-stroke looked either apologetic or defiant when he met a 500 c.c. sports. Apologetic, as if to say "Sorry I can't run to a 'bus like yours!" Defiant, as one who would remark "It is you road-burners who do the sport so much harm!" But these 1922 Levisites were all cutting out a fast bat, and chucked me the genial grin of road comradeship; they knew that at the end of the day they would have covered just about as big a mileage as I should, and that their average pace would only be fractionally slower than my own. Yet some people fancy that the T.T. does no good.

THE RECENT INTERNATIONAL SIX DAYS TRIAL IN SWITZERLAND.

Regarded as the finest possible test for air-cooled engines, the long climbs to high altitudes form the chief reason why British manufacturers enter the International Trial. Valuable experience of a technical nature is obtained, but to the riders it is a holiday amid some of the finest scenery in the world. Competitors on the Klausen Pass.

Pictorial Echoes of the International Trial.

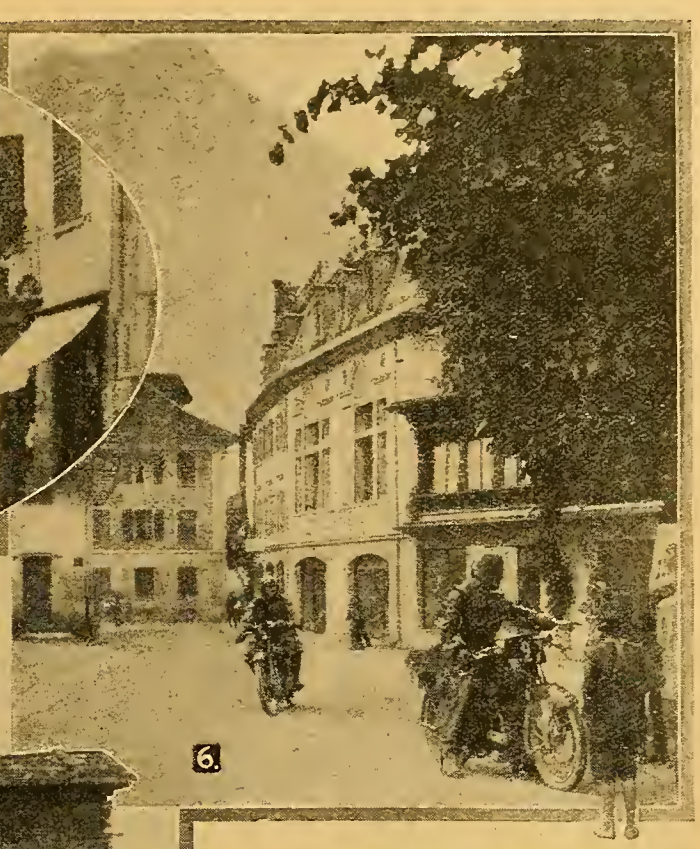
1.

2.

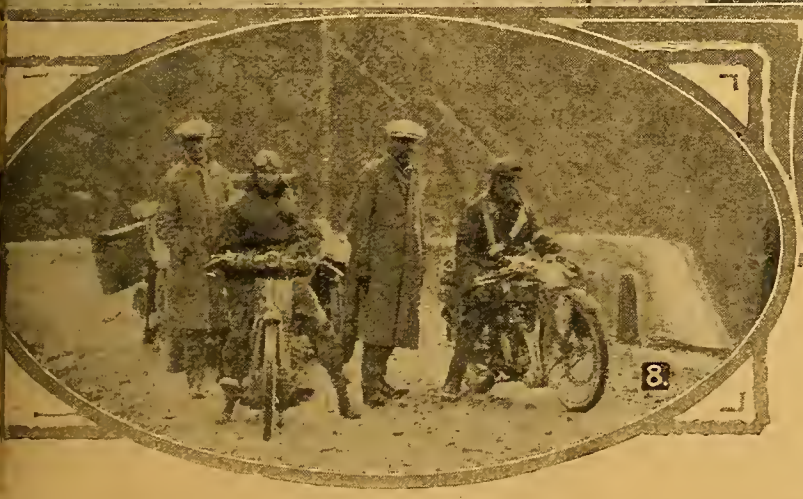
3.

4.

1 and 9. On the Col du Brüch. 2. Ascending the Grimsel Pass. 3. Windings of the St. Gothard road. This portion of the journey was made in pouring rain and the corners were extremely muddy and treacherous. 4. Eric Williams (A.J.S.) comfortably climbing the Côte de la Donzelle, which ascends abruptly (1 in 4) from the Rhône Valley. 5. A. Bennett (Sunbeam) in Brigue, which marks the beginning of the Simplon Pass. 6. Borzetti (348 Raleigh) in Altdorf. 7. Chalets in the lower portion of the Rhône Valley.



8. British motor cyclists near the summit of the St. Gothard. Standing behind them are Mr. T. W. Loughborough, General Secretary of the F.I.C.M., and Mr. W. H. Wells, who represented the U.S.A. at the F.I.C.M. Geneva conference.



Six Days among the Swiss Mountains

Robmann (Frera) taking a corner on the Klausen Pass.

Discussing the General Apathy of British Motor Cycle Manufacturers to Trials outside their own Country. Lessons that Might have been Learned.

LOOKING back on the 1922 International trial one's first thought is of regret—regret that British manufacturers, generally, have allowed a chance to slip by which may not occur again. It is not certain that Switzerland will run the event next year. And so an unrivalled opportunity of learning the lessons of motor cycling in high altitudes may well have been lost.

Great Britain has an undoubted supremacy in the motor cycle world, but she must not rest on her laurels, or she may find serious rivals on the Continent.

It has been suggested on more than one occasion that the trial, being so far away, scarcely justifies the expense, but there is a good answer to this. A well-known and popular English make, unknown in Switzerland previously, was entered last year and made a good performance; the result was that an order was given at the Olympic Show from a Swiss agent for 100 of these machines. Every motor cyclist is indirectly interested in overseas trade.

Where Delay Meant Disaster.

It was a trial in which delay meant disaster. In a country where the length of a hill may vary between five miles and practically ten times that amount, what chance has a rider to make up even for minutes lost in making an adjustment? Were it not for the corners, these long hills with gradients not worse than 1 in 10 could be climbed on top gear, but as it is, continuous use of second speed is demanded. Under these conditions *festina lente* must be the rider's motto; a generous throttle opening means trouble, as one of our riders, who suffered a partially seized engine through trying to make up time on a long hill, will agree. Lubrication becomes a real problem.

Efficient Swiss Brakes.

Brakes on British machines have improved, but they are still inferior to those used by the Swiss, which consist of enormous shoes applied to special rims.

One thing of importance has been definitely proved, and that is that on mountain roads motor cycles are vastly superior to cars. Very few British makes of cars would have survived this trial, and it is interesting to relate that the official cars, which were of French, Swiss and American manufacture, gave more trouble on the second day than all the motor cycles during the whole week.

Six Days among the Swiss Mountains.—

Ours was a splendid team, and technically it beat the Swiss people on their own ground. The three Britishers rode well, and if they could not command success they deserved it.

Mr. Loughborough, in his speech at the F.I.C.M. meeting following the trial, stated that he noticed a very marked improvement in the machines over those which took part last year, but evidently the Swiss had not expected to do quite so well as they had, and thought that the Donzelle hill "would just skim the cream off the milk"; but it was a failure. The performance of the British riders and, save for the accidents to the one sidecar, of the Swedes was as good as that of the Swiss.

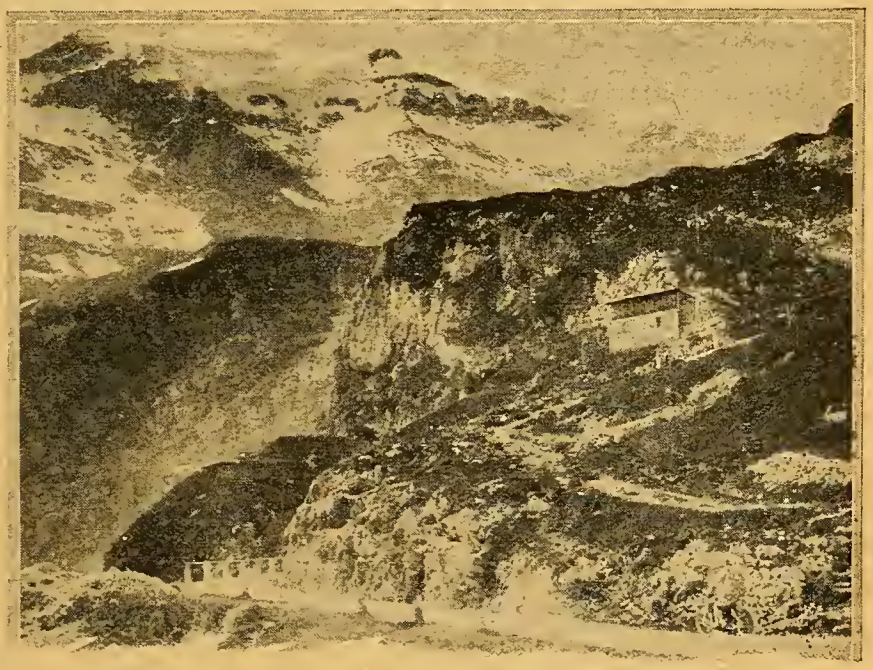
Next Year's Event.

He made the following two suggestions for the future event: the abolition of fixed controls outside which men waited and then arrived to time, and in their stead more secret controls with a larger margin both ways; the abolition of the examination of the machines at the end of the trial, which the A.C.U. had always found a source of trouble, and the substitution of a long high-speed test.

A word or two about conditions in Switzerland may not be out of place. There are plenty of motor cycles, and there would be more if traffic regulations were more reasonable. Certain cantons which forbid cars on certain roads allow motor cycles to use them, while others forbid all motor traffic. Motoring on Sunday is almost universally prohibited, and the result is that 40,000 francs is spent by Swiss motorists in France each week end; and at one Customs house 500 vehicles line up in a queue every Sabbath. This may be rather outside the scope of a review of the recent trial, but it is introduced with the idea of showing that, despite the Gilbertian traffic regulations of the country, motor cycling is in a fairly prosperous state. Also things are due to improve, for a new law placing motor traffic under Federal instead of Cantonal control is about to be passed. One of the results, incidentally, of the restriction of motor traffic is that the roads are mostly free of potholes and in excellent condition, and that the country is ripe for a motor cycling boom. When that occurs there will be a considerable demand for motor cycles of sturdy, efficient design such as Britain builds so well.

As a Touring Ground.

Even to-day, if the regulations are observed, a very pleasant holiday may be spent in the country, of which every section has its peculiar beauty, and, if discretion is exercised, at a really reasonable cost. Few people realise that Geneva is but 300 miles from Paris and very little farther from the French coast than London is from Edinburgh.



Wonderful snow mountains overshadow the road near the summit of the Klausen.

POSED PILLION PERILS.

UNINTENTIONALLY amusing photographs to show the alleged danger of pillion-riding were a feature of a recent issue of a Sunday illustrated newspaper.

Harmful Propaganda.

We might well pass them over with but a chuckle at their unnatural and absurd poses were it not that they will undoubtedly do harm to motor cycling generally.

The average reader of the newspaper in question probably knows nothing at all about motor cycles; further, he usually has a firm belief that the camera cannot lie. Subconsciously, therefore, he begins to believe that pillion-riding is as dangerous as it would be if everyone practised the gymnastics of the riders in the photographs.

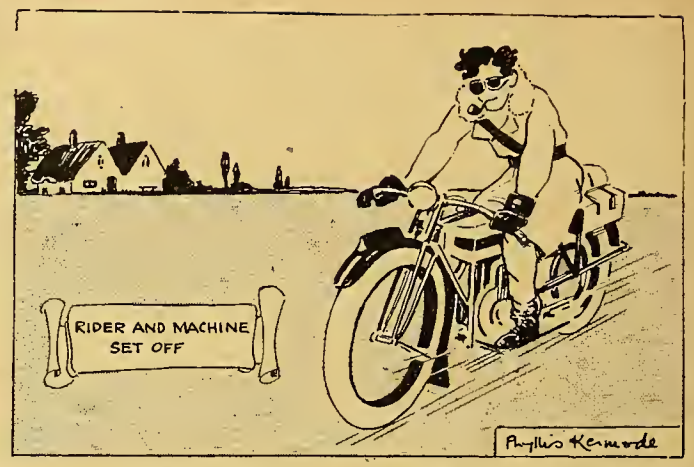
There is no reason for any of their movements. They ride up kerbstones; they drive into stationary motor cars; they steer between two stationary vehicles while the lady passenger leans over in an endeavour to give an impression of danger; they wobble horribly—all on a well-known touring big twin motor cycle which normally is hardly ever used without a sidecar!

To the informed reader the whole series provides an excellent contradiction of the view that pillion-riding is dangerous. *Every one of the "accidents" depicted would just as surely have been an accident had there been no pillion rider there at all.*

AN UNINTENTIONAL TOUR.

Holiday-making in England, Scotland and Wales, incidentally including 1,600 miles on the road.

Illustrated by Miss PHYLLIS KERMODE.



ON a recent Sunday, chance took me down to Brighton for the day. I had been before, but never until then had I realised how thoroughly unpleasant these crowded seaside resorts can be to the man who loves the countryside.

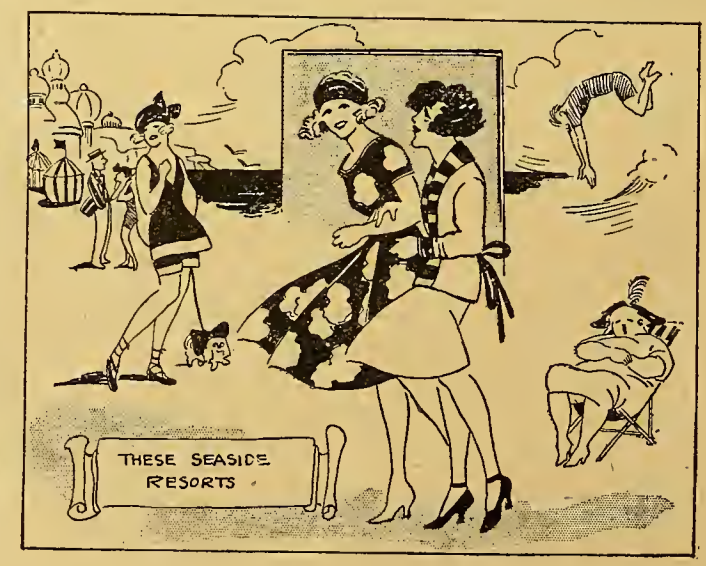
Thousands of holiday-makers aimlessly paraded the piers, the front, and the beach, looking hot, dusty, and, very often, unhappy. Some—wiser—occupied massed battalions of deck-chairs, but everywhere it was crowds, crowds, and more crowds. There seemed to be more people than pebbles on the beach, and even the sea—the sole justification for visiting the place—had a camouflaged air of artificiality.

Yet a holiday in Brighton, or Blackpool, or anywhere else of the kind, cannot be inexpensive. And one can obtain much better vacation value for money—if one is a motor cyclist.

Touring and Travelling.

As I write, my Bonniksen confesses to 1,600 miles, ticked off in England, Scotland, and Wales during the last fortnight, and every one of them enjoyable. Quite a small proportion, however, is touring mileage in the generally recognised sense of the adjective. As a matter of fact, my taste for touring has been spoilt by previous acquaintanceship with almost all the beauty haunts of Great Britain, and my original intention was to cram as much golf into each twenty-four hours as the long summer days would allow. This programme, too, despite the speedometer reading, was adhered to.

The initial journey from town to Coventry to take over my mount—a new one—was made by train. This fact is only interesting because it revealed that the luggage and clothing stowed and worn by the motor cyclist without trouble may be extremely bulky and awkward when lugged about by hand. The solo motor cycle is supposed to have very restricted facilities for luggage accommodation; let those who hold this view unstrap their holiday kit and clothing and become temporary pedestrians!



Clothing, by the way, may make or mar a long motor cycle journey. In my case I wore, with every satisfaction, an oilskin interlined trench coat underneath a long leather coat, and a pair of Hutchinson boots when necessary. This may sound more suitable for a London-Exeter run, but in my experience it is the ideal all-the-year-round garb for the hard rider. A pair of flannel trousers in the carrier bag was always ready to substitute riding breeches and stockings at times when the 'bus was not in use, and the vexed problem of headgear was solved by omitting it altogether, except for a pair of light, tinted Triplex goggles. One solitary strap, carefully located, efficiciently retained a loosely packed bag and the waders on the carriers, and maps, small kit—including toothpaste!—cash for roadside supplies of fuel, spare bulbs, cigarettes, tobacco, and a few other often required or fragile *etceteras*, were carried in an ex-W.D. haversack.

Northward Bound.

Thus equipped, rider and machine set off after lunch on Saturday for the Great North Road and Scotland. At first it was an irritating ride. Along that inviting speedway from Leicester to Newark, Doncaster, Wetherby, and Scotch Corner, it required considerable patience to keep the pace down to 25 m.p.h., but for the first 250 miles or so this was done. Never once did the needle reach "30," yet a late halt at Brough showed that the average for 200 miles had been 22 m.p.h. This may astonish those who talk of the difficulty of averaging 20 m.p.h. on a long run.

Next morning it was decided that the engine could stand much more throttle. Inverness was over 300 miles away,

and my ultimate destination 25 miles further on. Suffice to say, therefore, that I reached my objective at 8.30 p.m. after a glorious no-trouble run, apart from five or six fuel replenishments and a quick lunch and quicker tea, absolutely non-stop. Runaway Fodens would not drag from me the exact hour I started from Brough. Nothing distorted.

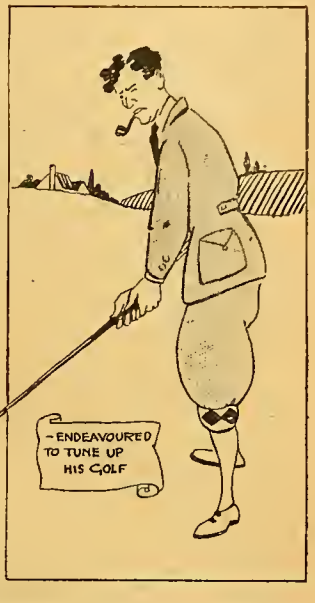
During the following week a pedometer would almost certainly have registered a greater mileage than the speedometer, the faithful 'bus being relegated to hack-work while its rider endeavoured to tune up his golf.

A Week-end in the saddle.

But from Saturday evening until Monday afternoon it came into its own again—in the North of Scotland the only really permissible Sabbath recreation is walking—and totalled up another 300 miles in a visit to friends near St. Andrews. By this time I was becoming quite bored with the road across the Grampians, which incidentally is as rough and out of condition as ever I have known it. For those to whom the Highlands are unknown, however, there are ample scenic compensations both on the spot and further on.

More golf ensued, and then, after eighteen holes on Tuesday morning in a minor gale, it was very suddenly decided to go and see the car T.T. races in the Isle of Man on the following Thursday. With a little rush work there would be, it was judged, just time to catch a night boat on Wednesday evening.

By a curious coincidence, I left Inverness at 3.50 p.m., which is also when the mail train for the South makes a start; this livened up the ride to Perth very considerably, for a Highland railway train makes no great speed for the first 50 miles, which is mostly hard climbing. There was quite an interesting train *versus* motor cycle duel. Of course, I lost on corners, but gained on the long hills, and all the way to Drumochter the train was kept in view wherever the road followed the iron trail. Not until a mile or two from the summit did I gain an appreciable lead, and, very soon after, the train came whizzing past once more at "55," a wave from the driver seeming to invite a continuation of the contest. The challenge was not accepted.



A Change of Plans.

That evening I went on only as long as I dared in a country where hotels are not eager to supply food after 9 o'clock or so. Kendal saw a stop for lunch on the following day. This halt is notable for two reasons: in the first place, the County Hotel there supplied, for the very modest sum of 3s. 6d., the most excellent meal it has ever been my lot to enjoy on the road; secondly, I decided—for a very adequate reason that need not be detailed here—not to visit the Isle of Man after all. (No! I am not a bad sailor.)

Turning northward once more for Windermere, Ambleside, and the Lakes, I discovered at least one beauty spot which I had not previously visited—Borrowdale and the road along the *west* side of Derwentwater. There one reaches a high altitude right alongside the lake, and the magnificent panorama will cause the most hardened road burner to halt for a moment. But vivid impressions of Scotland made the beauties of the Lake District seem tame; yet there was insufficient real contrast, such as Surrey or Warwickshire might have supplied, to make the change enjoyable.

A move was made to North Wales.

On Thursday, however, much rain caused a very prolonged lunch stop in Liverpool, and signs of more later in the day indicated a night's halt at Wrexham, after an aimless ramble totalling only some 150 miles. Truth to tell, my decision to re-visit the Welsh passes was backed by very little desire; the weather conditions, too, were discouraging.

The busy little Denbighshire town provided another pleasant surprise in the matter of hotel accommodation. Usually I rely on the A.A. or

An Unintentional Tour.—

R.A.C. signs when choosing where to stay, but in this case none were visible, and the next best—or perhaps the better—method of asking a policeman was employed. He pointed to a building of singularly unimposing exterior appearance, which was prominently labelled the "Wynnstay Arms." Doubting at first, I entered, I saw, I was conquered.

Inside were all the comforts of a London hotel—in the bedrooms, constant hot water, electric light with many switches, and labour-saving terra-cotta floors comfortably strewn with rugs; furthermore, there was excellent catering, service, and cleanliness at a moderate figure. Moral: Do not judge an hotel on its outside appearance.

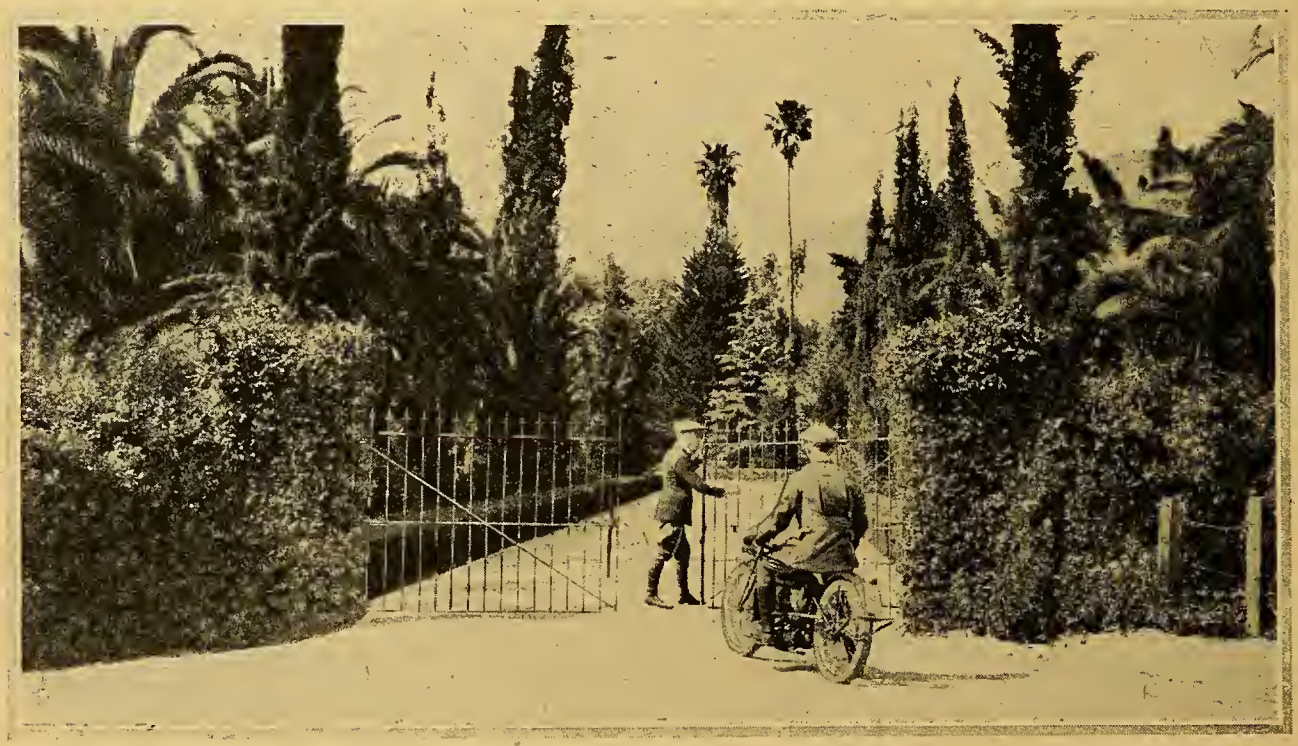
Friday—my last day on the road—contained another lazy run. Joining Watling Street at Shrewsbury, I experienced my usual difficulty in leaving it successfully for Coleshill and Coventry. The area enclosed by a circle having the Lichfield and Sutton Coldfield road as its diameter contains a more confusing maze of (apparently) main road junctions than anywhere else in the world!

Almost, I forgot my mount, which is a good sign, for too often, in the past, descriptions of holiday ramblings awheel tended to become purely narratives of mechanical repairs and adjustments.

The machine was an o.h.v. Triumph. It behaved in the way one expects a Triumph to behave—faultlessly. With the speedometer at 1,580 miles on Watling Street, it was let out to see how it had kept its tune for such a rapidly totalled mileage without decoking—"56 m.p.h." was the answer.

The plug was removed three times, and the valve push rods were adjusted on, I think, four occasions. Brake and rear chain received attention once each. That was all.

Fuel consumption for the whole trip averaged the extraordinary figure of 90-95 m.p.g. My record day's run, the first Sunday's 330 miles, failed to fatigue me. "Hands off steering" and 3in. tyres will be essentials on all my mounts of the future. A McL.

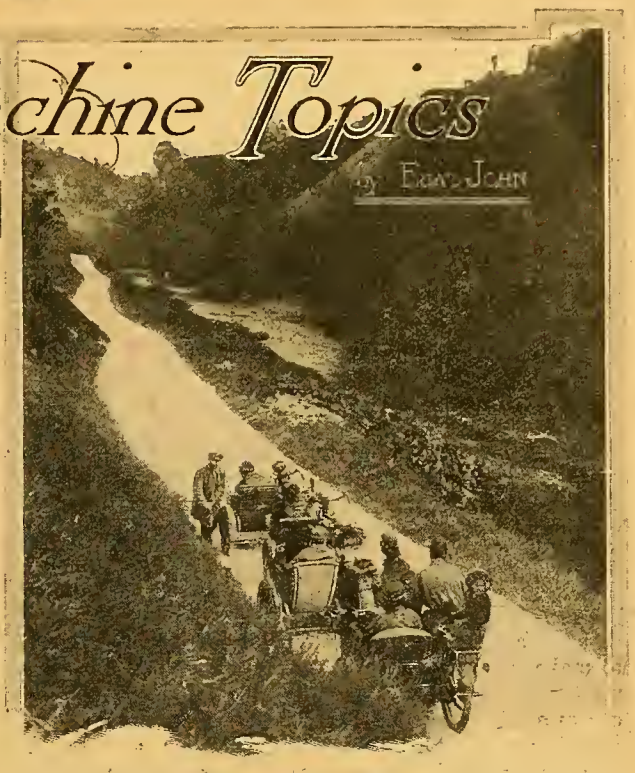


An ideal motor cycling country—California, the land of perpetual spring. These Los Angeles boys prefer a Cleveland two-stroke to their father's "twin-six" limousine.

MOTOR SPIRIT PRICES IN AMERICA.

IN the House of Commons recently, replying to Major Glyn, Sir P. Lloyd-Greame, Secretary to the Overseas Trade Dept., said that according to information he had obtained from trade and other sources, the price, at refineries in Philadelphia, U.S.A., of motor spirit, of a grade distinctly inferior to No. 3 motor spirit, was, on July 1st this year, 20 cents per gallon. The price to consumers in New York was 26 cents per gallon. In July, 1914, the corresponding prices were 11 cents and 15 cents. Those prices were for bulk supplies, and a standard gallon in the United States was five-sixths of a British imperial gallon. Most of the motor spirit imported into this country from the United States was carried in the oil companies' own tank steamers, and he was unable to supply information as to the cost of transport.

Passenger Machine Topics



A Perfect Day's Run. Riding in a Deluge. The Cost of Touring.

THE morning: a fine one in late August, calm, with just a touch of coolness in the air, and a golden glow in the misty east. We packed sandwiches in a porcelain-lined box—sandwiches from the middle of a Cumberland ham—lettuce and tomatoes. We also took a basket of greengage plums. Two fat Bakewell tarts were also accommodated, and two big flasks containing tea and coffee.

The tyres of all three wheels were perfect, and the spare was *not* a groggy cast off; chains were perfect, and there was no *hoping* we should not have trouble, for it was no perfunctory overhaul the machine had had the night before. Such was the start of a perfect day's sidecarring.

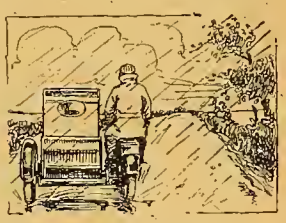
The journey: over roads without pot-holes and traffic, with an engine pulling with a clean exhaust note. Ten, twenty, thirty, forty miles, and then the sea-air was felt; the ozone, carried across the flats, met us as we rushed towards the shore. We inhaled big breaths of the tonic breeze, and glorified the sidecar.

The objective: seagulls skimmed over the desert of gleaming yellow sand before us; the gentle hiss of breakers reached us as we sat in the grey grass on the dunes and consumed ham and greengages. We bathed and decided in the future to shun the city and live "the simple life," then slowly packed up and prepared to depart. In the cool evening the engine sang sweetly, we met no disconsolates on the roadside with break-downs, no hare attempted to jump the sidecar, and we arrived home within a few minutes of our appointed time—a gorgeous, refreshing run on a rare day when the pleasures of the sidecar were enjoyed to the very limit. A tale lacking in incident, maybe, but such days I sorrily admit are only too rare.

IS it possible to keep perfectly dry whilst driving for five or six hours in a continuous downpour? I have my doubts. Up to the present everything I have tried allows wet to percolate either at the crook of the elbow or at the shoulder seams, and in spite of waders and a waterproof apron underneath the oilskin, rain will in some mysterious way find its way off the tank on to the saddle and also drive in between the buttons of the coat.

Some of my colleagues have been just as unfortunate as I have; others vouch that they keep perfectly dry in a deluge.

One rider, who has covered big mileage on powerful outfits wears ordinary waders and an oversized rubber coat, never complains. Another, who has covered the Scottish "Six Days" several times, wore last time a thin oilskin, a new and stout leather coat on top, and Hutchinson waders. Yet the Scottish "showers" penetrated the leather and seams of the oilskin.

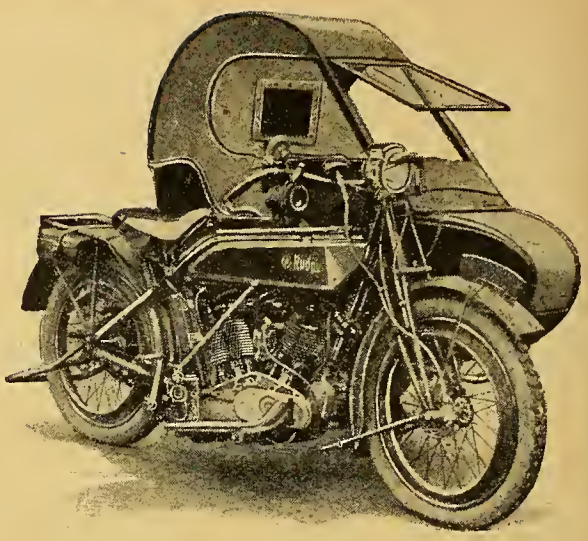


I am inclined to get specially made a pair of waders cut in a similar manner to what I believe are called American overalls, such as are used by mechanics. There are, of course, good overalls on the market made with seats, but they are not comparable with rubber waders—and were never meant to be—when it comes to riding in deluges. The special waders, together with a good rubber coat, with a light poncho on top, should enable one to keep dry and warm. Granted you might be suffocated, but those ominous and "goosey" shivers often experienced after a thorough soaking on the saddle would be avoided. Personally I would rather be suffocated than chilled to death.

Passenger Machine Topics.—

I DO not think quite sufficient attention is being displayed by makers in luggage accommodation. I know this is a statement that may be immediately refuted. The many lovely bulbous back sidecars capable of holding a can of petrol out of sight may be pointed out as exemplifying the attention that has been given to the subject. These bulbous backs are very nice; they add to the symmetrical appearance of a body, and are useful for oddments and also for carrying petrol when in Sutherland and Ross. But when it comes to carrying a couple of portmanteaux or a big package, one is often in a quandary.

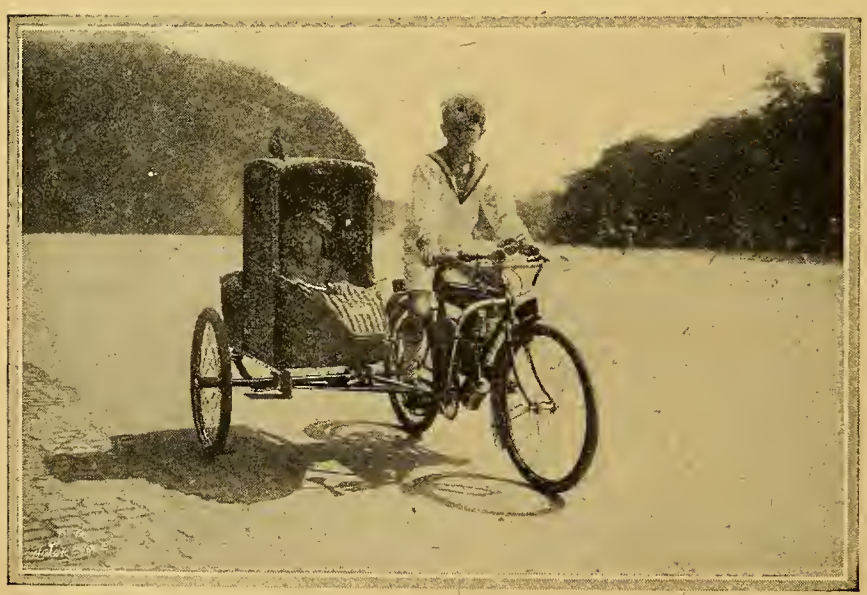
There is ample room for a display of ingenuity in arranging a grid that will take two cases of ample area without giving the outfit a clumsy appearance. These cases might fit quite independently into a permanent outer case of fibre fixed on to the special grid. Between the machine and the sidecar a similar idea might be adopted, for there is any amount of wasted space.



How a Coventry owner of a Rudge outfit, Mr. Biddle, solved the problem of weather protection for his passenger.

'WHAT it costs to tour!" A subject this; there are sufficient potentialities in those five words to make a book. Several of the many letters on this matter in recent issues are more than interesting; they are astonishing as showing what can be done on comparatively little expenditure. I say comparatively. "Experienced," for instance (lucky man with 30 days' respite from London), says he took a 30-days' holiday from London to Scotland, Lake District, Wales, and Bournemouth, for 30s. per day, which included accommodation for three persons and cost of petrol and amusement. "W. B.," on a 15-days' tour, averaged 13s. 2d. per day for bed and breakfast (for two persons). And then what can be said of "XF 3039," who, delving about Dorset, finds—"a delightful old-fashioned inn in gorgeous surroundings where we got plenty of wholesome country fare (home-cured bacon, new-laid eggs, home-made butter, etc.), and the bill for supper, bed, and breakfast was only 13s." The very name of the inn, "The Golden Heart," is intriguing. "XF3039" did not mention the honeysuckle and new-mown hay, the old beams and pretty waiting-maids, but then one can't expect everything for 13s.!

IT is obvious, then, that touring is not the expensive pastime some would have us believe. Discrimination has to be used; if one is too lazy to enquire for reasonably-priced accommodation, then the indifference has to be paid for. There certainly can be no more attractive holiday than a sidecar tour, putting up just where one desires, stopping as long as fancy dictates, and continuing the journey at one's own sweet time. Such a trip is blissful after existence under arbitrary time limits.

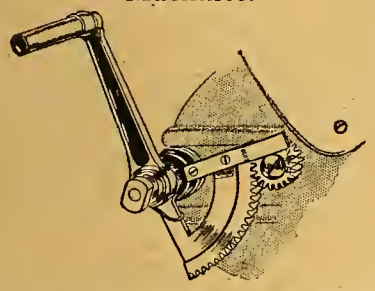


The limit in sidecar outfits—a 10 year old French enthusiast and his 9 year old passenger.

THE Paris correspondent of *The Motor Cycle* writes that in France no person is allowed to ride a motor cycle, or indeed to handle any kind of mechanically propelled vehicle, until he has passed a practical and theoretical Government examination. At present no age limit exists. Only 10 years of age. Paul Goujon, I am told, passed a very severe examination which gave him the right to travel over all the highways of France on a motor cycle. Paul's machine is built to his requirements, for it is a motor assisted bicycle to which is attached a closed basket-work sidecar.

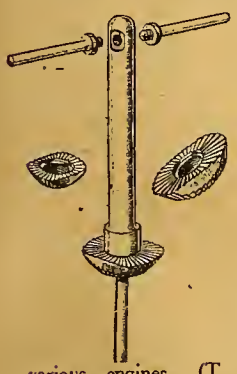
AMONG THE ACCESSORIES

Easier Starting on Ex-R.A.F. Machines.



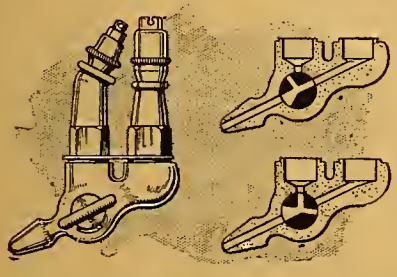
Ex-W.D. and other old P. & M. machines may be modernised by fitting the kick-starter made by the Motor Cycle Accessories Co., 43a, New Cross Road, London, S.E.

Valve Seat Cutters.



If the valve seating is badly pitted, this Midland device will prove useful. Although mainly for garage use, it should also attract the competition rider, for cutters are supplied to suit various engines. (T. H. Hodgson & Co., Ltd., Sentinel Steel Works, Neepsend, Sheffield.)

Dimming Acetylene Lamps.

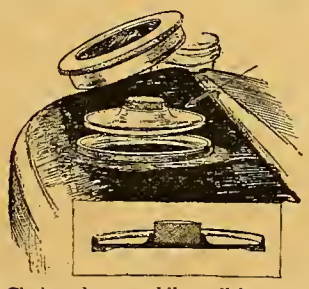


Intended to allow an acetylene lamp to be dimmed when the machine is stationary, the Cotton dimmer makes use of a three-way tap in conjunction with two burners. At present it fits P. and H. lamps only. (F. C. Cotton, 23, Wellington Street, Lincoln.)

Air Leak Detection Simplified.

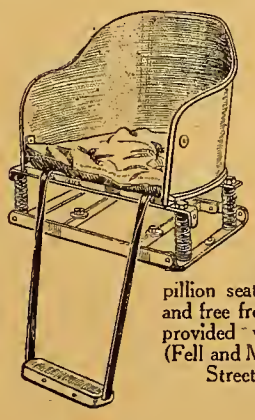
By means of cigarette smoke pumped into the cylinder by the Gordon patented device, air leaks, suspected or otherwise, may easily be located. It is particularly useful in detecting the cause of uneven firing on twin cylinder engines. (R. J. Gordon, 5, Landsdowne Square, Weymouth.)

Leak Proof Filler Cap.



Eli Clarke, the erstwhile well-known competition rider, has introduced a device to prevent petrol splashing out of over-full tanks; it consists of an aluminium disc, a felt washer and a felt pad by which the existing cap holds the new member in position. (E. Clarke, Cheltenham Road, Bristol.)

Simple Pillion Seat.



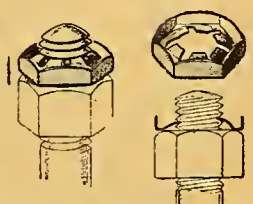
Suitable for either child or adult, the Fell and Mitchell pillion seat is light, simple and free from rattles and is provided with a footrest. (Fell and Mitchell, 24, Soho Street, Liverpool.)

Plug Cleaning Made Easy.

Screwed into the Westminster device, a sparking plug may be rapidly cleaned by a little vigorous shaking, loose steel wires and petrol combining to remove all carbon

deposit. If required, two plugs may be cleaned at once, one at either end. (The Westminster Trading Company, St. Stephen's House, Victoria Embankment, London, S.W.1.)

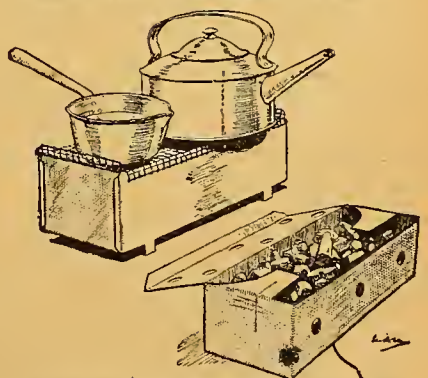
Ingenious Locking Washer.



Placed above the nut instead of underneath, the Palnut safety lock washer, which screws in the core of the thread, tends to flatten out and thereby grips more tightly as the main nut is unscrewed. 2s. 6d. per assorted box. (The Palnut Co., Ltd., 6, Great St. Helens, London, E.C.3.)

Slow Combustion Picnic Stove.

Wayside picnics, or even more elaborate meals, are simplified by the Hardy stove which burns a special charcoal slow combustion fuel, a card-board box-full, as



illustrated, lasting nearly two hours. With three fuel replenishments, the price is 13s., spare heating units being 9d. each. (The Pitt Commutator Co., Grenville House, Brunswick Square, London, W.C.2.)

The McKenzie Lightweight.

SPECIFICATION.

ENGINE: Hobart two-stroke; 60 × 60 mm., 170 c.c.
LUBRICATION: Petroil.
CARBURETTER: Vici, one lever.
TRANSMISSION: ⅝ in. rubber belt, fixed gear.
TYRES: 26 × 1¾ in.
BRAKES: Front, rim; rear, coaster hub.
MAGNETO: Fellows.
SPRINGING: Frame, rigid; front forks, Hobart spring.
PRICE: £27 6s. (at Coventry works).

THERE seems little doubt as to the rapidly increasing popularity of the ultra-lightweight motor cycle, and we therefore welcomed the opportunity of testing one of the most popular models in this class of machine—the 170 c.c. McKenzie.

Obviously this mount has been planned with considerable care and with an attention to detail which goes far to make it as satisfactory on the road as it proved to be.

In construction and driving it is simplicity itself, and anyone with even the most elementary knowledge of motor cycles need not be afraid of taking over the machine. The engine has a cubical capacity of 170 c.c. and is of the two-stroke type, giving very smooth running and all the speed that is required. Transmission is by a direct belt drive to a large drum on the near side of the back wheel from a pulley behind the outside flywheel on the engine shaft.

A pleasing feature of the little mount is the willingness and astonishing flexibility of the engine.

Petroil Lubrication.

The carburetter is a Vici of the single lever type, and lubrication is effected by the petroil system. The petrol filler cap is fitted with an oil measure, and spare oil is carried in the oil tank in front of the petrol container in the usual manner, but the underside of the oil tank possesses a release tap, thus enabling oil to be drained off as required. The mixture in this case should be five measures of oil to every half gallon of petrol. The tank capacities are about three-quarters of a gallon of petrol and one quart of oil.

To try it under the conditions which the average purchaser almost certainly will use it, we decided to subject it to a few tests in thick traffic, tests from which it emerged with flying colours. A few turns of the pedals were sufficient to start the engine, and after that, barring accidents in the way of traffic blocks and other inevitable stops, it was not found necessary to use the pedals for any purpose other than as footrests. With very little practice "traffic-dodging" may be reduced to a fine art with a McKenzie, as was soon discovered. The ease of manipulation and eagerness of the engine enable one to wriggle through openings which would be impossible to a less lively machine.

Speeds from 8 to 20 m.p.h.

Satisfied that the machine was capable of doing all that was required of it in traffic, we then tried the other extreme with equally satisfactory results.

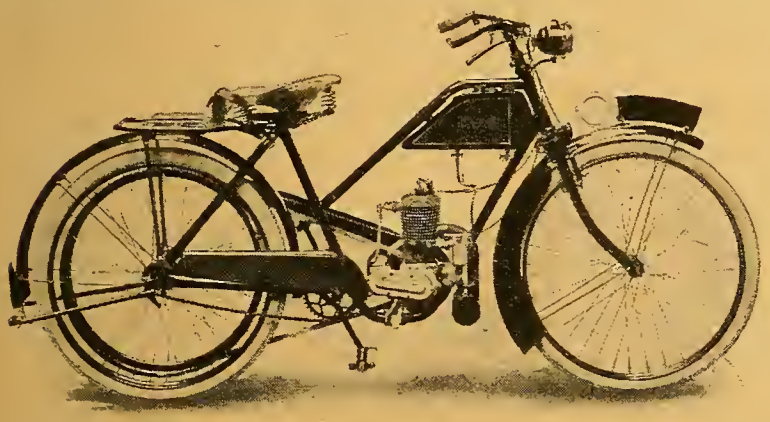
It stood up to reasonably fast work with apparent ease, and the engine appeared to be quite free from overheating. Of course it must not be imagined that great speeds can be obtained with a machine of this kind. The speed on the level is not much above 20 m.p.h., but as the machine is so light and convenient to handle, any speed greater than this would tend to have evil effects on what can only be described as an excellent little frame; the minimum speed with the engine firing properly is somewhere in the region of 8 m.p.h.

Road Tests of New Models.—

Braking is carried out by a hand-operated rim brake on the front wheel and a singularly efficient rear brake of the back-pedalling type. We took the opportunity of testing these brakes somewhat severely and were unable to find any fault with them. They do their work well.

A certain amount of vibration is noticeable when travelling at the higher speeds, but this is almost unavoidable in machines built on such very light and simple lines; the front forks absorb all average road shock quite satisfactorily, and the saddle is comfortably sprung.

We were unable to verify the efficiency of the mud-guarding arrangements owing to an unusual spell of fine weather during the tests, but as far as can be judged from appearances it should be quite good.



The latest McKenzie model—with a lower frame—an alternative to the now popular standard production.

The upper section of the driving belt is protected by a light metal shield which obviates any danger of one's clothes coming in contact with the belt and also protects it to a certain extent from the wet.

The frame is strongly built, the front down tube being continued in a loop under the crank case for extra security, and the engine itself is bolted to the frame in two places.

Suitable for Riders of both Sexes.

The advantage of the McKenzie is that the frame construction makes it suitable to be ridden with almost equal ease by either sex, whilst mechanical considerations need terrify nobody. It takes up no more room than an ordinary pedal bicycle and is really remarkably light.

Altogether we were very well pleased with the performance of this machine, whether used for slow and sometimes difficult work in London traffic or for the easier and more enjoyable pastime of open country riding, reliability rather than speed, of course, being the order of the day.

The large number of McKenzies now on the road, between 1,500 and 1,600, we are informed, testifies as to its all-round utility. Recently an alternative model with a slightly lower saddle position was introduced and is intended for those who find the original model a little too high. With this latest model it is possible even for short riders to sit on the saddle with both feet firmly on the ground, a point which gives the nervous rider increased confidence.

INSURANCE PROBLEMS.

A Feature in which Insurance Questions are Answered and Discussed.

The Bewildering Increase of Premiums.

Mr. L. Desoutter embodies a number of queries in the one letter: "In 1919 I took out a policy with a certain company for a 350 c.c. twin Enfield worth £75; it gave me complete cover, including pillion riding, and was insured whilst anybody drove it. I paid the first 50s. in the damages section. The premium was under £3. This year I wished to take out the same kind of policy, with the same people, offering the same cover for a 550 c.c. motor cycle worth £50; I was informed that the premium would be £13. I had no claim during the previous policy of 1919, but the company refused to give me a rebate of 15 per cent. because the insurance had not been continuous. To my disgust I find that all insurance companies require the same premium. Have they made a combine? For there seems to be no competition left. And why is it that premiums have gone up since 1919, when everything else—labour, cost of living, etc., has dropped considerably? My brother has got a two-seater light car worth £400; his comprehensive policy only costs him about £12. I have driven motor cycles for the last ten years, always with a pillion seat, and have never had an accident or put in a claim against any company, so you understand why I consider the above premiums exorbitant.

Can you tell me of a good insurance company that will give me the cover I require at a reasonable figure? Why should 50 per cent. extra be claimed for addition rider? The risk is not double, as the machine cannot be ridden by two persons at the same time.

The reason for the very wide difference between the premium you have previously paid and the present rate appears to be that for some time the insurance companies carried on motor cycle insurance business at a considerable loss. Insurance companies keep statistics with regard to the various classes of risk and have evidently found the increased premium necessary for pillion riding and risks where more than one person drives. Whilst there may be small variations in the premiums charged by various companies, we do not know of one that would be willing, at the present time, to issue policies at the figure you apparently require.

* * * *

Fire Caused by Collision.

Mr. F. Smurthwaite, Sales Manager of Messrs. C. Binks (1920), Ltd., Manchester, propounds an interesting question: "Assuming one has a machine insured against fire, theft, and third party risks, what would be the position if an accident, say a collision, damaged the petrol tank, thus causing a fire? Would the insurance company consider the damage due to 'accidental damage or fire'?"

In this case the damage caused by the fire would certainly be indemnified. The cause of the fire would not affect the case; but very possibly a reduction would be made for the damage to the machine in the collision.

INTERNATIONAL COMPETITION RULES.

F.I.C.M. Conference at Geneva makes Minor Alterations to Several Regulations. Touring Facilities Discussed.

NO less than nine countries were represented at the summer congress of the F.I.C.M., which was held immediately after the conclusion of the International Trial. Delegates were present from Great Britain, Italy, Switzerland, Belgium, Holland, France, Denmark, Sweden and the United States.

The Spanish Tangle.

Affairs in Spain appeared to be in a somewhat tangled condition. The Royal Spanish Motor Cycle Club (*Real Moto-Club d'España*) is really the governing body, but the Royal Moto-Club of Cataluña is the more active motor cycle body, and is fully qualified to take the lead. For some years the *Real Moto-Club d'España* has been promising to put its house in order, but it has done nothing. It is therefore proposed to give it one month to give a satisfactory reply to the F.I.C.M., and failing that to exclude it from the Federation and to appoint the Royal Moto-Club of Cataluña in its place. At the same time it was resolved to put the full facts of the case before the patron of the club, H.M. The King of Spain.

Touring Facilities.

The General Secretary reported that he had received communications concerning improved touring facilities from Belgium, Denmark and Holland, and he presented the Chairman with a reprint of an article in *The Motor Cycle* of February 16th, 1922, which showed the formalities to be gone through and the sums expended by a British motor cyclist who desired to tour on the Continent. It was also reported that the Dutch club had in one year dealt with 2,245 applications for facilities for foreign touring.

It was decided that the F.I.C.M. should take steps to be represented on the *Congrès Internationale de la Circulation Routière*, a body meeting annually in Paris, which attempts to smooth out all difficulties of international motoring. Motor cyclists hitherto have not been represented.

Insurance for Tourists and Competitors.

Next came a very interesting discussion on the question of insurance. In Denmark every motor cyclist must be insured against third-party risks, and a similar law is to be brought into effect in Switzerland. It was explained that the customs authorities of both countries would undoubtedly accept policies issued by recognised insurance companies. Mention was also made of the insurance of competitors in motor cycle races and competitions, and it was announced that riders in Switzerland could be insured up to 20,000 francs against death in a one-day race for 30 francs, and in a race not exceeding 10 kilometres in length for 10 francs. The British rate for similar policies is ten times this amount.

A proposition emanating from Belgium for the abolition of the 1,000 c.c. class for racing and other alterations in the general classification was not passed, as it was pointed out that these were purely internal matters and each country was free to follow its own desires.

A proposal from Great Britain to introduce a 750 c.c. class for sidecars was laid on the table, and another to the effect that in records the timekeeper's original sheets (if electrical timing, the original strip) should be submitted to the body passing the record was agreed: it was also decided that those parts of a motor bicycle taking part in a record which might be changed should be the sparking plug, chain or belt, wheel and/or tyre. A third proposal from Great Britain was also agreed—that mile or kilometre records might be made from a standing start with the engine running, as it was thought that this would give excellent information as regards acceleration.

Minimum Tyre Size Reduction.

From the point of view of safety it was agreed to adopt the proposal of the U.S.A. delegate that the minimum tyre size in Class E (1,000 c.c. machines) should be reduced to 65 mm., as it was found that the larger size tyre would not hold the rim at high speeds.

AN AMATEUR ROAD RACE NEXT YEAR?

Next Year's T.T. possibly in England. Proposal to Reduce Lightweight Capacity Limits.

SOME interesting recommendations regarding next year's T.T. Races are to be made by the Competitions Committee of the A.C.U. to the General Committee at its next meeting. It is suggested that in 1923 the three T.T. Races should be for motor cycles of 250 c.c., 350 c.c., and 500 c.c. respectively; a sidecar T.T. Race is also likely to be discussed. This will give great satisfaction to many makers of passenger machines.

Special consideration will be given to an amateur or private owner's event, following the T.T. Races proper. Alternatively, if amateurs can be satisfactorily defined, and the definition enforced, a reduced fee may be charged for them in the T.T. Races, and special prizes awarded.

The races may possibly be held in England about the middle of June; failing this, in the Isle of Man. It is also proposed that past T.T. winners should be made honorary life members of the A.C.U. and that special badges should be issued to them during the races week.

It is likely that efficient silencers will be made compulsory in the races.

WHOLESALE CAPTURE OF 600 c.c. SIDECAR RECORDS.

THERE has been considerable activity in the 600 c.c. sidecar record class at Brooklands lately. On Monday of last week J. Emerson (499 Douglas sc.) lowered the times for the mile, which, subject to confirmation, now stand at:

1 mile=68.82 m.p.h.
1 mile (mean speed record)=66.67 m.p.h.

On the following day he successfully attacked another two:

Flying 5 miles=70.50 m.p.h.
Standing 10 miles=68.48 m.p.h.

His equipment throughout was: Hutchinson tyres, Castrol oil, E.I.C. magneto, Shell petrol, Flexi carburetter, K.L.G. plugs, and a Beta streamline sidecar was fitted.

Also on Tuesday D. R. O'Donovan (588 Norton sc.) gained an important series of the longer distance records in the same class:

1 hr.	... ...	61m. 456yd.=61.26 m.p.h.
2 hrs.	... ...	118m. 1,030yd.=59.29 m.p.h.
3 hrs.	... ...	178m. 1,098yd.=59.54 m.p.h.
50 miles	... ...	49m. 2.04s.=61.17 m.p.h.
100 miles	... ...	1h. 38m. 42.3s. =60.78 m.p.h.
200 miles	... ...	3h. 24m. 29.41s.=58.68 m.p.h.

The equipment used included: Speedwell oil, Dunlop tyres, and a C.A.V. magneto.

SPORTSMANSHIP.

THERE are one or two little stories to tell in connection with the International Six Days Trials which go to show the sporting spirit of the Swiss.

Arriving in good time from their distant homes, the Swedish riders made a trial run through the country round Geneva, and returned in a very miserable state of mind, as they found that their brakes were wholly inadequate for the trial they were about to face. In Southern Sweden the roads are flat. Relating this trouble to a certain Swiss official, who prefers to be nameless, they were surprised and delighted to hear him offer to take their mounts into his works, which turn out a rival machine, and entirely reconstruct the brakes, and this was done to time after twenty-four hours' continuous work!

The Swiss officials were certain that England would win by a narrow margin, and were prepared to take their beating like sportsmen. Two dead-tired officials added up the figures. "Yes," said one, "we have won by one point." "Splendid," said the Swiss. "Hold hard!" said the first speaker, "it's *you*, not us." This remark, when translated, almost brought tears of joy to the Swiss sportsmen, so relieved were they at the end of this *lutte passionante* (passionate struggle), as they called it.

FAST TIMES AT CHATCOMBE PITCH.

Western Centre A.C.U. Mid-week Hill-climb Attended by Many Well-known Riders.

AFTER a heavy downpour in the forenoon brilliant sunshine favoured the Western Centre A.C.U. hill-climb last Thursday afternoon.

The event took place at Chatcombe Pitch Hill, about four miles south-east of Cheltenham, over a course all but half a mile in length. There were events for all classes of vehicles, and a large field turned out from the various clubs, both to take part in and to witness the sport.

The hero of the hour was George Dance, whose riding, as usual, was beyond all praise. He made the fastest time of the day on his 499 c.c. Sunbeam, covering the distance on more than one occasion in 23⅗s., thus again winning the "Williams" Challenge Cup; he also carried off the "John Bull" Challenge Cup, presented for the fastest time of the day with a sidecar or three-wheeled vehicle—28⅘s. W. L. Handley (348 O.K.-Blackburne) was also surprisingly fast.

The organisation was good; timing was carried out electrically; and a fairly strong wind blew in favour of the competitors, so that there was really nothing at which one could grumble.

There were thirty-two competitors, although considerably more entries.

The results were as follow:

250 c.c. Solo (Open).
1. F. Hallam (247 Levis), 31⅕s.
2. B. Kershaw (248 New Imperial), 31⅗s.

350 c.c. Solo (Open).
1. George Dance (349 Sunbeam), 24⅗s.
2. W. L. Handley (348 O.K. Junior), 25⅘s.
3. F. G. Morgan (348 Cotton-Blackburne), 27s.

350 c.c. Solo (General).
1. W. L. Handley (348 O.K. Junior), 25s.
2. J. Cook (348 Edmund), 28s.
3. F. G. Morgan (348 Cotton-Blackburne), 29⅗s.

500 c.c. Solo (Open).
1. George Dance (499 Sunbeam), 23⅗s.
2. H. Hassall (490 Norton), 24⅗s.
3. E. W. Spencer (494 Douglas), 24⅕s.

500 c.c. Solo (General).
1. E. W. Spencer (494 Douglas), 25⅕s.
2. W. L. Handley (347 O.K. Junior), 25⅖s.
3. F. J. Adam (490 Norton), 26⅗s.

750 c.c. Solo (Open).
1. George Dance (499 Sunbeam), 23⅗s.
2. H. Hassall (490 Norton), 24⅗s.
3. R. E. Eveson (490 Norton), 26s.

750 c.c. Solo (General).
1. W. L. Handley (348 O.K. Junior), 24⅕s.
2. E. W. Spencer (494 Douglas), 25s.
3. F. J. Adam (490 Norton), 26s.

Unlimited Solo (Open).
1. George Dance (499 Sunbeam), 23⅗s.
2. H. Hassall (490 Norton), 24⅖s.
3. L. Paynter (490 Norton), 26⅘s.

Unlimited Solo (General).
1. R. E. Eveson (490 Norton), 25⅗s.
2. F. J. Adam (490 Norton), 26⅖s.
3. W. H. W. Drew (490 Norton), 26⅔s.

600 c.c. Sidecars (Open).
1. George Dance (499 Sunbeam sc.), 30⅕s.
2. L. Paynter (490 Norton sc.), 31⅘s.
3. R. E. Eveson (490 Norton sc.), 32⅖s.

600 c.c Sidecars (General).
1. W. B. Gibb (494 Douglas sc.), 34⅖s.
2. J. C. Lovesy (490 Norton sc.), 36s.

750 c.c. Sidecars (Open).
1. George Dance (499 Sunbeam sc.), 28⅕s.
2. L. Paynter (490 Norton sc.), 32⅕s.

750 c.c. Sidecars (General).
1. R. Eveson (490 Norton sc.), 29⅗s.
2. W. B. Gibb (494 Douglas), 33⅔s.

Unlimited Passenger Machines (Open).
1. George Dance (499 Sunbeam sc.), 28⅘s.
2. R. E. Eveson (490 Norton sc.), 30⅕s.
3. L. Paynter (490 Norton sc.), 32s.

Unlimited Passenger Machines (General).
1. W. B. Gibb (494 Douglas sc.), 33⅕s.
2. H. V. Hughes (Morgan),36⅗s.

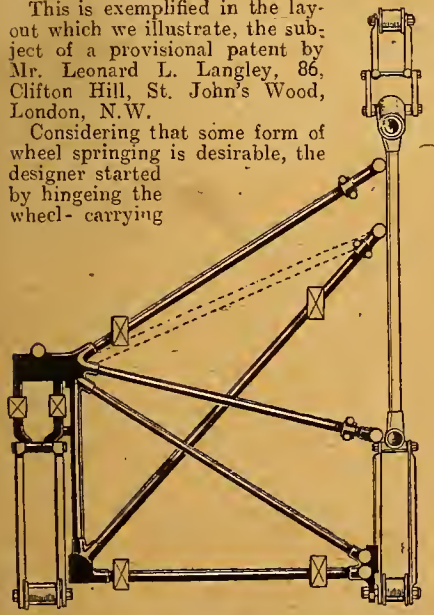
A number of minor thrills were witnessed at various times during the hill-climb, several competitors finding some difficulty in hugging the first bend sufficiently close, with the result that they found themselves dangerously near the grass bank on the opposite side of the road, and the thick dust here made a quick return to the middle of the road by no means an easy task.

TRIANGULATION AND THE SPRUNG WHEEL.

SIDECAR chassis design offers a wide field to the man of inventive genius, the tendency being more and more to ignore the conventional ideas of to-day and make a fresh start from first principles.

This is exemplified in the lay-out which we illustrate, the subject of a provisional patent by Mr. Leonard L. Langley, 86, Clifton Hill, St. John's Wood, London, N.W.

Considering that some form of wheel springing is desirable, the designer started by hingeing the wheel-carrying fork and providing a mounting for laminated springs for its suspension. From this main lug three straight tubes were carried to the cycle frame. Then an auxiliary portion was added to form some sort of rectangular mounting for the body. That, in brief, completed the task.



In the Langley sidecar chassis three straight tubes are led to the mounting for the sprung-wheel fork.

Although the sketch is more or less diagrammatic, it will readily be seen that the rigid points are where they are most needed, and that the cycle frame and the sidecar wheel are connected by a double triangle of straight tubes.

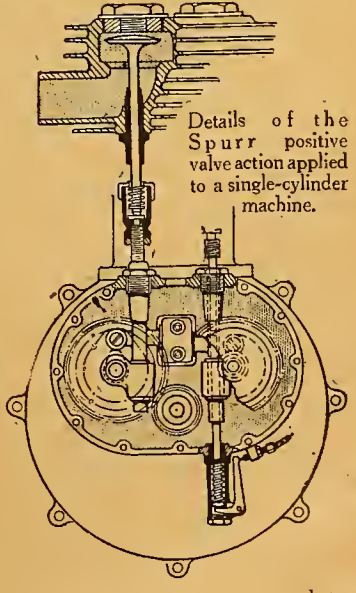
Alternative forms of wheel suspension, etc., are allowed for in the patent specification, and for heavyweight outfits an additional stay may be arranged as indicated by the dotted lines in the drawing.

POSITIVE VALVE ACTION.

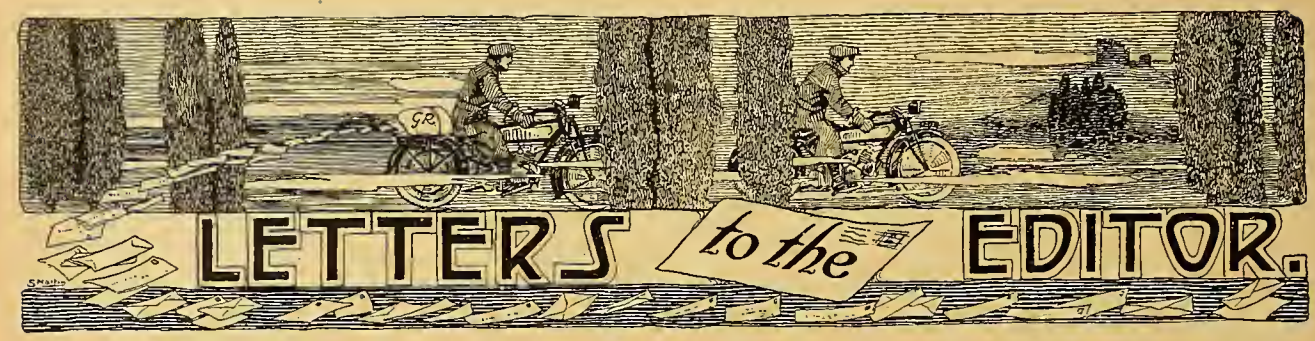
A SCHEME for the positive closing of side-by-side valves has been devised by Mr. H. F. Spurr, of 110, Newland Street West, Lincoln. The action is extremely simple, since instead of employing a plain cam a cam track is cut into the face of the 2 to 1 gear wheel; into this track is inserted a roller attached to the tappet stem, an additional guide being supplied to prevent side rock by twisting. The tappet is attached direct to the valve stem by means of a small screwed cup containing a very short length of spring sufficient only to take up the necessary tappet clearance. By this means the valves are both opened and closed positively. The scheme, though novel as regards motor cycles, has been in use on certain racing cars.

AN 18-MILE HILL.

EIGHTEEN miles up hill, even if the gradient is only moderate, represents a searching test of cooling. This unusual distance had to be covered in the Italian "Championship of the Mountain," up the St. Bernard Pass, starting from the village of d'Aoste. In the 500 c.c. motor cycle class a Triumph ridden by Opezzi was first in 35m. 14⅕s., followed by Rossi on a Motosacoche in 37m. 40s. Bisioli, who won in the recent Grand Prix Race at Strasbourg, was first in the 1,000 c.c. class.



Details of the Spurr positive valve action applied to a single-cylinder machine.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

650 SUPERFLUOUS C.C.?

Sir,—Mr. B. Pygsbotham wonders why people use machines over 350 c.c. for solo work. By the tone of his letter I take it he means fast solo work. True, the speeds attained in the T.T. races bring home the possibilities of the lightweight, but the buying public cannot, and never will be able to, buy standard machines as fast as those entered by the makers in the T.T. The Lightweight T.T. was won at nearly 50 m.p.h. average, but I certainly would not buy a two-stroke if I wanted a 50 m.p.h. machine (bar the Scott, of course). How many 350 c.c. four-stroke mounts are there able to keep up 50 m.p.h. for any length of time?

CHARLES F. STAGG.

Sir,—Mr. B. Pygsbotham seems fully convinced of the efficiency of the 350 c.c. machine, but he surely does not claim it to be the ideal sidecar mount. Some machines in this category, *e.g.*, the Douglas and the A.J.S., are fast, but even these do not make *ideal* mounts for serious sidecar work, and it cannot be expected of them.

Why is the "big twin" tolerated? Surely its more even balance and "silkiness" and its greater reserve of power give it a certain prominence over the good old "single."

London, S.W.19. "1,000 C.C."

Sir,—I do not own a machine at the moment, but my prospective purchase will be something pretty near a 1,000 c.c. 'bus unless I discover that either the new sports J.A.P. or o.h.v. Blackburne twin of approximately 750 c.c. possesses practically all the properties which less than a year ago belonged to the bigger engine only. This selection is the sole outcome of a careful and unprejudiced search for the machine which most nearly complies with the very clearly defined requirements necessary for me to experience and enjoy fully all that there is in the sport.

Does Mr. Pygsbotham really suggest that such an explanation is not a sane and reasonable one?

The outstanding feature of his letter is his rather arbitrary and uncomplimentary classification of the big twin solo rider—that is, the rider who seeks to get more than bare speed and acceleration from the stress and fury of a game little engine in extremis. Does he similarly stigmatise the individual who in the pursuit of any given hobby, recreation, or sphere of life, seeks more than just one bare attainment, or who would wish to explore other avenues? Is it a case of "big-car-itis" with the Rolls-Royce owner when a little machine of the G.N. type might be tuned to equal road speed and acceleration? Or a case of "big-house-itis" with the man who would reside in a "desirable residence, three reception rooms, billiard room, bath, h. & c., usual offices . . . " when any primitive water-tight two-roomed shack would efficiently provide mere simple shelter and warmth and a feeding and sleeping place?

On the other hand, it is certain that any man, observed to be continuously working and tuning away at his little 350 c.c. 'bus to keep it in 60 m.p.h.-under-slightly-adverse conditions fettle, would certainly evoke a new and unfavourable "medical" classification from quarters where the fascination of motor cycling was not sympathetically understood. In its unmedical form it might conceivably be "little-single-itis." Who knows?

No doubt it is within the point at issue to jot down a few of the conditions governing the writer's selection of a machine:

The wonderful little 350 c.c. engine was passed over because:

It is too fussy and insistent at speed.

It conveys too much sense of strain, effort, wear and tear at speed.

(T.T. conditions are not everyday road conditions.)

60 m.p.h. required to be available at any time without constantly looking to the tuning.

Requirements of writer a little too severe for retention of tune for a reasonable length of time.

Frame of bicycle too small (writer is somewhat above the average in height—or length of limb—and stature).

Machine too unsteady on battered roads and grease.

The 500 c.c. machine was passed over because he required:

A twin of at least 300 c.c. per cylinder;

Medium close ratio gear box;

Top speed of $4\frac{1}{2}/4\frac{1}{2}$ to 1.

All usual hills to be taken without effort, and bothering about speed gear when the hills are not "rushed."

Biggest top gear acceleration from comparatively slow speeds.

Big-twin-sports-outfit-speeds and acceleration in the event of it being wished to run a sidecar.

That indefinable pleasure of a well balanced big engine leisurely running well short of its capacity.

In addition there is the smoother and more "placid" running of a big twin at speed; the question of big tyres; the preference for a machine weighing approximately 270 lb., etc.

D. G. L.

London.

THE ROAD TO ST. DAVIDS.

Sir,—Pilgrims and travellers of many varieties from the days of William the Norman and Edward I. have visited St. Davids, that famous shrine and cathedral of South Wales. Its highway from Haverfordwest (of seventeen miles over sixteen hills) was in the Middle Ages well known to pilgrims. Pope Calixtus II. ordained that two pilgrimages to St. Davids counted as of equal merit to one to Rome.

To-day that road in some parts is in as bad condition and is as dangerous to travellers as when the pilgrims of ancient days passed over it.

The road is an epitome of many others in the country. For centuries it stood the ordinary traffic of coach, market cart, and farmer's shandry, and kept with little repair in fairly good condition.

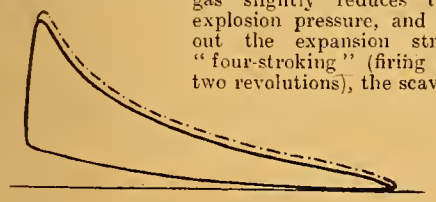
To be up to date (not having a railway line there) a railway company put on a motor-bus of 45 horse-power, and of immense weight, to deal with the local traffic. The result is a ruined road, torn up in places as if it had been ploughed. It is now being repaired at a cost of £90,000.

May a recent pilgrim to St. Davids make a suggestion to the local road authorities? Let them insist on the removal of the large 'buses, and require the substitution of lighter vehicles.

JAMES HOULT.

MUSICAL TWO-STROKES.

Sir,—With reference to the query raised on page 204 of August 10th issue of *The Motor Cycle*, the high-pitched "twanging" note of the exhaust of a two-stroke engine when "four-stroking" can be put down to the following: With the three-port type of engine firing once per revolution a certain amount of burnt gas is left in the cylinder after scavenge, and its presence in the next charge of incoming gas slightly reduces the maximum explosion pressure, and that throughout the expansion stroke. When "four-stroking" (firing only once per two revolutions), the scavenge obtained



in the "miss" stroke reduces the presence of any burnt gases that previously were present. The next incoming charge has, therefore, a slightly higher pressure on explosion and throughout its expansion. When the piston uncovers the exhaust port the effects of this are made noticeable to the ear by a sharper note. Indicator diagrams taken from a two-stroke engine when running normally and when "four-stroking" are appended. J. R. TOPHAM-HAYNES.

HAND-PUMP OILING PREFERRED.

Sir,—I see in the latest number of *The Motor Cycle* that I have received that "Ixion" rather spreads himself on mechanical oilers.

Considering my mount, I cannot agree with him at all, and wish I had a hand pump to give large dollops of oil to the engine when required.

My mount is a 595 c.c. Douglas which functioned very well in the cold weather.

Now I am stationed in the centre of India, where the "Great Ones" are building even another city (the eighth, I believe). Anyhow, they have started well, as the roads in the vicinity are good for the most part.

I have found that my machine dries up very quickly when riding over 30 m.p.h., which points to insufficient oil. I can never get it to smoke unless I fill up the drip feed cup and let it stand until the oil has gone down the pipe; then it only smokes for a minute or so.

I think the trouble is that the oil in the sump gets too hot. In the hot weather, with shade temperatures of 110° and over, it must be 150° in the sun on the road.

I got a partial seizure a few weeks ago, and took the machine into the local expert's to be dismantled, and found the connecting rod of the rear piston bent; otherwise the engine was in excellent order.

Can "Ixion" give any suggestions for gingering up the oil system. I also have difficulties with *all* oil connections after some miles on bumpy roads; they all leak, and oil oozes out freely.

Delhi. ULYSSES.

AVERAGE SPEEDS OF 350 c.c. MOUNTS.

Sir,—I have been a reader of your excellent weekly for some time, but did not become a "proud possessor" until six months ago, when I took delivery of a 1922 349 c.c. Sports A.J.S.

A few weeks ago I read of Mr. J. R. Jones' average speed performance of 35 m.p.h. on his 348 c.c. Douglas with a loaded sidecar.

A week or so ago I planned a "double twelve" hour trip from Deal to Plymouth and back over a long week-end. Going to Plymouth my wife accompanied me on the pillion. I was unfortunately advised by a very well known body to take the coast route through Hastings, Brighton, Southampton, Bournemouth, Dorchester, etc. I imagine it was thought I wanted a holiday instead of an endeavour to evade present railway fares.

In my inexperience I planned my schedule through that coast route for an average speed of 20 m.p.h.

Unfortunately, I could not leave early on the first day and could only do 80 miles, but was up to time. The remaining 220 miles were rattled off on the second day between 9 a.m. and 11 p.m. The average of 20 m.p.h. (running time) was maintained throughout, but at what a cost! We seemed to be tearing along at over forty nearly all the way. This seems queer arithmetic, but anyone who knows the coast towns will agree with me that this speed in the country is necessary to maintain the average.

On arrival in Plymouth my agent showed me the maker's sidecar suitable for my mount. My wife immediately insisted on the purchase or a return by rail. The strangeness of the new drive was overcome during the stay and the return journey set out upon (inland this time). I got away earlier on the first day and put up for the night at Salisbury. My average speed now with the loaded sidecar was 16 m.p.h. as far as Exeter, and then 20 m.p.h. on to Salisbury. I really think Devonshire should be considered separately, especially for such small outfits. The run from Salisbury to Deal was made the next day. On the whole the roads are very good, and I went at it hard on this last run, yet my average was only 24 m.p.h. I did a timed mile at 40 m.p.h., but to keep up 24 m.p.h. on such a long run meant hard going for the little 'bus for many miles of country. Happily, I had no involuntary stop either way, or even this average could not have been kept up.

Now I do not wish to compare the merits of the A.J.S. and Douglas junior mounts, but Mr. J. R. Jones' average of 35 m.p.h. puzzles me.

I have no speedometer, and my speed on such a run is calculated from milestones, route cards and a watch.

I am beginning to think a lot about this question of speed. In my opinion there are too many enthusiastic young motorists who talk casually of their 'buses "doing" 60 and 70 m.p.h. on the open highway. But perhaps after all it is the speedometer manufacturers who realise that a nice friendly make will be a "best seller."

Deal. B-ONE.

Sir,—

Some talk of Alexander, and some of H. Le Vack,
Of Dixon, and of Ixion, and many a racing crack;
Of racing cams and pistons, of new improved valve guides,
Of tyres, and wheels, and stronger steels, and many things besides.
But of all the sport's great heroes, there is no one to compare
With Mr. Jones, whose speed is as the speed of sound in air.
A bang! a blast! a whirlwind—he must be on the road;
Le Vack, and Pullin, Dixon, here's your chance of being towed.
I thought I read of records at Clipstone yesterday,
Ye gods! but what would they have been had he been there to pay?
A slight mistake in timing, a little slip in miles;
The story's good. Oh! keep it, excuse the reader's smiles.
Now, Mr. Jones, a long farewell, my hat is in my hand;
We all have bikes, we tell the tale, and so we understand.

Glasgow. JEHU.

Sir,—As a final contribution to the somewhat protracted correspondence on the above, may I state in reply to several letters that if their respective writers would kindly refer to my previous letter regarding the 100-mile run from Birkenhead to Birmingham they will at once notice that I clearly and emphatically stated that this was done on a solo mount, and absolutely no reference whatsoever was made to a loaded sidecar. I simply quoted the instance in question to convince one of your correspondents that a 348 c.c. Douglas can maintain a 35 m.p.h. average for fairly long distances—e.g., Birkenhead-Birmingham.

"Dougite" admits that he could do a "burst" of "40 easily" with a light sidecar attached to his 348 c.c.

Douglas. I have not only done a "burst," but I have kept up "40," and this simply goes to prove that on a tolerably good road a 30 m.p.h. average could easily be maintained.

To repeat myself again, on a long run I could not possibly hope to keep up such an average—only a fool would expect to—but as regards solo work it is an average that can be kept up with the minimum of cost and trouble.

In conclusion, my average speeds are no exception to the rule—every Douglas rider can do the same if he wishes to. I refer those interested to Mr. Hartley's letter; he averaged 40 m.p.h. over a distance of 50 miles, and 37 m.p.h. over a distance of 75 miles, and therefore it is quite evident that those who doubt these performances are not only ignorant of the subject which they are supposed to be discussing, but, in addition, have never been astride a Douglas machine. J. R. JONES.

WHERE CAN SIDECARS BE IMPROVED?

Sir,—"Friar John" asks where can sidecars be most improved? In my opinion the tubular system of construction is at fault, and ought to be omitted in the design of any chassis or frame intended to travel on the road. A few points may be gathered from my experience of old crocks.

I first took the road with an old 50 in. ordinary pedal cycle, with solid tyres, and covered some miles, doing all my own repairs. I then thought that the front wheel was fine, but the back wheel was too small, and the backbone too stiff; these two points shook my bones, especially on cobble pavé. My next mount was a "safety," with pneumatic tyres, which was much better, but the frame was too rigid. After this I got a 10 h.p. White steam car, with wood plated chassis, which did its work well, but the springs were too light. My little boy was often tossed off the seat, on quite a good road, if I opened out to over 20 m.p.h.

The next was a 10 h.p. Mors car (four-cylinder), with wood plated chassis, which was well designed, with large diameter wheels, and correctly sprung; it glided away beautifully, and the chassis lent itself to the uneven road, the tyres and springs doing their bit easily. Then came a "6 h.p." De Dion Jackson car, with tubular chassis. When going over pot holes, the steering wheel often jerked clean out of my hands. The frame was too rigid, and the springs too light. I then got a Premier motor cycle with wicker sidecar, tubular chassis; potholes meant pitch and toss with violence. Frame and chassis were too rigid. I now have an old Humber, with collapsible sidecar body, and spring steel chassis; the sidecar glides along very smoothly, and does not transmit the shocks to me when driving to half the extent that the tubular chassis did. Sidecar chassis should be made from the best spring steel, and if correctly designed they would prove ideal.

I am also in favour of spring steel frames for motor cycles, which I feel sure would damp out many jolts, which the tubular frame transmit to both machine and rider.

EDWARD BRACEWELL.

Sir,—Considering that comfort is first in demand, that the spring wheel of simple and perfect construction will eventually kill the rigid type is beyond all doubt. Since the cost is equal, the comparison for comfort is like light to darkness, or automatic to mechanical valves.

Coventry. A. S. M.

Sir,—The upholstery of many sidecars is lacking in resilience, and is made of very poor material.

The position and size of the screen relative to the passenger is sometimes wrong. The screen should be placed fairly near the passenger, as on the A.J.S., etc.

The facilities for carrying luggage and sundries are in many cases insufficient; there should always be a luggage grid, *à la* A.J.S. again.

The appearance and efficiency of the hood can be improved. Side curtains should always be supplied.

The mudguarding of the sidecar wheel is often poor, and the guard should be made larger, and with deep valances.

Even the chassis of some models are not up to their work, and a four-point connection is advisable.

Among details, it makes an appeal to the passenger, fair or otherwise, if suitable arm-rests are provided, and if a step is fitted. I have no interest in any firm.

London, S.W.19. FAMA CLAMOSA.

Sir,—I own a Triumph and a proprietary sidecar, and have had some very long runs on the outfit. The Triumph is a gem; only I wish the spokes in the two wheels would not break so often! This defect I partly attribute to the dead running of sidecar chassis.

Why is it that so much attention is paid to the springing of the sidecar body? The cycle rider requires as much pleasure and comfort as the passenger. All the road shocks from the sidecar wheel are passed by way of the chassis frame to the cycle, and materially add to the discomfort of the driver. In the ordinary course the rear wheel is not sprung, and the extra unsprung weight makes the rear very dead indeed.

I have had my chassis frame break three times; this, no doubt, would be obviated had the chassis a sprung wheel.

Swindon. F. H. P.

NOMENCLATURE.

Sir,—May I suggest "Siamese Twin" as an alternative to the term "split single" as applied to the Italian Garelli motor cycle described in a recent issue?

Kent. SLEEVE-VALVE.

SUSTAINED HIGH AVERAGE SPEEDS.

Sir,—Since "Water-cooled" is evidently a hard rider, it would be interesting to know what he considers the ideal gear ratios for the Scott-Squirrel for all-round work.

There are many prospective buyers of this machine, I am sure, who would welcome some advice on the choice of the ratios offered by the manufacturers.

E. HODGKINSON.

STANDARD BELT LENGTHS CONDEMNED.

Sir,—We read in your last issue a complaint from a rider that he was compelled to purchase a longer length of belting when on tour than he needed, consequent upon the garage proprietor stating that it was impossible to procure long lengths of belting from which lengths could be cut as required.

We do not know whether your correspondent was purchasing a "John Bull" belt, but there is no difficulty in any trader purchasing the "John Bull" belt in long lengths of about 64 feet, and we experience a regular demand for such lengths. In addition, these belts can be obtained in lengths suited to the standards of all machines, but as the standards are so varied the long lengths are particularly useful.

THE LEICESTER RUBBER CO., LTD.
(J. Cecil Burton, Director.)

GOGGLES AND HEARING.

Sir,—I should like to say that I fully endorse all that "Sutton Bank" has experienced in this matter, and would like to put forward the theory that the lack of air pressure on one's eyeballs gives one a false impression of lack of speed, and think that in some way there is a nerve in the eye which is connected to the ear-drums.

Westcliff-on-Sea. H.J. 915.

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Club News

Woolwich, Plumstead and District M.C.

A gymkhana is being held on the 27th inst. at Knockholt, Kent, and members are invited to participate in an extremely varied and interesting programme.

Barrow and District M.C.

Results of the reliability trial for the Members' Challenge Cup are as follows:—

1st.—Capt. J. T. Noble (678 Martinsyde sc.).
2nd.—J. Morrison (498 P. and M.).
3rd.—D. Channing (499 Sunbeam).

Abergavenny and District M.C. and L.C.C.

H. Hassall (490 Norton), deputising for a local rider, made fastest time of the day at the recent hill-climb. Arthur Davies (Cotton), T. Nicklin (Sunbeam), J. Parker (Sunbeam), won the classes in which Hassall did not ride.

Clitheroe and District M.C.C.

Considerable interest was displayed in a petrol-consumption test held recently. The winner of the first prize, a carburetter presented by Messrs. C. Binks, Ltd., was S. Whiteside (A.V. cycle car), while second and third awards were taken by H. Sainsbury (Marseel light car) and G. Hunt (976 Sunbeam sc.).

Bolton and District M.C.

The President's Cup, competed for in the reliability trial which took place last month, was won by W. E. Smithie (490 Norton), second best performance being made by V. Rothwell (633 Norton sc). Motor cyclists wishing to join this club should communicate with Mr. W. Headley, at Raikes Hall, Bolton.

Ashford M.C. and L.C.C.

On September 3rd a hill climb has been arranged to take place at a hill which will not be made known until the day before the event. Competitors will be allowed to ride up the hill once only before actually competing. There will be classes for all types of vehicles, including a special event for "veteran" machines.

Darlington and District M.C.

On the occasion of their first annual long distance trial on Saturday the 12th inst., members were unfortunate as regards weather conditions, and although a good entry had been received only eleven competitors started on the run to Edinburgh *via* Appleby and Carlisle. Leaving Darlington at 8 p.m., the first man arrived home at 8.8 p.m. the next day, having covered a total distance of 304 miles. A large crowd of interested spectators assembled to witness the finish. Prize-winners: (1) J. Moffet (Mathis light car), (2) R. F. Stobbs (349 A.J.S.), (3) P. Bell (349 Massey Arran). The district was well represented in the trial, competitors from Northallerton, Barnard Castle, Wolsingham, and Bishop Auckland taking part.

The next important trial is to be held on the 27th inst., when a number of valuable prizes will be offered for competition.

Isle of Wight M.C. and L.C.C.

Results of the hill climb, which took place recently over a difficult course near Ventnor, are as follows:—

275 c.c. two-strokes, solo.—(1) A. J. Rust (269 O.K. Union), 44⅕s.; (2) C. Langford (269 Sparkbrook), 54s.

350 c.c., solo.—(1) J. R. Morris (348 Raleigh), 38⅖s.; (2) C. Langford (348 Douglas), 43⅕s.

500 c.c., solo.—(1) C. F. Stagg (494 Douglas), 34⅘s.; (2) E. G. H. Morris (490 Norton), 36⅖s.

750 c.c., solo.—(1) C. F. Stagg (494 Douglas), 34s.; (2) D. Oliver (498 Zenith), 35⅘s.

Unlimited, solo.—(1) W. H. S. Collins (989 Harley Davidson), 31⅘s.; (2) W. H. Linington (976 Royal Enfield), 32⅘s.

600 c.c., sidecars.—(1) J. H. D. Allen (557 B.S.A. sc.), 48⅗s.

Unlimited, sidecars.—(1) C. W. Brancon (976 Royal Enfield sc.), 39s.

Dulwich and District M.C. and L.C.C.

A reliability trial was recently organised which included some fairly stiff hills, and creditable performances were put up by many of the competitors. Silver medals were awarded to Robinson (596 Indian sc.) and D. Setter (550 Triumph sc.).

Burton M.C. and L.C.C.

On August 13th a reliability trial for the Robotham Cup was held over a difficult course of 88 miles, when the following were successful:—

P. B. Chester (490 Norton), 3½ marks lost, winner of Robotham Cup. H. L. Collins (490 Norton), 6½ marks lost, silver cup.

Week-End Club Events.

Aug. 24th and 26th.—Doncaster and District M.C.C.—Speed Trials.
Aug. 26th.—Worksop M.C. and L.C.C. and Mansfield and District M.C. and L.C.C.—Joint Speed Trials on Clipstone Drive.
Aug. 26th.—Mid Bucks M.C.C.—Second Trophy Run.
Aug. 26th.—Kelso and District M.C.C.—Hill Climb.
Aug. 26th.—Sheffield and Hallamshire M.C. and L.C.C.—24 Hours' Reliability Trial.
Aug. 26th.—Wallington and District M.C. and L.C.C.—Freak Hill Climb.
Aug. 26th.—Reigate, Redhill and District M.C.C.—"Old Crocks" Trial.
Aug. 26th.—Gloucester M.C. and L.C.C.—Secret Destination Trial.
Aug. 26th.—Aberdeen and District M.C.—Hill Climb.
Aug. 26th—Connaught M.C.C.—Gymkhana at North Harrow.
Aug. 26th—York and District M.C.—Garrowly Hill Climb.
Aug. 27th.—Darlington and District M.C.—Reliability Trial.
Aug. 27th.—Prestwich and District M.C.—Reliability Trial.
Aug. 27th.—Liverpool M.C.—Reliability Trial for Colmore Trophy.
Aug. 27th.—Ashford M.C. and L.C.C.—Run to Eastbourne.
Aug. 27th.—Exeter M.C. and J.C.C.—Run to Becka Falls and Hawtor.
Aug. 27th.—Eastbourne and District M.C.C.—Petrol Consumption Test.
Aug. 27th.—Epsom and District M.C.C.—Reliability Trial.
Aug. 27th.—Halifax and District M.C. and L.C.C.—Run to Fewston.
Aug. 27th.—North Wales M.C.C.—Picnic.
Aug. 27th.—Manchester M.C.C.—Social Run.
Aug. 27th.—Middlesbrough and District M.C.—Reliability Trial for McAdams Cup.
Aug. 27th.—Newcastle and Northern M.C.—Picnic Run to Alwinton.
Aug. 27th.—Coventry Triangle M.C.—Run to Droitwich.
Aug. 27th.—Atherton and District M.C.C.—Run to Castleton.
Aug. 27th.—Sheffield M.C.C.—Run to Newark Castle.
Aug. 27th.—Rotherham and District M.C.—Run to Harrogate.
Aug. 27th.—Rochester, Chatham and District M.C. and L.C.C.—Run to Hastings.
Aug. 27th.—York and District M.C.—Run.
Aug. 27th.—Leeds Motor Union.—Reliability Trial.
Aug. 27th.—Worcestershire M.C.—Symonds Yat Picnic.
Aug. 30th.—Leeds Motor Union.—Run from City Square.
Aug. 31st.—Gloucester M.C. and L.C.C.—Visit to Avon Tyre Co., Melksham.
Aug. 31st.—Bidwell M.C.—Run to Woodhouse Eaves.

Builth Wells and District M.C.C.

Enthusiasm ran high at the second annual carnival and gymkhana held by the club on Wednesday, the 9th inst.

Epsom and District M.C.C.

The progress of this newly-formed club has been entirely satisfactory. A reliability trial is being held on the 27th inst., consisting of two laps of 20 miles each, starting from Epsom grandstand at 3 o'clock p.m. Further information can be obtained from Mr. G. E. Himing, "The Laurels," Park Hill Road, Ewell.

Gipsy M.C.C.

The annual rally is to be held this year at Monsal Head, near Bakewell, on September 3rd. Secretaries of clubs which intend competing for the trophy should write for further particulars to Mr. C. Thornewill, Hampton Cottage, Eynsford, Kent.

Neath and District M.C.C.

Speed trials will take place in Margan Park on Saturday, Sept. 2nd, all classes being catered for, including a special championship event. The D. M. Evans Bevan Challenge Cup is open for competition, and the present holder, C. Sgonina, will defend his title. The entire proceeds will go to the Neath Nursing Association.

East Midland Centre A.C.U.

A hill-climb open to all members of clubs in the area will take place on Saturday, Sept. 16th, in the hope of encouraging the entry of new riders, it has been decided to run a special section in each class for those who have not been in the first three places at any speed event this year. Full particulars are obtainable from Mr. K. S. Topping, 64, Frederick St., Loughborough.

Macclesfield and District M.C.

Starting from Fence Avenue, Buxton Road, Macclesfield, at 1.30 p.m. on the 27th inst., a reliability trial will be run over a point-to-point course of approximately 752 miles. Special awards will include the Birchenough Cup and the Hopwood Shield. This event is open to members of the North Cheshire, Chester, Buxton, and Warrington Clubs; entries should be addressed to Mr. S. T. Holland, West Mount, Chester Road, Macclesfield.

Dunheved (Launceston) & District M.C.C.

Some good performances were witnessed at a recent hill-climb when H. Piper (499 Sunbeam) carried off first place in the solo class, closely followed by O. G. Whitlock (349 A.J.S.). The sidecar class was won by E. R. Wells (490 Norton sc.), with W. Weighell (799 A.J.S. sc.) second. A special prize for Morgan runabouts was secured by W. T. Horrell, and the novices prize by T. C. Williamson (349 A.J.S.), whilst the fastest turn of the day was made by H. Piper (499 Sunbeam). On the 30th inst. a reliability trial to Porlock and back will take place.

Yeovil and District M.C.C.

The trial held on Saturday, the 5th inst., for the President's challenge cup produced some excellent sport, and very close times were recorded. Competitors had to make the first circuit at an average speed of between 17 and 20 miles an hour, and the next two circuits in as near as possible the time taken on the first. The course totalled 76½ miles, and had to be covered non-stop. The best motor cycle performance was made by E. P. Saunders (350 Diamond), 18s.; and Arnold Wright (499 Sunbeam sc.) was 22 seconds out. Certificates for non-stop runs were also awarded to the following:—L. F. Clarke (532 Scott), 37s.; W. G. Churchill (349 Verus), 41s.; G. L. Morrish (499 Sunbeam), 50s.; T. V. B. Hook (595 Douglas sc.), 65s.; J. Shenton (Morgan), 76s.; Miss M. Chiswell (350 Diamond), 116s.; E. G. Lawrence (498 Ariel), 125s.; J. Stagg (494 Douglas), 165s.; H. G. Clarke (595 New Hudson sc.), 459s.

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

REBORING CYLINDERS.

I am thinking of having the cylinders of my Douglas rebored and fitted with new pistons. Will you inform me what is the least amount of metal one can leave with safety? Surely the thinner the walls the better the cooling would be. Can you recommend reboring?—L.E.F.

If it is necessary to rebore the cylinders of your Douglas, we should suggest that you approach the makers, who would perform the work far more satisfactorily than most smaller firms. If the ovality of the cylinders necessitates removal of more than $\frac{5}{100}$ in., we should advise you to have them renewed.

A HEAVY LOAD.

Intending shortly to buy a sidecar outfit, I would like to know if my so far intended choice is impossible as I have been told it is. The passenger list includes myself, 12 stone; wife (pillion), 9 stone; and two children (sidecar), 5 stone the two; the type of machine selected is a 350 or 370 c.c. two-stroke, three-speed gear, all-chain drive. Is 21 stone on the bicycle too much?—J.W.P.

The load you suggest is far too heavy for a machine of under 500 c.c., and we would recommend you consider one of at least this size, and preferably a single cylinder. A weight of 21 stone on a lightweight motor bicycle itself, as a regular load, is excessive.

Important Dates.

Sat., Sept. 2nd. — Cheshire Centre A.C.U. Open Reliability Trial.

Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.

Sat. Sept. 16th—The Scott Trial.

Sat., Sept. 23rd—500 Mile Race at Brooklands.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

A halt by the way. G. S. Davison (247 Levis), B. Malmberg (494 Husqvarna), L. Pelissier (994 Motosacoche), and F. W. Giles (800 A.J.S. sc.) near Lugano during the International Six Days Trial in Switzerland.

UNSUITABLE MAGNETO.

I do not think the magneto is the right one for my twin N.S.U. The cylinders are set at 60°. If I set No. 1 exhaust to close top dead centre, will the other come right? Contact breaker cams are set at 180°; is this right? If not, can I alter them to suit the engine?—D.N.O.

(1.) If both valves are worked from one cam you need only time one valve, and if this is done properly the correct timing of the other will follow. (2.) If the magneto is one designed to suit an engine with cylinders set at 180°, it will be impossible to modify it to suit a 60° V twin engine; you would need another magneto suited to the latter angle. The cams should be set at 150°.

TIMING OLD PATTERN ENGINE.

(1.) Will you please give me the correct timing of the exhaust valve of my old type Fafnir motor cycle? (2.) If this were wrong, would it cause overheating?—E.H.E.S.

(1.) The timing of the exhaust valve of your engine, which is presumably one with an automatic inlet valve, is as follows:. Rotate the engine until the piston is at the top of the stroke, then insert the cam wheel so that the valve is just closing. (2.) If the exhaust valve timing is very much out it would cause poor running. Most probably the trouble is the result of late ignition timing, insufficient lift of the exhaust valve due to a worn cam or too much clearance between the tappet and the valve stem.

OVERTAKING A TRAMCAR.

Will you kindly tell me which is the correct side on which to pass a tramcar, both when running and stationary? I was told recently that it is correct to pass a stationary car on the near side, but as passengers are usually mounting or dismounting when the car stops it is more of a difficulty to pass on the near than the off side.—J.P.M.

In overtaking a tramcar a good deal of discretion has to be used, and there is no very definite legal ruling on the point. When a tramcar is in motion it is better, if at all possible, to overtake it in the ordinary way on the off side, but circumstances may compel you to keep on the near side. The same applies also when it is stationary.

LEAKAGE FROM GEAR BOX.

After running a few miles my belt becomes smothered with grease from the gear box of my single-cylinder Ariel. Last week I partly filled the gear box with grease before starting on a long journey, but on arriving at my destination the box was nearly empty. What is the best means of cleaning the belt? Is petrol injurious? What grease do you recommend?—W.C.J.

The only thing to do is to have the gear box taken down and find the cause of the leak. It might be that the bearings require rebushing, or that a felt washer is needed. All you can do is to wipe the belt with a rag soaked in petrol. Petrol naturally destroys rubber, but if it is wiped quickly and lightly no harm should ensue. Ambroleum or thick engine oil is generally used for the gear box.

REMOVING BELT DRUM.

Will you inform me how to remove the belt driving wheel, which is fixed to the hub of the 1915 single-cylinder B.S.A. motor cycle?—NOVICE.

The belt pulley on the rear wheel of the 1915 B.S.A. motor cycle is screwed on with a left-hand thread (the lock ring is right-hand thread). These pulleys are extremely difficult to remove, and unless you have special apparatus, they are easily damaged in the process. We would recommend you to return the wheel to the makers if it is necessary that the pulley should be taken off.

FLYWHEEL RING OR CHAIN SWISH.

On my 349 c.c. Blackburne engined two-speed machine the chain drive (not enclosed) between the engine and gear box makes considerable noise when travelling over 15 m.p.h., and I have tried tightening and loosening the chain, but all to no avail; it does not catch anywhere, and the sprockets are not worn; chain lubricant has no silencing effect. I am told that a silent chain and sprockets will cost about £7 or £8, which is altogether too much to spend on the machine. Also what is a suitable ratio for top gear; the present one is 6½ to 1? H.D.R.

You do not say if you are using your machine solo or with a sidecar, consequently it is rather difficult to advise you with regard to the gear ratio, but if you are riding solo a gear of 5½ or 6 to 1 should be low enough. If your chain sprockets or chain have worn badly there is no cure for the noise you mention other than replacement, but most outside flywheel machines are apt to accentuate the chain swish. Try the effect of painting the flywheel with a thick paint, which may deaden its ringing.

READERS' REPLIES.

A TWO-STROKE RATTLE.

My Villiers (old type) engine developed a bad rattle. On arriving home, I discovered that the fly-wheel keyway was enlarged to half the circumference of the bore. The remedy was obvious.—A. KELSALL.

A bad rattle occurred whenever I exceeded 25 m.p.h., but with my timing thus—handle-bar lever at full retard, points just breaking, and piston just *past* t.d.c., I can now exceed 35 m.p.h. without any trouble.

Also, instead of 8, 16, and 32-stroking when running slowly downhill (as it used to do), my Peco engine now two-strokes perfectly.—A. A. SMITH.

If "H. B." tries a thicker washer between cylinder and crank case he will probably cure the rattle. My own engine, 1916 Villiers, was thoroughly overhauled about a year ago, but when I received it again I found it would not exceed 25 m.p.h. without a terrific clanking from the engine. As far as could be ascertained, everything was in order. New plugs and a different timing were tried without success. Just as I was on the point of giving it up as a bad job I tried a thicker washer, with great success. Speed, hill-climbing and slow running all improved, without a trace of rattle. Why a thick washer is required now, when formerly I used a paper joint, is a mystery, unless the new con-rod was a shade longer than the old one and so raised the compression or altered the port timing. It always takes about 200 miles after decarbonisation to get the former power back.—SHEFFIELD-VILLIERS.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

H.L. (Hove).—799 c.c. A.J.S. sidecar fitted Lucas Magdyno: suitable speedometer and hood.

"M. J. T." (Arnhem).—Mills carburetter for slow running and economy on American big twin to replace Schebler type.

"C. J. S." (Stoke-on-Trent).—225 c.c. Royal Enfield "sports" model: speed; fuel consumption; reliability.

"H. W." (Stonehouse).—Rudge-Multi and Zenith-Gradua: belt slip in wet weather; life of belts.

"H. D. R." (Tadworth).—398 c.c. A.B.C.: reliability; carburation.

"R. F. N." (London).—398 c.c. A.B.C. and sidecar: reliability.

"J. S. B." (Waterloo).—989 c.c. Harley-Davidson sidecar with Binks carburetter.

"A. E. S." (Newark).—142 c.c. Atlas lightweight.

"F. W. T." (West Norwood).—349 c.c. Royal Ruby "sports": with Amac carburetter.

"W. W." (Widnes).—584 c.c. Harley-Davidson: suitable sidecar, m.p.g., steering and speed.

"C. V. H." (Newquay).—976 Brough Superior (side valve J.A.P.) and 986 c.c. o.h.v. model: speed, reliability, and m.p.g. with sidecar.

"H. L. G." (Tunbridge Wells).—349 c.c. A.J.S.: speed, climbing, and "all-weather" finish. Also 398 c.c. A.B.C. and 499 c.c. Triumph.

Cycle Car Records.

A 700 c.c. Blackburne engine was used in the A.V. monocar which recently created flying kilometre and mile records at Brooklands.

Auto-Wheel Price Reduction.

The price of the Auto-Wheel attachment has been reduced from £30 to £25 by Auto-Wheels, Ltd., Russell Road, Kensington, London, W.14.

The Belgian Grand Prix Winner.

Antoine, who has been adjudged winner of the Belgian Grand Prix, after Jackson's disqualification, used a Lodge plug in his o.h.v. Triumph.

Magneto Repairs in London.

London users of the Coventry made M.L. magneto will find a complete service department at S. Smith & Sons (M.A.) Ltd., 179, Great Portland Street, London, W.1.

Midland Foundrymen's Success.

At the recent Foundry Exhibition in Birmingham five employees (not three as previously stated) of the Midland Motor Cylinder Co., Ltd., gained prizes out of a total entry of 400.

Price of the McKechnie.

The price of the McKechnie spring frame sidecar outfit is now £155. The address of the makers is McKechnie Motors, King's Head Chambers, Coventry.

Hand Cleanser.

Rejoicing in the name Yomf, a hand-cleanser is being marketed by the Quick Service Motor Co., 123, Church Street, Croydon. A sample has passed its test at the editorial hands.

Better Late than Never.

A. Attwood, who protested successfully against being disqualified on a 600 c.c. Hawker sidecar during this year's London to Edinburgh run, has since been awarded a gold medal by the M.C.C. for his performance.

Change of Address.

Owing to the increasing demand for the Henley motor cycle, the manufacturers have found it necessary to remove to larger premises, the address of which is now: Messrs. Henley Engineering Co., Ltd., Steward Works, Doe Street, Birmingham.

The Chameleon Exhaust Pipe.

The colour-changing propensities of the nickel-plated exhaust pipe of a certain sports model are being watched with growing interest. At first the plating turned a pale straw colour, and then took on the appearance of polished brass. It next reverted to its original clear nickel, and now a wondrous purple hue is spreading downwards from the exhaust port.

Times to Light Lamps.

August	24th	8.34 p.m.
„	26th	8.30 „
„	28th	8.26 „
„	30th	8.22 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Tyresome Tips.

"Soak them in paraffin, and then give them liberal treatment with lubricant"—a Yorkshire paper's advice on the care of motor cycle tyres.

Taxation Prophecies.

Included in extracts from a Northampton newspaper two hundred years ago is the following news item: "Municipal authorities have been invited to suggest alternative schemes for the taxation of motor vehicles." A correspondent suggests that perhaps, when the subject *has* been considered for 200 years, some system approaching the reasonable may be hoped for!

The Continental Way.

On one of the hairpin bends on the Jura road, where a glorious view over the Lake of Geneva and the High Alps is unfolded, is displayed a notice "Ralentissez—Admirez" (Slow up—Admire).

A Feathered Phantasy.

Extract from a daily newspaper:—"Muffled noises from underneath a char-à-banc alarmed the passengers during a 10-mile ride from St. Brides to Newport (Mon.). At the end of the journey four hens flew out of the vehicle's gear box." No wonder the passengers were alarmed!

The Silence Gamble.

Different localities have different ideas upon silence, and the fact that the Reading magistrates recently decided, after a demonstration, that a sports model with a straight through exhaust pipe was not unduly noisy is no guarantee of future immunity from prosecution elsewhere—or, for that matter, in Reading.

Extra "c.c." Not Superfluous.

A detective recently received information that a motor cycle had been stolen (a 348 c.c. Douglas as it happened). He went home, got out his 976 c.c. New Imperial sidecar, and although the thieves had fifteen minutes start, was successful in overhauling them 14½ miles from where the theft had taken place. The idea of justice overtaking them with such alarming rapidity astride a big twin of modern design had apparently not occurred to the culprits, for they abandoned the stolen Douglas and fled.

Coupé Sidecars.

Will the coupé type of sidecar eventually become a standard pattern and be included in catalogues of the majority of manufacturers?

Waste Space on Sidecars.

It is to be hoped that sidecar manufacturers will pay more attention to the utilising of the waste space between the machine and sidecar. Special grids holding specially shaped cases would be useful when touring.

Sign Posting.

More attention should be paid by local authorities to signposting in towns and villages. The most difficult districts to traverse are those in the South, both Surrey and Sussex being as bad as any county. Rarely is the same amount of difficulty experienced in the West, Midlands, or North.

4s. Worth of Bliss.

At the Bishops Lydeard (Somerset) Police Court Ralph Alexander Coleman, a boy aged 12, was summoned for having ridden a motor cycle without a licence. The boy had ridden the machine from Taunton, a distance of five miles, and when quite near his home met the local police sergeant. The bench admired the boy's pluck and discharged him on payment of the costs, 4s.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Indispensable.

New high-powered sidecars are as much in evidence as ever they were. There appears not the slightest likelihood of any waning in their popularity, and once again may be asked, Where is the vehicle that can replace them?

Heard on the Halls.

Sitting in a dazed condition on the road with his right arm clutching what remained of a front wheel, a motor cyclist, who, at 40 m.p.h., had forgotten how the throttle closed, was requested by a short-sighted old lady to mend her umbrella as well!

Motor Cycle Club Recommends Silence

Darlington and District M.C. and L.C.C. has passed the following commendable resolution: "That all members of this club are advised by the committee to comply carefully with the law regarding the silencing of their machines, thus assisting to preserve our good relations with the police and avoiding any annoyance to the public."

Once upon a Time.

Blowing the horn of his Enfield sidecar outfit when passing three horse brakes on the High Beach-Woodford road, a reader was stopped by a policeman and told that he was making a noise. The officer then produced a piece of wire, looked over the machine, and pronounced that the tappets wanted packing! (N.B.—This is neither a dream nor a fairy tale.)

Special Tracks for Cyclists Opposed.

Propositions that special cycling tracks should be laid alongside new and existing main roads are strongly opposed by organised cyclists' interests, which take the view that such provision may possibly become only a preliminary towards excluding the cyclist from full rights on the road. In consequence of this the Roads Improvement Association has dropped its sponsorship of the suggestion.

Rust.

A movement, of interest to motorists, is on foot to form an association of manufacturers of non-corrodible and anti-corrosive products to foster the scientific and commercial development of materials and processes that tend to defeat the ravages of rust and corrosion. Any of our readers who are interested in the project are invited to communicate with Mr. W. R. Douglas Shaw, at the Royal Society of Arts, 18, John Street, Adelphi, London, W.C.2.

CLUB NEWS (continued from p. 275)

Essex M.C.

Starting at 6.30 p.m. on Friday, September 8th, from the Castle Hotel, Woodford, the twenty-four hours reliability trial through London to Bala and finishing at Luton will take place, covering a total distance of 420 miles. All awards will be won outright; further particulars are available from Mr. E. J. Bass, 40, Chancery Lane, W.C.2.

Midland C. and A.C.

Arrangements are now complete for the inter-club team trial on the 9th of next month, when teams representing competing clubs will consist of three solo and three passenger machines, all riders to count. Clubs intending to enter for this event, which is by invitation, no entry fee being required, should communicate with Mr. J. L. Stocks, at the Ariel Works, Bournbrook, Birmingham, as soon as possible.

Kidderminster M.C.C.

Motor cycles, sidecars, and cycle cars may enter for the half-day reliability trial which is being held on Saturday the 26th inst., starting from the Red Lion Hotel at 2.15 p.m., over a route approximately 80 miles in length. The classes run will be as follows:—Solo machines up to 350 c.c., and unlimited; passenger machines up to 600 c.c., and unlimited. Entries should be addressed to Mr. A. K. Bell at 33, St. George's Terrace, Kidderminster.

Annfield Plain and District M.C.

A course of 170 miles over somewhat difficult country in parts was chosen for the President's reliability trial which was held recently. The results of the run are now to hand, and are as follows:—

(1) R. Wilson (490 Norton), *President's Cup and Gold Medal.*
(2) H. Adam (M.A.G. Morgan), *Gold Medal.*
(3) J. Dix (557 B.S.A.), *Silver Medal.*
(4) H. Hunter (550 James), *Bronze Medal.*

Okehampton M.C.C.

Twenty-two competitors started on the annual reliability trial to Land's End and back on the 16th inst., when the following awards were made:—

Heavy Solo Machines:—
(1) W. Backway (550 Triumph); (2) E. J. Hosking (976 Zenith); (3) T. Woods (550 Triumph).
Lightweights:—
(1) H. Brooking (349 Verus); (2) A. Terber (211 Levis); (3) P. Cawling (348 Douglas).
Passenger Machines:—
(1) J. G. Durrant (633 Norton sc.); (2) W. H. Newman (976 Royal Enfield sc.).

Mill Hill M.C.C.

Preparations are at present in hand for the formation of a club in this district, and motor cyclists desirous of encouraging the scheme should communicate with Mr. J. H. Woods, of Woods Garage, Daws Lane, Mill Hill, N.W.

North-Western Centre A.C.U.

The open hill-climb which was postponed on July 29th is to take place on September 9th. The entry list has been re-opened and entries can be received by Mr. J. H. Place, "Girsee," 258, Manchester Rd., Burnley, up to September 2nd.

Surrey M.C. and L.C.C.

A team trial was held on the 12th inst. in indifferent weather over a circular course of 27 miles, starting at Wotton Hatch Hotel, near Dorking, the course being covered twice in opposite directions. No team succeeded in finishing complete. Results, subject to confirmation:—1st, Dorking Centre, Team 2 (silver medals), F. P. Venney (500 N.U.T.), F. P. Verney, jnr. (225 Triumph), 7 marks; 2nd, Dorking Centre, Team 1, C. J. Feeny (346 Francis-Barnett), J. B. Phelps (269 A.E.L.), 24 marks; 3rd, Farnborough Centre, P. J. Broadhurst (499 Sunbeam), S. W. Mansell (499 Rover), 51 marks.

Petersfield and District M.C. and L.C.C.

The first hill-climb, which took place on the 6th inst. at Hyden Hill, Eastmeon, over a measured mile, was quite successful. Five hundred spectators attended. Thirty members participated in the event, there being sixty entries in the eight classes. The winners of the various classes were as follows:—

250 c.c. Solo:—
(1) McArdell (247 Levis), 1m. 52s.
(2) B. Mould (239 James), 2m. 39s.

350 c.c. Solo:—
(1) R. Blagg (293 New Imperial), 1m. 36⅕s.
(2) D. Fairbairn (348 Raleigh), 1m. 49⅘s.

500 c.c. Solo:—
(1) A. Moss (494 Douglas), 1m. 21⅗s.
(2) W. S. Luker (490 Norton), 1m. 24s.

750 c.c. Solo:—
(1) W. S. Luker (490 Norton), 1m. 20⅖s.
(2) Bannister (481 Scott Squirrel), 1m. 26⅖s.

1,000 c.c. Solo:—
(1) W. S. Luker (490 Norton), 1m. 19s.
(2) Bannister (481 Scott Squirrel), 1m. 24⅖s.

750 c.c. Sidecar:—
(1) R. Chitty (678 Martinsyde sc.), 1m. 52⅖s.
(2) D. Fairbairn (665 Ariel sc.), 1m. 54⅕s.

1,000 c.c. Sidecar:—
(1) R. Chitty (678 Martinsyde sc.), 1m. 52s.
(2) D. Fairbairn (665 Ariel sc.), 1m. 54⅕s.

Bradford M.C. and L.C.C.

In the recent International trials the following represented the club as a team:—
Hugh Gibson (349 Raleigh), Clifford Wilson (654 Quadrant), and Charles Sidney (349 Raleigh).

Bath and West of England M.C.

The club held a successful hill-climb at Bannerdown Hill on Saturday, Augnst 12th. Fastest time of the day was made by V. Anstice (733 Douglas), who covered the 686 yards course in 17⅖s. The winners of three premier awards were: Solo Class (Fuller cup), E. W. Spencer (494 Douglas), time 18s. Sidecar Class (Colmer cup), V. Anstice (595 Douglas sc.), time 22½s. Amateur Class (5 guinea prize), G. McWatters (490 Norton), time 20s. The results for the remaining classes are as follows:

CLASS 1.—S. Gill (249 New Imperial), 25⅘s. (bronze medal).
C5377 2.—S. Gill (349 Weatherell), 25⅖s. (bronze medal).
CLASS 3.—G. McWatters (490 Norton), 20s. (silver medal).

SIDECAR CLASSES.

CLASS 15.—G. H. Tucker (490 Norton sc.) tied with V. Anstice (595 Douglas) for first place, time 26⅗s., and Tucker was awarded a bronze medal on formula.
CLASS 16.—V. Anstice (595 Douglas sc.), 22½s.
CLASS 18.—G. H. Tucker (490 Norton sc.), 26⅘s. (bronze medal).
CLASS 19.—V. Anstice (595 Douglas sc.), 21⅘s. (silver medal); G. H. Tucker (490 Norton sc.), 26s. (bronze medal).
CLASS 22.—G. McWatters (490 Norton sc.), 29⅖s. (bronze medal).
E. W. Spencer (494 Douglas), 21s. (silver medal).
CLASS 4.—V. Anstice (595 Douglas), 17⅗s. (silver medal); E. W. Spencer (494 Douglas), 18⅗s. (bronze medal).
CLASS 5.—S. Gill (249 New Imperial), 26s. (bronze medal).
CLASS 6.—L. Bird (348 Douglas) tied with S. Gill (349 Weatherell), 29s. S. Gill won bronze medal on formula.
CLASS 7.—G. McWatters (490 Norton), 20⅘s. (gold medal); E. C. Collins (490 Norton), 22⅖s. (silver medal). R. Houghton (492 Sunbeam) tied with F. W. May (500 James) for third place with 24s. May won bronze medal on formula.
CLASS 8.—E. W. Spencer (494 Douglas), 18s. (silver medal); V. Anstice (494 Douglas), 18⅕s. (bronze medal).
CLASS 11.—G. McWatters (490 Norton), 20⅗s. (silver medal); R. Houghton (492 Sunbeam), 22⅘s. (bronze medal).
CLASS 12.—G. McWatters (490 Norton) 20⅘s. (silver medal); R. Houghton (492 Sunbeam), 22⅘s. (bronze medal).

RACING AT PORTMARNOCK.

A VERY successful meeting was run off by the Leinster Motor Cycle at the Velvet Strand, at Portmarnock, on Saturday last, when a programme of five races was decided. The feature of the meeting was the consistent riding of J. G. Burney (225 Royal Enfield), who was placed in the four solo classes, winning two of them. The back-markers were asked to give away rather too much, and none of them got placed. T. E. Greene (494 Douglas) was the fastest of the cracks, but he was never nearer than fifth in the final placings.

Results:—

SIX MILES (TWO-STROKE UP TO 300 C.C.).
1. R. Humphreys (220 Velocette), 55s.
2. T. F. Slavin (220 Velocette), scr.
3. J. G. Burney (225 Royal Enfield), 75s.
Time, 9m. 35s. (actual).

SIX MILES (ALL TYPES UP TO 350 C.C.).
1. J. G. Burney (225 Royal Enfield), 2m.
2. S. Woods (348 Cotton), owes 90s.
3. T. F. Broderick (211 Levis), 2m. 10s.
Won by 250 yds. Time, 10m. 30s.

TEN MILES (UP TO 600 C.C.).
1. C. Briggs (550 Triumph), 4½m.
2. J. G. Burney (225 Royal Enfield), 7½m.
3. S. Woods (348 Cotton), 55s.
Won by 30 yds. Time, 15m. 25s.

TWENTY MILES (UNLIMITED).
1. J. G. Burney (225 Royal Enfield), 15m.
2. C. Briggs (550 Triumph), 9m.
3. S. Gill (348 Douglas), 16m.
Time, 34m. 30s.

SIX MILES (SIDECARS, UNLIMITED).
1. C. D. Maguire (976 Matchless sc.), 20s.
2. E. F. Ashton (998 Indian sc.), scr.
3. P. Smith (998 Indian sc.), 25s.
Won easily. Time, 8m. 37s.

RESULTS OF NORTH WALES OPEN TRIAL.

MORE detailed results of the North Wales Centre A.C.U. Open Trial than were available when our report was prepared for last week's issue are now to hand.

It will be observed that J. Westwood Wills (547 Powell), who gained the premier and other awards, has now also been awarded the centre championship prize. This award was first made to another rider—Wills Welsh residence qualification being under discussion.

The full provisional results are as follows:—

Open Challenge Cup.—J. Westwood Wills (547 Powell).

Open Amateur Cup.—G. F. Burns (499 Sunbeam).

Powell Challenge Cup.—J. W. Wills (547 Powell).

Centre Championship.—J. W. Wills (547 Powell).

Cup for N.W.M.C.C. Amateur.—G. F. Burnes (499 Sunbeam).

Cup for 250 c.c. solo machine.—Bert Kershaw (249 New Imperial).

Cup for 350 c.c. solo machine.—C. M. Jones (349 Diamond, B. and S.).

Cup for 500 c.c. solo machine.—W. J. Kellet (499 Sunbeam).

Novice prize.—C. M. Jones (349 Diamond, B. and S.).

Passenger machine prize.—H. F. S. Morgan (980 Morgan).

Trade Team.—W. Edwards No. 2 Team: W. Edwards (547 Powell), S. W. Smith (532 Scott), A. E. Hughes (550 Triumph).

Club Team.—N.W.M.C.C. No. 2 Team: W. J. Kellet (499 Sunbeam), J. W. Davies (499 Sunbeam), R. R. Bromley (499 Sunbeam).

Gold Medals.—J. W. Wills (547 Powell), W. J. Kellet (499 Sunbeam), W. J. Williams (700 Raleigh), A. R. Evans (499 Sunbeam), G. F. Burns (499 Sunbeam), H. S. F. Morgan (980 Morgan).

Silver Medals.—R. Edwards (598 Beardmore-Precision), J. Knowles (499 Triumph).

Bronze Medals.—J. O. Jones (499 Triumph), A. S. Jones (482 Scott-Squirrel), W. Edwards (547 Powell), S. W. Smith (532 Scott), D. E. Hughes (550 Triumph), J. H. Davies (499 Sunbeam), G. B. Richards (499 Triumph), Miss Cottle (550 Triumph), G. L. Falck (499 Rover), A. Colcombe (596 Indian), C. M. Jones (349 Diamond-B. and S.), B. Kershaw (249 New Imperial), W. J. Astley (499 Triumph), R. O. Hughes (349 Raleigh), R. R. Bromley (499 Sunbeam), H. J. Greathead (348 Ivy), H. Price (547 Powell), H. Pennington (547 Powell).

1903 CRYSTAL PALACE · 1904 LONDON · YORK & LONDON · 1905 S.W. ENGLAND · 1906 LANDS END JOHN O'GROATS · 1907 LONDON WEST COUNTRY · 1908 LANDS END JOHN O'GROATS · 1909 LONDON SHREWSBURY · 1910 END TO END · 1911 HARROGATE · 1912 TAUNTON · 1913 CARLISLE · 1914 SHEFFIELD · 1919 LLANDRINDOD WELLS · 1920 DARLINGTON & BROOKLANDS · 1921 W. COUNTRY CIRCT BROOKLANDS · 1922 WESTERN CIRCT BROOKLANDS

The A.C.U. Six Days Reliability Trials 1922

YORKSHIRE -- WALES BROOKLANDS

Early Stages of this Week's Big Endurance Test. Over 140 Competitors.

JUST as the T.T. is the biggest motor cycle speed event of the year, so the A.C.U. Six Days Trials form the most important reliability event.

Nominally they started on Monday last, but actually most of the competitors felt that they, anyhow, had "gone over the bags" just as soon as they handed over their machines to the care of the A.C.U. on the previous day.

Sunday in York (the starting point) was a busy day, but before going on to describe what happened and what it brought forth, it may be well to recapitulate the story of the trials generally. Briefly, there are five days of road work at, mostly, a 20 m.p.h. schedule, finishing on Friday; then, to see how the competing machines have retained their tune, high speed tests will be held at Brooklands on Saturday; and, finally, an examination of general condition will be undertaken. The road portion, without being freakish, is sufficiently stiff to be a very severe trial in itself; the speed and condition tests are expected to prove the last straw on the camel's back in quite a number of cases.

142 Competitors.

To return to the preliminaries, 142 of the 144 entrants presented themselves for the long drawn-out business of having their machines weighed, examined, and sealed. Most of the riders took things very seriously, and a considerable amount of apprehension was felt about the following day's run.

Although the trials provide manufacturers with every opportunity of trying out new designs under conditions of great publicity, they are not so freely used for this purpose as they might be.

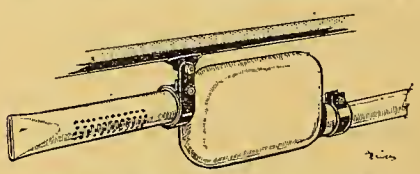
This is to be regretted, because the lessons learned during the week's strenuous testing are sufficiently in advance of the Olympia Show to enable any modifications found necessary to be incorporated in the next year's models.

New "350 c.c." Single.

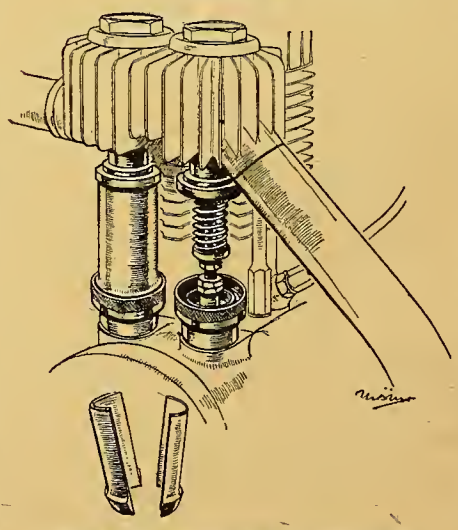
The James Cycle Company has evidently appreciated the Six Days in the light of an instructive test of this description and its entry includes a departure from its usual range of models in a 349 c.c. single-cylinder four-stroke, on examples of which J. Lidstone and G. Kimberley are mounted.

In appearance the new James lightweight singles are as distinctive as the other products of the same factory. The engine is of the inside flywheel variety, with side-by-side valves, the springs of which are enclosed in plated cases, as on the big-twin engine. The drive is by chain throughout, a James three-speed gear box with hand and foot clutch control and kick-starter. The finish is the usual black, with brown tank lined in red and gold.

In the same class is the Raleigh, a new chain-driven model of which made its first appearance. Undoubtedly the popularity which the chain-cum-belt Raleighs have attained will be enhanced by the adoption of a chain-driven specimen, especially for harder work or sidecar pulling.



An aluminium silencer, fitted with drilled fish tail, is bolted to the chain stay of the Francis-Barnett.



Split detachable valve spring covers on the new single-cylinder James lightweight.

Increased Popularity of Chain Transmission. 1923 Models under Test.

Much attention was focussed on the smaller mounts, which are becoming more and more popular. It is to be regretted, however, that two-strokes were not more fully represented amongst the starters. Nevertheless the two oldest two-stroke names, Levis and Connaught, were well upheld, the former by three chain-driven 247 c.c. models of standard design (two looking rather "naked" with their exposed magneto chains), and the latter by a team of three solos and a sidecar outfit. Two of the solo Connaughts and the sidecar are more or less new models. The engine dimensions of 76 × 77 mm. (348 c.c.) are new to this make, and the tank has been modified in shape and finish. Chain drive and three-speed Burman gears are fitted, and altogether the appearance is workmanlike and substantial.

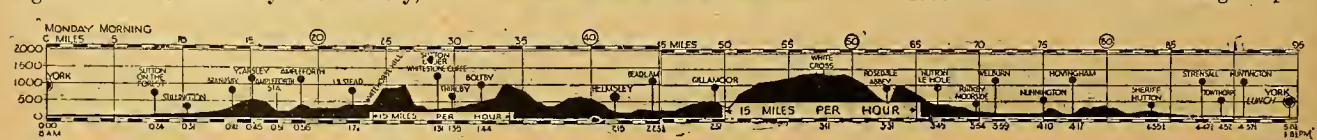
Other two-strokes in the trials are the rotary-valved Sun-Vitesse, the Allon, the Radco, the O.K.-Juniors, and the 500 c.c. Dunelt, but the latter are represented by a sidecar outfit this year. Moss three-speed gears with chain drive are being used on the Sun-Vitesse and O.K. Junior machines, while the Allon is now fitted with a Sturmey-Archer three-speed box and chain-cum-belt drive. Specially commendable is the fact that the Allons are absolutely standard models, even to the footboards and leg-shields.

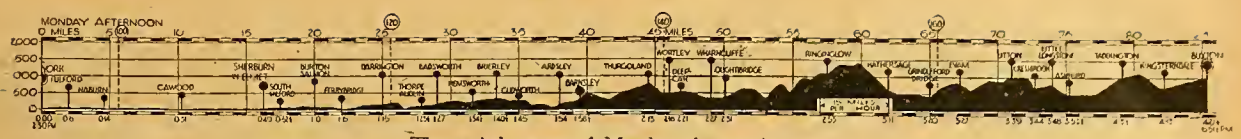
A Super Solo Mount.

Probably no machine attracted greater crowds of admirers at the weighing-in than George Brough's new 80 m.p.h. (guaranteed!) 976 c.c. special sports model Brough-Superior. It is a glistening mass of plating and polished aluminium. The exhaust pipes are connected to the ports by large finned castings, and the expansion chambers at the extreme ends are of stream-line bulbous formation. The saddle position is only 27 inches from the ground.

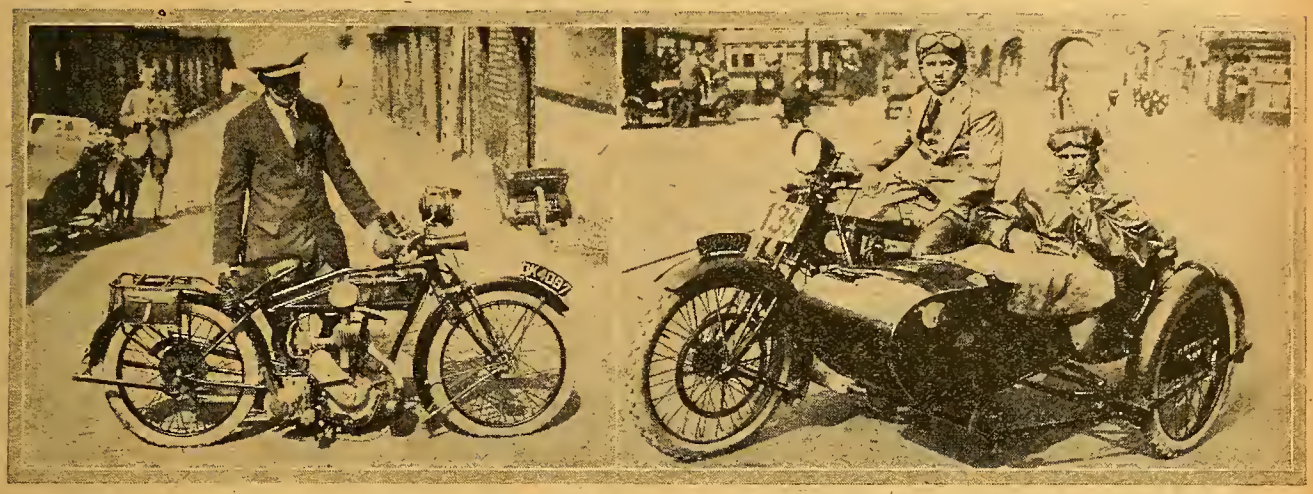
Brettell's Connaught sidecar has been mentioned, and is the only competitor in the same class as M. C. Breese, who is driving a 349 c.c. Blackburne-engined Weatherall.

Re-designed cylinders with deeper fins are being used on the Ariel and Rudge singles, but the remaining machines in this class show little change or modification. The P. and M. machine, it was noticed, had been fitted with additional foot control for the change speed





The varied nature of Monday afternoon's route.



J. Lidstone and the new and attractively designed 349 c.c. James.

F. Smith, who is piloting the 925 c.c. Clyno sidecar.

mechanism, and an innovation on the twin B.S.A. is a foot-operated front brake. On this machine, also, the growing tendency to mount the handle-bar rigidly on the head lug is followed. In-

J. Westwood Wills and the 547 c.c. chain-driven Powell.

cidentally, this practice is, among others, adopted on the Connaught, Sunbeam, the new Grindley, the Brough Superior, and the Coventry Eagle.

A True Lightweight.

Easily the smallest machine entered, the 169 c.c. J.E.S. two-stroke is a real lightweight of diminutive size. Its rider, R. P. Purnell, felt somewhat handicapped by the absence of a clutch, but the little mount is equipped with a four-speed constant mesh gear box giving a lowest ratio of 18 to 1; the transmission is by chain throughout. If this machine survives the week a few failures on the worst hills would be no discredit to it.

Silencing Systems.

There was every evidence, as the machines were presented for examination, that few people were anxious to lose marks for inefficient silencing.

Raleigh lightweights had a very complete system, using a transverse silencer under the magneto, a long pipe, a further expansion chamber, and finally a fish-tail. Westwood Wills' Powell carried an Argus silencer at the end of a huge "drain pipe" exhaust, and G. E. Austin had another Argus silencer adapted to take the twin exhaust pipes of his Coventry Victor. Carbjector silencers were the equipment on the Allon two-strokes, while Harry Reed's big Dot sidecar had an enormous expansion chamber secured to the carrier stays. Unusual and somewhat diverse exhaust systems were to be seen on the Beardmore-Precisions, J. M. Philpotts' machine having a long pipe which branched into two at its farther end, the outlets being restricted by the insertion of smaller tubes. Neat aluminium expansion boxes were fitted to the Francis-Barnett sporting models.

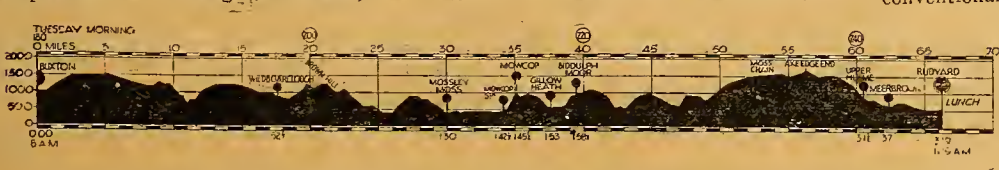
New "Assembled" Mount.

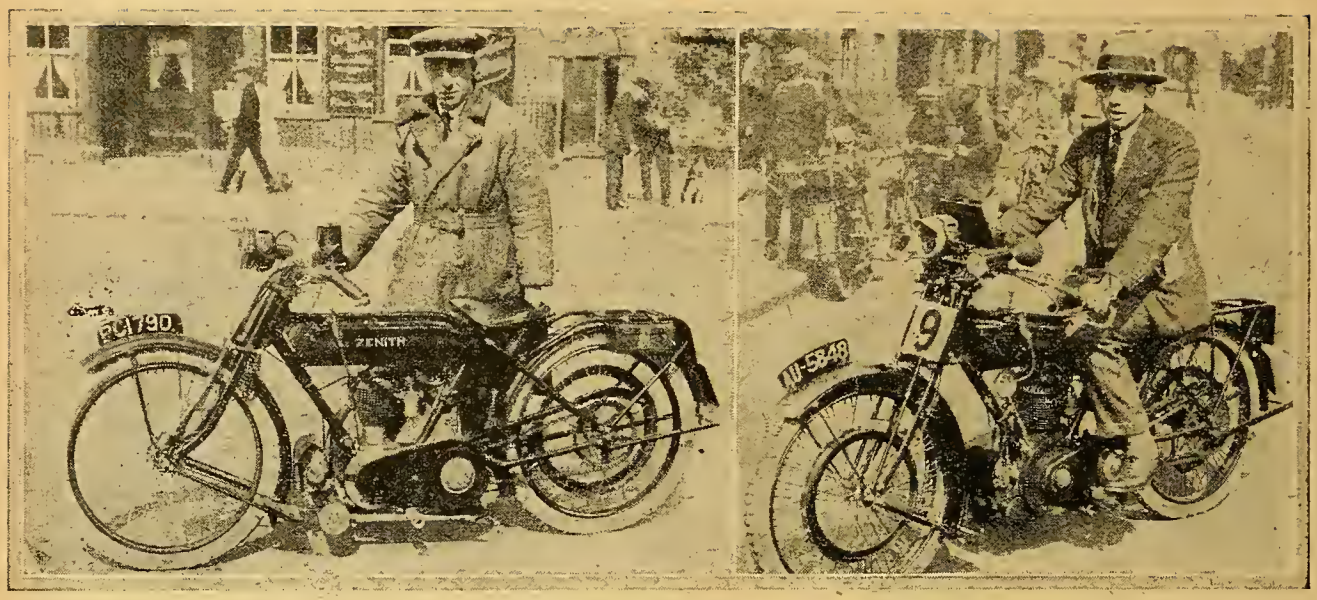
A late-comer at the weighing-in was the Grindley sporting machine, equipped with

One of the new chain-driven Allons, three of which are entered.

a 249 c.c. J.A.P. engine. Nothing unconventional distinguishes this mount, which embodies well-tried components, but its graceful lines and the unusually large tyres (28×3 in.) give it an attractive appearance. It is made by the Grindley Motor Co., of Prees, Salop.

Few innovations in trans-





ADVANCE 1923 MODELS.

One of the two 349 c.c. single cylinder chain driven Zeniths.

W. H. Hadfield, who is riding the 348 c.c. all-chain driven Raleigh.

mission or brakework were to be seen, but most of the machines in the Trials have three-speed gears and all-chain drive. Four speeds, however, were to be found on the J.E.S., Clayton Russell's, 633 c.c. Norton sidecar (Dureff four-speed chain gear box), the P. and M.'s, the Dot, and the Morgan runabouts. Examination of the sidecars did not bring to light any startlingly new or unusual features; indeed the general tendency to make the actual connections rigid in the plane of the greatest stress almost indicated a lack of any real inspiration in sidecar chassis design; whether the end of the week will bring a tale of frame and chassis fractures remains to be seen, but in one or two instances it might be predicted.

Most of the "big" sidecars—Ariel, Matchless, Harley-Davidson, Brough Superior, A.J.S., Bradbury, Martinsyde, Zenith, Chater-Lea, Clyno, James, Excelsior, and Indian—are standard models, and it is noteworthy that they mostly carry one or more spare wheels, one of which is equipped with chains.

Runabouts Well Represented.

Contesting with the sidecars are a Scott Sociable and Morgan, L.S.D. and T.B. runabouts. At the conclusion of the Trials much comparative material as to the rival merits of these types will be available.

The only known non-starters were G. Packman (349 P. and M.) and G. E. Cuffe (698 Metro-Tyler).

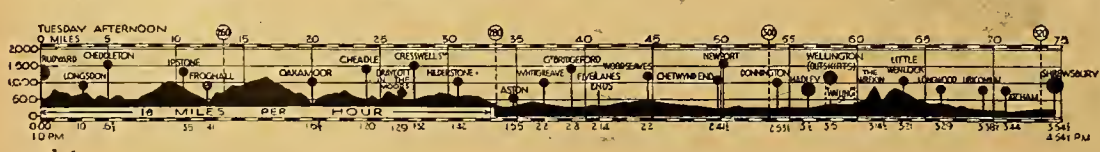
Apart from one or two alterations in gear ratio—usually denied by the riders concerned, who argue that their erring lower gears are counteracted by larger tyres—the only changes on the list of competitors published last week are:—R. Evans is riding in place of Hugh Gibson (Raleigh); C. W. Hough in place of Eric Williams (A.J.S.); B. E. Browning in place of P. N. Hills (Royal Ruby); and C. Bourlet in place of C. Dickenson (Ariel).

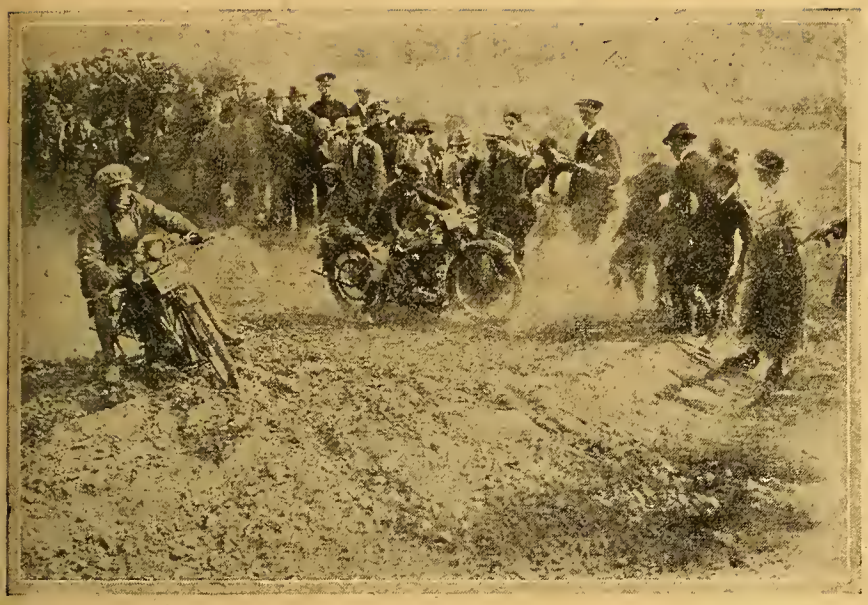
Only one machine was changed: J. H. Davies, the North Wales representative in the premiership competition, decided to ride a 492 c.c. T.T. Sunbeam in place of a 599 c.c. model.

Drivers with their machines and passengers reporting to the chief marshal last Sunday afternoon at York.

Many and varied were the magneto protections against water-splashes, from a handful of grease on some, a sponge bag to a complete wrapping of old inner tube on another.

The Martinsyde sidecars are reputed to have 21.8 to 1 bottom gears.





Two 350 c.c. soloists in the "rough" on Rosedale Abbey Bank, H. F. Harris (A.J.S.) and Mrs. Janson (Coventry Eagle).

MONDAY'S RUN, 179¾ MILES.

York, Stillington, Ampleforth, Thirlby, Helmsley, Gillamoor, Kirkby Moorside, Hovingham, Strensall, York (lunch), Naburn, Cawood, Brierley, Barnsley, Ringinglow, Ashford, Buxton.

Really gorgeous summer sunshine graced the start of Monday's run, the first of the Six Days' Trials.

For the first twelve miles level going in a northerly direction was encountered, but the Hambleton Hills loomed in the distance.

The White Horse.

Five or six miles of undulating lanes with a surprising frequency of blind corners next ensued. All the time the riders could see ahead of them the "white horse" which gives its name to the first test hill of the day. Cut out of the heather so that the white shingle shows through, the tremendous representation of a horse dominates that flank of the hills on which Sutton Bank lies on the more northward side.

Near the foot of the hill a rather severe hairpin had to be negotiated, but the hill itself was scarcely worth observation. Most modern solos, and some of the sidecar models should have taken it in their stride on middle gear. Nevertheless, there were many failures, almost all due to indifferent driving.

Stage Fright.

Of course, the first hill in a trial always finds the riders in a state of stage fright, and it is this must account for the poor performances of many, yet it is unbelievable that old and seasoned competition riders should commit such blunders as to "cut" unknown hairpins and to commence prodding with their feet when there is no earthly need to loose balance on merely mildly stony surfaces.

White Horse Hill belied the rumours of the Sunday evening; its texture alternated between sandy path and quite inconsiderable sandstone boulders, much more pleasant to ride over than, say, certain portions of the Finchley Road out of London! The hill is perhaps about a mile in length.

On the upper part H. F. Harris and C. W. Hough made the ascents which gained most applause from the spectators; they were fast and neat. Mrs. Knowles, on a similar machine, made a remarkably good steady climb.

Bert Kershaw, whose luck surely is out this last few weeks, ran his New Imperial up the bank. Dance and Bennett (Sunbeams) treated the gradient contemptuously, and "T.T.'ed" up, but Bennett got into a bad cleft in the rocks and wobbled a little.

A Wonderful Miniature.

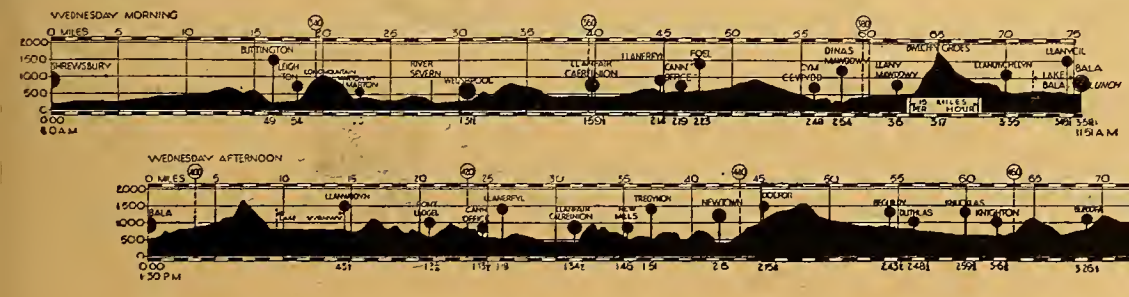
R. P. Purnell made a wonderfully good ascent on his 169 c.c. J.E.S., and the Levis and Sun-Vitesse machines generally did well. Of the Allons, R. Cooper was noticeably the fastest of the three, but W. Johnson hung on to middle gear right up to the worst part.

Two Scott riders, W. Moore and W. Scott, did not trouble to take the hairpin wide; knowing what they could do they simply "cut" it at speed, going over the worst gradient. T. Peck, one of the solo Ariel riders, attempting the same feat, ran into the bank.

Lightweights attacking White Horse Hill at speed. J. Johnson (247 Sun-Vitesse) and R. Evans (348 Raleigh), followed by F. W. Applebee (247 Levis).

Particularly nice ascents were made by F. W. Becker (688 McKechnie), G. Brough (976 Brough Superior), L. Horton (249 New Imperial), P. L. Mayo (249 Coventry-Eagle), and C. L. Sprosen (348 Connaught).

The first sidecar up was the 349 c.c.



Yesterday's routes. The morning included Bwlch-y-Groes

Solo machines after tackling the worst portion of the Rosedale climb. The riders are: J. Lidstone on the new 350 c.c. James, P. N. Hills (349 Royal Ruby), H. M. Beedon (499 Sunbeam), and E. Searle (349 Sheffield.-Henderson).

Weatherall, driven by M. C. Breese, and it climbed quite well.

Most of the single cylinder sidecars did well, and they were not depending on non-skid chains; with the big twins, however, quite another story must be told, for all of the following stopped: R. Swanton (998 Indian sc.), baulking V. F. Long (976 Excelsior sc.), H. H. S. Harris (799 A.J.S. sc.), G. E. Minnett (750 Bradbury sc.), P. Platt (750 Bradbury sc.), F. Cottom (749 James sc.), and T. J. Ross (993 Matchless sc.).

Three-wheelers Score.

The most impressive sidecar ascents were those of the Martinsyde team, but undoubtedly the three Morgans, the T.B., and the L.S.D., outclassed all the other passenger machines. H. F. S. Morgan, indeed, made a wonderful show in avoiding stopped or failing sidecars, as also did W. E. Grange (750 Bradbury sc.).

A diversion was provided by the Scott Sociable, which speeded up the hill with the spare wheel bouncing behind, trailed by a few yards of strap; it was ultimately hauled in like a lifebelt by the crew.

From White Horse, Sutton Bank was descended (with caution); and after some Colonial going Boltby Bank was ascended. The latter hill is a second-gear climb in point of gradient, but has a very vile surface, dry but exceedingly rough. So also was the moorland track which followed, it seemed, for miles and miles. 15 m.p.h. was the schedule speed for this section, and it was none too low.

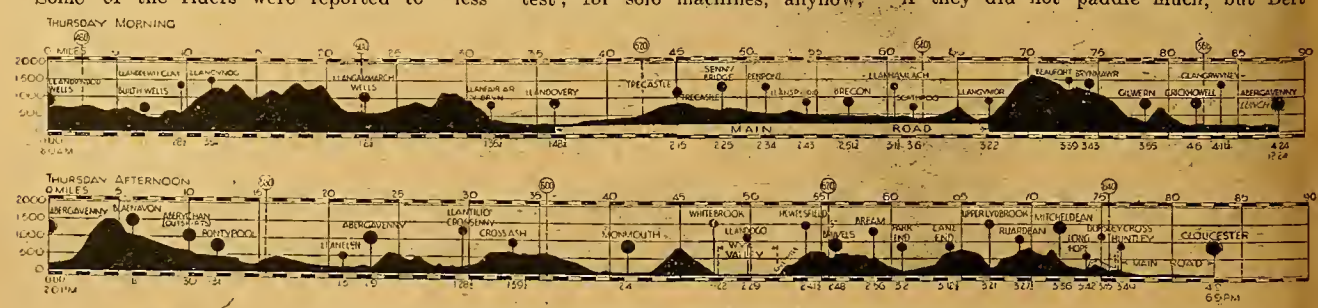
Some of the riders were reported to have visited Rosedale Abbey Bank on the previous day and to have compiled charts of its safe passages and dangerous shoals. It is that sort of hill, but curiously enough the people who conquered it recompensed controllability and an ample reserve of power, almost every time.

Hundreds of spectators had foregathered to watch the fun, when A. R. Edwards (247 Levis) appeared and regis-

F. C. North piloting his 292 c.c. O.K. up Rosedale Abbey Bank. He did not stop to light his pipe.

tered a very creditable temporary failure not very far from the summit. J. Wilkins (249 New Imperial) and G. S. Davison (247 Levis) both waved their legs if they did not paddle much, but Bert its dry but treacherous surface and banked cross-gulleys were as often or not those who had never seen it before.

One cannot say that it was a "useless" test; for solo machines, anyhow,



Six Days' Trials.—Kershaw (249 New Imperial) made a clean climb in the full sense of the phrase. Until he fell, P. L. Mayo (249 Coventry Eagle) was very steady, and L. Horton (249 New Imperial) only stopped his road wheels when he grounded.

Mrs. Knowles (349 A.J.S.) came to a stop at the same spot, but soon got going again. Non-stop, but more or less erratic, journeys—sometimes hampered by other outright failures—were made by G. Lovegrove (247 Radco), L. E. Clulee (292 Allon), W. Johnson (297 Allon), R. M. Knowles (490 Norton), S. M. Greening (346 Francis-Barnett), E. A. Barnett (346 Francis-Barnett) and F. C. North (292 O.K. Junior).

Loud cheers greeted R. P. Purnell's J.E.S., which did well until it stopped for a little while. Bridcutt's and Cathrick's Dunelts got mixed up in a heap, while Parkes' and Bishop's Sun-Vitesses wormed past very cleverly. The Grindley romped up to lie down, and R. Cooper broke the belt of his Allon. Hall and Handley on the remaining O.K.'s made very excellent climbs, without touching with their feet.

Eric Williams' substitute on the A.J.S.—C. W. Hough—got cheers in mistake, but eventually earned them, passing Mrs. Janson (Coventry Eagle), who had to be assisted after a fall on the first corner. A new chain-driven Raleigh in the hands of W. H. Hadfield, who only footed once, was very fast, as was H. F. Harris (A.J.S.), who wobbled somewhat, however.

A Star Ascent.

The Sunbeam solo team was led by Dance, who made a magnificent climb; Bennett tried to provide an *encore*, but skidded right round on the fatal gulley; and their third man, C. Greenwood, footed.

One of the new lightweight James—G. Kimberley's—made an unblemished ascent, and Lidstone on the other was quite fair. The 349 c.c. Zeniths were less fortunate, but neither actually stopped. E. H. Gifford (496 Martinsyde) did not do nearly so well as he usually does, nor did H. Greaves (349 Beardmore-B. and S.).

Three Scotts came next—ridden by W. Scott, G. Hill, and W. Moore—and all made imposing climbs; one unfortunately stopped higher up in a sporting attempt to avoid a baulk.

A. Rollason (Ariel), E. Foster (698 Raleigh), and E. S. Burnett (698 Raleigh) all reached the upper gulley before footing; and about the same time Westwood Wills (Powell) recorded another of the rare, non-footing journeys. R. P. Ranson (Lea-Francis) fell spectacularly, and his *confrère*, A. Lea, somehow also got mixed up with a bunch of failures. For a few minutes all was chaos. G. E. Austin (Coventry Victor) joined the melee, and Cross (499 Triumph) was fortunate in being able to worm past. Bainbridge (Martinsyde) failed to emulate Cross, but T. Buckle (748 F.N.) glided through the throng in an extraordinary manner to stop higher up.

Things cleared a little for J. A. Newman (Douglas), and he kept his feet on the rests all the way up. In an endeavour to hug the left side of the road, J. H. Davis (492 Sunbeam) edged a party of spectators down the hill-side, and J. M. Philpot (598 Beardmore) followed, erratically but quite well, the path that Davis had so effectively cleared. D. H. Davidson (596 Indian Scout) and W. D. Pugh (989 Harley-D.) were probably the last solo riders to make anything approximating a really good showing, although the bigger twins of George Brough (Brough-Superior) and E. J. Kehoe

Sidecars on Rosedale Abbey Bank. The A.C.U. included this hill in the 1920 trial, but at the last moment decided against its inclusion.

Cooling the tyres after Rosedale Abbey Bank. A. W. Hadley (499 Rudge sidecar) negotiating the watersplash at Hutton-le-Hole.

(Rudge) were at least as effective as the majority of the lightweights—but they were not nearly so suitable for the task in front of them.

To attempt to describe the sidecar performances in detail would prove nothing.

Passenger Machines on Rosedale.

The three P. and M.'s were as good as any; the Harley-Davidsons and one of the Indians—despite, in each case, a fairly high low gear—were excellent. F. W. Giles's A.J.S. was wonderful, and Freeley's and Mundey's New Hudson outfits also stood out from the ruck. None of the Sunbeams appeared to have enough weight on their front wheels, and the Matchlesses, except G. D. Hardee's, were not up to their usual pitch. W. H. Bashall's Martinsyde did not require assistance, nor did J. H. Walker's B.S.A. until the sidecar apron became mixed up with the wheel. A 494 c.c. Douglas outfit, driven by J. W. Wildblood, just scraped to the summit, where to the general disappointment it, too, stopped. Wade's A.J.S. was almost as good as Giles's; and L. Newey (Ariel) was easily best of his team.

The Scott Sociable shed its passenger; but the three-wheelers with central rear drive were, without exception, in faultless fettle. These were: H. F. S. Morgan (Morgan), W. Carr (Morgan-Anzani), S. Hall (Morgan-M.A.G.), F. S. Spouse (T.B.), and G. W. Shepherd (L.S.D.).

After passing the Chimney at Rosedale Summit, a mile or two of moderately "colonial" surface brought the competitors to Hutton-le-Hole, which has two watersplashes in its street; these did not cause any trouble, however. Thence from Kirkby Moorside, through Hovingham and Strensall, to York was plain sailing.

Straightforward Afternoon's Run.

In the afternoon, apart from the number of corners, the route, until the outskirts of Sheffield were reached, was entirely over top gear roads, a small observed hill, Stainboro' Low, near Barnsley, being of no account.

Between Oughtibridge and Hathersage there was a considerable amount of climbing, with corresponding deep descents, but the much-rumoured teaser near Ringinglow proved to be dead easy.

Descending from the moors to Hathersage a rough-surfaced patch nearly unseated many as it was encountered with a comparatively easy moorland road on which fair speed could be attained. Before reaching Buxton, Litton Slack was seen, over a wall, and the gateway at the foot of Cowdale was passed. It seemed strange to go so near those famous test hills without actually scaling them.

Despite the easy nature of the afternoon's run, memories of the morning made the banner, "Buxton Welcomes the A.C.U.," a truly thankful sight.

A new gate change, mounted in a bracket incorporated in the gear box frame clamp, is being tested on Clayton-Russell's Dureff four-speed box.

* * * *

W. H. Hardman's old Wilkin has a 550 c.c. Blackburne cylinder head on its 499 c.c. engine.

At the start Wills' Powell, with its white-painted tyres, looked like a London taxi.

* * * *

W. A. Carr's Morgan has an o.h.v. Anzani engine which is remarkably silenced.

* * * *

Glorious sunshine made the leather coat brigade look unfashionable—but, he laughs best who . . .

* * * *

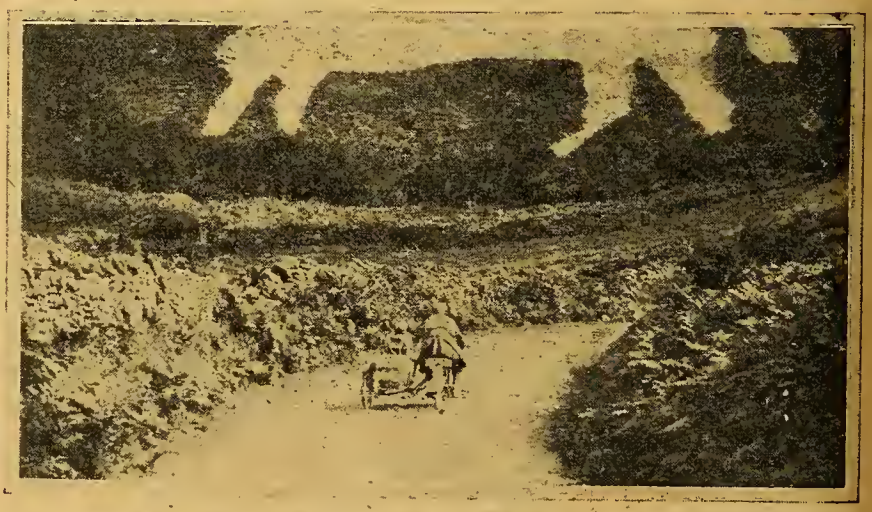
Searle's Sheffield-Henderson, although a side-valve model, has a foot-operated oil-pump.

TUESDAY'S RUN, 140¾ MILES.

Buxton, Mossley Moss, Mowcop, Biddulph Moor, Axe Edge End, Rudyard (lunch), Ipstone, Cheadle, Hilderstone, Aston, Gt. Bridgeford, Newport, Wellington, Longwood, Uriconium, Shrewsbury.

Again there were prospects of fine weather, and only a very small minority were unable to take the road for the long run westwards to Shrewsbury.

The route for the day was planned largely by Dr. C. H. Hopwood, who rode a Levis in the T.T. He assures us that in the afternoon there were 297 corners (including 100 hairpins). Certainly bends were the predominant feature, their number and surprising variety making the twenty-mile average difficult in the extreme.



J. Harrison-Watson, 550 c.c. Triumph with Toronda sidecar, on White Horse Hill. The landmark from which the hill is named is seen in the background.

ANGLO-DUTCH TRIAL ARRANGEMENTS.

IT would appear from the present state of affairs that the Anglo-Dutch Trial is likely to fizzle out, as the Eastern Centre, which the A.C.U. requested to organise the trial so far as this country is concerned, look upon the event as one which should be a matter for the A.C.U., and even at this date no definite details are available. Pending a further arrangement, entries should be sent to Mr. D. Stuart, hon. sec., Eastern Centre, A.C.U., Holme Villa, Algers Road, Loughton, Essex, before September 1st.

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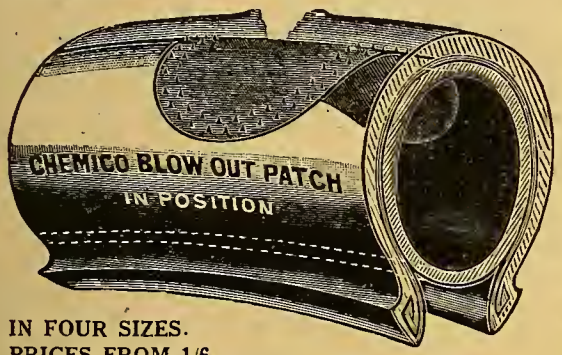

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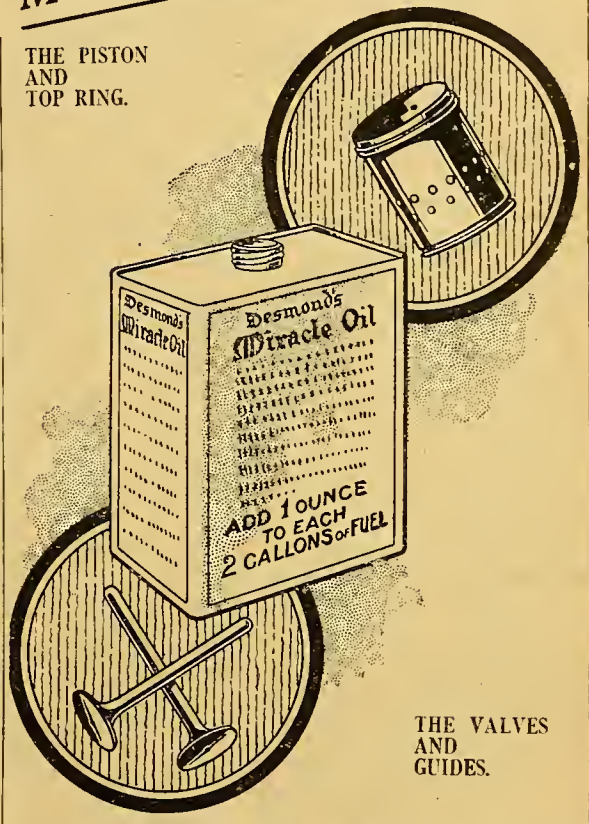

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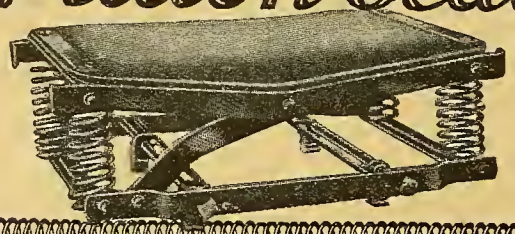

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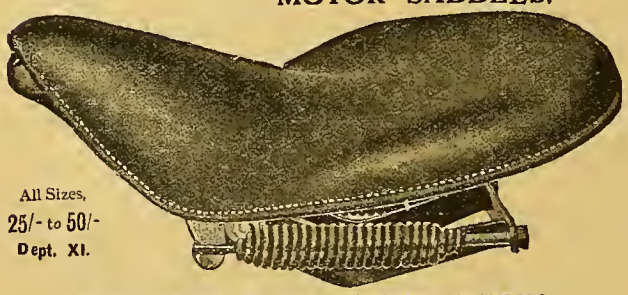

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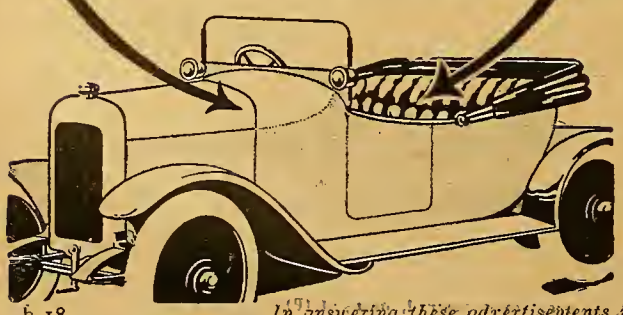

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1921 Brough Superior, 8h.p., o.h.v., lamps, horn, speedometer, licensed, mileage 300; £115.—Forrest, "Hut," Crossford, Carluke, Scotland. [5879

MANCHESTER, Oldham, Bury, Stockport, Stalybridge, Rochdale, Huddersfield, etc., etc.—We are sole agents for Brough Superior.—Brough Superior Northern Services, 198, Manchester Rd., Oldham.

BROUGH SUPERIOR Northern Services.—As our name implies, we are Brough Superior specialists. All models in stock. Mark I., 90×77½ mm., o.h.v., £160; Mark I. side valve, £150; Mark I. sporting combination, with screen, step, mat, and apron, £180; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. sporting combination, £150. Demonstration runs by appointment. Catalogues post free on request. We are the Brough Superior representatives for whole of Lancashire and Yorkshire (exception Leeds and Sheffield), and greater part of Cheshire and North Stafford. Showrooms, 198, Manchester Rd., Oldham.

IS Yours Going to be a Brough Superior? If so, don't forget Brough Superior Northern Services. Let us give you a trial run. [0880

BROUGH SUPERIOR 1921 Sports Combination, o.h.v. J.A.P., original tyres, Ace discs, speedometer, fully equipped, spares, licensed; £125, or exchange.—Malvern Garage, Thornton Heath. [7677

6.5h.p. Brough Superior, March, 1922, Lucas lamps, horn, Cowcy speedometer, large D.A. cylinder, Terry pillion seat, fitted with £40 Toronda sporting mottled aluminium sidecar screen, disappearing hood, locker; in perfect condition and looks as new; £150, cost £190.—Skinner, 12, Sadler Gate, Derby. [7056

1922 Brough Superior Combination, 8-10h.p., special super-sports J.A.P. engine, side valve, mileage 1,500, as new, licensed, lamps, speedometer, horn, trial and examination invited, cost £208 in April; bargain, £170; or exchange modern light 4-seater car, with cash adjustment.—Harding, 6, Church St., High Wycombe. 'Phone: 22. [7480

BROUGH SUPERIORS.—Order your new mount from us. We are the Brough experts. Specially tuned to order. Mark I., 8h.p., side valve, £150; sporting combination, with screen, step, mat, and apron, £180; Mark I., 90mm. bore o.h.v., £160; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. combination, £150. Special Service Agents; lists.—G. and J. Dawson, The Ideal Garage, Cambridge. 'Phone: 993. [0834

ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½ o.h.v., 3-speed, clutch, and kick-starter, £160; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5 mag., 72×90, 3-speed, clutch, and kick-starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

B.S.A.

B.S.A., speedometer, lamps, spring pillar, good order; £28.—323, Portland Rd., South Norwood. [7634

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B.S.A.

B.S.A. Combination, 3¼h.p., 2-speed, as new; £30.—17, Heaton Rd., Mitcham. [7617

NEW 1921 B.S.A. 4h.p. T.T. model, single-speed; £57/10.—Snipe, 330, Euston Rd. [7742

B.S.A. 4¼h.p., June, 1922, chain-belt; £85.—Williams, Brightview, Hadley Rd., New Barnet. [7349

4¼h.p., not done 500. Canoelet sporting sidecar; £95; exchange.—Howell, Tynewydd, Treherbert. [7097

B.S.A 1914 Combination, 4¼h.p., all-chain, tax paid; £60.—31, St. Dunstan's Rd., Feltham Middlesex. [7575

1920 B.S.A., Lucas lamps, horn, licensed, exceptionally good condition; £55.—99, Cannon Hill Lane, Merton. [7455

1921 B.S.A. 6h.p. Combination, Rennoc 2-seater sidecar; nearest offer £120.—8, Hirstwood Rd., Saltaire, Yorks. [7641

B.S.A. 1922, 4¼h.p. model K2, very slightly soiled; bargain at £95.—The Layton Garages, 30, Holywell St., Oxford. [6889

1914 4h.p. B.S.A., coachbuilt sidecar, fully equipped, 3-speed, K.S.; £49.—2, Fortune Gate Rd., Harlesden, N.W. [7986

1920 4¼h.p. B.S.A., 3-speed, all-chain drive, in perfect condition; £56.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [7571

1922 B.S.A., brand new, shop-soiled, Model H2; £105.—Shepherd, Enfield Highway. 'Phone: Waltham Cross 31. [0908

4¼h.p. 1919-20 B.S.A. Combination, 3-speed, free engine and kick start; £75.—Wauchope's, 9, Shoe Lane, London. [6702

B.S.A. 4¼h.p. Combination, 1922, for sale; £125; mileage 150; owner wants 8h.p. Rover.—Box 3241, c/o *The Motor Cycle*. [7942

1913 B.S.A. 3½h.p., 2-speed, clutch, perfect condition; £20, or exchange spares, etc.—Cooper, 63, Avenue Rd., Camberwell. [7372

£42.—1917 4¼h.p. B.S.A. Combination, 3-speed, clutch, K.S., coachbuilt sidecar, lamps, horn, taxed, overhauled.—King, Egrove, Oxford. [7871

1922 B.S.A. 6h.p. Combination, as new, about 300 miles, lamps, horn, Easting screen, licence; £142.—Coryn, Hornchurch, Essex. [7767

1921 (late) 4¼h.p. B.S.A. Combination, almost new, electric, taxed, equipped, insured; £110.—20, Overhill Rd., East Dulwich, S.E.22. [7263

B.S.A. 4¼h.p., 1922, H2, 3 speeds, clutch, K.S., brand new, slightly soiled; £98.—Eagles and Co., 275, High St., Acton, London. [7922

1919 B.S.A. Coachbuilt Combination, 4¼h.p., electric lighting, tax paid; any trial; £60.—Lime Tree Farm, Chartridge, Chesham, Bucks. [7361

1922 B.S.A., 4¼h.p., 3-speed, shop-soiled only; £90.—Rey, 173, Great Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6996

B.S.A. Combination 1915-16, Model de Luxe sidecar, good condition, great bargain; £45.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [7994

B.S.A. Combination, late 1914, lamps, horn, etc., licence paid, excellent condition, perfect running order; £60.—P.V. Motor Cycles, Ltd., Perry Vale, S.E.23. [7483

1919 B.S.A. Combination, 3-speed, Cameo windscreen, side curtain, cover, beautiful condition; £55.—Station Hotel, outside Latimer Rd. Station (Metropolitan). [7294

1921 4¼h.p. B.S.A. Chain Combination, electric light, Bluemel screen, new tyres all round, fine condition, tax paid; £115.—6, St. George's Rd., Golders Green. [7026

B.S.A. 1917 4¼h.p., all chain, perfect condition, full equipment, coachbuilt sidecar, screen and hood, tax paid; £63; after 6.—Cann, 181, Green Lanes, Clissold Park. [7390

1920 B.S.A. 4¼h.p. Combination, fully equipped, good condition; selling to clear 18 months' storage and debt, £68, or close offer.—Box 3068, c/o *The Motor Cycle*. [6108

1921 4¼h.p. B.S.A. Combination, Eastlog windscreen, all accessories; £115.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6989

1921 B.S.A. 6-7h.p. Combination, all accessories, shop-soiled only; £150.—Rey, 173, Great Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6997

1922 B.S.A. Light 6-7h.p. and No. 4 sidecar, shop-soiled demonstration model, maker's guarantee; 138 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5454

1920 4¼h.p. B.S.A. Combination, new May, 1920, splendid condition, 3-speed, lamps, Easting screen, tax paid and insurance to July, 1923, Burton-on-Trent district; £79.—Box 3234, c/o *The Motor Cycle*. [7883

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B.S.A.

B.S.A. 6-7h.p. Combination, unscratched, very low mileage, spare wheel, Lucas lamps, horn, speedometer, Easting, many unused spares, insured, taxed; £130.—Watson, 168, Burbage Rd., Dulwich, S.E. Tel.: Brixton 1489. [7540

1914 B.S.A. Combination, 3-speed, K.S., clutch, all-chain drive, all on, tax paid, very sound machine; £35.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 3221. [7919

1922 8h.p. B.S.A. model F, all lamps acetylene, horn, mirror, new spare valve, cover, tubes, barely ridden 500 miles; £120, or with 1921 Royal Leicester, bulbous back sidecar, £135; ill-health sole reason for selling.—Woodcock, Hull St., Leicester. (D) [7848

1920-21 4½h.p. B.S.A. Combination, B.S.A. chassis and B.S.A. coachbuilt sidecar, all-chain drive, 3-speed, clutch, kick-start, speedometer, Easting screen, apron, hood, Tan-Sad, lighting set, etc., tax paid, beautiful condition; £88.—Wil, 769, Romford Rd., Manor Park, E.12. [7466

B.S.A. 1919 Combination, practically as new, not used since last August, perfect condition, equipped with all lamps, horn, speedometer, Eastiog screen, folding luggage grid, tools and spares, genuine harbain; £82, or near; must sell, any trial week-ends.—6, Vancouver Rd., Catford. [5603

B.S.A. new 1922 4½h.p. all-chain Solo, £110; 4½h.p. chain-cum-belt, £107; sidecars supplied to any model; your old machine taken in exchange and treated as payment down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [6703

1921 Luxurious 6-7h.p. B.S.A. Combination, with spare wheel, 4 new tyres, speedometer, electric and Cowey mechanical horns, Lucas 6-volt light-car dynamo lightiog set, with ammeter and switchboard, 2 head, 2 side, and tail lamps, screeo, hood, and luggage grid; 129 guiaeas. May be viewed and tried in London.—Write in first instance to Alban Gilbey, The Lea, Dedham, Bucks. [7061

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7663

B.S.A. Spares can be had by return, post free, from Jones Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [0805

GODFREY'S, Ltd., 208, Great Portland St. Loodon, W.1.—Complete stock of all B.S.A. spare parts always io stock Write for free spare part list, stating year of manufacture. [0750

Calcott.

£15.—1915 2¾h.p. Calcott, all accessories.—Brampton, Blagdon Rd., New Malden, Surrey. [8031

Calthorpe.

NEW Shop-soiled 1922 Calthorpe 2-stroke, single-speed; £32/10.—Snipe, 330, Euston Rd. [7744

CALTHORPE-J.A.P., genuine, 1917, 2½h.p., Enfield gears, splendid machine; £30.—8, Hill View, Ilminster. (D) [7160

1920 Calthorpe, equal to new, 2¾h.p. J.A.P., Enfield 2-speed gear; £37/10.—Metcalfe, 256, Fore St., Edmonton, N.18. [7508

1919 Calthorpe-Jap, 2¾h.p., Enfield 2-speed, licensed 1922, excellent condition; £33.—Coles, The Cottage, Cranbrook. [7040

CALTHORPE-J.A.P. 1916 2¾h.p., 2-speed, clutch, splendid condition, fully equipped, licensed; £26.—21, Sydenham Rd., Guildford. [7524

CALTHORPE 1922, 2-speed, clutch, kick-starter, perfect; £32.—Norrington. Terrace Garage, Turoham Greea Terrace, Chiswick. [7687

1919 Calthorpe-Jap 2¾h.p., new 3-speed, clutch, kick-start, lamp, horn, tools; £45.—Walters, Presbytery, Richmond Rd., Worthing. (D) [7210

1918 2¾h.p. Calthorpe, 2-stroke, clutch, 2-speed; selling up; any reasonable cash offer.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [7499

2½h.p. Calthorpe Motor Cycles.—New 1922 models, £36; or £7 down and 12 monthly payments of £2/9/6, balance paid in 18 months if required.—Wauchope's, 9, Shoe Lane, London, E.C.4. [6704

SOUTHPORT.—Calthorpe 1915 combination, 4h.p. J.A.P. twin, 2-speed, all-chain, all on, taxed; snip, 39 gns. Calthorpe 2¼h.p., 4-stroke, 2-speed, just overhauled, accessories, taxed; 19 gns.; exchanges.—Kents, 417, Lord St., Southport. [7777

1916 2¾h.p. Calthorpe-Jap, 3-speed countershaft gear, Senspray carburetter, horn, knee-grips, tax paid, is fitted with Dunlop heavy tyres, in very good condition throughout, and all spares; accept £20.—Allen, Station House, Aldeburgh, Suffolk. [7900

Campion

3½h.p. Campion-Broler Combination, all accessories. Easting, new engine, 2-speed, clutch, kick-starter, Showell's lubrication; offer.—62, West Hill, Dartford. [7355

Chater-Fafnir

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N.U.T.	ZENITH.

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ROVER, 1919, 3½ h.p., 3 speeds, clutch and K.S...	£62
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RUDGE-MULTI, 1920, 3½ h.p., I.O.M. Model	£48
B.S.A., 1922, 4½ h.p., Model H2, and No. 3 sidecar	£123
B.S.A., 1919, 4½ h.p., Model K, and Millford sidecar	£80
A.J.S., 1916, 2¾ h.p., 3 speeds, clutch and K.S.	£40
ROYAL ENFIELD, 1921, 2¼ h.p., 2 speeds	£42
RUDGE-MULTI, 1920, 3½ h.p., and sidecar	£58
B.S.A., 1913, 3½ h.p., and sidecar, 2 speeds and clutch lamps, horn, speedometer, Easting screen. Running order, but not guaranteed	£35
MATCHLESS, 1921, 8 h.p. Comb.	£125
NEW IMPERIAL, 1914, 2¾ h.p., 2 speeds. Running order, but not guaranteed	£23
ROYAL ENFIELD, 1917, 3 h.p., 2 speeds, clutch ..	£38
RUDGE-MULTI, 1922, 3½ h.p., I.O.M. Model	£65
BRADBURY, 1922, 2¾ h.p., 3 speeds, clutch and kick-starter	£55
B.S.A., 1913, 3½ h.p., Countershaft, 3 speeds, clutch and kick-starter and sidecar	£43

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CHATER-LEA 2¾h.p., 1919, 2-speed, lamps, horn, Stewart speedometer, good condition; £35.—Wright, "Liscard," Lavender Hill, Enfield. [7189

CHATER-LEA, 1920, Villiers 2½h.p., 2 speeds, Watford, Klaxon, Tan-Sad, Lucas lighting, 2 toolbags and tools, just been overhauled, in guaranteed condition; £40, offers; any time.—58, West Green Rd., Tottenham, N.15. [7545

Cleveland.

1914 3½h.p. T.T. Cleveland-Precision, complete, sound, accessories; £28, or offer.—Broughton Vicarage, Cockermouth. [7045

£12 secures Clevelaod 1921 3h.p., 2-stroke, absolutely new, mileage under 100, fully equipped; balance 12 monthly payments 55/-.—Martin, 10 Herbrand St., Russell Square, W.C.1. [7708

CLEVELAND, 3h.p., 2-stroke, 2-speed, hand clutch, kick-starter, new April, 1921; mileage, 2,000; 700×80 tyres, unpuoctured, semi-T.T. bars, long copper exhaust, Westwood heavy electric light, licence for year, fast and exceptionally comfortable; reason for sale; £55; trial.—Burtoo, South St., Ashbourne, Derbyshire. [7051

Clyno.

CLYNO 2¾h.p., 2-stroke, shop-soiled, £76; sale price £50.—Whipple, Grantham. [7135

1920 Clyno, 2-speed, all on, good condition; £25/10.—31, Nursery, Walworth, S.E. [7984

£40.—Clyno, 2-stroke, 2-speed, shop-soiled, 2½h.p.—Townson and Ward, Ltd., Barrow-in-Furness. [7340

1920 Clyno, 2½h.p., 2-speed, clutch; 28 gns.; exchange combination.—27, Gayhurst Rd., Dalston. [7673

1920 Clyno, 2-speed, 2-stroke; £36.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6987

1920-21 Clyno 2¾h.p., little used, perfect, 2-speed, clutch, new Dunlop, lamps; any trial; £37/10.—67, Amity Grove, Raynes Park, S.W.20. [7565

5h.p. to 6h.p. Clyno 1917 Combination, 3-speed, 700×80 new tyres, splendid condition; £85; exchange higher power, cash adjustment, Wales.—Box 3221, c/o *The Motor Cycle.* [7324

CLYNO 1921 8h.p. Combination, fully equipped with all lamps, horn, windscreen, tax paid, and spare wheel, in perfect condition; £100.—The Layton Garages, 30, Holywell St., Oxford. [6886

CLYNO 1920 2½h.p., 2-stroke, splendid condition little used, electric light, clutch, horn, Dunlop tyres, tools, etc., tax paid; bargain, 39 gns. Any evening after 8.—91, Lordship Park, Manor Rd., N.16. [7409

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7664

Connaught.

CONNAUGHT, late 1921, fully equipped, tax paid, as brand new; £30.—284, St. James's Rd., Old Kent Rd., S.E.1. [7494

1921-22 Connaught, Sturmey gear box, kick, clutch, lamps, licensed, guaranteed; £35, no offers.—89, East Hill, Wandsworth. [7591

1922 Coonaughts, all models, for immediate delivery; cash or deferred terms, 4% extra. Write for leaflet and further particulars to the official N. Loodon agents.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7907

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T.T. Junior Race.—Cotton-Blackburne team the only 100% finishers. 85 recent awards and records. From 62 gns.—Cotton Motors, Gloucester. [9524

Coulson.

2¾h.p. Coulson 2-stroke, nice condition; £22; or exchange with cash for combination.—Jones, 131, Beechcroft Rd., Upper Tooting. [7626

2¾h.p. Coulson-Blackburne 1920, 2-speed, fully equipped, mechanical condition, appearance perfect, carefully used; 45 gns.—Write, Carey, Post Office Staff, Epsom. [7661

Coventry Eagle

NEW 1921 Coventry Eagle 3½h.p., 3-speed; £67/10.—Snipe, 330, Euston Rd. [7740

COVENTRY EAGLE 1919, 2¾h.p. J.A.P. engine No. V. 727, Jardine gears, B. and B. carburetter Hutchinson's, Lucas horn, P. and H. lighting, nearly new; £35.—59, Swaby Rd., Earlsfield, S.W.18. [7463

De Luxe.

DE LUXE-T.D.C., 2-stroke, 2-speed, perfect order, £20, must sell.—150, High St., Barnet. 'Phone: Barnet 250. [7282

F.O.C.H. have 1920 De Luxe 2-stroke, excellent condition; bargain, £20.—5, Heath St., Hampstead. (Near Tube.) [8002

DE LUXE T.D.C., 2-stroke, accessories, guaranteed; ride away; £19.—176, St. Albao's Av., Bedford Park, Chiswick. [7632

MOTOR CYCLES FOR SALE.

Enfield

ROYAL ENFIELD 1916 3h.p., twin, tax fully paid; any trial; £33.—Brockbank, 58, Lord St., Southport. 'Phone: 1054. [7941

DAN GUY, Weymouth.—Enfield 1921 8h.p., Magdyoo, double-seated sidecar, hood and screen, guaranteed perfect; £125. [0816

1922 Enfield 8h.p. Combination, dynamo lighting, hood, windscreen, speedometer, spares.—Bingle, 51, Conduit St., Gloucester. [7191

ENFIELD Combination 8h.p. J.A.P., new last year, in perfect condition throughout; £95.—Monck, Bishop's Cleeve, Cheltenham. [7444

2¾h.p. Twin Royal Enfield, 2 speeds, fully equipped, tax paid, excellent order; £15.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [7448

1921 Enfield 2-stroke, as new, any trial; or exchange for combination; £32/10.—Jones, 131, Beechcroft Rd., Upper Tooting. [7627

1922 Enfield Combination. One of these reliable outfits slightly shop-soiled; what offers —Radfords, Ltd., 12, Bull Ring, Birmingham. [7832

1922 8h.p. Enfield 2-seater Combination, Lucas horn, tax paid, mileage 150; offers.—Chapman, 20, Bostall Hill, Plumstead. [7404

ENFIELD Combination, 1914, 6h.p., screen, spare cover, tube, tax, insurance, excellent condition; £65.—64, Normandy Av., Barnet. [7789

ENFIELD 2-stroke, 2-speed, Dunlop tyres, fully equipped, tax paid, guaranteed; £30; or exchange. —406, Garratt Lane, Earlsfield, S.W. [8016

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175a, London Rd., Croydon. 'Phone: 1619. [6299

ENFIELD.—Complete range of 1922 models for immediate delivery; cash; exchanges; easy payments.—P. J. Evans, John Bright St., Birmingham. [7331

ENFIELD 1921 8h.p. Magdyno Combination, tax paid and completely equipped, excellent order; £120.—The Layton Garages, 30, Holywell St., Oxford. [6890

BARGAIN.—1922 8h.p. Enfield combination, indistinguishable from new, fitted with 3 lamps, horn, and tax paid; £128/10.—Willoughby, Merstham, Surrey. [7507

8h.p. Enfield Combination, late 1920, Mag. dynamo, electric horn, and spares, condition like new, mileage 5,300; £100.—Hands, 184, Sovereign Rd., Coventry. [8107

1921 Enfield 2¼h.p., K.S., Lucas lighting, horn, and full equipment, licensed, indistinguishable new, used lady; £40; appointment.—15, Beech Hall Rd., Highams Park, E.4. [7384

ENFIELD 1921 Combination, Lucas Magdyno, fully equipped, perfect condition; £107/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. Phone: Avenue 5548. [0065

1921 (Aug.) 8h.p. Enfield Combination, speedometer, Easting and many extras, mileage 2,000, perfect condition; 105 gns., or near offer.—Derngate Motor Co., Northampton. [7716

ROYAL ENFIELD 6-8h.p. J.A.P. Combination, double-seater sidecar; a real family man's outfit; lamps, tax, etc., excellent condition; £65.—Rhind and Co., Stone Place, Rusholme, Manchester. [7253

PHOTOGRAPH Free.—Enfield 6h.p. coachbuilt combination, good order and appearance, taxed, equipped; 49 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6957

ENFIELD Combination, 1918, 8h.p. J.A.P., Bluemel windscreen, electric light, 700×80 tyres, pilon, speedometer, taxed to December, excellent condition; £80.—Howard, 102, Station Rd., Crayford. [7450

1917 6h.p. Enfield Combination, hood, screen, discs and all accessories, tax paid, in splendid condition, guaranteed; any reasonable trial or examination; £95.—Pittuck, Rly. Station House, East Ham, E.6. [7276

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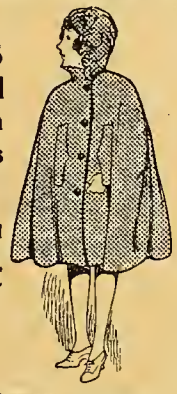

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1920 British Excelsior Combination, 8h.p., J.A.P., Lucas Magdyno, exceptionally smart machine; £87/10; spare wheel, etc.—Rhind and Co., Stone Place, Rusholme. 'Phone: 776 Rusholme. [7251

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BARGAIN, Fafnir motor cycle and sidecar, magneto ignition; £12 lot.—Shade, 16, Mason St., Walworth. [8030

3½h.p. Fafnir M.O.V., enclosed Bosch, B. and B., Druid forks, tax paid, good order; £10.—P. Willcocks, Datchet, Bucks. [7415

F.N.

F.N. 2¼h.p., 2-speed, new, B. and B.; sacrifice, £11. —Cooke, 20, Stephen St., Coventry. [7117

2¾h.p. F.N., 2-speed, clutch, fully equipped, good condition; £35.—Apps, Bracknell. [7172

F.N. 1913 4-cyl. 5h.p., fitted with new Amac, good running order; best offer.—Brown, Camps, Crawford. [7256

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1922 latest Francis-Barnett, all-chain, 2¾h.p. sports; £68.—Clifford Motories, Eastwood, Notts. [5448

1920 (Sept.) 2¾h.p. Francis-Barnett-Jap, Sturmey 2-speed, clutch and kick-start, Dunlops new, tax paid, only wants seeing; £40.—5, Norwood Rd., Herne Hill, S.E.24. [7998

FRANCIS-BARNETT, late 1920, 2¾h.p. J.A.P., Sturmey-Archer 2-speed, gear box, clutch, kick-starter, lamps, accessories, licence, excellent condition; £50, exchanges.—63, Solon Rd., Brixton. [7558

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SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

1919 Harley-Davidson Combination, fine condition; £65.—24, Balliol Rd., North Kensington. [7868

1919 Harley Combination, excellent condition; 58 gns, bargain.—67, Fernlea Rd., Balham; exchange. [8036

HARLEY Combination, 7-9h.p., hood, Easting, Tan-Sad; any trial; £70.—108, Merrow St., Walworth. [7318

HARLEY 1915 Combination, fully equipped, good appearance; any trial; £55.—114, Holland Rd., Harlesden. [7535

1915 Harley-Davidson Combination, 7-9h.p. 3-speed, in good order, Easting, lamps.—97, Chestnut Rd., Plumstead. [7298

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HARLEY Combination 1920, description too much to print, only wants seeing, private owner; offers.—Eaves, Wells Mews, Wells Rd., Shepherd's Bush, W. [8019

HARLEY Combination, 7-9h.p. Model de Luxe sidecar, splendid condition; £95; or would exchange for solo mount and cash adjustment.—49, Bangalore St., Putney. [7426

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HARLEY-DAVIDSON 1916 7-9h.p. Combination, fully equipped and tax paid, windscreen, etc., good condition; £50.—The Layton Garages, 30, Holywell St., Oxford. [8054

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HARLEY Combination, 1920, electric model, De Luxe sidecar, speedometer, hood, windscreen, little used, splendid condition, tax paid year, insurance March; cost £250; take £125.—187, Westbury Av., Wood Green. [7111

HARLEY-DAVIDSON 1921 Combination, dynamo model, with handsome sidecar, speedometer, disc, absolutely perfect and spotless, only run few miles; great bargain, £135.—Norrington, Terrace Garage, Turnham Green Terrace, Chiswick. [7688

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HAZLEWOOD Combination, late 1920, low mileage, 5-6h.p. J.A.P., 3-speed, countershaft, clutch, kick-start, new condition; £95, or near offer.—170, Hazlewood Lane, Palmers Green, London, N. [7931

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Hobart.

1921 Hobart-Jap 2¾h.p., 2-speed, footrests, ki starter, etc., condition perfect; £45.—Anderso 13, Courtside, Sydenham, S.E.26. [71

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1922 Humber 4½h.p. Flat Twin Sports, brand ne shop soiled; £95.—Shepherd, Eofield Highway [09

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INDIAN 7-9h.p., 1915 clutch model, road race £30.—17, Heaton Rd., Mitcham. [76

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£25.—1913 Indian Combination, 2-speed, clutch, n Dunlops, perfect condition.—17, Birchington R Kilburn. [80

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£36.—Indian 7-9h.p., splendid machine; sidecar, £ forced to sell.—Williams, 22, St. Martin's R Stockwell, S.W. [73

7-9h.p. Indian, clutch, like new, excellent conditio £35, offers, or exchange, cash adjustment.—2 Princes Av., Chester. [71

1922 Indians.—Immediate deliveries, deferred p ment, exchanges.—Brown, 3, Parker La Burnley. Tel.: 1032. [63

1921, Dynamo lighting, big valve Indian Co bination, absolutely unscratched; 85 gns.—6 Fernlea Rd., Balham. [80

1916 7-9h.p. clutch model Indian, absolutely p fect, 70 miles per hour, fully equipped; £39. High, Ringstead, Lynn. [71

INDIAN 5h.p. 1915, overhauled, new tyres, chai licensed, £45; sidecar for same, £12.—Blunde 14, Addison Grove, Taunton. [73

INDIAN 7-9h.p. Combination, spring frame, hoo and screen, perfect; 65 gns.—A. Hughes, 5 Staines Rd., Sunbury, Middlesex. [73

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1921 Indian, big valve model, dynamo lighting, seater sidecar, all on; £95; take solo part. 13, Normansmead, London, N.W.10. [73

£37.—1915 7-9h.p. Indian Combination, electr lights, speedometer, beautiful condition; after p.m.—4, Elm Gardens, Hammersmith. [80

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INDIAN, 1914, 3-speed and clutch, 7-9h.p., lamp horn, etc., tax paid, splendid condition; £42.- Cope, 15, Upper Hagley Rd., Birmingham. [76

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INDIAN Powerplus Combination, condition and ap pearance as new, electric lighting, any trial; £65 —Turner's, 223, Forest Rd., Walthamstow, E.17. [74

1920 Indian 7-9h.p., electrically equipped, roomy seater sidecar, hood, watch, speedometer, disc, pe fect, trial; £95.—28, Albert Rd., Stroud Green, N.4. [77

1921 Indian Scout, dynamo lighting, speedometer etc., tax paid; £85. Exchanges.—Homac's 243, Lower Clapton Rd., N.E. 'Phone: Dalsto 3403. [79

1919 Indian Combination, Powerplus, overhauled electric lamps, 3-speed, clutch, Easting, grid tax £75, or near.—Winsor, Leitb House, Weybridge Surrey. [75

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MATCHLESS, all models; free delivery to any address.—Gibb, Northgate, Gloucester. [7548

MATCHLESS, new August, 1921, cost £225, M.A.G., Lucas Magdyno lighting, fully equipped with spare wheel, hood, screen, speedometer, etc.; best offer over £120.—Sanders, "Milford," Stone, Greenhithe, Kent. [7055

GENUINE Bargain.—1921 H2 Matchless, Magdyno, 1922 improvements, equipped regardless of expense, insured, perfect condition, mechanically oiled; £140, near offer.—Full particulars, 43, Ashcroft Rd., Cirencester. [7240

MATCHLESS Combination H2, late 1920, M.A.G., Lucas Magdyno lighting, speedometer, hood, screen, curtains, spare wheel, two new tyres, tax paid, perfect condition; £125.—Milne and Russell, 72, High St., Croydon. [7785

MATCHLESS Combination, August, 1921, licensed December 31st, M.A.G. engine, spare wheel, windscreen, all accessories, perfect order throughout, privately owned; £135.—It can be seen at Down St. Garage, Piccadilly, W.1, at any time. [0913

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3½h.p. New Hudson Combination, about 1914, 3-speed, clutch, running order; £30.—Apps, Bracknell. [7173

NEW HUDSON, 2-stroke, 2-speed, low, excellent condition, easy starter; would suit lady; £30.—Lyon, Soham. [7425

2½h.p. New Hudson, single speed model, complete, and tax paid; £25, suit boy or lady.—Cross, Effingham Square, Rotherham. [7073

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NEW HUDSON Motor Cycles.—London Depot, 45, Gray's Inn Rd., London, W.C.2. Immediate delivery all models. Spares stocked. Trade supplied. [0851

1922 2¼h.p. Hudson de Luxe, £63; one shop-soiled de luxe, £55; also Popular model, £50.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0911

1920 4h.p. New Hudson Combination, as new, speedometer, Cameo screen, many extras, taxed; £60.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [7815

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NEW 1921 New Imperial Combination 8h.p.; £100; exchanges.—Snipe, 330, Euston Rd. [7737

£23.—2¾h.p. New Imperial-Jap, 2 speeds, lamps, tax paid.—King, Egrove Farm, Oxford. [7874

WAUCHOPE'S, 9, Shoe Lane, London.—New Imperial-Jap, 1917, 2-speed gear; £37/10. [8010

NEW IMPERIAL, 2¾h.p. J.A.P., 2-speed, very smart, unscratched; 29 gns.—67, Fernlea Rd., Balham. [8032

SHEFFIELD Agent for New Imperial Motor Cycles; all models in stock.—J. A. Stacey, Ecclesall Rd., Sheffield. [0813

£35.—1920 New Imperial, 2½h.p. J.A.P., 2-speed, tax paid; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [7503

NEW 1922 New Imperial 2¾h.p., 3-speed, makers' guarantee; £56; must realise.—391, King St., Hammersmith. [6471

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

NEW IMPERIAL 8h.p. Combination 1919, fully equipped, perfect order; £65.—20, Woodsome Rd., Highgate Rd., N.W.5. [7981

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Japs, 1922, No. 3 £73, No. 2 £60; easy terms and exchange. [6712

1921 (August) New Imperial-Jap, 2-speed, perfect, as new, tax paid; any trial; £42/10.—Harvey, 47, South Lambeth Rd., S.W.8. [7933

NEW IMPERIAL, 1917, good condition, mechanically perfect, engine renovated 1921, 2-speed; £32.—40, Woodland Gdns., N.10. [7799

1920 New Imperial, 2¾h.p., excellent condition; £35.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

1918 New Imperial Combination, J.A.P., Binks, excellent condition, insurance and tax paid; £70.—Hogg, 2, Ruse's Square, Newmarket. [7412

1920 6h.p. New Imperial and Sidecar, all accessories; £85.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30. 4 o'clock Saturdays [6992

1919-20 New Imperial-J.A.P. Combination 8h.p., fully equipped, licensed, in absolutely new condition; £70.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [7570

1921 New Imperial, 2¾h.p., 3-speed, all accessories, £50; also 1921 2-speed, £40.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6991

NEW IMPERIAL Combination, 8h.p., 1921, September, used one month only through illness, fully equipped, cost £190; offers wanted.—Molloy, 14, Whitehorse Rd., Croydon. [7682

NEW IMPERIAL-J.A.P. 8h.p., 3-speed, Binks, Canoelet MM4 sidecar, hood, screen, lamps, mileage 4,000, perfect condition; nearest £100.—Gregory, Highfields, Hackney, Matlock. [7186

NEW IMPERIAL 2¾h.p., model No. 3, 3-speed, kick-start, all-chain drive; £73; immediate delivery; cash, exchanges; easy payments.—P. J. Evans, John Bright St., Birmingham. [7334

1919-20 New Imperial-Jap Combination, large coachbuilt sidecar, windscreen, legshields, etc., tax paid; an absolute bargain, £85.—Rhind and Co., Stone Place, Rusholme, Manchester. [7250

8h.p. New Imperial Combination, 1919, 3-speed, fully equipped, tax paid, guaranteed, exceptionally smart condition, Easting screen, large bulbous back sidecar; trial willingly; £69.—406, Garratt Lane, Earlsfield, S.W. [8017

SPECIAL Super-Sports New Imperial, 1922, 250 J.A.P., special flywheels, cams, etc., specially tuned at cost of £15, B. and B. and T.B. magneto, close ratio Albion, 1916 frame, splendid steering, fast, new condition, Lucas and copper exhaust; £55; or exchange cheaper machine and cash.—Wellington, 40, Lowlands Rd., Harrow. [7286

MOTOR CYCLES FOR SALE.

New Imperial.

SPECIAL stocktaking clearance sale offer of new but slightly showroom soiled 1922 model No. 3 New Imperial 2¾h.p., 3-speed, chain drive; reduced to £62; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [6970

2¾h.p. New Imperial Motor Cycle for Sale; £40, or nearest offer; 2-speed gear box with kick-start and clutch, good running order; reason of sale out of work; J.A.P. engine.—A. W. Prior, 1, Station Rd., Bishops Stortford, Herts. [8050

NEW IMPERIAL Combination, 1919, 8h.p., 2-speed, J.A.P. engine, 2-seater, Easting screen, newly upholstered, perfect running, very little used; must dispose, going away; all on; £105, or near offer, bargain; private owner.—47, Elborough St., Southfield, S.W.18. [7121

1919 New Imperial Combination, chain drive, 3-speed, clutch, K.S., electric and gas lamps, horn, tax paid, privately owned, guaranteed perfect; £75.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 3221. [7920

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

NORTON, 1921, 16H, very special; 75 gns.—Clark, 7, Exhibition Rd., S.W.7. [5859

1922 Nortons, all models; deferred payments.—Clifford Motories, Eastwood, Notts. [5446

NORTON Big Four, new 1922, chain drive, £120; sale price £110.—Whipple, Grantham. [7134

NORTON 3½h.p., 16H, 1921, Miller lamps, Cowey horn, Cowey speedometer; £75.—24, South St., Newport, Isle of Wight. [7319

NORTON 1921 16h.p., equipped, licensed, new tyres, £72/10; also 1919 Philipson model, nice order, £34.—43, Turnham Green Terrace, nr. Station. [7099

LATE 1921 16H Norton, ridden only 400 miles, absolutely as new, all on, insurance; illness prevents owner riding; £90.—Grace, Clatford, Andover. [7453

1920 Big Four Norton, 3-speed, T.T. bars, speedometer, new 700×80 tyres, accumulator lighting, taxed; £70.—Boxer, 151, Burnt Ash Hill, Lee, S.E. [7304

NEW 16H 3½h.p. Norton, oversize tyres, close ratio gear box; cost £117/10; makers' guarantee; best offers; must realise.—391, King St., Hammersmith. [6472

F.O.C.H. have 1922 Norton 16H Model, little used, excellent condition, licensed; also 1917 Big Four combination; bargains.—5, Heath St., Hampstead. (Near Tube.) [7999

75 M.P.H.—3½h.p. Norton, 3-speed, April, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £85.—77, St. Mary's Rd., Sheffield. [7364

NORTON 3½h.p., chain, Montgomery sporting, as new, electric light, new light car tyres, screen, grid, smart, fast turnout, silencer fitted; £65.—Wilson, Midland Bank, Acock's Green. [7640

1921 4h.p. Norton, P. and H. head lamp, Lucas rear, speedometer, tax paid, insured, fully equipped, splendid condition; £87.—Tupling, Poultry Farm, Ivy Hatch, Sevenoaks. [7490

NORTON.—New all 1922 models supplied. Big Four and De Luxe sidecar £153; also 3½h.p., 3-speed, all-chain drive, £115; exchange and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [6713

NORTON, 16 H, brand new 1922 model, but shop-soiled, list price £115, my price £98; Big Four, brand new 1922, shop-soiled, £120, for £102; cannot be repeated.—Bradbury, 224, London Rd., Sheffield. [6389

1922 I.O.M. Norton, special 3-speed Sturmey-Archer gear box, separate oil tank with foot pump, fastest Norton lap in T.T., as new, over 80 m.p.h.; £100; tax paid.—Hollowell, Wash Lane, Warrington. [7038

1920 (late) Big Four Norton Combination, De Luxe sidecar, electric lighting, powerful head lamp, car tyres, legshields, speedometer, spare chains, mileage 7,000, condition perfect; £90.—Gathergood, The Folly, Bishop's Stortford. [5948

1921 July 16H Norton, Ricardo piston, light flywheels, close and standard gears, oversize tyres unpuncture, remarkable speed and economy, £85; wanted, O.H.V. Douglas, Triumph, or Sports J.A.P. engined machine.—Ivydene, Tichborne St., Leicester. [7853

SPECIAL Clearance Offer of new slightly shop-soiled 1922 Nortons; No. 9, 3½h.p., £70; 16H, 3-speed, £95; Big Four, 3-speed, £100; this offer cannot be repeated; easy payments only 4 per cent. extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [5506

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N.S.U.

N.S.U. 1912 4h.p., taxed £14, running; offers; exchanges.—28, Shelbourne Rd., Bournemouth. [713

N.S.U. 6h.p., spring frame, coach sidecar, good order nearest £38, or lightweight or lathe part.—273 Morland Rd., Croydon. [718

N.U.T.

PRACTICALLY Brand New N.U.T., Magdyno, electric horn, speedometer, Binks; £75.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [797

OCTOBER, 1920 3½h.p., N.U.T., Magdyno, speedometer, new tyres, mileage 9,000, ideal all weather solo-machine, owner bought car; 65 gns.—Bayfields Garage, Sale, Cheshire. [765

1921 N.U.T. 3½h.p., Lucas Magdyno lighting, electric horn, Binks, licensed, absolutely perfect condition throughout; 70 gns; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [697

N.U.T. 1920 3½h.p., with brand new Montgomery sidecar, electric lighting (Lucas), hand and foot clutch, Lucas electric horn, Cowey trip speedometer all as good as new, run under 3,000 miles; £110, or nearest offer.—Bradley, 78, St. James's Rd., Rotherhithe, S.E.16. Hop. 5210. [704

O.K.

O.K. Junior sports model with Rideezi sidecar 80 gns., from stock.—Agents, 27, Cowley Rd., Oxford. [774

O.K. 2½h.p., brand new, single speed; accept £28/10; only 2 left.—Birch's Garage, Wolverhampton. [721

O.K. 1916, very fast machine, 2-speed, F.E., nicely tuned; accept £24.—H., 33, West End Lane, Hampstead, N.W. [793

O.K. Juuior 3-speed Combination, cost £96/12 done 300 miles, lamps, appearance as new genuine bargain, £65.—1, Park Hill Rd., Ewell. [584

1920 O.K. Junior, Villiers engine, 2-speed Albion gear box, footboards, variable ignition, lamps horn, tax paid, perfect condition; 30 gns.—A. Guttridge, Long Clawson, nr. Melton Mowbray. [716

Omega.

£26.—2¾h.p. Omega-Jap, 2 speeds, fully equipped perfect condition.—King, Egrove, Oxford. [787

OMEGA, brand new shop-soiled 1921 model, 2¾h.p. Villiers engine, flywheel magneto; £28.

OMEGA, shop-soiled 1921 model, 2¾h.p. J.A.P. 2-speed model; £48; approval; Newport, Mon.—Box 3134, c/o *The Motor Cycle*. [707

OMEGA-VILLIERS 2¾h.p., late model, 2 speeds lamps and accessories, just overhauled; 22 gns. will ride 100 miles to view.—Ayers, 9, Johnson St., Notting Hill Gate, Loudon. [795

2¾h.p. Omega-Jap, 2-speed, new July, 1920, condition, plating, tyres, etc., like new, for sale for best offer, or exchange for recent 4h.p. Blackburne engined mount, cash adjustment.—Taylor, Farm, Bridge St., Golborne, Warrington. [769

LATE 1919 2¾h.p. Omega-Jap, 2-speed, clutch, K.S., long nickel exhaust, lamps, horn, new wide tank, 2 gallons, engine just thoroughly overhauled and rebushed, original tyres, good as new, fine condition, all accessories, very fast; £40.—34, Watkin Ter., Northampton. [751

P. and M.

P. and M., 1919, sidecar; going abroad; nearest £50.—Brooker, 55, Lady Margaret Rd., Kentish Town. [702

1913 P. and M. Combination, full accessories, tax paid, a bargain; £37.—Ross, 86, High Rd., Lee. [760

P. and M. 1918 Combination, perfect, easy terms; £55 cash, offers.—38, Sherriff Rd., West Hampstead. [759

P. and M. Combination, recently painted, perfect condition, tax paid, insured; 55 gns.—184, High St., Poplar, E.14. [706

£49, bargain.—P. and M. and Sidecar, new 1920, all accessories, new condition.—143, Ravensbury Rd., Earlsfield, S.W.18. [795

BARGAIN, 1917 P. and M., 2-speed, kick-start, coachbuilt combination, perfect order, good condition; £30; deposit.—Box 3238, c/o *The Motor Cycle*. [779

1920 P. and M. and Sidecar, all accessories, Easting windscreen, etc.; £55.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [698

1917-18 P. and M. Combination, lamps, horn, tax paid, in good condition; private owner; £36.—Clark, c/o Shepherds' Garage, Enfield Highway. Tel.: Waltham X 31. [090

MOTOR CYCLES FOR SALE.

Rudge.

RUDGE-MULTI for Sale, all on, Watford speedometer, tax paid for year, as new; £60, or nearest offer; owner going abroad.—H. Dowse, Vicarage Lane, King's Langley, Herts. [7551

1920 Rudge-Multi, electric lighting, horn, etc., licensed, good tyres, excellent mechanical condition; 45 gns; exchanges or deferred.—Edwards, 50, Harringtoo Rd., South Kensiugton. [5544

1916 Rudge-Multi, 5-6h.p., new belt and tyre, all oo, tax paid; a bargain, £25.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheeo, S.W.14. 'Phone: Richmond 3221. [7918

£30.—3½h.p. Rudge Multi, T.T. bars, taxed, eqnipped, overhauled, enamel and plating as new, fast; any trial.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [8094

T.O.M. Rudge 1921 model, little used and in new condition, bargain; price £55.—Light Car and Motor Cycle Engineering Co., Ltd. 'Phone: Brixton 1292. Half minute from Brixton Skating Rink. [8084

1920 7-9h.p Rudge Combination, in exceptionally fine condition, new rings, gudgeon pins, etc., enamel and plating very good, electric lamps, oversize tyres, any trial; £75.—Kirk, 180, Alfred St., Nottingham. [7578

1920 Rudge 5-6h.p. Combination, electric light, Klaxon, knee grips, etc., licensed year, excellent mechanical condition and appearance; 50 gns.; exchanges or deferred.—Edwards, 50 Harrington Rd., Sonth Kensington. [6977

1922 Rudge 7-9h.p. Combination, never ridden, finest combination extant, 3-sneed, chain drive, spare wheel, splendid hulbous sidecar; £130 cash; deferred payments arranged; tuition free.—Motoria Regeot's Parade, North Finchley. [6787

PHOTOGRAPHS free.—1920 7/9h.p. Rudge-Multi combination, luxuriously equipped, 78gns.; also 1916 3½h.p. Rudge-Multi combination, electric lighting, bargain, 39gns.; also 1916 3½h.p. Rudge-Multi solo, 32 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8065

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3163

Scott.

JOHN R. KINSEY and Co., Ltd., Croydon, for Scotts. [4594

1920 Scott, unused, offers.—3, Borough Crescent, Stourbridge. [7684

SCOTT Service Depot, Cathedral Motor Works, Liverpool.—Scott Sociables and motor cycles. [6666

SCOTT, almost new, carrier and pillion included; £100; owner emigrating.—The Nook, Byfleet, Surrey. [7278

1 SCOTT Standard, also Squirrel; used less than 5 miles for demoostration; £100 each.—Gibb, Northgate, Gloucester. Service Agent. [7582

SCOTT Combination, 1914, all on, sidecar newly painted, lined, upholstered; nearest £48.—110, Camberwell New Rd., S.E.5. [7062

1921 Scott 3¾h.p. Combination, new, little used, lamps, horn, pump; 60 gns.—48, Plough Lane, opposite Football Ground, Wimbledon. [7472

£27.—Specially tuned Scott, 60 m.p.h. guaranteed, perfect, any trial, Lucas lamps, etc.—4, Carlton Terrace, N.W.2. 'Phone: Hampstead 8390. [8047

1922 Scott Squirrel, direct from makers this week, unpacked, firm's guarantee, nnable take delivery; £99.—Box 3070, c/o *The Motor Cycle*. [6110

SCOTT Combination 1915, overhauled, new tyres, licensed; £40, take lightweight P. and M. part exchange.—Hughes, 3, Claremont Square, London, N. [8044

SCOTT Combination, 1920, Easting windscreen, Cowey speedometer, hood, complete lighting set, tools and spares, tyres and chains new.—Burton, High St., Bridgnorth. [6000

SOUTHPORT.—Instant delivery Scott Squirrel, deferred payments; also 1922 Squirrel combination, Squirrel aluminium sidecar, all on, lovely condition, 105 gns.; exchanges.—Kents, 417, Lord St., Southport. [7778

SCOTT SQUIRREL, purchased December, 1921, mileage under 2,000, Lucas lamps, horn, etc., carrier fitted, insured till May, 1923, condition and appearance as new; price £80.—D. M. Smyth, Depot Mess, Whittington Barracks, Lichfield, Staffs. [7536

1922 Scott-Squirrel Combination Canoelet Minor Sidecar; this machine is literally new, fully equipped, and tax paid, sidecar and solo sprockets specially tuned, exceptionally smart lot; £85, bargain; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8079

1920 Scott Sports Model, fitted with 3in. tyres, speedometer, Klaxon horn, tax paid, complete with new Grindlay sporting sidecar, also 3in. tyre, machine has been carefully ridden, and has done very little mileage; first cheque for £110 secures.—Barnes, 30, Shakespeare St., Nottingham. [7203

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WARD Motors, Ltd., 32, Hustler St., Bradford, for serviceable second-hand Scott parts on approval against cash. [0889

GODFREYS', Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Singer.

WAUCHOPE'S, 9, Shoe Lane, London.—2½h.p. Singer, 1910; £25. [6726

SINGER 2½h.p.; £20, with spares, or offer.—G. H. Baldwin, 105, Marsala Rd., Lewisham. [7112

£15.—2½h.p. Singer, enclosed Bosch, splendid running order.—King, Egrove Farm, Oxford. [7878

SINGER 4½h.p. 1915 Combination, perfect, hood, screen; £37/10.—Ilersey, 6, Dryburgh Rd., Putney. [7382

Spare Parts:

THE Promptest Firm for Singer Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3164

GENUINE Singer Parts. By return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [7542

Sparkbrook.

SPARKBROOK 1919 2½h.p. Villiers engine, all accessories, 2-speed, perfect running; £32; original cost £75.—47, Elborough St., Southfield, S.W.18. [7122

PHOTOGRAPH Free.—Sparkbrook-J.A.P. 6-8h.p., countershaft gears, clutch, kick-start, 2-seater sidecar; 52 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6953

Sun.

1916 Sun-V.T.S. 2¾h.p., 2-stroke, 2-speed, tax paid, perfect; £19.—1, Priory Rd., Kew. [8025

SUN-VILLIERS 1914, good order, tax paid; £17.—Brockbank, 58, Lord St., Southport. 'Phone: 1054. [7938

SUN-VITESSE, 2-stroke, 2-speed, guaranteed perfect; £24; would take push bike part.—Box 3230, c/o *The Motor Cycle*. [7888

24 GNS., Exchange.—1917-18 Sun-Villiers, 2-speed, lamps, legshields, smart, any examination.—Seabridge, Haosler Rd., E. Dulwich. Sydenham 2452. [7680

FOR Sun-Jap, or Sun-Vitesse, get in touch with the sole North London agents. Models in stock, single Special, 42 gns.; 2¾h.p. J.A.P., 2-speed, K.S., 60 gns. Send for catalogues. Trade supplied.—Jones Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM 1921 3½h.p. Touring Model, brand new; £125, bargain.—Ginger Motors, Banbury. [6672

CROSS, Effiogham Square, is Agent for Sunbeams in Rotherham. 4¼h.p. model from stock. [7705

SUNBEAM Combination 3½h.p. 1919, screen, lamps; £85.—Lee, 138, Tachbrook St., Victoria, S.W.1. [7546

1918 3½h.p. Sunbeam Combination, excellent condition; £65.—36, Regina Rd., Southall, Middlesex. [7633

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Sunbeams; unequalled service, repairs, etc. [3558

1920-1 Semi-Sports Sunbeam, new condition, low mileage; £90; offers considered.—106a, Gt. Moor St., Bolton. [7644

SPORTS Sunbeam 1921, electric lightiog set, Lucas horn, tax paid, good coodition; £95.—Cope, 15, Upper Hagley Rd., Birmingham. [7665

8h.p. Sunbeam Combination, spring wheel, spare wheel, Binks, electric, hood, screen; £85 or offer.—13, The Hard, Portsmouth. [7405

SUNBEAM New 4¼h.p., 1922, with Watsonian Monarch, Easting, just cost £172, done 600; £159, or near.—10, York Rd., Maidenhead. [7351

1921 Sporting Sunbeam, condition new, fully eqnipped, speedometer, electric-acetylene lighting; £95.—Gibson, 26, Powell St., Warrington. [7023

1921 Sunbeam 3½h.p. Sports, fully equipped, Bonniksen, tax paid, insured, little used; £105.—Smith, Blenheim House, Kernerton, Tewkeshury. [7241

SUNBEAM 1919 3½h.p., lamps, horn, tax, splendid condition; £75.—Knight and Wheatley, 4, The Pavement, Conlsdon, Surrey. 'Phone: Purley 1277. [7660

SUNBEAM 4¼h.p. 1922 Combination, registered, never been on the road, owner cannot take delivery; best offer secures.—168, Downham St., Blackburn. [7245

8h.p. 1921 Sunbeam Combination, Lucas Magdyno lighting and electric horn, spare wheel, Cowey trip speedometer, legshields, Tan-San with back rest, sidecar fitted with hood, windscreen, luggage grid and mat, tax paid and insured, mileage only 4,000; £150.—Pangbourne, 64, York St., Twickenham. 'Phone: Richmond 1135. [7414

MOTOR CYCLES FOR SALE.

Sunbeam.

1914 6h.p. Sunbeam Combination, 3-speed, all enclosed chain drive, kick-start; £47/10.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2698. [7529

1921 3½h.p. Sports Sunbeam, perfect condition, Cowie hooter, brand new Lucas lighting set, spares; nearest £100; no exchanges.—Box 3218, c/o *The Motor Cycle*. [7521

SUNBEAM Combination, M.A.G. engine, fine condition, all accessories; first offer £90 secures; any trial.—Jackson, 24, St. James St., Piccadilly. 'Phone: Regent 383. [7864

1921 Sunbeam 3½h.p. Combination, oversize tyres, speedometer, Lucas lamps, spares; any trial; £100, or exchange solo all-chain Triumph and cash.—18, Canterbury St., Coventry. [7358

1921 3½h.p. Sunbeam, lavishly equipped, fullest particulars; first £110, or best over £100; bargain; condition as new; cost £180.—Foyster, National Provincial Bank, Lowestoft. [7458

SUNBEAM 1919 8h.p., 3-speed, hand clutch, semi-T.T. bars, with spare wheel; £75, bargain. Sidecar to fit same, £10. Will separate.—28, Woodford Rd., Forest Gate. Phone: Maryland 2598. [7528

SPECIAL Sporting 3½h.p. Twin Sunbeam, delivered last year, cost £175. Sale imperative. Any reasonable cash offer. Torpedo sidecar extra. Photos. —120, Marlborough Flats, Walton St., Chelsea, S.W.3. [7500

1920 8h.p. Sunbeam Combination, spare wheel, hood, screen, Cowey speedometer, electric lighting, Klaxon, spare valve, new condition, guaranteed perfect, any trial; £140.—Elliott, 69, West Cliff Rd., Ramsgate. [7489

1922, 3½h.p. Sunbeam Combination, new May 11th, in new condition, Orto windscreen, speedometer, Lucas best head lamp and horn, luggage grid; cost over £180; sacrifice £145; no offers.—Ball, 22, Hawesside St., Southport. [8099

SUNBEAM 1921 3½h.p., genuine sports model, hardly used, unscratched, fully equipped, in every way equal to new, racing and standard cams, extra sprocket, etc., tax paid; 95 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [7996

SUNBEAM Combination, 1918, 8h.p., just fitted new sidecar, electric lighting, fully equipped, spare wheel, tax paid, splendid running condition, reasonable trial allowed; price £125, near offer.—H. Short, 699, Seven Sisters Rd., Tottenham. [7317

3½h.p. Sunbeam Combination, cycle 1920, sidecar 1921, inter wheels, electric light, legshields, 700×80 tyres, leaf spring forks, excellent condition, any trial, tax and insurance paid to 1923; £120, or near offer.—Lorna Cottage, Chertsey Rd., Byfleet, Surrey. [7553

1920 3½h.p. Sunbeam Combination, No. 1 Sunbeam sidecar, luggage grid, baby Easting, Lucas lamps and horn, interchangeable wheels, original tyres, spare tube, complete Sunbeam tool kit, in splendid condition; £120.—Gibbons, Outfitter, 86, High St., Croydon. [7834

Swift.

SWIFT 3½h.p., 3-speed, clutch, re-enamelled, overhauled; £21.—16, Dalcham Mews, Hampstead, N.W.3. [7195

T.M.C.

8-10h.p. T.M.C., 4 cyls., W.C., spring frame, K.S., 3 speeds, beautiful sidecar to match, fitted hood, screen, elbow model, smartest machine on the road, runs like a car, fully equipped, taxed, spares, etc.; cost late owner over £200; bargain, £95; exchanges.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [8091

Triumph.

PREMIER Motor Co. for 1922 Triumphs.

IMMEDIATE delivery of type H, 4h.p., 3-speed, £105; type S.D., chain drive, £115; type R., 3½h.p., overhead valve, £120; type L.W., lightweight, £65; sidecars from £20 to £50; easy payments, 4 per cent. extra; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0867

3½h.p. Triumph; a bargain, £14.—14, Phœnix St., Euston, N.W.1. [7584

1920 Triumph, full accessories, tax paid; £68.—Ross, 86, High Rd., Lee. [7603

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0868

£15.—1911 3½h.p. Triumph, clutch model, splendid running order.—King, Egrove, Oxford. [7879

TRIUMPH; £18; tax paid, ride away, genuine.—441, Seven Sisters Rd., Tottenham. [7305

1918 Countershaft Triumph, lamps, disc wheels, etc.; £50.—H. Wright, Arlesey, Beds. [7433

1919 Triumph Combination, fully equipped, perfect; £55.—24, Balliol Rd., North Kensington. [7866

LATE 1918 Triumph 4h.p. Countershaft, splendid condition; £50.—9, Church Rd., Harlesden. [7267

TRIUMPH 1919 4h.p. Countershaft, taxed, insured, privately owned; £65.—K.J. Motors, Bromley. [7851

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TRIUMPH-RICARDO, little used, guaranteed perfect, as new; £100.—Hodgson Carage, Keswick. [7244

TRIUMPH C.S. Combination, Montgomery sporting sidecar, screen, grid, all on, tax paid, insured; £75.

TRIUMPH C.S., all on, taxed, insured; £52/10; all black.

TRIUMPH 1919, rebuilt as new 1922, gear box, cylinder, etc., fitted 1922 aluminium sporting Montgomery sidecar, Sundum screen, Lucas electric lighting, fully equipped, tax paid, 3 months' guarantee; £120.—R. G. Houchin, Triumph Specialist, 188, High St., Peckham, S.E.15. [7547

1918 Triumph, countershaft, perfect, £47; ditto, 1919, £52.—24, Balliol Rd., North Kensington. [7867

4h.p. Countershaft Triumph complete, and tax paid; £46.—Cross, Effingham Square, Rotherham. [7706

CROSS, Effingham Square, is Agent for the Trusty Triumph in Rotherham. All models from stock. [7704

1918 Triumph Combination, fully equipped, trial; bargain £60.—Mitchell, Chelwood Beacon, East Grinstead. [7805

TRIUMPH, equipped, renovated; £24.—20, Lapdoc Rd., Clapham. Evenings, Saturday afternoon, Sunday. [7176

3½h.p. Triumph, 2-speed, clutch, Bosch, just overhauled; £23.—44, West Side, Wandsworth Common. [8043

3½h.p. Triumph, 2-speed, excellent condition, sporty 'bus; bargain.—"Cremona," Holmfield Rd., Coventry. [7359

4h.p. Triumph Coachbuilt Combination, 2 speeds, K.S.; £30.—Fisher, Springwell Rd., Heston, Hounslow. [7801

1918 4h.p. Triumph, 1920 Gloria sidecar, perfect condition; £69.—2, Fortune Gate Rd., Harlesden, N.W. [7985

1917 Triumph Combination, equipped, good condition, any trial; £52.—77, Haverstock Hill, Hampstead. [7976

TRIUMPH Model H; £105; best allowance for yours or quote terms.—Bunting's Exchange, Wealdstone. [7965

1912 Triumph, clutch, lamps, speedometer, licensed, guaranteed perfect; £23.—99, Cannon Hill Lane, Merton. [7457

TRIUMPH 1920, Gloria sidecar, Tan-Sad, etc., splendid condition; £90.—Hodgson, York Villa, Warlingham, Surrey. [8027

1919 Triumph 4h.p. Countershaft, lamps, horn, etc., splendid condition; what offers?—61, Downhills Park Rd., N.15. [7430

TRIUMPH 4h.p. 3-speed Combination, fine condition, taxed; trial; £42.—120, Fairbridge Rd., Highgate, N.19. [7060

1920 4h.p. Triumph, condition as new, fully equipped; 60 gns.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [7447

TRIUMPH 3½h.p. 1912, clutch, W.D. bars, good tyres and belt, taxed, perfect; £24.—103, Moore Park Rd., Fulham. [7303

SOUTHPORT.—1911 Semi-T.T. Triumph, all on, excellent tyres; 23 gns.; exchanges.—Kents, 417, Lord St., Southport. [7783

TRIUMPH Combination, 3-speed, clutch, just overhauled by makers; £40.—Dulken, 26, John St., Bedford Row, W.C.1. [7513

1919-20 Triumph Coachbuilt Combination, electric lights, full equipments; £73, offers.—131, Bonchurch Rd., Brighton. [7167

£55.—Triumph Countershaft Combination No. 65009, equipped, licensed, new condition throughout.—47, Leigh Rd., East Ham. [7751

3½h.p. Triumph, good running order, splendid condition; £30, no reasonable offer refused.—7, The Parade, Walton-on-Naze. [7198

TRIUMPH Combination 1918, fully equipped £67/10.—Skinner, c/o Hillier, 216, Portobello Rd., North Kensington. [6283

NEW Triumph, Model H, shop-soiled only; special price, £95.—D. and S. Autocar Co., 33, The Parade, Golders Green. [7914

£22.—Triumph 3½h.p., clutch, Phillipson pulley, accessories, taxed, runs splendid.—143, Ravensbury Rd., Earlsfield, S.W.18. [7995

1920 4h.p. Triumph Gloria Combination, perfect condition, fully equipped, little used; £80.—Thomas Bond, Burford, Oxon. [7266

TRIUMPH 3½h.p., perfect condition, new valves, guides, tappets, easy starting, fast; £20, offer.—1, Burgbley Rd., Leytonstone. [7031

MODEL H Trimph Combination, new in 1922, 300 miles, speedometer, all accessories; £105, offers.—4, St. Charles Square, W.10. [7509

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ZENITH 4h.p., Binks, electric lights, horn, discs, knee grips, magnificent appearance, only wants seeing; accept £45 for quick sale.—Gough, 105, Battersea Park Rd., S.W.8. [7115

ZENITH 8h.p. Countershaft, purchased 1921, equipped, registered, Montgomery sidecar and screen, lovely turnout; £75; after 5 p.m.—4, Elm Gardens, Hammersmith. [8007

ZENITH 5h.p., countershaft, electric lighting, beautiful condition, for No. 9 Norton, or late Levis; cash adjustment; sell £68.—F. Goatcher, Rosebury, Findon, near Worthing. [7032

ZENITH 8h.p. Combination, countershaft model, Millford Empress sidecar, complete with lamp, screen, horn, and all accessories, very little used, original tyres, splendid condition; £95.—Rice Bros., Horsham. [7215

1919 8h.p. Sports Zenith, good belt, tyres, knee-grips, largest F.R.S. lamp set. Cowey, horn, £10 overhaul April, 1922, 60 m.p.h., guaranteed; £55, or exchange.—Pettinger, Ponsford Rd., Minehead, Somerset. [7081

PHOTOGRAPHS Free.—Late 1919 8h.p. countershaft Zenith Combination, clutch, kick-start, choice of single or 2-seater sidecar, taxed, equipped, 68 gns.; also a 1922 Zenith-Bradshaw, 85 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8066

ZENITH 8h.p. Combination, winner gold medal 1,000 miles trial, in perfect condition, run 6,000 miles only, special Millford sidecar, all accessories, lamps, etc., Cowey horn and speedometer, Easting windscreen, late 1920-1, tax paid and fully insured; price £100.—Apply 5, Hook Rd., Surbiton. [5993

ALLAN GRUZELIER, 168, Regent St., W. Regent 205.—1922 shop-soiled 3½h.p. Zenith-Bradshaws, belt drive, sports, 75 gns.; 1921 5h.p., clutch models at 84 gns., listed £113; 1922 all-chain Eight Zenith in stock, £130; 1921 5h.p. sports Zenith, all on, very good condition, unpunctured, £65.

SEVERAL Good Second-hand Bargains. We are the experts on Zeniths, let us advise you. [7216

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ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

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CLEARANCE of Shop-soiled Models.—New 1922 Lady's Velocette, clutch and kick-start, 2-speed, reduced to £60; 3 speed, £65; cannot be repeated; easy payments 4 per cent. extra.—Premier Motor Co., Aston Rd., Birmingham. [5512

Miscellaneous.

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8h.p. J.A.P., good condition; £22.—Ivydene, Bandon Hill, near Croydon. Call after 7. [7429

2¾h.p. J.A.P., single speed, in new condition; £25; tax paid.—254, Icknield St., Birmingham. [7829

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1920 Imperial 8 2-seater sidecar, £68/10; 5-6h.p. Rover sidecar, £62/10.—89, Spencer Place, Leeds. [7758

VILLIERS J.H. 1917, 2-speed, any trial, tax paid; £25.—Brockbank, 58, Lord St., Southport. 'Phone: 054. [7937

PRECISION 2¾h.p., equipped; £18.—20, Leppoc Rd., Clapham. Evenings, Saturday afternoon, Sunday. [7177

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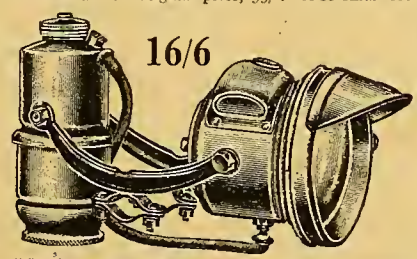

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1920, 3-speed, C.S., new condition, perfect, fully equipped; £65.—Harvey, 47, South Lambeth Rd., S.W.8. [7932

£15, £20, £25.—We have a good assortment at these figures, and we're on the Bakerloo.—Bunting's Motor Exchange, Wealdstone. [7967

1914 Precision 3½h.p., 2 speeds, Bosch, B. and B., lamps, horn, perfect running order; £30; after 6.—41, Olive Rd., Cricklewood, N.W.2. [7113

SPECIAL Motor Cycle Bargains.—1920 British Excelsior 8h.p. J.A.P. combination, Lucas Magdyno, absolutely perfect, windscreen, aprons, etc.; £87/10.

1919-20 New Imperial-Jap Combination, roomy sidecar, windscreen, fully equipped, almost new; £85.

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ROYAL ENFIELD Combination, double-seater sidecar, tax paid, excellent condition, equipped; £65, rare bargain.

MOTOR Cycles bought, sold, or exchanged.—Joseph Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [7254

SALE motor cycle, complete, Druids, magneto, carburetter, tax, low, good tyre, running order, magneto requires attention; £10 or offers.—Dent, Farm, Greenhead, Crook. [7088

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash; inspection cordially invited. 'Phone: Holborn 5777. [6724

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite station, L.S.W. Railway). 'Phone: Latchmere 4388. Terms: no extra with good deposit; immediate delivery; no inquiries; satisfaction guaranteed.

ALLBER.—Clyno 1920 2-stroke, 2-speed, clutch, all accessories, tax paid, in new condition; £30.

ALLBER.—Triumph 3½h.p., clutch model, all accessories, Philipson pulley, tax paid, good condition; £28.

ALLBER.—Douglas 1914 3½h.p., 2 speeds, complete with all accessories, tax paid; £29.

ALLBER.—Blackburne 1920 4h.p., 3-speed, clutch, kick, all accessories, tax paid; £65.

ALLBER.—Triumph-Gloria, 1921-22, all-chain model, Easting Royal, luggage grid, complete acetylene lamps, most beautiful combination, as new, tax paid; £110.

ALLBER.—1916 B.S.A. Combination, 4½h.p., countershaft, Easting, all accessories, in good order, tax paid; £58.

ALLBER.—Chater-Lea-Jap Combination, specially-built, 1921, 5-6h.p., S.A. 3-speed, clutch, kick, Ariel coach sidecar, all accessories, tax paid; £55.

ALLBER.—Humber combination, 1914, 3½h.p., 3 speeds, clutch, kick, all accessories, tax paid, good order; £32.

ALLBER.—Rndge combination 1920-21 Multi, 3½ h.p., coach sidecar, accessories, tax paid, in new condition; £58. [7719

A.J.S. 7h.p. Combination, new condition, electric lighting, many extras, only wants seeing; 140 gns., or near offer; Rndge-Multi 3½h.p., 1920, lamps, horn, speedometer, £50; Beardmore-Precision, 1921, lamp, speedometer, mechanical horn, nice order.—G. Crawley, 43, Ashdon Rd., Saffron Walden. [7515

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MOTOR CYCLES FOR SALE.
Miscellaneous.

BLACKPOOL Bargains.—1932 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories, Waterloo Rd., Blackpool.

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BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel, £110/10/6; 1920 Tamplin, £59/10/6; Morgan De Luxe, £147/10/6; 1920 8h.p. Ruby combination, £79/10/6; 1920 3½h.p. New Scale, 2 speeds, K.S., £38/10; 6h.p. Bat, countershaft, 3-speed, £39/10/6; 1920 2¾h.p. Excelsior, £27/10/6; 3h.p. Enfield, £37/10/6; 8h.p. Indian, £32/10/6; 1921 Enfield lightweight, £39/10/6; 1920 Sun, £35/10/6; several others cheap; push cycles taken in exchange.—Booths' Motories, 294, Waterloo Rd., Blackpool. [5483

NEW HUDSON, late 1920, 2¼h.p., 2-speed gear box, with new cylinder, all in good condition, tax paid, etc. Also Wolf 1914 2¾h.p., single gear, J.A.P. engine with new cylinder, piston, piston rings, tappets, valves and springs, belt, etc. Same may be taken to pieces for inspection; £42 the two.—E. J. Mylon, Botwell Lodge, Hayes, Middlesex. (P) [7048

STARTLING Reductions in new 1922 Models: slightly shop-soiled 2¾h.p. Royal Ruby combination, 3-speed, list £95, accept £82/10; 2¾h.p. Excelsior-Blackburne, 3-speed, list £75, accept £65; 3½h.p. Rudge, chain-drive, list £94, accept £82; 3½h.p. James sports model, list £105, accept £90; 7h.p. James combination, list £170, accept £150; 8h.p. Enfield combination, list £140, accept £126; 7h.p. A.J.S. combination, Magdyno, spare wheel, etc., list £210, accept £185; 8h.p. Matchless combination, 2-seater, Magdyno, spare wheels, etc., list £207, accept £182; brand new 1921 8h.p. Enfield combination, £120.—J. Hehden and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [6395

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HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

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WANTED, Harley standard dynamo combination, not earlier 1920, cheap for cash.—108, Church St., Edmonton. [7214

1921 Rudge-Multi, I.O.M., must be cheap and in perfect condition.—Caston, The Pheasant, Vanxball Walk, S.E. [7376

WANTED, good Solo, not earlier 1918, Triumph preferred; state price.—R. Baker, Osiers Farm, Petworth, Sussex. [7488

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BRAND New Autoped Scooter, 1½h.p., single-speed, complete with dynamo; £15.—Snipe, 330, Enston Rd. [7748

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CYCLO-TRACTEUR, new, makers' price, £20; accept £10/10; carriage paid.—Edwardes, 277, Camberwell Rd., S.E. [7638

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HELEN Sidecars!!! Helen Sidecars!!! Catalogues on request. Touring and sports bulbous-back bodies, beautifully finished, complete with coverall apron, from £6/10; lightweights from £5/15; small streamline bodies, £3/15; 2-seaters from £8; second-hand bodies from £2; the Robini pillion seat, 12/6. —Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W. 'Phone: Brixton 1585. [7723

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MONARCH Sidecar, new, complete, Dunlop heavy pattern windscreen, only shop-soiled, worth £20; accept £11/15.—Edwardes, 277, Camberwell Rd., S.E. 4913 Hop. [7635

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FOLDING Sidecar.—When ordering your motor specify a Hopley folder. Suits motors up to 10h.p. Can be changed from pleasure to commercial in few seconds. Detachable wheels can be fitted. Tested 7 years.—Hopley, Upper Highgate St., Birmingham. [0151

WILLOWBROOK Sidecars now produced on large scale. Special designs and terms to motor cycle manufacturers. May we give you a call?—Willowbrook Sidecar Works, Leicester. [0331

SIDECARS.—Tourers, complete with tyre, £13; bulbous back, extra large, £17/10; tradesman's carriers, £17/10; specials to order; soiled bodies from £3; lugs in stock.—R.E.A.L. Carriage Works, Kew Bridge, Brentford. [7531

£15.—Henderson featherweight sidecar, purchased new 1920, used about four times, recently repainted, fitted new Dunlop studded cover and tube, electric lamp and accumulator box, 4 connections, perfect condition.—Grey, White House, Cobham, Surrey. [7651

DORWAY Folding Sidecar saves garage. When folded (10 seconds) combination passes through ordinary doorway. Unnoticeable appearance when open, no freakishness; send for descriptions.—Frank Whitworth, 139, New St., Birmingham. [5081

SPECIAL Purchase.—Manufacturers' stock to be cleared at unheard of prices (stock soiled). Complete sidecars with coachbuilt body, tyre and fittings £11/10; coachbuilt bodies, £3/10; limited quantity cannot be repeated.—Bastones, 228, Pentonville Rd., King's Cross, London, N.1. [7341

SIDECAR (Phœnix), C.B., underslung, off B.S.A., roomy, comfortable, splendid upholstery (green), 2½ tyre, new bearings wheel, Camco, hood, jns enamelled and varnished (body green), spare spring £12; privately owned.—Seen at Clarke's Garage, South St., Romford. (Half-minute station.) [7151

PARAGON (patent) Folding Sidecar saves storage has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle and, when folded, combination will pass through 30in. doorway. Call and see it demonstrated.—Wirecycle Co., Ltd., 236, High Holborn, W.C.1. [0381

HELEN Sidecars!!! Helen Sidecars!!! Still going strong. Heavyweight outfits complete, new bulbous back bodies, for all types of American and English machines, £22/10; complete outfits for Triumph, B.S.A., etc., from £12/10; new lightweights complete, £11/10; 2-seaters complete, all fittings, etc., from £14. Your old outfit taken in part exchange. Extended payments taken. Write for particulars.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [7721

SIDECAR ATTACHMENTS.

HUGE Purchase of Plus One Chassis, brand new, complete with all fittings, for English od American 8-10h.p. machines, usual price £23; ur price £12/15; or complete with our specially uilt De Luxe body, upholstered real leather, £22/10. -Robini Manufacturing Co., 1 and 3, Tulse Hill, rixton, S.W.2. 'Phone: Brixton 1585. [7726

OLD Man Hep, nearly sold out his 1,000 Douglas Chassis at £5 each, so if you don't want to be isappointed get busy. He can also supply a new ouglas type body fitted with bulbous back and locker nder seat and new tyre (complete sidecar) £10/10; old over 850 since last August. Send for photo, nclose stamp, please.—Hep, 17-19, Wilcox Rd., South ambeth, London S.W.8. [7343

EXCEPTIONAL OFFER.—New Millford chassis de luxe, fitted with best coachbuilt bulbous back ody, painted and upholstered to choice, or standard royal blue, £20; chassis only, £11/11; all fittings ree. Special fittings for late type Triumphs. Several econd-hand Millford chassis at bargain prices; other akes of chassis second-hand from £2. New 6h.p. nfield chassis, £5. New sidecar wheels, less tyre, 5/-. Several new bodies, slightly shop-soiled at clear- nce prices. All Millford parts stocked. Write for ur illustrated catalogue. If you wish to purchase our sidecar by instalments, come and inspect the ideezi Model. Liberal allowance for your old side- ar.—Light Car and Motor Cycle Engineering Co., Ltd. Phone: Brixton 1292. Half minute from Brixton kating Rink. [8083

RUNABOUTS AND CYCLE CARS.

3h.p. 1921 Unit, with dynamo, 2 spare wheels; £135. —Littledale, Stony Stratford. [7057

A.C. Sociable, good condition, hood, screen; £45.— 5, Shotteudane Rd., Fulham. [7406

A.N. Chassis, complete, less engine, gear; £10.— Norrington, Montpelier Rd., Ealing. [7527

A.C. Sociable 5-6-h.p., excellent order, electric lights; £30.—17, Heaton Rd., Mitcham. [7619

TAMPLIN 1922 2-seater; £175; now in stock.—Ser- vice Motors, St. Chad's Rd., Headingley, Leeds. [7585

MORGAN 1915 A.C., re-bushed, Binks, any trial, exchanges; £55.—Highdene Ridgeway, Enfield. [7423

240.—Tamplin 1920 2-seater, hood, screen, equipped; exchange combination.—47, Leigh Rd., East Ham. [7752

A.V. Monocar, 1920; cash price, £120; excellent con- dition.—Bunting's Motor Exchange, Wealdstone. [7968

FAMILY Morgan, electric and oil lighting; £100. —Avery, 24, Grove Park Rd., Brislington, Bristol. [7569

3h.p. single cylinder Rover, magneto, splendid con- dition; £18.—London Road Garage, Stony Strat- ford. [7058

MORGAN, late 1920, M.A.G., Grand Prix, equipped, taxed, perfect; £126.—Clark, 7, Exhibition Rd., W.7. [5854

EDELIA.—The new 1922 model 8-10h.p., air- cooled or water-cooled to choice. Immediate de- veries.

EDELIA.—Air-cooled model £185, water-cooled model £195; side-by-side armchair seats, 3 speeds d reverse, 5 detachable wheels, hood, screen, lamps, ols, jack, and pump included; trial free.

EDELIA.—Cash or easy terms. Your old car or motor cycle taken part payment.

EDELIA.—Catalogue free from L. N. Palmer, sole concessionnaire for the British Empire, Pal- er's Garage, Tooting. [7732

COVENTRY-PREMIER 1922 4-wheeler, as new; £160.—James, c/o Bradmores, 482, Harrow Rd., ddington. [7816

A.V. Monocar, 1920, 5h.p., excellent condition, re- painted, electric lighting, speedometer, tax paid, /.—Below.

TAMPLIN 1921 Tandem, Staggered seating, tax paid, full equipment, excellent condition; £72.— elow.

COVENTRY-PREMIER 3-wheeler, 1920, tax paid, dynamo lighting, fully equipped, excellent condi- on; £120.—Below.

A.N., 2-speed, belt drive, tax paid, good condition; £32/10.—Below.

A.N. 1921 Popular, excellent condition, mileage 3,000; £105.—Elce, Ltd., 13-15-16, Bishopsgate ., Camomile St., E.C.3. 'Phone: Avenue 5548. [7072

RILEY Runabout, 7-9h.p., water-cooled, perfect; £75; exchange light car.—4A, St. John's Wood, ondon, W. [7383

MORGAN De Luxe, excellent condition, tax paid, fully equipped; £85.—Waterloo House, North eam, Surrey. [7287

1922 Castle Three, new, 4-cyl., water-cooled, electric lighting, in stock; £200.—Stephens, 60, Notte ., Plymouth. [7233

1921 Carden 2-seater, spare wheel, electric light- ing, hood, and full accessories; £60.—Ross, 86, igh Rd., Lee. [7608

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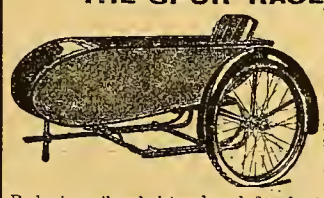

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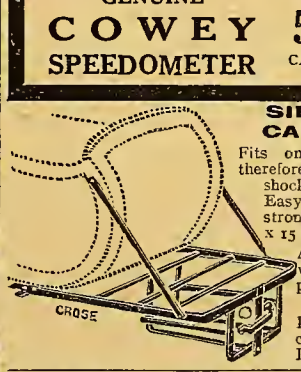

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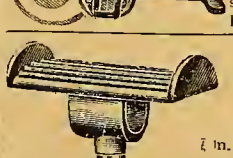

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MORGAN G.P., 1921, as new in every way, fully equipped; £130.—Roseworth Cottage, Chipstead Valley Rd., Coulsdon. [7769

£110.—Unit No. 1, 1920, dynamo model, spare wheel, etc.—Clifford Wilson Company, 177, West- minster Bridge Rd., S.E.1. [8052

MORGAN.—New 1922 Models in stock.—Agents, Birkenhead Motor Works, Old Bidston Rd., Birkenhead.' Phone: 2047. [2389

PALMER'S Garage, Tooting.—£35 down and 12 monthly payments £5 secures smart 12-15h.p. Panhard landaulet, runs well.

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GORDON-ARMSTRONG, 10h.p. J.A.P., 2-seater Chater, 3-speed gear box; bargain, £15.—118 Hither Green Lane, Lewisham. [8076

MORGAN, 1921, De Luxe, water-cooled, M.A.G., like new; £130; several cheaper.—Bunting's Motor Exchange, Wealdstone. [79

COVENTRY-PREMIER, 3-wheeler, dynamo lighting, new January, 1921, handsome lot; £140.—Bunt- ing's Motor Exchange, Wealdstone. [7969

LATE 1921 Coventry-Premier 4-wheeler, dickey, splendid condition; £145.—Norrington, Terrace Garage, Turnham Green Ter., Chiswick. [7691

CYCLECAR as illustrated and described in *The Motor Cycle* of August 3rd, page 168; £120, or offer.— Chaasen, 34, Windsor Terrace, Glasgow. [7046

1920 Tamplin 2-seater, hood, screen, 3 speeds, licensed, lamps, guaranteed perfect; £59 (ex- changes).—89, East Hill, Wandsworth. [7592

1921 M.B., 4-cyl. Coventry Simplex engine, spare wheel, hood, screen, electric light, licensed, as new; £105.—89, East Hill, Wandsworth. [7593

TEMPERINO 9h.p 2-seater, June, 1921, 6 inter- changeable wheels, perfect; £125; would ex- change.—Mitchell, 12, Canonbury Place, N.1. [7274

MORGAN de Luxe, 1921, M.A.G., water-cooled, absolutely as new; £140; many spares.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [7817

CARDEN 2-seater 1921, hood, windscreen, electric and acetylene lighting, licence, Klaxon, splendid con- dition; £65, exchanges.—63, Solon Rd., Brixton. [7559

A.V. Monocar 1920 6h.p., J.A.P., 2 speeds, dickey, lighting, Klaxon, tax paid, good tyres, general condition as new; £55.—2, Madrid Rd., Barnes. [7475

MORGAN 1921, Aero model, water-cooled, speedo- meter, hood, screen, 5 lamps, 2 D.A. cylinders, all tools, etc., car very little used and guaranteed perfect; 126 gns.—Longman Bros., Bond St., Ealing. 'Phone: 689. [7703

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MORGAN, a.c. 8h.p. J.A.P., speedometer, tyres and mechanical condition good; £70; offers invited; after 6.30.—44, Kiver Rd., Upper Holloway, N.19. [7386

LIGHT Car, 5-6h.p. W.C., J.A.P., Phœnix chassis, partly assembled, spares, particulars, exchange; bargain, £30.—Wardman, High St., Cheltenham. [7097

£55.—Warren Lambert 2-seater, 4-wheeler, 1914, 9.6h.p. water-cooled Blumfield engine, electric lamps, exchange considered.—406, York Rd., Wandsworth. [7589

£75.—Temerino 1921 2-seater, 10h.p., 3-speed and reverse, kick-starter, detachable disc wheels, small mileage, exchange combination.—406, York Rd., Wandsworth. [7568

HAMILTON Light Car, fully equipped, ready for service; early delivery; £175; write for booklet. —Smith and Co., Ltd., Compton Works, Wickford, Essex. [6449

MORGAN De Luxe 1920, J.A.P., fully equipped, disc wheels, spare chains, valves, tube, cover, excellent condition; £115.—Lloyd, Victoria Ter., Leamington. [7651

COVENTRY-PREMIER 4-wheeler, 1922, new condition, tax and insurance paid; £190; exchange cheaper car or cycle.—97, Nightingale Rd., Wood Green. [7228

MORGAN de Luxe, 1921, 8h.p., water-cooled, speedometer, discs, lovely condition; £125; exchanges. —Hillier (side bell), 9, Wallingford Av., North Kensington. [7794

HALIFAX.—7-9h.p. 3-speed 3-wheeler, £69/10; A.V. 8h.p. 2-speed, £75; 1920 Richardson light car, £95.—Halifax Motor Exchange, Horton St., Halifax. [7929

MORGAN, 1920, Grand Prix, J.A.P., all accessories; £110.—Rey, 173, Great Portland St. 'Phone: Langham 1257. Open till 7.30; 4 o'clock Saturdays. [6998

TWO Lovely G.N.'s, little used, privately owned, dynamo, open to any reasonable offer of exchange; to be sold cheap.—Marlborough, 20, Finchley Rd., N.W.8. [6173

89 GNS.; Exchange.—Baby Peugeot, 3 speeds, lamps, horn, Stepney, tax paid; any examination, trial.—Seabridge, Hansler Rd., E. Dulwich. Sydenham 2452. [7681

CAMBRIA Cycle Car, 9h.p. air-cooled J.A.P., 90°, overhead valves, Fellows magneto, tax paid 1922; £70. Wanted, De Luxe Morgan.—Berry, 81, Hawthorne Rd., Bolton. [7759

BAYLISS-THOMAS 1922 10h.p, Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; 300 gns.; immediate delivery.—Godfrey's Ltd., 208, Gt. Portland St., London, W.1. [0736

COVENTRY-PREMIER 1921 3-wheeler, dynamo, spare wheel, dickey, speedometer, in new condition; £140; exchanges.—Hillier (side bell), 9, Wallingford Av., North Kensington. [7795

G.N. 1920 Standard Model, full equipment, dynamo lighting, etc., perfect condition; £120.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

1922 Morgan Popular, £150; Grand Prix, £180; 8h.p. Rover, £220; in stock for immediate delivery; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [0773

A.V. Monocar 1921 8h.p., fully equipped, in perfect condition, mileage 500; £70; or exchange for good motor cycle or combination.—K.G.S.H., Winchester House, E.C.2. Tel.: Wall 4343. [7280

MORGAN 1922 Family Model 10h.p., M.A.G. engine, water-cooled, practically new, excellent condition, speedometer, accessories, tax and insurance paid; £180:—Jenks, Mont-Clare, Cinderford. [7856

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A.V. Monocar with dickey 1920, 8h.p., just overhauled, re-enamelled and upholstered, new tyres and spares, exchange Triumph combination or sell cheap for cash.—Botsford, 37, Thorpe Rd., St. Albans. [7431

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G.N. 1922 2-seater, dickey, dynamo lighting, 5 detachable wheels, automatic lubrication, hood, screen, horn, tools, pump, jack, tyres unpunctured, mileage 500; £210—Box 3227, c/o *The Motor Cycle*. [7325

VICTOR, splendid 2-seater, 8h.p. twin, water-cooled, 3 speeds, reverse, hood, screen, lamps; 49 gns. Exchange motor cycle. Easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [7701

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MORGAN G.P., M.A.G. engine, 1918, dynamo li ing, electric horn, speedometer, discs, 5 lam dash lamp, taxed, sound condition; exchange combi tion; or sell cheap for cash.—143, Ravensbury Earlsfield, S.W.18. [7

COVENTRY-PREMIER, 1922, latest model, br new, just arrived; trials and tuition free; £ cash, or easiest of easy payments. Motor cycles cars taken in part exchange.—Wilkins, Simpson, opsite Olympia, London. [8

1921 (date guaranteed) Carden fine 2-seater, tw 3 speeds, hood, screen, speedometer, Klax lamps; any trial; only 79 gns.; exchange motor cy also easy terms.—Wandsworth Motor Exchange, Eb St., Wandsworth (Town Station). [7

COVENTRY-PREMIER 4-wheeled super-runabo 8h.p., water-cooled, spare wheel, dynamo, li insured, etc.; £230; motor cycles, etc., taken in p exchange; instalments if desired.—Frank Whitwo 139, New St., Birmingham. [5

1922 10h.p. Popular Morgan, M.A.G. engine, Bi carburetter, lamp sets and horn, tax p brand new July, carefully used, 150 miles only; price complete £161, accept £148.—Wallis, 49, H St., Saffron Walden. 'Phone: 45. [7

1922 Morgan G.P. model, fitted o.h.v., water-coo Anzani engine, fully equipped, in stock immediate delivery; £185. Easy payments accep at 4% extra.—Homac's, Morgan Service Depot, 2 Lower Clapton Rd., N.E. Dalston 2408. [7

REYNOLDS Runabout, in perfect condition, 2-sea 2-stroke engine, 2-speed gear, kick-starter, hide seats, as new, with tool kit; makers' price 75 gn our price £45 only; come and test it.—C. Dna and Co., 16, Little Portland St., London. [5

MORGAN Grand Prix Aero Model, M.A.G. engi w.c., special exhaust, Lucas dynamo lighti discs, hood, splendid condition; nearest offer to £1 privately owned; seen after 6.30 p.m.—Young, Thor son's Garage, Estcourt Rd., Fulham, S.W.6. [7

£75.—1921-22 Tamplin 2-seater, side-by-side sea twin J.A.P. 8h.p. engine, hood, screen, lam speedometer, 3-speed, clutch, kick-start, only run hundred miles, condition as new; genuine bargain Speechley, 86, Churchfield Rd., Acton, W.3. 'Phon Chiswick 1902. [72

MORGAN De Luxe 1922 (May), plum purp nickel fittings, W.C., 8h.p. J.A.P., Bonniks trip, Jeffs, Zenith, Jack, etc., cost £210, year's t done 500 miles, owner-driven, bought car; near £175; delivered 50 miles; no dealers.—5, Ickbar Rd., Clapton, E.5. [71

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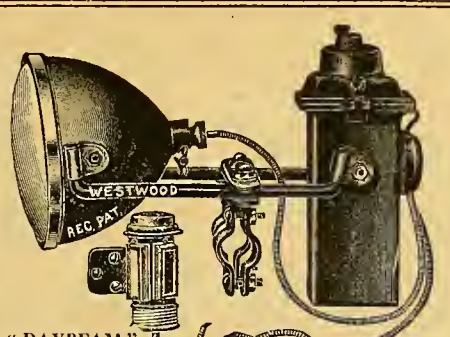

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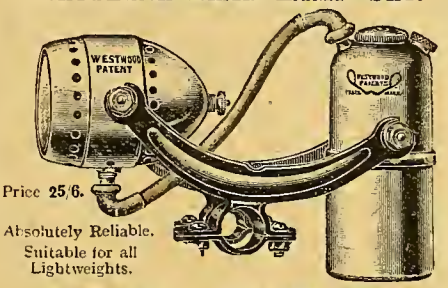

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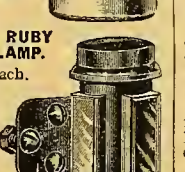

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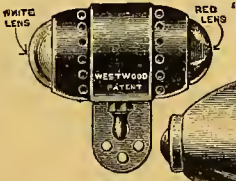

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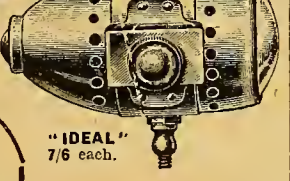

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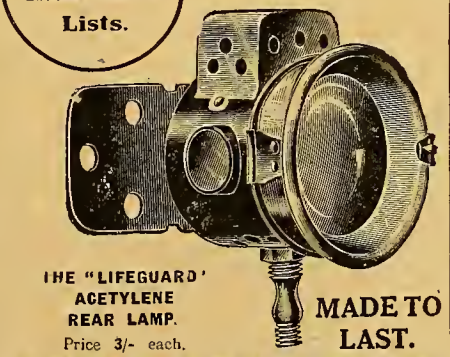

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24×2.—Hutchinson rubber studded, 22/3.

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26×2½.—Wood-Miloe Keygrip, 14/6; Hutchinson rubber studded or ribbed, 33/9; Bates special heavy ribbed, 30/-.

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650×65.—Emanuel's extra heavy rubber studded, 26/6; Hutchinson's 3-ribbed, 32/6; Burnett grooved, 32/-; Dunlop 3-ribbed, 42/-; brand new Palmer cord 3-ribbed, 35/-.

700×80 to fit 650×65 rims.—Emanuel's extra heavy rubber stud, 42/6; Bates special heavy rubber non-skid, 52/6.

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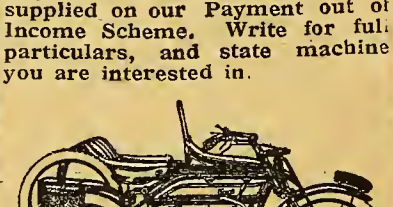

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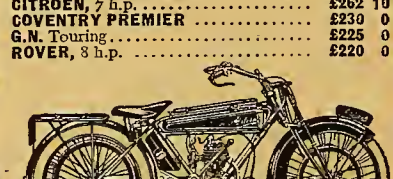

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3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Museum 2334. [0005

ECONOMY with Security.—Comprehensive policies from £3/10; Morgans, £6; sound companies.—H. R. Broadhurst, Buchanan Bldgs., 24, Holborn, W.C.1. [7378

"The Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and proposal forms on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

SITUATIONS VACANT.

LOCAL Representative wanted, with or without experience; opportunity for one with motor.—Tyneside Pillion Seat Works, Union St., North Shields. [0907

LEADER and Tuner Wanted by old-established carburetter makers, for motor cycle trade, used to hill and bench tests, good education and certain amount of theoretical knowledge necessary.—Box 3192, c/o *The Motor Cycle.* [7221

WANTED, smart demonstrators in every large town for De Luxe-Barr and Stroud machines. Substantial wage and commission. Applicants must be excellent drivers and give guarantees. Permanent job for good men.—De Luxe Motor Co., 174, Corporation St., Birmingham. [7901

LEADING Cycle and Motor Company require competent Works Manager, having thorough experience of all departments of cycle and motor cycle manufacture; design, organisation, production, control of staff. Financial interest acceptable but not essential. Remunerative position for qualified man.—Apply in strict confidence, with all details, Box 15a, Dorne-Peacock Co., Ltd., County Buildings, Cannon St., Manchester. [7327

SITUATIONS WANTED.

METALLURGICAL Engineer, age 24, keen motorist, desires appointment, fully control laboratory.—Box 3233, c/o *The Motor Cycle.* [7884

STOP

at this and compare prices and quality. Invitation to inspect before purchasing.

All Buildings carriage paid. No extras:

This Building is complete with 1in. tongued and grooved floor, ⅞in. match-boards or weather-boards, 3in. framing, strong boarded roof, best pluvex felt. Building treated with weather-proof composition. Prices, complete and carriage paid to any station in England and Wales:

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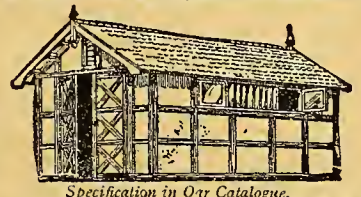

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12× 8	£23 10 0		18× 10	£42 10 0	
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16× 10	£37 15 0			—	

Delivered with iron roof complete. Fire-proo and sound-proof.

Our unsolicited testimonials should create confidence.

Sheen Park Lawn Tennis Club,
May 22nd, 1922.

Dear Sir,
I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.
Yours faithfully,
JOHN O. GRIFFITS

23, London Road,
Leicester.

Gentlemen,
I find the Building you sent me very satisfactory, and consider it very good value for the money.
Yours faithfully,
J. CROSBY

"Alma,"
Alexandra Road,
Cowes, I.O.W.

Dear Sirs,
I have received the Building in good condition and I consider it an excellent piece of workmanship and an exceptional bargain.
Yours faithfully,
L. G. CHINCHEN.

Illustrated Catalogue Free.

SOUTH-WESTERN APPLIANCE Co.
High Street, Fulham, London, S.W.
Telephone · PUTNEY 2771.

SITUATIONS WANTED.

SUCCESSFUL trade rider desires change, more progressive firm, trials, racing, competed 3 T.T., pre-war experience.—Box 3135, c/o *The Motor Cycle.* [7075

A MOTOR Cyclist, age 20, seeks post as competition rider, no opposition, but am very eager to take up same.—State full particulars to Box 3183, c/o *The Motor Cycle.* [7143

FINANCIAL.—PARTNERSHIPS.

FINANCIAL.—Belgium motor cycle firm, well established and very successful, offers half partnership to active young man; capital required £6,000.—Write to Box 2978, c/o *The Motor Cycle.* [5604

ACTIVE Directorship in established motor business, London, holding valuable sole agencies, technical knowledge not essential, but knowledge of cars and motor bikes an advantage; only smart, young, keen men who mean work need apply; investment £1,500, to be utilised in expansion; good salary.—Write, L., c/o Willmore's Chiswell St., E.C. [7346

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

CYCLE and Motor Cycle Business, with little car work, valuable agencies, genuine, owner retiring; goodwill and lease, £250; stock about £400.—Box 3231, c/o *The Motor Cycle.* [7886

LONDON suburban main road freehold premises for sale, splendid position, fine showroom, well fitted workshop, doing good sales trade new machines and repairs, no garage, owner retiring, no goodwill asked, small stock optional; £2,600 for freehold. Suit large dealers as branch for cycles and cars, no opposition; exceptional opportunity. Principals only, write in own name.—Box 3095, c/o *The Motor Cycle.* [6788

GARAGES.

BRIXTON!—Private lock-ups, combinations, 4/- weekly; small cars, 6/-.—26b, Ingleton St. [7498

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [7735

WANTED.

WANTED, 4 tyres, 26×2½, good second-hand, cheap. —56, Stanton St., Newcastle. [7044

WANTED, Scott Frame and Tank.—39, Sunnydene Rd., Purley, Surrey. [7281

MATCHLESS Spare Wheel, 28×3.—Corby, 38 Kellett Rd., Brixton, S.W.2. [7407

SIDECAR Wanted, with connections for B.S.A. 1921 single.—F. Cage, Halstead, Kent. [7452

LIGHTING Set for combination.—Price, particulars. Box 2958, c/o *The Motor Cycle.* [5370

QUANTITY old motor ball races, cheap.—Platts, 602, King's Rd., Fulham, S.W.6. [7860

WANTED, Factors to write for samples and prices of Baker's Little Dinky wire brushes.

WANTED, Dealers to know—Little Dinky Wire brushes are a wanted line.

WANTED, Motorists to know that Baker's Little Dinky is the best wire brush for cleaning sparking plugs, etc.—Baker's, Albion Works, Eyre Lane, Sheffield. [7259

AUTO-WHEEL, condition immaterial; state lowest price for cash.—97, Latchmere Rd., Battersea. [7181

WANTED, Sturmey-Archer gear box, complete or incomplete.—33, Hackford Rd., Brixton, S.W.9. [7398

PEUGEOT cylinder wanted, 1913 model, 3½h.p., single 84×90.—Jarvis and Sons, Ltd., Wimbledon. [7443

FORKS and other Spares wanted for 1916-20 Henderson 4-cyl. machine.—Box 3219, c/o *The Motor Cycle.* [7322

GOOD Second-hand Philipson handle-bar control Norton 1921.—Newton, Bank House, Farnham, Surrey. [7200

WANTED, Indian 2-speed gear, complete, in perfect condition.—Thirsk, 17, Sherwood St., Barnsley. [7037

WANTED, 3½h.p. Triumph engine, with magneto, chain covers, front engine plates.—Birkett, Wilden, Stourport. [7201

PREMIER Parts or complete Premier motor cycles in or out of repair.—Jack Ward, 11, Radford Rd., Leamington Spa. [7756

CYCLE Car Wanted, Morgan preferred: exchange O.K. Junior, balance cash.—Howe, 44, Somerset Rd., Mead Vale, Redhill. [7179

WANTED to purchase Outright for Cash, bankrupt stocks, W.D. spares, miscellaneous spares motor cycles, any make.—Send full particulars, McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [7182

WANTED.

WANTED, Victory model Matchless sidecar, interchangeable wheel.—A. Stovell, 2, Battery Rd., Well Hall, Eltham, S.E.9. [5054

EXCHANGE.

EXCHANGE A.V. Monocar for solo machine.—2, Madrid Rd., Barnes. [7476

6h.p. Enfield Combination, exchange cycle car.—D. Whitehead, Davenham, Northwich. [7137

CARDEN 2-seater and 2¾h.p. Francis-Barnett (see adverts.).—63, Solon Rd., Brixton. [7560

EXCHANGE Late 1919 Harley for good single; cash adjustment.—9, Church Rd., Harlesden. [7268

1922 Indian Scout (new), dynamo, for late Combination.—89, East Hill, Wandsworth. [7595

EXCHANGE 1920 2¾h.p. Omega, 2-speed, clutch, for 2-stroke.—Cole, Ashbrook, Cirencester. [7182

TRIUMPH Ricardo, Model H., and Baby in stock; exchanges invited.—Thos. Booth, Frodsham. [7776

EXCHANGE your present machine for a new car or motor cycle at Kays, 8, Bond St., Ealing. [5076

1918 Yale Combination, 9h.p., for lighter combination.—40, Woodlands Rd., Bishop Auckland. [7078

4h.p. 1917 3-speed Rover; exchange screw-cutting lathe, hand shaper.—P. Wright, Witchford, Ely. [7806

EXCHANGE 3½h.p. Zenith-Jap for combination or parts; offers.—27, Lower Grove, Wandsworth, S.W. [7226

EXCHANGE good sound motor cycle, value £18, for bicycle and cash.—Collins, 28, St. Mary's Rd., Nuneaton. [5633

EXCHANGE Bebe Peugeot 4-cyl. for motor cycle and cash.—Green, 2, Howard Rd., Morpeth, Northumberland. [7140

1917 7-9h.p. Thor Combination, also P. and M., perfect, modern runabout.—80, Pembroke Rd., Cardiff. [7050

FORD 1-ton Lorry, run 3 weeks only, pneumatic, special Eoglish body; £140; wanted, Ford touring.

ANY of our machines advertised we are open to exchange, taking yours.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [7255

B.S.A. 4¼h.p. Solo; exchange Morgan, G.N., similar, cash adjustment.—23, Jupiter Terrace, Well Hall, S.E.9. [7765

EXCHANGE 3-inch treadle screw-cutting lathe and cash for combination.—Box 3239, c/o *The Motor Cycle*. [7798

TRIUMPH 3½h.p., 2-speed, speedometer, perfect; £27, or part exchange, useful.—50, Ballspond Rd., Dalston. [7424

ARIEL Combination 3½h.p., equipped, perfect order; accept piano and cash.—Brown, 14, Ilford Avenue, Wallasey. [7064

1920 Zenith Combination for Triumph, Sunbeam, or small car. See sales column.—Jeweller, Earlsfield. [7898

EXCHANGE for 2-seater Sidecar, Enfield 3h.p., also sidecar, or sell.—Dawson, 82, Walton St., Leicester. [7353

ROVER 8h.p. Car, 1920, for motor cycle or combination.—Bridges, Gander Green Lane, Sutton. 'Phone: 57. [7972

5-SEATER Car, good condition, for combination, cash.—9, Jubilee Terrace, Broomfield Rd., Chelmsford. [7526

SMART 1919 2¾h.p. 2-speed, 2-stroke, and cash for good combination.—Write Patrick, 24, Lordship Park, N.16. [7051

ENFIELD Twin, 2¾h.p.; £17, or exchange lightweight not under 1½h.p.—Bevis, 29, Queen's Rd., Basingstoke. [7892

EXCHANGE first-class Douglas's Combination, 4h.p., 1919-20, Morgan, Harley, or similar.—30, Welland Rd., Coventry. [7893

30FT. Motor Cabin Cruiser, for good make combination; cash adjustment.—288, Priory Rd., Southampton. [7290

1920 New Imperial Combination, all accessories, for solo; cash adjustment.—134, Wanstead Park Av., Wanstead. [8023

EXCHANGE 1916 3-seater Trumbull for powerful combination or Morgan.—Elton, Bodden Lane, Shepton Mallet. [7309

1920 Scott Combination for 1920 Triumph or A.B.C. solo and little cash, or sell £78.—Glendinning, Burgh, nr. Carlisle. [7139

EXCHANGE two Lightweights, one taxed, for heavier machine, solo.—C., 6, Thorley St., near Bishops Stortford, Herts. [7481

EXCHANGE Racing 5h.p. Indian, with or without sidecar, for 2¾h.p. Blackburne or J.A.P.-engined machine.—Blundell, 14, Addison Grove, Taunton. [7311

In Busy and Populous South Wales

The South Wales Branch

of

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED,

Head Office: 77, CHEAPSIDE, LONDON, E.C.2

is situated at

15, High Street, CARDIFF

Telephone: CARDIFF 4156.

—a convenient centre for the whole District.

Applications for "The Motor Cycle" and "The Autocar" policies are invited from South Wales Agents.

These should be addressed to the Cardiff Branch, the Manager of which will be pleased to give any information that may be desired.

Every assistance is rendered to agents in securing business, and the specialised organisation of the Company is placed at their disposal for the settlement of claims or difficulties.

N.B.—"The Motor Cycle" policy is authorised and approved by "The Motor Cycle," with which The Antocar Fire & Accident Insurance Company is closely associated. The conditions of the policy are complete and comprehensive, and the issuing Company enjoys a high reputation for generous and prompt settlement of claims, and for efficient service to policy-holders at all times.

WRITE TO-DAY.

EXCHANGE.

WANTED, B.S.A. Cycle Taxi, will exchange facturing business (patented), no oppositio 56, Dingle Lane, Liverpool.

RELIABLE P. and M. Combination and £ higher power combination.—Bramall, 16, grave Terrace, Scarborough.

PREMIER 1915 3½h.p., countershaft gears, for old 2-stroke and cash; or sell £30.—20, Av., Hoggers Corner, Barnes.

NEW IMPERIAL 8h.p. Combination, 191 change lower power, Douglas preferred, or 20, Woodsome Rd., N.W.5.

4-WHEEL Chassis, 4¼h.p. J.A.P., 2-speed c shaft, good running order, new tyres, for weight.—Lambert, Whitwick.

1917 Alldays Allon 2¾h.p., 2-speed, in order, and cash, for Triumph; sell Avenue Lodge, Grays, Essex.

EDMUND (spring frame), Levis, 2-speed, and cash, for good combination.—A. W. 602, King's Rd., Fulham, S.W.6.

REQUIRED Urgently, Combination in ex 3h.p. twin M.A.G. Enfield, with £20 t cash.—Garrett, High St., Uxbridge.

1919 Omega-Jap, 2¾h.p., 2-speed, perfect 4¼h.p. 3-speed C.S. K.S. machine, B.S.A ferred.—39, Ashford Rd., Swindon.

1920 7-9h.p. Indian-Millford Combination, model; exchange Morgan or good cycle c Hawkswood Place, Kirkstall, Leeds.

EXCHANGE Sporting 3½h.p. Triumph, clutch start, 1913, for 2-stroke.—Avery, Little Yor tage, Back Pantiles, Tunbridge Wells.

1914 American X, 2-speed, clutch, perfect tion, for lower power and cash.—Norman, Snowdrop Rd., Lodge Lane, Welling.

EXCHANGE almost new Indian Scout for Sunbeam, Ricardo Triumph, or similar; a p.m.—4, Elm Gardens, Hammersmith.

BEAN 1921 2-seater, dickey, electric lightin starter; £285; would consider solo or combi part payment.—52, Sidbury, Worcester.

10h.p. Reading Standard Combination, 3- licensed, perfect (£48); for modern Parwood, 89, East Hill, Wandsworth.

EXCHANGES.—See Calthorpe, Douglas, Dia F.N., Invicta, Scott, Triumph columns.— 417, Lord St., Southport. Tel.: 1273.

1920 4h.p. Blackburne, 3 speeds, accessories, good condition; exchange lightweight and —143, Ravensbury Rd., Earlsfield, S.W.18.

EXCHANGE G.W.K. 2-cylinder 2-seater, sp condition, for good combination.—Norrington race Garage, Turnham Green Ter., Chiswick.

EXCHANGE Rudge 3½h.p. Combination, screen, spares, licensed, for Henderson; sell —Manton, 36, Brigg Rd., Ashby, Scunthorpe.

AMERICAN X 1921 Combination, dynamo lig magnificent turn-out; exchange lower powe cash.—110, Upper Richmond Rd., East Sheen.

7-9h.p. Rudge-Multi, late 1920, beautiful coac sidecar, new condition; exchange lower powe cash.—110, Upper Richmond Rd., East Sheen.

EXCHANGE Sporting Bat-Jap Combination, 5- perfect, for 2¾h.p. Douglas or similar; cas justment.—239, Goldhawk Rd., Shepherd's Bush.

1920 3½h.p. Rover Combination, sound mecha condition, and cash, for more powerful com tion.—King, 100, Bedford Rd., Kempston, Beds.

1922 7-9h.p. Indian dynamo Combination; see Columns, for Brough-Superior, S. by S. v or good solo; cash either way.—Parsons, Chiswi

EXCHANGE 20h.p. Martini Car, 4 speeds an verse, sporting 2-seater for combination, Tri preferred.—Forfield Motors, Forfield Place, Leami Spa.

EXCHANGE Morgan De Luxe, w.c., late 1921, lutely as new, for combination and cash.— rington, Terrace Garage, Turnham Green Ter., wick.

NEW HUDSON Big Six Countershaft Combina £65; exchange lighter solo, cash adjust either way.—Davis, 46, Blandford Rd., Bedford W.4.

EXCHANGE 1920 8h.p. New Imperial Combina fully equipped, licensed, for lightweight and —37, Arlington Rd., Surbiton. 'Phone: King 1274.

EXCHANGE September 1919 8h.p. New Imperi seater, S.C. screens, lamps, etc., private o for lightweight and cash or small car.—23, Charle Reading.

EXCHANGE 6h.p. N.S.U. Combination, 2-s Senspray, Bosch, quarter's tax paid, overha low built, for A.C. Sociable.—Woodgate, Colliers Ware, Herts.

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Reflections Upon the Six Days Trials.

NO more interesting or instructive six days trials have been held than last week's Auto Cycle Union event, embracing Yorkshire, the Peak district, Wales, and Brooklands. It was the sixteenth of the A.C.U. series. As if the varied road test of 830 miles were not sufficient to bring out the weak spots of any machine, a final twenty-five laps of Brooklands at minimum set speeds served to test the engines and lubrication systems to the uttermost. That so many machines survived the ordeal (no less than 80 qualified for gold medals) is the more significant to those acquainted with the various test hills introduced, for few trials have presented so many compressed difficulties in the space of six days. There was no relief from start to finish. The first two days, for instance, were each the equal of the most severe one-day trial, and on Wednesday the ascents of Bwlch-y-Groes and the Hirnant Pass were not to be despised. Generally speaking, the most outstanding achievements could be claimed by the smaller machines, for the 250 c.c. and 350 c.c. mounts were throughout conspicuously good performers, no hill being too much for them, whilst their track speeds on the last day were an eye-opener to many. Next in order of merit, considering classes as a whole, we should place the three-wheeled runabouts, only one of which retired.

A.C.U. six days events have been notoriously severe except in 1921, protests being the result. This year, however, there was a noticeable absence of complaint, Rosedale Abbey Bank almost alone arousing the ire of men who were mounted on standard machines. Their contention that surface alone spelt success or otherwise was supported by the exhibition on the steeper gradient of Alms Hill, Henley-on-Thames, one of the final climbs on Friday afternoon. Here, despite a gradient of 1 in 3, most of those who essayed the climb were successful, 250 and 350 c.c. lightweights again publicly demonstrating that solo mounts of this size are wholly reliable and of the "go-anywhere" type.

Chiefly, the retirements may be divided into three classes: (1) transmission troubles, (2) broken frames, and (3) accidents. A large proportion of the last-mentioned were due to the tortuous nature of the course and insufficient braking power. The speed test was responsible for six retirements, two at least due to the front tyre leaving the rim.

No one type of machine suffered more than another so far as the hill-climbing was concerned, for representatives of all types made outstanding performances.

Three points only may be subject for discussion among competitors: (1) The hotel arrangements *en route*; (2) the wheel slip rule on hills which was difficult to put into operation fairly; and (3) the front wheel stand clause. It will be recalled that many competitors in the Stock Machine Trial were disqualified on the last-mentioned count, and those who fitted stands specially in the present case may well ask whether those who did not conform to the rule will be disqualified.

Condition at the finish is an important matter from the prospective buyer's point of view, and it may definitely be stated that the mechanical condition of the engines and machines generally was never better than this year. The track speeds were really remarkable considering the length of the speed test and the fact that it followed immediately upon a long and difficult road test offering no respite. It was good that so much country was embraced, for a great deal of useful propaganda has been accomplished; public interest was most marked throughout.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY "IXION"

Those Small Makes.

AN unfortunate reader purchased a motor cycle of a little-known make, and on delivery found the steering was rather stiff. After much worry he dismantled the steering head and found that the top half of the lower ball race had been completely omitted by the erector, together with two of the balls. On complaining to the makers, he received a *postcard*, which I copy verbatim:—

"Dr. Sir,—Your letter to hand. In our opinion the ball race had been overhardened and split up gradually disintegrating *en route*. This opinion is confirmed by the absence of the other balls.

"Yrs. faithfully,
"——."

There is a delicious air of attachment about this postcard which pleases me enormously. The matter is treated purely and simply as a technical problem, apart from all sordid considerations of £ s. d. or such personal matters as inconvenience to the owner. It reminds me of the chemist whose medicine poisoned the sick wife. When the irate husband sent a lawyer's letter complaining that 10 grains of arsenic had been put in a tonic, the chemist replied: "Yours of the —th inst. to hand. You are in error. It was strychnine, not arsenic."

The Single Sleeve Valve.

I AM at present riding an engine which many good judges regard as likely to prove the pleasantest power unit on the road—the Barr & Stroud single sleeve valve. It is much too new and stiff to have developed its real running, but is already very likeable. Well silenced and freed from the clack of the usual valve gear, it slides along very amiably, the faint tuttering of the exhaust being the only noise apart from the incurable hum of the front chain and a fainter undercurrent of sound which I ascribe to the sleeve-operating mechanism. A couple of kicks suffice to ungum the brand-new sleeve each morning, and, when once warmed up, the engine is extraordinarily free. The compression release valve makes an unusual noise when opened, reminiscent of the similar valve on a baby two-stroke, but nevertheless distinctive; a twitch of the valve lever is useful to warn pedestrians in traffic. While the engine is running itself in, its chief peculiarity by comparison with more familiar types is the phenomenally dogged way in which it slogs uphill at a countable rate of popping. Not for many, many years have I sat over an engine which went on pulling quite smoothly down to such incredibly low r.p.m. It is mounted in a Beardmore-Precision frame, and the pair make a most attractive combination.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Three Squirrels.

DURING the summer I have ridden three separate Scott Squirrels, two of which were supplied to humble and obscure persons in the ordinary way of business, and—much to the credit of the firm—were quite as hot as another delivered to our staff. When riding them a mute wonder assails me as to how they lost the T.T. For if they are possibly a mile or two slower than two or three ginger four-strokes along the open straight, their road-holding and control qualities make them simply invincible over roads which bend and undulate. I am a timid old fogey nowadays, but I can make any rider on any machine stretch himself when I tackle him over average or freak roads on a Squirrel. I suppose the explanation of their failure to lick the four-strokes in the Isle of Man is ignitional (another nice, new word). After all, when you have an explosion at every revolution, and are revving for hours and hours at about 4,000 r.p.m., the poor plug does not have much chance to dispose of the flames which lick it so continuously. But at least one plug merchant informs me that by 1924 he will have a plug which will remain cool and black in the jet of a welding blowpipe; so the Scotts will be out for blood, one presumes, in the 1923 race. In the meantime they remain the hottest and most comfortable lightweights on the road—for all this trio of Squirrels come out at under 200 lb.

Mechanical Flash Lamps.

A YEAR ago I penned some notes anent the chain or handle-operated type of flash lamps, which substitute a geared dynamo for the usual dry cell, and claim to be "inexhaustible." A shower of samples rained upon the office in response, and I promised to report in due course. I never like to look a gift horse in the mouth, but frankly I am not enthusiastic about either their economy or their reliability. The makers have been very good in repairing them gratis, but the pick of the basket has revisited

Occasional Comments.—

its birthplace thrice in the year. My heart is sour towards it, because I trusted to it in arriving at a favourite camping ground after dark; and I had hardly started to collect wood for a fire to cook my supper when its gears jammed. I now carry the dry cell type of flash; it is lighter, cheaper, and more reliable.

Signposting Through Towns.

ISN'T it time that motor cyclists began to make themselves felt in municipal administration? I have already ridden 6,000 miles this year, and in town after town I notice an absolute lack of any clear signs to direct the through traveller, some of the largest towns being the very worst offenders. The motoring associations do comparatively little to assist, perhaps because their members are largely car owners, and a car can so conveniently pause for enquiries. A stoppage is annoying to a motor cyclist who would wish to ride on serenely into, say, Manchester, until a large sign, "To Liverpool," caught his eye. In a few weeks town councillors will be seeking our votes. Couldn't we ginger some of them to attend to the matter? Incidentally, there are many towns which would benefit themselves as well as their visitors, since through signposting would switch a lot of traffic down bye-pass routes and relieve ancient streets which are far too narrow to be safe or convenient. This is the twentieth century. There is not a town in the country which is not traversed by hundreds or thousands of through travellers every year. Yet there is hardly a single town through which a stranger can find his way without considerable assistance. Even if the signs are in order, his experience of other towns makes the tourist so doubtful that he generally stops to enquire "between signs." I hope the A.C.U. awarded their £100 to a suggestion on these lines. Personally, as an everyday rider, I would not grudge any reasonable subscription to a body which would get this urgent job well done.

A Trap Somewhere?

I GET some funny letters.

The latest to hand runs thusly:—"Dear Ixion,—Is a 4 h.p. twin more powerful than a 4 h.p. single?"

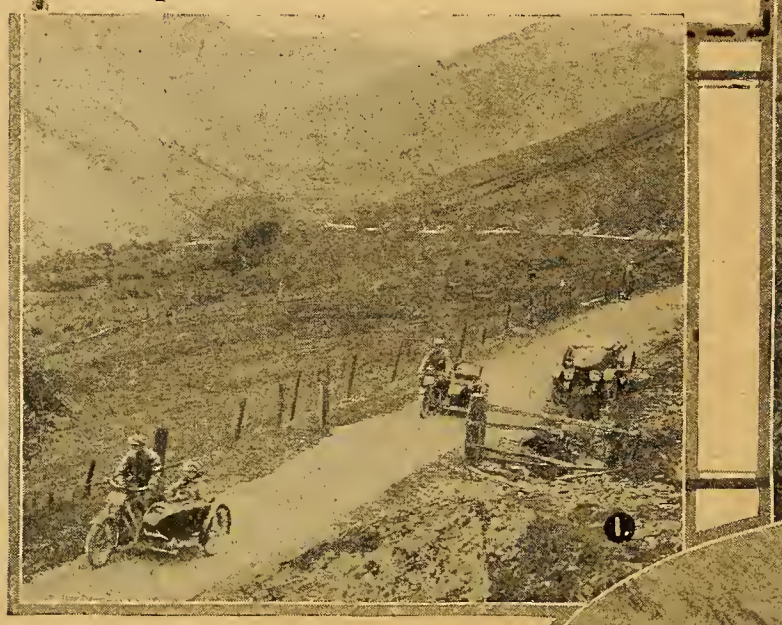
I will adopt the Socratic method, and reply by asking whether a pound of aviation spirit is lighter than a pound of Castrol R? But perhaps the questioner is not trying to pull my leg after all. In which case the answer is that with which papa always begins when sonny puts a poser, viz., "It all depends." If the 4 h.p. be maximum b.h.p. in both cases, the two engines are of equal horse-power. If on the contrary the 4 h.p. is a merely nominal rating, either of the two engines may be considerably more powerful than the other. It all depends who designed them, and with what end in view.

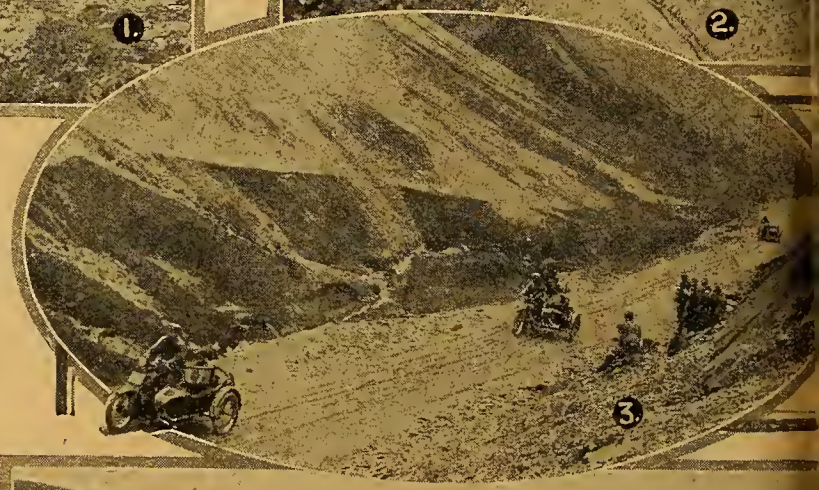
THE INDEPENDENT SPORTSMAN. In the pursuit of sports and pastimes the sidecar owner has an ever-ready aid to his pleasure. The golfer living in town can reach the links without irksome train or 'bus travel, the cricketer, too, becomes independent of all hired transport.

A Genuine Scandal.

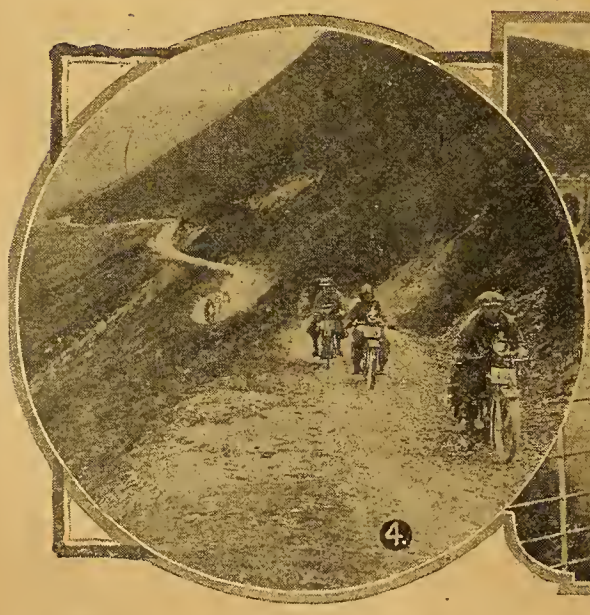
WHEN you spend £175 in hard cash for a brand new passenger outfit of reputed first grade, you expect good value. One of my friends laid out this sum, and was almost immediately troubled with misfiring. When he began to investigate the sparking plugs, he found they were W.D. disposal type, and part of a cheap line which has been handed on to the trade at 9s. per dozen plugs, wholesale. Within a week the American cloth seat cushion proceeded to crack. Finally, though he bombarded the firm with a letter, a registered letter, and a wire in the order named, over three weeks elapsed before they took any notice of his complaint; and even now they have not presented him with a new cushion or two new plugs.

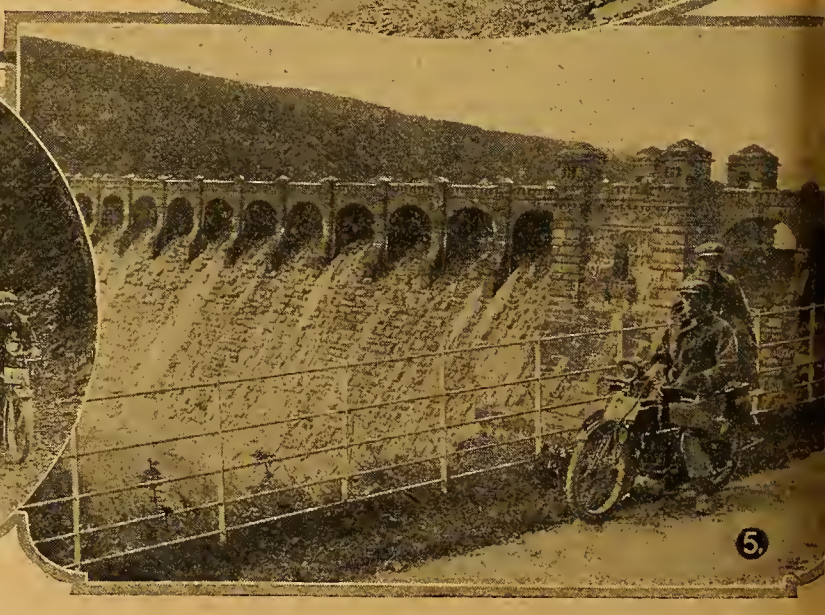
The "Six Days" Epitomised in Pictures.





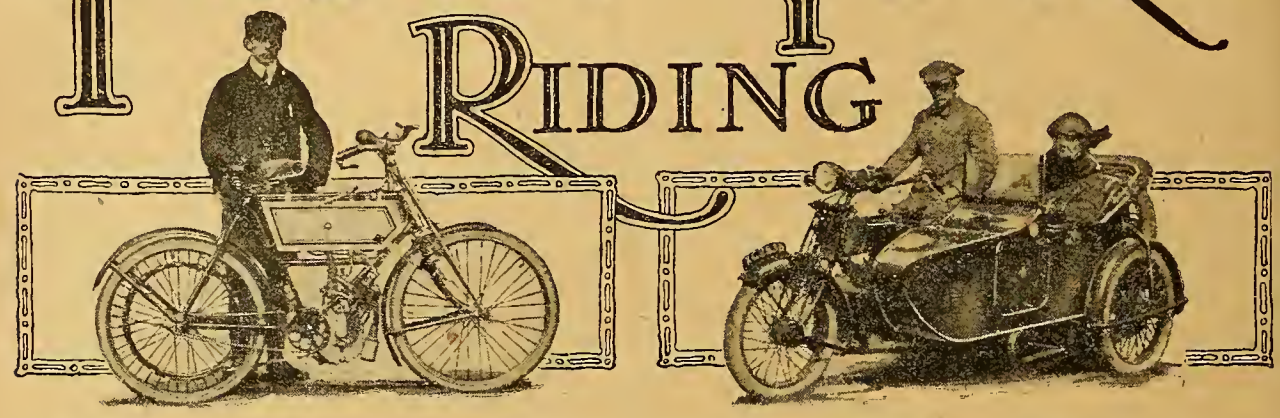
1. B. Burke (595 New Hudson sidecar) R. Brown (599 Sunbeam sidecar) making light of Bwlch-y-Groes. 2. P. L. Mayo (249 Coventry Eagle) S. M. Greening (346 Francis-Barnett) and R. Cooper (292 Allon) on the Long Mountain. 3. Another view of Bwlch-y-Groes. F. W. Giles (799 A. J. S. sidecar) and W. Bucknell (993 Matchless sidecar). 4. A trio of solo riders on Hirnant Pass. E. A. Barnett and S. M. Greening on 346 c.c. Francis-Barnett's and W. H. Hadfield (348 Raleigh). 5. The great dam at Lake Vyrnwy. G. Kimberley (349 James) has a cigarette by the way.





(6). H. F. S. Morgan (978 Morgan) making a fast ascent of Bwlch-y-Groes. (7). R. P. Ranson (494 Lea-Francis) and J. L. Hanman (494 Douglas) at the bend on Whiston Hill. (8). A pair of high powered flat-twin solo machines on Whiston Hill, G. E. Austin (688 Coventry Victor) and E. Foster (698 Raleigh). (9). Thrills for the spectators were provided in plenty on Rosedale Abbey Bank; T. C. de lay Hay (599 Sunbeam sidecar), P. Pehrson (599 Dunelt sidecar) and J. Harrison Watson (550 Triumph sidecar). (10). B. Kershaw (249 New Imperial) and G. Lovegrove (247 Radco) breasting Mow Cop.

TWENTY YEARS RIDING



1902—1½ h.p. Minerva. 1922—7 h.p. A.J.S. sidecar.

A Motor Cyclist Discusses many Mounts he has used since the days of the Werner.

AS an enthusiastic motor cyclist I find it interesting to look back upon machines I have owned and to notice the evolution which has taken place for a period extending over a number of years.

When photography and riding are combined an illuminating record can be preserved.

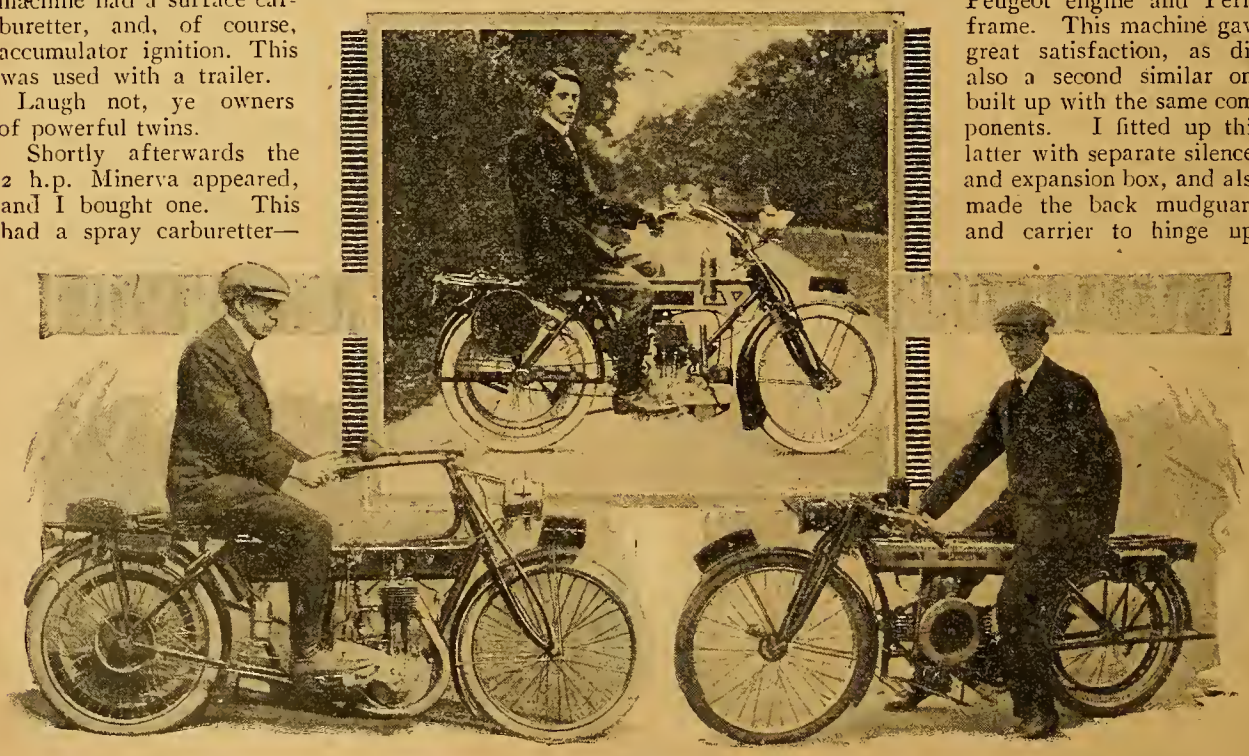
After various tentative trials on a 2¾ h.p. motor tricycle and a Werner front-driven motor bicycle, I first invested in a 1½ h.p. Minerva bicycle. This machine had a surface carburetter, and, of course, accumulator ignition. This was used with a trailer.

Laugh not, ye owners of powerful twins.

Shortly afterwards the 2 h.p. Minerva appeared, and I bought one. This had a spray carburetter—but the frames of both these Minervas were as high as a corresponding pedal cycle, and very unpleasant when cornering.

Locally Built Machines.

It is interesting to remember that when these machines were in use, number plates were unknown, licences not required, and petrol cost about 11d. per gallon. Horse-power was then increasing, and my next 'bus was built up for me locally with a 3½ h.p. Peugeot engine and Perry frame. This machine gave great satisfaction, as did also a second similar one built up with the same components. I fitted up this latter with separate silencer and expansion box, and also made the back mudguard and carrier to hinge up,



(Left). 1907—4 h.p. 2-speed Roc. (Top). 1911—3½ h.p. single geared Bradbury. (Right). 1913—2¾ h.p. 2-speed Douglas.

Twenty Years' Riding.—

thus affording easy access to the tyre for repairs. It seems a pity that present-day machines do not embody this feature when detachable wheels are not fitted. These Peugeot machines were built with much lower frames, and a great increase in stability resulted.

The old wicker sidecar shown attached to one of these machines was the first I owned—a very light affair, affording scant protection to the passenger. Well do I remember pushing off the outfit when starting, as there was no clutch, and only a single gear!

It is interesting to compare this with my present A.J.S. outfit—there being an interval of over ten years between them.

Pedalling Gear Abandoned.

The next machine—a 4 h.p. Roc, with two speeds and handle starting, was quite an advance in design, and was my first in which pedalling gear was eliminated. The seat position was the lowest I have ever experienced.

Following the Roc, I got a 3½ h.p. Bradbury, which I believe was in 1911. This outfit showed the great advance which had taken place in engine balance about that time.

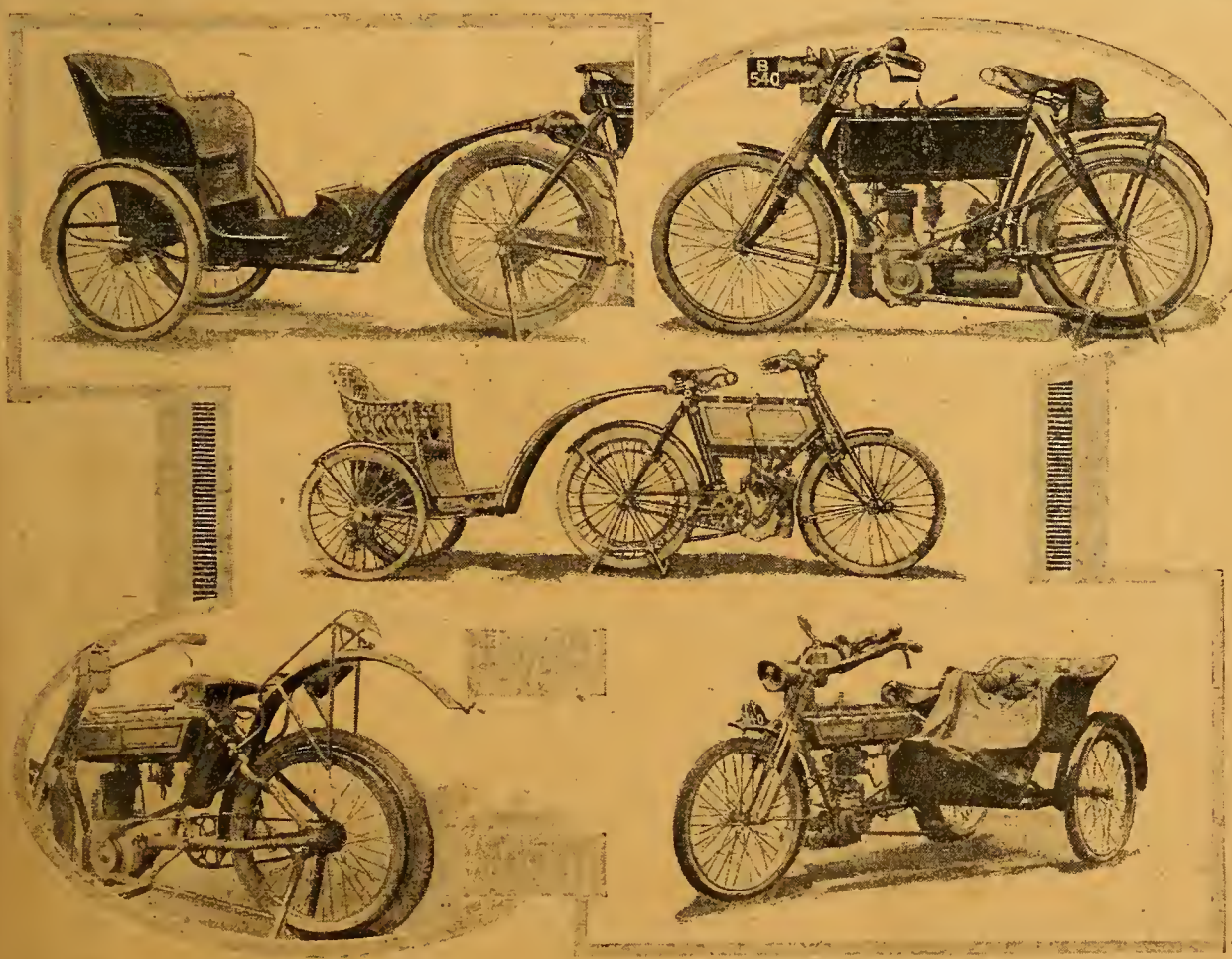
In 1913 I got a 2¾ h.p. Douglas, and immediately became enthusiastic over this handy little mount.

Between the Douglas and the next motor cycle, three light cars were owned, my present mount, a 7 h.p. A.J.S. sidecar, being then obtained. This machine afforded some interesting comparisons with the light cars, especialy as regards cooling and engine lubrication.

A Prophecy.

In my opinion, the future heavyweight will have an open frame, and a large pan seat, affording some support to the small of one's back, also enabling ordinary clothing to be worn. A steel pressing would extend up to the steering head, and the sides carried out for leg protectors as in the A.B.C. machine. The driver would then enjoy a little more comfort, as well as the sidecar passenger. It will be an interesting study to note future evolution, especially when the lessons learnt with aircraft design come to be even more adapted to motor cycle design than they are at present.

C. W. STILLMAN.



Coachbuilt trailer used with the 3½ h.p. Peugeot.

1903-4—3½ h.p. Peugeot built to the rider's specification.

1902-3—A 2 h.p. Minerva, with engine on the front down tube, to which was attached a wicker trailer.

1905-6—A Peugeot fitted with a hinged rear mudguard.

The Peugeot was the first of the writer's sidecar machines.

A MOTOR CYCLIST'S COUNTRY DIARY.

An Old Farmer's Views. School Children and their Sport. A Game of Hide and Seek.

By J. FAIRFAX BLAKEBOROUGH.

SOMEONE remarked the other day that sailing away on a good straight road, with the wind behind one, provided a sensation which he imagined could only be likened to that of a hawk in its "stoop"—as the downward journey to seize its prey is called in technical sporting language.

Those who have had much experience with aeroplanes and are also motor cyclists, aver that the sensation of motion through the air is quite different in the respective methods of locomotion. There is somehow a closer intimacy and a greater feeling of being a part of the vehicle in the case of the motor cycle than in that of the 'plane. A flying man once expressed this rather neatly when he said, "When I'm in my 'bus (why do aeronauts call their 'planes 'busses?) I feel to a certain extent dependent on *it*; when I'm on my motor bike I feel that it is to a great extent dependent upon *me*."

"He chose to be antagonistic."

At a Wayside Inn.

We called at a wayside inn the other day for lunch, and whilst we waited for the ham and eggs—always ham and eggs in isolated districts which only see a butcher once a week—we entered into conversation with one of the "corner sitters," whom one invariably finds at these rural hostelries. He chose to be antagonistic, and was not long in informing us that he considered all motor cyclists under a cloud. "We had a young farmer's son near here who had yan o' them motor bikes," he began, "and he took a young lass with him behind. They had a smash up—ran into a wall or summat. He sold his machine but, if you believe me, he's bought another, which we thinks is a scandal . . . In fact, it's the talk of the country how he can show his face on one again. They're going to be the ruination of half the young farmers is motor bikes. They go fleeing about the country instead of stopping at home and looking after things."

I ventured to suggest that if the accident had happened to the unfortunate young lady whilst she was being driven in a trap it would not have been considered against either sentiment or decency for the driver to have continued to be interested in horses and in driving and riding them. But the man in the corner couldn't see that the cases were at all analogous, and was firmly convinced that the growth of motor cyclists amongst the agricultural community boded ill for farming and was likely to unfit the coming generation for hard work.

We ate our ham and eggs amidst a continued stream of anathemas against motor cycles and motor cyclists, which at first was inclined to be amusing, but which eventually became irritating, and as we left we were cautioned not to "kill any of the school bairns," who, we were told, would be "laiking (playing) on t'road." Sure enough we *did* come across the school children, who had eaten their dinners, despite the cold, under the protection of a hedge where now lay their baskets. They were an excited group on the broad strip of grass on which their fathers and mothers had played before them, and, as one is never quite sure what either children or pigs will do when near a highway, we slowed down to pass them.

Cruel Sport of the Young.

Then our curiosity was aroused. There was a terrier in the midst of the children, obviously trying to worry something amid the plaudits and encouragement of the onlookers. So we pulled up—how much some motor cyclists miss on their rides by making "non-stop runs" almost an article of faith! It was a hedgehog the little terrier was endeavouring to kill—a "pricky back hotchen" as these children called him. They had found him amongst the dead leaves in a ditch, and the terrier turning up opportunely they had "set him on."

Talk about the peaceful country and all its refining influences! I know of nothing capable of much more systematic cruelty than the average village boy! Well, the dog's little nose was sorely pricked with the hedgehog's quills and, turn him over as he would, the dog couldn't catch hold of the animal's nose—which was his aim. Knowing that the end would be a game of football with the inoffensive "hotchen," I gathered him up in my handkerchief, to the surprise of the children and amid the protestations of the dog. Poor little fellow, he's somewhere amongst my strawberry beds now, and will be very useful in the spring as a slug-catcher.

Have you a garden, dear reader? If so, I advise you to bring a hedgehog home when you come across one during a country ride. It is a great asset in a garden, and an interesting little animal into the bargain.

Gypsies eat them and consider their lily-white flesh a delicacy after being enclosed in wet clay and put into a stick fire till baked. I once tasted them at a gypsy

Motor Cyclist's Country Diary.—camp high up on the Hambleton Hills—the home of the still more fascinating badger. We do funny things in our part of rural England (Yorkshire), and it is not at all uncommon to see our village butcher bringing a sheep or a calf to the slaughter in his sidecar. A snapshot of him with the not very accurate description, "Taking a sheep for an airing" appeared recently in a local paper, and rumour hath it that some old maids in this district immediately transferred their custom to such a "nice, kind, humane butcher," and even proposed an illuminated address.

"Never sure what children or pigs will do!"

Progressive Young Farmers.

I know of quite a number of young farmers who now daily use their sidecar to carry corn and cake to sheep and horses running out in pastures some distance from the homestead. One of these left it till rather late a few nights ago and was surprised to find on turning down the field road (which led to nowhere except turnipland and pasture) that he was being followed by another motor cyclist. On slowing up prior to arriving at the gate of the sheep field the other cyclist arrived on the scene and also pulled up. There was a mutual stare of astonishment and a mutual recognition. The second M.C. was a police sergeant from a neighbouring market town who was following up—or *had been* following up—a "suspect" on a motor cycle, and had been sure our innocent sheep-feeding friend was his man, and that a chase over hedge and field was in store for him in the dusk. Probably the intrepid sergeant was more relieved than otherwise; for his task was not likely to have been a pleasant one.

A Dog Story.

So much for the game of hide and seek on motor cycles along country roads which are a series of never-ending S's. You'll see from the foregoing we do have a little excitement of sorts in village life. This incident provided us with talk for two days—indeed till the vicar's wife's barking Pom was run over by the Squire's young son who rides his motor bike like the very—(bad word!). We all prayed most devoutly that it would never recover—but, bless your life, it's more cocky and persistent in its attacks than ever. Of course its days *are* numbered, and whoever is responsible for the good deed eventually will never dine at the vicarage again! However, he will suffer in the general cause of the community.

THE MOTOR CYCLE IN SCANDINAVIA.

Reliability Trials Growing in Favour; British and American Machines.

A SCOTSMAN motor cyclist resident in Sweden sends some interesting notes on the development of the movement in his adopted country.

"Before 1910," he writes, "there were very few motor cyclists, mostly riding F.N., N.S.U., and Durkopp machines. From then onwards to 1914, with the improvements in design, motor cycles and reliability trials became popular. There used to be a 3-day reliability trial over a 900-mile course in the spring. This was a most strenuous trial, and used to be a tussle between a 3 h.p. Enfield and the Wanderer, these two makes being extremely popular at that time.

"Reliability trials have always been popular, and lately short distance speed events run off on the ice have become very fashionable. A couple of the more important reliability trials are run in the late autumn and winter, and very adverse weather and road conditions are often encountered. The severity of these trials when the roads are deep with snow might be realised by the fact that over a 200-mile course the leading competitors may arrive at the finish 8-10 hours after schedule time.

"At the present time almost every machine one sees is of American make; the Swedes are very fond of being astride something big in horse-power ratings, and a lot of solo riding is done on big American twins.

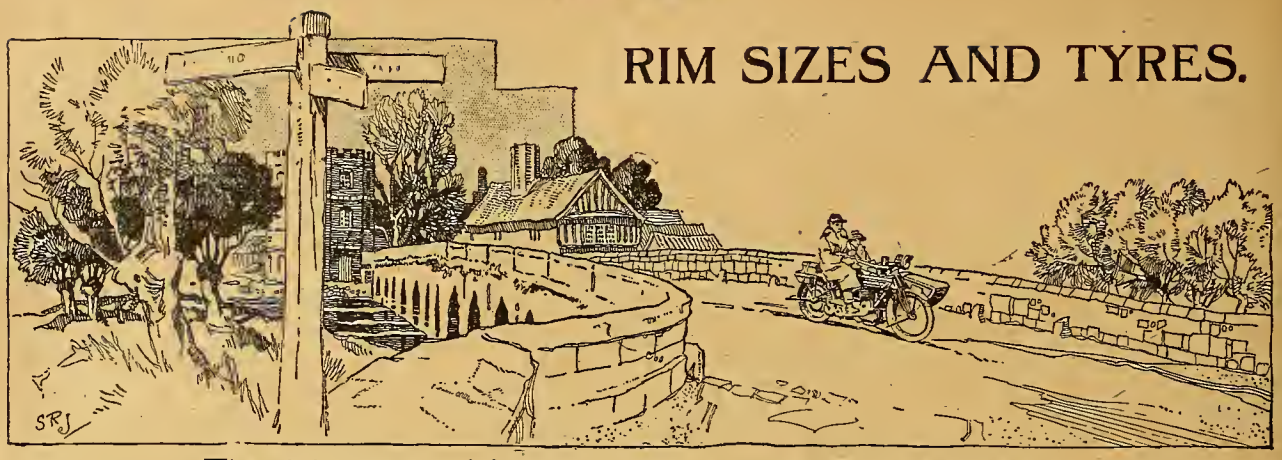
"One of the reasons for this is no doubt the comparatively low price at which American machines can be bought for here, and the consequent good value for money. Machines like the Indian Scout and Reading Standard are sold at £105. On the other hand, some of the agents are asking rather high prices for British machines. Last year the prices of two well-known British singles which were the same in England showed a difference of £40 here.

"The latest model Swedish-built 'Huskvarna' is a first-class machine. With a twin-cylinder engine of 550 c.c., all-chain drive, 3in. tyres, excellent mudguarding, high quality and finish, and attractive appearance, it is sold at £105, and why the Swedes buy equivalent American machines when they can obtain the home-made product at the same price can only be accounted for by their preference for everything foreign.

"On account of the comparatively low price of the American machines, the British manufacturer no doubt finds himself up against hard competition, but the British product has a great reputation for quality, and there is always a market for a high quality article. Sweden has not a big population, but she has plenty of motor cyclists; last year's registration figures show one motor cycle for every 330 inhabitants.

The lightweight is getting more popular, and that is where the British manufacturer should grasp his opportunity, as he has the market almost entirely to himself.

The British machines are known for quality, but what is important for Swedish conditions is: heavy tyres, plenty of clearance in the forks for the fitting of anti-skid chains to the wheels for winter riding, and an oiling system which will work in a temperature much below zero.



RIM SIZES AND TYRES.

The Advantages of Large Tyres Outweigh Their Drawbacks.

AT the present time there seems to be a more or less general realisation of the fact, which has been well-known to many for a long time, that large tyres are a real advantage both in the matter of freedom from punctures and other tyre trouble and in the increased comfort they afford to the rider of a motor cycle.

This new appreciation of large tyres has had a good effect upon the design of 1922 machines, and has caused motor cycles in general to be more adequately shod with sensible tyres than ever before, but this is not all. It has also caused motor cyclists "to sit up and take notice," with the result that many of them, when a new tyre becomes a necessity, are looking around for larger tyres to fit existing rims, provided that their machines have sufficient clearance between the forks and mudguards to allow of these being fitted.

Confusion of Sizes.

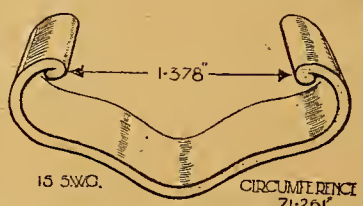
Now there has been in the past, and it is feared that there still is, a large amount of confusion in the standardisation of rims and tyres. It is remarkable, indeed, that in many cases the sizes marked on the tyres were very often not the actual sizes, but were called the nominal sizes, the actual sizes being as a rule less than the nominal; some makers also produced "oversize" tyres for several of the rims.

Further, the tolerances permitted in both rims and tyres were unduly large, and it was never known whether a new tyre would be exceedingly tight and difficult to place in position or quite loose and hardly secure.

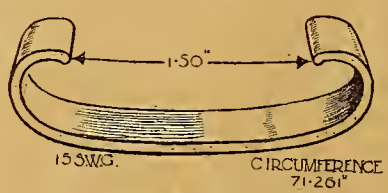
Standard Sizes.

Much discussion took place before the war with the object of remedying this state of things, and doubtless if the war had not set the world back many years there would now be no uncertainty, but, as things are, even now some of the old patterns and sizes are still in use. The results of these deliberations were published by the Engineering Standards Committee in April, 1915, but it was many years before they began to take effect, and they have never come into the general use to which their merits entitle them.

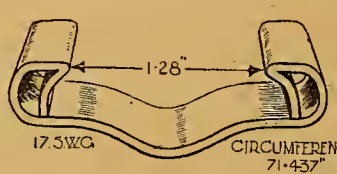
About five years later it was felt that a smaller number of standard sizes would be sufficient to meet all practical requirements, and, although the rim known as D2, which had been introduced in 1915 to take 26 × 2¼, 26 × 2⅜ and 26 × 2½ for 2¼in. tyres, had been generally accepted, a new rim with a round base to accommodate these sizes was put on the market. This rim is known as No. BB, and is of the same circumference as the D2 rim, but is slightly wider.



The D.2 Standard Rim, 26 × 2¼in., 2⅜in., 2½in. for 2¼in.



The B.B. Round Base Rim, 26 × 2¼in., 2⅜in., 2½in. for 2¼in.



The Old 26 × 2¼in. Rim, 26 × 2in., 2¼in., 2⅜in., 2½in. for 2¼in.

Fitting Larger Tyres.

The question now arises as to what course is open to the motor cyclist who wishes to fit larger tyres than those with which his machine was originally equipped. This will, of course, depend entirely upon what rims are built into his wheels and what size his present tyres are. If his rims are No. D2 and his tyres 26 × 2¼in. he can obtain greater comfort by fitting "26 × 2½in. for 2¼in." tyres, but beyond this he cannot go in most makes of tyres. I have known 28 × 3in. tyres to be fitted to the old 2¼in. rim and the D2, which is almost identical with it in circumference but slightly wider between the lips. These 28 × 3in. tyres are made for American rims, and if fitted to the above rims the use of three security bolts is strongly recommended.

On lightweights fitted with 26 × 2in. tyres, 26 × 2¼in. or 26 × 2⅜in. may be mounted on the same rims.

Many tyre manufacturers make 26 × 3in. tyres suitable for the "old size" 26 × 2½in. rim; this rim measured 66½ to 66¾in. in circum-

Rim Sizes and Tyres.—

ference over the bead, which means that they are something like 1½in. less in diameter than the D2 rim, and therefore able to accommodate tyres of a larger section. Also a 700 × 80 mm. tyre can be fitted to a 650 × 65 mm. round base rim, and even 710 × 85 mm. have been fitted on this size of rim.

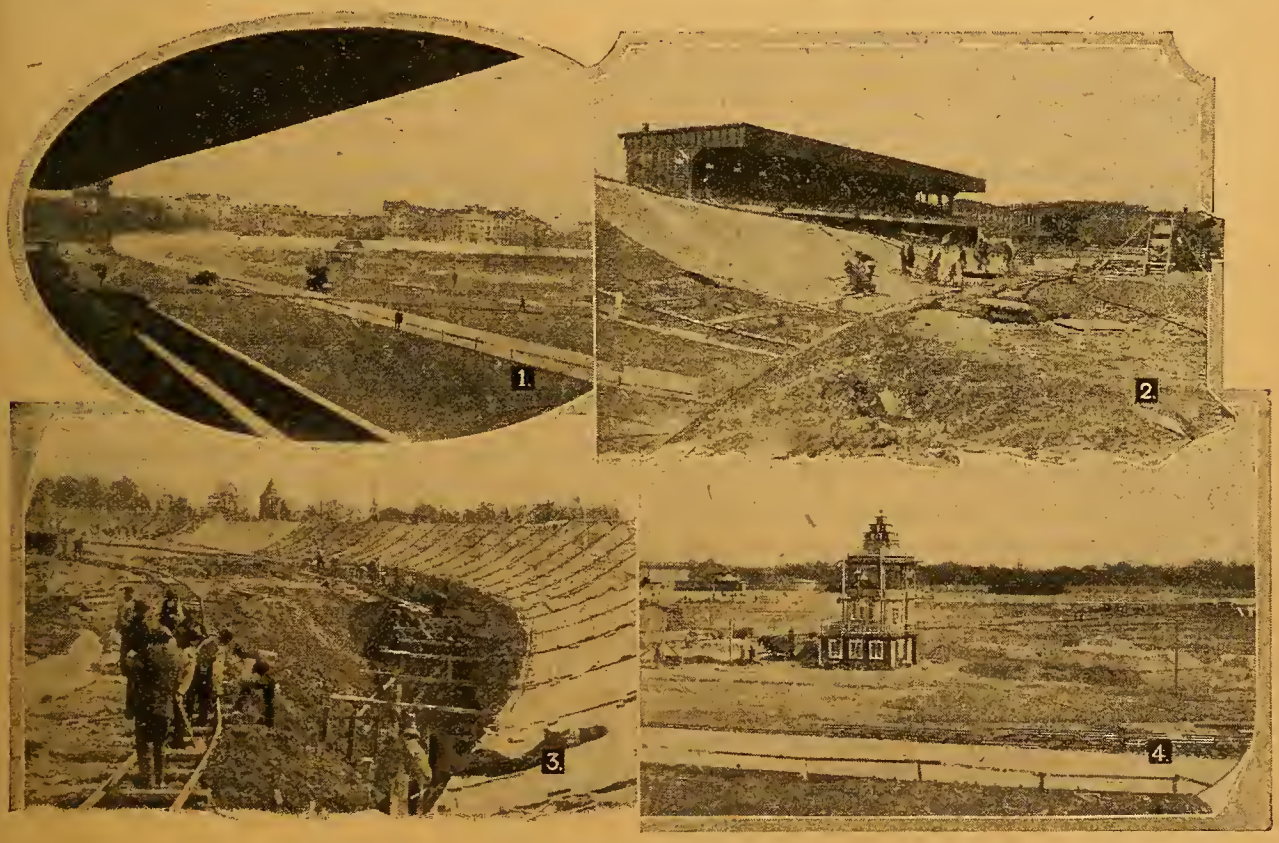
When purposing to fit tyres of larger diameter or section it is strongly recommended that the motor cyclist should write to the tyre makers and send them accurate dimensions of the rims and thus ascertain whether the larger tyre can be fitted in safety. The fork and mudguard clearances should also be carefully noted, for on some machines there is very little room to spare, and a mudguard with a small clearance can easily be blocked with mud to the detriment of the tyre and the running of the machine.

The Advantages of the Bigger Sizes.

The great advantages of the larger tyres are undoubted and very plain to anyone who takes the trouble to give any attention to this point; the larger diameter and circumference cause the wheel to drop a little less into potholes and considerably lessen the effort which is necessary to make the wheel run over an obstruction on the road or rise out of a pothole; the larger section very greatly increases the comfort of the rider and the greater thickness of the tread minimises the liability to puncture to a marked extent. The disadvantages are found in the greater weight of the tyre, a slightly increased tendency to side-slip, and a liability to roll when turning corners; this last is more noticeable on a sidecar outfit than when the bicycle is ridden solo, which perhaps is fortunate, for the slipping which a roll might cause and the unsteady feeling which it produces are of less moment when a sidecar is fitted. Both rolling and the possibility of punctures can be minimised by blowing up the tyres rather harder than would be otherwise necessary, and this also helps to prevent side-slip, but something is lost in the matter of comfort.

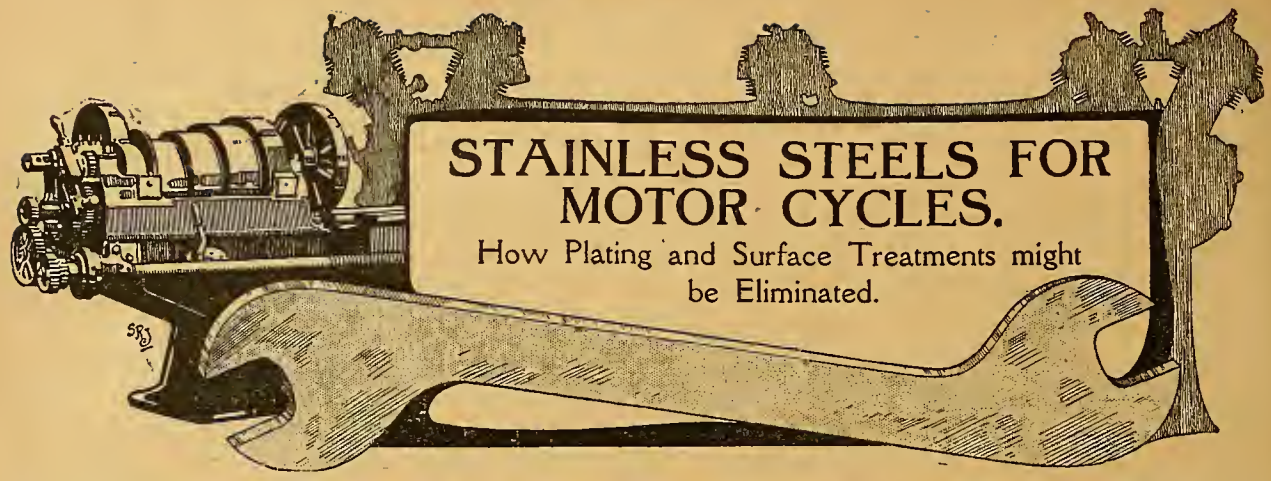
Taken all in all there is no doubt that the advantages far outweigh the disadvantages, and there are even some who maintain that large tyres give an increased comfort to a motor cycle which is comparable to that provided by a spring frame. It is, too, most desirable that as much road shock as possible should be absorbed by the tyre, for in this manner it is not transferred to any part of the machine.

The amount of roll given by big tyres will depend largely upon the rims to which they are fitted; if the rims be wide there will be practically no roll, and it will not be necessary to resort to over-inflation and thus sacrifice comfort, but when they are on narrow rims they must be blown hard. AURIGA.



PREPARING A RACING TRACK.

Czecho-Slovakia is a country where motor cycle racing will soon be afforded the prominence it is given in America. In the U.S.A. special tracks are provided, in which the competitors are always in view of the spectators. The illustrations depict the Prague track under construction. (1). From the grand stand. (2). Laying cement over the wooden base. (3). Showing the trestle supports. (4). The timekeeper's stand.



STAINLESS STEELS FOR MOTOR CYCLES.

How Plating and Surface Treatments might be Eliminated.

ALTHOUGH it is probably true that most people have heard of the stainless steels available on the market to-day, yet many are extremely sceptical about their stainless, or rustless, properties, while others even consider that these steels do not actually exist and that the various names given to them and implying resistance to corrosion are merely clever advertisements employed to hoodwink the greater mass of the unscientific British public.

Furthermore, a very prevalent impression amongst the people who do believe in the corrosion-resisting properties of these steels is that this is their only valuable property, and that they are of no further commercial value.

What Is Steel?

Before considering stainless steels, and so that we may more clearly understand them, let us first see what ordinary, commonplace steel really is. Steel is essentially an alloy of carbon and iron. Incidentally it constitutes one of the countless examples which show the wonderful properties of carbon, undoubtedly one of the most remarkable and valuable elements known to mankind. When it is remembered that the beautiful diamond is composed of pure carbon, exactly the same as the soot in our chimneys; and that carbon is the base of most drugs, high explosives, perfumes, beautiful dyes, and many other things, one realises what a wonderful element it is, and the properties it imparts to iron, when alloyed with it, are not its least marvellous and peculiar asset.

There are, of course, many different kinds of steel, and the nomenclature applied to them is based on their carbon content, thus :—

Dead mild steel contains	... ...	0.05 to 0.15%	carbon
Mild steel	,, ...	0.16 ,, 0.35%	,,
Medium steel	,, ...	0.36 ,, 0.45%	,,
Medium high steel	,, ...	0.46 ,, 0.65%	,,
High steel	,, ...	0.66 ,, 0.9%	,,
Extra high steel	,, ...	0.91 ,, 1.5%	,,

There are always other elements present in steel, such as manganese, and impurities such as silicon, phosphorus, and sulphur; and should a steel contain such metals as nickel, chromium, tungsten, vanadium, molybdenum, and cobalt, it is known as an "alloy steel," or in some cases as "tool steel."

We are now in a position to understand the composition of stainless steel and its relationship to other steels. Stainless steels are alloys of carbon, iron, and chromium, and if we add 12 to 14% chromium to each of the steels given in the list above, we have a complete list of all the stainless steels in use to-day. We have, therefore, arrived at the fact that stainless steels are actually quite different from ordinary steels, and that their wonderful properties depend upon the 12 to 14% chromium which they contain. It must here be pointed out very definitely, however, that *stainless steels are not stainless unless they receive a special* treatment. This statement, although possibly sounding somewhat paradoxical, is, nevertheless, perfectly true.

If we take a piece of a stainless steel ingot, or rolled bar, and polish it, then expose it to the atmosphere, it will rust almost as severely and easily as will ordinary "common or garden" steel. This fact accounts for a great deal of the scepticism with which a goodly number of motor cycle manufacturers regard these steels, and it cannot be too strongly stated that stainless steels must be correctly heat treated before they will exhibit their corrosion-resisting properties.

Stainless Properties Depend on Heat Treatment.

Fortunately the heat treatment process is very easily carried out. It consists of merely heating the steel to a "bright red heat" (*i.e.*, 900 to 950° C.), and then quenching it off in water or oil. This treatment renders the steel quite stainless but somewhat hard and brittle (*i.e.*, with a tensile strength in the neighbourhood of 100 tons per square inch), and so if a certain amount of ductility be required it must be reheated to a temperature below a dull red heat. By merely altering this reheating temperature, a host of different mechanical properties can be obtained, ranging from 110 tons per square inch tensile, with little or no elongation before the breaking point to 45 tons per square inch tensile, with perhaps 20 to 25% elongation.

We have heard a good deal recently about stainless iron. This name is rather misleading, because actually stainless iron is only a dead mild stainless steel (*i.e.*, it contains 12 to 14% chromium, the same as do other

Stainless Steels for Motor Cycles.—

stainless steels), but the carbon content is similar to that found in ordinary wrought iron, which is anything up to about 0.15%. So-called stainless iron, however, is a very useful alloy, and is much more easily worked (*i.e.*, forged, rolled, or stamped) than are the higher carbon stainless steels. It has other applications on account of the fact that after forging small sections and allowing them to cool in air they are comparatively soft and can be machined without annealing. This is unlike the other stainless steels, which can practically be considered as "air hardening" steels, by which is meant that they will harden to about 100 tons per square inch tensile by merely heating and cooling in air.

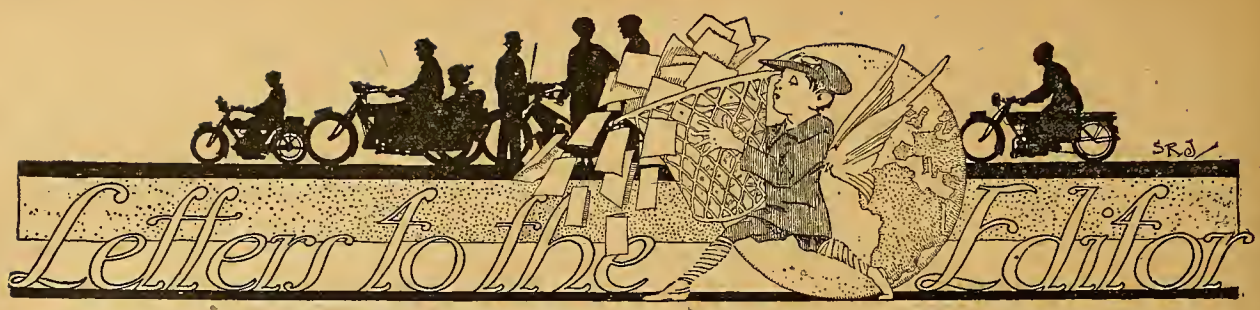
Practical Applications.

Just imagine, for example, if those "beastly" rims, spokes, handlebars, controls, etc., were manufactured of this alloy, we could plug along for hours in pouring rain—or even run along the sea shore in the shallow salt water—and when we had had enough we could put the 'bus on the stand *without* drying it down or touching it in any way, and leave it overnight with the absolute assurance of finding it perfectly free from that horrid red rust so frequently seen to-day. Or, again, we could give it a good hose down in a few minutes and then leave it. When one thinks of the time this would save—it is the drying which takes 90% of the time in cleaning a machine—one realises just a fraction of the advantages we would obtain if manufacturers could only be persuaded to adopt this steel and do away with the unserviceable silver- or nickel-plate which is so dear to their hearts.

Yet another point of advantage possessed by this steel to which attention must be drawn is its strength at high temperatures. Ordinary steels and most alloy steels, even if heat-treated to some 120 tons per sq. in., when heated to the temperature of the exhaust port of a motor cycle engine are very brittle, and their tensile strength drops to the extraordinarily low figure of about 7 tons per sq. in. Stainless steel at the same temperature gives a tensile strength of at least twice this figure, which fact speaks for itself and accounts to some extent for its popularity for the manufacture of exhaust valves.

Of course, there is a fly in the ointment—stainless steel is comparatively dear at present, but make the demand, and the cost will drop; besides, consider the saving in plating. KEMIST.

Those fortunate motor cyclists who are at present leisurely touring the Scottish Highlands are indeed to be envied. The illustration, which depicts a scene near Loch Tay, conveys a slight idea of the magnificent scenery. This road is well known to Scottish Trials competitors but during the strenuous "Six Days" the scenery cannot be appreciated as it can on an ordinary tour.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

TANK CORPS MOTOR CYCLISTS.

Sir,—I was extremely pleased to read your small paragraph in the issue of *The Motor Cycle* of August 17th in connection with the above, and I feel confident that if a big reunion of motor cyclists who were attached to the Tank Corps can be arranged, a very successful and pleasant meeting would result, and I should be only too pleased to give any assistance in this matter within my power.

I might state that I was one of the original members in this body, belonged to A Battalion H.B.M.G.C., and was stationed at Thetford, and from there went to France in September, 1916, and then on to the Somme, and I should very much like to have the opportunity of meeting some of the old friends of this battalion. W. PRATT.

Regimental No. 75102.

TWO-STROKE PHENOMENA.

Sir,—I am interested in the article on "Two-stroke Phenomena" in your current issue, but must offer my sympathy to your contributor for the extraordinary machine he possesses. I also run a 1921 "Levis," which, unlike his, does not four-stroke unless either the jet is too big or the engine over-lubricated. With an "economy" jet it functions perfectly at a small throttle opening on any down grade and at any speed above five miles per hour on the level (both with a gear ratio of 4⅜ to 1). It has never misbehaved itself so far as to six-to-sixteen-stroke, and I should get off and open my tool kit if it did.

The "profound contrast" between a four-stroke valve and a two-stroke port is to my mind a fallacy, but one which often appears in print and conversation. The duration of opening is about .8 in favour of the four-stroke, but in engines of similar capacity the effective area is in favour of the two-stroke, and the question resolves itself into an argument as to the respective merits of duration and effective area. As the duration is mechanically operated in each case, and also the only other factor to be considered when opening the throttle is atmospheric pressure, which is identical in each case, proportionate working must take place from the start right to the limit of the engine's speed. I do not see, therefore, why your contributor's theory can explain any variation from the normal functioning of a two-stroke. If his machine is over-running his engine on a down grade, he is obviously under-geared. I quite agree with his remarks about the release valve and its tale-telling properties, and I have also observed the rattling sound he mentions. My experience, however, has forced me to conclude that a change of plug is desirable and not more oil.

Obviously a two-stroke engine will run perfectly in either direction, the only limiting factor being the magneto.

To my mind the retarding influence to the development of the two-stroke is the absence of a carburetter designed specifically *for* the two-stroke engine.

If such an instrument were designed, it would be applicable to the four-stroke engine also. There is a certain mixture of petrol vapour and air which is correct to obtain the perfect detonating charge necessary to make the two-stroke do its intended work, and *the* carburetter would be one which gave a constant mixture at all throttle openings. At the moment, if I require more than 50 m.p.h., I must put in a jet which causes four-stroking up to about 12 m.p.h.

On the other hand, if I two-stroke at 5 m.p.h., I cannot reach much over 40 m.p.h. at full throttle.

It must be understood that the statements above are not intended to convey the idea that the inlet port of a two-stroke is the alpha and omega of its design; but your article makes no mention of exhaust and transfer, so I do not deal with them. I am now trying out the Hanwell Universal small-end, for which a patent has been sought, and hope to get better results with this fitting. As its name implies, it is a universal joint, and enables the piston to follow the cylinder without pulling the connecting rod out of the vertical. I can now remove my "Levis" cylinder without taking the tank out of the frame.

I am afraid I have encroached on your valuable space, but I am not alone in my opinion that the two-stroke is the future power unit, and I think that the articles and discussions on the subject are to be welcomed. In conclusion, I will assert that the reason one hears scornful remarks on the type is that there is not one repairer in a hundred who knows anything about it. F. W. FRASER.

THE A.C.U. AND SOUTHSEA SPEED TRIALS.

Sir,—Referring to the letter in your last issue from "Not a Member of the A.C.U.," may I entirely agree with everything he says? It is, as he says, "real childish." I have been a reader of *The Motor Cycle* since 1919, and since that date have always wondered why we never had races along the Southsea front, which, in my opinion, is an ideal speedway.

We were all overjoyed at the thought of having the chance of seeing some up-to-date sport; and it would just have given the Carnival an extra event which even non-motor cyclists would have enjoyed. PUSH-BIKE.

Southsea.

A group of motor cyclists attached to the Electrical and Mechanical Staffs at the Central Power Station Basrah Iraq Mesopotamia. All the machines are Triumphs.

PRAISE OF THE TWO-STROKE.

Sir,—Can you spare me space for a short account of my two-stroke experience? It may interest others and be of some use.

Until recently I have held the opinion common to many that the baby two-stroke, while being an admirable "potterer" for town work, was quite unsuitable for strenuous distance work. However, recent experience has changed my views. Last March I purchased a six-year-old New Hudson 2¼ h.p. two-speed two-stroke (baby)—my fourteenth machine. I immediately started using it for my journeys (I am a traveller), and to my surprise it answered all my requirements, taking both short town rides and long country journeys with equal ease and comfort. Since March I have covered 4,500 miles, with a petrol consumption of 135 miles to the gallon and total consumption of lubricating oil just under 5 gallons. Tyres and belt seem very little worse for wear than when I had it first, while total repairs came to 2s. 6d. for new magneto chain and 2s. for two spindles for the front springs, total 4s. 6d.; these last did not break, but were somewhat worn, so I replaced. I can do 30 to 35 miles an hour, but at that speed she is inclined to overrun; the best speed for a journey is about 25 miles per hour. For a man of my age (53), and a traveller, a better machine could not be wished for. "O.B."

Blundellsands.

DEVONSHIRE'S NEW COAST ROAD.

Sir,—May I be allowed to supplement the article entitled "A New Coast Road" so far as it touches the route from Exeter to Torquay?

If the tourist desires to pass along a road much favoured by char-à-bancs, running through several villages, and having little to recommend it in the way of sea or moorland views, then by all means let him take the coast road to which preference is given in the aforementioned article.

In my opinion the following is by far the best route:—At Alphington Cross, one mile from Exeter, take the right fork (for Torquay). First village Kennford; one mile beyond take left fork up Telegraph Hill. From top of hill, two miles, take left fork (Teignmouth). Straight into Teignmouth. Cross Shaldon Bridge, and again straight for Torquay.

This route is recommended as being the shortest and by far the most beautiful, as it affords the most glorious views both of the sea and Dorset coast on one side, and of Dartmoor on the other. Again, this route is not so 'bus-ridden as the other, and it avoids Newton Abbot; indeed the only places it touches are Kennford and Teignmouth.

Telegraph Hill is less than half a mile in length, and as regards gradient, is easily surmountable. It is worth one's while to stop at the top of the hill to get the sea view on the left. Again, one mile or so above Teignmouth, look down to the right for a view of the sea coast, the Teign estuary, the quaint old village of Shaldon, and the valley of the Teign.

D. BRIAN CHAMBERS.

GOGGLES AND HEARING.

Sir,—*Re* the above, I would like to say that I never managed to wear goggles during my service in the Royal Flying Corps, and did some 1,000 hours day and night flying.

I never felt safe with them on, and they seemed to dim the whole of my faculties, and the same applies when motor cycling, though I do wear them in dust.

I am sure, however, that this only applies to few, as very few pilots indeed worked without them in the squadrons to which I belonged, and I never met anyone else similarly affected.

With reference to the many letters and articles on the Peak District, I would like to recommend to your readers the beauties of Lathkil Dale. I have never seen anything more beautiful; but let the rider who goes there see that his brakes are highly efficient, and his engine pulling well, as the hill down the valley side is very stiff.

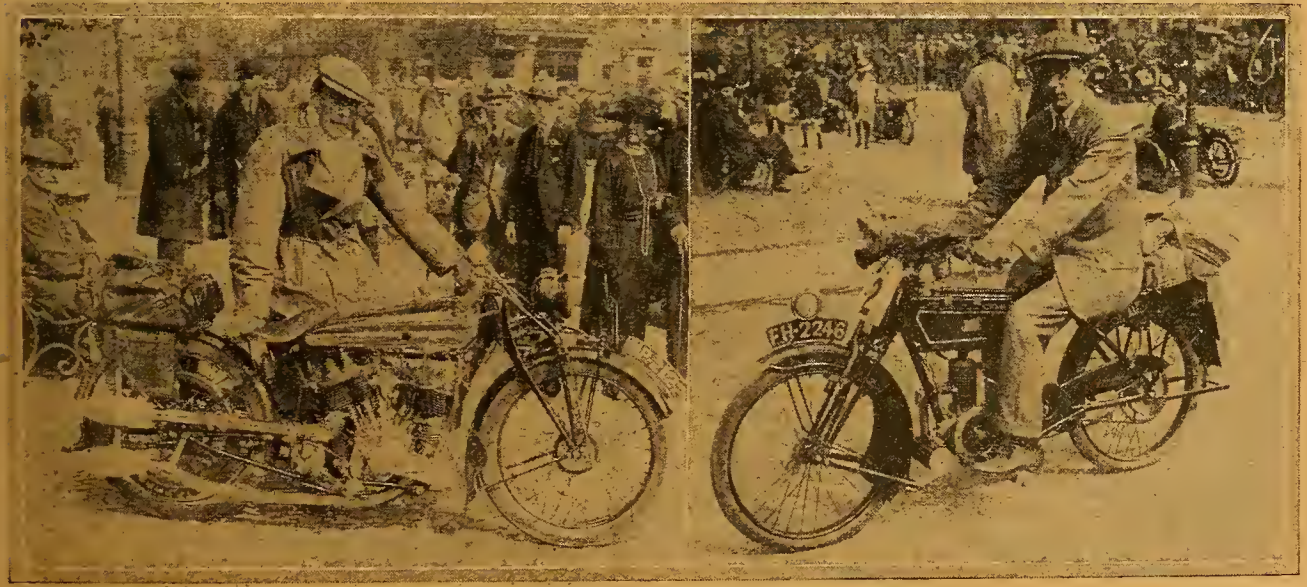
EX-CAPT., R.A.F.

Sir,—I am extremely interested in the discussion going on in your columns with regard to goggles and deafness, and, as you ask medical readers to contribute, may I as one offer a few remarks?

During the war I put in a few hundred hours of flying, and on looking back I can remember no occasion on which deafness occurred through the wearing of the goggles which I still use for motor cycling.

Like your other correspondents, I have noticed the deafness when motor cycling. If I may venture an opinion of the cause, I think it is largely due to the restricted lateral field of vision caused by ordinary goggles.

Sounds in motor cycling come usually from the rear or flank (if the sound of the engine be excluded). Both of these positions are usually out of the field of vision when the eyes are looking forwards out of goggles. In the air practically all the sound comes from the engine, *i.e.*, from the front usually—in the field of vision. The only other sounds



THE SIX DAYS TRIALS—A CONTRAST IN SIZES.

George Brough with the new 976 c.c. Brough Superior.

The smallest machine in the trial—the 169 c.c. J.E.S. R. P. Purnell is the rider.

are occasional shouts from one's observer, but he usually precedes these by a friendly smack on the back. As a pilot's head was continually turning, it is difficult to say whether "Archies" were more easily heard in front or not.

As a medical reader, may I suggest that, as the secondary hearing and sight centres of the brain are very closely connected by communicating nerve fibres, the temporary restriction of one sense, as caused by goggles, affects the other. This must not be confused with what happens to the one sense after the complete loss of the other.

The pressure of elastic round the ears and the wearing of a helmet has only a mechanical effect in closing the ear.

Inverness. N.U.T.

UNCERTIFIED ELECTRICAL TIMING.

Sir,—Your correspondent, "Interested" has been at some pains in raising the question of the accuracy of the Ferodo Electric Timing Gear, and incidentally that of the apparatus of somewhat similar character used at Brooklands.

We are quite aware that fractional errors must obtain even in the very highest class of time recorders, but we are quite satisfied with the makers' guarantee that the fully compensated clock supplied with our instrument has the minimum of error mechanically possible. If there is an error in lag or gain of 1 second in 4 hours, what perceptible or measurable lag or gain can there be in brief intervals of from 24 seconds to 2 minutes, during which the instrument is normally in use? In any case, the personal element is eliminated, and the times recorded are consistent in every case.

We do not see how it is possible to test the accuracy of any times recorded—certainly, we should not be prepared to accept the evidence of even the most experienced timekeeper with the best watch obtainable, since our instrument records divisions of time impossible with a watch. Again, the perceptive faculty of the human eye cannot appreciate differences of movement in excess of 1-16th of a second. It is, therefore, impossible that an observer can actually see the wheels of a vehicle crossing a line at a velocity of, say, 29 yards per second, which is the approximate distance travelled in one second at 60 miles per hour.

We are not experts in connection with split second chronometers, but it occurs to us that we have seen no times recorded with watches by divisions of seconds other than 1-5ths; in this there may be considerable error, for it is quite possible that two motor cycles or cars at the finish of a half-mile timed event may be running at 80 m.p.h. and each given times of 25 seconds, yet one may have accomplished 24.85, the other 25.15 seconds—the former would be about 13 yards faster. It would seem to follow that for recording high velocities, that electrical contacts are essential in conjunction with an instrument making a visible and permanent record of seconds or half-second intervals, which can be very finely subdivided—quite easily down to 1-16th of a second.

We agree that the actuating clockwork should be calibrated from time to time by recognised authorities.

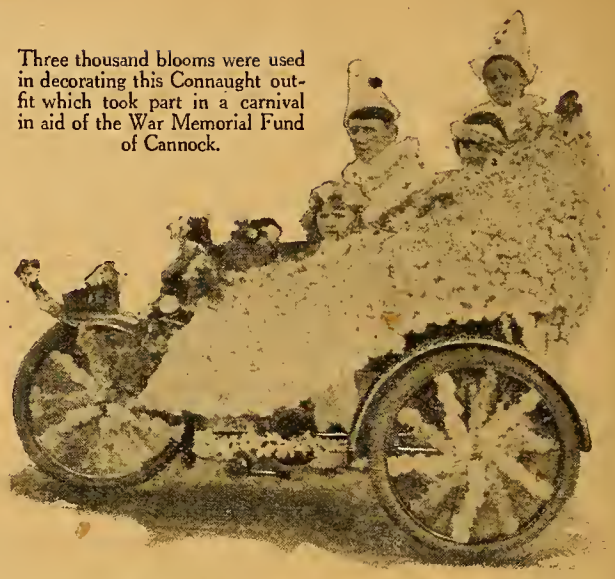
Yours faithfully, FERODO, LIMITED.

BRISTOL'S FREAK HILLS.

Sir,—In my letter *re* the above, which appeared in your issue of 3rd inst., I stated that East Dundry, Ubley, and Burledge hills were not considered "freaks"—in any way—by the Trials Committee of the Western Centre Auto Cycle Union. These climbs were included in the course of the "Arctic" Trial held on April 1st, 1922, and as prior to the event we had stated in the Press that no freak hills would be on the route, I was anxious to correct the impression which would be gained from your report of the Bristol-Bath Inter-Club Trial, namely, that possibly we had not acted in good faith. I further stated that the Bristol and Bath Clubs did not take part in the Arctic (*as clubs* being understood), though I might here add that the few members who did ride, did well.

From the letters which appeared in your issue of 17th on the subject, it seems that the writers have obviously ignored the object of my letter, making myself the subject of a personal attack in a way which I should term "not cricket," on which point I leave your readers to judge.

The only two occasions on which I have negotiated these three hills in competition were the Bristol-Bath Inter-Club



Three thousand blooms were used in decorating this Connaught outfit which took part in a carnival in aid of the War Memorial Fund of Cannock.

Trial of 1921, and in a recent club half-day event run by the Weston Club. In the former I rode a big 7 h.p. A.J.S. solo, and, unknown to myself, I was told that momentarily I touched the ground with one foot on East Dundry on the first circuit only. Burledge was taken for the most part on top gear, and Ubley on middle. In the more recent trial I rode my 3½ h.p. Sports Douglas—which then had some 25,000 miles to its credit—and, due to the heavy overnight rainfall, afternoon sun, and a much-worn back tread, I found it quite impossible to obtain any grip, without the use of chains, on Burledge Hill. I did not stop my back wheel at all, and after much hard work, aided by an engine which seemed quite fresh after nearly 15 minutes' revving on the climb, I reached the top. Not one competitor climbed clean without non-skid chains, and of those who, like myself, believed in using ordinary methods of obtaining grip, only a very few succeeded in keeping their back wheels going all the while.

Mr. Simpson will perhaps be interested to know that I am still suffering from injuries received in 1914 in Belgium, and he is quite correct when he says I was exhausted on reaching the top.

In conclusion, may I remind your readers that the hills which form the subject of this letter were not "*cut out*" of the Arctic Trial, but because the district in which they lie was completely snow-bound on April 1st this year, the afternoon's course of which they formed a part, was not traversed.

J. A. NEWMAN,
Honorary Trials Secretary and Treasurer,
A.C.U. Western Centre.

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MAKE BROOKLANDS WORTH VISITING.

Handicap Events Responsible for the Failure of the Weybridge Race Meetings as a Spectacle.

By "TANGENT."

Spectators, nowadays, are either keen young enthusiasts, interested trade men, or people who enjoy an occasional "flutter." Taken together they are not very numerous—and the average, ordinary motor cyclist is almost entirely absent.

ABOUT this time each year the regular follower of Brooklands events begins to lose a good deal of his earlier enthusiasm, and the old question as to what is wrong with the track crops up once more.

As a matter of fact, quite a number of things are "wrong"—varying according to the viewpoint which one takes—and none of them can be righted very easily. While I do not intend to limit my remarks to the motor cycle meetings only, I will endeavour to put the case of the average motor cyclist spectator and the *occasional* or *would-be* motor cyclist competitor.

The track is much too big. Even the racing cars are inclined to get lost on its vast expanse of bare cement; motor cycles at 70, 80, or 90 m.p.h. do not look in the least impressive to the spectator, who sees them only speeding down a section of the straight usually as far on the other edge of the track as they can be, or else, intermittently, as black spots crawling along the railway straight or the Byfleet banking. For half of each lap they are almost lost to view altogether. A mile to the lap track, half as wide as Brooklands, would still permit plenty of room—for motor cycle racing, anyhow.

Compromise.

It may be argued that it is all very well to say that the track is too large, but that it cannot very easily be made smaller. That is so, and until a sensibly-designed substitute makes an appearance in the Midlands we must make the best of things as they are.

There are several further failings of the Weybridge location, but before touching upon them one additional advantage of the Midlands scheme must be emphasised. New blood would be infused into the entry lists, and, since Birmingham is about a hundred miles nearer the centre of the motor cycle industry than London, it would be healthy new blood and plenty of it. If Brooklands, with all its faults, were transferred bodily to somewhere near Birmingham, the racing would gain 100% in interest, more spectators, too, would attend, and admission charges might profitably be reduced.

In handicap races it occasionally happens that the limit man completes a lap before the scratch men start. Spectators find such races very difficult to follow and consequently much interest is lost

Too Few Star Riders.

The track as it is to-day suffers because there are too few star riders. In each capacity class there are two or, at the most, three top-notch performers who are always a little faster than the majority; these riders attend every meeting, and if all the events were on a scratch basis nobody else but them would win—for a time.

I do not begrudge these people their superiority; nobody does, for they have attained it by their hard work and long hours of experiment and practice. At the same time, they are largely responsible for the vogue of the handicap, and the handicap event is the curse of Brooklands.

A handicap is not a race at all; it is a calculation. The competitors are not racing one against the other, but all against the handicapper. Unfortunately, one may go even further and say that they are not racing, but scheming against the handicapper.

The system, of course, is at fault. To be so unwise as to win two races at one meeting

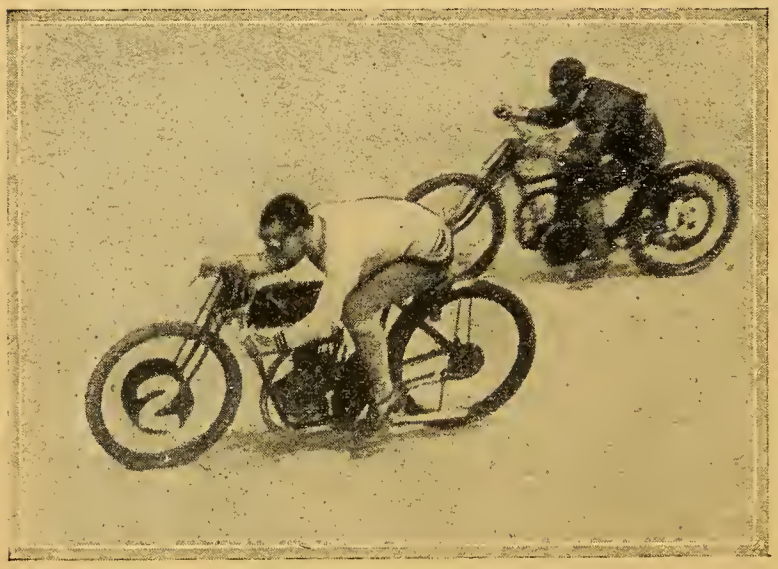
Make Brooklands Worth Visiting.—

means that the victor will not win again in a hurry; he will be penalised right out of the picture for months to come. The experts at the game contrive to win races only as frequently as they dare, and to lose them in a realistic manner as and when required.

Indeed, to such a pitch have matters come that one hears the view expressed more often than should be that the riders arrange amongst themselves as to who will win each race. It is very deplorable that this quite incorrect assumption should find currency, but it is understandable when the true facts of the case as already outlined are considered.

The Incentive to Win.

It is not easy at a glance to see how matters can be put right in this respect, but I firmly believe that if the handicap race were eliminated altogether from Brooklands programmes things would right themselves in course of time. The regular limit man of to-day would simply be forced to find more speed, and there is no reason why they should not be successful. It is not necessary to handicap the T.T. competitors to ensure close finishes. The mere fact that one or two men to-day have a monopoly of Brooklands speed is only because the others have not had the "get-on-or-go-under" incentive to beat them.



Duels such as this are not uncommon on the wide expanses of Brooklands track, but too often only a venturesome press photographer is near enough to appreciate them.

Scratch races already form a feature of B.M.C.R.C. meets, but so long as handicap events are also to be won, the tendency is to stifle effort. It is to be regretted that the most recent meeting was run purely on a handicap basis.

Keep the races confined to engines of the same capacity; if need be, separate the "experts" from the "generals," as is done already in club hill-climbs; and certainly run events for novices and events for equipped touring machines; but at all costs avoid the line of least resistance—the handicap.

Neck-and-Neck Races.

It might be a slow process. Probably for months the same two or three riders on the same two or three machines would win the "expert" classes, but the other manufacturers, I feel sure, would eventually be shamed into action, and the invariable headache which a visit to a race meeting brings to many others beside myself would be forgotten in the interest of following a series of neck-and-neck races.

Again, to attract new men, why not stage scratch races for private owners, confined to machines of one particular make and capacity? A short race for genuinely privately owned 490 c.c. Nortons; another for 494 c.c. Douglases; another for Scott Squirrels; for Levises; for Triumphs—all would provide much interest.

Then, as a special feature for the last meeting of the year, a race for straight-from-the-crate stock models of the makes upon which the expert riders have been scoring such phenomenal successes. Let the "stars" ride them, but do not let them tune them. Would the same handful of men win if the race went to, say, twenty laps? It is difficult to tell, and for that reason the spectacle would be exciting.

Or, again, a combined one-lap race and brake test, run in heats with two or three riders at a time, the winner to be the first man to get round the track and bring his machine up stationary on the starting line again. Or timed speed trials up and down the test hill non-stop to a predetermined spot at the foot.

There are lots of ways of attracting new men to the track, and most are methods which would also increase the interest for the spectators

More often, however, it is a case of solo lightweights and high speed three-wheelers straggled all over the track, and all travelling at different speeds.

Current Chat

Times to Light Lamps.

August	31st	.. ..	8.19 p.m.
Sept.	2nd	.. ..	8.14 „
„	4th	.. ..	8.10 „
„	6th	.. ..	8.5 „

One number plate must be illuminated as above (*vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Repairs in Progress.

Motor cyclists wishing to test the springing of their machines are recommended to carry out tests on a stretch of main road between Watford and Rickmansworth, where alleged road repairs are in progress.

The Motor Exhibition.

Intimation has been received by the Society of Motor Manufacturers and Traders that the King has been graciously pleased to grant his patronage to this year's motor exhibition, which will be opened to the public on Friday, November 3rd.

"Crash-Helmet" de Luxe.

One cannot but admire the ingenuity of a certain "speedman" familiar to the Brooklands community whose practice it is to disturb the ozone with some force protected as to the head in what was once a self-respecting bowler hat—now raised to the elevated ranks of a "crash-helmet" by means of skilful camouflage.

A New Fuel.

A reader tells us that he stopped outside a large garage not long ago for a fill-up of petrol. An assistant, obviously new to the game, was in the act of attending to his requirements when our correspondent's curiosity was aroused by the appearance of the liquid. On enquiries being made, it was discovered that the zealous attendant had obligingly filled the tank with water from a "show" can placed outside the shop to attract customers.

Not a Race.

The third one-day "sporting" trial, open to members of the Motor Cycling Club, is being held this year on Saturday, September 30th, when solo motor cycles of any capacity will be eligible to enter. The start will be made from the Railway Hotel at Caterham at 10 o'clock, the route, consisting of a circuit of about sixty miles, to be covered twice. Entries for this event, which should be addressed to Mr. F. T. Bidlake, 84, North End Road, Golders Green, London, N.W.11, close on Saturday, September 23rd.

Wanted, an Owner.

A member of *The Motor Cycle* staff recently picked up in the road a licence holder and card. XB 3318 is the number.

Awards for the Passengers.

After last week's Trials, the sidecar passengers are again asking themselves why they should not receive some award.

Lost, Stolen or Strayed.

Motorists appear to be getting a trifle careless in their habits judging by what they leave about the roads in the course of a day.

A Little Giant.

How can riders of 1,000 c.c. solo machines preen themselves after climbing Bwlch-y-Groes when a little J.E.S. took it in its stride during last week's Trial?

An Excellent Performance.

Though quite unacquainted with the course, Clifford Wilson (653 Quadrant) made an excellent performance in the International Six Days Trials. He not only made a clean ascent of the Weissenstein pass and gained a gold medal, but he also received the special cup for the best performance in Class D.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Sidecars in France.

There was an enormous increase in the number of sidecars on the roads in France between 1920 and 1921. In the former year there were only 5,559, while last year there were 13,358, an increase of 140 per cent. This, too, is reckoned as rather a moderate estimate.

Looking for Trouble.

It is surprising to observe how few people appear to be aware of the dangers attendant upon precipitating themselves and their machines into any main thoroughfare from a side turning without any "audible warning of approach." Why is it that drivers of Ford cars always seem to be the worst offenders?

A Breakfast-table Problem.

What is the longest period a motor cycle has run, maintaining efficiency, without decarbonising? Messrs. A. G. Cox and Son, of the Irving Motor Works, of Taunton, put in a claim for a single cylinder Ariel which has been run for five years with a sidecar without having either a valve ground in or the cylinder taken off. Even then there was only 1-32nd of an inch of carbon deposit. Can anyone beat this record?

"The Old Order Changeth——!"

It is interesting to recollect that a comparatively short while ago, even after the war, it was considered pure "swank" to wear the now almost universally popular "flying helmet" for motor cycling purposes—until people began to realise that such a form of headgear was both comfortable and efficient. Nowadays they are worn by motor cyclists of every description, from the "big twin" solo man to the baby two-stroke "speed merchant."

Passing Trams.

Little attention appears to have been paid to the very real danger to overtaking traffic at tram junctions, the heavy cars swinging to right or left without any signal to other drivers who may be expecting them to go straight on. Last week a writer in *Motor Transport* states that he saw one such accident which is typical of what too often happens. A light car on the off side of a tram at a junction was just passing as a tram took the points, and was crushed against another tram. The driver of the No. 1 tram could not see the car when he took the points, while the driver of the car, seeing no signal, naturally took it that the tram would go ahead instead of to the right. The conductor could not warn the car driver, as he was too far behind. In a case like this, who is to blame for the accident?

CLUB NEWS

HARROGATE M.C. RELIABILITY TRIAL.

(Left) A. Leake (349 Massey-Arran) at the top of Jack Hill. (Right) T. Holmes (481 Scott Squirrel) followed by Eastwood (498 Zenith-Bradshaw) on a pretty but rough "titbit" of the route well known to competitors in the "Scott" and Ilkley Trials.

Southport M.C.

In the reliability trial held recently for the "Rudge" cup and special prizes, J. Carnell (998 Rudge sc.) was the winner, being the only rider to make a non-stop climb of Park Rash. Redmond (349 Massey-Arran) and Speakman (499 Rudge) won the special prizes in the 350 c.c. class and over 350 c.c. class, respectively, Carnell taking the special prize in the sidecar class.

Oxford M.C.

By invitation of Mr. and Mrs. Frank Gray, a gymkhana has been arranged to take place at Shipton Manor, Shipton-on-Cherwell, on Thursday, September 7th, commencing at 2.30 p.m., when a number of interesting and amusing events will be included in the afternoon's programme. Entries close on September 2nd and should be sent to Mr. F. L. K. Loxley, at 66, St. Giles' St., Oxford.

Widnes M.C.

Thirteen competitors started and twelve completed the 84-mile course selected for the reliability trial held recently to decide the winner of the "Ireland Rose Bowl," when the following results were recorded:—

(1) W. Cook (550 Triumph), rose bowl and gold medal.
(2) A. J. Sandland (998 Morgan).
(3) H. Burrell (348 Rex-Acme).
(4) J. Mooney (499 Sunbeam).

Peterborough M.C.C.

Results of the hill climb held on the 20th inst. are now to hand, and are given as follows:—

250 c.c., 2-stroke.—Standing start: (1), B. Knighton (225 Royal Enfield), 26⅕s. (30.66 m.p.h.); (2), A. Mason (247 Levis), 33⅖s. (26.71 m.p.h.). Flying start: (1), D. Coldesworth (249 Massey), 19⅖s. (46.31 m.p.h.); (2), B. Knighton (225 Royal Enfield), 20⅗s. (42.65 m.p.h.).

350 c.c.—Standing start: (1), J. W. Turnill (349 Royal Ruby), 22⅗s. (39.82 m.p.h.); (2), H. Le Boeuf (349 A.J.S.), 25⅕s. (32.53 m.p.h.). Flying start: (1), J. W. Turnill (349 Royal Ruby), 15⅖s. (58.44 m.p.h.); (2), H. Le Boeuf (349 A.J.S.), 16⅘s. (53.56 m.p.h.).

500 c.c.—Standing start: (1), A. Stapleton (499 Sunbeam), 19⅗s. (45.96 m.p.h.); (2), O. Collier (499 Sunbeam), 19⅘s. (45.46 m.p.h.). Flying start: (1), A. Stapleton (499 Sunbeam), 13s. (69.21 m.p.h.); (2), O. Collier (499 Sunbeam), 13⅕ s. (68.18 m.p.h.).

Unlimited.—Standing start: (1), O. Collier (499 Sunbeam), 19⅖s. (46.31 m.p.h.); (2), A. Stapleton (499 Sunbeam), 19⅘s. (45.46 m.p.h.). Flying start: (1), A. Stapleton (499 Sunbeam), 13s. (69.21 m.p.h.); (2), O. Collier (499 Sunbeam), 13⅕s. (68.18 m.p.h.).

Spectators Race.—Flying start: (1), T. Parker (499 Sunbeam), 15½s. (59.21 m.p.h.).

The fastest time of the day was made by A. Stapleton (499 Sunbeam), whose time was 13s., giving a speed of 69.21 m.p.h.

Reigate, Redhill and District M.C.C.

September 10th has been chosen for the one-day reliability trial, open to all clubs in the South-Eastern Centre (A.C.U.). The start will be made from Laker's Hotel, Redhill, at 10.30 a.m. Entries, which close on Saturday, September 2nd (first post), should be addressed to Mr. E. F. Bewers, 22, Garlands Road, Redhill, from whom any further particulars are available.

Lune Valley M.C.C.

Speed trials held on Hest Bank sands on the 20th inst. resulted in some exciting finishes, awards being made as follows. The course measured ½ mile:—

350 *c.c.* (*scratch*).—(1) P. Barron (348 Hawker); (2) J. N. Yates (349 Sheffield-Henderson).

600 *c.c.* (*scratch*).—(1) J. N Yates (349 Sheffield-Henderson); (2) P. Barron (348 Hawker).

Unlimited (*scratch*).—(1) J. H. Illingworth (989 Trump-Anzani); (2) J. N. Yates (349 Sheffield-Henderson).

350 *c.c.* (*handicap*).—(1) G. Hardman (349 Coulson B.), 150 yards; (2) J. N. Yates (349 Sheffield-Henderson), scratch.

600 *c.c.* (*handicap*).—(1) R. Foxcroft (499 Sunbeam), 50 yards; (2) H. Baxter (490 Norton), scratch.

Unlimited (*handicap*).—(1) H. Baxter (490 Norton), 25 yards; (2) R. Foxcroft (499 Sunbeam), 50 yards.

600 *c.c. Sidecars* (*scratch*).—(1) H. Jackson (499 Sunbeam sc.); (2) H. Baxter (490 Norton sc.).

Unlimited, Sidecars (*scratch*).—(1) E. B. Parkinson (976 Brough Superior sc.); (2) H. Jackson (499 Sunbeam sc.).

600 *c.c. Sidecars* (*handicap*).—(1) H. Jackson (499 Sunbeam sc.), scratch; (2) H Jepson (498 Zenith-Bradshaw sc.), 100 yards.

Unlimited. Sidecars (*handicap*).—(1) E. B. Parkinson (976 Brough Superior sc.), scratch; (2) H. Jackson (499 Sunbeam sc.), 25 yards.

Races were run over a 5-mile course in the following classes:—

Unlimited. Sidecars (*handicap*).—(1) E. B. Parkinson (976 Brough Superior sc.), scratch; (2) H. Jepson (498 Zenith-Bradshaw sc.), 2min.

Unlimited. Sidecars (*scratch*).—(1) E. B. Parkinson (976 Brough Superior sc.); (2) H. Jepson (498 Zenith-Bradshaw sc.).

350 *c.c.* (*scratch*).—(1) J. N. Yates (349 Sheffield-Henderson); (2) G. Hardman (349 Coulson-B.).

600 *c.c.* (*scratch*).—(1) H. Baxter (490 Norton); (2) R. Foxcroft (499 Sunbeam).

Unlimited (*scratch*).—(1) J. Illingworth (989 Trump-Anzani); (2) J. N. Yates (349 Sheffield-Henderson).

Unlimited (*handicap*).—(1) G. Hardman (349 Coulson-B.), 1½min.; (2) J. Illingworth (989 Trump-Anzani), scratch.

20 *Miles Unlimited Handicap Race*.—(1) J. Illingworth (989 Trump-Anzani), scratch; (2) J. Caurot (481 Scott-Squirrel), 7½min.

The winner's time in this race was 22min.

Bradford M.C. and L.C.C.

Solo machines only will be allowed to compete in the first hill climb, which has been planned for Saturday next, September 2nd, to decide the winner for the Wilson Cup. On the day following, the 3rd inst., a reliability trial for the Priestly Cup will be run off. A general meeting is being held at 8 p.m. to-night at the Club headquarters.

Matlock and West Derbyshire M. and M.C.C.

The half-day reliability trial originally arranged to take place on August 27th has been postponed until September 10th, when a start will be made from Darley Bridge Garage at 2.30 p.m. to cover a course approximately 80 miles in length. A gymkhana is being held on Saturday, September 9th. Particulars of both these events may be obtained from Mr. E. F. Hurt, of South Darley, Matlock.

Avalon and Wells M.C.

A successful hill-climb was held on High Ham Hill recently. L. G. Williams (494 Douglas) made fastest time of the day, his time for the half-mile standing start being only 28 seconds.

The results were:—

500 *c.c.*—(1) L. G. Williams (494 Douglas); (2) V. G. Tucker (490 Norton).

750 *c.c.*—(1) L. G. Williams (494 Douglas); (2) V. G. Tucker (490 Norton).

1,000 *c.c.*—(1) L. G. Williams (494 Douglas); (2) V. G. Tucker (490 Norton).

500 *c.c. Sidecar.*—(1) L. G. Williams (494 Douglas sc.); (2) J. Steele (490 Norton sc.).

1,000 *c.c. Sidecars.*—(1) L. G. Williams (494 Douglas sc.); (2) P. Steele (490 Norton sc.).

Coatbridge, Airdrie and District M.C.C.

The confined flying half-mile speed event held recently over a measured section of the Glasgow-Edinburgh road near Harthill was productive of some excellent times. The official results to hand are given as follows:—

400 c.c.: H. Drummond (349 Massey-Arran), 29⅗s.

600 c.c.: N. Muir (490 Norton), 26½s.

1,000 c.c.: N. Muir (490 Norton), 26s.

600 c.c. (sidecars): J. Muir (490 Norton sc.), 32⅖s.

1,000 c.c. (sidecars): R. W. Muir (976 Brough Superior sc.), 32s.

The "Sunbeam" gold medal awarded for the fastest time of the day for a solo machine of any capacity was won by N. Muir (490 Norton) in 26s. H. Drummond (349 Massey-Arran), whose time was 29⅗s., carried off the prize of £2 2s. offered by Mr. E. M. McNaught for the fastest time of the day up to 400 c.c., whilst the fastest time for sidecars of any capacity was achieved by R. W. Muir (976 Brough Superior sc.) in 32s., thus winning the "Walter Connor" Cup.

The Six Days Trials Described

Another view of Mow Cop showing a pair of 678 c.c. Martinsyde sidecars making the ascent. The riders are J. T. Bashall and A. A. Symes.

A scene at Mow Cop on the second day. Crowds gathered to watch competitors, and in many instances riders were baulked by thoughtless spectators pressing on to the course. J. Harrison-Watson (550 Triumph sidecar) followed by C. Dickinson (498 Ariel sidecar).

Five Days on the Road. A Test of 830 Miles in Yorkshire, the Welsh Mountains and the Thames Valley for 143 Representative Motor Cycles. 106 Arrived at Brooklands for the Final Speed Trial.

MONDAY'S RUN, 179¾ MILES.

York, Stillington, Ampleforth, Thirlby, Helmsley, Gillamoor, Kirkby Moorside, Hovingham, Strensall, York (lunch), Naburn, Cawood, Brierley, Barnsley, Ringinglow, Ashford, Buxton.

AS fully reported in last week's issue, the route on Monday morning was of a trying nature despite the fact that fine weather conditions prevailed.

White Horse, the first hill, although easy, proved the undoing of many, while the big ascent of the run, Rosedale Abbey Bank, became a *débâcle*, the majority failing through lack of wheel grip on the loose surface.

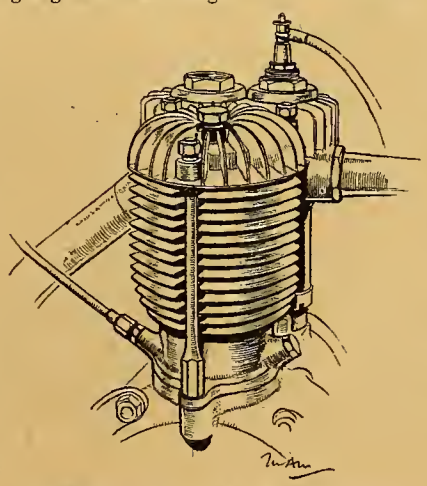
One or two soloists, the three-wheelers, and, in particular, certain single-cylinder sidecars made outstanding performances.

Distinguished at the Outset.

Amongst the solo machines, the A.J.S., the new 350 c.c. James, the Scotts, and the Powell earned special praise, while the outstanding riding ability of G. Dance (499 Sunbeam) gained tremendous applause on the hills. Sidecars were upheld in reputation chiefly by the P. and M. team, the New Hudsons, the Dunelt, and the A.J.S. The wonderful handling of the latter machine by F. W. Giles was as remarkable in its way as the brilliant solo riding of Dance and the Scott exponents.

All the Morgans, the T.B., and the L.S.D. successfully climbed Rosedale, but the Scott Sociable required slight assistance even without its passenger.

From York southwards to Buxton in the afternoon was an easy trip over main and good secondary roads, with a little rough going near Hathersage.



Long bolts hold down the cylinder on the new single cylinder James.

TUESDAY'S RUN, 140¾ MILES.

Buxton, Mossley Moss, Mowcop, Biddulph Moor, Axe Edge End, Rudyard (lunch), Ipstone, Cheadle, Hilderstone, Aston, Gt. Bridgeford, Newport, Wellington, Longwood, Uriconium, Shrewsbury.

DESPITE early rain, which belied the promise of the previous evening, Tuesday's run was not so severe as Monday's.

Nevertheless, there were nine retirements, at least three being definitely attributable to broken frames or sidecar chassis, which gives some indication of the nature of the going. Much of it was very rough, and almost all of it was tortuous in the extreme.

Freak Surfaces But Easy Hills.

One section, which included a slight hill, was thoroughly freakish; but the two main test hills did not take a heavy toll. Two of the retirements were caused by accidents, both with somewhat serious consequences to the drivers, I. P. Brettell (348 Connaught sc.) and W. N. Clayton-Russell (633 Norton sc.). Brettell's retirement robbed the trials of one of the two 350 c.c. sidecar outfits, and previously he had been doing well.

A straying Scotch mist hung over Buxton at eight o'clock; and the first hour or

At the lunch stop on the first day. The keen interest of the Yorkshire people in the trials is evinced by the crowd inspecting competitors' machines.

so was an unpleasant scramble over moorland roads, with a visibility of about 50 yards. Buxton to Rudyard, the lunch stop, is only a matter of 17 miles by the main road, but this was ingeniously lengthened to 66 on the route-card.

Mow Cop—Long and Straight.

Mow Cop was the scene of more lost marks than anywhere else. It is long and straight and uneven on the steepest (1 in 4½) portion; on Tuesday an inconsiderate crowd, which persisted in blocking up the road, multiplied its slight difficulties.

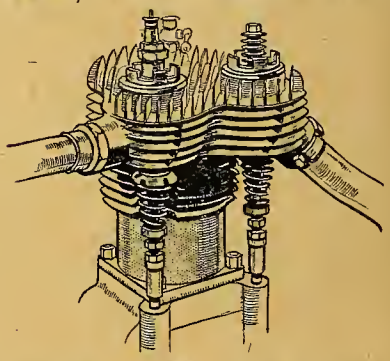
Except the J.E.S., which stopped, owing, it is said, to a momentary piston seizure, all the lightweights were good. The bigger (500 c.c. and upwards) solo machines simply toyed with the gradient; Dance and Bennett (499 Sunbeams), two of the three Scotts, J. H. Davis (492 Sunbeam), G. F. Bainbridge (739 Martinsyde), T. Buckle (748 F.N.), and George Brough (Brough-Superior) all appearing to exceed the legal limit on the 1 in 4½ portion.

The New Hudson and P. and M. single-cylinder outfits were the most uniformly excellent in their class, but it was noticeable that the four-speed gear on Lewis's P. and M. enabled him to overtake Freeley's three-speed New Hudson—and the latter was by no means slow.

J. W. Wildblood's 494 c.c. Douglas outfit also distinguished itself by beating W. H. Bashall's 678 c.c. Martinsyde—but after all the event is not a race, and slow but sure is a wise motto. The Connaught sidecar just scraped up without assistance, while its only rival, the Weatherell, getting a clear passage, rushed up at speed.

Penalty of Overloading.

J. Harrison-Watson's super-equipped Triumph outfit konked right out; Hadley's and Danskin's 499 c.c. Rudge sidecars both required assistance, and it was touch and go with Sibley. Two "seven-fifty" twins also needed help—F. Cotton's James and W. E. Grange's Bradbury; and the Scott Sociable shed its passenger and some of the water in its radiator—probably a leak. Bourlet (498 Ariel sc.) claimed a baulk for his failure.



New cylinder on 498 c.c. Ariels. Deeper radiating fins and larger and more free valve ports are its features.

It was difficult to distinguish the "very fast" sidecars from the merely "fast," but the following should certainly come under the first heading: F. W. Giles (799

Rough portions on the route of the second day. E. W. Choldcroft (349 A.J.S.) and H. F. Harris on a similar mount.

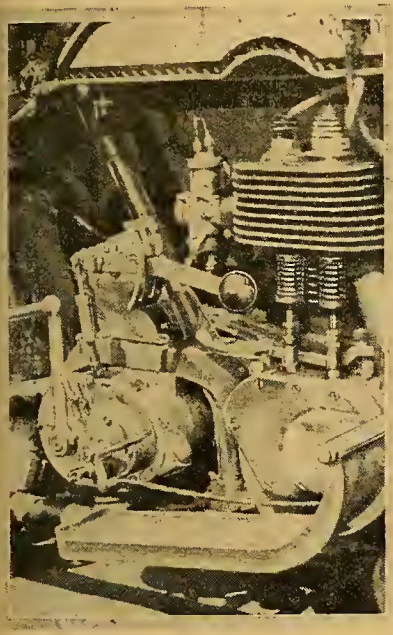
Competitors on cart tracks near Ipstone. E. A. Barnett (346 Francis-Barnett) followed by S. M. Greening, also on a Francis-Barnett.

Six Days Trials Described.—

A.J.S. sc.), L. C. McCardie (989 Harley-Davidson sc.), W. N. Clayton-Russell (633 Norton sc.), and W. A. Fell-Smith (976 Brough-Superior sc.). As usual, H. F. S. Morgan (Morgan) made a show at least as good as any sidecar.

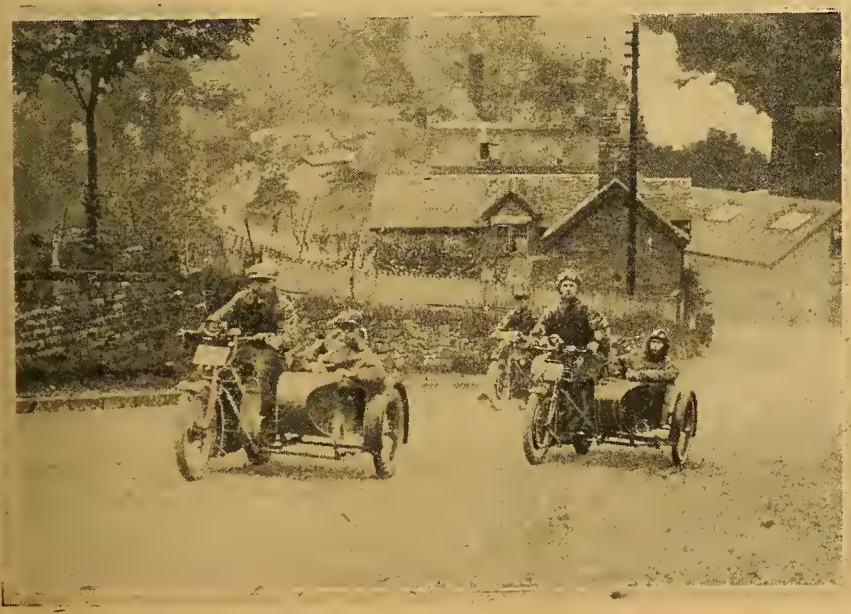
Lunching at Rudyard, somebody noticed that E. J. Kehoe's Rudge did not look right. Examination proved that the front down tube was broken, displacing the engine by at least two inches. The news was broken to the rider, who confessed that he had not noticed it himself. News also came through that Lea's 496 c.c. Lea-Francis had disintegrated somewhere on the moors from the same cause.

There were more corners than ever in the afternoon's run, but with the exception of the Colonial section already referred to, the road surfaces were slightly better.



For quick manipulation. An experimental gate change mounted in a bracket incorporated in the Dureff gear box frame clamp on Clayton-Russell's Norton.

A shallow watersplash in picturesque surroundings near Leek. W. Bucknell (993 Matchless sidecar) and E. C. Barton on a sister machine.



A trio of sidecars on the hill leading out of Oakamoor. F. B. Freeley (535 New Hudson), P. Pehrson (499 Dunelt), and A. W. Hadley (499 Rudge).

The descent to Oakamoor was more difficult than the succeeding ascent, and it is surprising that apparently none of the many spectators there knew of a considerably less easy hill two miles further on. However, even the latter was not severe enough to be interesting, nor was anything else until the Wrekin was reached.

Solos Only on the Wrekin.

Mainly because of a narrow gateway, solo machines only were allowed to attempt the climb; and since it terminated some distance from the actual summit it was child's play to most.

The only bump on the well-graded, smooth track up through the woods caused just one failure—J. L. Hanman (494 Douglas)—but D. H. Davidson (596 Indian Scout) nearly met a similar fate, and Westwood Wills (547 Powell) was dangerously long in effecting a gear-change on the hairpin. One or two riders footed, quite unnecessarily, at this point.

The palm for the most imposing performance goes to W. Hill (Scott), although several ran him close and none displayed any lack of power.

As it was on Tuesday, the Wrekin is a much over-rated test; it is doubtful, even, if it becomes treacherous when thoroughly wet.

* * *

Only nineteen competitors finished the first day's run with absolutely clean sheets.

* * *

Billeting-out by hotels in Shrewsbury was not appreciated by those concerned. In one case a well-known rider was told by his temporary landlady that he must come home to bed at nine o'clock; and in another the good lady of the house had not returned from the "pictures" by 10.30 p.m.!

WEDNESDAY'S RUN, 156 MILES.

Shrewsbury, Marton, Welshpool, Dinas Mawddwy, Llanuwchllyn, Bala (lunch), Llanwddyn, Llanfair Caereinion, Newtown, Knighton Penybont, Llandrindod Wells.

EXCEPT for Bwlch-y-Groes, Wednesday's run did not promise much in the way of difficulties. Long Mountain and the Hirnant Pass, the two unknown quantities to most of the competitors, failed to provide any unpleasant surprises, although a greasy upgrade a mile or two out of Welshpool might have been the cause of lost marks had there been anybody there to watch the fun.

Yet, taken as a whole, the day *was* difficult, if only because of the number of long second-gear climbs, such as only Wales can provide. Perhaps no machine fails on these at the time, but later on poorly designed engines begin to lose power in an unaccountable manner—and another batch of unfortunates remove their official numbers. On Wednesday the party numbered six. (A detailed list of retirements day by day will be found on a later page.)

An Easy Test Hill.

Long Mountain had dried too well after the previous night's rain to cause much anxiety. Riders toured up in batches of nine or ten, and in consequence of this some of the faster men had perforce to "touch" as they took to the rough to overtake. J. H. Davies (492 Sunbeam) was a clever exception.

The hill does not merit that everybody's performance should be mentioned, and in order to avoid undue publicity to the usual dozen or so very fast riders our account must be confined to the odd incidents.

For example, a Scott followed a Lea-Francis over a patch of semi-slime. The latter wobbled slightly; the former went up like an arrow, which reminds us that, excepting perhaps the solo Sunbeams, the large-tyred machines were infinitely steadier in grease than the 26 in. × 2¼ in. brigade.

Fast Ascents.

Reg. Brown's and T. C. de la Hay's sidecar Sunbeams shone here more in the manner expected of them earlier.

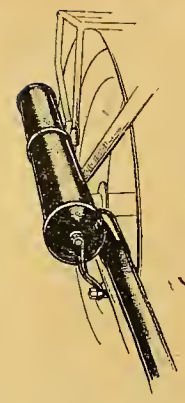
Had the climb been timed, W. D. Pugh (989 Harley-D) and G. F. Bainbridge (739 Martinsyde) would probably have tied for first place.

Of the sidecars, Giles (A.J.S.), Baxter (Harley), Chater-Lea (Chater-Lea), Newey (Ariel), Barton (Matchless), and the irrepressible Wildblood (494 Douglas) appeared the fastest; but, showing how difficult it is to estimate in this matter, Hardee (Matchless sc.) had just earned a "very fast" in our notebook when McCardle (Harley D. sc.) actually overtook him on the steepest portion.

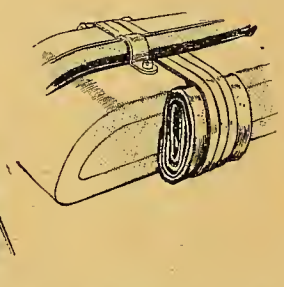
The failures were: Danskin (499 Rudge sc.), Harrison Watson (550 Triumph sc.), who baulked J. H. Walker (770 B.S.A. sc.), Saddington (749 James sc), and T. J. Ross (993 Matchless sc.). It was not lack of power in the last case.

Bwlch-y-Groes was the next official point of interest, but it is a pity that the Welshpool hill was not observed.

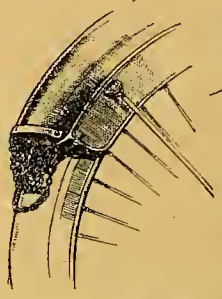
FITMENTS ON THE COMPETING MACHINES.



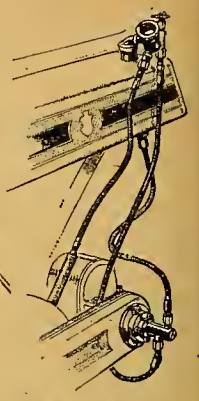
Exhaust box fitted on Harry Reed's Dot outfit.



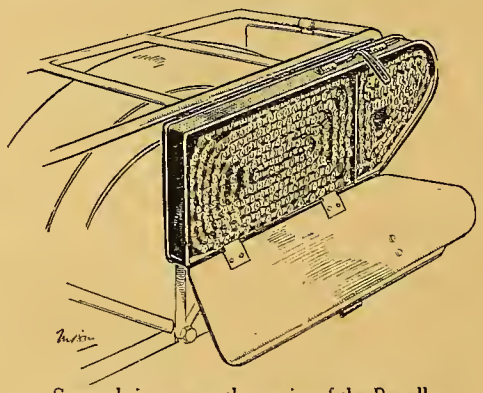
An old inner tube used as a knee grip on J. A. Leyland's P. and M. The tube is strapped to the tank.



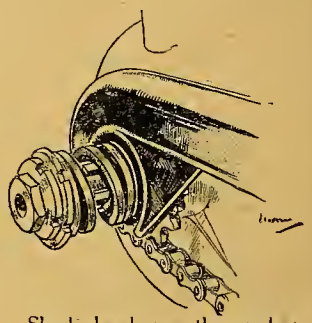
A chain nail puller on C. F. Nott's Raleigh.



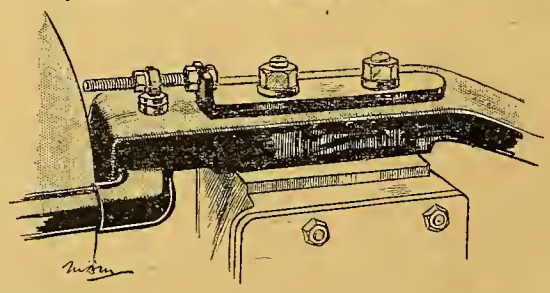
Mechanical pump lubrication and sight feed on J. Harrison Watson's Triumph. Note the flexible tubing.



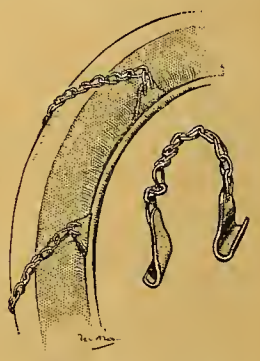
Spare chain case on the carrier of the Powell.



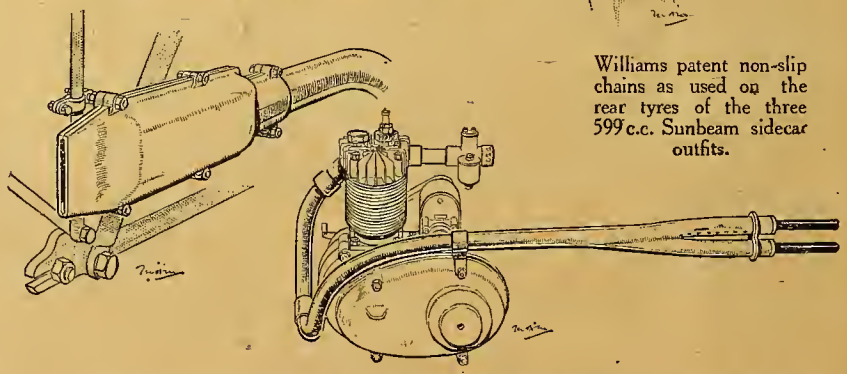
Shock absorber on the crankshaft sprocket of the Raleigh.



Gear box adjustment on the new chain driven Raleigh lightweight.



Williams patent non-slip chains as used on the rear tyres of the three 599 c.c. Sunbeam sidecar outfits.



(Left) The sports model Powell had a large Argus silencer bolted to the carrier stays. (Right) Twin outlets were used for the exhaust of the Beardmore-Precision.

A string of solo riders on the Hirnant Pass climbed after lunch on the third day. H. Greaves (349 c.c. Beardmore-Precision), Geo. Dance (499 c.c. Sunbeam), A. Bennett (499 c.c. Sunbeam), A. G. Wall (348 c.c. Connaught) and C. Greenwood (499 c.c. Sunbeam).

On the way to Bwlch-y-Groes (the Pass of the Cross) rain fell occasionally, which troubled the competitors on the narrow, winding foothills leading to and beyond Dinas Mawddwy. Here the right-hand road was taken to Bala (not the road to Dolgelley often confused with Bwlch-y-Groes). Bwlch-y-Groes is 1,750 ft. above sea-level, and the wonderful panorama of rolling hills—the wildest and finest country that Wales can produce—was appreciated to the full by the crowd of spectators who patiently awaited the arrival of the long line of competitors. Meanwhile motor cycles and cars arrived one by one with their quota of observers, some successful, others not so.

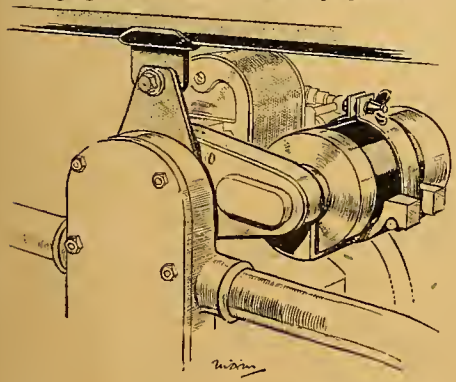
Bwlch-y-Groes.

Mr H. R. Watling, General Manager of the Motor Cycle Manufacturers' Union, who accompanied the trials on a 348 c.c. Raleigh, made a good ascent, a private owner followed on a Scott, which, even handicapped by a passenger on the carrier, cruised up with ease. A couple of 349 c.c. A.J.S. side by side romped up, so that quite early one was prepared for successful climbs of this two-mile ascent averaging one in five or six—by general consent the fairest and finest test hill in the country, for the surface is good, and steep gradient alone decides the issue.

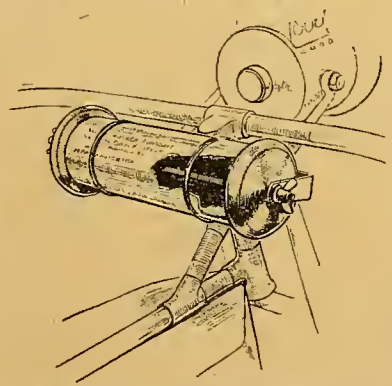
P. L. Mayo (249 Coventry Eagle), led the way at 11.15 a.m., Kershaw (249 New Imperial) following closely in his track. Both made comfortable climbs with their diminutive engines. Two non-competing cars hereabouts stopped on the crucial stretch fifty yards above the gate and had to be parked beside the road in the place usually kept clear for competing machines which falter on the hill. Johnson (247 Sun Vitesse), Pa Applebee, and Edwards (Levises) also made this one-time formidable Welsh ascent look easy.

Fine Ascents by Lightweights.

Mrs. Knowles, on her A.J.S. who came next, was quite fast, passing several other competitors on the way up. C. W. Hough (A.J.S.) was also quick, passing three riders, whilst Harris (A.J.S.) was little slower. The fine performance of the tiny J.E.S. ridden by Purnell was acknowledged by hearty applause from the spectators assembled. His 169 c.c. engine never faltered and required no assistance—surely an epoch-making achievement. After this one could hardly evoke special enthusiasm for the larger machines, for practically all got up well, some with plenty of power in hand, others preferring to impress by fast middle-gear climbs. Horton (New Imperial) bounced on the saddle, and nearly baulked his team mate (Wilkins). Davison got a cheer for his recent remarkable exploits on his two-stroke Levis. Greening (Francis-Barnett) was good, N. Hall (292 O.K. Junior) excellent, Searle (Sheffield Henderson) good, also Bishop (Sun Vitesse), and R. Evans (Raleigh). Eric Barnett (Francis Barnett) passed three other riders, Lovegrove (Radco) toured up comfortably, Cholderoft (A.J.S.) toyed with the gradient, Handley (O.K. Junior) was notably good, and Graham Oates (on the new 248 Grindley) quite fast. Thereafter a big bunch of competitors toured up the gradient as if it did not exist, including Sprosen (Connaught), Dodson (Royal Ruby), Hadfield (348 Raleigh), Clulee Johnson, and Cooper, on two-stroke Allons, Lidstone (James), Parkes (Sun Vitesse), Kimberley (James), and Mrs. Janson (Coventry Eagle). Ladies are always popular in trials, and Mrs. Janson's ascent was suitably applauded. C. F. Nott showed up well on a 348 c.c. Raleigh, also Anderson (293 Connaught).



Lucas dynamo gear-driven from the magneto shaft of the Raleigh flat twin.



Revolving route card carriers were used on the two Lea-Francis machines. The card was rolled between two tubes of celluloid which keep it dry in wet weather.

The Heavy Brigade.

Then followed representatives of the larger classes, Cathrick (499 Dunelt) doing well. J. H. Davies (599 Sunbeam) in the 750 c.c. class was next, well ahead of time, "blinding" up—to use a motor cyclist's favourite term—with his back down. Longman's performance on the new all chain driven Zenith, was excellent, also F. C. North (292 O.K. Junior). To this point no failure had been recorded on the upper and steepest stretch, although for half an hour the riders had filed past. Hills (Royal Ruby) had to footslog on the steepest part, but picked up again. Hardman (499 Wilkin) was very fast, actually changing up. A pause, and in the distance one saw a rider streaking past his fellow competi-

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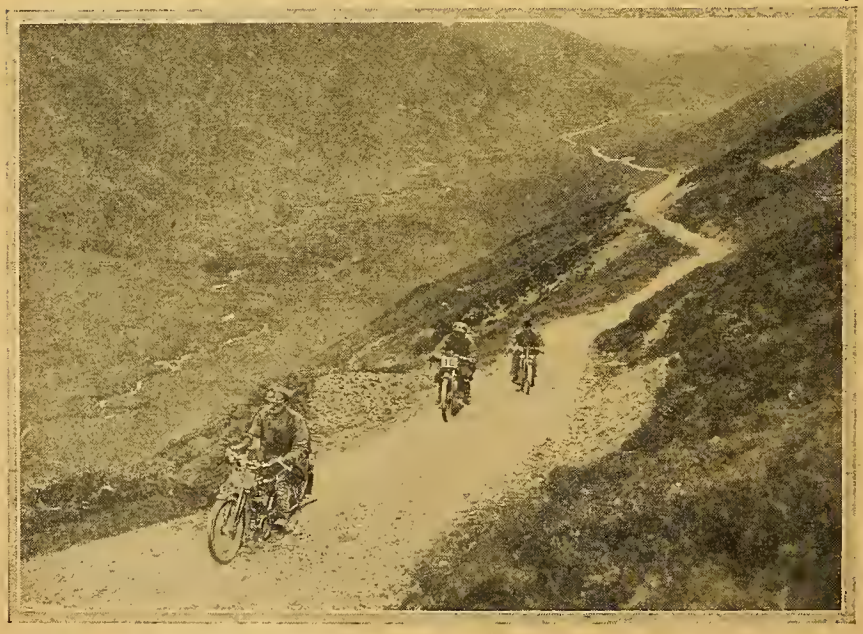
tors. It was R. M. Knowles, the Norton private owner, smoking a pipe nonchalantly. Then followed Woodcock (Ariel), Rollason (Ariel), Wall (Connaught), and Greaves (Beardmore-Precision), all going well. Three others together, Moore (Scott), W. Scott (Scott) and Foster (Raleigh), travelled well, and Beedon (Sunbeam) and Bainbridge (739 Martinsyde) simply toured up. Westwood Wills (547 Powell) made a spectacular ascent at speed, Newman (Douglas) took matters easy, and was passed by Bridcutt (499 Dunelt). G. Hill (Scott) toured up comfortably, Whitfield (Rudge) and Longman (Ariel) were steady, Austin (Coventry Victor) had power to spare, and Gard (Rudge) was good. Possibly Geo. Brough's climb was the fastest of all, for his Brongh Superior was in fine fettle. After Ranson (Lea Francis) had toured up, a bunch of eight riders were seen approaching the gateway which marks the beginning of the crucial stretch. All got up well. Geo. Dance (499 Sunbeam) emerged with Bennett (Sunbeam) ahead of the rest, T. Peck (Ariel), Becker (McKechnie), Pugh (Harley), Cross (Triumph), Burnett (Raleigh), and Greenwood (Sunbeam). Buckle (F.N. four-cylinder) buzzed up at speed, followed by Davidson (596 Indian Scout), Phillips (Triumph), J. M. Philpott (Beardmore-Precision), and Leyland (P. and M.).

Performances of the Passenger Machines.

It was 11.45 a.m. before the first sidecarists hove in sight, Cunningham (555 P. & M.) with Lewis on a similar mount, leading the way. T. C. de la Hay (599 Sunbeam) was close on their heels, the brothers Bashall on 678 c.c. Martinsyde following. All were good. E. Mundey (New Hudson) and Symes (Martinsyde), Bourke (New Hudson), Brown (599 Sunbeam), Bischoff (Sunbeam), Townsend (P. & M.), formed a group of notable performers, but Bridgman (998 Indian) easily took the palm for speed. Pehrson (Dunelt) and Jacobs (Beardmore-Precision) were good, but bad luck befel Swanton (998 Indian), who stopped and ran back some yards. Hadley (Rudge) immediately behind repeated the performance. When Wildblood (499 Douglas) arrived he had to yell to clear the course, what time he bounced vigorously on the saddle. Perry's 770 c.c. B.S.A. got up comfortably, also Walker and Bird on similar mounts, Giles (A.J.S.) made no mistake, Bucknell (Matchless) and Ellis (Matchless) also doing well. Newey's 994 c.c. Ariel had plenty in hand, Baxter (Harley Davidson) and Barton (Matchless) were good, but Ross (Matchless) came to a standstill due to a broken chain which delayed him some minutes. Cotton (749 James) stopped, and then ran alongside, but the next batch were all good, viz., O'Brien (Matchless), Hardee (Matchless), Johnston (Harley), Wade (A.J.S.), Poole (A.J.S.), and Allchin (Harley). Hall drove the first Morgan up the hill and was notably fast. H. F. S. Morgan, on the runabout bearing his name, actually changed up, but was soon down again. Carr (Morgan) was also fast. Chater-Lea (976 Chater-Lea) showed up well, also Spouse (T.B.), Frank Smith (926 Clyno), and McCardle (Harley).

F. S. Spouse piloting his 980 c.c. T.B. three-wheeler up the famous Bwlch-y-Groes. Even in this outlying district many spectators witnessed the ascents.



A panorama on the Hirnant Pass on Wednesday afternoon. F. W. Applebee (247 Levis) and Mrs. O. M. Knowles (349 A.J.S.) followed by a non-competitor on a Scott.

At the End.

The Scott Sociable had been anxiously awaited, and the driver appeared half sitting over the driving wheel, his engine pulling merrily. It appears that he was baulked at the hairpin at the hill foot, and was delayed six minutes before his engine fired again. By 12.15 p.m. all the competitors had passed Saddington (James sc.), bringing up the rear, but he stopped momentarily on the 1 in 5 stretch.

The descent to Bala for lunch was particularly rough, rock protruding through the roadway and buffeting the machines. But this was as nought to what followed after lunch. First the riders travelled by way of villages bearing tongue-twisting

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names over the Hirnant Pass, and down the never-to-be-forgotten descent to Lake Vyrnwy, cut up beyond recognition by heavy timber waggons. Numerous cross gullies or gutters varying in depth twisted and strained the sidecar mounts particularly—a twelve mile stretch equal in severity to anything Scotland can produce.

But we digress.

The Hirnant Pass.

Hirnant Pass is a climb of 1,500 feet, almost as sevcre as Bwlch-y-Groes. Although motorists were warned by old and disfigured R.A.C. signs that the road was impassable, without exception every rider made light of it. Solo competitors toured up in second gear, and had it not been for the many deep and water-filled gullies, it would have been taken at really high speeds. As it was several riders made ascents that were foolishly fast. Westwood Wills (547 Powell) and J. H. Davies (599 Sunbeam) were particularly spectacular, plunging recklessly over the gullies regardless of consequences which might ensue, for a skid on the loose shale surface would have precipitated them over the unprotected edge into a ravine a hundred feet below.

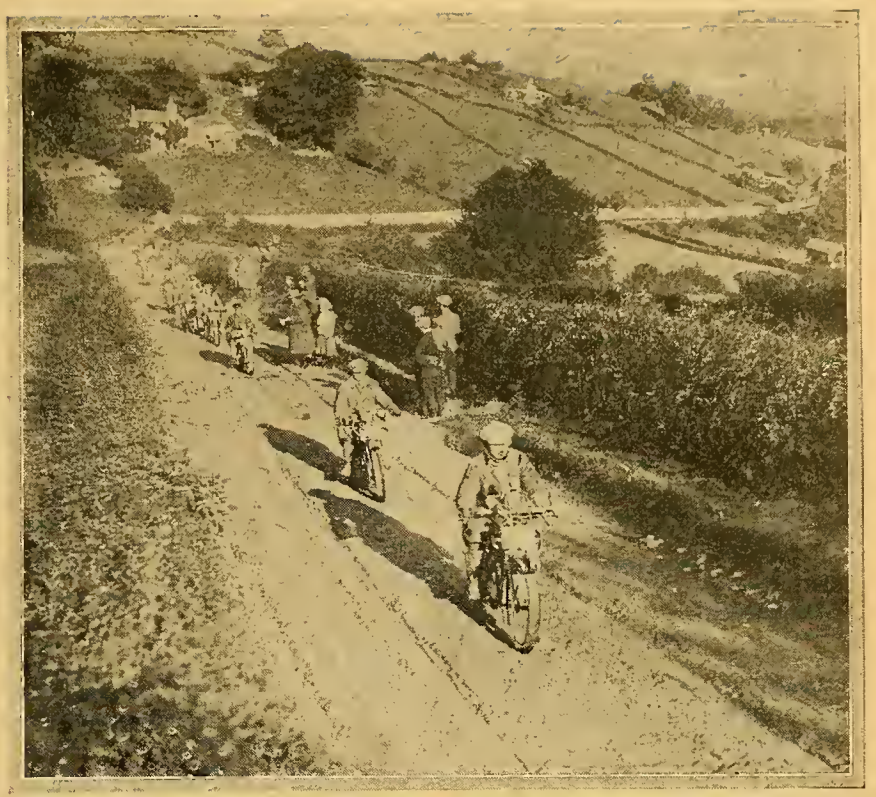
These riders, however, did not monopolise this entertainment enjoyed by the many spectators who had journeyed to witness how modern British machines can perform on Colonial type mountainous roads. The three Scott's, ridden respectively by G. Hill, W. Scott, and W. Moore, were equally fast. George Brough (Brough Superior) also climbed the tortuous shale-strewn path in a spectacular manner, jumping clear of the ground at one particularly awkward gully, and was nearly unseated. T. Peck (Ariel) followed in a like manner and narrowly escaped colliding with J. M. Philpott (Beardmore), who was taking things more easily.

Some of the riders revealed a different temperament, for they ascended the rough cattle way very steadily. J. A. Newman (494 Douglas) was evidently taking no chances, and was playing to a larger audience than is assembled on any trials test hill, *i.e.*, the general public, which judges results on the award obtained. E. Foster (698 Raleigh), P. H. Hills (349 Royal Ruby), F. W. Becker (688 McKechnie), and D. H. Davidson (596 Indian) were also in this category.

Little Work for Observers.

The official observers with checking sheets having ample space to record all kinds of failures, had nothing of this nature to report, and it came as quite a relief to them when one man, C. J. P. Dodson (349 Royal Ruby) was reported to have used his feet or missed his gear change or "something," for they were not sure.

Special mention, perhaps, should be made of the little J.E.S. ridden by R. P. Purnell. By climbing Bwlch-y-Groes and the Hirnant Pass as steadily and as easily as most of its larger contemporaries, it proved, anyway up to this point, that the miniature engine, less than half the size of Junior T.T. machines, was a practicable proposition not only for general utility work about city streets, but in a tourist's machine.



Filing up Long Mountain, the first test hill on Wednesday morning. The leaders are E. A. Barnett (346 Francis Barnett), C. W. Hough (349 A.J.S.), F. W. Applebee (247 Levis).

One could not but admire the performances of the sidecars. Without exception they were excellent, although the speed at which the competitors drove them over the gullies brought forth prophesies of fractured frames and chassis later in the week.

Speedy Sidecars.

P. Cunningham (555 P. and M. sc.) and R. Lewis (555 P. and M. sc.) were the first pair of passenger machines to follow the solo men, and they emulated the latter's spectacular methods, sending up high "bow waves" as they crossed the water courses. T. C. de la Hay (599 Sunbeam sc.) was just as fast and had to pass a stalled non-competitor who forced the sidecar driver to take a path perilously near the edge of the precipice.

G. M. Townsend (555 P. and M. sc.), R. Brown (599 Sunbeam sc.), and P. Pehrson (499 Dunelt sc.), ascended at a more steady pace, the last-mentioned only changing to bottom for the last 100 yards of the long climb.

B. Bourne (595 New Hudson sc.) picked his way more carefully, and obviously had plenty of power in hand, as had E. R. Jacobs (598 Beardmore sc.). A. W. Handley (499 Rudge sc.) did well, while the 494 c.c. Douglas sidecar driven by J. W. Wildblood again made a splendid climb.

A. A. Symes (678 Martinsyde sc.) was too fast for the comfort of his lady passenger, who had to raise herself from her seat to minimise the full force of the shocks as the machine was forced over the gullies at speed.

W. H. Bashall (678 Martinsyde) heeded not the mute appeal for mercy from his lady passenger, and drove on as if the twain were rendering the Excelsior duet.

J. T. Bashall (678 Martinsyde sc.) was slower, but only by choice, and E. Mundey (595 New Hudson sc.) came up looking down anxiously as if expecting to find his tyro flat.

For a moment, perhaps, the bored observers thought they would have something to record, but luck was against them.

More Passenger Comfort Wanted.

Sidecar passengers among the spectators were asking one another why the competitors' companions had not insisted upon the inclusion of pneumatic cushions in their equipment.

R. Swanton (998 Indian sc.) had evidently overcome the trouble that had stopped him on Bwlch-y-Groes, for he climbed exceptionally well, as did Frank Smith (926 Clyno sc.).

It is impossible to add to the list of those who made sure ascents; as before mentioned none stopped.

The descent from Hirnant was not at all enjoyable, but the rest of the run to Llandrindod Wells should not have required bottom gear anywhere—unless from the lightweights, on one ascent.

J. W. Wildblood (494 Douglas sidecar) making a speedy ascent of Llanfair Hill.

Mrs. G. M. Janson (349 Coventry Eagle) and R. Evans (348 Raleigh) on Long Mountain.

Harrison Watson (Triumph sc.) lost so much time owing to his front tyre leaving the rim that he retired, and a broken valve put Danskin (Rudge sc.) out. W. H. Hardman (499 Wilkin), who previously had been one of the great majority of good but not spectacular and therefore often unnoticed riders, took two nasty tosses, the second damaging the Wilkin too much to continue.

THURSDAY'S RUN, 171 MILES.

Llandrindod Wells, Llangynog, Llandovery, Brecon, Llangynidr, Gilwern, Abergavenny (lunch), Blaenavon, Pontypool, Abergavenny, Monmouth, Tintern, Mitcheldean, Gloucester.

SEVERAL things happened on Thursday. For the first time in the trials it rained really heavily. In itself this fact would not be important, but it so happened that the last hill of the day—a minor test that scarcely anybody knew of—was of the sort that required only slight lubrication to convert it into very nearly the worst hill of the week.

The rest of the route was more in the nature of an endurance test; there was a great deal of second gear slogging, and, consequently, hard riding to keep to schedule. The toll of retirements was five.

After eight miles the fun started with a long climb over the mountains, where possible *via* grass-grown and rock-bottomed roads, but never over really bad surfaces. Thirty-five miles of this sort of thing was followed by an equal distance over main roads, which brought the riders *via* Brecon to the Llangynidor Pass.

Footing and "Footing."

Nowhere was it steep enough or rough enough to cause an outright failure, but we spent an interesting half-hour on the least easy hairpin bend watching Dr. Hopwood endeavour to discriminate between "footing" to preserve balance and "footing" to assist the machine. Eventually it was decided that "Pa" Applebee (Levis) and J. Grabam Oates (Grindley) were guilty of the latter offence. Why W. Scott (532 Scott) had to prod is a mystery, but in the case of a Royal Ruby rider it was simply that he was not at home on loose stones. T. Buckle (748 F.N.) moved his foot, but then decided to replace it. J. Watson Bourne, who had taken over G. Brough's machine owing to the latter's indisposition, looked very bored.

Between the lower and upper hairpins, we observed three sidecarists effecting adjustments. These were J. W. Wildblood (494 Douglas sc.), T. R. Allchin (989 Harley-Davidson sc.), and C. W. Johnston (989 Harley-Davidson sc.). The first-mentioned had evidently developed real trouble after a noteworthy performance right up to this point, for as the competitors left Abergavenny after lunch they passed him in tow of a motor 'bus, his transmission sprocket having sheared. Thus Pehrson's Dunelt was the only 500 c.c. sidecar left in the trial.

Thereafter to the Abergavenny lunch stop there was far less main road than even the official route map might have led one to expect, and sudden detours and tortuous descents at the last moment caused several to experience difficulty in getting in on time. One of these, Pa Applebee, suffered a stuck release valve on the top of other troubles.

At lunch, A. R. Edwards (Levis) fitted a gaiter to his rear tyre; and it was reported that R. M. Knowles (Norton) had been towed into Brecon owing to gear box trouble.

A No-trouble Hairpin.

After lunch the competitors were led to the Fiddler's Elbow, a hairpin with a local reputation, but which proved easy to every competitor. Being near a centre where many enthusiastic motor cyclists reside, a big crowd of spectators congregated to witness what proved to be nothing more than a display of regularity and fast cornering. Probably some of the competitors wished that the hill were miles away from civilisation, for several non-competitors considered it good form con-

On the Wrekin, which was climbed by solo riders only. The gradient was not at all severe as test hills go, but there were difficulties which precluded the sidecars from entering the section. G. Kimberley (349 James) is the rider shown breasting the summit.

The bombardment of Rosedale Abbey Bank. F. Parkes (247 Sun Vitesse), B. H. Cathrick (499 Dunelt) and O. S. Bridcutt (499 Dunelt) can be discerned in the smoke screen.

tinually to ride up and down while the trial was in progress. Here Professor Low was comfortably seated in a car making notes on "silence."

A detour brought the now thoroughly soaked riders back to Abergavenny, and almost all the way to Monmouth it was greasy by-lanes and short hills. Mrs. Knowles (349 A.J.S.) suffered from water in her magneto, and P. L. Mayo (249 Coventry-Eagle) stopped on Upper Lydbrook Hill owing to oil on his magneto carbon brush.

Generally speaking, however, so little happened (except rain) that the pressmen were getting bored with the whole affair. Longhope Hill proved their salvation! It has a hard embedded stone surface of the typical unfinished kind of country lane, and on Thursday afternoon was coated with so much slime that walking required care. Only the solo machines were sent up.

It was impossible to observe all the hill at once, but all of it was treacherous; our remarks apply only to the upper reaches.

On a Greasy Hill.

The early lightweights, having a clear run, made quite a good show. Davison (Levis), Applebee (Levis), Kershaw (New Imperial), and Horton (New Imperial) being most steady. Mrs. Knowles (A.J.S.) disappeared round the top bend in great style, but Mrs. Janson (Coventry Eagle) was not so fortunate; eventually she fell. But she failed in good company, for Dance hit the bank at speed and baulked his two Sunbeam teammates, Greenwood and Bennett. All three got going again in good style. C. J. P. Dodson's (Royal Ruby) clutch appeared to cease functioning temporarily, and R. P. Ranson (Lea-Francis) almost relinquished all control of his bucking mount. H. M. Beedon (499 Sunbeam), A. Rollason (498 Ariel), and B. C. Browning (349 Royal Ruby) should not lose any marks for their climbs. When G. E. Austin (Coventry-Victor) came to the inevitable stop—his machine simply would not go straight ahead—he baulked F. A. Longman (498 Ariel), and in the same way T. Peck (665 Ariel) prevented Westwood Wills (Powell) from getting up. Wills fell twice without stopping his engine, but three was not his lucky number in this instance.

Plucky do-or-die climbs were made by J. A. Newman (Douglas) and J. H. Davis (T.T. Sunbeam), and W .T. Woodcock (498 Ariel) was very sure. The three Scotts once again excelled, W. Moore's being really wonderfully steady and unfussing. Becker's spring frame McKechnie seemed to take to the grease like a duck to the water; his climb was as good as any except the Scotts'.

A very high low gear ratio proved the undoing of Bainbridge's Martinsyde, but despite several tumbles his time for the whole distance must have been very nearly fastest of the day. Pugh's big Harley also proved very unmanageable, a foot-controlled clutch had obvious disadvantages. Watson Bourne (976 Brough-Superior) made a magnificent climb until he fouled the handle-bars of A. A. Verity's Triumph. The only other heavy weight to make an imposing ascent was Burnett's 698 c.c. Raleigh.

FRIDAY'S RUN, 182¼ MILES.

Gloucester, Stroud, Tetbury, Birdlip, Northleach, Whitney, Oxford (lunch), Dorchester, Watlington, Princes Risborough, High Wycombe, Maidenhead, Windsor, Staines, Chertsey, Weybridge (Brooklands).

TOWARDS the end of a strenuous trial the competitors get tired or reckless or bored. The finish seemed in sight on Friday morning, and some of the riders apparently ignored the wisdom of "many a slip betwixt . . ."

There was much careless cornering—overshooting turns, etc.—and not a few minor crashes on Cotswold and Chiltern clay. Although there was not one real hill in a morning's run through country famous for its great climbs, there were many unpleasantly slippery lanes. One of

D. H. Davidson (596 Indian) and W. T. Woodcock (498 Ariel) making light of Llangynidr Pass.

Six Days Trials Described.—

these, about ten miles from the start, got half the solo entry wobbling and brought several to the ground, all within 20 yards of one another. Lovegrove (Radco) hurt his leg here, but carried on.

Later, after traversing Miserden Park and some gloriously English country, in most pleasant contrast to the bleak Welsh mountains of the morning before, a second gear observed climb was made less easy by the presence of a shallow water-splash at its commencement. Here C. W. Hough (349 A.J.S.) came to a stop, either with a shorted plug or with water in the carburetter, and T. Buckle (748 F.N.) fell.

Another Detour.

The only survivor of the unlucky Rudges, F. S. Whitfield's, knocked on the hill but did not stop. Both the new solo James were as sure and steady as any, but it was left to the new Brough-Superior, still in the hands of Watson-Bourne, to make the most effective climb, although J. H. Davies (T.T. Sunbeam) was nearly as speedy. Dance, after his adventures on Longhope on the previous day, appeared to be holding back slightly, and the rest of the solo Sunbeam team took their cue from him.

After fifty miles of mixed going the riders had only reached the summit of Birdlip, and it was not until Northleach that continuous main road to Oxford was joined.

Apprehension.

At lunch there was an extraordinary amount of apprehension—"wind-up" is the apter term—about Alms Hill. According to the latest dictates of the A.C.U. it was to be a penalty as well as a bonus hill—*i.e.*, plus five marks for a clean climb, minus five marks for a failure. Sportsmen who had lost their maximum for a gold debated the knotty point vigorously, but usually without coming to any conclusion. Five bonus marks were very tempting; but Alms Hill was reputed to be a real terror when wet. And of course it would be wet!

Very glutinous-surfaced by-lanes on the way to Henley, moreover, seemed in the nature of a practising ground, and by the time the parting of the ways was reached most of the riders were in a state reminiscent of one's first day in the trenches.

Then, one by one at first, and later in batches as they arrived at the foot, they discovered that the hill was remarkably dry. It was five easy marks for all but two who attempted it.

All Who Climbed Alms.

The heroes are enumerated below:

Very fast, very steady climbs: J. A. Watson-Bourne (976 Brough-Superior); on a *middle* gear of about 5½ to 1. W. D. Pugh (989 Harley-Davidson); only slightly slower.

Very fast, steady climbs: G. Dance (499 Sunbeam); as speedy as Watson-Bourne, but necessarily more fussy and spectacular. A. Bennett (499 Sunbeam); ditto, probably steadier than Dance. J. H. Davies (492 Sunbeam); as good as he had been doing all through the event.

Fast and effortless: E. H. Gifford (496 Martinsyde). F. S. Whitfield (499 Rudge). W. N. G. Phillips (499 Triumph). J. Westwood Wills (547 Powell); carelessly rubbing his eye as he breasted the "cannons." J. M. Philpott (598 Beardmore-Precision). T. Buckle (748 F.N.). W. T. Woodcock (498 Ariel). D. H. Davidson (596 Indian Scout); with slight rear wheel skidding.

Fast and imposing lightweights: L. Lidstone (349 James). E. Searle (349 Sheffield Henderson). C. W. Hough (349 A.J.S.). H. F. Harris (349 A.J.S.). J. Graham Oates (248 Grindley). E. A. Barnett (345 Francis Barnett). J. Wilkins (249 New Imperial). G. S. Davison (247 Levis); changed up just past the "cannons."

Effective, but more cautious: P. L. Mayo (249 Coventry Eagle). Mrs. O. M. Knowles (349 A.J.S.). A. R. Edwards (247 Levis); waved to a friend among the spectators. B. Kershaw (249 New Imperial); taking no chances. M. Bishop (247 Sun-Vitesse). F. Parkes (247 Sun-Vitesse); slightly baulked. C. L. Sprosen (348 Connaught). W. Handley (292 O.K.-Junior). E. W. Cholderoft (349 A.J.S.). I. F. Anderson (292 Connaught); very slow, but possibly intentionally so. G. Kimberley (349 James). H. Greaves (349 Beardmore); quite fast, but appeared to hold back considerably. C. Greenwood (499 Sunbeam); very speedy on second gear, then changed down. B. H. Cathrick (499 Dunelt); not spectacular, but exceptionally steady. A. Rollason (498 Ariel); changed down at "cannons." E. S. Burnett (698 Raleigh).

Clean climbs: L. Horton (249 New Imperial); bounced on steepest portion. F. W. Applebee (247 Levis); feet ready, but did not touch. J. Johnson (247 Sun-Vitesse; touch-and-go on the "cannons." F. C. North (292 O.K.-Junior); wobbled considerably. Mrs. G. M. Janson (349 Coventry Eagle); almost footed. F. A. Longman (498 Ariel); changed down too late, and unsteady low down.

Failed: H. M. Beedon (499 Sunbeam); charged "cannons" while attempting to change gear. T. Peck (565 Ariel); apparently unable to find low gear.

Several of the soloists footed in the "porridge" surface near the summit, but obviously not from lack of power.

Twenty-one sidecars and four three-wheelers made the attempt, and all except one—Frank Smith (926 Clyno)—were successful. The P. and M.'s led the van; R. Lewis's was, for a moment, expected to fail, but it pulled gamely through; Townsend's was fastest. Only Reg Brown of the Sunbeam sidecar team took the risk, and of course he was justified, although he seemed none too happy with his steering. P. Pehrson and the passenger in his Dunelt sidecar chatted unconcernedly together as they ambled easily upwards—a very fine performance from the smallest passenger outfit left in the trials.

Fastest Sidecars.

The remainder of the successful sidecars were big twins, and their climbs must be summarised. As usual, Giles (A.J.S. sc.) was fastest, but a tyre burst near the top, without, however, bringing him to a stop. L. F. McCardle (989 Harley-D. sc.) was only fractionally slower, although considerably less spectacular. The three Martinsydes were clean—W. H. Bashall's ascent being best— and H. S. Perrey's was most effective of the three B.S.A.'s. The nominated Harley team all did well, although C. W. Johnson and his passenger both looked frightfully worried. J. Chater-Lea, on the outfit bearing his name, was quite good, as was O. Wade on the second A.J.S., although it did not answer the helm too well.

W. Bucknell's outfit was the most effective of the three Matchlesses to come up, O'Brien's being fair, and Ellis's not at all impressive. These three were among the few to use Parson's chains, and they did not appear to be of much help in this instance.

S. Hall's two-speed Morgan was considerably better than H. F. S. Morgan's own four-speed model; Spouse on the T.B. and Carr on the third Morgan both made excellent climbs.

Thus it was proved that gradient alone cannot stop the modern motor cycle or three-wheeler.

Minor Misfortunes.

Sudden turns, minor hills, and patches of muddy going followed during a 40-mile detour to Marlow. Over-shooting of corners continued to be too common; in one melee Dance, who pulled up because two James had missed a turn, was rammed by Verity (499 Triumph). The latter, on a strange machine and in his first trial, was again unfortunate later. He ran into a large dog at Marlow and bent things considerably; pluckily he continued.

When making a minor adjustment to his Matchless by the roadside, E. C. Barton was knocked down heavily by a following sidecar. He was unable to go on, but his machine was taken to Brooklands for its "gold" by an official.

No. 13, J. Graham Oates (Grindley), arrived at Brooklands very, very late, and explained that he had had valve trouble, remarking to Mr. Loughborough that he never wanted a similar number allotted to him again! E. S. Burnett (698 Raleigh) was noticed by the roadside repairing a front tyre, apparently in serious trouble, for he failed to reach Weybridge that night.

On the whole, therefore, the day was a stiff one. There were four retirements.

SATURDAY, 68 MILES ON BROOKLANDS.

Brake Test, 25-Lap Speed Trial, Final Hill Climb and Examination.

THE surprises of the final speed tests were the number of cases in which the minimums were exceeded by a large margin, and the comparatively small amount of trouble caused by a gruelling 25 laps under a glaring sun. The required speeds were: 250 c.c. solo, 30 m.p.h.; 350 c.c. solo, 35 m.p.h.; 500 c.c. solo, 40 m.p.h.; 750 c.c. solo, 44 m.p.h.; 1,000 c.c. solo, 48 m.p.h.; 600 c.c. sidecars, 32 m.p.h.; 1,000 c.c. sidecars 38 m.p.h.; 1,100 c.c. three-wheelers, 38 m.p.h.

250 c.c. and 350 c.c. machines were dealt with first, a rough and ready brake

Start of the high speed test at Brooklands for 250 c.c. and 350 c.c. machines. The riders had to maintain 30 and 35 m.p.h. respectively to qualify for full marks.

test on the test hill being staged on the way to the fork start. Except for bonus marks, there was little to be gained by racing, but Mrs. Janson (349 Coventry-Eagle) and E. Searle (349 Sheffield-Henderson) immediately started a small T.T. on their own. They finished closely, the latter just leading, but Mrs. Janson paid the penalty later, for she could not make her engine fire when the time came to reclimb the test hill for the final examination.

The lap-scoring arrangements were excellent, but several riders made their own additional counting apparatus. Pa. Applebee was said to carry 25 pebbles in his pocket; and Mrs. Knowles had a cardboard "comb" on her handle-bars.

Eleventh-Hour Troubles.

Valve and plug troubles were the chief difficulties. Unlucky Graham-Oates (Grindley) broke another valve and could not remove the cap. At last he was forced to retire, after a very fine performance, marred only by misfortune. S. E. Longman (349 Zenith) was similarly troubled, but completed the course. The J.E.S. plugged steadily round, but it was reported that Purnell had difficulty in feeding the tiny engine with oil.

Several stopped for petrol, including A. R. Edwards, who called attention to the phenomenally cool condition of his Levis engine. A detailed schedule of the speeds attained will be found in the page giving the final awards.

The test hill was vanquished by all the survivors, but not always with ease.

Fast Solo Mounts.

The same sequence was now followed with the 500 c.c. and 750 c.c. solo machines. Westwood Wills (547 Powell) split his belt rim coming down the hill and so lost his only marks—eight—in the trials. Whitfield's Rudge was again obstinate, but was eventually persuaded to the starting line. It was of no avail, for another two exhaust valves went, and the machine was withdrawn.

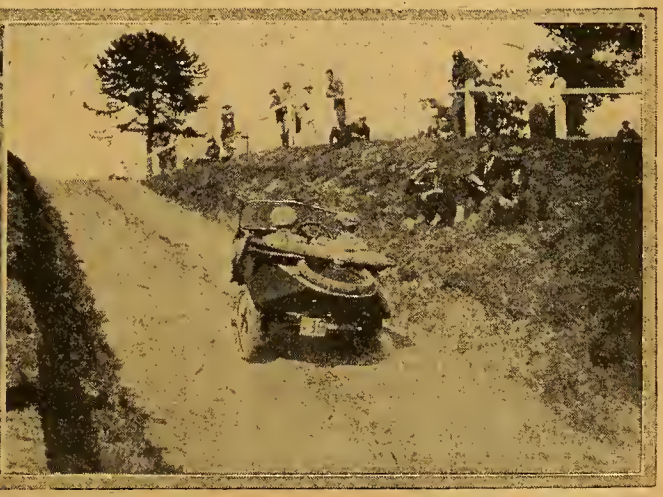
Dance (Sunbeam) announced his intention of going steadily. He must have changed his mind, for only G. F. Bainbridge's "Quick Six" Martinsyde was able to get ahead of him. Bainbridge had had a rough time during the road portion of the event—his lowest gear was in the neighbourhood of 9 to 1, and probably, in consequence, the Martinsyde steering-head was in a parlous state—but he was always a notable performer, and he finished up in a haze of glory *two laps ahead of Dance.*

Two spills marred the proceedings—T. Buckle (F.N.) and B. H. Cathrick (Dunelt) burst front tyres at the same spot on the track—and although at first the latter's injuries were reported to be serious, it happily turned out that neither was seriously hurt.

Few Adjustment Stops.

If anything there were considerably fewer adjustment and repair stops than in the previous classes. Phillips' four-valve Triumph was opened out on the last lap and was timed to go round at 60 m.p.h. Becker's McKechnie and Philpott's Beardmore were surprisingly fast; spring frames were evidently an advantage to newcomers to the track.

F. A. Longman (498 Ariel) in the brake test.



D. Rhodes (578 Scott Sociable) on the test hill at Brooklands.

Six Days Trials Described.—

T. Peck (665 Ariel) again tried top gear hill-climbing and failed, and Westwood Wills came up—a little way!—with his petrol turned off.

Watson-Bourne on the Brough-Superior and Pugh on the Harley were started with the 600 c.c. sidecars. The former immediately commenced lapping at 63-64 m.p.h., and his last circuit was unofficially timed as 2m. 20s., 69.8 m.p.h. The Harley rider complained of vibration, and was lapped several times by the British production.

Slow Sidecars.

None of the sidecars went in for high speeds; it was mainly a series of uninteresting processions. P. W. Bischoff adopted a super-racing attitude, but drove the slowest Sunbeam. B. Bourke's gearbox gave out in the same way as Freeley's earlier in the week.

While the Scott Sociable kept going, it beat the sidecars of approximately equal capacity in a convincing manner, but it suffered much tyre trouble and a broken spring, and was unable to finish in time.

Very few of the 1,000 c.c. sidecar drivers treated the test otherwise than as a race. For seven laps, F. W. Giles (800 A.J.S. sc.) and L. F. McCardle (989 Harley-Davidson sc.) fought a ding-dong struggle for the lead. Giles lapped most consistently at 50 m.p.h., and later declared that he had not been all out but wished that he had. Plug trouble made McCardle's times vary, and eventually lost him several laps, but he claims to have completed his final circuit at 60 m.p.h. Strange noises came from O'Brien's Matchless, but at length they ceased, warmed-up oil probably finding its way into a starved bearing.

For the honour of the Ariel team L. F. Newey, at first very fast, carried on with a badly leaking petrol-tank, stopping every four laps for a fuel replenishment. After lying third to Giles and McCardle for some time, Wade on the second A.J.S. distorted a valve.

New Engine's Troubles.

Saddington, a late entrant on a James sidecar, who had started the trials with a brand new engine that simply would not climb hills, was still in trouble early in the speed test, losing nearly four laps on the majority. He retrieved himself by finishing in time, in great style.

The 678 c.c. Martinsydes, with the smallest engines in their class and the lowest top gears, did not disgrace themselves by any means; and the solitary Chater-Lea, although not fast, was very consistent. The two Indians were hampered by very heavy touring sidecars. The B.S.A.'s were not so silent as most of the big sidecars, but they certainly went well, and beat several 200 c.c.-larger outfits. Walker, however, broke a chain at the foot of the test hill, for which he was docked 11 marks.

Three-wheeler *versus* Sidecar.

Running in the same class, the Morgans lost a lap to Giles about half-distance, but were gaining ground again at the finish.

Although the final examination, conducted by Professor Low and Col. Davidson, was thorough, the number of marks lost at this point was surprisingly low.

Indeed, the feature of the whole trials, which, as it may be judged, were really severe, was the manner in which so many machines came through, ready, after only minor adjustments, to do it all over again.

HOW THE COMPETITORS FARED ON THE HILLS.

The Competitors Classified according to the Machines they rode. Their Awards and the hills on which they failed to make a clean ascent.

A.J.S.

Mrs. O. M. Knowles (349). *Gold medal.* Rosedale.
E. W. Choldcroft (349). *Gold medal.* Rosedale and Mow Cop.
H. F. Harris (349). *Gold medal.* Rosedale.
C. W. Hough (349). *Gold medal.* Candle Green.
F. W. Giles (800 sc.). *Gold medal.* Climbed all hills.
H. Poole (800 sc.). *Gold medal.* Boltby.
O. Wade (800 sc.). *Silver medal.* Climbed all hills.
H. H. S. Harris (800 sc.). *Retired.*

ARIEL.

A. Rollason (498). *Gold medal.* Climbed all hills.
F. A. Longman (498). *Gold medal.* Climbed all hills.
W. T. Woodcock (498). *Gold medal.* Climbed all hills.
L. Newey (994 sc.). *Gold medal.* Climbed all hills.
C. Bourlet (498 sc.). *Retired.* Boltby. Rosedale.
T. F. Blumfield (994 sc.). *Retired.*
F. J. Watson (994 sc.). *Retired.*
T. Peck (665). *Retired.*

ALLON.

L. E. Clulee (292). *Gold medal.* Climbed all hills.
R. Cooper (292). *Gold medal.* Rosedale.
W. Johnson (292). *Gold medal.* Boltby.

BEARMORE-PRECISION.

E. R. Jacobs (598 sc.). *Gold medal.* Boltby Rosedale.
J. M. Philpott (598). *Gold medal.* Rosedale.
H. Greaves (349). *Silver medal.* Whitehorse.

BROUGH-SUPERIOR.

Geo. Brough (976). *Gold medal.* Rosedale.
W. A. Fell Smith (976 sc.). *Retired.*

B.S.A.

B. L. Bird (770 sc.). *Gold medal.* Climbed all hills.
J. H. Walker (770 sc.). *Gold medal.* Rosedale.
H. S. Perrey (770 sc.). *Silver medal.* Rosedale.

BRADBURY.

W. E. Grange (750 sc.). *Retired.*
G. E. Minett (750 sc.). *Retired.*
P. Platt (750 sc.). *Retired.*

CHATER-LEA.

J. Chater Lea (976 sc.). *Gold medal.* Rosedale.

CLYNO.

F. Smith (926 sc.). *Gold medal.* Rosedale. Alms.

CONNAUGHT.

C. L. Sprosen (348). *Gold medal.* Gillamoor.
I. F. Anderson (292). *Certificate.* Boltby. Rosedale.
A. G. Wall (348). *Retired.* Long Hope.
I. P. Brettell (348 sc.). *Retired.*

COVENTRY EAGLE.

P. L. Mayo (249). *Gold medal.* Long Hope. Lydbrook.
Mrs. G. M. Janson (349). *Retired* at Brooklands. Rosedale. Wildboarclough. Long Hope.

COVENTRY VICTOR.

G. E. Austin (688). *Silver medal.* Boltby. Rosedale.

DOT.

H. Reed (986 sc.). *Retired.*

DOUGLAS.

J. A. Newman (494). *Gold medal.* Climbed all hills.
J. L. Hauman (494). *Retired.*
J. W. Wildblood (498 sc.). *Retired.*
R. C. Winn (494). *Retired.*

DUNELT.

P. Pehrson (499 sc.). *Gold medal.* Axe Edge. Allgreave. Candle Green.
O. S. Bridcutt (499). *Silver medal.* Climbed all hills.
B. H. Cathrick (499). *Retired* at Brooklands. Rosedale. Penrhied.

EXCELSIOR.

V. F. Strong (976 sc.). *Retired.*

F.N.

T. Buckle (748). *Retired at Brooklands.* Rosedale.

FRANCIS-BARNETT.

E. A. Barnett (346). *Gold medal.* Rosedale.
S. M. Greening (346). *Gold medal.* Long Hope.

GRINDLEY.

J. Graham Oates (248). *Retired at Brooklands.* Rosedale. Whitehorse. Llangynidr. Portway.

HARLEY-DAVIDSON.

W. D. Pugh (989). *Gold medal.* Rosedale.
L. F. McCardle (989 sc.). Not eligible for award. Centre Premiership only. Rosedale.
G. Baxter (989 sc.). *Gold medal.* Rosedale.
T. R. Allchin (989 sc.). *Gold medal.* Climbed all hills.
C. W. Johnston (989 sc.). *Gold medal.* Rosedale.

INDIAN.

E. A. Bridgman (998 sc.). *Gold medal.* Boltby. Rosedale.
R. Swanton (998 sc.). *Silver medal.* Whitehorse. Rosedale. Bwlch-y-Groes.
H. G. Catterall (596). *Silver medal.* Whitehorse. Boltby. Rosedale. Wildboarclough. Froghall.
D. H. Davidson (596). *Retired.* Boltby. Whitehorse.

JAMES.

G. Kimberley (349). *Gold medal.* Climbed all hills.
J. Lidstone (349). *Gold medal.* Climbed all hills.
F. Cotton (749 sc.). *Certificate.* Whitehorse. Boltby. Rosedale. Mow Cop. Long Mountain. Bwlch-y-Groes. Alms.
H. H. Saddington (749 sc.). *Certificate.* Whitehorse. Boltby. Rosedale. Mow Cop. Long Mountain. Bwlch-y-Groes.

J.E.S.

R. P. Purnell (169). *Certificate.* Whitehorse. Boltby (approach). Rosedale. Mow Cop. Long Hope

LEA-FRANCIS.

R. P. Ranson (496). *Gold medal.* Rosedale.
A. Lea (496). *Retired.*

LEVIS.

G. S. Davison (247). *Gold medal.* Rosedale.
A. R. Edwards (247). *Gold medal.* Rosedale.
F. W. Applebee (247). *Gold medal.* Boltby. Rosedale. Llangynidr.

L.S.D.

G. W. Shepherd (998). *Retired.*

MARTINSYDE.

E. H. Gifford (499). *Gold medal.* Rosedale. Inchbrook.
G. F. Bainbridge (739). *Gold medal.* Long Hope.
A. A. Symes (678 sc.). *Gold medal.* Climbed all hills.
J. T. Bashall (678 sc.). *Gold medal.* Rosedale.
W. H. Bashall (678 sc.). *Gold medal.* Rosedale.

MATCHLESS.

W. Bucknell (993 sc.). *Gold medal.* Rosedale.
F. O'Brien (964 sc.). *Gold medal.* Rosedale.
T. J. Ross (993 sc.). *Gold medal.* Whitehorse. Boltby. Rosedale. Long Mountain. Bwlch-y-Groes.
F. J. Ellis (993 sc.). *Gold medal.* Rosedale.
G. D. Hardee (998 sc.). *Gold medal.* Climbed all hills.
E. C. Barton (976 sc.). *Silver medal.* Boltby. Rosedale.

McKECHNIE.

F. W. Becker (688). *Bronze medal.* Rosedale.

MORGAN.

S. Hall (1,096 M.A.G.). *Gold medal.* Climbed all hills.
H. F. S. Morgan (978 Jap). *Gold medal.* Climbed all hills.
W. Carr (1,096 Anzani). *Gold medal.* Climbed all hills.

NEW HUDSON.

E. Mundey (595 sc.). *Gold medal.* Rosedale. Candle Green.
B. Bourke (595 sc.). *Retired* at Brooklands. Rosedale.
F. B. Freeley (595 sc.). *Retired.*

NEW IMPERIAL.

B. Kershaw (249). *Gold medal.* Whitehorse.
L. Horton (249). *Gold medal.* Climbed all hills.
J. Wilkins (249). *Gold medal.* Climbed all hills.

NORTON.

W. N. Clayton-Russell (633). *Retired.*
R. M. Knowles (499). *Retired.*

O.K.

F. C. North (292). *Gold medal.* Climbed all hills.
N. Hall (292). *Gold medal.* Climbed all hills.
W. Handley (292). *Gold medal.* Climbed all hills.

P. AND M.

P. Cunningham (555 sc.). *Gold medal.* Climbed all hills.
R. Lewis (555 sc.). *Gold medal.* Climbed all hills.
G. M. Townsend (555 sc.). *Gold medal.* Boltby.
J. A. Leyland (555). *Retired.*

Six Days Trials Described.—

POWELL.

J. Westwood Wills (547). *Gold medal.* Climbed all hills.

RADCO.

C. Lovegrove (247). *Gold medal.* Climbed all hills.

RALEIGH.

R. Evans (348). *Gold medal.* Rosedale.
C. F. Nott (348). *Gold medal.* Rosedale.
W. H. Hadfield (348). *Bronze medal.* Whitehorse.
E. Foster (698). *Retired.*
E. S. Burnett (698). *Retired.*

ROYAL RUBY.

C. J. P. Dodson (349). *Retired.*
P. N. Hills (349). *Certificate.* Bolthy. Rosedale. Mow Cop. Bwlch-y-Groes.

RUDGE.

A. W. Handley (499 sc.). *Retired.*
W. J. Danskin (499 sc.). *Retired.*
F. T. Sibley (499 sc.). *Retired.*
E. J. Kehoe (998). *Retired.*
W. L. Gard (499). *Retired.*
F. S. Whitfield (499). *Retired.*

SCOTT.

G. Hill (532). *Gold medal.* Climbed all hills.
W. Moore (532). *Gold medal.* Climbed all hills.
W. Scott (532). *Silver medal.* Climbed all hills.

SCOTT-SOCIABLE.

D. Rhodes (578). *Certificate.* Bolthy. Rosedale. Mow Cop.

SHEFFIELD-HENDERSON.

E Searle (350). *Gold medal.* Climbed all hills.

SUN-VITESSE.

J. Johnson (247). *Gold medal.* Rosedale.
M. Bishop (247). *Gold medal.* Climbed all hills.
F. Parkes (247). *Certificate.* Hirnant.

SUNBEAM.

G. Dance (499). *Gold medal.* Climbed all hills.
A. Bennett (499). *Gold medal.* Rosedale.
C. Greenwood (499). *Gold medal.* Climbed all hills.
H. M. Beedon (499). *Gold medal.* Rosedale. Alms.
T. C. de la Hay (555 sc.). *Gold medal.* Bolthy. Rosedale.
P W. Bischoff (555 sc.). *Gold medal.* Bolthy. Rosedale.
R. Brown (555 sc.). *Gold medal.* Rosedale.
J. H. Davies (492). *Gold medal.* Climbed all hills.

T.B.

F. S. Spouse (980). *Gold medal.* Climbed all hills.

TRIUMPH.

W. N. C. Phillips (499). *Gold medal.* Rosedale. Whitehorse.
A. A. Verity (499). *Gold medal.* Long Hope.
J. Harrison Watson (550 sc.). *Retired.*

WEATHERELL.

M. C. Breese (349 sc.). *Retired.*

WILKIN.

W. H. Hardman (499). *Retired.*

ZENITH-J.A.P.

S. E. Longman (349). *Silver medal.* Climbed all hills.
C. H. Mocatta (349). *Retired.*
R. H. Bywaters (986 sc.). *Retired.*
R. C. Charlesworth (986 sc.). *Retired.*

CAUSES OF RETIREMENTS.

MONDAY.

H. Reed (986 Dot sc.)—gear box.
V. F. Long (976 Excelsior sc.)—unknown.
H. H. S. Harris (800 A.J.S. sc.)—carburetter and burnt clutch.
R. C. Winn (494 Douglas)—transmission sprocket sheared.
T. F. Blumfield (994 Ariel sc.)—primary chain trouble.
G. E. Minnett (750 Bradbury sc.)—gear box.
F. J. Watson (994 Ariel sc.)—unknown.
P. Platt (750 Bradbury sc.)—magneto.
C. H. Mocatta (349 Zenith)—rear hub bearing.
R. H. Bywaters (986 Zenith sc.)—unknown.
R. C. Charlesworth (986 Zenith sc.)—gear box.
G. W. Shepherd (998 L.S.D.)—unknown.

TUESDAY.

A. Lea (496 Lea-Francis)—broken frame.
C. Bourlet (498 Ariel sc.)—clutch trouble.
W. N. Clayton Russell (633 Norton sc.)—accident.
E. J. Kehoe (998 Rudge)—broken frame.
W. A. Fell-Smith (976 Brough Superior sc.)—broken sidecar connection.
M. C. Breese (349 Weatherell sc.)—broken frame.
I. P. Brettell (348 Connaught sc.)—accident.
H. G. Catterall (596 Indian Scout)—carburetter.

WEDNESDAY.

J. L. Hanman (494 Douglas)—gear box.
W. H. Hardman (499 Wilkin)—accident.
F. B. Freeley (595 New Hudson sc.)—gear box.
W. J. Danskin (499 Rudge sc.)—broken valves.
J. Harrison-Watson (550 Triumph sc.)—tyres.
W. E. Grange (750 Bradbury sc.)—unknown.

THURSDAY.

R. M. Knowles (490 Norton)—gear box.
W. L. Gard (499 Rudge)—engine trouble.
J. A. Leyland (555 P. and M.)—unknown.
J. W. Wildblood (494 Douglas sc.)—sprocket key sheared.
F. T. Sibley (499 Rudge sc.)—broken sidecar chassis.

FRIDAY.

A. G. Wall (348 Connaught)—unknown.
E. Foster (698 Raleigh)—unknown.
E. S. Burnett (698 Raleigh)—tyres.
C. J. P. Dodson (349 Royal Ruby)—accident.

SATURDAY.

J. Graham Oates (248 Grindley)—valves.
F. S. Whitfield (499 Rudge)—valves.
T. Buckle (784 F.N.)—accident (tyre).
B. H. Cathrick (499 Dunelt)—accident (tyre).
Mrs. Janson (349 Coventry-Eagle)—engine and magneto.
B. Bourke (595 New Hudson sc.)—gear box.

COMPLETE TABULATED RESULTS.

Competitors' Marks (lost and gained) on Various Tests. 79 Gold Medals, 9 Silver Medals, 3 Bronze Medals, 7 Certificates. 1 Not Eligible for Award, Centre Premiership Competition Only. 43 Retired.

SPECIAL PRIZES.

TEAM PRIZES: Class A. 1; Levis, total marks 1,450 (riders: G. S. Davidson, A. R. Edwards and F. W. Applebee). 2; New Imperial, 1,447 (riders: B. Kershaw, L. Horton and J. Wilkins). 3; Sun-Vitesse, 1,416 (riders: J. Johnson, F. Parkes and M. Bishop).

Class B. 1; O.K.-Junior, 1,447 (riders: F. C. North, N. Hall and W. Handley). 2; A.J.S., 1,445 (riders: E. W. Choldcroft, H. F. Harris and C. W. Hough). 3; Allon, 1,417 (riders: R. Cooper, L. E. Clulee and W. Johnson).

Class C. 1; Sunbeam, 1,458 (riders: G. Dance, A. Bennett and C. Greenwood). 2; Ariel, 1,454 (riders: A. Rollason, F. A. Longman and W. T. Woodcock).

Class F. 1; P. and M., 1,443 (riders: P. Cunningham, R. Lewis and G. M. Townsend). 2; Sunbeam, 1,419 (riders: T. C. de la Hay, P. W. Bischoff and R. Brown).

Class G. Harley-Davidson and A.J.S. tied, 1,443 marks (Harley-Davidson riders: G. Baxter, T. R. Allchin, C. W. Johnston). (A.J.S. riders: F. W. Giles, H. Poole and O. Wade).

CENTRE PREMIERSHIP: F. W. Giles (A.J.S. sc.), Midland Centre, 494 marks.

HOPWOOD PRIZE for Best Performance in the Trial: 1; F. W. Giles (A.J.S. sc.), 494. 2; W. Carr (Morgan), 493. 3; H. F. S. (Morgan), 492.

Competitor and Machine.	Speed on Brooklands. m.p.h.	MARKS LOST (Bonus Marks shown thus "+5."). On time.	On hills.	Brakes.	Silence.	Speed test.	Condition.	Total.	Award.
CLASS A.—MOTOR BICYCLES. NOT EXCEEDING 250 c.c.									
P. L. Mayo (249 Coventry-Eagle)	34.4	6	10	6	1	+4	4	23	Gold.
R. P. Purnell (169 J.E.S.)	27.3	50	25	—	2	+12	+4	93	Certificate.
B. Kershaw (249 New Imperial)	43.0	8	—	—	2	+13	—	+3	Gold.
L. Horton (249 New Imperial)	38.1	10	+5	—	3	+8	—	0	Gold.
J. Wilkins (249 New Imperial)	42.4	10	+5	—	3	+12	—	+4	Gold.
G. S. Davison (247 Levis)	43.5	—	—	—	4	+13	—	+9	Gold.
A. R. Edwards (247 Levis)	42.8	—	—	—	4	+12	—	+8	Gold.
F. W. Applebee (247 Levis)	37.9	—	10	—	4	+7	—	7	Gold.
G. Lovegrove	34.5	—	—	—	3	+4	2	1	Gold.
J. Johnson (247 Sun-Vitesse)	33.12	—	—	—	4	+3	2	3	Gold.
F. Parkes (247 Sun-Vitesse)	36.9	28	—	—	4	+6	1	27	Certificate.
M. Bishop (247 Sun-Vitesse)	37.3	—	+5	—	4	+7	2	+6	Gold.
J. Graham Oates (248 Grindley)	—	—	—	—	—	—	—	—	Retired 6th day.

Competitor and Machine.	Speed on Brooklands. m.p.h.	MARKS LOST. (Bonus Marks shown thus "+5.") On time.	On hills.	Brakes.	Silence.	Speed test.	Condition.	Total.	Award.
CLASS B.—MOTOR BICYCLES NOT EXCEEDING 350 c.c.									
E. A. Barnett (346 Francis-Barnett)	42.6	—	—	—	3	+7	2	+2	Gold.
S. M. Greening (346 Francis-Barnett)	41.1	—	5	—	3	+6	—	2	Gold.
Mrs. O. M. Knowles (349 A.J.S.)	40.0	—	—	—	5	+5	—	0	Gold.
R. Evans (348 Raleigh)	39.6	—	5	—	2	+4	2	5	Gold.
W. H. Hadfield (348 Raleigh)	38.9	22	—	—	3	+3	6	28	Bronze.
C. F. Nott (348 Raleigh)	41.0	—	5	—	2	+6	1	2	Gold.
R. Cooper (292 Allon)	38.9	—	5	—	4	+3	—	6	Gold.
L. E. Clulee (292 Allon)	40.0	—	—	—	5	+5	—	0	Gold.
W. Johnson (292 Allon)	24.2	—	5	—	2	10	—	17	Gold.
E. W. Choldcroft (349 A.J.S.)	44.6	—	5	—	2	+9	—	+2	Gold.
H. F. Harris (349 A.J.S.)	45.8	—	—	—	3	+10	9	2	Gold.
C. W. Hough (349 A.J.S.)	44.7	—	—	—	3	+9	1	+5	Gold.
F. C. North (292 O.K. Junior)	35.5	—	+5	—	3	+1	1	+2	Gold.
N. Hall (292 O.K. Junior)	39.5	—	—	—	2	+4	2	0	Gold.
W. Handley (292 O.K. Junior)	39.6	—	+5	—	2	+4	2	+5	Gold.
E. Searle (350 Sheffield-Henderson)	46.3	—	+5	—	2	+4	2	+5	Gold.
S. E. Longman (349 Zenith-Jap)	32.8	—	—	—	2	12	1	15	Silver.
C. H. Mocatta (349 Zenith-Jap)	—	—	—	—	—	—	—	—	Retired 1st day.
J. F. Anderson (293 Connaught)	35.4	68	5	—	4	—	15	92	Certificate.
C. L. Sprosen (348 Connaught)	40.1	—	—	—	5	+5	—	0	Gold.
A. G. Wall (348 Connaught)	—	—	—	—	—	—	—	—	Retired 5th day.
Mrs. Janson (349 Coventry-Eagle)	46.3	—	—	—	—	—	—	—	Retired 6th day.
C. J. P. Dodson (349 Royal Ruby)	—	—	—	—	—	—	—	—	Retired 5th day.
P. N. Hills (349 Royal Ruby)	43.0	50	20	—	3	+8	—	65	Certificate.
K. Kimberley (349 James)	40.1	—	+5	—	3	+5	2	5	Gold.
J. Lidstone (349 James)	40.1	—	+5	—	2	+5	1	+7	Gold.
H. Greaves (349 Beardmore)	45.7	12	—	—	5	+10	1	8	Silver.
CLASS C.—MOTOR BICYCLES NOT EXCEEDING 500 c.c.									
G. Dance (499 Sunbeam)	52.3	—	+5	2	5	+12	1	+9	Gold.
A. Bennett (499 Sunbeam)	49.9	—	—	2	5	+9	1	+1	Gold.
C. Greenwood (499 Sunbeam)	48.0	—	+5	—	5	+8	—	+8	Gold.
E. H. Gifford (495 Martinsyde)	46.6	—	5	—	3	+6	—	2	Gold.
O. S. Brideutt (499 Dunelt)	44.7	—	—	12	4	+4	8	20	Silver.
B. H. Cathrick (499 Dunelt)	—	—	—	—	—	—	—	—	Retired 6th day.
R. M. Knowles (499 Norton)	—	—	—	—	—	—	—	—	Retired 4th day.
L. J. Hanman (494 Douglas)	—	—	—	—	—	—	—	—	Retired 3rd day.
W. L. Gard (499 Rudge)	—	—	—	—	—	—	—	—	Retired 4th day.
F. H. Whitfield (499 Rudge)	—	—	—	—	—	—	—	—	Retired 6th day.
W. H. Hardman (499 Wilkin)	—	—	—	—	—	—	—	—	Retired 3rd day.
H. M. Beedon (499 Sunbeam)	42.4	—	10	—	4	+2	8	20	Gold.
R. C. Winn (494 Douglas)	—	—	—	—	—	—	—	—	Retired 1st day.
R. P. Ranson (496 Lea-Francis)	43.0	—	5	—	2	+3	—	4	Gold.
A. Lea (496 Lea-Francis)	—	—	—	—	—	—	—	—	Retired 2nd day.
W. N. G. Phillips (499 Triumph)	49.7	10	5	2	5	+9	1	14	Gold.
A. A. Verity (499 Triumph)	43.8	—	5	2	4	+3	—	8	Gold.
A. Rollason (498 Ariel)	44.2	—	+5	2	5	+4	—	+2	Gold.
F. A. Longman (498 Ariel)	46.3	—	+5	2	4	+6	—	+5	Gold.
W. T. Woodcock (498 Ariel)	48.0	—	+5	2	4	+8	—	+7	Gold.
J. A. Newman (494 Douglas)	49.0	—	+5	2	3	+9	—	+9	Gold.
J. H. Davies (599 Sunbeam)	52.8	—	+5	2	4	+12	—	+11	Gold.
CLASS D.—MOTOR BICYCLES NOT EXCEEDING 750 c.c.									
G. E. Austin (688 Coventry-Victor)	45.4	—	10	—	1	+1	—	10	Silver.
J. Westwood Wills (547 Powell)	48.7	—	+5	10	3	+4	8	12	Gold.
G. F. Bainbridge (739 Martinsyde)	56.3	—	5	—	3	+12	4	0	Gold.
G. H. Davidson (596 Indian)	40.1	—	5	—	4	13	4	26	Silver.
W. Scott (532 Scott)	50.2	—	—	2	1	+6	12	9	Silver.
G. Hill (532 Scott)	45.5	—	—	—	1	+1	0	0	Gold.
W. Moore (532 Scott)	47.2	—	—	2	1	+3	—	0	Gold.
E. Foster (698 Raleigh)	—	—	—	—	—	—	—	—	Retired 5th day.
W. F. Becker (688 McKechnie)	48.5	21	5	—	2	+4	—	24	Bronze.
J. M. Philpott (598 Beardmore)	47.9	—	—	2	5	+3	2	6	Gold.
J. A. Leyland (555 P. & M.)	—	—	—	—	—	—	—	—	Retired 5th day.
H. G. Catterall (596 Indian)	—	—	—	—	—	—	—	—	Retired 2nd day.
E. S. Burnett (700 Raleigh)	—	—	—	—	—	—	—	—	Retired 5th day.
T. Buckle (748 F.N.)	—	—	—	—	—	—	—	—	Retired 6th day
T. Peck (665 Ariel)	—	—	—	—	—	—	—	—	Retired 5th day
CLASS E.—MOTOR BICYCLES NOT EXCEEDING 1,000 c.c.									
E. J. Kehoe (998 Rudge)	—	—	—	—	—	—	—	—	Retired 2nd day.
Geo. Brough, J. A. Watson-Bourne (976 Brough Superior)	64.6	4	—	4	2	+16	4	+2	Gold.
W. D. Pugh (989 Harley-Davidson)	49.9	10	—	—	2	+1	—	11	Gold.
CLASS B/S.—SIDECARS NOT EXCEEDING 350 c.c.									
M. C. Breese (349 Weatherell sc.)	—	—	—	—	—	—	—	—	Retired 2nd day.
I. P. Brettell (348 Connaught sc.)	—	—	—	—	—	—	—	—	Retired 3rd day.
CLASS F.—SIDECARS NOT EXCEEDING 600 c.c.									
P. Cunningham (555 P. & M. sc.)	37.4	—	+5	2	4	+5	—	+4	Gold.
R. Lewis (555 P. & M. sc.)	37.5	—	+5	2	5	+5	—	+3	Gold.
G. M. Townsend (555 P. & M. sc.)	35.7	—	—	2	5	+3	—	4	Gold.
T. C. de la Hay (599 Sunbeam sc.)	36.7	—	10	—	3	+4	—	9	Gold.
P. W. Bischoff (599 Sunbeam sc.)	35.4	—	10	2	2	+3	—	11	Gold.
R. Brown (599 Sunbeam sc.)	36.7	—	—	2	3	+4	—	1	Gold.
P. Pehrson (499 Dunelt sc.)	33.6	—	10	4	4	+1	—	17	Gold.
B. Bourke (595 New Hudson sc.)	—	—	5	2	—	—	—	—	Retired 6th day.
F. B. Freeley (595 New Hudson sc.)	—	—	—	—	—	—	—	—	Retired 3rd day.
E. Mundey (595 New Hudson sc.)	46.5	—	10	4	4	+14	3	7	Gold.
A. W. Handley (499 Rudge sc.)	—	—	—	—	—	—	—	—	Retired 4th day.
W. L. Danskin (499 Rudge sc.)	—	—	—	—	—	—	—	—	Retired 3rd day.
F. T. Sibley (499 Rudge sc.)	—	—	—	—	—	—	—	—	Retired 2nd day.
E. R. Jacobs (598 Beardmore sc.)	37.4	—	10	—	5	+5	—	10	Gold.
C. Bourlet (498 Ariel sc.)	—	—	—	—	—	—	—	—	Retired 2nd day.
J. Harrison Watson (550 Triumph sc.)	—	—	—	—	—	—	—	—	Retired 3rd day.
J. Wildblood (494 Douglas sc.)	—	—	—	—	—	—	—	—	Retired 4th day.

Competitor and Machine.	Speed on Brooklands. m.p.h.	On time.	On hills.	MARKS LOST. (Bonus Marks shown thus "+5".) Brakes.	Silence.	Speed test.	Condition.	Total.	Award.
CLASS G.—SIDECAR NOT EXCEEDING 1,000 c.c.									
A. A. Symes (678 Martinsyde sc.)	43.9	—	—	2	5	+5	1	3	Gold.
J. T. Bashall (678 Martinsyde sc.)	43.6	—	—	2	5	+5	—	2	Gold.
W. H. Bashall (678 Martinsyde sc.)	43.6	—	—	2	5	+5	1	3	Gold.
E. A. Bridgman (998 Indian sc.)	40.1	2	10	—	5	+2	—	15	Gold.
R. Swanton (998 Indian sc.)	40.1	—	15	2	5	+2	—	20	Silver.
V. F. Long (976 Excelsior sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
H. S. Perrey (770 B.S.A. sc.)	47.5	18	—	4	5	+9	11	29	Silver.
B. L. Bird (770 B.S.A. sc.)	42.3	—	+5	4	5	+4	1	1	Gold.
J. H. Walker (770 B.S.A. sc.)	43.9	—	—	6	5	+5	—	6	Gold.
H. H. S. Harris (799 A.J.S. sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
W. Bucknell (993 Matchless sc.)	37.4	—	—	2	4	+10	—	16	Gold.
E. C. Barton (976 Matchless sc.)	32.6	8	10	2	5	15	11	51	Silver.
G. E. Minett (750 Bradbury sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
P. Platt (750 Bradbury sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
W. A. Fell Smith (976 Brough Superior sc.)	—	—	—	—	—	—	—	—	Retired 2nd day.
F. Cotton (719 James sc.)	39.5	4	35	—	3	+1	2	43	Certificate.
G. Baxter (989 Harley Davidson sc.)	45.8	—	—	—	5	+7	—	+2	Gold.
T. R. Allchin (989 Harley-Davidson sc.)	47.3	—	+5	4	4	+9	—	+6	Gold.
C. W. Johnston (989 Harley-Davidson sc.)	49.1	—	—	6	4	+11	—	+1	Gold.
F. W. Giles (809 A.J.S. sc.)	50.9	—	+5	—	3	+12	—	+14	Gold.
H. Poole (800 A.J.S. sc.)	42.7	—	5	—	2	+4	—	3	Gold.
O. Wade (800 A.J.S. sc.)	36.7	—	+5	—	2	11	—	8	Silver.
F. O'Brien (964 Matchless sc.)	45.5	—	—	2	3	+7	—	+2	Gold.
T. J. Ross (993 Matchless sc.)	37.9	—	25	4	2	10	1	42	Bronze.
F. J. Ellis (993 Matchless sc.)	43.5	—	—	2	2	+5	—	+1	Gold.
W. E. Grange (750 Bradbury sc.)	—	—	—	—	—	—	—	—	Retired 3rd day.
T. F. Blumfield (994 Ariel sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
L. Newey (994 Ariel sc.)	44.5	—	—	2	5	+6	—	1	Gold.
F. J. Watson (994 Ariel sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
R. H. Bywaters (986 Zenith sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
H. Reed (986 Dot sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
R. C. Charlesworth (986 Zenith sc.)	—	—	—	—	—	—	—	—	Retired 1st day.
G. D. Hardee (998 Matchless sc.)	42.5	8	—	—	3	+4	—	7	Gold.
F. Smith (926 Clyno sc.)	46.0	—	10	2	5	+8	—	9	Gold.
W. N. Clayton Russell (633 Norton sc.)	—	—	—	—	—	—	—	—	Retired 2nd day.
J. Chater Lea (976 Chater-Lea-sc.)	41.0	—	—	2	4	+3	1	4	Gold.
L. F. McCardle (989 Harley-Davidson sc.)	39.9	—	—	4	5	+1	—	8	—
H. H. Saddington (749 James sc.)	37.9	—	30	—	5	—	1	36	Certificate.
CYCLECARS.									
D. Rhodes (578 Scott Sociable)	29.1	44	15	4	3	14	11	91	Certificate.
G. W. Shepherd (998 L.S.D.)	—	—	—	—	—	—	—	—	Retired 1st day.
F. S. Spouse (980 T.B.)	41.6	—	+5	—	5	+3	—	+3	Gold.
S. Hall (1096 Morgan)	43.3	—	+5	—	3	+5	—	+7	Gold.
H. F. S. Morgan (978 Morgan)	48.9	—	+5	—	3	+10	—	+12	Gold.
W. Carr (1096 Morgan)	49.1	—	+5	—	3	+11	—	+13	Gold.

The feat of Mrs. Knowles in winning a Scottish and an English "gold" in one year is an unparalleled achievement for a woman, and one equalled by very few men. She is a genuine private owner, and is all the more pleased because she did *not* have an absolutely no-trouble run.

* * * *

The rear band brake of Graham Oates' Grindley gave a lot of trouble, and in consequence the Grindleys of the future will be fitted with the dummy belt rim type. Incidentally 28×3 in. tyres were used on this lightweight after prolonged tests, which proved they did not slow the machine one whit.

* * * *

The Auto-Cycle Union wishes to contradict the impression wrongly gained by a few of the competitors that charges for hotel accommodation included a certain percentage to be devoted to the expenses of the trials. On the contrary, these charges did not even include the cost of preparing and printing the books of coupons, or the expenses incurred in arranging accommodation for some two hundred and fifty individuals. These, obviously, were covered by the entry fees received. Possibly the error arose owing to the fact that at one headquarters no advance prices could be obtained, and therefore an average was struck with the definite object of adjustment at the conclusion of the trial.

THE RESULTS ANALYSED.

Class.	Gold.	Silver.	Bronze.	Certificate.	Non-starter.	Retired.
A	10	—	—	2	—	1
B	18	2	1	2	1	4
C	13	1	—	—	—	8
D	5	3	1	—	1	6
E	2	—	—	—	—	1
B/s ..	—	—	—	—	—	2
F	0	—	—	—	—	8
G* ...	18	4	1	2	—	12
J2 ...	—	—	—	1	—	—
H	4	—	—	—	—	1
	79	10	3	7	2	43

* One not eligible for award (centre competition only).

CENTRE PREMIERSHIP.

	Marks.
1. F. W. Giles (A.J.S. sc.), Midland	494
2. J. H. Davies (Sunbeam) N. Wales	491
3. J. A. Newman (Douglas), Western	489
4. F. J. Ellis (Matchless sc.), S. Eastern	481
5. L. F. McCardle (Harley-D. sc.), Eastern	472
6. H. H. Saddington (James sc.), S. Midland	444

* * * *

When G. Brough was forced to retire, he wired for J. A. Watson-Bourne, who is now partner in a garage business at Oldham. The latter set out at 1 a.m. on his Brough Superior outfit, reached Llandrindod Wells at 7.30 a.m., and started off with the competitors at 8.26 a.m. Incidentally, he always shone on hills, often climbing second and low-gear pimples—for others—on a top of 3.5 to 1.

Barnett's and Greening's Francis-Barnetts—the only two in the trial—ran most consistently throughout the event, but the former lost 2 marks in the final examination owing to neglecting to tighten his rear cone after a hurried tyre change, under official supervision, the night before.

* * * *

On Monday Percy Mayo (Coventry Eagle), Bert Kershaw (New Imperial), and some others, riding together, miscalculated a 15 m.p.h. section and were caught early at the secret check.

* * * *

Hadfield (Raleigh) lost marks on Monday owing to a new engine seizing; all the rest of the week he retained a clean sheet.

* * * *

The old McKechnie spring frame machine in the hands of F. W. Becker made some surprisingly good ascents of difficult hills. Becker is not an old hand at trials riding, and the manner in which he kept upright on freak surfaces augured well for the general stability of the design.

* * * *

Last week we stated that Bridcutt and Cathrick, the Dunelt riders, "got mixed up" on Rosedale. They did; but it turns out that the former made a clean ascent.

* * * *

The four three-wheelers to finish—five started—have a better record than the survivors in any other class.

CURRENT CHAT (continued from p. 305).

The Scott Trial.

Invitations to compete in the Scott Trial on September 16th are now being issued, and any prospective competitor who has not received one should write at once to the Scott Motor Cycle Co., Ltd., Saltaire, Shipley, Yorks.

The Kingston Police.

In spite of the condemnations of some of our correspondents, a Midland rider who passed through Kingston recently, reports the behaviour of the local police to be above any criticism; their excellent traffic control at two difficult junctions was greatly appreciated.

Sidecars Records Jump.

On the 17th inst. V. E. Horsman (596 Norton sc.) broke the following kilometre and mile records:

FLYING MILE: 48.07s.=74.89 m.p.h.=120.53 km.p.h.
INTERNATIONAL MILE: 49.22s.=73.14 m.p.h.=117.72 km.p.h.
INTERNATIONAL KILO: 30.39s.=73.61 m.p.h.=118.46 km.p.h.

A S'olen Mount.

Last week a sidecar outfit which was being tested by a member of the staff of our contemporary, *The Motor Cycle and Cycle Trader*, was stolen in Birmingham. The machine was a 749 c.c. James outfit, with spare wheel, sidecar screen and Magdyno; frame number 1858, registered OH 8799.

The French Salon.

This year the French Show will be held from October 4th to 15th. It will consist of two separate exhibitions. Most of the exhibitors will be housed in the Grand Palais, but motor cycles, sidecars, and cycle cars, and certain accessories, will be found in the huts of the Paris Fair on the Esplanade des Invalides and on the Cours-la-Reine.

North-Western Centre A.C.U.

Owing to the Chief Constable being unable to provide sufficient police control, due to other ceremonies occurring on the same date, the open hill-climb, formerly arranged to take place at Garstang on September 9th, has been postponed. It is hoped to be able to hold the event on October 28th, but further particulars will be announced later.

Popular Scottish Event.

Organised by the Edinburgh and District M.C., the Scottish Two Days' Trial will take place this year on September 16th-18th, over a course of approximately 190 miles. Sheriffmuir, Rinloon, Cockbridge, Bridge of Brown, Inverfarigaig Corkscrew, and Kenmore are all included as non-stop hills. Further particulars are available from Mr. Campbell McGregor, at 6, Castle Terrace, Edinburgh.

An Extraordinary Accident.

On the London road near Crayford, Kent, a broken overhead tramway wire became entangled in a motor bicycle and sidecar. There was a shower of sparks and the driver was warned not to move as the wire was "live." His wife and child were in the sidecar, but the insulation afforded by the tyres saved them from shock, but they had to remain stationary until officials wearing rubber gloves removed the wire.

An Inter-Works Team Trial.

To be allowed to set your own schedule over a 25-mile lap and then to complete two more laps without deviation sounds easy, but try it! This was the problem set by the Coventry and District Works Motor Association to the various teams representing Coventry works in an event held on Saturday last. Each lap included a short colonial section and an ascent of Sunrising Hill. Some sixty competitors started and a few first-class performances were registered, though there were a number of failures on Sunrising. It must be understood that the competing machines were the property of the owners, and though a number of up-to-date models were to be seen, in some cases they were of considerable antiquity. The results of the competition are not yet to hand.

CLUB NEWS (continued from p. 306)

Levis A.C.

The Yardley Cup and other prizes will be competed for on the occasion of the third annual reliability trial which has been arranged to take place on September 30th. The event is confined exclusively to single-geared belt-driven machines.

Slough and District M.C. and L.C.C.

Saturday, October 7th, has been selected for holding the first annual reliability trial for the Harris challenge cup and medals. The first man will leave the Crown Hotel, Slough, at 4 p.m., and the course will be about 80 miles in length. All particulars of this and other events may be obtained from Capt. H. W. H. Dyke, of "Hartford," Upton Road, Slough.

Westmorland M.C.C.

Brilliant weather and good sport characterised the gymkhana held at Sandside (Morecambe Bay) on the 20th inst. The occasion also served as a rally for the Northern Centre A.C.U., and there was a large attendance of motorists from all parts of the district. The results of the events were as follows:—

Potato Race: (1) G. Hodgson (490 Norton); (2) M. Sedgwick (499 Sunbeam).
Threading the Needle: (1) R. McKenzie (654 Rover); (2) P. Fawcett (499 Sunbeam).
Plank Race: (1) G. Atkinson (249 Velocette); (2) P. Fawcett (499 Sunbeam).
Looping the Loop: (1) T. Chaplow (498 Ariel); (2) G. Atkinson (249 Velocette).
Obstacle Race: (1) B. Turner (249 Velocette); (2) G. Parkinson (293 New Imperial).
Tilting the Ring: (1) T. Chaplow (498 Ariel); (2) R. McKenzie (654 Rover).
V.C. Race: (1) B. Turner (249 Velocette); (2) T. Chaplow (498 Ariel).
See-saw Race: (1) T. Chaplow (498 Ariel); (2) R. McKenzie (654 Rover).
Blindfold Race: (1) T. Chaplow (498 Ariel); (2) G. Roberts (492 Sunbeam).
Two-wheel Sidecar Race: (1) G. Hodgson (490 Norton sc.); (2) T. Chaplow (498 Ariel sc.).

The star event of the day was the race for two-wheel sidecars, Hodgson (490 Norton sc.) putting up a very praiseworthy performance. Lifting his sidecar for a distance of a hundred yards, he passed the finishing post at 30 m.p.h. amidst the plaudits of hundreds of spectators. The prizes were afterwards distributed by Mrs. R. M. Chaplow, whose husband, together with Mr. W. Houghton, were the donors of the prizes. Mr. Arthur Moffatt acted as starter.

Week-End Club Events.

Sept. 2nd.—Cheshire Centre A.C.U.—Open One Day Reliability Trial.
Sept. 2nd.—South Eastern Centre A.C.U. (Surbiton M.C.).—Brooklands Race Meeting.
Sept. 2nd.—Worcestershire M.C. — Madresfield Court.
Sept. 2nd.—Atherton and District M.C.C.—Run to Turvin.
Sept. 2nd.—Mid Bucks M.C.C.—Petrol Consumption Test.
Sept. 2nd.—Wolverhampton M.C.C.—Competition for Eric Williams Challenge Shield.
Sept. 2nd.—Coventry and Warwickshire M.C.—Closed Speed Trial.
Sept. 2nd.—Coatbridge, Airdrie and District M.C.C.C.—Social Run to Tillitudlem.
Sept. 2nd.—Dumfries and District M.C. and C.C.—Gymkhana.
Sept. 2nd.—Eastbourne and District M.C.C.—Surbiton and District M.C.C., Speed Trials.
Sept. 2nd.—West Kent M.C.—S.E. Centre Speed Trials, Brooklands.
Sept. 2nd.—Coventry Triangle M.C.—Paper Chase.
Sept. 3rd.—Coventry Triangle M.C.—Run to Wrekin.
Sept. 3rd.—Colne and District M.C.—Run to Hopper Lane.
Sept. 3rd.—Bridgnorth and District M.C.C.—Captain's Run.
Sept. 3rd.—Halifax and District M.C. and L.C.C.—Run to Higher Hodder.
Sept. 3rd.—Barrow and District M.C.—Northern Centre A.C.U. Rally, Keswick.
Sept. 3rd.—Middlesbrough and District M.C.—Knock-out Competition.
Sept. 3rd.—Sheffield M.C.C.—Run to Edwinstone, Dukeries.
Sept. 3rd.—Leeds Motor Union.—Run to Ramsgill and Middlesmoor.
Sept. 3rd.—York and District M.C.—Mr. E. Wasling's Run.
Sept. 6th.—York and District M.C.—Novices' Trial.
Sept. 6th.—Leeds Motor Union.—Impromptu Run from City Square.
Sept. 6th.—Exeter M.C. and J.C.C.—Evening Run to Dawlish Warren.
Sept. 7th.—Oxford M.C.—Gymkhana.

Clitheroe and District M.C.

J. Todd (211 New Hudson) was the first "hound" to catch the "hare," J. Whittaker (584 Harley-Davidson), in a successful paper-chase held on Wednesday of last week over a varied course of approximately 30 miles.

Southport M.C.

Fine weather conditions favoured the race meeting held on the Sands on the 19th inst. W. Johnson, jun. (499 Sunbeam), secured two firsts and one second, showing considerable skill. In the sidecar classes F. Bullough (490 Norton sc.) took five firsts in six events.

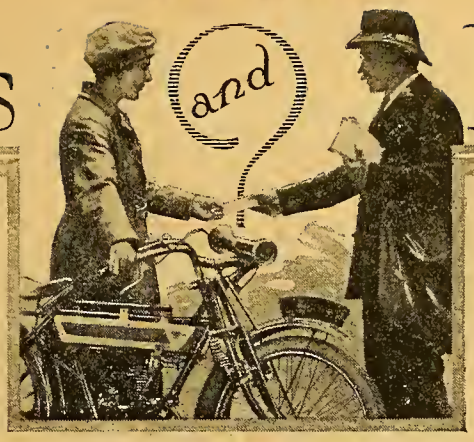
Rotherham and District M.C.

Eighty miles had to be covered in the course of the annual reliability trial which took place on August 20th. The prize-winners in this event were:—

(1) D. Lister (349 Excelsior-Blackburne).
(2) C. Watt (498 Ariel).
(3) L. Thrall (348 Douglas).

The late Mr. Robert Head, Chairman of the Motor Cycling Club, who died at Teignmouth last week. By his decease the M.C.C. will suffer an irreparable loss.

Questions and Replies



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not, **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

WORN CYLINDER.

I have a 1918 Allon two-stroke and in my work run about 700-1,000 miles per month. Of late the piston is extremely difficult to get out of the cylinder. In fact, I have to wrench it out forcibly. It burns in the rings after about 300 miles and needs taking down. (I decarbonise every 500.) The machine is slow and rattles badly immediately it reaches 23 m.p.h. I presume the cylinder is worn in the bore and is still the original calibre in the neck. Is it a satisfactory job to have a two-stroke rebored and new piston fitted?—C.J.

It will be best to return the cylinder and piston to the makers, as they might be able to rebore it for you and fit a new piston; in all probability, however, they would recommend the fitting of new parts, as it seems to be badly worn.

TAXATION.

As it is nearly two years now since I rode a motor cycle will you tell me what would be the tax on a machine of about 2¾ h.p. and whether one has to have a licence as well? To the best of my recollection it was about 25s. for a licence two years ago. The registration fee, I presume, is only a small amount.—T.S.M.F.

Motor cycles are now taxed on weight, machines under 20 lb. being 30s. annually; over 200 lb. 60s. Quarterly licences can be obtained. The taxation fee includes registration of the machine, and a driving licence costs 5s. The description of machines by arbitrary "horse powers" is falling into disuse since the initiation by *The Motor Cycle* of the system of rating by capacity only, e.g.: 349 c.c. A.J.S., 269 c.c. Villiers, etc.

SKID ON WET TAR.

I was riding recently in a district where the council was tarring the roads. The tar machine was drawn by a tractor, and being on the bend of a decline it obscured my view of oncoming traffic. No signals or notices were exhibited, and as I drew near I observed that the tractor had stopped and only left sufficient room for one vehicle to pass, and consequently a motor car came through which placed me with the alternative of either running on the newly laid tar or being run into. The former was done, causing a skid, with slight personal injuries and damage to clothes, machine, etc. What course do you suggest to be taken in the matter? Is the council liable for not exhibiting warning notices?—P.M.

You do not make it clear whether the position of the tar-spraying machine compelled you to use the "wrong" side of the road. This would have some bearing on the matter, but it is possible that you may be able to obtain compensation under the circumstances which you describe, as there appears to have been some negligence on the part of the highway authority in not showing warning signs. Your best plan is to take legal advice locally.

LAMP ON SIDECAR.

The other evening I was stopped by a policeman for not having a sidecar light on my Douglas outfit. Does the law enforce a light on the sidecar when the latter is attached on the near side?—H.C.

A lamp must be carried on the near side of the sidecar in addition to the head lamp on the motor cycle, in order to show the full width of the outfit.

WORN BEARINGS.

(1) When warm, the engine of my 486 c.c. single-cylinder sidecar develops a rattle which usually disappears on breasting a rise, but reappears again when the slope eases. It amounts to a slight metallic purr, which becomes intensified when speed on the level is increased. My mileage is about 2,500. (2) What accounts for black smoke being emitted from exhaust pipe when engine is being started up?—J.E.W.

(1) A mechanical rattle which is more noticeable when the engine is running light than at other times is usually associated with a worn big-end bearing, and it would be advisable to remove the cylinder and test whether there is excessive play in either of the connecting rod bushes. If the trouble is not due to play in these parts, it may arise from wear in the timing gear, although this is not likely if the machine has only done 2,500 miles. (2) Black smoke coming from the exhaust pipe indicates that the mixture is far too rich; either the carburetter is flooding excessively or the jet is too big.

TO IMPROVE TOP GEAR PULLING.

I have a 349 c.c. Blackburne-engined motor cycle geared 4¼ to 1 on top. I find the machine will not pull very well against a head wind, and propose to alter the gear to about 5½ to 1. The present engine sprocket has 20 teeth. What number would be required on a new sprocket, to make this alteration, and where could I obtain a sprocket?—W.H.

A 16T sprocket on the engine shaft will give you a gear ratio of approximately 5¼ to 1, which should be satisfactory. Possibly the engine makers will supply you with a suitable one.

REMOVING B.S.A. BELT RIM.

Having split the belt rim of my 557 c.c. 1919 B.S.A., I shall be glad of your help *re* the following questions: (1) How is the belt wheel fixed? (2) Which is the best way to get it off? (3) Is it possible to fix a new rim to the old belt wheel? (4) If the answer to question No. 3 is in the affirmative, where can I obtain the belt rim?—H.D.

(1) The belt wheel is screwed on to the hub with a left-hand thread and secured by a right-hand lock ring. (2) It requires a considerable amount of power to get it off, and it may be necessary to heat the hub centre with a blow-lamp; probably your best plan is to return the wheel to the makers. (3) and (4) The makers would no doubt repair the belt rim; we do not think that you could do it yourself.

Important Dates.

Sat., Sept. 2nd.—Cheshire Centre A.C.U. Open Reliability Trial.

Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.

Sat. Sept. 16th—The Scott Trial.

Sat., Sept. 23rd—500 Mile Race at Brooklands.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

READERS' REPLIES.

FROM NEUTRAL TO LOW.

With reference to "G.A.C.'s" inquiry concerning Indian clutch adjustment, I should recommend him to examine the thrust rod, which passes right through the Indian gear box, for wear, and to adjust accordingly. When this rod wears the operating arm will travel through the first portion of its arc before commencing to disengage the plates. I have been able to cure similar faults to those described in this way.—W. W. W.

A TWO-STROKE RATTLE.

Last month my own two-stroke was overhauled by the makers and was fitted with a new cylinder, new connecting rod, gudgeon-pin, crankpin and rollers, crank case bushes and piston rings, the original piston being retained, and right from the first time I tried it, since when I have done about 200 miles, an appalling rattle has issued from the cylinder at speeds over 10 miles an hour, and which I cannot control by any means.

It could hardly be wear in such a short time, especially as I give it plenty of oil, and also the fact that the rattle was audible as much during the first mile as it is now after 200 miles, rules out that as the reason.

If the flywheel is gently rocked there is a faint clicking which I have traced to the new piston rings being somewhat narrower than the grooves, and consequently coming into contact with the top and bottom of the groove as the piston goes up and down; this, however, I think is nothing to do with the rattle, as it is only noticeable when the flywheel is turned slowly backwards and forwards, and disappears if the engine is turned over quickly; also the offending noise is much deeper in tone than the click of the rings. J. I. H.

SCOTT CHAIN ADJUSTMENT.

"F.P.M." should change his chains over. The present low gear chain should be shortened to fit the high gear and the high gear chain lengthened with the piece cut off the low gear chain, when this will be found to fit. If he has the correct number of links in each chain he will find that his trouble has vanished. If his machine is a 532 c.c. standard the high gear chain should have 66 links and the low gear 77 links. W. O. J.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"W. A. L." (Liverpool). — Scott Sociable: speed, power on hills, interchangeable wheels.

"N. O'N." (Richmond).—Johnson's Carbon Remover.

"R. P." (Bristol).—557 c.c. B.S.A. sidecar ("sports" model): suitable top gear ratio, prevention of oil leakage around tappets.

"J. S. P." (Thornton).—Hopley and Paragon folding sidecars.

"J. R. A." (Burton).—499 c.c. Rudge-Multi: suitable "sports" sidecar and general running with same.

"W. K." (Redruth).—550 c.c. Hawker-Blackburne: fuel consumption, reliability for solo and sidecar work in Cornwall.

"C. M. P." (Liverpool).—225 c.c. Royal Enfield with sidecar.

"S. J. W." (Bodmin).—349 c.c. Coulson-Blackburne, 2-speed "sports" model: reliability, speed and upkeep.

"D. G. H." (Southsea).—Jackson's Impervo.

"S. C. D." (Cirencester).—398 c.c. A.B.C. sidecar: speed, hill-climbing, and springing.

"P. M." (Portland).—499 c.c. Dunelt sidecar: carburetter fitted, fuel consumption, general running.

"G. J." (Taunton).—490 c.c. Norton, 654 c.c. Quadrant, 650 c.c. Excelsior, and 557 c.c. B.S.A., all with sidecars: speed and reliability.

"A. S. P." (Richmond).—One arm (right). Suitable machine; mechanical adjustments necessary.

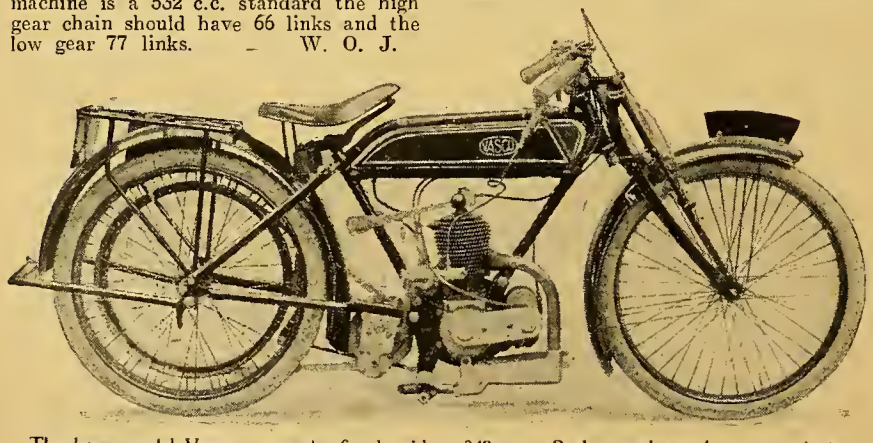
"A. J. C." (Frome).—398 c.c. A.B.C.: hints on tuning.

"W. T." (London).—164 c.c. Economic.

"F. S." (Malvern).—398 c.c. Raleigh: reliability, speed.

"M. S." (Northumberland).—596 c.c. Indian Scout

"X. Y. Z." (Glasgow).—498 c.c. Zenith Bradshaw.



The latest model Vasco two-stroke fitted with a 349 c.c. Broler engine. A commendable feature of this neatly designed machine is the large and effective aluminium silencer Prices range from £45 to £60. The Vasco is produced by Vasco Motors, 136, London Road, Kingston-on-Thames.

SPARKLETS

Low Priced Big Twin.

The price of the American "X" motor cycle has now been reduced to £105, including the usual equipment.

Super-lubrication.

As many as 125 of the 142 starters in the A.C.U. Six Days Trials used Miracle oil for their engines.

Change of Address.

The Cleveland Motor Cycle Manufacturing Co., Ltd., has changed its quarters to Premier House, 150, Southampton Row, London, W.C.1.

Chassis-less Sidecars.

Described in our pages nearly two years ago, the Millford-Rock spring sidecar, which has been described as a chassis-less model, is now being placed in production.

Guarding Against Punctures.

Tyre trouble is always annoying, but at times it is fatal. To guard against it, over 75 per cent. of the competitors in the "Six Days" took the precaution of injecting Jackson's Impervo into their tubes as a preventive measure.

An Injunction.

An injunction has been obtained by C. A. Vandervell and Co., Ltd., against the Safix Marine Engineering Co., Ltd., and a Mr. Burdon, who are restrained thereby from selling partly rebuilt surplus W.D. starter magnetos as genuine new C.A.V. magnetos.

Found on the Road.

By Mr. M. W. Bingham, 35, Coniston Road, Muswell Hill, N.10, a tool kit and gin. Coventry chain, on the London-Worthing road, two miles north of Horsham, on August 13th.

By G. Peff, "Rosemary," Chase Court Gardens, Enfield, a camera, on the Winchester-Bournemouth road.

Useful Preparation.

We have lately received a sample of 3-In-One oil, which is ideal for the lubrication of magnetos and small tools, such as drills. It prevents rust, can be used as car polish for polishing up sidecar bodies, and can be mixed with metal polish to prevent tarnishing. It is sold in one, three, and eight-ounce bottles by John G. Rollins and Sons, 27, Stonecutter Street, London, E.C.4, at 9d., 1s. 6d., and 3s. respectively.

Catalogues Received.

The British Timken Co., Ltd., Ward End, Birmingham: A booklet giving useful information regarding Timken roller bearings.

James Grose, Ltd., 4, Old Jewry, Cheapside, London, E.C.—A complete catalogue and price list containing a large number of illustrations of motor accessories of every description.

GOES FURTHEST

CHALLENGE!

ON EVERY TIN.
INSIST EMPHATICALLY
ON
Challenge Oils

H.M. 2/7 per quart tin.
Thousands of satisfied users.
CHALLENGE OIL CO., LTD.,
HOWARD ROAD WORKS,
STOKE NEWINGTON, LONDON, N.16.

A GRADE OF CHALLENGE OIL TO SUIT EVERY MOTOR CYCLE.

OFFICERS' ARMY TRENCH COATS

THE GENUINE "WESTO" TYPE 55/- Post Free in Great Britain and the Irish Free State.

With All-Wool Detachable Fleece Lining **70/-** each.

Brand New, Tripleproof Gabardine, check lining, **oilskin *inter*-lining**, and with detachable **All-wool** fleece lining. **Four Coats in One.**

These coats are impervious to weather. Worn with the fleece lining, they combine the warmth and comfort of an ulster with the rain-resisting qualities of a stout mackintosh. With this lining detached they are a light, elegant raincoat.

This is the only coat made THROUGHOUT with surplus Government materials which we control.

We now stock this coat for ladies as well as gentlemen. Same materials, same price. Same High Quality.
State Height and Bust measurement.

"MONEYBACK" PRINCIPLE (Our Guarantee). Our method of doing business is simplicity itself. If you do not like the goods send them back, and we refund your money. It is a condition that they must be returned within seven days of purchase.

Chest sizes, 34, 36, 38, 40, 42, 44 ins. Gentlemen, when ordering state height and chest measurement over waistcoat. Ladies as above.

SEND YOUR ORDER TO-DAY—IT WILL BE EXECUTED TO-MORROW.

Art Catalogue illustrating this and other Bargains in wearing apparel FREE ON REQUEST.

Cheques, Money Orders and Postal Orders should be crossed Barclays Bank, Limited. Treasury Notes should be registered.

GEORGE WESTON & CO., Clothing Contractors, "Moneyback" Merchants,
(Dept. M.C.), Westo House, Inverness Road, Hounslow, Middlesex.

Vickers Steels

Copy of letter from:—
Messrs. Sunbeam Motors, Ltd., Moorfield Works, Wolverhampton.

14th July, 1922.

In reply to your letter of the 13th inst. re T.T. Race in the Isle of Man, the frames of the Sunbeam Car which won this race were supplied by Vickers last year in 3% Nickel Steel.

Yours faithfully,

REGISTERED TRADE MARK

FURTHER PROOF

of the reliability and efficiency of **VICKERS STEELS.**

ON June 22nd, 1922, the Sunbeam and Talbot Darracq racing cars won the two Tourist Trophy Races in the Isle of Man.

All forgings for both these cars were made by VICKERS LIMITED from VICKERS STEEL.

Some PREVIOUS PROOFS:—

VICKERS — Crankshafts, Propeller Shafts and other forgings in Rolls-Royce engines made the first aeroplane flight across the Atlantic.

VICKERS — Crankshafts, Propeller Shafts and other forgings in Rolls-Royce engines made the first aeroplane flight from England to Australia.

VICKERS — Crankshafts, Propeller Shafts and all other forgings in Sunbeam engines made the first Airship flight across the Atlantic in R.34.

VICKERS — Forgings were used exclusively in the Sunbeam car driven by Mr. Kenelm Lee Guinness, which on May 27th, 1922, at Brooklands, made the remarkable speed of 137 miles per hour, being the greatest speed ever recorded by a car.

VICKERS STEELS are used by the Leading motor car and aeroplane engine manufacturers.

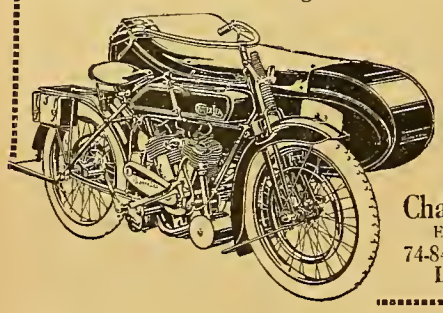
VICKERS LIMITED,
River Don Works, SHEFFIELD.
Head Office: **VICKERS HOUSE, BROADWAY, LONDON, S.W.1.**

Don't decide until you have seen the

Chater Lea

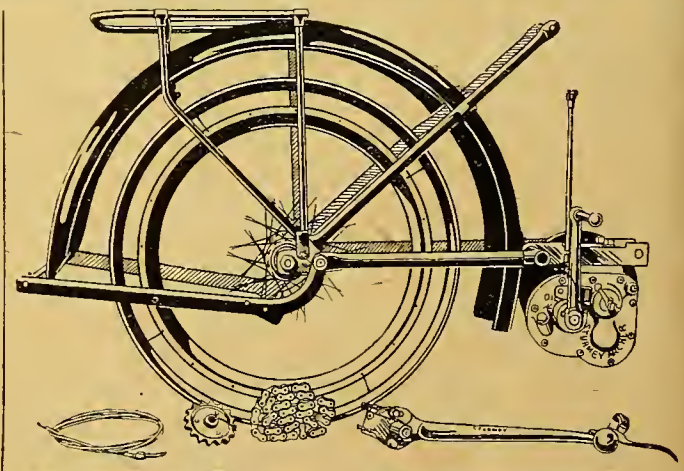
8 H.P.—3-Sp. Sidecar Combination.

WINNER of many hundred awards for reliability and speed during the past 12 years. A real no-trouble touring mount, built to carry weight and go anywhere. The Chater Lea looks good and is good, a machine to give you long service, and worthy in every respect of our 32 years' reputation for excellence of design and workmanship.



Write for Sidecar List.

Chater Lea Ltd.
Established 1890.
74-84, Banner Street.
London, E.C.1.



CONVERT your old

— Hub Gear Motor Cycle into —

A MODERN 1922 MODEL

Triumphs, Rovers, B.S.A., New Hudson, Humber, etc

IMMEDIATE £25 DELIVERY

New Gear Box, Sturmey-Archer, Jardine, Burman, everything complete, ready to fit. Spares stockists for Kent for Triumphs, Douglas, Rover, :: :: Sturmey-Archer, Villiers, Raleigh. :: ::

We shall be pleased to forward upon application copies of letters received from satisfied customers.

READ BROS., 4 & 6, Goods Station Road, Tunbridge Wells.

Telegrams: Rebro, Tunbridge Wells. Telephone: 1139 Tunbridge Wells.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., as new, dynamo lighting, extra air, speedometer, tax paid, semi-T.T., engine perfect; 78 gns.—Erinville, 11, Lingfield Av., Kingston-on-Thames. [8150

3 Years ago:

"I may say I am attracted to your firm owing to the straight way in which you dealt with me three years ago."

For 12 years the name GODFREY'S HAS STOOD FOR STRAIGHT DEALING.

1922 MODELS.

Whether you are a buyer or "are just looking round," Godfrey's stock will appeal to you. Here you will find all the Latest Models and courteous attention at all times.

Amongst new models now in stock are:- **A.J.S., B.S.A., LEVIS, INDIAN, SCOTT, TRIUMPH, MATCHLESS, NEW IMPERIAL, EXCELSIOR, COVENTRY EAGLE, RUDGE, ZENITH, CEDOS, CALTHORPE, ENFIELD, RALEIGH.**

If you cannot call we will on request mail you our full lists, including details of **second-hand** guaranteed machines of which the following is a selection:—

SOLO.

1919	2¾ h.p. **Invicta-Jap,** 2 sp.	£42
1920	3 h.p. **A.B.C. Dynamo**	£72
1921	4 h.p. **Indian Scout Dynamo**	£98
1921	**Omega-Jap,** 2 sp., k.s.	£48
1914	2¾ h.p. **New Imperial Jap**	£38
1920	**I.O.M. Rudge Multi**	£50
1919	2¼ h.p. **Chater Lea,** 2 sp.	£32
1919	2¾ h.p. **Omega-Jap,** 2 sp.	£35
1922	4 h.p. **Douglas,** as new	£84

PASSENGER MACHINES.

1917	4 h.p. **Triumph "H"** Sports s/car	£74
1916	**Indian Powerplus,** 7 h.p.	£88
1920	4¼ **B.S.A.** w. Touring s/car.	£88
1920	5/6 h.p. **Rudge,** bulbous back s/car	£58
1914	**B.S.A. Combination,** 4 h.p.	£65
1921	3¾ h.p. **Scott Squirrel,** Touring s/car	£92

CASH.—Gradual Exchanges.

GODFREY'S, LTD.
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MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., first-class condition throughout; £55/10.—Horswills, 42, Bridge St., Chester. [8228

A.B.C. 1921 Combination, electric light; £105.—25, Peel Grove, Cambridge Heath, London. [8727

WAUCHOPE'S, 9, Shoe Lane, London.—A.B.C. Sports model; £295; immediate delivery. [9156

F.O.C.H. have an A.B.C., fully equipped, excellent condition, bargain.—5, Heath St., Hampstead (near Tube). [8368

FRENCH Model A.B.C., 4 speeds, hand clutch, kick-starter, speedometer, licence, accessories, new condition; £65; exchanges.—63, Solon Rd., Brixton. [8703

A.B.C. 1920 3h.p., lamps, horn, Tan-Sad, perfect condition; £62.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

A.B.C., April, 1922, equipped, licensed, insured till next April, mileage under 1,000; 70 gns.—Apply Bachrach, Sutherland House, London St., Paddington. (After 8.) [8518

LATE 1920 A.B.C., lamps, horn, speedometer, Cox Atmos, flexible, good acceleration, no hard usage, fully insured; photograph; £60.—Amies, 109, London Rd., Chelmsford. [8250

A.B.C., late 1920, electric light, electric horn, mechanical horn, speedometer, mirror, new Dunlop tyre, back, excellent condition, licensed; £55.—F. Port, 163, Albany St., Regent's Park, N.W.1. [8263

A.B.C., new February, all 1922 improvements, dynamo, electric model, new accumulators, kick-start, Smith speedometer, mileage 3,000, perfect; £75, or part exchange combination.—Chick, Senior Staff Mess, Royal Aircraft Factory, Farnborough. [8122

A.B.C. Motor Cycle, 1920, as new, guaranteed not done 1,000 miles, owner uses car; cost £180; electric lighting, Lucas Magdyno, kick-starter, speedometer, horn, 4-speed, rear sprung; will do 60 without any vibration; a car on 2 wheels; legshields; £100; can only be seen by appointment.—Mansfield, 73, Powerscroft Rd., Clapton, London, N.1. [8131

Spare Parts:

A.B.C.—The Service Depot for all spares.—Maudes' Motor Mart, 100, Great Portland St., W. [9017

Abingdon.

3½h.p. Abingdon, complete, good; cheap, £10/10.—Williams, 51, Thurston Rd., Pontypridd. [8164

ABINGDON 4h.p., Bosch, taxed, accessories; ride away; £10, bargain.—Guinchard, 179, York Rd., Islington. [8721

ABINGDON King Dick 3½h.p. Combination, roomy, C. and B. sidecar, good running order, dependable, all lamps, horn, tools, spares, licence Dec. 31st; £30.—19, Woodland Gardens, N.10. After September 6th. [8277

A.E.L.

BRAND New A.E.L.-J.A.P., 2¾h.p., 2-speed, clutch, kick-starter; £50, or nearest offer.—137, Clifton Rd., Rugby. [8241

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A.J.S. Combination, lavishly equipped; £90.—6, Station Rd., Hampton Wick. [8632

A.J.S. 2¾h.p. to 7h.p. in stock.—Merrick'a Stores, Listerhills Rd., Bradford. 'Phone: 2439. [5069

A.J.S. Combination 1921, full equipment, Lucas set; going cheap.—11, Cedar Rd., Cricklewood. [8168

1921 A.J.S. Combination, every fitment; £115; exchanges.—24, Balliol Rd., North Kensington. [8549

A.J.S. Motor Cycles on easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [6699

A.J.S. 1922 2¾h.p. Sports and 7h.p. Combinations in stock.—Clifford Motories, Eastwood, Notts. [4763

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175; in stock. Dorset trade supplied. [0817

A.J.S. Motor Cycles, deliveries from stock, all models. —Derby agents. H. Palin, Ltd., Bourne St., Derby. [5091

1914 A.J.S. Combination de Luxe, excellent condition, license; offers.—Martin, 73, High St., Sidcup. [8274

A.J.S. 1921 2¾h.p., mileage 800, unpunctured, perfect; £68.—26, Wanderers Avenue, Wolverhampton. [8758

£70.—A.J.S., May, 1922, 2¾h.p., B.1, Lucas lamp and horn, as new.—Boult, Holywell St., Chesterfield. [8466

A.J.S. 1922 complete touring model B, shop-soiled, unused, ex-works May; £76.—Robins and Marriott, Tring. [8713

7h.p. A.J.S., dynamo lighting set, new but slightly shop-soiled; £179.—Box 3358, c/o *The Motor Cycle.* [8979

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 2¾h.p., 3-speed, 1921, taxed, electric lighting, new condition; £65.—Clark, 7, Exhibition Rd., S.W.7. [9164

SHOP-SOILED 1922 A.J.S. Combination, spare wheel, never been registered; £165.—Clifford Motories, Eastwood, Notts. [7692

A.J.S. Combination, 1920, as new, spare wheel, lamps, windscreen, tax paid; £105.—Flitt, Wellington Rd., Watford. [8397

A.J.S. 2¾h.p. (July, 1922) Touring, horn, tax and insurance, indistinguishable from new; £80.—27, Old Town, Clapham, S.W. [8302

1921 2¾h.p. A.J.S., mileage 600, lamps, horn, tax, indistinguishable from new; £69.—30, Claremont Sq., Angel, Islington. [8240

£70.—A.J.S. 1922 2¾h.p., Model B1, very small mileage, as new.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [5501

2¾h.p. A.J.S. 1916, 3-speed, clutch, K.S., fully equipped, mechanically perfect, licensed; £40.—69, Kingston Rd., New Malden. [8522

1921 A.J.S., exceptional condition, Sept.-March unused, speedometer, sidescreen, spare wheel; £160.—75, Gladstone St., Derby. [8567

A.J.S. Combination, 1920, 1922 engine, hood, electric lights, spare wheel, perfect condition; £125.—28, Denbigh Rd., West Ealing. [8183

1917 2¾h.p. A.J.S., 3-speed, clutch, kick-start, all-chain, speedometer, lamps, horn, taxed; £40.—Write, Hart, 133, Maybury Rd., Woking. [8673

A.J.S. 7h.p. Combination, £175; 2¾h.p. 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [8375

1919 6h.p. A.J.S. Combination, cycle parts need thorough overhaul, engine excellent; trial; £55; after 5.—Corlett, 128, Holland Rd., Kensington. [8252

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

1919 A.J.S. Combination, spare wheel, screen, speedometer, lovely condition; £85.—Hillier (Side Bell), 9, Wallingford Av., North Kensington. [8858

A.J.S. 6h.p. Combination, interchangeable wheels, etc.; exchange for solo or Morgan; cash adjustment.—Write Snow, 58, Malvern Rd., Dalston, E.8. [9100

1921 7h.p. A.J.S., spare wheel, Triplex screen, tax paid, Lucas lamps, also D.A. lighting, Tan-Sad; £110.—Taylor, 29, St. Margaret's St., Canterbury. [8144

1916 A.J.S. Combination, just completely re-upholstered and enamelled; owner bought car; accept £65.—Merle Bank, Rotherfield Rd., Carshalton. [8555

1921 A.J.S. Combination, electric horn, speedometer, excellent condition, Magdyno, £145; ditto 1920, £110.—Goad, 122, Maida Vale 'Phone: Hampstead 1353. [9003

1922 A.J.S. 2¾h.p. Model B1, immediate delivery from stock; catalogues with pleasure.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6972

A.J.S. 1920 Combination, 5-6h.p., usual equipment, perfect condition; £87/10.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.J.S. 5h.p. twin-cyl., all-chain drive, countershaft gear box, kick-starter, complete with sidecar; accept £38 cash for immediate sale.—74, Brighton Rd., Surbiton. [8504

A.J.S. 1920 6h.p. 2-seater Combination, spare wheel, many accessories; £115; perfect condition.—Newnham Motor Co., 223, Hammersmith Rd., W.6 'Phone: Hammersmith 80. [8922

A.J.S. 1922 Sports B1, special Palmer cord tyres, Lucas lamps, tax paid, 3 weeks old, mileage 150; £80.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7904

139 GNS., Exchanges.—1921 A.J.S. Combination, lamps, screens, spare wheel, luxurious turnout, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [6966

A.J.S. 2¾h.p. 1922 Standard Sporting, bought July, maker's guarantee, tax paid and insured to July, 1923, fast and as new; bargain, £75; owner going to sea.—Stephen, 54, Woodside Rd., Wood Green, London, N. [9085

A.J.S. late 1921 7h.p. Combination, spare wheel, Lucas lighting, horn, speedometer, pillion seat, Wex carburetter, accessories, small mileage, new condition; £140, or close offer.—R., 63, Wharfedale Gardens, Thornton Heath. [8718

A.J.S. 1920 (late) Combination, dynamo lighting, speedometer, mirror, hood, front and side screens, spare wheel, 3 new spare covers, spare set of chains, valve, etc., good condition, mileage 6,000.—Seen by appointment at 14, East Dulwich Grove, S.E.22. £150. [8176

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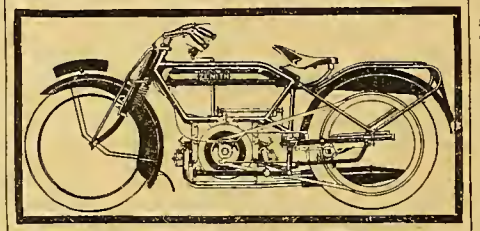

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2¾h.p. A.J.S. Sports, 1921, 3 speeds, clutch, and K.S., equipped Bonnikseo, mileage 349, unscratched, guaranteed perfect, tax paid; £75. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7905

1922 A.J.S. 7h.p. Combination, Magdyno, electric horn, trip speedometer, spare wheel, special car tyres, insurance, maker's guarantee, few miles only, absolutely new, bought car; £160.—51, Upper Richmond Rd., East Putney. [8420

1921 A.J.S. Combination, completest equipment, value £30, including Tan-Sad, side screen, Triplex glass, perfect condition, used week-ends only, unscratched; £155.—Cree, "Lansdowne," Worcester Park. Tel.: Victoria 9000, extension 75. [8197

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7662

Alldays.

ALLDAYS-ALLON, 2-speed, perfect; £27/10.—51, Upper Richmond Rd., Putney. [8417

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Allons; unequalled service, repairs, etc. [3559

ALLON 1920, speeds, clutch, kick-start, excellent condition; £38.—128, Offord Rd., Barnsbury, N.1. [8456

£26, or nearest.—1919-20 Allon, 2-speed, clutch, new condition, perfect running order, licensed.—McGough, 130, Denton St., Carlisle. [8810

ALLDAYS' Allon 1922 2¾h.p., 2-speed, clutch, kick-starter, electric lighting, shop-soiled only; accept £60.—The Layton Garages, 30, Holywell St., Oxford. [8886

27 GNS., Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452. [4773

1922 Allon Combination, special folding sidecar, tax paid, S.A. 3-speed, K.S., only ridden few miles, many extras; £105.—10, The Exchange, London Rd., Thornton Heath. [8146

ALLON 1917-18, 2-speed, clutch, lamps, horn, engine gears, and magneto, makers' overhaul: London to Land's End and return, no trouble run: tax, insurance; £33/10.—104, Plough Rd., Battersea. [8811

ALLDAYS' Allon, 1921, 2-stroke, 2-speed, clutch, kick-start, disc wheels, legshields, tax paid, lighting set, horn, in practically new condition throughout; £39.—Walker, 769, Romford Rd., Manor Park, London, E [8829

American X.

AMERICAN X 8h.p., 1918, T.T. model, 3-speed clutch, tax paid; £50.—Peacock and Brown, Kew Bridge Rd., Brentford. [7291

AMERICAN X 8h.p. T.T. Model, 3-speed clutch, kick-starter, in perfect condition; a bargain, £45.—Marble Arch Motor Exchange, 135, Edgware Rd., W2. [9094

LATE 1920 American X 7-9h.p., 3 speeds, dynamo lighting, Grindlay super-sprung sidecar, deck, hood, screen, luggage grid; £100.—Grocer, 193, Lancaster Rd., North Kensington. [8299

Ariel

1922 Ariels; immediate delivery; best value; 6-7h.p. combination, £125.—Pinn's Garage, 12, High St., Fulham. [6535

F.O.C.H. have 1920 3½h.p. Ariel Combination, fully equipped, excellent condition, bargain.—5, Heath St., Hampstead (near Tube). [8369

SOUTHPORT.—1920 Ariel 3½h.p. Combination, Ariel sidecar, Easting, all on, excellent lot; 69 gns.; exchanges.—Keats, 417, Lord St., Southport. [8588

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 1922 3½h.p. Sports, 3 speeds, kick-start, chain-cum-belt drive, T.T. bars, shop-soiled only; £80.—Maudes', 100, Great Portland St., London. [9010

ARIEL 1922 Sports Model 3½h.p. Combination, practically new, lamps, and all accessories; £90.—Welch, 343, Devon Buildings, Tooley St., S.E.1. [8190

1918 3½h.p. countershaft Ariel Combination, equipped, taxed, overhauled, condition guaranteed as new; £55.—77, Haverstock Hill, Hampstead. [9060

PHOTOGRAPHS free.—Ariel, late 1920 3½h.p. coachbuilt combination, equipped, 69 gns.; Ariel 7½h.p., 3-speed coachbuilt combination, hub gear, 35gns. Exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8061

£75.—Exceptional bargain, 3½h.p 1921-22 Ariel, with Rideezi light sidecar, condition as new, mileage 500 only.—If you are looking for a bargain, call and inspect this and several others, Triumph, Douglas, Indian, etc., at Langford's, 37, Cricklewood Broadway, N.W.2 Hampstead 8616. [9066

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Clyno.

917 6h.p. Clyno Combination, 3-speed, K.S., perfect running order, tax paid; £60; seen after —316, Haydon's Rd., Wimbledon. [8346

918 Clyno 6h.p., 3 speeds, dismantled, less small parts; inquiries after 6, or Saturday afternoon; 9/10.—9, Stanhope St., East Park Rd., Leicester. [8773

CLYNO 1921 8h.p. Combination, fully equipped, spare wheel, tax paid, spring frame, in excellent condition; £100.—The Layton Garages, 30, Holywell , Oxford. [8890

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7664

Connaught.

32/10.—1921-22 Connaught, Sturmey gear box, clutch, kick-starter, lamps, licensed, new condion, guaranteed.—89, East Hill, Wandsworth, Barsea 443. [8840

CONNAUGHT Combination, 1922, May, 3-speed, chain drive, clutch, Tan-Sad, Easting, lamps, perfect, hardly used; £75.—Bromfield, 72, Fordok Av., Ealing Common. [8457

922 Connaughts, all models, for immediate deliery; cash or deferred terms, 4% extra. Write leaflet and further particulars to the official N. ndon agents.—Homac's, 243, Lower Clapton Rd., E. 'Phone: Dalston 2408. [7907

Cotton.

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Coulson.

920-21 2¾h.p. Coulson B., Blackburne engine, 2-speed, spring frame, fully equipped, taxed; £40. Phone: Kingston 1274.—37, Arlington Rd., Surbiton. [8597

3h.p. 1920 Coulson-B, 2-speed, clutch, B. and B., 4 low mileage, recently overhauled and enamelled, ndition as new; £50.—W. F. Brown, Clawson, Mel n Mowbray. [8647

Coventry Eagle

COVENTRY EAGLE 3¾h.p., J.A.P., 2-speed, lamps, horn, licence till December next, good res, very smart; £25.—Bunting's Motor Exchange, ealdstone. [9045

COVENTRY EAGLE 1920 2¾h.p., J.A.P., 2-speed, clutch, K.S., etc., licensed March, 1921, carelly ridden, A1 condition; £55, or offers.—Perkins, , Reckleford, Yeovil. [8751

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P.O.O.H. have 1920 De Luxe 2-stroke, excellent condition; bargain, £20.—5, Heath St., Hampstead ear Tube). [8370

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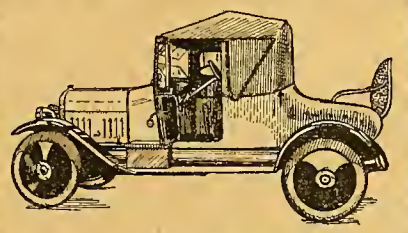

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REX-JAP, 6 h.p. comb, tax paid	**£52 10**
PREMIER, 3½ h.p., 2-speed	**£32 10**
SINGER, 3½ h.p., clutch, tax paid.	**£27 10**
BRADBURY, 3½ h.p., 3-speed, tax paid.	**£32 10**
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1921 Diamond-Jap 2¾h.p. 2-speed Sturmey, fully equipped, Binks carburetter, Best pump legshields, tax paid, excellent condition; £47/10.—Best, 64, Somerset Rd., Handsworth, Birmingham. [8298

Dot.

DOT-J.A.P. 6h.p., dynamo lighting, combination, Bosch, Cowey, kick, Gradua, roomy sidecar everything equal new; £78; take piano, furniture, or solo part exchange.—115, Bramley Rd., Ladbroke Grove. [8786

Douglas.

2¾h.p. Douglas, 2-speed, 1914, exceptionally good condition.—Below.

2¾h.p. Douglas, 2-speed, 1916, fully equipped, tax paid, Dunlop nearly new tyres, smart, recently overhauled; £28.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 2041. [8984

AT Edwards.—Douglas 2¾h.p. 1921, 3-speed, clutch, fully equipped; 52 gns.—Below.

2¾h.p., 2-speed, reconditioned, with all new parts, as good as new, fully equipped; 37 gns.; deferred or exchanges.—101, Gt. Portland St., W.1. [9001

2¾h.p. Douglas, 1916, all on, licensed, perfect; £26. —27, Arragon Rd., Twickenham. [8651

DOUGLAS 2¾h.p., late, condition, appearance new: £36.—153, Manor Rd., West Ham. [8166

DOUGLAS 1922 3½h.p. Sports, brand new, slightly soiled; £105.—Ginger Motors, Banbury. [6671

2¾h.p. Douglas, 2-speed, 1917; bargain, £25; must sell.—67, Fernlea Rd., Balham. [9109

2¾h.p. Douglas, 2-speed, good, sound, last machine; £30.—Burnham, Hulcote, Towcester. [8202

BARGAIN.—2¾h.p. Douglas, as new, never been ridden; £42.—15, Curzon St., Leicester. [8312

DOUGLAS 2¾h.p., condition as new; £34; after 7. —Harrison, 30, Mountgrove Rd., Highbury. [9090

1921 Douglas 2¾h.p., 3-speed, little used, and in good order; 50 gns.—Surridge, Ongar, Essex. [8342

£25.—Pre-war Douglas 2¾h.p., splendid condition; offers.—Write 31, Vicars Hill, Ladywell, S.E.13. [8529

DOUGLAS, 1921, all on, taxed, perfect; 48 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5851

2¾h.p. Douglas, Sept. 1921, 3-speed, K.S., clutch model; £57, bargain.—49, Brunswick Rd., Leyton. [8690

DOUGLAS 1922 4h.p. Combination, absolutely new; £110.—Oldbury Motor Co., Oldbury, nr. Birmingham. [7243

DOUGLAS 4h.p. Combination, any trial; £56, or offer.—Dorville, Cambridge Park Mews, Twickenham. [8860

DOUGLAS 2¾h.p., thoroughly overhauled, complete; £30, or near.—4, Garthorne Rd., Honor Oak Park. [8637

2¾h.p. Single-speed Douglas, excellent condition; £16.—Gill, 51, Nassington Rd., Hampstead, N.W.3. [8613

1918 Douglas Combination, new sidecar, enamel and plate as new; 45 gns.—120, Sutherland Rd., Croydon. [8797

4h.p. Douglas Combination, only done 500 miles, owner gone abroad, licence paid; £105.—Huttons, Swindon. [8280

DOUGLAS 1918 4h.p.; £40; all accessories, good condition.—Miller, Pine Ridge, Orpington 'Phone: 28. [8335

1915 2¾h.p. 2-speed Douglas, lamps, Klaxon, Tan-Sad, perfect, fast; 30 gns.—97, Lower Richmond Rd., Putney. [8483

2¾h.p. Douglas (unused W.D.), absolutely as new, maker's colours; 40 gns.—52, Cartwright Gardens, W.C., after 7. [5203

DOUGLAS, 1915, fast, overhauled, topping condition; £33, or offer.—Holly Lodge, Manorgate Rd., Kingston Hill. [8198

DOUGLAS 1921 2¾h.p., 3 speeds, clutch, kick-start, all lamps, tax paid; £68.—Maudes', Walsall Garage, Walsall. [9025

DOUGLAS 2¾h.p. 1921, all on, guaranteed exactly as new, original tyres, belt, etc.; £50.—49, Long St., Atherstone. [8791

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Douglas 2¾h.p., 1916, 2 speeds, tax paid, all on; £35. [9153

MOTOR CYCLES FOR SALE.
Douglas.

1918 2¾h.p. Douglas, fitted 1921 tank, Binks, fully equipped; £32.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [8762

1922 2¾h.p. 2-speed Douglas, all on, delivery from stock.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0899

DOUGLAS 2¾h.p. machines, built of new parts throughout; 42 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5850

2¾h.p. Douglas, 2-speed, 1918-19, Lucas lamps, all accessories, excellent condition; £35.—72, Clock House Rd., Beckenham. [8683

DOUGLAS 1921 2¾h.p., fully equipped, unscratched; £46.—Skinner, c/o Hillier, 216, Portobello Rd., North Kensington. [8698

DOUGLAS 2¾h.p., 2-speed, W.D., new and unregistered; £35.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [8617

1921 2¾h.p. 2-speed Douglas, Cowey speedometer, lamps, oversize tyres, perfect condition; £49.—Victoria Garage, Surbiton. [8172

DOUGLAS 2¾h.p., 1917, overhauled, good condition throughout, accessories; £37/10.—Hockey, 10, Broadway, West Worthing. [8293

1919 Douglas Combination, good order, tax and insurance, all accessories; £75.—Richardson, Broughton Rd., Stoke Newington. [8326

DOUGLAS Combination, re-enamelled, semi-T.T., speedometer, disc, as new; £75.—Belbin, West Wickham, Kent. City 8456. [8429

1917 Douglas Combination, lamps, 3 speeds, good order; £54; exchange lightweight and cash.—Coniston, Park Crescent, Erith. [8149

DOUGLAS 1922 Solos and Combinations in stock.—Agents, Birkenhead Motor Works, Old Bidston Rd., Birkenhead. 'Phone: 2047. [2388

BARGAIN, must sell, 4h.p. Douglas Combination and Alldays 2-stroke, both taxed; £40 the two.—57, London Rd., Sawbridgeworth, Herts. [8248

1916 2¾h.p. Douglas, completely overhauled, lamps, new tyres, every accessory, taxed; seen London; £38.—Munt, 6, Fourth Av., Hove. [5700

DOUGLAS 2¾h.p., 1920, engine No. 45004, complete with magneto, Amac carburetter, and exhaust; £15.—Box 3362, c/o *The Motor Cycle*. [8975

45 GNS.—Douglas Combination, 1919, 4h.p., 3 speeds, clutch, kick-start, tax paid; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [8272

SOUTHPORT.—1919 Douglas semi-T.T., Lucas headlamp, horn, tools, tax; bargain, 38 gns., exchanges.—Kents, 417, Lord St., Southport. [8590

1919 4h.p. Douglas Combination, smart appearance, excellent condition, complete accessories; 55 gns.—Fersfield, Westbury Rd., New Malden. [8337

3½h.p. Douglas as new, very sound 1914 engine in new frame; £50; ride 50 miles to purchaser.—Elverston, Crescent Rd., Chorlton-cum-Hardy. [8236

GIBB, Gloucester, has ridden Douglases for years past; prompt delivery of the various models from stock; trade supplied where not represented. [7542

DOUGLAS 2¾h.p., built of brand new parts, including tyres and belt; £40; fully guaranteed.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [8761

DOUGLAS 1915 2¾h.p., excellent condition; £30.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

DOUGLAS, late 1921, 2¾h.p., 3-speed, clutch, kick-start, completely equipped and licensed, perfect condition; £55.—Purdy, Stoke Park, Coventry. [8605

DOUGLAS 2¾h.p., overhanled, makers' colours, lamps, horn, complete; bargain, £27.—50, Haverstock Hill, N.W.3. 'Phone: Hampstead 6609. [8604

1921 2¾h.p. Douglas, 2-speed, all on model, tax paid; bargain, £48.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [7990

DOUGLAS 1915 2¾h.p., 2-speed, completely equipped, tax paid, good order; bargain, £35.—The Layton Garages, 30, Holywell St., Oxford. [8892

DOUGLAS 1916 4h.p. Combination, in very good order, accessories, £45; 1919 ditto, £68.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [8925

1920 Douglas 2¾h.p., 3 speeds, full equipment, practically brand new, unscratched; £45.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [9086

2¾h.p. Douglas, 2-speed, in excellent mechanical order and condition, owner bought sidecar machine; 30 gns. to clear.—83, Station Rd., Sidcup. [8460

1919 4h.p. Douglas Combination, all accessories; £58.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30, 4 o'clock Saturdays. [8944

DOUGLAS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5163

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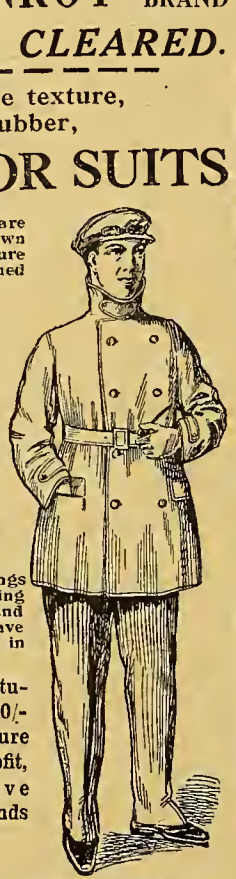

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BARGAIN, £18.—Douglas motor cycle, single gear very light, easy to handle, excellent tyres and new belt, ready to ride away.—Pratt, Highfield, Millom [8123

1922 3½h.p. Sports Douglas, indistinguishable from new, lamps, horn, absolutely in new condition 92 gns.—Edwards, 50, Harrington Rd., South Kensington. [8076

DOUGLAS Combination 4h.p., new tyres, 3-speed kick-starter, lamps, condition as new, accessories tax paid and insured.—6, Boston Place, Dorset Sq., N.W.1. [8178

1919 2¾h.p. Douglas, 2-speed, tax paid, mechanically perfect, seen after 6 o'clock weekdays, any trial; 39 gns.—103, Winstanley Rd., Battersea, S.W.11. [8394

DOUGLAS 1919 2¾h.p. (W.D. model), 2-speed, all accessories, lamps, speedometer, etc., engine in excellent condition; £35.—Clark, 15, Lord St. West, Southport. [8716

£55 secures Douglas 4h.p. Combination 1918, tax paid, accessories, new enamel and plating; any inspection.—88, Gloucester Place Mews, Portman Square, W. [8496

DOUGLAS, late 1921, 4h.p. Combination, complete with all accessories and Tan-Sad, small mileage, and absolutely as new; £105.—Smith, High Rd., Goodmayes. [7694

1920 Douglas 4h.p. Combination, fully equipped, excellent condition and appearance, tax, insurance paid; £85.—Woolgar, 84, Elmgrove Rd., Barnes, S.W. [8219

2¾h.p. 1921 2-speed Douglas, all on, £60, solo; also 3½h.p. 1914 Douglas combination, 2-speed, £35; cash or easy terms.—Wauchope's, 9, Shoe Lane, Fleet St., London. [6705

DOUGLAS 1920 2¾h.p., 3-speed, clutch, kick-starter, fully equipped and tax paid, exceptionally fine condition; £55.—The Layton Garages, 30, Holywell St., Oxford. [8891

DOUGLAS 1922 Models: 2¾h.p. £69, 4h.p. solo £110, 4h.p. combination £135; prices include all accessories; delivery from stock.—Rivett, 236, High Rd., Leytonstone. [2680

1919 Douglas 4h.p. Combination, good condition, comparatively small mileage, tax paid, accessories include spare new belt; £65.—10, Charleville Circus, Sydenham, S.E.26. [8641

1921, September 4th, Douglas Combination, mileage 800, absolutely as new, tax and insurance paid; also Tan-Sad; £100.—Smith, 63, Friern, Barnet Rd., New Southgate. [9128

2¾h.p. Douglas, W.D., reconditioned machine, unused, nearly all new parts, tyres, belts, etc.; 40 gns.; all on, exchanges.—Edwards, 50, Harrington Rd., South Kensington. [5204

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful to you. The pioneer agent for Douglas motors.—196, Cheltenham Rd., Bristol. [0016

1921 Douglas Combination, Cowey horn and speedometer, 2 new tyres, recent overhaul, splendid condition; any trial; 90 gns., best offer.—116, New City Rd., Plaistow, E.13 [8194

4h.p. Douglas Combination 1919, very small mileage, perfect mechanical condition, fully equipped, tax and insurance paid; £70 or near offer; Ealing.—Box 3347, c/o *The Motor Cycle*. [8431

DOUGLAS 4h.p. Combination, 1918, Easting, luggage grid, tax to December, insurance to March 23rd, all on, and in good order; £65.—Adams, 130, Wightman Rd., Harringay, N.4. [7422

DOUGLAS Combination 4½h.p., late 1918, complete with lamps (electric), Klaxhorn, windscreen, and all tools, recently overhauled and in perfect condition; price £70.—Masson Seeley, 121, Victoria St., S.W. [8906

2¾h.p. Douglas 1922, 3-speed, clutch and kick-starter, equipped with Lucas electric lighting, speedometer, and Brooks Cantilever saddle, in perfect mechanical condition and appearance, tax paid; £60.—Kays, 8, Bond St., Ealing. [8537

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill [0786

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2¾h.p. Hazelwood-Jap, 3-speed and clutch, all accessories, ride away; £15, or exchange with cash combination.—Jones, c/o Rutter, 340, High Rd., Balham. [8784

Henderson.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Hendersons; unequalled service, repairs, etc. [3560

HENDERSON Combination, excellent condition, recently overhauled throughout, new tyres, spares; £90.—Box 3346, c/o *The Motor Cycle*. [8426

HENDERSON 1920 Combination, Easting, tax paid, lamps, tools, etc.; £80.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [8153

1921 Model K Henderson Combination, dynamo lighting, reverse gear, splendid condition, cost £300; accept £155 or near, bargain.—307, Camden Rd., Holloway, N.7. [8453

1921 Henderson De Luxe Combination, Ace discs, electric lighting, equipped regardless of cost, mileage 500; £125, or offer.—"Oaklands," The Grove, Finchley. 'Phone: 868. [8482

£38.—1916 10h.p. 4-cyl. Henderson Combination, speedometer, mechanical horn, lamps, etc., running order but wants attention; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [8916

149 GNS.—Henderson 1921 ¾ Elite Combination, 12h.p., 4-cyl.; side valves, 3 speeds, reverse model, dynamo lighting, licensed, as new throughout; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [8267

ROBERTSON'S Motors, Ltd., the original Henderson importers, offer the following: 1920 Standard combination, all accessories, tax paid, £115; 1915 Standard, with luxurious sidecar, speedometer, and accessories, £65.—157b, Gt. Portland St., W.1. [5937

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Spare Parts:

ROBERTSON'S Motors, Ltd., the Henderson Experts, have the most representative stock in the country.—157b, Gt. Portland St., W.1. [5934

Hobart.

HOBART-VILLIERS, 2-speed, Binks, electric light, accessories; £30.—17, Drayton Av., W. Ealing. [8645

Humber.

3½h.p. Humber, taxed; £15.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [8749

£12.—2½h.p. Lightweight Humber, running order, tax.—Ewers, Newton Rd., Burton-on-Trent. [8488

1922 Humber 4½h.p. Flat Twin Sports, brand new, shop soiled; £95.—Shepherd, Enfield Highway. [0900

HUMBER Combination, 1920, 3½h.p., flat twin, 3 speeds, speedometer, horn; £75.—Brookman and Co., 5, St. Albans Rd., Watford. [8208

3½h.p. Humber Combination, 3-speed, kick-start, Easting screen, lamps, tools, splendid condition; £55.—32, Chandos Rd., Tottenham, N.17. [8425

HUMBER 1922 4½h.p. Flat Twin, mileage 1,000, as new, Bonniksen trip speedometer, Tan-Sad, imp set; bargain, £100.—Slade's, Garage, Penn, Bucks. [8350

HUMBER 1922 4½h.p. Flat Twin and special coachbuilt sidecar, completely equipped, lamps, horn, licence, Easting and Bonniksen, almost new; £120.—The Layton Garages, 30, Holywell St., Oxford. [8895

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INDIAN 7-9h.p., clutch model, excellent running order; £25.—99, Tynemouth Rd., Mitcham. [8693

£20.—7-9h.p. Indian 1914 clutch model, good condition, taxed.—77, Haverstock Hill, Hampstead. [9062

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

1915 7-9h.p. Indian Combination, excellent throughout, Easting; £70, bargain.—23, Bass St., Derby. [7232

INDIAN Powerplus Combination, late 1920, dynamo lighting, any trial; £75.—Catt, 140, Humber Rd., Blackheath. [8195

INDIAN 1915 7-9h.p. Road Racer; £35, or near offer; seen by appointment.—Swinton, 10, Hervey Rd., Blackheath. [8674

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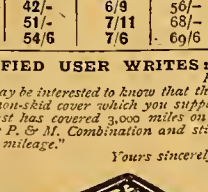

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INDIAN Powerplus, late 1919, just overhauled, splendid condition; £60, or near.—Rodgers, 38, Ardfillan Rd., Catford. [8249

1915 7-9h.p. Indian Combination, 3 speeds, clutch, good condition; £55.—27, Pavilion Rd., Knightsbridge. [8125

1922 Indians.—Immediate deliveries, deferred payment, exchanges.—Brown, 3, Parker Lane, Burnley. Tel.: 1032. [6332

INDIAN Scout Combination, 1922, electric light and speedometer, done 300 miles; only £140.—Pawsey, Rayne, Essex. [8611

1921 Indian Combination, big valve model, dynamo, electric horn, absolutely as new; must realise 85 gns.—19, Valnay Rd., Tooting. [9105

1917 7-9h.p. Indian, 2-speed and clutch, tyres as new, lamps, excellent condition; what offer, or exchange?—Rose Garage, Uxbridge. [8774

1915 5-6h.p. Indian Combination, kick-start, clutch, 3 speeds, Easting, perfect; £50.—19, Fairfield South, Kingston-on-Thames. [8631

1921 Indian Scout, dynamo lighting, speedometer, etc., tax paid; £85. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 3462 [7908

1922 Indian Scout, dynamo lighting (demonstration model), three weeks old, absolutely new; sell cheap; exchange entertained.—89, East Hill, Wandsworth. [8839

£77/10.—Indian Scout, fully equipped, registered, almost new, mileage 4,000; exchanges entertained. After 5 p.m.—4, Elm Gardens, Hammersmith. [8709

INDIAN Combination, 7-9h.p. Powerplus, Sports model, splendid condition; £65.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [8154

1916 5-6h.p. Indian Combination, 3-speed, kick-start, as new, never been registered; bargain, £55.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [8618

1921 Indian Combination, electric lighting, tax paid for the year, Easting windscreen, speedometer, in excellent order; 92 gns.—Edwards, 50, Harrington Rd., South Kensington. [8071

1920 Indian 7-9h.p. Powerplus Combination, 3-speed, electric dynamo lighting, speedometer, spring frame, excellent condition; accept £85.—1, Sunningdale, Clifton, Bristol. [8572

39 GNS.—1915 7-9h.p. spring frame Indian combination, 3-speed, equipped, Easting, very nice condition; exchanges entertained. After 5 p.m.—4, Elm Gardens, Hammersmith. [8711

INDIAN 1919 Powerplus Combination, electric light, Grindlay spring wheel sidecar, real smart; £80; or exchange Douglas combination and cash; or Morgan.—Bell, 106, Gaisford St., N.W.5. [8355

BARGAIN, 75 gns.—Powerplus Indian Combination (£225, 1920), dynamo lighting, electric horn, speedometer, Cameo, licensed, new tyres, original condition, guaranteed perfect; any trial.—8, Barmouth Rd., Wandsworth. Latchmere 4541. [8581

PHOTOGRAPHS Free.—Indian 1920 Powerplus 7-9h.p., 3-speed, spring frame, new condition, 59 gns.; Indian 7-9h.p. combination, splendid order, 49 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Tel.: Putney 2865. [6944

1922 Indian Combination, dynamo and latest wide mudguards, etc., delivered month ago, cost £175, mileage 550; will take best price offered between Thursday and Saturday; dealers invited; owner giving up.—Apply Professional, Greystoke Golf Club, Hanger Lane, Ealing. [8454

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7-9h.p. Powerplus Indian Solo, late 1921, electrically equipped, rear-drive speedometer, tax paid, practically new, and in guaranteed perfect mechanical condition, a wonderful end-of-season bargain; £50 cash, or gradual payments arranged.—On view at Juno Showrooms, 248, Bishopsgate, E.C. [8873

FOR Sale, 1919 7-9h.p., spring frame, Powerplus Indian motor cycle, with new Miller lamps, separate generators, aluminium top tube tool box, new sprockets, engine overhauled recently, enamel and plating in good condition; £55.—To be seen at Youngs, Motor Agent, 2, 3 and 5, The Parade, High Rd., Kilburn, N.W.6. [7105

1921 Indian Scout 4h.p., clutch, K.S., 3-speed, overhauled and just delivered by makers, who have fitted brand new frame, tank, wheels and tyres, handlebars, forks, etc., nearly everything except engine which is in perfect order, electric light, licensed December; cost £165; accept £85 or near offer; great bargain as essentially a new bicycle; owner buying car; near London.—Box 3363, c/o *The Motor Cycle*. [8976

MOTOR CYCLES FOR SALE.

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1921 Big Valve Road Racing Indian Combination, absolutely one of fastest machines on road, bargain; 75 gns.—67, Fernlea Rd., Balham. [9106

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7868

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INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [6301

Invicta.

INVICTA, single speed, 2-stroke; £28, near offer.—4, Albert Bridge Rd., Battersea. [8719

Ivy.

1920 2½h.p. 2-speed Ivy, excellent order, complete; £32.—88, Park Rd., Dulwich. [8496

James.

JAMES Combination, 1919, 5-6h.p., D.A. cylinder, insured, tax; bargain £65.—Apply 1, Whitman Rd., Mile End, E. [8265

JAMES 1916 4¼h.p. 3-speed Chain Drive Combination, in excellent condition and appearance; £55.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [8927

1920 James, 2-stroke, 2-speed, all lamps, horn, etc., tax paid; £32/10. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7909

JAMES Combination, 4¼h.p., countershaft 3-speed gear box, clutch, kick-starter, all-chain, licence, hood, etc.; bargain, £38; exchanges.—63, Solon Rd., Brixton. [8706

JAMES 1920 Combination, 5-6h.p. de Luxe, well equipped, smart appearance; £90; tax and insurance paid. Ill health.—100, Newlands Park, Sydenham. [8132

£40.—Extra special 4¼h.p. James Coachbuilt Combination, 3 speeds, clutch, kick-starter, in extraordinary good condition, fully equipped.—King, Egrove, Oxford. [8738

JAMES 6h.p. Combination, new June, 1919, lamps, horn, speedometer, screen, 1922 pattern Ferodo brake, all in splendid condition; bargain, £88.—Newton, 50, Hampstead Rd., N.W.1. [8563

4¼h.p. Big Single James Combination, all-chain drive, 3-speed, kick-start and clutch, complete with new Sandum windscreen and apron, Miller lamp sets, Lucas horn, Watford speedometer, mileage 4,000, beautiful condition, any trial, must sell; £57/10.—Farrin, 7, The Vale, Acton, W.3. [8919

Spare Parts:

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5079

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

1920 J.E.S. Lightweight, mileage 500, fully equipped, taxed; £18.—37, Arlington Rd., Surbiton. [8598

J.E.S.—A few 1921-22 4-stroke 1½h.p. Lightweights taken in part payment for our larger models. All will be thoroughly overhauled and carry our full guarantee. Prices from 23 guineas. Send for lists of these bargains.—J.E.S. Motor Works, Gloucester. [7335

Juno.

1913 2½h.p. Juno-Precision, 3-speed and clutch, good running order; £16, bargain.—Whisstock and Lingley, Woodbridge. [8474

Kingsbury.

KINGSBURY 1920 2-stroke, 2-speed, electric lighting, tax paid; 36 gns.—M., 45, Nightingale Lane, Hornsey, N.8. [8276

1921 Kingsbury, very smart little machine, 2-speed, Enfield gear, absolutely unscratched, bargain; 30 gns.—67, Fernlea Rd., Balham. [9111

2¾h.p. 1921 Kingsbury, 2-speed, clutch, Orbit engine, all-chain, lamps, tax paid December, as new; sacrifice, £33.—K.R., 10, Linden Arcade, Chiswick. [8171

Lea-Francis

LATE 1920 Lea-Francis, M.A.G. engine, 2-speed, fully equipped, lamps, etc., taxed, beautiful condition throughout; £60.—Summerfield, Craven Arms, Salop. [8831

LEA-FRANCIS 1920-21 3½h.p., 2-speed, kick-starter, clutch, lamps, horn, speedometer, beautiful condition, as new; bargain, £55; exchanges.—25a, Stratbville Rd., Earlsfield, S.W.18. [8594

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LEVIS 2¼h.p., 1916-17, electric light, disc whe Al order, smart; £26.—38, Lincoln Rd., Enfie [86

WE are the Agents for London, S.W. Choose fr our stock.—Knight's, 126, Upper Tooting R S.W.17. [07

LEVIS 247c.c. G1 Sports Model, new, licens ready for road; £57.—Newman, Hartburn R Stockton-on-Tees. [71

LEVIS 1919, mechanically perfect, new Sensp copper exhaust, lamps, Klaxon, licensed; £26 69, Kingston Rd., New Malden. [85

1922 Levis 2-speed, clutch, kick-start, in stock. L.J. and Co., Forest Garage, Bignold Rd., Fore Gate, E.7. 'Phone: Maryland 2640. [82

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O.K.

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Omega.

21 Omega-Villiers, 2¾h.p., 2-speed, clutch, K.S., perfect; £35.—181, Wellington Rd. South, Stock- [8756

22 3h.p. Omega Combination, coachbuilt sidecar, clutch, K.S., taxed, equipped; £49; bike only, easy payments.—Box 3348, c/o *The Motor Cycle*. [8435

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and M., in splendid condition; £25.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [8748

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and M. Combination, 1918, good condition, must sell; £38, offer.—25, Ravensbourne Rd., Catford. [8531

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Peco.

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3½h.p. Premier Combination 1915, 3-speed counter- shaft, K.S., taxed, trial; £35; exchange 2¾h.p. Douglas.—Stanley Tite, 113, Lavender Hill, S.W.11. [8812

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WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Quadrant 1921 4½h.p. Combination, dynamo, all on; £65. [9152

4¼h.p. 1921 Quadrant Combination, 3-speed, clutch and kick-start; £75.—Wauchope's, 9, Shoe Lane, Fleet St., London. [6731

£30.—1914 3-speed Quadrant combination, hood, speedometer, lamps.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [8051

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1922 Raleigh 2¾h.p., 3-speed, sports model, Cowey horn, Lucas lamps, as new; £68.—4, Edward St., Loughborough. [8492

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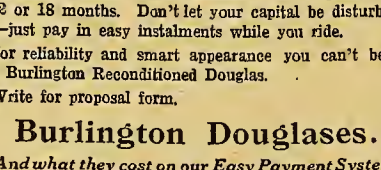

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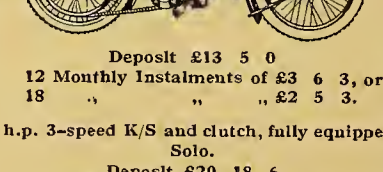

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£100.—Zenith-Bradshaw, all-chain, brand new, sho soiled only; great bargain.—Pickering, Ager Shrewsbury. [86

ZENITH-GRADUA Coachbuilt Combination, go condition, reliable, cheap bus; £37.—60, Mi Rd., S.E.17. [86

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ROBERTSON'S Motors, Ltd. — 1922 shop-soil Zenith-Bradshaw, Gradua gear; £100.—157b, G Portland St., W.1. [89

6h.p. Sports Zenith-Gradua 1915, perfect conditio lamps, horn, licensed, fast; £36; exchange.—1 Hearne Rd., Kew Bridge. [85

1920 5h.p. Sports Zenith Combination, Gradua, lamp apron, screen; £65; exchange lightweight, cash. 48, Honedale Rd., Charlton, S.E.7. [86

49 GNS.—Zenith-Gradua 1915 6-8h.p. Combin tion, handle start, licensed; exchanges.—1 Cornwall Mews, Gloucester Rd., S.W.7. [82

90-BORE o.h.v. Zenith, all accessories; £70; e change solo 1920 Sunbeam, cash adjustmen after 6.30.—6, Colville Rd., Leytonstone. [85

ZENITH-BRADSHAW, new, unused, 1922 mod Gradua gear, slightly soiled; 75 gns.—Eagles a Co., 275, High St., Acton, London, W. [90

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£85.—1921 (January) Zenith 8h.p., large bulbo Sandum, lighting set, Cameo, horn, taxed, pe fect condition.—68, Goldsmith Av., Manor Park. [86

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1921 Zenith 5-6h.p. sports model, new May th year, mileage 500, carefully run in, complete equipped, absolutely as new; £73.—"Grantham," Seve oaks. [82

ZENITH-GRADUA 4h.p., J.A.P., latest Binks, ne belt, excellent condition, speedy, must sell, an trial; £40.—R. A. Little, 27, Ashtead Rd., Stamfor Hill. [84

ZENITH 1922 (June) 8h.p. Super Sports J.A.P. mileage 500, as new, lamps, horn, tax paid £100, or nearest offer.—85, Park St., Greenleys Manchester. [88

PHOTOGRAPHS Free.—Late 1919 8h.p. countersha Zenith Combination, clutch, kick-start, choice single or 2-seater sidecar, taxed, equipped, 68 gns. also a 1922 Zenith-Bradshaw, 85 gns.; exchanges.— Peter Gordon, Ltd., 110, Upper Richmond Rd., Eas Sheen. [80

MOTOR CYCLES WANTED.

WANTED to purchase for cash, or sell on commission, a number of really first-class motor cycles and combinations. Representatives will be sent to inspect and complete transactions after preliminary negotiations. Write, phone, or call.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [8910

SEND Your Motorcycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [9073

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2590

BARGAIN.—Specially designed motor scooter, very smart, as new; seen any time; £20.—25, West End, Brierley Hill, Staffs. [6496

A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £20; wonderful bargain.—Frank Whitworth, 1-9, New St., Birmingham. [5085

AUTOGLIDER, 1921 model, 2¾h.p., good condition, upholstered seat, take 2 anywhere, 2 spare tyres and tubes, etc., tax paid; £25, or near offer; unemployed.—48, Grosvenor Rd., Highbury, N.5. [8189

MOTOR ATTACHMENTS.

YOUNG Attachment and B.S.A. bike; £9/17/6; little used.—176, S. Ealing Rd., W.5. [8726

AUTOWHEEL, fitted to gent's brand new cycle, tax paid; £15/10.—59, High St., Hampton Hill. [8137

1h.p. Motor Attachment, fitted to a B.S.A. motor cycle, with 3-speed gear; £15.—Wauchope's, 9, Shoe Lane, London. [8011

TANDEM, Chater-Lea, fitted with Youngs 1¾h.p. motor attachment; would separate.—F. A. Levy, 1, Highbridge Villa, Goldsworth Rd., Woking. [8509

YOUNG attachment on special cycle, done 1,300 miles, all on, cost £36, just overhauled; £18; owner bought combination. — Loftin, Northfield Avenue, West Ealing. [8422

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COLLINS and Son for hoods, screens, and aprons; hoods from 35/-.—Below.

COLLINS and Son.—Adjustable wind screens, complete with apron; 22/6, 30/-, and 35/-; sent on approval against cash; carriage 1/6 extra.—Below.

COLLINS and Son stock all known makes of windscreens; we have a few second-hand Standard Eastings, fitted with new celluloid, from 45/-.—Below

COLLINS and Son fit celluloid panels to any windscreen in few hours, new aprons, side curtains, etc.; open weekdays till 8.30, Sunday mornings till 1 o'clock.—Collins and Son, rear of 84, High St., Putney, S.W. (D) [6198

WINDSCREEN, new, 22in.×13in., plated frame; 40/-.—Chevins, Ollerton Rd., Retford. [8463

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30/-.—Bower Adjustable Windscreen, 30/-, complete with coverall apron; carriage paid on approv.; 30/-. Easting screens from £3; Sandham V. screens, £2/15. All makes of screens repaired. New panels fitted from 12/-. Aprons supplied from 10/-.—Robin Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [7729

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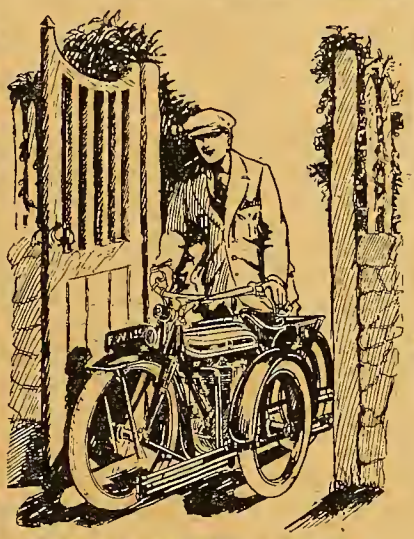
BEAUTIFULLY Finished Bulbous Bodies, £4/15; other models from £2/10; write for specification.—Burton, Sidecar Works, St. Peter's Park Rd., Broadstairs. [3637

FIFTY bodies, second-hand, upholstered best pegamoid, touring shape, from £2 each; a few, new, at £7, exceptional bargain; also a few chassis to clear.—Sandums, 336, Gray's Inn Rd., W.C.1. [0871

The "Dorway" SIDECAR with patent folding chassis



When open looks like any other sidecar, and is as rigid as any other sidecar. Chassis folds—body does not fold—it lifts off.

The "Dorway"

1. Will pass through any ordinary door of about 30 inches.
2. Can be changed from a touring body to commercial body in 20 seconds.
3. Permits easy access to engine and transmission both sides.

Price £27 Complete and Carriage Paid.

With roomy bulbous back body (any finish); or same price with Commercial Box body; or £25 with open commercial truck; or with two interchangeable bodies, at extra cost.

SUITABLE FOR AND WILL FIT ANY MAKE MOTOR CYCLE.

Wholesale and Retail District Agents:

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FOR

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SANDUM Sidecars.—Our pre-war prices were the talk of the show; £14 to £50. Write for new catalogue.

SANDUM (V-shaped) Wind Screen; a hood, screen, and apron; £2/15 and £3/18. Write for list.

SANDUM (V-shaped) Wind Screen.—Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

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MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

EXTENDED Payment Arrangements if desired, on most generous terms at Middleton's.

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200 MILE Sidecar Race, Davidson first, riding Indian with Middleton spring wheel sidecar; Le Vack second, riding Zenith-Jap with Middleton spring wheel sidecar.

MIDDLETON'S undertake repairs of all kinds; trade inquiries invited.

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BASTONES.—Lightweight sidecars complete, to fit any machine; £12/18/6.

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SIDECAR, light coachbuilt, off Triumph; £5/10.—42, Clifton Gardens, Chiswick, W. [8642

CANOELET Sporting Sidecar, perfect, new tyre, etc.; £11, no offers.—Ford, Sotwell, Berks. [8512

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20 P.M. brand new Sidecars, Boublas, underslung, windscreen, tyre, £10/10; sports model, £8; new.

35 New P.M. Chassis, all fittings, £5/15.—Turner and Co., 55, St. James's Rd., Bermondsey. [9093

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BOOTHS' Blackpool Bargains.—New £9/10 coach bodies for £6/7/6. Illustration free.

BOOTHS' Blackpool Bargains.—Quantity of new latest pattern underslung chassis; £9/19/6. Illustration free.

BOOTHS' Blackpool Bargains.—Some new sidecars for Triumph, B.S.A., Douglas, etc., cheap; sidecar fittings, wheels, springs, rims, mudguards.—Booths' Motories, 294, Waterloo Rd., Blackpool. [5484

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BARGAIN.—Canoelet coachbuilt sidecar off Indian, 28×3 tyre, splendid condition; £10; deposit.—Box 3360, c/o *The Motor Cycle*. [8978

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FOLDING Sidecar.—When ordering your motor specify a Hopley folder. Suits motors up to 10h.p. Can be changed from pleasure to commercial in few seconds. Detachable wheels can be fitted. Tested 7 years.—Hopley, Upper Highgate St., Birmingham. [0152

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A COMPARISON with the prices below and any other advertised prices will show that Triumph riders can obtain from us their spares and replacements—all brand new—at very low prices. Our stock is too numerous to detail, but we hold a complete stock of Triumph parts. Write, call, wire or 'phone! All parts sent on approval against cash.

Rims, back and front		10	6
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Carb. Control Levers, single		4	0
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Piston Rings		1	3
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All nuts and bolts 25 per cent. under list.

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Brand new shop-soiled countershaft **TRIUMPH** £90

1921 I.O.M. **RUDGE-MULTI,** small mileage. Tax paid and accessories £54

1920 3½ h.p. 3-speed K.S. **TWIN JAMES.** Tax paid £40

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We have a large and varied stock of Sidecars & Chassis. Write for catalogue

LIGHT CAR & MOTOR CYCLE ENGINEERING CO., Ltd.,

22, 26 & 26a, Tulse Hill, Brixton

(½ minute from Brixton Skating Rink).

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EXTENDED Payments accepted for sidecars; model for all makes.—Send for catalogue, etc., Rideo Sales, Ltd., 5, Victoria St., S.W.1. [082

HUGE Purchase of Plus One Chassis, brar new, complete with all fittings, for Englis and American 8-10h.p. machines, usual price £2 our price £12/15; or complete with our special built De Luxe body, upholstered real leather, £22/1 —Robini Manufacturing Co., 1 and 3, Tulse Hil Brixton, S.W.2. 'Phone: Brixton 1585. [772

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HUMBERETTE, A.C., good bargain; £48 cash.— 264, Kennington Park Rd., S.E.11. [856

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BEDELIA.—The new 1922 model 8-10h.p. air-cooled or water-cooled to choice. Immediate deliveries

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BEDELIA.—Cash on easy terms. Your old car or motor cycle taken in part payment.

BEDELIA.—Catalogue free from L. N. Palmer, Sole Concessionnaire for the British Empire.— Palmer's Garage, Tooting. [9071

MORGAN 1922 De Luxe, insured March, 1923, per fect; offers.—14, Duncrievie Rd., Hither Green S.E. [8167

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GRAND Prix Morgan-Jap, electric lighting appearance as new; £95.—Bunting's Motor Ex change, Wealdstone. [9045

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MORGAN.—New 1922 Models in stock.—Agents, Birkenhead Motor Works, Old Bidston Rd., Birkenhead. 'Phone: 2047. [2389

£110.—Unit No. 1, 1920, dynamo model, spare wheel, etc.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [8052

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ZEPPELTHWAITE'S for all spares for the 8h.p. J.A.P., 4h.p. w.c. J.A.P. (new), £13; complete of new parts to build 8h.p. (less flywheels), 10/10; second-hand engines, 4h.p. J.A.P., £10; ½h.p. Triumph, chipped fins, £5/10; 3½h.p. Hum- and magneto, £8/10; 3½h.p. L.M.C., £9; 5h.p. S.U., £4/10; also others.—19, Wilcox Rd., South mbeth, London, S.W.8. 'Phone: 1958 Brixton. [7341

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A REAL BARGAIN

IN Magnetos can be secured from the Marble Arch Motor Exchange.

150 Motor Cycle Magnetos to be cleared.—See below.

PLEASE note our stock consists of genuine Motor Cycle Magnetos, all variable ignition, and guaranteed not converted or reconstructed aeroplane starter ags.

WE guarantee we can supply you a magneto cheaper than anyone.

SINGLE-CYL. Anti-clock, M-L, 45/-; C.A.V., 38/-; U.H., 35/-; Berling, 30/-; Dixie, large type, 30/-; l above suitable for Triumph, B.S.A., etc.—Below.

SINGLE-CYL. Clock, C.A.V., 38/-; Dixie, 30/-; Berling, 30/-.—Below.

180° Anti Clock, C.A.V., 38/-; Splitdorf, 36/-; Dixie, 30/-.—Below.

180° Clock, Thomson-Bennett, 38/-; C.A.V., 37/6; Splitdorf, 35/-.—Below.

2°, 50°, 55°, Thomson-Bennett, Splitdorf, or Dixie; hundreds of others in stock. All guaranteed and nt on approval against cash.—Marble Arch Motor xchange, 135, Edgware Rd., W.2. 'Phone: Padd. 9. 'Grams: Archmotex, Padd., London. [9079

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J.B. for new and second-hand magnetos; all spares stocked.

J.B. Specialise in Thomson-Bennett, complete for fixing to Triumph.

D.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

M.A.V. New, twin and single, clock and anti; £3.

DIXIE, single and twin, all degrees; £2/5.

J.B. Guarantee all magnetos one year.

J.B. will take your old machines in part payment.

J.B. Despatches all goods per return, carriage paid, on approval against cash, or through *The Motor Cycle* deposit system.

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MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton t., Camberwell. [3584

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SILENCE!

SssssHhhhhH!!!

An important word

to Motor Cyclists!

TO secure that satisfactory silencing *without losing power*, fit the perfected

"CARB-JECTOR"

THIS is the silencer that is simple in fitment, and gives

100% efficiency.

The CARB-JECTOR (showing section).

Test on a Heenan & Froude Dynamometer, June 22nd, 1922.

Revs. per min.	Open Exhaust. B.H.P.	Carb-jector B.H.P.
2000	2·66	2.66
2400	3·11	3·20
3000	3·94	4·00
3600	4·80	4·87
3800	5·06	5·06

249 c.c. (2¼ h.p.) Sports Model.

The "CARB-JECTOR" PREVENTS OVERHEATING. All Steel. Plated Ends.

Dismantled by unscrewing Inlet End. Tail Pipe included.

SIZES.

For engines up to 250 c.c. (2¼ h.p.).—Carb-jector measures 2⅝ in. × 11½ in. Weight 2¼ lbs.

For engines up to 350 c.c. (2¾ to 3 h.p.).—Carb-jector measures 2⅝ in. × 12 ins. Weight 3 lbs.

For engines up to 500 c.c.—Carb-jector measures 2⅝ × 15 in. (2/6 extra for this size).

CARB-JECTORS for engines above these capacities ready shortly.

PRICE 25/- POST FREE. **CASH WITH ORDER.**

BRIDGEHEAD Ltd., Bankhey Works, BLACKPOOL.

IGNITION, LIGHTING, ETC.

COUNTY of London Engineering Works, Ltd.

MAGNETO Factors and Repairers.

ALL Magneto Spares Stocked.

BOSCH Single, Type D.A.L., variable ignition; £3/3.

M-L Single, enclosed, waterproof, variable ignition; £3/15.

THOMSON-BENNETT, single or twin, enclosed, waterproof, variable ignition, all degrees; £2/15 each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed, waterproof, variable ignition; £2/15 each.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle, suitable for Rudge.

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required. Please state make of engine when ordering.

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed. Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade. Write for list.

COUNTY of London Engineering Works, Ltd., 27, Stockwell Rd., London, S.W. (1 min. from Stockwell Underground Station). T.A.: Ignitionac, Clapham Rd., London. Tel.: Brixton 2841. [2717

RELIANCE Magneto Repairing Co. (the largest London Repair Depot), for repairs and magnetos.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a 12 months' written guarantee against all defects.

RELIANCE test every magneto after repair, under all running conditions, and as we contract for many of the largest concerns, you need have no hesitation in placing your orders with us.

RELIANCE stock spares for all makes. Special line, genuine platinum screws for all types, 12/- per pair. Magneto work of every description is carried out solely on our premises. We are, therefore, enabled to give you quicker and more efficient service at the right price.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co. for new and second-hand magnetos. See following list.

THOMSON-BENNETT singles and twins, brand new any degree, enclosed waterproof, variable; 55/-.

THOMSON-BENNETT, large type single or twin, enclosed, waterproof, variable, suit Harley, Indian, etc.; £3/10.

C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

E.I.C. enclosed, waterproof, variable, suitable for Triumph, B.S.A., or any Lightweight; £3.

BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern; ideal for Douglas, 2¾h.p. and 4h.p.; £4.

BOSCH D.A.L. twins, enclosed, waterproof, any degree, suitable for Indian, Harley, etc.; £4/10.

FELLOWS new magnetos always in stock, any degree for any engine; also a large selection of second-hand magnetos, all makes.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute. —Reliance Magneto Repairing Co. (1914), 283, St. John St., London, E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco, Isling, London. [9816

IGNITION, LIGHTING, ETC.

MAGDYNAMO Engineering Co., Ltd., for magnetos, spares, and repairs.

MOTOR Cyclists fit reliable high quality magnetos now and avoid certain failure of inferior magnetos.

BOSCH Enclosed Waterproof Type D.A.L. Magnetos, Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds, makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each, postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine. Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

ZENITH Owner writes: "Since fitting magneto have completed a run of 250 miles; highly satisfied; will certainly recommend these magnetos."

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, supplied by Magdynamo, beat all other Magnetos.

MAGDYNAMO will take your old Magneto in part payment.

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch ZA2 magneto now, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P. and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos, latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting pounds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparkiug plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it, we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if nrgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row, E.C.2. 'Phone: London Wall 4570. (One minute from Brown Bros.) [7497

M.L. single magnetos, new, complete; 25/-.—Tompkins, 25, Buckingham Rd., Harlesden. [8401

ANY Motor Cycle Magneto repaired, no matter what condition, provided complete, for 30/-; 24 hour service.—Kays, Electrical Dept., 8, Bond St., Ealing, W. [5077

DASH Switchboards, 4-way, with ammeter, 20/-; with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept. H.1), 9, Colonial Av., Minories, E.1. [0760

DOUGLAS Magnetos, 2¾h.p. models, latest type, watertight variable ignition Dixie magnetos; price 20/-, post free. 50 only.—Griffin and Son, 97, Angell Rd., Brixton, S.W.9. [8965

SURPLUS Magnetos, with written guarantee one year, M-L single, 35/-; B.L.I.C. ditto, 42/-; Bosch ditto, 45/-; C.A.V. single or twin, 50/-; Thomson-Bennett ditto, 60/-. We specialise in repairs and spares for all makes. Lists, 2d. stamp. Deal with experts and avoid certain disappointment.—Whitdala Magneto Service, Cherry Orchard, Croydon. 'Phone: Croydon 1625. [6459

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All Buildings carriage paid. No extras:

This Building is complete with tin. tongued and grooved floor, ¾in. match-boards or weather-boards, 3in. framing, sfrong boarded roof, best pluvex felt. Building treated with weather-proof composition. Prices, complete and carriage paid to any station in England and Wales:

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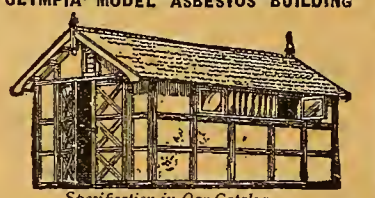

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Delivered with iron roof complete. Fire-proo and sound-proof.

Our unsolicited testimonials should create confidence.

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Dear Sir,
I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.
Yours faithfully,
JOHN O. GRIFFITS.

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I find the Building you sent me very satisfactory, and consider it very good value for the money.
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Dear Sirs,
I have received the Building in good condition and I consider it an excellent piece of workmanship and an exceptional bargain.
Yours faithfully,
L. G. CHINCHEN.

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High Street, Fulham, London, S.W.
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IGNITION, LIGHTING, ETC.

21/- is what we charge for overhauling your magneto, returned as new in 2 days, and guaranteed for 12 months. Spares supplied at lowest prices.—Turner Bros., Magneto Repair Service, Sunnerseat, Manchester. [494

SENSATIONAL Bargains! C.A.V. 180° anti-twin magneto, 25/-; T.B. 180° anti, new, 27/6; Splidorf Magdyno, new, suit big twin, £6/16; accumulators, 6 volt 35 amp., 35/-; 6 volt 15 amp., 18/. Approval.—88, Gloucester Place Mews, Portman Square, W. [849

THE London Magneto Repairing and Winding Co. Ltd. (Managing Director, S. T. Boon), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 2 hours. We have several new and second-hand slog and 2-cyl. magnetos in stock, all guaranteed.—78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Eusroad, London. [244

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on U.H. Bosch, Eisemann, Mea, Splitdorf, Dixie, and Berlin magnetos, we can naturally give you better service. Prices, rewinding, 18/-; condensers, 10½-; platinum screws (Bosch standard), 6/-; remagnetising, 2/6; slip rings, 6/6; H.T. terminals, 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and re-despatched to you in 2 days.—Continental Ignition Repair Co., 13, Harwick Rd., Chiswick, London. [250

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos. Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approval A.I.I. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plug cables, ¼-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [026

TYRES.

A

MAUDES' Motor Mart.—Special offer of clearance covers, not W.D., all guaranteed by us, carriage paid. 24×2¼ Hutchinson T.T., 21/-; 26×2 Hutchinson Brooklands, 17/6; 26×2 Hutchinson T.T., 23/-; 26×2¼ Avon Duroflth, 25/-; 26×2¼ Hutchinson Brooklands, 17/6; 26×2¼ Hutchinson T.T., 3-rib, 22/6; 26×2⅜ Hutchinson T.T., 23/6; 26×2½ to fit 2¼, Belgrave cable cord, 23/6; 26×2½ to fit 2¼, Hutchinson passenger, 33/-; 26×2½ Hutchinson passenger R.N.S. 30/-; 28×3 Hutchinson T.T., 27/6; 28×3 Clincher Dreadnought and De Luxe, 52/6; 700×75 to fit 650×65 Hutchinson 3-rib, 28/-; 700×80 Burnett manufacture 3-rib, 50/-; 700×80 Stepney road grip, B type for Morgan rear wheels, 60/-; tubes, strong red rubber 26×2¼, 5/6; 26×2½, 6/-; 26×3, 6/-; 28×3, 7/-.—Maudes' Motor Mart, 100 Gt. Portland St., W.1. [903

A.

EXCEPTIONAL Offer:

BRAND New Covers.—Reflex Clipper Ideal (made by Dunlops), heavy 3-ribbed, each cover guaranteed perfect, 26×2¼ 25/-, 26×2¾ 27/6, 26×2½ to fit 2¼ extra heavy 4-ply 32/6, 28×3 extra heavy 4-ply 40/-; tubes 26×2½ to fit 2¼ rims 5/9, 28×3 6/6 (made by Dunlop); postage on all above extra.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [903

MAUDE Rubber Co. for real value; see displayed advertisement of tyres, etc. [887

BULL'S have your size in bargain covers and tubes. A call on us will convince you, or 'phone, Gerrard 1347.—See Below.

26×2¼.—Palmer cord, 32/6; Beldam all-rubber 25/-; Wood-Milne 3-ply, 22/6; Clincher de Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

26×2½.—Avon Stonehenge, 27/6; Tricar, 30/-; Clincher rubber non-skid sidecar, 27/6; Good year cord 5-ribbed, 40/-; tubes, 5/9.—Below.

26×2½×2¼.—Palmer cord, 36/-; Beldam 3-ply 30/-; 4-ply, 35/-; Wood-Milne 4-ply, 25/-; Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

26×2⅜.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-, tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Beldam all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6.—Below.

28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes 8/-.—Below.

650×65.—Palmer cord heavy, 42/6; Wood-Milne 4-ply, 37/6; 3-ply, 30/-; Goodyear cord 5-ribbed, 42/6; tubes, 8/-.—Below.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, London, W.C.2 (next door to Aldridge's). 'Phone: Gerrard 1347. [086

TYRES.

EMANUEL'S for Tyre Bargains, from manufacturer's bankrupt and surplus stock.—Below.

24×2.—Hutchinson rubber studded, 22/3.

24×2¼.—Clincher de Luxe heavy rubber studded, 22/3; Bates special heavy 3-ribbed, 29/9.

26×2.—Continental Standard or ribbed, 16/6; Hutchinson Brooklands R.S., 26/9.

26×2¼.—Hutchinson Brooklands R.S., 19/6; Macintosh chain heavy, 32/3; Palmer cord 3-ribbed heavy, 34/9; Dunlop Magnum (pattern), 35/-.

26×2½.—Dunlop Retreaded grooved, 20/6; Clincher de Luxe extra heavy, 24/3; Hutchinson T.T. rubber stud, 28/6; Palmer cord 3-ribbed heavy, 34/3; Dunlop Magnum (pattern), 35/9; Dunlop Magnum extra heavy, 41/-.

26×2½ to fit 2¼ rims.—Belgrave cord, cable rubber stud, 27/9; Emanuel's extra heavy rubber stud, 28/6; Hutchinson's 3-ribbed, 30/6; Bates special heavy rubber non-skid, 43/6; Continental heavy, rubber studded, 39/9.

26×2½.—Wood-Milne Keygrip, 14/6; Hutchinson rubber studded or ribbed, 33/9; Bates special heavy ribbed, 30/-.

26×2½.—Rom Combination rubber and steel stud, 30/-; Avon combination rubber and steel stud, 30/-; Macintosh chain tread, 32/9; Dunlop Magnum (pattern), 41/-.

650×65.—Emanuel's extra heavy rubber studded, 26/6; Hutchinson's 3-ribbed, 32/6; Burnett grooved, 32/-; Dunlop 3-ribbed, 42/-; brand new Palmer cord 3-ribbed, 35/-.

700×80 to fit 650×65 rims.—Emanuel's extra heavy rubber stud, 42/6; Bates special heavy rubber non-skid, 52/6.

700×75 to fit 650×65 rims.—Hutchinson 3-ribbed extra heavy, 42/6.

28×2½ to fit American rims.—Hutchinson ribbed or square tread, 25/-.

28×3.—In original wrappers, Macintosh chain tread heavy, 27/6; Fisk extra heavy rubber studded, 46/-; Goodrich safety tread, 47/6; Firestone rubber non-skid, 45/-; Goodyear diamond tread, 47/6.

28×3.—Bates special heavy 3-ribbed, 52/6; John Bull extra heavy rubber stud, 52/6.

29×3½.—Bates special heavy rubber non-skid, 53/3.

REAL good reliable second-hand of well-known makes in all sizes at 10/- each, plus 1/- carriage.

NEW Tubes, all sizes, 7/-; clearance, 5/6 each.

JOHN Bull Repair Outfits, 3/- and 1/-.

H. EMANUEL and Co.—Stores, 37A, Ball's Pond Rd., Dalston, N.1. Office, 27, Belgrade Rd., Stoke Newington, N.16. Tel.: Dalston 3161. [0832

MOTOR Cycle Tyres on Easy Terms, standard makes; list post free.—J. G. Graves, Ltd., Sheffield. [0589

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire [9293

26×2½ for 650×65 rim Palmer Cord, 2-ply only, 20/- each; Macintosh, 20/-; Clincher de Luxe, 30/-; other makes same price.

700×80 Clincher Tubes in boxes, perfect condition, 6/- each.

MARBLE Arch Motor Exchange, 135, Edgware Rd., W.2. [9080

24×2¼ Covers and Tubes, 21/9, Dunlop clearance; 28×3 Pedley, 39/6; tube, 7/9; carriage paid, approval.—Davies, Union St., Wednesbury. [4452

SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 436, Argyle St., Glasgow. Lists post free. [5200

MASONS.—The most competitive market; 700×80 Palmer cord, 45/-; 650×65 Michelin Universal, 35/-; 28×3 Goodyear A.W.T., 47/6.—Below.

MASONS.—Great offer Wood-Milne Key-grip; 26×2½ heavy, 21/6; ditto, extra heavy, 25/-; 28×3 heavy, 30/-; 700×80 heavy, 35/-; 24×2¼ heavy, 18/6; 26×2¼ extra heavy, 23/6; 26×2½×2¼ extra heavy, 28/6; 650×65 extra heavy, 25/-; 28×2½ extra heavy (American), 30/-; approval against remittance, satisfaction guaranteed; carriage paid.—Masons, The Tyre House, Ipswich. [0916

WHY Vulcanise? Use Minitmend. No heat, no tools required. Money refunded if unsatisfactory. 50 repairs 5/4, post free. Agents wanted.—Crabtree, Lion St., Bacup. [6051

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [3955

REAL Bargains.—Tyres: 26in.×2¾in. Dunlop heavy, 26/6; 26in.×2½in. for old size or 650×65 rims, Dunlop heavy, 30/-; Clincher extra heavy, 25/-; Hutchinson passenger, 22/6; T.T., 20/-; Avon tricar, 20/-; Clincher stud, 16/-; carriage paid.—Below.

INNER Tubes.—Heavy, 26in.×2¾in., 4/6; 26in.×2¼in., 4/-; Dunlop heavy, 4/6; post paid; ½ doz. 25 per cent. discount.—Deacon, 58, Blagdon Rd., New Malden. [8966

MAUDE RUBBER Co.

58, PRAED STREET, W. 2.

4484 Padd.

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and send immediately on 7 days' approval against cash, any of the following goods which are perfect stock, being manufacturers surplus or slightly shop-soiled.

24×2	**Wood-Milne** Extra Heavy....	20/-
	Wood-Milne Hcavy	18/6
24×2¼	**Continental.** Chain-Td.	21/6
	Wood-Milne Hcavy	18/-
	Wood-Milne Extra Heavy....	21/-
	Hutchinson R/S	18/6
26×2	**Englebert** Passenger. Heavy.	17/6
	Avon Ribbed. Heavy.....	17/6
26×2¼	**Wood-Milne** Comb. Ex. Hvy.	22/-
	Dunlop Rubber-studded. Hvy.	27/6
	Firestone Safety. Ex. Heavy.	28/6
	Hutchinson T.T. Heavy	23/-
	Avon. 3-Ribbed Heavy	22/6
	Michelin Comb. Ex, Heavy ..	20/-
26×2⅜	**Dunlop** Rubber-stud. Ex.Hvy	36/6
	Clincher de Luxe. Ex. Hvy...	26/6
	Hutchinson Rubber-stud. Hvy	26/6
	Dunlop R/S. Heavy.....	30/-
26×2½×2½	**Palmer** Cord. Heavy	28/6
	Goodyear Diamond	38/6
	Clincher de Luxe. Heavy ...	28/6
	Dunlop Heavy. Rubber Stud	45/-
	Wood-Milne Extra Heavy....	28/6
	Pirelli R/S Extra Heavy....	35/-
	Belgrave Cable Cord.....	27/6
26×2½	**Dunlop.** Extra Hvy. R/S....	53/-
	Dunlop. R/S. Heavy.....	32/-
	Hutchinson Passenger. Ex.Hvy	27/6
	Wood-Milne Heavy.....	24/-
	Wood-Milne Extra Heavy ...	28/6
26×3	**Englebert** Passenger. Heavy.	30/-
	Avon. Ex. Hvy. Rubber Stud	40/-
26×3×2½	**Wood-Milne** Heavy.....	27/-
	Wood-Milne Extra Heavy...	32/6
28×2½	**Kempshall** Anti-Skid. Heavy	18/6
	Wood-Milne Extra Heavy....	27/6
28×3	**Firestone,** Rubber N/S	42/-
	Goodyear Diamond All-wtbr.	49/6
	Goodrich. Safety....	45/-
	Portage, Super Ex. Heavy ...	43/-
	Wood-Milne Heavy.....	27/6
	Federal. Ex. Heavy.....	43/-
650×65	**Avon.** 3-Ribbed Heavy	32/-
	Avon. Extra Heavy	36/-
	Dunlop S. studded. Light Car	35/-
	Dunlop. Grooved. Light Car	37/6
	Avon Comb. Extra Heavy..	40/-
	Wood-Milne Heavy..	22/6
	Wood-Milne Extra Heavy....	27/6
	Goodrich. Safety Td.....	37/6
	Palmer Cord.	32/6
700×8	**Roface** Sq. Td. Ex. Hy.Lt.Car	42/6
	Maude. Super Ex. Heavy....	45/-
	Goodyear Diamond	52/6
	Midland 3-Rib. Light Car ...	45/-
	Goodrich Safety. Light Car	45/-
	Wood-Milne Heavy	28/6
	Dunlop Magnum.....	60/-

Tubes. Dunlops, Palmers, and Avon—
26″×2″, 2¼″, 2¾″ and 2½″ 5/6 each
26× 28× 650 & 700 6/6 ,,

CHALLENGER PUNCTURE-PROOF TUBES
all sizes in stock.

RUBBER BELTING. DUNLOP, AVON and PEDLEY.
1⅜—2/- ; 1″—1/9; ⅞″—1/7 per foot.
JOHN BULL.
7′-6″ lengths; ⅞″—12/6; 1″—15/-; 1½″—16/9

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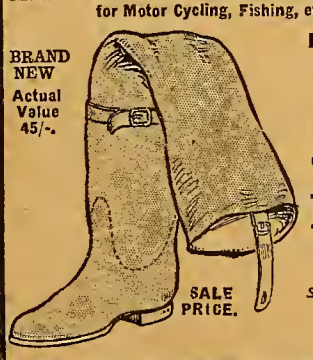

RUBBER HIP BOOTS (WADERS)

10/6

per pair.
postage 1/3.
Sent on approval against cash.

Wholesale Dept. & Warehouse: STOCKWELL, S.E.

TYRES.

ECONOMIC Tyres.—We have the following blemished and clearance covers and tubes in stock. We send on 7 days' approval against remittance, carriage paid, passenger train.

ECONOMIC.—24×2 Clipper Ideal, 15/-; tubes, 5/-; 24×2¼ (also for 2in. rims) Clincher Junior de Luxe, heavy, 20/-.

ECONOMIC.—26×2 Clipper Rubberstud, 17/6; 26×2¼ Palmer heavy cord, 37/6; Firestone non-skid, 28/6; tubes, 5/6.

ECONOMIC.—26×2⅜ Economic heavy rubberstud, 31/-; extra heavy 36/6; Clipper tubes, 5/6.

ECONOMIC.—26×2½×2¼ Goodyear All-weather, 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redfern heavy rubberstud, 27/6; Clipper Ideal, extra heavy, 35/-; tubes, 7/-.

ECONOMIC.—28×2½ American Clincher extra heavy de Luxe, 45/-.

ECONOMIC.—28×3 Stepney Roadgrip, 47/6; Goodrich Safety, 47/6; Firestone non-skid, 45/-; Portage non-skid, 41/-; tubes, 6/6.

ECONOMIC.—650×65 Stepney Roadgrip, 39/6; Goodrich Safety, 39/6; Clipper, extra heavy, 32/6; tubes, 6/6.

ECONOMIC.—700×80 Beldam V-grooved, 50/-; Goodrich Safety, 46/-; Economic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warranted; 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26×2¼, 25/9.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E. 14 (near Town Hall). 'Phone: New Cross 1393. [6651

CENTRAL Garage for Fair Dealing. All covers advertised are guaranteed. What is more, we will send with all lines a portable vulcaniser free of charge; no motor cyclist should be without one.

SPECIAL Offer of Palmer Cord Tyres.—26×2½×2¼, 35/-; 26×2½, 35/-; 650×65, 44/-; 700×80, 50/-. These covers are not W.D., but brand new and guaranteed.

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26×2¼.—Firestone, 27/6; Clincher E.H. (oversize), 28/-; Clincher Junior, 19/-; Avon Stonehenge, 21/6; Wood-Milne E.H. combination, 22/6; Hutchinson T.T., 21/6.

26×2⅜.—Dunlop heavy 28/-; Avon tricar, 27/6; Hutchinson, 26/6; Clincher de Luxe (for 2¼), 28/-.

26×2½.—Hutchinson Passenger, R.S., 29/-; Clincher E.H., 29/6; Hutchinson T.T., 25/-.

26×2½×2¼.—Dunlop H., 46/-; Hutchinson T.T., 30/-; Avon E.H., 28/-; Belgrave cord, 25/-; Continental H., 32/6.

26×3.—Continental H., 35/-; E.H., 40/-; 26×3×2½ Dunlop H., 54/-; E.H., 62/9.

28×3.—Clincher E.H., ribbed, 42/6; Dunlop sidecar, 30/-; Macintosh chain tread, 25/-; Goodyear Diamond, 49/6; Firestone, 42/-; Goodrich, 45/-; Portage, 43/-.

650×65.—Goodrich (guaranteed), 36/6; Hutchinson H., 32/-; E.H., 37/6; Rom E.H., 37/6.

700×80.—Firestone, 41/-; Avon extra heavy, 44/-; Goodyear, 52/6.

TUBES.—Small size, 5/6; 28×3 and 700×80, 7/3.

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GRAND Offers of Tyres, sent on 7 days' approval against cash, plus 1/6 postage. 26×2¼ Avon, 21/6; Clincher, 19/-; Wood-Milne combination, 22/6; 26×2⅜ Clincher, E.H., 27/-; Dunlop heavy, 28/-; Avon, 27/6; 26×2½×2¼ Avon E.H., 28/-; 28×3 Dunlop, 28/-; Goodyear, 49/6; Firestone, 42/-; Goodrich, 45/-; Macintosh, 24/-; 650×65 Goodrich, 36/6; Palmer cord, 44/-; 700×80 Avon E.H., 44/-. Tubes, small sizes, 5/6; others 7/3.

ALL these covers are guaranteed by us. Alwin Tyre Co., 37, Red Lion St., High Holborn. [9033

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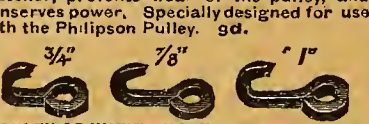

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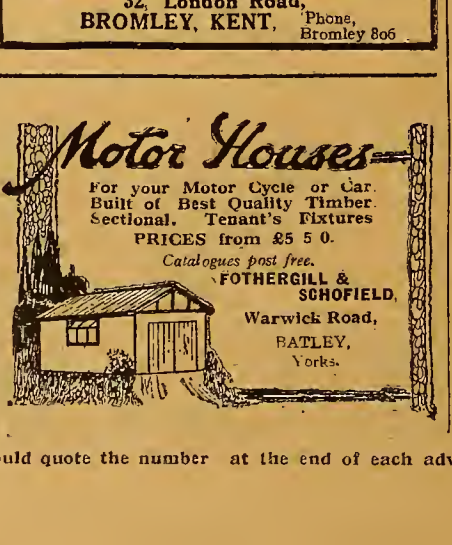

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	Dominion, Usco Rubber, non-skid, Heavy	25/6
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	Midland, Ribbed, Heavy	30/-
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26×2¼	**Goodrich,** Safety Tread	35/-
	Midland, Rubber Non-skid, Heavy	28/-
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24×2 and 24×2¼	each 4/3
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700×80, 28×3 and 650×65	each 7/6
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3-WHEEL 8h.p. Cycle Car, good condition, lamps, etc., for modern solo machine, or would sell.—17, Bellingham Terrace, Catford. [8253

1919-20 Powerplus Indian, T.T. bars, as new, 3 speeds; lower power, 4h.p. Norton, etc.—8, Amos Hill, Pen-y-Graig, Glamorgan. [8112

MINERVA Combination, 3½h.p., 2-speed, handle start; 32 gns.; take lightweight part.—57, Kenbury St., Camberwell, London. [8682

EXCHANGE new Miniature Transmitting, Receiving Wireless for 24in. wheels or motor saddle; sell 30/-.—7, Abbey Walk, Grimsby. [8331

12h.p. Hillman Landaulet, condition guaranteed, ideal taxi; exchange motor cycle or Ford.—9, Red Hill, Bassett, Southampton. [8752

HENDERSON De Luxe Combination, dynamo, as new throughout; exchange lower power.—51, Upper Richmond Rd., Putney. [8415

£30 cash and 3½h.p. motor cycle, for best combination, not later 1918; or sell £30.—Dykes, 25, Moorpark, Stevenston, Ayrshire. [8816

1919 Countershaft Zenith 8h.p., Dunhill sidecar, for sporting Scott or Humber combination.—Halliday, R.A.E., Farnborough, Hants. [8625

VICTOR 1920 8h.p., water-cooled, used for demonstration only; £100. Exchange motor cycle.—P. D., 58, Woodfield Rd., Ealing. [8758

A.B.C. Brand New Sports Car, licensed, cost over £300; exchange solo or combination and cash.—51, Upper Richmond Rd., Putney. [8414

ARIEL 3½h.p. 1915, countershaft, three, good order; £32, offer; exchange good combination, cash adjustment.—68, Bancroft Rd., Mile End, E. [8130

INDIAN Combination, condition as new, fully equipped; exchange solo Indian Scout or 4h.p. Harley.—42, Harpenden Rd., West Norwood. [8165

EXCHANGE 1920 8h.p. Countershaft Zenith, lamps, speedometer, taxed, for lighter machine.—'Phone: Kingston 1274.—37, Arlington Rd., Surbiton. [8595

1915 7-9h.p. Indian Combination, 3-speed, excellent condition, for modern lightweight. After 5 p.m.—4, Elm Gardens, Hammersmith, W.C. [8712

AMERICAN X 1921 Combination, dynamo lighting, magnificent turn-out; exchange lower power and cash.—110, Upper Richmond Rd., East Sheen. [8067

7-9h.p. Rudge-Multi, late 1920, beautiful coachbuilt sidecar, new condition; exchange lower power and cash.—110, Upper Richmond Rd., East Sheen. [8068

1920 Harley Combination, 7-9h.p., discs, speedometer, dynamo, unscratched, beautiful outfit for lightweight or 2-seater.—21, Wontner Rd., Balham. [8799

EXCHANGE 1920 8h.p. New Imperial Combination, equipped, splendid condition, for solo and cash.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [8579

A.J.S. 1920 Combination, 6h.p., accessories, taxed, sound condition, for light solo or combination, or sell cheap.—143, Ravensbury Rd., Earlsfield, S.W. [8990

1920 Williamson Combination, 6h.p. J.A.P., 3-speed Sturmey-Archer gear box, all on, and in perfect order; exchange lower power and cash.—Chauffeur, Albury House, Surbiton Hill Rd., Surbiton. [8207

EXCHANGE 3½h.p. Zenith, about 1914, Gradua gear, B. and B., Bosch, T.T. bars, engine perfect, tyres and belt good, for 2-stroke, about 2½h.p., in good order.—Tomlinson, Grove Mill, Haslingden. [8393

EXCHANGE.

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3½h.p. Brough, o.h.v., 3-speed S.A., countershaft, dual clutch, Lucas, Cowey, fast, for lightweight and cash.—27, Wandle Rd., Wandsworth, S.W.17. [8867

A.J.S. 6h.p. Combination, interchangeable wheels, etc.; exchange for solo or Morgan; cash adjustment.—Write Snow, 58, Malvern Rd., Dalston, E.8. [9100

1922 Connaught 2¾h.p., 2-speed, kick-starter, lamps, speedometer, etc., unscratched, guaranteed, for best 4h.p.—Pratt, Woodlands, Higham, Rochester. [8660

1921 4-cylinder, 2-seater, hood, screen, electric light, licensed, perfect, for combination or solo and cash (95 gns.).—89, East Hill, Wandsworth. [8841

EXCHANGE 1920 A.J.S. Combination, first-class order, fully equipped, and cash for late Morgan; sell £130.—45a, Duntshill Rd., Earlsfield, S.W.18. [9092

3½h.p. Rover 3-speed, clutch, all accessories, tax paid, exchange for 2¾h.p. Connaught or any other make.—Write to W. Lixenfield, Welston, nr. Coventry. [8257

P. and M. Combination, late model, maker's colours, fully equipped, taxed, practically new condition; exchange solo and cash.—7, Cowdrey Rd., Wimbledon. [8865

EXCHANGE 1921 2-seater Richardson Car, dickey back, for combination and cash; or sell £125.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [8616

A.V. Monocar, 1920, electric, 5-6h.p. J.A.P.; £60. Modern motor cycles part.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [8158

1921 Henderson Combination, discs, speedometer, legshields, Easting, dynamo, beautiful condition; for lightweight or 2-seater.—21, Wontner Rd., Balham. [8800

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EXCHANGE Enfield Magdyno Combination, 1920, excellent condition (too powerful), for late Sunbeam, B.S.A., Triumph single; no rubbish.—12, Union St., Maidstone. [8656

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1921 L.M.C. 8-9h.p., all enclosed chain drive, patent saddle suspension, not run 300 miles, too powerful for owner; £85, or exchange 4h.p. Douglas 1921-22.—Clark, Llangunnor, Carmarthen. [8592

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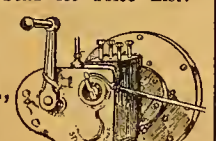

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WHITE and Watson, 80, Belvedere Rd., Lambeth, S.E.1, Motor Cycle Repair Specialists.—We have by careful organisation arranged a 24-hour service for reboring cylinders; cylinders reground and fitted with new pistons complete in 24 hours from time of receipt to despatch. To facilitate this, it is advisable to post remittance, when despatching, according to our schedule below: 2¾h.p., 3½h.p., and 4h.p. Douglas cylinders reground, with 2 new pistons complete, 35/-, 40/-, and 45/- per pair; other flat twins from 40/- to 45/- per pair; other cylinders at the following rates: Up to 65 mm., 22/6; 70 mm., 27/6; 80 mm., 32/-; 85 mm., 35/6; and over, 37/6; 2-strokes up to 60 mm., 38/-; 70 mm., 40/-; and over, 45/-. Brico rings fitted to our rebores as standard; Clewpet rings, 4/- per bore extra. Engines rebushed, rebalanced, and overhauled. Gear boxes overhauled and replacements machined. First-class workmanship. Aluminium welding, no distortion. [8640

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

AMAUDES' Motor Mart. Special offer of clearance ex-W.D. and manufacturers' surplus offer. P. and M. frame tool bags, 11/-; Coventry chains, unused, low gear, 10/6; high, 10/-; driving 20/-; set, 38/-; front stands, 5/-; front brakes, 24/6; fir cone valve caps for Blackburne, Triumph, Douglas, Sunbeam, Norton, 5/9; licence-holders N.P., 2/6; Lodge aero plugs, 2/6; Douglas 2¾h.p. Renold chains, 7/6; 4h.p., 11/6; N.P. front brakes complete, 2¾h.p., 13/6, doz. only; Watford trip speedometers complete, 80/-; set of Apollo spanners, 2/6; tool rolls only 1/6; electric torches without battery, 1/3; 6in. screwdrivers, 1/4; 8in. hacksaws, adjustable, 2/4; 2-speed Roc gear box, £6/10; Royal Ruby spindles with cones, front 5/-, rear 7/6; Sturmey foot clutch pedals, 2/3; aluminium rear lamps, 3/6; 18in. Bluemel pumps, 4/6; genuine sheepskin gauntlet gloves, 5/6 per pair; mechanical horn, black or N.P., 13/6.—Maudes' Motor Mart, 100, Gt. Portland St., W. [9031

ELCE & Co
LIMITED.

NEW SHOP-SOILED AND SECOND-HAND MOTOR CYCLES AND COMBINATIONS AT PRICES FOR CASH OR INSTALMENTS TO SUIT YOUR POCKET or INCOME.

Please write us for full lists,-your present machine in part exchange and/or as first instalment.

WANTED FOR CASH Second-hand
MORGAN, ROVER, G.N., PREMIER.
Please give full particulars and prices.

MORGAN'S 1922 MODELS FROM STOCK.
Spare Parts, any Model, from Stock.

13, 15, 16, BISHOPSGATE AVENUE,
Phone: Avenue 5548. CAMOMILE STREET,
'Grams: Elcemocyca, Stock, London. LONDON, E.C.3

THE 'K' SERRATED MOTOR CYCLE OILCAN.
PATENT No. 2930.
Fitted with BRASS TUBULAR SCREW SPOUT
NO LEAKING JOINTS.
Post free 1/9 each from the SOLE MAKERS:
J. KAYE & SONS, LTD.
93, High Holborn, LONDON, or Lock Works, LEEDS

PARTS AND ACCESSORIES.

A.

BANISTER-BOTTEN have the largest stock genuine new Douglas spares ex-W.D.—Below.

DOUGLAS 4h.p. Engine Spares.—Crankshafts, 3 nuts, 6d.; main races, 17/6 and 8/-; conne rods, 16/6; pistons, complete, 12/6; bare, 9/6; va 2/6; springs, 6d.; valve guides, 1/9; tappets, 3/6; ta guides, 3/6; valve caps, 2/-; rings, 1/6; gudgeons, small ends, 1/6; big ends, 2/-; bolts, 4d.; sprock 3/6; camshafts, 15/-; races, 4/-; housings, 3/-; sc 1¼d., cams complete, 6/-; top section crank 25/-; oil trays, 3/6; main oil pipes, 4/6; pumps, intermediate and camshaft wheels, 5/-; magnetos, main, 4/-; worm screws, 1/6; bronze wheel, 1/-; w studs, 1/3; induction pipes, 12/6; exhaust lifts, plete, 10/-; magnetos, Thomson-Bennett, 37/6.—Belo

DOUGLAS 4h.p. Gear Box, Clutch Spares.—C wheels, 17/6; pulleys, complete, 15/-; front ph 6/6; middle, 2/6; cork, 5/-; rear, 10/-; races for s 1/-; studs, 3d.; screws, 1½d.; kick-starter quadra 12/6; pinions, 2/6; nuts, 1/6; sleeve nuts, 5/6; wo 5/6; bridle, 5/6; front bolt, 2/6; rear K.S. bolt, dustcap, 6d.; drawbolt, complete, 2/6; all inte pinions, 6/- each; dogs, 3/6; mainshafts, 9/-; second 5/-; bronze forks, 3/-; steel, 3/6; main race ch side, 6/-; secondary races, 5/-.—Below.

DOUGLAS 4h.p. Fork Parts.—Sides, 30/- pair, si ing columns, 7/6; headclips, 6/6; spindles, fork springs, 1/6; eyes, 1/6; nuts, 3d.; shackles, 4/-; bottom, 4/6; races, 9d. each. 1915 fork pa Steering columns, 6/6; spindles, 1/6; links, 1/-; spri 1/6.—Below.

DOUGLAS 4h.p.—Rear stands, 8/-; front (1918), (1915), 2/6; footboards, 12/6 pair; carriers (19 16/6; rearguards, 10/-.—Below.

DOUGLAS 4h.p.—Frames, steel heads, £7; headli 15/-; bottom rear stays, 4/6 each; tops, bolts, 2/-; sidecar rear springs, complete, 9/-; top lea 4/-; side rearstay clip, 5/-.—Below.

DOUGLAS 4h.p.—Wheel rims, 4/6; hubs, 12/6; rims, 10/-; spindles, 3/-; cups, 1/-; shells, rings, 1/-; dusteaps, 3d.—below.

DOUGLAS 4h.p.—Exhaust pipes, 16/- pair; silenc 10/-; clutch and brake pedals, 3/6; rear brak complete, 14/6; spanners, valve cap, 1/-.—Below.

DOUGLAS 2¾h.p. Engine Spares.—Valves, 2/-; c plete, 2/9; connecting rods, bushed, 14/-; pist bare, 7/6; rings, 1/-; gudgeons, 1/-; small ends, valve springs, 6d.; big ends, 1/6; valve guides, tappets, 2/-; guides, 1/3; sprockets, 2/6; rocker ar 3/-; studs (camwheel rocket, etc.), 1/6; valve caps, magnetos, Thomson-Bennett, 37/6; Dixie, 17/6; i pipes, 12/-.—Below.

DOUGLAS 2¾h.p. Gear Box Spares.—Layshafts, 13 screwed sleeves, 6/-; plain, 6/-; large races, small, 3/-; pulleys, 5/-; chain wheels, 5/-.—Below.

DOUGLAS 2¾h.p. Clutch Model.—Chain wheels, 17 adjustable pulleys, 12/6; pedals, 3/6; mainshaf 9/-.—Below.

DOUGLAS 2¾h.p.—Rear mudguards, 7/6; carri 10/6; silencers, 12/6; footboards, 8/6 pair; ch guards, 4/6; rear stands, 8/-; fronts, 2/6; tool ba 2/- second-hand, new, 7/-.—Below.

DOUGLAS 2¾h.p.—Fork spindles, long, 1/6; sh 1/-; springs, 1/6; headraces, 6d.; number plat 1/3 pair; brake blocks, 1/6; sight-feed glasses, petrol taps, 1/9; hub spindles, 3/-; cups, 1/-; exha lifts, 7/6; filler caps, 1/6.—Below.

DOUGLAS 8h.p.—Cylinders, W.C., £2; pistons, 8 rings, 1/6; gudgeons, 1/6; small ends, 1/6; ends, 3/-; valves, 3/6; connecting rods, 17/6; va guides, 1/9. Can quote for other spares.—Below.

BANISTER and Botten have all the small Doug spares in stock. Trade supplied. Hundreds parts not mentioned above. All goods despatched sa day, carriage extra.—341, Upper St., London, N Opposite Agricultural Hall. 'Phone: 2480 North. [83

4h.p. Douglas Spares, all brand new, genuine Below.

PISTONS, oversize, 5/-; valves, 1/9; piston rin 7d.; tappet guides, 1/9; tappets, 1/9; small-e bushes, 10d.; big-end bushes, 1/3; gear change qua rants, 2/6; rear hubs, complete, 8/-; spindles, 1/ cups, 7d.; rear brakes, complete, 10/-; rear stand 6/-; tanks, complete with sight-feed lubricator, e (1915 type), new, 35/-; carburetter control wires, co plete, 3/- pair. Only parts as above in stock.—Belo

SPRING Links.—¾×5-16 Coventry, 10d. each, 8 doz.; Renolds cranked, 9d. each, 7/6 doz.; rolle 4d., 3/- doz.; ⅝×¾ Renold or Coventry, cranked link 6d. each, 5/6 doz.; ½×3-16 Renolds spring links, 5 each, 4/- doz.; cranked, 4d. each, 3/- doz.—Below.

BEST and Lloyd Sight-feed Lubricators, less pump brand new; 6/- each.—Below.

CARRIAGE on all above extra. Large stocks other interesting parts. Cheques and P.O should be made payable to Marble Arch Motor E change, 135, Edgware Rd., W.2. 'Phone: Padd. 78 'Grams: Archmotex, Padd., London. [90

J.A.P. Spares. Immediate delivery.—Keys 8, Bor St., Ealing. [50

TWO Harley Cylinders, 1915, with pistons; £5. —6, Moseley St., Southend. [87

PARTS AND ACCESSORIES.

LYNO.

ARBLE Arch Motor Exchange.

LYNO 5-6h.p. and 8h.p., spares, enormous stock. Undoubtedly we hold the largest stock in the ld. All genuine Clyno parts, brand new.—Below.

ARBLE Arch Motor Exchange.—No ridiculous prices. Trade supplied, liberal discounts on quan-os; send stamp for our Clyno list and compare es; you'd be surprised.

LYNO.—Very special offer, limited quantities. Take advantage of this exceptional offer; it won't last g, buy now. Rear portions, 35/-; front stands, 7/-; eels, 30/-; hub shell, 5/-; wheel cones, 1/6; cups, ; wheel rims, 26in. or 28in., 5/-; handle-bars, 7/-; springs, 17/6 pair.—Below.

LYNO Clutch Plate, bronze 8d. each, steel 3d. each; ratchet sleeve, 1/-; starter pinion, 18t., ; pinion spring, 2d.; pinion sleeve, 1/6.—Below.

LYNO 5-6h.p.—Hollow crank pins, 2/6; crank pin rollers, 1d. each; outside washer for crank pin, ; inside, 3d.; piston rings, 8d. each; valves, 3/- h; tappet guides, 1/6 each; tappet, exhaust, 1/6; et, 9d. each; cap for tappet, 6d.; cam gear wheels, 3 each; cam gear shafts, 1/6 each; Ferodo brake e lining, 9d. each; timing case screws, 1d. each; eel spindle bolts, 1/- each.—Below.

h.p.—Williamson and Douglas Spares. Enormous stock of engine parts at half list prices, all nd new. Let us know your requirements.—Below.

¼ 2ft. 7in. Lengths Coventry Chain, 7/6; 22½in. lengths ½×⅛in. Coventry magneto chain, 1/6 h; special offer.—Below.

ENOLD Chain Rivet Extractors, 3/6 each; a very useful tool.—Below.

.A.P. 8h.p. Spares.—Brand new crank cases, 35/-; double cam gear wheels, 7/6; crank pins, timing e shafts, 3/- each; mainshaft timing pinions, 2/-; ton rings, 9d. each; gudgeon pin bushes, 1/6 each; above brand new.—Below.

RAMPTON Heavyweight Spring Forks, 10in. stem for 1in. bars, brand new, ex-W.D., special offer; -; Druid, 45/- pair.—Below.

COTT Rear Carriers, brand new; 10/- each to clear. —Below.

EW Imperial 8h.p. Spindles, complete with cones, nuts, and dust-caps, back and front; 4/- pair.— ow.

EATHER Helmets.—Soft tan leather-lined chamois, special offer to clear; 4/- each, a real bargain. elow.

RAMPTON or Coventry Rear Chains for Clyno, ¾×5-16in., 5ft.; 15/-.—Below.

LYNO Tool and Spare Parts Boxes, 15in. long, 9½in. wide, 5½in. deep, fitted with 3 trays; se are really fine boxes, no Clyno rider should be hout one at this price; 7/6, worth double.—Below.

LYNO Metal Tool Boxes to fit on top tube, very special offer to clear; 5/- each, listed 17/6, suit machine.—Below.

LYNO Metal Cases for carrying spare tube; 1/9 each to clear, listed 4/6.—Below.

DECAR C Springs (Terry), 4 leaf bushed, very special offer; 17/6 pair.—Below.

LECTRIC Soldering Irons, brand new, by G.E.C., 200-220 volt, listed 50/-; our price to clear, 12/- , a bargain.—Below.

ROCKETS.—J.A.P., 6 or 8h.p., ⅝×⅜, 16 t., 3/6; 14 t., 2/6; 12 t., magneto sprockets, 1/6 each. elow.

YCLE Car Wheels, brand new, 24×2¼, with No. 2 car hub, as fitted to Grahame White cycle car; each, list price, 30/-.—Below.

UDGUARDS.—Front, 4in., heavily valanced and complete with stays for 26in. wheels, special rance offer; 5/- each, worth double.—Below.

E have a few Motor Cycle Dynamo Lighting Sets complete.—These are really magnificent outfits, were manufactured to retail at £16; our price, 10. Come and see one, all braud new.

CETYLENE Head Lamp Sets.—Black or nickel, comprising lamp, generator, H.B. brackets, ing; 17/6, usual price, 30/-.—Below.

LAXONS, genuine, M.C., extra heavy top tube fit-ting; 15/- each.—Below.

⅜×14 Gauge Finest Quality Steel Tubing for M.C. work; 7d. ft., any length cut.—Below.

LECTRIC Head Lamps, 7in., complete with brackets and box to take accumulator; 35/-, a real bar-n, worth double.—Below.

LECTRIC Tail Lamps, complete with adapter, beautiful finish, usual price, 10/6; our price, .—Below.

6×2½ Tyre Gaiters, a useful spare; 1/- each, usual price, 2/6.—Below.

UBES.—700×80 Olincher, 6/-; 28×3, butt-ended, St. Helens, 5/-; 26×2¼, made by Palmer, 5/6. elow.

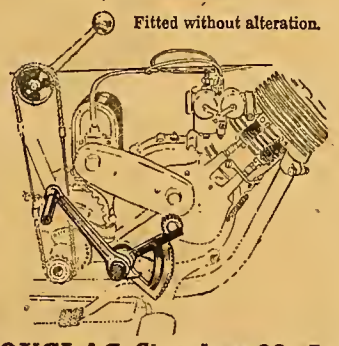
ELL-MADE Metal Accumulator Boxes, 6in. deep, 5¼×3½in., with hinged lid and brackets; 2/6 h, usual price, 7/5. [9078

IMPROVED KICK-STARTS

30/- Complete.

P. & M. P. & M. P. & M.

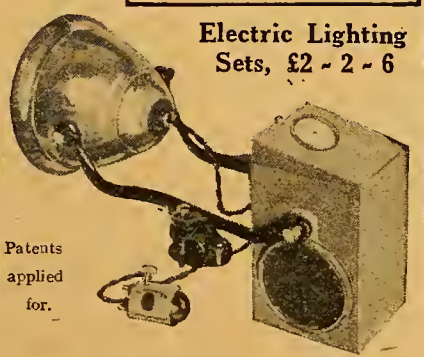
Fitted without alteration.



2¾ DOUGLAS Clutches £2-5-0

Suitable for 2¾ h.p. W.D. and machines prior to 1920. H.B. Control. Easily fitted in place of gear chain sprocket.

Electric Lighting Sets, £2 - 2 - 6



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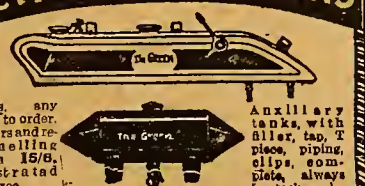
6in. Head Lamp, 4-volt. Accumulator, Tail Lamp and Licence Holder. Polished Aluminium finish.

Motor Cycle Accessories Co.,

43a, NEW CROSS ROAD, S.E.

Petrol & Oil Tanks



Tanks, any shape to order. Repairs and re-enamelling from 15/6. Illustrated List free.

Auxiliary tanks, with filler, tap, T piece, piping, clips, complete, always in stock.

A. GREEN, Water St., off Chapel St., Salford, Manchester

PARTS AND ACCESSORIES.

FOSTERS.

THE quick despatch firm hold one of the largest stocks of Douglas motor cycle spares and accessories, all at knock-out prices; trade supplied, etc. —Below.

DOUGLAS 4b.p. Engine Spares.—Cylinders, 27/6; Douglas carburetters, new, complete, 15/- each; Amac carburetters, complete, 27/6; crankshafts, 37/6; connecting rods, 16/6; valves, 2/6; guides, 1/9; springs, 6d.; caps, 2/-; tappets, 3/6; guides, 3/6; pistons, 9/-; rings, 1/6; gudgeons, 1/-; main pinion wheels, 4/-; intermediate wheels, 5/-; magneto wheels, 5/-; camshaft, 15/-; big-end bushes, 2/-; small, 1/6; induction pipes, 12/6; oil pumps, complete, 10/-; main oil pipes, 4/6; worm screws, 1/6; wheels, 1/-; flywheel sprockets, 3/6; chain guards, 6/-; etc.—Below.

DOUGLAS 4h.p. Gear Box Spares.—Brand new gear boxes, complete with clutch and kick-start, etc., £9/10; all pinions, 6/-; dogs, 3/6; clutch ballraces, 1/6; chain wheels, 17/6; clutch plates, back, 10/-; middle, 2/6; front, 6/-; loose with cork inserts, 5/-; rear bolts, 4/-; front, 2/6; kick-start quadrants, 12/6; kick-start pinions, 2/6; nuts, 1/6; clutch release arms, 3/-; ditto lever, 6/-; drawbolts complete 2/6; springs, 9d.; C.W. sleeve nuts, 5/6; etc.—Below.

DOUGLAS 4h.p. Fork and Miscellaneous Spares.—Front brakes, £1; forks complete, 1922 type, new, £5; stop shackles, 4/-; bottom, 5/-; spindles, 3/-; springs, 1/6; etyes, 1/9; steering columns, 6/6; head clips, 8/-; bead races (set of 4), 2/6; late type carriers, 16/6; early, 10/6; stands, 8/6; rear brakes, 14/-; head lugs, 15/-; silencers, 10/-; mudguards, back 12/6, front 15/-; tool kits complete, 10/6; tool bags, 11/6; small, 6/6; sidecar rear springs, 10/-; top leafs, 4/6; etc.—Below.

DOUGLAS 2¾h.p. Engine Spares.—Cylinders, 32/6; crankshafts, £2; Amac carburetters complete, 27/6; Douglas carburetters complete, brand new, 15/-; connecting rods, 14/-; pistons, 7/-; rings, 1/-; gudgeons, 1/-; big-end bushes, 2/-; small, 1/6; valves, 2/-; guides, 1/6; rockers, 3/-; tappets, 2/-; guides, 1/6; timing wheels, 5/-; cam wheels, 14/6; engine sprockets, 3/-; chain guards, 5/-; silencers, 10/-; etc. —Below.

DOUGLAS 2¾h.p. Gear Box Spares.—Chain wheels, 5/-; pulleys, 5/-; mainshafts, 8/-; S.S. pinions, 8/-; plain, 6/-; layshafts, 13/6; ball hearings, large 4/-, small 3/-; etc.—Below.

DOUGLAS 2¾h.p. Miscellaneous Spares.—Front brakes, 12/6; forks complete, new, £2/5; fork steering columns, 10/-; springs, 2/-; links, 1/-; spindles, long 2/-, short 1/-; head races (set of 4), 2/6; back wheels, 35/-; front, 27/6; mudguards, valanced, 12/6; handle-bars, plated, 13/6; rear stands, 8/6; front, 2/6; complete tool kits, 10/6; tool bags, 6/6; carriers, 11/6; Clincher belts, 6in.-6ft., 7/6; etc.—Below.

MAGNETO and Accessories.—Thomson-Bennett new enclosed type magnetos, 180° twins and singles guaranteed, £2; Sphinx plugs, 2/6; genuine car size Klaxon horns, 14/6.—Below.

CARBURETTER Bargains.—Brand new carburetters complete with controls for all makes, 20/- each, list price £4; Amac carburetters complete for all makes, 30/- each; etc.—Below.

FOSTERS.—The quick dispatch firm. All goods sent same day on approval. Carriage extra. Send stamp for lists.—Fosters, 31, Clissold Rd., Clissold Park, London, N.16. [8793

INDIAN Engines, forks, mudguards, handle-bars, gears, clutches, wheels.

INDIAN Magnetos, carburetters, kick-starters, and all parts for above.

INDIAN Carriers, chains, springs, sprockets; in fact, all parts for models 1909-1922.

INDIAN Spares.—Vast stock new, also second-hand. Send list requirements for our prices.—Dennis, 89, Brixton Rd., London, the Indian Repair Specialists. 'Phone: Brixton 3129. [7146

AVENUE Motors for Douglas Spares, 2¾h.p. and 4h.p., new and S.H.—Below.

DOUGLAS Spares, 2¾h.p.—Cylinders, new, 32/6 each; screwed sleeve, 7/6; plain, 5/6; dog, 3/-; cam wheels, 14/-; all other timing wheels, 5/-; Amac carburetter, complete, 27/6; gudgenn pins, 1/-; rings, 1/-; tappet complete, 2/3; valanced mudguards, 18/6 pair; pulley, 4/9; sprockets, 5/-; G.B. connecting rods, 14/-; pistons, 7/6; big ends, 1/9 pair; head clips, black 5/-, plated 6/-; head races, 3/9 set of 4; front forks, 16/6; enamelled frames ditto, £3/15; steering columns, 7/6; fork springs, 2/-; valves, new 2/-; genuine, complete, 2/9; front brakes, 12/-; lay shafts, 12/6; Renolds chains, 7/6; Brampton, 3/9.—Below.

ALL 4h.p. Spares in stock at lowest prices; 7 days' approval on all goods, carriage extra.—Avenue Motors, 373, London Rd., Thornton Heath. Tel.: 468 Croydon. [9000

BROOKS' and Lycett's Saddles, 26/- post free; 26/- —33, Hackford Rd., Brixton. [9126

CLYNO Spares.—All parts for all models cheap.—79 Waverley Rd., Redland, Bristol. [6941

PARTS AND ACCESSORIES.

BURLINGTON.

BURLINGTON.—The House for Douglas motor cycles and spare parts.

BURLINGTON.—We are not dealers in junk, all our spares are new and unused. The following are a selection from our enormous stocks. We have practically everything for Douglas machines.—Below.

BURLINGTON.—Engine parts for 2¾h.p. Douglas: Crankshaft, £2/5; piston, complete with gudgeon, 7/6; piston rings, 1/-; cylinders, £1/12/6; big end bushes, 2/-; small end bushes, 1/6; valves, inlet or exhaust, complete with spring collar and cotter, in protective case, 2/9; valve guides, 1/3; flywheel sprocket, 3/-; tappets, 2/-; tappet guides, 1/3; cam wheels, 14/6; rocker arms, 3/-; timing side ball race, 8/6; big end bolts, 5d.; nuts, 2d.; aluminium valve caps, special design, 5/6; silencers, 10/6.—Below.

BURLINGTON.—Tank parts for 2¾h.p. Douglas: Taok, late pattern to take early type drip feed, £2/10; oil pump plunger, complete, 4/-; drain tap, 1/9; tank caps, glass, 2/-; plain, 1/6; drip-feed needle valves, 2/-.—Below.

BURLINGTON.—Gear box parts for 2¾h.p. Douglas: Gear box, complete, £5/10; chain wheel, 4/6; pulleys, 4/6; chain wheel nuts, 6d.; pulley nuts, 6d.; adjustable clamp for gear rod, 2/6; secondary shafts, 14/-; ball races, large 4/-, small 3/-; Reynolds' chain, 8/6; Coventry chains, 7/-; down operating rod, complete with knob and screw, 8/3.—Below.

BURLINGTON.—Frame parts for 2¾h.p. Douglas: Mudguards, 12/- per pair; rear stands, 10/-; rear stand clip, 1/3; rear stand bolt, 5d.; front stands, 2/6; front stand clip, 1/-; carriers, 12/6; tool bags, special deep armoured bag, 8/-; saddles, £1/5; handlebars, semi-T.T., 15/-; front fork springs, plated, 2/6; fork spindles, long 1/6, short 1/3; spindle nuts, 4d.; fork links, 1/-; head locking ring, 1/6; undershields, complete 5/-; footboards, complete, 12/6 per pair; steering columns, 17/6.

BURLINGTON.—Sturmey-Archer Stockists.—Below.

BURLINGTON.—All models Easting Windscreens in stock.—Below.

BURLINGTON.—Carriage on the above goods is extra.—Below.

BURLINGTON Motor Cycle Co., Ltd., 7, South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. 'Grams: Burlington Motors, Clapham. [8386

CLYNO PARTS.

DO NOT BE MISLED.

WE are the Clyno experts, largest stock of spare parts in the trade.—Below.

CLYNO engines 5-6b.p., brand new, guaranteed, £15; gear boxes complete with all controls, 75% new parts, 129 gns., guaranteed.—Below.

CLYNO.—New cylinders with valve guides, 56/6; piston, 12/6; engine sprockets, 8/6; back exhaust, front exhaust, and back inlet, toggles, 5/- each; tappet guides, 1/9; gear side shaft, 4/-; driving side shaft, 4/-.—Below.

CLYNO.—New chain cases, magneto 7/6, front 15/-, rear 25/- pair; footboards, 10/6 pair; clutch pedal, 4/-; brake pedal, 4/-; handle-bars, 5/-; complete wheels, 30/-; rims, 4/6; hub spindle, 4/6.—Below.

CLYNO.—Centre frame, 60/-; rear portion, 35/-; C springs, 17/6 pair; mudguards, Brampton, front 12/-, rear 15/-; Druid, front 8/6, rear 7/6; front stand, 7/-; ball cups, 1/-; rear sprocket spindle, 5/-.—Below.

CLYNO.—Special offer (2 weeks only) brand new Renolds rear chain, ¾×5-16, complete length, 16/6; front Brampton, ⅝×⅜, 15/-.—Below.

CLYNO part sets, special offer, comprising: Brampton forks, complete centre frame, rear portion, front and rear mudguards, front and rear stands, tank, complete with drip feed and all fittings, pair footboards, 2 interchangeable wheels, handle-bars; all new parts; gear box complete with all controls; 85% new parts; the above set 22 gns. The best bargain ever offered. Don't delay, limited quantity only.—Below.

CLYNO.—Thousands of other parts in stock, low prices; send stamp for list.

TRIUMPH pistons, 4h.p., second-hand, guaranteed good condition, 6/- each; J.A.P. 8h.p. new sprockets ⅝×⅝, 16T, 3/6, 30/- doz.—Below.

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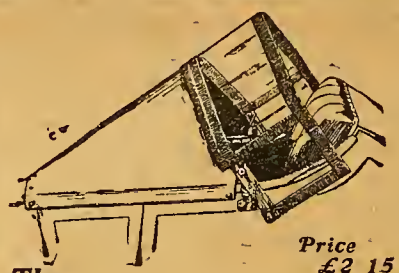

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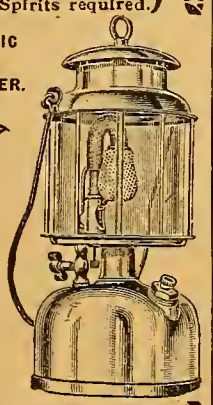

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PHILIPSON Pulleys, Triumph, Rover, Bradbury, B.S.A., etc., excellent; 75/-.—Box 3356, c/o *The Motor Cycle.* [8972

STURMEY-ARCHER 3-speed wheel, J.S. type, in good order, with all controls and back stays; £8/10.—Below.

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DOOLEY.—New Kapoc-lined motor cycle waterproof coats ¾ length with belt, sizes 46, 48, 50; price £1 each, carriage extra.

DOOLEY.—Please apply for the above to J. J. Dooley, 398, Wandsworth Rd., S.W.8. 'Phone: Battersea 1579. [8278

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BARGAIN Lot.—Pair wheels, tyres, two frames, fork, tank; 35/- lot.—Simpson, Orchard, Sunbury-on-Thames. [8470

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TRIUMPH Countershaft Frame, practically new; approval, deposit, £3.—Harris, "Strathavon," Lythall's Lane, Coventry. [9148

CROWN Adjustable Pulleys.—Triumphs, Bradburys, Premiers, Precisions, 17/6; J.A.P.'s, 19/6; Douglases, 25/-.—Ridington.

ENGINE Chain and Magneto Sprockets promptly made. — Ridington, 202-4, Southampton St., Camberwell. [2453

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PARTS AND ACCESSORIES.

ALL 7-9h.p. Premier spares for sale; approval, cheap; new Rudge touring bars, 35/-, with controls.—9, Red Hill, Bassett, Southampton. [8753

NEW Cylinders.—2¾b.p. J.A.P., 47/6; 3½h.p. Precision, 80/-; 4½h.p. B.S.A., 80/-; 6h.p. Rex 1912-14, £3; 83mm. Rax, 70/-.—Shortridge.

PREMIER Spares.—Cylinders, 70/-; pistons, 12/6; con-rods, 14/-; bushes, 7/6 pair, main shafts, 5/6; flywheels, 20/-; tappets, adjustable, 10/- pair; tappet guides, 10/- pair; crank-cases, £4/10.—Shortridge.

SINGER Spares.—Cylinders, 70/-; pistons, 18/-; con-rods, 18/-; flywheels, 20/-. Enquire for other parts.—Shortridge.

TRIUMPH Spares.—1904-21 Cylinders, 70/-, chipped, 62/6; pistons, 14/-; con-rods, 14/-; all Triumph spares supplied.—Shortridge.

PISTONS for all popular makes, valve caps, gudgeon pins, etc.—Shortridge, 18, Boughton Rd., Brownsover, Rugby. [8629

GEARS.—I have the following brand new gears actually in stock, and will take your old gear in part exchange. Let me quote you.—Below.

STURMEY 3-speed heavyweight; Sturmey 2-speed kick-start lightweight; Albion 2-speed kick-start lightweight; Burman 3-speed kick-start lightweight; Albion 2-speed plain model.—Below.

SECOND-HAND Gears.—Burman 2-speed kick-start and clutch model gear box, in perfect order, complete with controls; £8.—Below.

STURMEY 2-speed kick-start and clutch model lightweight gear box, complete with all controls, absolutely perfect; £7/10.—Below.

ALBION 2-speed plain model gear box, complete with controls, in splendid condition; real bargain, £4.—Below.

E.R.S. Lamp, complete with generator and bracket, as new, 35/-; Best and Lloyd drip-feed lubricator, complete, as new, 15/-; Lycett No. 6 Panseat saddle, soiled only, 20/-; new Miller rear lamp and bracket, 4/6; Tan-Sad, perfect, 18/6.—Below.

WILLIAMSON, Premier, Rex, Triumph, Singer, Arden, and Rudge spares in stock. Send for quotation.—Below.

ALF. HOLLAND, Hearsall Lane Corner, Coventry. 'Phone: 1945. [9172

FOOTBOARDS, solid aluminium, 14in. long, 5,000 to clear; 7/6 pair, quantities cheaper.—Fulwell, 48, Manor Farm Rd., Greet, Birmingham. [8652

PHILIPSON pulley with handlebar control for Villiers engine, flywheel magneto, condition as new; £3/15.—Morris, Redleaf, Birchwood Rd., Parkstone. [8177

CLYNO Spares.—Parts for all models, immediate delivery from stock.—Write, Claridge's, Clyno Specialists, 8, Chandos Rd., Redland, Bristol. [7262

CLUTCH and Free Engine Wheel, complete controls, off B.S.A., 50/-; new Dunlop 1in. belt, 10/-.—H. Swift, Huntbridge House, Matlock. [8220

SADDLES.—Empire de Luxe, large pan, new, cost 35/-, bargain, 18/6; one, slightly used, 14/6. Approval.—56, Sutton St., Aston, Birmingham. [8772

P. and M. and Douglas Chassis Spares. Always in stock.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [7728

PALMER'S Motor Auction. Every Thursday 2 o'clock. Selling commission 10 per cent. Send those parts and accessories.—Palmer's Garage, Tooting. [9075

J.A.P. Specialist; all genuine J.A.P. spares in stock for all J.A.P. engines; quotations by return.—B.P. Garage, Murray's Mews, Murray St., Camden Town. [8733

P. and M. New Spares.—Piston rings, 1/9; valves, 3/9; inlet caps, 4/6; exhaust, 3/6; gudgeon pins, 2/6; exhaust clips, 2/6; kick-starter chains, 3/-.—Below.

P. and M. New Spares.—R.A.F. tanks, maker's 1922 colours, 48/6; aluminium discs, combinations, 35/-; handle-bars, 10/-; magneto chain covers, 5/-.—Below.

P. and M. New Spares.—Polished aluminium chain covers, front and rear, complete, 30/-; tool bags, 10/-; tank needles, 1/9; solid gear spindles, 6/6.—Below.

P. and M. New Spares.—Main fork springs, 3/6; cases, 3/3; check springs, pair, 1/9; cases, 2/-; gear wedge bars, 6/6; journal cages, 7/6.—Below.

P. and M. Spares.—Lamp brackets, 2/6; brake pedal studs, 1/9; crank levers, 3/6; front wheel spindles, 4/-; magnetos for P. and M., guaranteed, 48/6.—Below.

WE are the authorised Phelon and Moore agents, and can give immediate despatch of any part, in addition to being able to supply from stock, the new 4½h.p. 4-speed machines at current list prices.—Below.

ALL goods on approval against cash, postage extra.—Below.

KENNETH KEMP and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London, W.2. 'Phone: Padd. 1177. [9159

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

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Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

500 Mile Race Abandoned.

THE cancellation of the 500 Mile Race at Brooklands, on account of the alleged nuisance caused to Weybridge residents by the noise of the competing machines, is much to be deplored.

Not only is an invaluable test lost, but the whole motor cycle movement is stigmatised.

Only those concerned can rightly judge whether the noise complained of is as irritating and displeasing as it is said to be. At the same time, we cannot but think that the decision has been a hasty one. The complaints presumably are based on last year's 500 miles event, when, be it noted, no attempt whatsoever was made to silence the competing motor cycles. Since then some sort of silencer has been fitted to practically every machine that uses the track, and no one will deny that the noise of the average short-distance motor cycle race is considerably reduced in consequence.

It would be an easy matter to ensure that every 500 mile racer was even more efficiently silenced. Then would be the time to decide whether or not the event had caused discomfort to the local residents, and we feel sure that if the ban remained, the B.M.C.R.C. would not wish to carry the matter further when the 1923 event came up for consideration.

Ladies in Competition.

IT is curious, not to say amusing, to hear the varied expressions of opinion upon ladies competing in difficult motor cycle events. This is no new subject with *The Motor Cycle*, but among the ranks of motor cyclists it is discussed far more frequently. Curiously, opinion appears to be diametrically opposed. Some consider women motor cyclists most sporting and plucky and quite enthusiastically applaud their achievements on hills; others, more prudish perhaps, refer scathingly to the masculine attire they affect and the general strenuous appearance not only of their equipment, but of the actual riders themselves.

Whether good is done to the pastime by exhibitions such as we are discussing is also a matter upon which there is no unanimity of opinion. But to the lady motor cyclists suitably attired we owe a great deal, for they are the means of demonstrating convincingly that a modern motor cycle is simple to handle and control and its mechanism easily understood. Hundreds of our lady readers use them daily in the course of their shopping expeditions or to the tennis courts or links, and that is, after all, the really pleasurable use to which motor cycles are applied by the weaker sex.

This Year's Paris Salon.

NEXT month the Paris Automobile Salon will lead off the series of shows of 1923 models. There are no less than one thousand exhibitors. In years past we have rather felt that the motor cycle exhibits were lost to view in the enormity of the Grand Palais. Huge as that building is, it is insufficient to accommodate the motor cycles, the small cars, and the cycle cars, as well as large cars and coachwork. It has been determined, therefore, to hold a second exhibition simultaneously on the Esplanade des Invalides, which is on the other side of the Seine. In it will be the motor cycles and those cars which have a cylinder capacity not exceeding 1,000 c.c.

While the advantage of the separate shows held at the same date will be that the motor cycle exhibits will be easily found and will enjoy greater prominence, it is possible that the same number of visitors will not be attracted to the smaller show as to the larger one.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY IXION

Spongy Deposit on Valves.

THE rubbery "growth" on inlet valves, of which some readers complain, is probably ascribable to the vegetable element in compound lubricating oils. Other riders of similar engines, who use an exclusively mineral oil, do not suffer from this deposit. It is slow in accumulating, and causes no trouble; before the deposit becomes really heavy, the engine will need decoking for the sake of the piston and combustion chamber.

Oilproof Tappets.

IS workmanship less careful than it was? Or how is it that not one of my post-war engines has been genuinely oiltight? The tappet guides are invariably the chief offenders. No doubt I over-lubricate a trifle, but most good motor cyclists err on that side, especially if they hog on occasions. It is an awful nuisance to be reduced to using paraffin and a wire saucepan-cleaning brush on a fine summer evening when one ought to be enjoying the open road. Yet I hate to see my crankcase enamelled a dull bronzy-brown by charred deposits of lubricant. Both design and workmanship appear to shriek for concentrated attention in this respect.

New Ailments.

"GOGGLE deafness" and "helmet whistle" continue to make the postman stagger under sacks of correspondence, but few of the letters are illuminating. Mr. T. A. Simpson has sent me one of his "Phace" screens, a sort of bottleneck composed of celluloid and waterproof twill; it is tremendously effective, but as I shall have a pipe in my mouth till within about ten seconds of the death rattle commencing, I can't wear the screen; moreover, it makes one feel rather like a preserved lizard in a museum, revived by the alcohol in its bottle. A Tynesider sends me a most learned letter. I am to hold my watch (*a*) half-an-inch from the tip of my nose; (*b*) pressed against my forehead. I have done so. I cannot hear it tick in either position. S'pose he just wanted to make me look silly in front of my family. Curse him. In my baronial hall there is a suit of armour worn by an ancester, Sir Ixion de Coventry, at the battle of Cressy. I am thinking of getting R. W. Coan to reproduce the headpiece in aluminium, plus a little mouth-hole to stick my pipe through.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Mingling with the Crowd.

AT the end of a day's run in a big trial I generally take my stance in the official garage, and talk to the boys. But on one night of the A.C.U. I elected to mingle with the general public on the edge of the pavement and listen to the untutored criticism of Tom, Dick and Harry, not to speak of Jane, Mabel and Gladys. All that I overheard might be boiled down to just three ejaculations:—

1. "*Aren't* they dirty!" (It had been raining, and hardly one number plate was legible.)
2. "Why do some of them make that funny noise?" (Most of the baby two-strokes were four-stroking at traffic speeds.)
3. "*Poor* boys!" (I am not certain whether this pity was evoked by the mud-soaked aspect of many riders, or by the somewhat haggard expression assumed by most motor cyclists after 80 miles of grease.)

Removing the Piston.

I HAVE just been assisting a novice to decoke an elderly machine, purchased second-hand some months ago. Its designer was one of those kindly souls whose gudgeon pin is a driving fit, clearly marked "In" at one end, so that there is no doubt where to begin punching it out; moreover, when it is out another "In" is revealed at the side of one end of the pin, so that you don't have to calliper it to discover which way the fine taper runs. The job roused two or three reflections, which I now pass on to all concerned. *Imprimis*, the cylinder bore was scored, because at some previous removal of the gudgeon the last owner had failed to replace it with its ends flush against the piston. Now it is not the easiest job in the world for an amateur to ascertain whether his gudgeon has been driven right home or not, and the provision of a ring gauge—cost about 3d.—would have saved this unknown owner from damaging his cylinder. Moreover, the discovery—at a later decokement—that he had scored his cylinder had apparently deterred him from removing his piston on the next occasion. At any rate, the inside of the piston contained twice as much carbon as the combustion chamber. The moral is that if pistons are arranged for amateur removal, pretty thorough resistance should be provided. I even wonder how many amateur garages boast a pair of callipers, by which the operator may determine whether his piston is out of round after the pin has been driven back. Where neither callipers nor a ring gauge are provided, is it worth while stamping "In" all over the engine?

Occasional Comments.—

The 200 Miles Cycle Car Race.

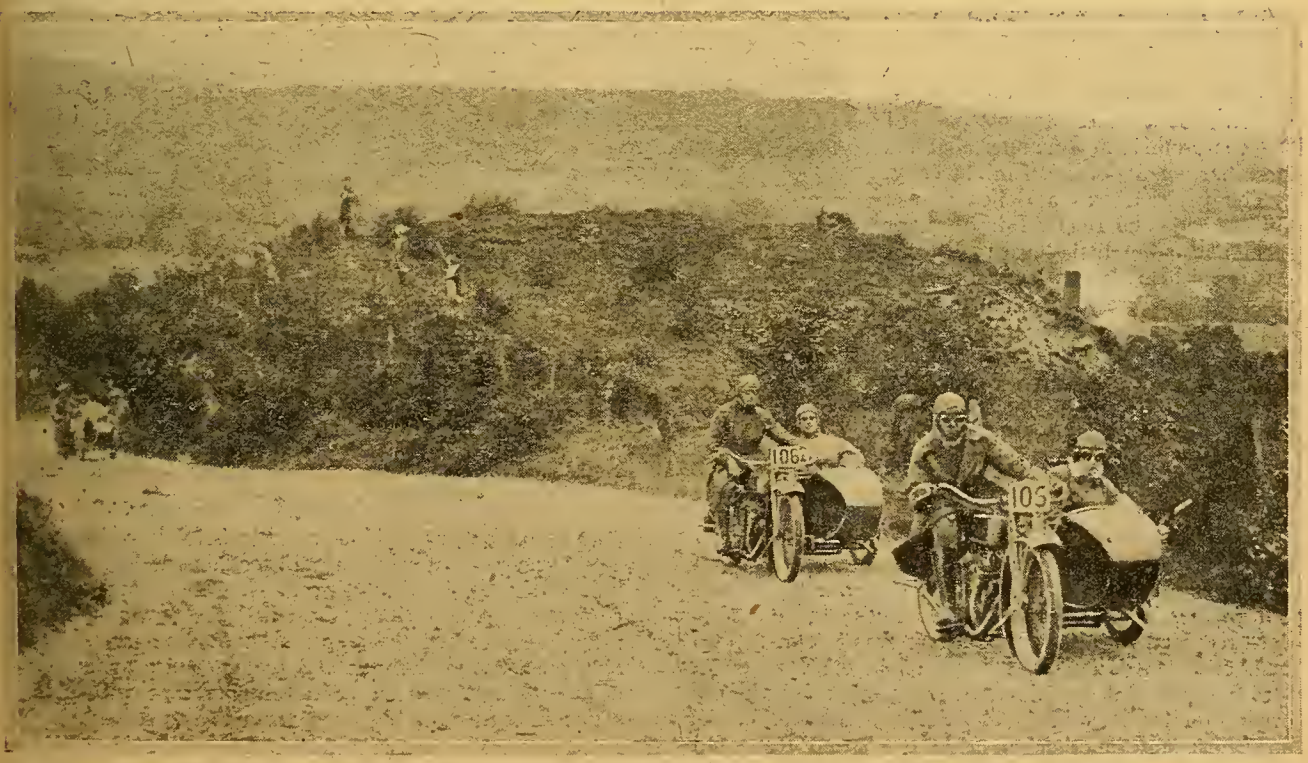
THE 1,100 c.c. edition of the 200 miles race was peculiarly interesting to motor cyclists; firstly, because it was contested by engines no larger than many employed in sidecar outfits; secondly, because these 1,100 c.c. cycle cars represent a mount on to which many of us hope to graduate some day, when we get our next rise of salary; thirdly, because France fought (and incidentally thrashed) our two leading makes of cycle car. From a sporting point of view, the top spot of the race was Frazer Nash; to spend 42 mins. changing a piston, and to finish at an average speed of 62 m.p.h., is some feat. The three-wheelers put up a very disappointing display indeed; and our best four-wheeled cycle car, the G.N., could not live with the French baby fours. Next year the twins may have a race to themselves, leaving British miniature fours to show they are as fast as the French.

About Spark Gaps.

THE least sophisticated motor cyclist has begun to smell a rat in connection with spark gaps. Such extravagant claims have been made for certain devices in this line that doubts of them all have been aroused. In sending me a set of the firm's spark gap cable terminals, Mr. Alexander Lodge carefully refrains from suggesting that they halve your fuel consumption or double your h.p. He mildly remarks that his spark gaps are cheap, and that they do no harm where the sparking conditions are otherwise good; but he makes no positive claim for them beyond the well attested fact that they tend to prevent misfiring when the plugs have to work under bad conditions. He does not believe that any rival device can do more. Unluckily the four engines at present in my hands for test all spark with an almost monotonous regularity; but the Lodge views on the subject will certainly interest some of our readers.

A Good Course.

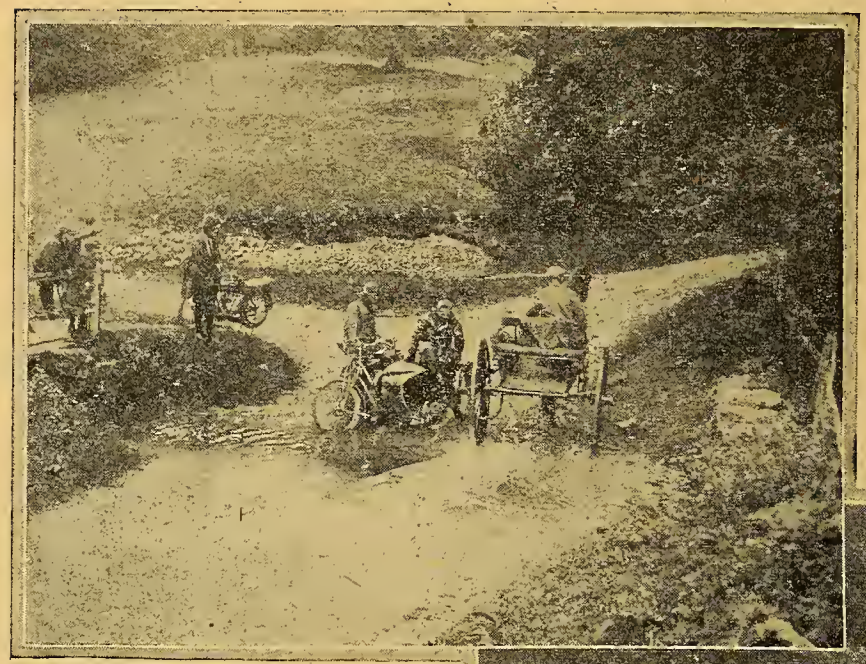
THE A.C.U. has oscillated between several opposed policies for its Six Days Trials, but this year it came very near what is probably the best solution. When it concentrated on freak hills, it was told that motor cycles were not chamois. When it utilised normal roads (as in 1921), we all arose derisively, and enquired if the trial was intended for perambulators. This year the Union included just one genuine freak hill. The rest of the route was composed as far as possible of rough, twisty, undulating lanes. Each section, considered separately, was just the sort of stuff which lots of rural motor cyclists cover every day of their lives; but the sum total of these sections imposed a continuous and cumulative strain on brakes and gear boxes and engines, whilst the prolonged avoidance of main roads rendered it extremely difficult for anybody to pick up time lost over petty troubles. With a little assistance from the clerk of the weather, a six day trial on these lines develops into a very substantial ordeal, mild as any individual section will seem to a rider who knows it by heart. For example, the Friday morning consisted of about 96 miles; and 75 of them were quite exacting, though not an inch was colonial or unfair.



Drayton Cross Hill which was included in the second day's run of the Six Days Trials. Years ago the hill was considered quite a formidable climb, but all the machines this year took it "on the run." E. A. Bridgman (998 Indian sidecar) and R. Swanton following on a similar machine.

ANALYSING THE SIX DAYS TRIALS.

Unequal Performances which gained Equal Awards. Lessons to be learned—by Prospective Buyer and Motor Cycle Designer—from the Trials.

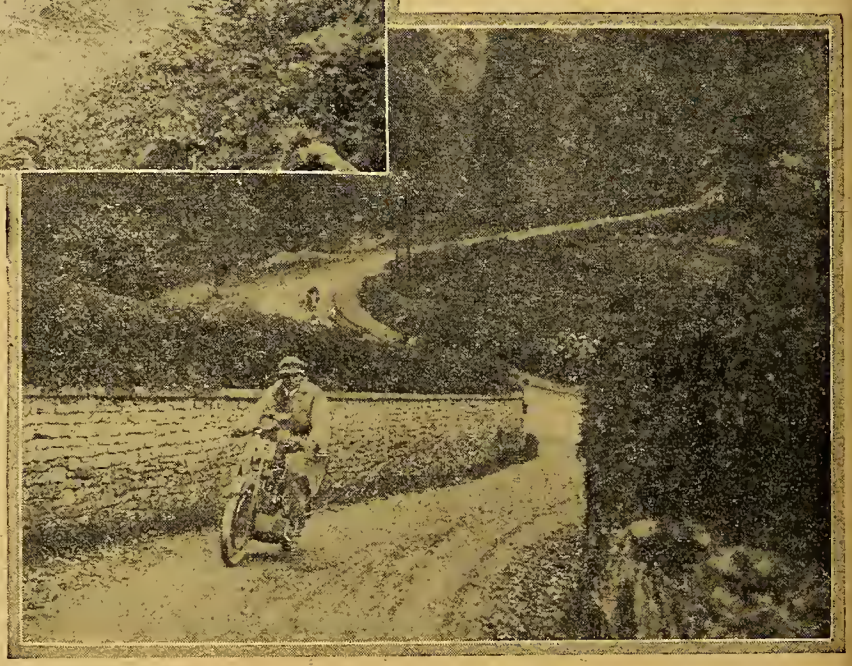


None of the watersplashes were deep enough to wet one's feet, and E. Mundey's (New Hudson sidecar) stop occurred before he actually reached the ford.

IN this year's Six Days Trials the A.C.U. trod the thorny path of compromise in a manner that the most hardened politician might envy.

The position was a delicate one. On one side the 1921 affair of many special tests but little hard road work was being heartily condemned; on the other there were lively murmurings against anything freakish or impossible. The A.C.U. listened to both and then successfully devised a scheme whereby, it was hoped, everybody concerned would be pleased.

Unfortunately, "everybody concerned" does not include all of the general public.



R. P. Ranson (496 Lea Francis) on Daneway Hill, a test that looks difficult but did not cause any failures.

It happened thus. The trials were undoubtedly severe; one or two of the hills were among the worst in the country; the track test of twenty-five laps found out further weaknesses in the machines; but the standard required for a first-class award was too low. Two machines, "A" and "B," started in the same class. "A" climbed Rosedale and every other hill in the event in a faultless manner, gaining five bonus marks on Alms, and another eight in the speed test, and losing none under the time, silence, brakes, or condition headings. "B" failed on Rosedale and Longhope, and successfully claimed baulks on White Horse and Boltby Bank, did not attempt Alms Hill, lost five marks on time (caused by unreliability), four in the final examination (for a defective steering head), and only gained a bonus of two in the speed test. "A" and "B" each gained a gold medal.

It is not suggested that "B" should have had no award—his performance was infinitely better than, say, "C," whom we imagine retired on the second day with a fractured sidecar chassis *plus* a seized layshaft—but, certainly, it is misleading to class him with "A."

The Man-in-the-Street may or may not be sufficiently interested to delve into the comparative values of various gold medals—if he does he will find it a complicated business, where equal aggregates may gain different awards—but it would have indubitably sealed the whole event as the most valuable ever run had the medal scale, to use an appropriate metaphor, been geared higher and with close ratios instead of a big drop from top to second.

Fair Marking.

On the whole, the marking throughout the trial was very fair; if anything, there were more cases of

Analysing the Six Days Trials.

undeserved clean sheets than unfair deductions. An analysis of the performances, class by class, is, therefore, interesting.

To give credit where credit is due, we will endeavour to distinguish between the "100% golds" and the "only-just-got-away-with-it golds."

Thirteen started in the 250 c.c. class, and six finished with as many or more marks than they were credited with at the outset—480.

	m.p.h.	Mks.
G. S. Davison (247 Levis)	43.5	489
A. R. Edwards (247 Levis)	42.8	488
M. Bishop (247 Sun-Vitesse)	37.3	486
J. Wilkins (249 New Imp.)	42.4	484
B. Kershaw (249 New Imp.)	43.0	483
L. Horton (249 New Imp.)	42.4	480

Only one retired and only two more failed to qualify for premier awards. One of the latter was the 169 c.c. J.E.S., the general performance of which entitles it to special praise, irrespective of how many marks it may have lost by an arbitrary classification. On the face of it, it might be said that the two-stroke engine has beaten the four-stroke type, but it should be noted that the latter was only represented in the proportion of five to eight. Moreover, through a bad tactical error, the New Imperial riders gave away 28 marks between them by arriving too early at a check.

Eleven out of twenty-seven 350 c.c. solo entrants dropped no marks, which is not quite such a good proportion, but, nevertheless, is better than their rivals on larger and more expensive machines.

	m.p.h.	Mks.
E. Searle (349 Sheffield-Henderson)	48.3	493
J. Lidstone (349 James)	40.1	487
C. W. Hough (349 A.J.S.)	44.7	485
W. Handley (249 O.K.-Junior)	39.6	485
G. Kimberley (349 James)	40.1	485
E. A. Barnett (346 Francis-Barnett)	42.6	482
E. W. Choldcroft (349 A.J.S.)	44.6	482
F. C. North (292 O.K.-Junior)	36.5	482
Mrs. O. M. Knowles (349 A.J.S.)	40.0	480
L. E. Clulee (292 Allon)	40.0	480
N. Hall (292 O.K.-Junior)	39.5	480

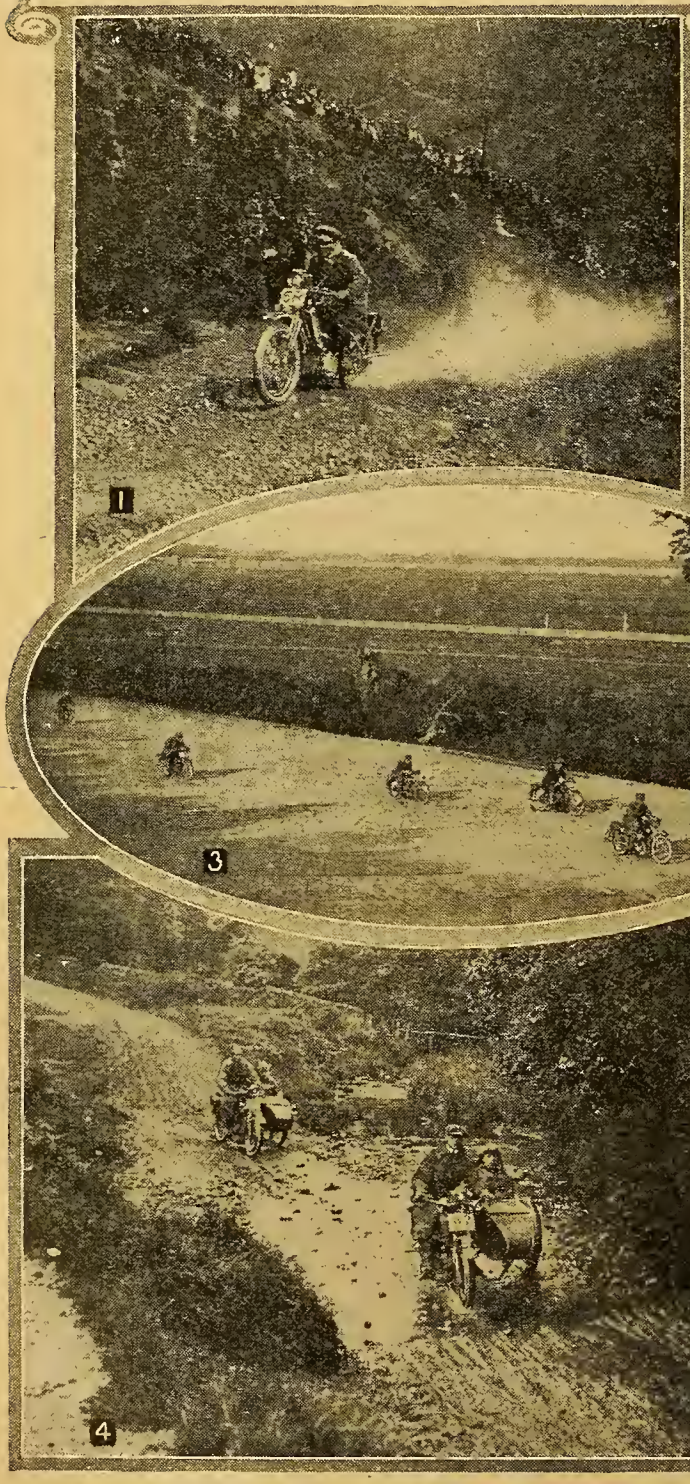
Five others won gold medals, but four retired, which is considerably less satisfactory than the previous class. Although the four-stroke machines, helped by superior speed, occupy a strong position, the annexation of the team prize by the two-stroke 292 c.c. O.K.-Juniors more than levels up matters. Searle's performance as a lone entry is particularly creditable.

The 500 c.c. class was disappointing. Only eight of the twenty one starters scored full marks.

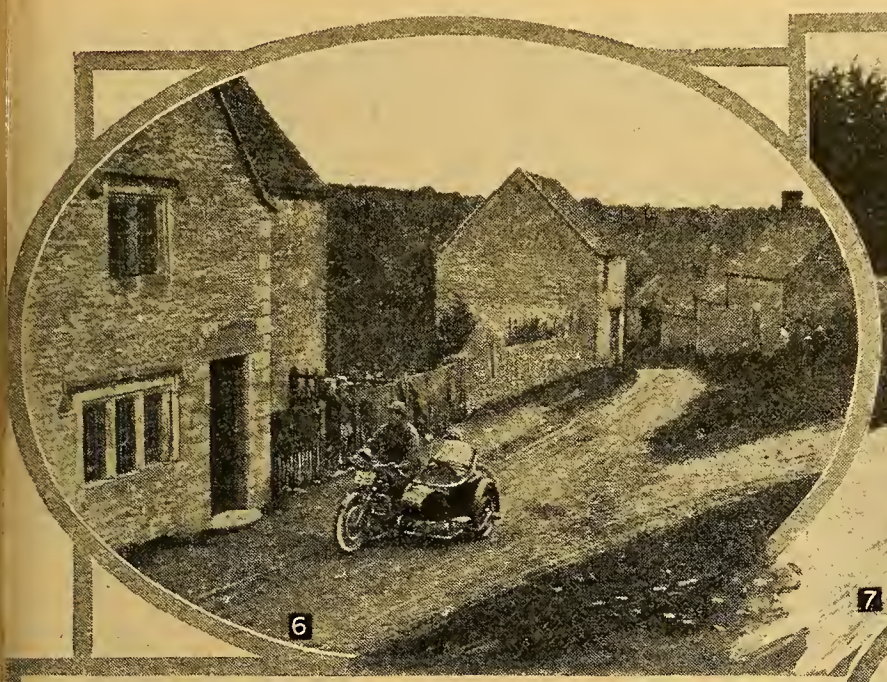
	m.p.h.	Mks.
J. H. Davies (492 Sunbeam)	52.8	491
G. Dance (499 Sunbeam)	52.3	489
J. A. Newman (494 Douglas)	49.0	489

Long second-gear climbs occupied a considerable portion of Thursday's run (from Llandrindod Wells to Gloucester). (Top) Over the open moorland near Llangammarch: J. A. Newman (494 Douglas), and J. Westwood-Wills (547 Powell). (Centre) E. Foster (698 Raleigh) and G. F. Bainbridge (739 Martinsyde) on the Llangynidr Pass hairpin. (Bottom) A. G. Wall (348 Connaught), N. Hall (292 O.K.-Junior) and C. L. Sprosen (348 Connaught) on Panne Hill.

"SIX DAYS" IMPRESSIONS.



(1) W. Scott (532 Scott) after passing the worst portion of Rosedale Abbey Bank. (2) P. L. Mayo (249 Coventry Eagle) and R. P. Purnell (169 J.E.S.) at the foot of Llangynidr Hill. (3) Some of the 250 c.c. and 350 c.c. machines in the speed test at Brooklands. (4) F. T. Sibley (499 Rudge sidecar) and A. W. Hadley (499 Rudge sidecar) passing through the shallow water splash near Leek. (5) J. H. Davis (492 Sunbeam) and W. L. Gard (499 Rudge) on Whitehouse Hill. (6) P. W. Bishoff (599 Sunbeam sidecar) near Tetbury.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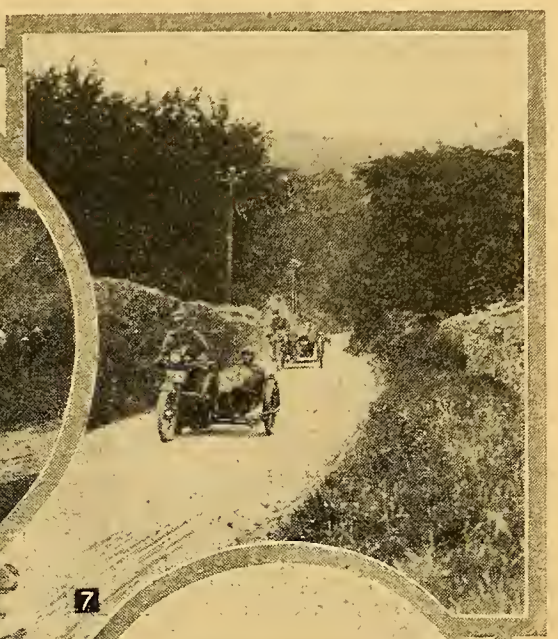
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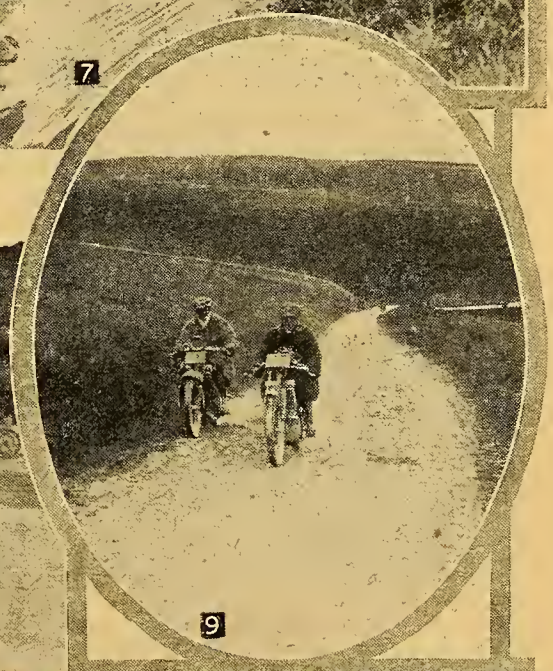
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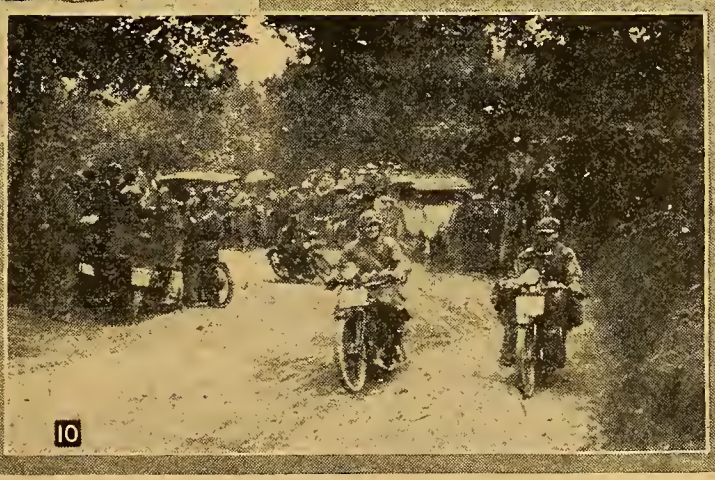
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(7) Two of the 1,000 c.c. sidecar prize winners: G. Baxter and C. W. Johnston on 989 c.c. Harley Davidson sidecars making the ascent of Bubbs Hill. (8) At the start of the speed test for the 500 c.c. and 750 c.c. machines. Some excellent times were made. (9) G. Hill and W. Moore ascending Llangammarch Hill on 532 c.c. Scotts. (10) E. W. Choldcroft (349 A.J.S.) and W. Johnson (292 Allon) on the "Fiddler's Elbow" near Abergavenny.

Analysing the Six Days Trials.

	m.p.h.	Mks.
C. Greenwood (499 Sunbeam)	48.0	488
W. T. Woodcock (498 Ariel)	48.0	487
F. A. Longman (498 Ariel)	46.3	485
A. Rollason (498 Ariel) ...	44.2	482
A. Bennett (499 Sunbeam)	49.9	480

Another eight retired from various causes, usually pure mechanical breakdowns; and one rider had to be content with a silver medal, incidentally owing to a failure in brakes.

The "seven-fifty" solos are even less impressive. Fifteen started, but only three finished square on marks, and not one earned a solitary bonus point that was not discounted by earlier deductions.

	m.p.h.	Mks.
G. F. Bainbridge (739 Martinsyde	56.3	480
G. Hill (532 Scott) ...	45.5	480
W. Moore (532 Scott) ...	47.2	480

Two more just scraped through with premier awards, three got "silvers," one a "bronze," and six did not finish.

There were only three starters in the largest solo class, but one of them certainly deserves a line to himself.

	m.p.h.	Marks
J. A. Watson-Bourne and G. Brough (976 Brough-Superior)	64.6	482

Another gained his gold with 13 marks below the datum line, and the third broke his frame.

Neither of the two 350 c.c. sidecars completed the trials; it was hardly a fair test for them, anyhow.

Two 600 c.c. sidecars came up to our line of demarcation, and although seventeen started, it would be obviously unfair to draw comparisons with the solo percentages.

	m.p.h.	Marks
P. Cunningham (555 P. and M. sc.) ...	37.4	484
R. Lewis (555 P. and M. sc.) ...	37.5	483

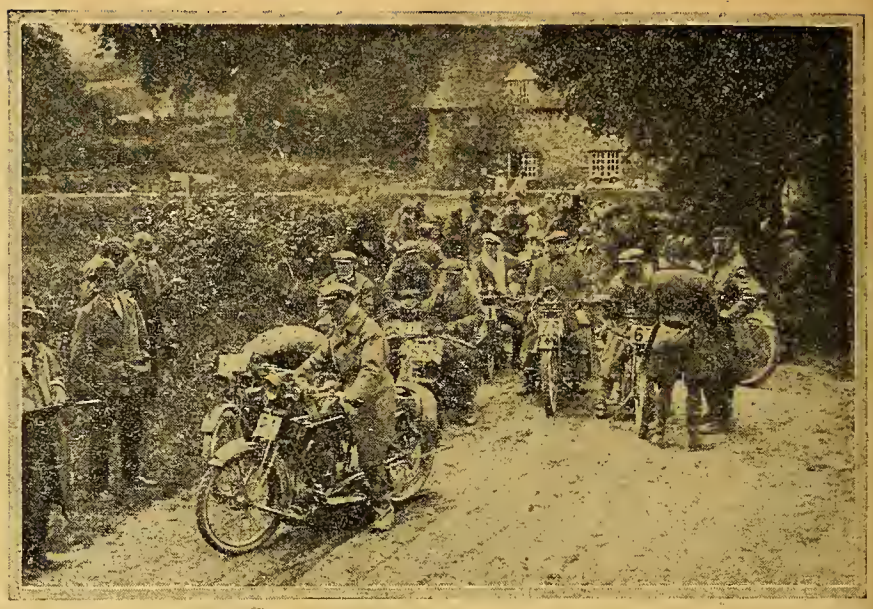
Eight retired, but the remaining seven all succeeded in qualifying for premier awards. Incidentally, this is the first and only case where the highest aggregate of marks did not go to the man who had made the highest speed in his class.

Seven big sidecar outfits earned at least as many bonus marks as they had previously lost, but thirty-eight started, so the proportion is none too good.

	m.p.h.	Marks
F. W. Giles (800 A.J.S. sc.)	50.9	494
T. R. Allchin (989 Harley-D. sc.) ...	47.3	486
A. A. Symes (678 Martinsyde sc.) ...	43.9	482
G. Baxter (989 Harley-D. sc.) ...	45.8	482
F. O'Brien (964 Matchless sc.)	45.5	482
F. J. Ellis (993 Matchless sc.) ...	43.5	481
L. Newey (994 Ariel sc.)	44.5	481

Eleven others were awarded "golds," a twelfth qualified, but was ineligible, since he had been competing for the Centre Premiership only, seven got lesser awards, and no fewer than twelve retired. The A.J.S. and the Martinsyde, therefore, earn special praise on account of the small capacity of their engines.

The Scott Sociable had a class to itself, but lost thirty-five marks on hills and one in the speed test, although not from lack of speed. It was awarded a certificate.



Although, as it turned out, it was not really necessary, competitors were only allowed up Alms Hill singly. In this group at the foot are W. T. Woodcock (498 Ariel), J. Westwood-Wills (547 Powell), George Brough—keeping the saddle of the Brough-Superior warm while Watson-Bourne prospects the hill—Tom Peck (665 Ariel), D. H. Davidson (596 Indian Scout) and, standing on the extreme right, W. D. Pugh, the big twin Harley rider.

Five conventional three-wheelers started; four were on the *plus* side at the finish.

	m.p.h.	Marks.
W. Carr (1,090 Morgan-Anzani) ...	49.1	493
H. F. S. Morgan (978 Morgan-Jap) ...	48.9	492
S. Hall (1,096 Morgan-Mag.)	43.3	487
F. S. Spouse (980 T.B.)	41.6	483

The fifth entrant retired on the first day owing to a stone becoming wedged in the driving chain.

Thus it will readily be admitted that the three-wheelers and the 250 c.c. solo lightweights outshone the machines in any other class.

Reasons are not far to seek. The cycle cars won because they were better able to climb freak hills than even the most expertly-driven solo machines, and because they incurred less ill-effects in the way of chassis distortions and breakages on rough going than the sidecars.

Several factors allowed the small solo machines to score: (1) They were more easily handled on rough going; (2) less was expected of them on the track; (3) possessing early numbers, they generally got more of a clean run at the difficult hills than the later people; (4) they were in every case driven by expert trade riders; and (5) they are much more efficient than most people, even now, realise.

Further important facts may be gleaned from a study of the result sheets as published last week.

No machine in the trial gained full marks for silence, the nearest approach—*minus* one point each—being the three Scotts, Mayo's Coventry Eagle, and Austin's Coventry Victor. That the only two-stroke twins in the event have scored in this respect certainly points to the advantage of this type of engine, but the fact that the others are a single-cylinder and a flat twin would seem to prove that silence may be obtained from any kind of engine if the expansion arrangements

are properly designed. The Coventry Victor was fitted with a proprietary silencer.

Brake inefficiency was responsible for many lost points, but it is noteworthy that only one machine in the 250 c.c. and 350 c.c. classes, and none in the 1,000 c.c. cycle cars, lost marks under this heading. The main brake test was carried out on the Brooklands test hill, but it would be interesting to know if the A.C.U. official observed making notes on a main road descent on Wednesday was responsible for any of the deductions. If so, it was not a fair method; too much depended on each rider's natural style of driving down a hill.

All the 600 c.c. sidecars lost only three marks between them on the final examination, and the three-wheelers only one. Otherwise the lack of condition penalties were very evenly spaced throughout the entry list, and never were they unduly heavy. Indeed, the excellent order of the machine at the finish of such a strenuous event was the subject of much favourable comment.

The only failures to gain bonus marks in the speed test were those who suffered actual mechanical trouble therein, and of these there were surprisingly few. Another five miles per hour on the schedule speeds all round should not by any means be an impossible task next year.

Fourteen riders gained double figures on their required minimums :—

250 c.c. Class.

G. S. Davison (247 Levis) ...	43.5 m.p.h.	(+13)
B. Kershaw (249 New Imperial)	43.0 m.p.h.	(+13)
A. R. Edwards (247 Levis)	42.8 m.p.h.	(+12)
J. Wilkins (249 New Imperial) ...	42.4 m.p.h.	(+12)

350 c.c. Class.

E. Searle (349 Sheffield-Henderson)	48.3 m.p.h.	(+13)
H. F. Harris (349 A.J.S.) ...	45.8 m.p.h.	(+10)
H. Greaves (349 Beardmore) ...	45.7 m.p.h.	(+10)

500 c.c. Class.

J. H. Davies (492 Sunbeam) ...	52.8 m.p.h.	(+12)
G. Dance (499 Sunbeam) ...	52.3 m.p.h.	(+12)

750 c.c. Class.

G. F. Bainbridge (739 Martinsyde)	56.3 m.p.h.	(+12)

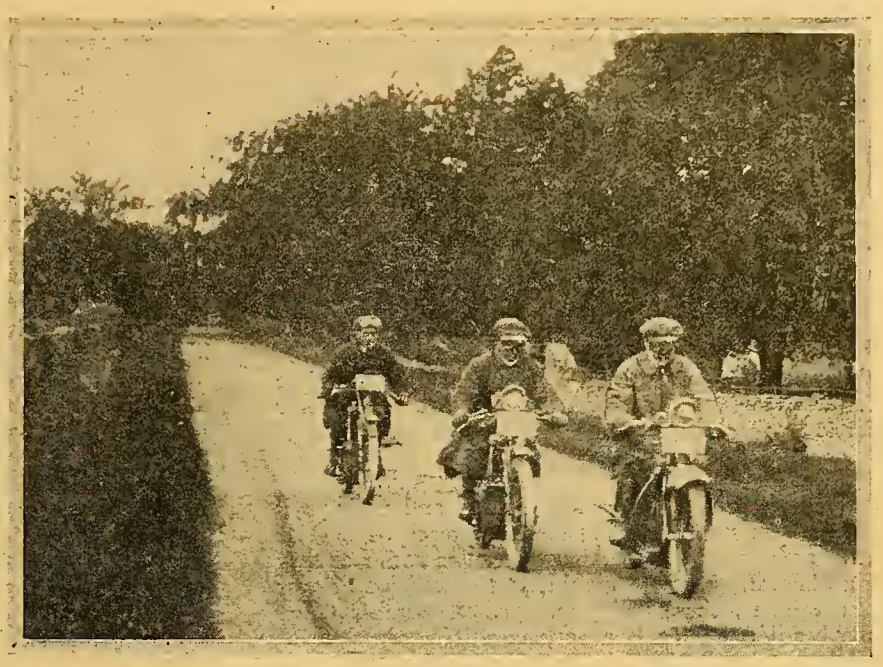
1,000 c.c. Class.

J. A. Watson-Bourne (976 Brough-Superior)	64.6 m.p.h.	(+16)

1,000 c.c. Sidecars.

F. W. Giles (800 A.J.S. sc.) ...	50.9 m.p.h.	(+12)
W. Carr (1,096 Morgan) ...	49.1 m.p.h.	(+11)
H. F. S. Morgan (978 Morgan) ...	48.9 m.p.h.	(+10)

While it might not always have been good policy to "open out" fully on the track when half throttle would have given the required speed, every credit is due to those who did so successfully.



Teams usually kept together on the road, and the Scott riders—W. Moore, W. Scott and G. Hill—were no exception to the rule.

Fuel consumption was not tested officially, but it was very noticeable that the first morning's run, which did not traverse an area well catered for by garages, caused a great number to run out of petrol before the lunch stop was reached. The distance was ninety-five miles—strenuous going, it is true—and one can only surmise that petrol tanks are still smaller than they ought to be. Anyone who lost marks on this occasion deserved to.

Rosedale Abbey Bank.

As was inferred earlier, the road portion of the test was exceptionally severe without being unfair. Rosedale Abbey Bank is certainly a freak hill, but, as we pointed out in our report a fortnight ago, controllability and an ample reserve of power were usually fully rewarded. Baulking was common, but in one or two instances it proved a blessing in disguise. Although from the spectacular point of view "close formation" among the competitors is an admirable arrangement, we would recommend either that the starting intervals be lengthened next year, or that the riders be sent up all the worst hills singly, as was done at Alms.

The sidecars did not distinguish themselves on Rosedale. True, Giles made one of the best ascents of the day; but are Shepherd, Hall, Morgan, or Carr (on the three-wheelers) as super-expert drivers as Giles? It hardly seems likely, and therefore we must regard Giles as the exception that proves the rule.

Longhope, the next worst hill, again proved that certain machines are more controllable than others, but baulking was even more common here, and so was a great deal of rank bad driving. Only one man proved capable of surmounting the hill at speed (until he ran into another unfortunate); that was Watson-Bourne on the Brough-Superior, and, again, he is

Analysing the Six Days Trials.—

rather an exceptionally good driver on that type of machine. At the same time, the particular brand of slime on Longhope was less treacherous to large tyres —which in itself is quite a valuable lesson.

Friday's chief point of interest—Alms Hill—was, fortunately, dry. We say "fortunately" advisedly, for, as it was, it became a very fair test. It is as steep as Rosedale, and it proved that gradient alone cannot cause a modern motor cycle to hesitate—even after 750 miles of the worst roads in the country. Had it been wet it would have been a driving-test pure and simple, and the element of luck would have entered the matter to a greater extent than is desirable. It allowed many competitors to retrieve their Rosedale failures, which was a thoroughly just course of events for all concerned.

Transmission Failures Too Common.

There were forty-three retirements, and perhaps it is by a study of these that the trials teach us most of all. Last week we tabulated the causes as far as they were known. Eleven were due to transmission or gear box failures, these being the greatest number under one heading. This is a very unsatisfactory state of affairs, and it is sincerely to be hoped that the manufacturers will take note and endeavour to eliminate the weak points in 1923 designs. It is futile to reason that the average private owner does not impose such severe strains on his gear box as did a competitor in the trials; he may not in a thousand miles, but in ten thousand the same troubles will almost certainly occur.

Frames and sidecar chassis stood the bucketing remarkably well, but breakages were not unknown.

Valve trouble was common, and although magnetos did not put many machines right out of the event, they spoiled the performances of quite a number.

Plug troubles were especially numerous during the track test; apparently the average touring machine is not fitted with plugs that will stand up to prolonged high speed.

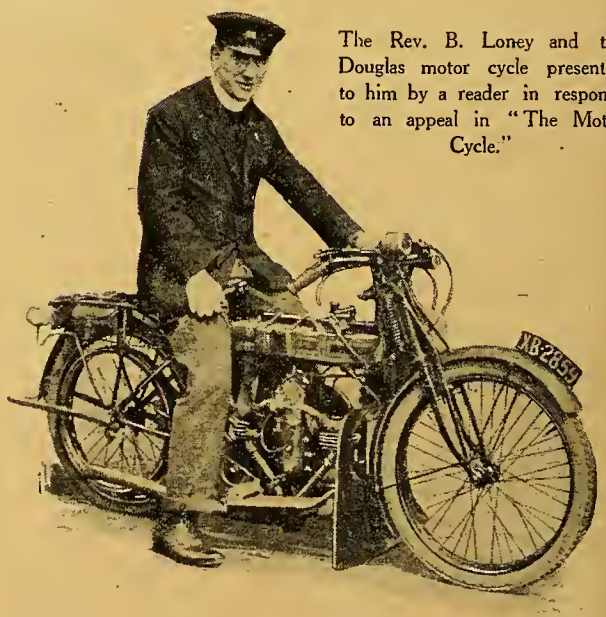
Tyres contributed their quota of disaster, and although such preventatives as Jackson's Impervo—which was largely used—may possibly have lessened the number of stops for minor punctures, when a tyre "went" it usually went very badly indeed. Both the crashes on the track were due to front tyre failures.

The number of accidents on the road would point to the sence of more ineffective brakes than were noted on Saturday at Brooklands.

To say more would savour of repetition. The results, published last week, if read carefully in conjunction with the report of the trials, will provide more information than any general article can convey.

A KINDLY ACTION.

SOME little time ago we received a call from a clergyman working in the east end of London, who found it well-nigh impossible to carry out his Sunday duties owing to lack of transport. He is the Rev. B. Loney, of the Missions to Seamen's Institute, Victoria Dock Road, London, E.16. Many of those who do the best work in this world, and who labour for the welfare of their fellow-creatures, are inadequately paid, and Mr. Loney was quite unable to purchase a motor cycle to enable him to get from place to place on what is to him the hardest working day of the week. Consequently his appeal was inserted in a recent issue of *The Motor Cycle*, with the result that a lady and gentleman who had advertised a 349 c.c. Douglas in the same number immediately gave it to Mr. Loney. The machine is in perfect condition and very little used, and had only recently been overhauled. We naturally do not make a habit of inserting appeals of this kind, but the case in question appeared to us to be a most deserving one, and we are glad to think that such a ready response was obtained.

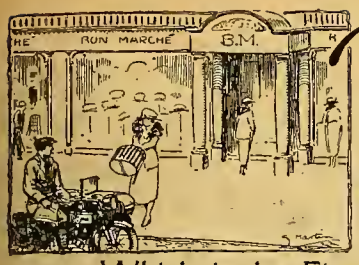


The Rev. B. Loney and the Douglas motor cycle presented to him by a reader in response to an appeal in "The Motor Cycle."

VALUABLE TECHNICAL DATA.

ONE of the most interesting and useful annual publications in connection with the motor movement has been "The Automobile Engineer Year Book," which now appears under a new title, "The Automobile Engineer Reference Book." Compiled by the editorial staff of our sister journal, *The Automobile Engineer*, this volume is in effect a new and revised edition of the year book, which has in the past been widely recognised as the standard technical work of reference for engineers, designers, manufacturers, and private motorists.

Undoubtedly, in its present form "The Automobile Engineer Reference Book," which can be obtained from our publishers, Messrs. Iliffe & Sons Ltd., Dorset House, Tudor Street, London, E.C.4, price 6s. net, or post free 6s. 6d., is a most valuable record concerning motor vehicle design and production generally.



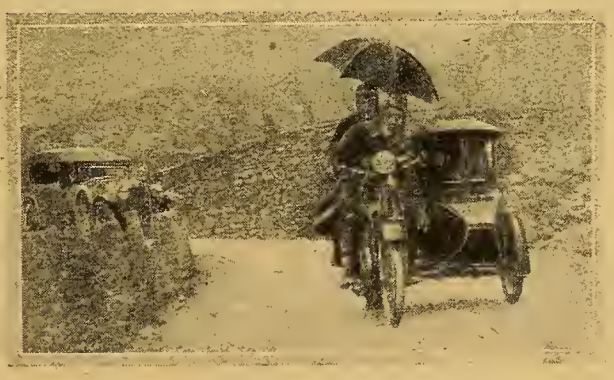
Passenger Machine Topics

BY FRIAR JOHN

Which is the Finest Prospect in Great Britain? On Cleaning Muddy Outfits. Springing of Sidecars.

ONE of my colleagues is determined to have his next sidecar attached to the right-hand side of the machine. But his reasons have no bearing whatever on the question of safety. He is one of that awful brigade which rides on the right camber of the road and which asserts that higher speeds can be maintained on that side because of the much easier steering; also he says he is slightly deaf in the left ear, and finds it difficult to converse with his passenger (he is married, too). Of course, all journalists have to be deaf in one ear and blind in one eye. But in his case it is the left ear, whereas the journalist's deaf ear can be right or left according to his desire and to circumstances. So presently we shall have another disciple of Mr. Mortimer Batten—I wonder for how long?

WHERE is there most room for improvements in sidecar comfort? I asked this question some weeks ago. Judging from the diverse nature of the replies (published and unpublished), it seems that readers think that chassis and upholstery springing leaves more to be desired than any other feature of the sidecar; then come criticisms of hoods and screens. Several correspondents are severe on such details as lack of luggage accommodation, finish of the upholstery, and general design. But unquestionably it is the subject of springing which interests the majority. One reader goes so far as to say that he intends this winter to fit shock absorbers on the springs and to replace the seat with a hammock suspended from coil springs, and then fill the hammock with air cushions. I happen to know the lady who rides in this comfort-seeker's sidecar. She has ridden many thousands of miles in sidecars, and to listen to her enthusiastic talk of the long and splendid runs she has experienced, one would not judge her to be the revolutionary she is. But the heart-to-heart talks about these "splendid runs" are mostly heard in private—in fact, the real opinion of many lady passengers concerning some modern sidecars has never been ventured in words. The ladies are too wise to do that. Another astonishing thing observable in the letters is that the majority of the grumbles are from owners of big and powerful sidecars, many of whom appear to want Rolls-Royce comfort at Ford car price. I do, too, but I know there is a limit to the springing of so small a vehicle as a sidecar.



An incident in the 1922 International Six Days Trials. A spectator descending from the top of the St. Gothard Pass in the pouring rain. The passenger is, of course, well protected by the hood and screen, but the pillion rider is holding an umbrella over himself and the driver.

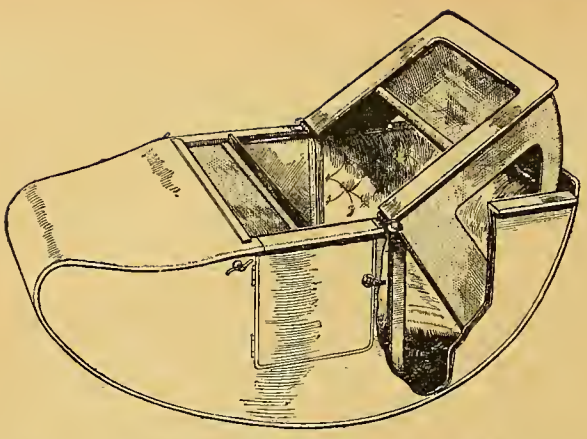
THE sporting sidecar owner is indifferent to or content—I prefer to say content—with his light sidecar. Madamoiselle does not grumble either at the reclining attitude or at the leather racing helmet, much less does she grumble at the springs. She likes the zebra stripes and canary yellow enamel, and the more penetrating the exhaust the better. No! the grumbles are reserved for a later date. But it was ever thus.

WHICH is the finest prospect in Great Britain? This question arose the other day whilst discussing roads and scenery with several sidecarists who were making preparations for touring.

Ideas differed widely. The people I spoke to considered the following scenes to be the finest from their particular points of view:

(*a*) Edinburgh from Carlton Hill.
(*b*) Pass of Aberglasyn from the bridge.
(*c*) Looking back towards the Black Mountains (South Wales) from the hill between Llangynidr and Beaufort.
(*d*) From the top of Applecross.
(*e*) From the Devil's Bridge (Central Wales).
(*f*) Severn Estuary from the upper road between Gloucester and Bristol.
(*g*) From the top of Fish Hill, Broadway, in the Cotswolds.
(*h*) Wharfedale looking towards Simon's Seat from Burnsall Fell.
(*i*) The Langdale Pikes from the Elterwater—Langdale Road.

A good deal depends on the state of mind when a first impression is made—it's a question of nerves and stomach after all. It is not at all likely that unforgettable impressions of scenery would be registered on a day of continuous mechanical trouble and thunder-



An ingenious sidecar with collapsible and concealed hood. In front of the latter is a sliding celluloid screen and over the open portion by the door there is a sliding apron. When erected the hood, screen and apron completely protect the passenger. Mr. W. G. Davies of 155, Rathcole Gardens, Hornsey, London, N.8, has protected the device.

storms. But, given a cheery engine, brilliant sunlight and good road surfaces, one can quite easily praise the panoramas of the Great North Road.

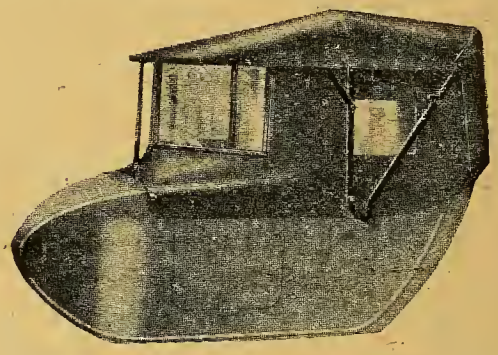
◈ ◈ ◈ ◈

THE job of cleaning a muddy outfit is no sinecure. It is dog's work. The worst of it is after spending precious hours on the filthy job, half an hour's run on a muddy road causes the outfit to look as disreputable as ever. I suppose I ought to use disc wheels to avoid the irritating spoke cleaning, and buy an engine that cannot leak oil, and avoid tarred roads and always wait until the roads are dry; then I should stand a fair chance of sleeping with a peaceful mind. Of course, the alternative is to pay five shillings each time to the garage boy. What a grouse for the beginning of September!

This soreness is proved by the fact that my garage partner simply stands four or five yards off his car, and, with a hose, calmly directs a devastating stream of water on to the mud. *He* appears to enjoy the job, but I have to grovel about with a brush and bucket.

◈ ◈ ◈ ◈

WHAT an astonishing difference a new tyre makes to the steering of a heavy sidecar. I had a heavy oversize studded cover, which did splendid service on the front, after covering many thousands of miles on the back wheel. It had worn very flat, and, being particularly wide in the tread, the slightest deflation caused objectionable dragging and a decided impression that the sidecar must be badly out of alignment. A narrow contact, such as given by tyres having a central rib on the tread, allows the easiest of steering.



A hood and screen particularly neat in appearance—the Easyquip. The screen, which is V-shaped, offers the least possible resistance to the wind, and opens and shuts with the door. It is sold by Coventry Equipments, Ltd., Empire Works, Coventry.

ON PICTURESQUE DANEWAY HILL IN THE SIX DAYS TRIALS. T. Peck (665 Ariel), followed by W. D. Pugh (989 Harley Davidson), who on his big machine made some very excellent ascents of the worst hills.

IDEAS: USEFUL AND INGENIOUS.

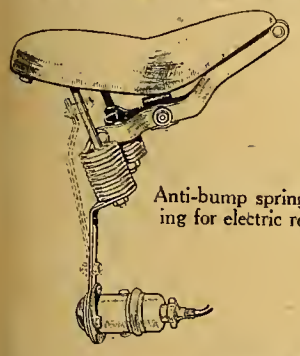
A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Petrol Level.

FOR ordinary purposes the petrol level in the average carburetter should be just as high in the jet as it can be without overflowing.

Protecting the Rear Lamp.

HAVING experienced a trouble frequently met with in electric lighting sets, Mr. C. S. Rawlins has attempted to remedy the matter in a very practical way. The trouble referred to is the breaking of tail lamp bulb filaments, and the alternative method of

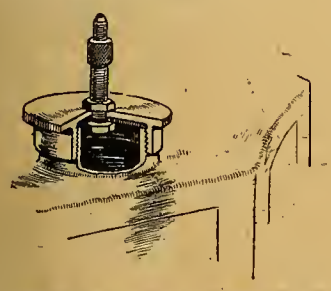


Anti-bump spring mounting for electric rear lamp.

lamp mounting which constitutes the cure takes advantage of the saddle springing. A strip of iron is used to secure the lamp to the nut at the base of the saddle spring, and an additional strut to the spring plunger rod prevents undue whipping. The clip on the rod should be free enough to slide a little.

Assisting Gravity Drip Feed.

SOME of the cheaper ultra-lightweights are equipped with a gravity drip feed lubrication system, and sometimes there is a difficulty in getting oil to pass in sufficient quantities.



For putting air pressure in the oil tank, when gravity drip lubrication is used.

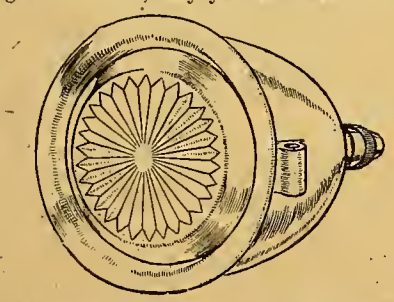
A Scottish reader, Mr. G. Glass, overcame this trouble by fitting a tyre valve in the oil-filler cap, giving a small amount of pressure as needed with the tyre pump.

Thief-proofing an Enfield.

SIMPLICITY itself is Mr. F. T. Prettyman's tip for preventing unauthorised driving of his Enfield. When leaving it unattended, he puts the gear in neutral, lifts the gear control lever vertically against its spring and removes the small pinion (on squared shaft) which operates the rack in the centre of the gear. This is the work of a moment, no tools are required, and it is practically impossible to make the machine ridable under power until the pinion is replaced.

Anti-Dazzle Headlamp Glass.

THOSE who find that the electric headlamps frequently fitted to American machines give insufficient light for fast driving, and incidentally on occasion show an annoying black spot, yet are not sufficiently roomy to accommodate a big gas-filled bulb, may yet take heart.



A unique improvisation. In place of the ordinary lens a fruit dish is used, the pattern making an effective light diffuser.

P. N. D. discovered that a cheap "cut" glass fruit dish could be obtained of the correct size to replace the existing front glass. It can be held in place independently of the usual fitting by means of a length of uncovered Bowden casing inserted in a piece of rubber gas tubing of the correct size and sprung into position while the glass is held in place.

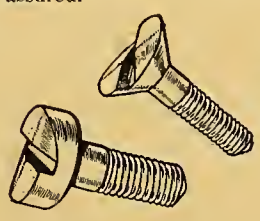
It will be found that the headlamp will easily accommodate a large half-watt bulb, while the star pattern on the glass diffuses the light so as to eliminate the black spot.

Carrying a Spare Tube.

WHEN fixing a spare inner tube round the handle-bars the best thing to use is a broad wrist strap of the kind made to go twice round the wrist. A hole should be cut, through which the valve is passed.

Making Screws Irremovable.

WHEN such items as watches, club badges, and speedometers are to be fixed permanently to a machine it may be worth while to adopt the petty theft foiling device recommended by C. N. B., of Plumstead, London, S.E. Briefly, his method is to file a slope down into the screwhead slots, leaving the full depth only on the side with which the screwdriver engages when driving the screw home. Screws so treated cannot be unscrewed, except, perhaps, with a hammer and chisel; therefore the safety of permanent or valuable accessories is assured.

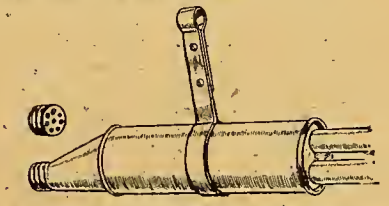


Screws with part of the head filed down to prevent their withdrawal.

Cheaper than Fines.

OWNERS of second-hand machines that have been fitted with straight through or flexible exhaust pipes can make them comply with the law for nothing, as was discovered by H. R. C., of Kilcreggan.

H. R. C. buys Texaco oil in the "easy-pour" half-gallon tins, and in one of these he pierced holes in the bottom so as just to admit the passage of the exhaust pipes. Next a clip of ⅜in. mild steel strip was made to encircle the tin and secure it on to the back stays of frame or other suitable point. The screw-on stopper can be drilled with ⅛in. holes and screwed on tight if the machine is not silent enough, but a big twin has been well silenced without it.



Utilising a Texaco oil tin as a silencer for "straight through" exhaust pipes.

The tin stands the heat and vibration well, we are told, and, given a coat of cylinder black, it improves the appearance of the machine.

INSURANCE PROBLEMS.

A Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Negligence on the Part of the Insured.

Mr. A. Clark, Retford, asks "whether a company would refuse compensation on the grounds that an accident or loss of property occurred owing to the negligence of the insured."

The wording of most companies' policies is such that they would not be relieved of liability in the event of an accident occurring which is due to the negligence of the insured. It must be remembered that goodwill forms a very prominent part of insurance transactions, and the high reputation of British insurance companies has been founded on this attribute.

* * * *

Riding with an Empty Pillion Seat.

Mr. H. Clarkson, Islington, says: "In connection with my lightweight I have an 'all in' policy. For the convenience of occasional passenger carrying I have fitted a pillion seat, and I appreciate that any accident I may be involved in whilst carrying a passenger the onus would be entirely on my shoulders. I have also been given to understand that the insurance company would repudiate responsibility if I should be mixed up in an accident riding purely solo, merely because I was carrying an empty pillion seat. Surely this is monstrous, and I hope to hear that my informant is wrong."

If your policy has not been specially endorsed to include risk whilst a pillion passenger is being carried, it is obvious that during the time you are carrying a passenger in that way your insurance would not be in force, but your insurance will not be affected in the event of an accident occurring whilst a pillion seat is fitted but a passenger is not being conveyed on same.

* * * *

Renewing an Insurance.

"Mancunian," writing from Stockport, says: "The schedule at the top of the policy reads as follows: 'Value insured, including accessories and sidecar, £175.' Total loss clause of policy reads: 'Up to the insured value of motor cycle.' Agreed value clause reads: 'In the event of a motor cycle insured being totally destroyed or lost by fire, accident, or theft, the insured value will be paid.' The outfit was purchased in 1921 and cost £175, and this was the value insured with the company. I have renewed the policy, and the same value appears in the schedule. Do you consider that the words used are such as to bind the underwriters to pay the full amount named, viz., £175? The wording of the policy appears to be different from the majority."

If the present actual value of your motor cycle and sidecar is considerably less than £175, we doubt whether the clause in your policy to the effect that £175 is payable in the event of a total loss would hold good in a court of law. We think you should raise the point with your insurers, as if the present value is only, say, £100, the premium should be less.

* * * *

Frame Breakage.

Mr. Hubert H. Hooke, Swanage, writes:—'I have a 770 c.c. B.S.A. sidecar outfit fully insured. Last week whilst riding alone to pick up my passenger, and travelling at not more than 6 m.p.h., a young child dashed out from a side road almost into the outfit. I applied brakes and shut throttle and locked motor cycle sharply to right, causing a very severe skid which broke the frame in three places. Fortunately I did not touch child and a more serious accident was avoided by the handle-bar falling over to the left on to the sidecar. The insurance company denies responsibility, as there was no collision, and alleges a weak or faulty frame. Could you kindly advise me?"

There is no doubt whatever that under such circumstances the damage is not such as is covered under the ordinary motor cycle policy.

If the skid had caused the machine to come into contact with the kerb or some other object the breakage would have been understandable, and come within the cover granted by your policy.

ONE DAY TRIAL IN SCOTLAND.

THE one day reliability trial organised by the Scottish Western M.C. took place under exceptionally unfavourable weather conditions when the competition for the James Shield was stronger than ever.

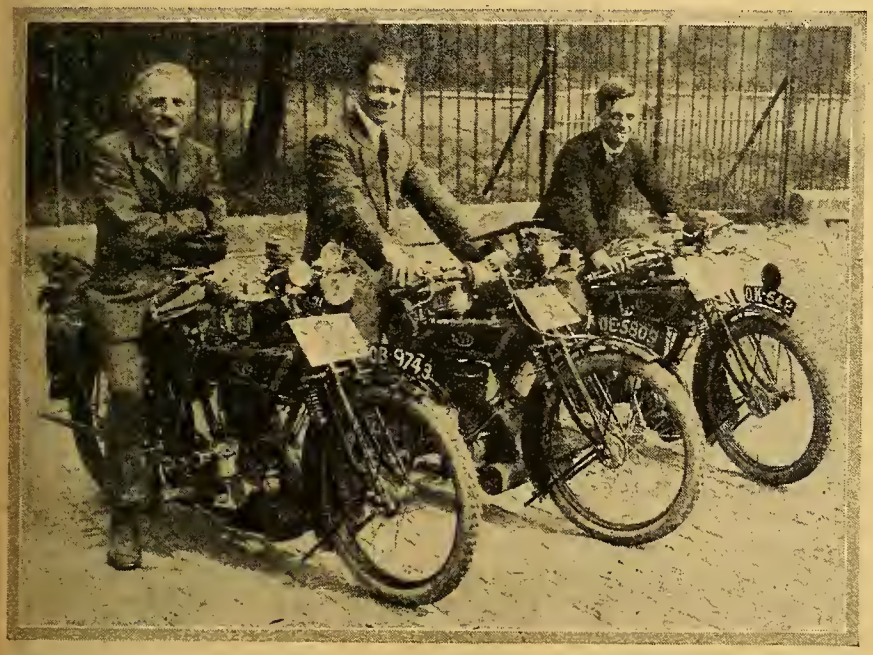
Argyllshire roads are test enough for any motor traffic in the ordinary way, but when the club officials include such roads as the Rest and be Thankful, Glendarnal, Ballochandrain, Hell's Glen and Auld Glennie Mhor, with weather such as experienced recently, it is a trial indeed.

Fylestone was the first observed hill, but proved of little trouble to anybody, and Glen Douglas failed to find any failures, although MacCradie, who was riding a Bradbury, had trouble with his tyres in the non-stop section, and D. Wright, who is the present holder of the shield, was in trouble at the bottom of the Rest with his sidecar connections; and, save up at the flying check at the top of the Rest, almost all of the solo men had time to waste, but most of the sidecar machines had to ride hard to be in time. The exceptions were: Geo. Grinion (989 Harley-Davidson sc.), Mrs. Duncan Bell and B. Brown (799 A.J.S. sc.), and K. Sanderson (976 Brough Superior sc.).

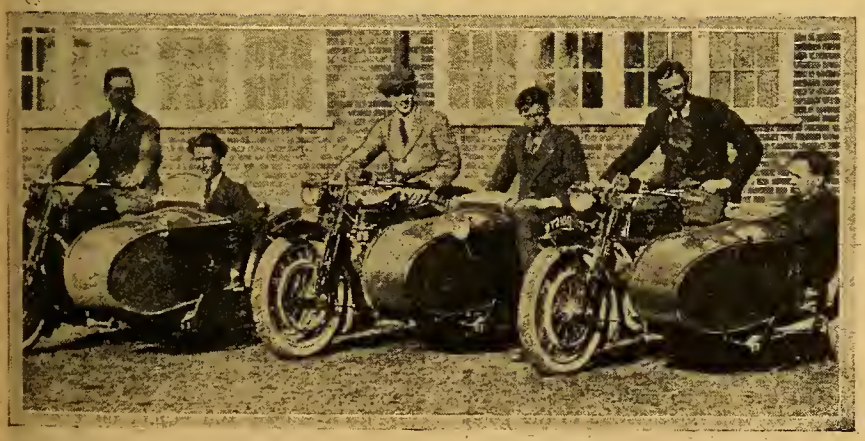
After the lunch check, which was at Strachur, the most difficult part of the route was experienced, and from here to the finish the failures were many—W. Simons turned his outfit over in Hell's Glen. Mrs. Bell, who had been doing well up to Glen Douglas, also came to grief through her lamp falling and fouling the front wheel of her machine.

Of the sixty starters, only about half finished, and the results will show that they have not all got clean sheets.

Members of the O.K.-Junior team, who were awarded the team prize in class B, their total number of marks being 1,447. F. C. North and N. Hall are shown inset in the photograph of their colleague W. Handley, who is seen ascending Portway Hill.



Winners of the team prize in class A. F. W. Applebee, A. R. Edwards and G. S. Davidson who between them gained 1,450 marks.



The P. and M. trio which won class F. Their total number of marks was exactly the same as that of the winning 1,000 c.c. teams. The riders are: R. Lewis, R. Cunningham and G. M. Townsend.

AGGREGATE PERFORMANCES.

Winning a Team Prize in the A.C.U. Six Days Trials.

NEVER has there been such keen competition to win the team prizes as in the recent Six Days Trials.

To secure one of these awards is more than an honour; it is undoubted proof of merit, for, while individual riders may obtain splendid performances, a team of three, nominated before the start of a strenuous six days, has a three to one chance as compared with a single rider.

Only those following the trials and well acquainted with the competitors can obtain a true idea of the anxiety and keenness of the men in the various teams. Before the first day is concluded every team rider knows by heart the numbers of his fellow-competitors in the same class. To see what their rivals have done is the team man's first consideration when notices are posted showing the day's losses in marks—and so it goes on all the week, until on the last day every man knows his team's chances exactly.

This year there were twenty teams competing for five prizes. In Class A (250 c.c.) New Imperial, Levis, and Sun Vitesse teams were nominated, and in Class B (350 c.c.) there were five teams—Raleigh, Allon, A.J.S., O.K.-Junior, and Connaught.

Only Two Teams in 500 c.c. Class.

Class C (500 c.c.) only attracted two teams, but there were four in the 600 c.c. sidecar class and six in the large sidecar group. Unfortunately, there were insufficient entries for team competition in the large solo and the cycle car classes. Sunbeam and Ariel riders competed against each other in Class C; P. and M., Sunbeam, New Hudson, and Rudge in Class F (600 c.c. sidecars); and Martinsyde, B.S.A., Harley-Davidson, A.J.S., Matchless, and Ariel in the big sidecar group.

How close was the competition will be judged from the total number of marks secured by the respective teams. In Class A only three marks separated the winning Levis team from the New Imperial aggregate of 1,447. The O.K.-Junior trio won the Class B prize by a margin of two marks; the Sunbeam riders had an advantage of four over the Ariel men in Class C and in Class G (1,000 c.c. sidecars), the Harley-Davidson and A.J.S. teams actually tied with a score of 1,443 marks each. Third in this contest was the Martinsyde trio with 1,437 marks.

In the 600 c.c. sidecar class the P. and M. team won by an easier margin, securing 1,443 against the Sunbeam sidecars' 1,419.

The marks lost and gained by the riders in the Levis and New Imperial teams were given in last week's issue. From the tabular results published one finds that the three New Imperial riders lost twenty-

Aggregate Performances.—

eight marks on time. This was due to an error on the first day of the trial, when, after negotiating very difficult country, the riders overlooked the 15 m.p.h schedule speed and arrived at a check too early, and were therefore penalized twenty-eight marks. The only other marks lost were on silence, where everybody was penalised. Horton and J. Wilkins, who, with B. Kershaw, formed the team, were awarded bonus marks on hills, and all three secured bonus marks in the speed test. Since only three marks divided the two teams, it is obvious that the New Imperial lost the prize entirely through being too early at a check.

The Levis team performance was consistently good. The riders were G. S. Davison, A. R. Edwards, and F. W. Applebee. None secured bonus marks on hills; in fact, the last-mentioned of the trio lost ten marks. They each lost four marks, against the New Imperials' three, on silence. In the speed test they secured thirty-two marks, against the New Imperial score of thirty-three.

Won on "Condition."

The total score of the 350 c.c. team winners—the O.K.-Junior—was lower, by three, than that of the 250 c.c. Levis team. Here, again, the results were very close, the O.K. team scoring 1,447 and the A.J.S. 1,445. The riders were: A.J.S.: E. W. Choldcroft, H. F. Harris, and C. W. Hough; and O.K.-Junior: F. C. North, N. Hall, and W. Handley. None of them lost marks on time, and on hills two of the O.K. riders (F. C. North and W. Handley) secured bonus marks, while E. W. Choldcroft (A.J.S.) lost five marks under this heading. On silence the O.K. riders were also one up over their competitors on the A.J.S. Thus before the speed test and examination the O.K. team was leading by three points. Considering that the A.J.S. machine is a stable companion of the famous T.T. winners, it is not probable that the O.K. two-stroke riders hoped to maintain their advantage after the speed test, and it may be mentioned that had the speed test only decided the results the A.J.S. team would have won. The A.C.U. officials are wise, however, and debit marks on condition, and this is where the O.K.-Junior scored. On speed no less than twenty-eight bonus marks were secured by the A.J.S. riders against nine of the O.K. men, but on condition the former team lost ten marks against five of the O.K. Thus it will be seen that the O.K. team won on condition. The two-stroke engines fitted were of 16.3% smaller capacity than the four-stroke engines of the Wolverhampton machines.

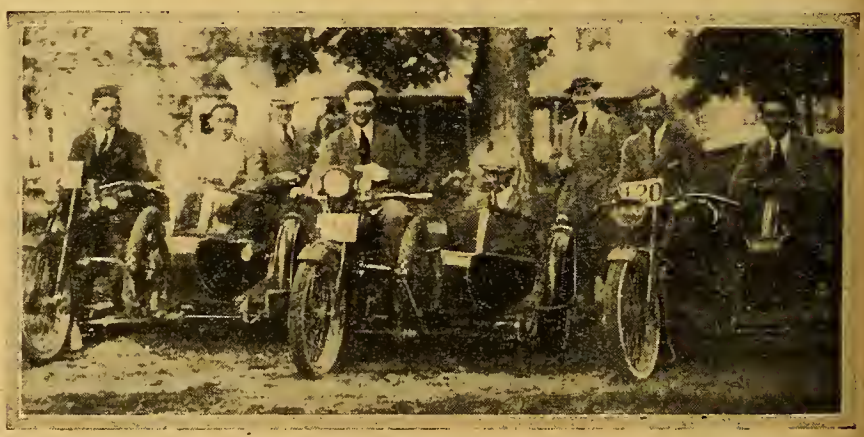
500 c.c. Solo Class.

Next comes the Sunbeam-Ariel contest in Class C. The Sunbeam riders were G. Dance, A. Bennett, and C. Greenwood, the two first-mentioned, at least, men with international reputations. Representing the Ariel were A. Rollason, F. A. Longman, and W. T. Woodcock, all riders long experienced in trials riding. On hills the Sunbeam men secured ten bonus marks against the Ariel riders' fifteen, neither team losing any on time. Dance and Bennett each lost two marks on brakes, and all three of the Ariel riders also lost two marks each. This left the Ariel team with three marks to the good. The silence test penalised the Sunbeam men five marks each—total fifteen—compared with their opponents' total of thirteen, so the Ariel had still a lead of five marks before the speed test and examination.

Dance averaged 52.3 m.p.h. on Brooklands, Bennett 49.9 m.p.h., and Greenwood 48 m.p.h. The Ariel riders were not so fast on the whole, although Wood-

With a total number of 1,458 marks the above Sunbeam riders were awarded the team prize in Class C. Inset are A. Bennett and G. Dance. C. Greenwood is shown making the ascent of Mow Cop.

Besides tieing with the Harley-Davidson team in class G, one member of the A.J.S. team F. W. Giles (on left) won the Centre Premiership. In the centre H Poole, on the right O. Wade.



Equalling the A.J.S. aggregate, the Harley-Davidson riders share the honour of winning Class G. From left to right: T. R. Allchin, G. Baxter and C. W. Johnson.

Aggregate Performances.—

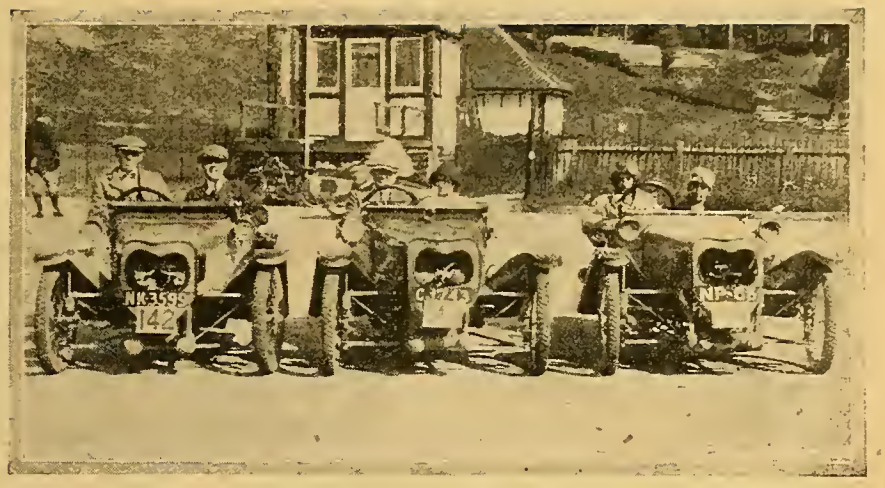
cock averaged 48 m.p.h. and his colleagues 46.3 and 44.2 respectively. The Sunbeam total bonus on speed was twenty-nine, against the Ariel's score of eighteen, and on condition the Sunbeams lost two, while the Ariels came through the examination without loss of a mark. Thus the Sunbeam team won by the narrow margin of four marks by the bonus marks gained by Dance's speed, which were more than enough to wipe out the Ariels' lead of five marks and the loss of two on condition.

600 c.c. Sidecars.

In the medium-sized sidecar class the contest was between P. and M. and Sunbeam. The New Hudsons had lost one of their team before reaching Brooklands and the Rudge team had suffered misfortunes during the week. The P. and M.'s had engines of 555 c.c. against the 599 c.c. of the Sunbeams, and the riders were :—P. and M. : P. Cunningham, L. Lewis, and G. M. Townsend; Sunbeam : T. C. de la Hay, P. W. Bischoff, and R. Brown. None of the six riders lost marks on time, but on hills the P. and M. four-speed machines secured ten bonus marks and the Sunbeams lost twenty. This gave a lead of thirty marks to the Cleckheaton production. On brakes all but T. C. de la Hay lost two marks, which test brought the P. and M. gain down to twenty-eight. The silence test penalised the P. and M.'s fourteen, against eight of the Sunbeam, reducing the P. and M. gain to twenty-two. On examination none of the six riders were penalised, thus it was left for the speed test to decide the winner, although it is fairly obvious that the P. and M.'s would have had to be very slow indeed and the Sunbeams very fast for the latter to gain an advantage. There was just the chance that a P. and M. would fall out during the twenty-five laps. But it did not, in fact, two of the P. and M.'s were faster than any of their opponents in the other team, and the total bonus marks on speed for the respective teams were : P. and M., thirteen, Sunbeam eleven; thus the P. and M. riders actually increased their advantage, winning the Class F team prize by twenty-four points.

1,000 c.c. Sidecars.

In the big sidecar class competition was closest between the Harley-Davidson, the A.J.S., and the Martinsyde teams. The riders were :—Martinsyde : A. A. Symes, J. T. Bashall, and W. H. Bashall; Harley-Davidson : G. Baxter, T. R. Allchin, and



Although having no team competitors, the three Morgans made a splendid aggregate performance in the Six Days Trials. From left to right are: S. Hall (1096 Morgan-M.A.G.), H. F. S. Morgan (978 Morgan-Jap) and W. Carr (1090 Morgan-Anzani); all secured gold medals with a surplus of marks.

C. W. Johnston; A.J.S. : F. W. Giles, H. Poole, and O. Wade. No member of the three teams lost marks on time; one of the A.J.S. riders lost five marks on hills, but the other two (Giles and Wade) gained ten bonus marks and one of the Harley riders (T. R. Allchin) gained five. Thus these two teams were level with an advantage of five over the Martinsydes. On the brake test the Martinsydes lost a total of six, against ten of the Harley-Davidsons. The A.J.S. lost no marks, and therefore had an advantage over the Harley-Davidson team of ten, and over the Martinsydes of eleven. The last-mentioned team lost a further fifteen marks on silence and the Harley-Davidsons a further thirteen, while the A.J.S. team scored in this test, its only loss being seven marks. Thus before the speed test and final examination the Martinsydes were twenty-one on the wrong side of the 450 credited at the start, the Harley-Davidsons were eighteen down and the A.J.S. two. It will be seen that the A.J.S. had a lead of sixteen over the Harley-Davidson trio. It remained for the speed test to decide the issue for all that, for neither team lost any marks on condition, although the Martinsydes were debited with a further two. The Harley-Davidsons averaged 50.9, 42.7, and 36.7 m.p.h. respectively scoring twenty-one marks, against the A.J.S. total of three. This low total bonus was due to losses by one of the team. F. W. Giles put up a wonderful ride at 50.9 m.p.h. with a touring sidecar, and his bonus was twelve, but O. Wade lost eleven in the speed test and Poole secured four. Thus the Harley-Davidsons regained the eighteen marks previously lost and secured three marks in addition. The A.J.S. team, by Wade's losses, came near to losing honours. They were two down before the speed test, and Wade's loss of eleven brought this to thirteen. Giles gained twelve bonus marks and Poole four, between them making up for Wade's deficit, and bringing their total to the same as that of the Harley team, viz., 1,443 marks.

Although there was no competition, and, therefore, no team prize in the 1,100 c.c. cycle car class, the trio of three Morgans, driven by W. Carr, H. F. S. Morgan, and S. Hall, calls for special comment, since it gained a bonus total of thirty-two marks, being thus twenty-nine marks ahead of any other passenger team and topping the best solo team by fourteen marks.

Special credit is due to the men and machines securing the team prizes, for readers on perusing the above will appreciate that in no case were results due to luck. Reliability, hill climbing, speed, and condition all played their part, together with that expert riding which is so important in competitions.

MODERN HIGH DUTY VALVES.

THOSE of the old school of riders will remember the troubles which occurred in early days owing to defective valves, partly due to poor design, and partly due to defective material.

Gradually, however, improved materials and more scientific designs eliminated valve troubles till they became the exception rather than the rule in touring engines, but the fear of breakage remained and it has been the main cause of the comparatively slow development of overhead valve units. Even nowadays trouble is not unknown

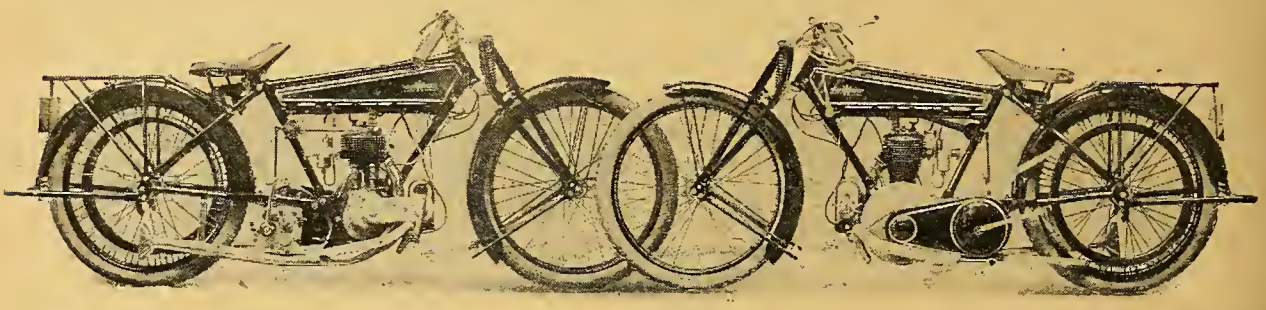
During the course of the war the introduction of high efficiency engines, especially for aircraft work, produced an urgent necessity for really reliable valves, and research in this direction has enabled enormous improvements to be made till at the present day it is possible to construct a valve which is to all intents and purposes unbreakable, and which will stand prolonged use without the necessity of regrinding. There are now several firms which specialise in the manufacture of valves, and amongst these the Celerity High Duty Valve Co., of 113, Kingston Road, Staines, Middlesex, has had wonderful successes both on road and track.

We know of several racing motor cyclists who have succeeded in eliminating valve trouble by fitting Celerity valves, and we have ourselves had most satisfactory results with them in a particularly hot running engine.

An almost entire absence of pitting is a very noticeable feature of the steel from which these valves are made, and the confidence of the manufacturers is exemplified by their guarantee to replace free of charge any valve which breaks or burns.

A FRENCH 500 c.c. SINGLE.

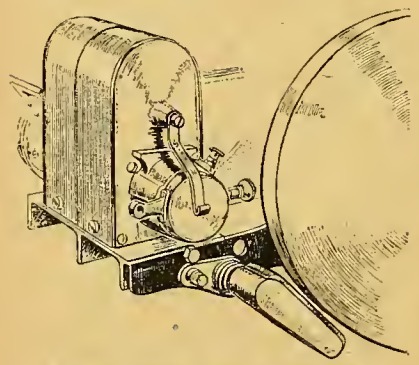
Big Output Foreshadowed of new Gnome and Rhône Three-speed Outside Flywheel Double Purpose Machine.



Of trim and symmetrical appearance, the 499 c.c. Gnome and Rhône as seen from both the valve and flywheel side. In future models a silencer will be fitted.

MAINLY following standard lines, but possessing several attractive features, the Gnome and Rhône is about to appear in the British market. This machine was first described in our report of the Paris Show last year, but since that date it has undergone a good many improvements.

Though of French construction, being built at the famous Gnome and Rhône



Splitdorf magneto and flywheel brake.

works which turned out 30,000 aeroplane engines during the war, the 499 c.c. Gnome and Rhône was designed by an Englishman, Mr. K. Bartlett, who has distinguished himself in French competitions on both this machine and the A.B.C. (which is also the company's production). He competed in the *Tour de France* of 2,300 miles on the machine under review without the loss of a single mark.

Designed for Cool Running.

A 499 c.c. single-cylinder air-cooled engine, of 85 × 88 mm. bore and stroke, with outside flywheel, provides the motive power. The whole of the interior of the cylinder is machined, and the radiating fins are especially deep, particularly round the exhaust port, while there is an ample air passage round the valve chest. There are no separate valve guides, these being cast integrally with the cylinder.

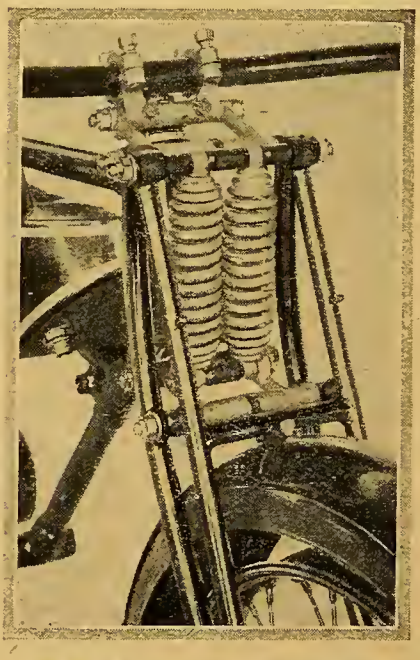
In the timing gear a single camshaft is employed; double roller bearings are provided to the connecting rod, and there is a double row ball bearing for the main shaft on the transmission side.

It is worthy of mention that the method of securing the gudgeon pin by means of two spring rings fitted in grooves in the latter and engaging with corresponding grooves in the piston boss renders it safe and yet easy to detach.

Easy Starting Air Strangler.

Mixture is supplied by a simple single lever Gnome and Rhône carburetter provided with a strangler to the main air intake, thus ensuring easy starting under all conditions. The air inlet is cone-shaped, and is carried well to the rear of the carburetter.

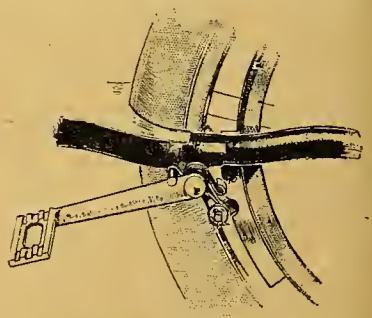
Transmission is by chain and belt, a Sturmey-Archer three-speed gear box being employed. The primary drive is "outside" the flywheel and is enclosed in a sheet metal case.



The spring forks of the Gnome and Rhône, the links of which are steel drop forgings.

Two Foot-controlled Brakes.

Originality is shown in the design of the brakes. One of these, of the direct-acting variety, is controlled by the rider's left heel, and consists of a large shoe applied to the belt rim, while the other is actuated by the rider's toe, and is



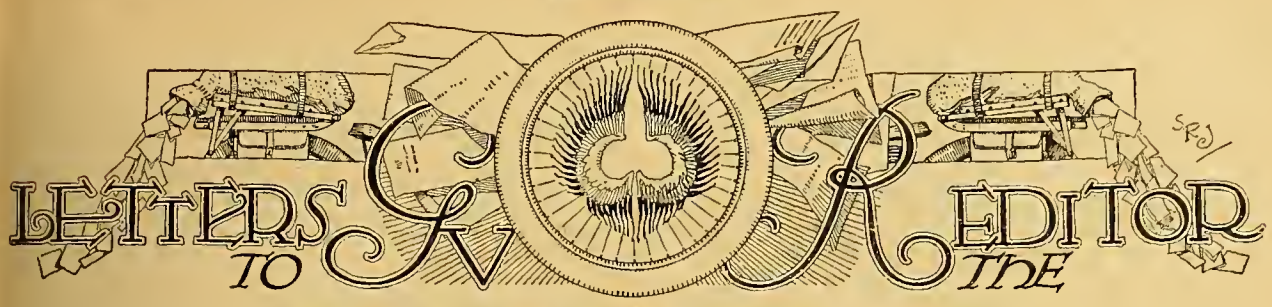
Simply-designed rear wheel brake.

applied directly to the periphery of the flywheel, the pedal being on the offside footboard. Good spring forks are employed, and caps are provided to keep wet and grit from the hubs.

In the first model seen over here the magneto is controlled by a lever on the tank, but in future models this will be handlebar-controlled. It is interesting to note that all control wires are concealed and pass through the handlebars, and that sidecar lugs are incorporated in the frame.

Extensive Production Programme.

The Gnome and Rhône is to be made on mass production lines, 10,000 machines being suggested for next year and 20,000 the year after; the first batch is practically ready for delivery. It is hoped to produce the machine at an extremely moderate price. English concessionnaires have not yet been appointed, but the export of the machine is handled by Overseas Sales, Ltd., 21, George Street, Hanover Square, London, W.1.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

COSTS OF A CONTINENTAL HOLIDAY.

Sir,—I have read in your columns the correspondence respecting the cost of a holiday with a motor cycle. I have just returned from a fortnight's trip in Western France, and perhaps a few details of my expenses may be of interest to your readers.

I live some twenty miles from Southampton, so it was convenient to cross from that town. I paid 63s. 5d. for a first-class return ticket to Cherbourg, and my machine cost 7s. 11d. each way. I avoided the expensive coast-town hotels, but usually went to the best hotel in each place. I find the average charge per day for dinner, usually of soup, fish, meat, vegetables, fruit and cheese with cider, bed, breakfast, consisting of coffee with rolls and butter, works out 19 francs 30 centimes, or, at an exchange of 55 francs to the £, about 7s. 4d. My lunch, on similar lines to the dinner, would average 8 francs 50 centimes, or 3s. 2d. Tips are not included. So the tourist can get along quite well at about 13s. per day. Of course, fashionable seaside towns must be avoided unless one is prepared to double expenditure. There are, however, plenty of small towns in Normandy and Brittany where the tourist can do himself very well at an extremely modest cost.

The price of petrol varies in the different districts, but 9 francs per can of 5 litres is about the average. This is, roughly, 3s. per gallon.

A *permit de circulation* available for three months costs 2 francs. It is obtained without formalities at the Customs House at the port of debarkation on exhibition of the tourist's return ticket to England.

The roads in Western France are of varying quality; the worst are the main roads running to Paris. If the secondary roads are chosen a good surface is generally found.

Isle of Wight. SAFETY FIRST.

FUEL CONSUMPTION OF TWO-STROKES.

Sir,—As an Allon rider I was much interested and surprised at the letter of "Nolla Syadlla."

My machine is a 1919 model, and with the carburetter fitted by the makers I could not get more than 50 m.p.g.; so I fitted a Binks and using 00, 0, and 7 jets average about 70 m.p.g. Your correspondent's statement that he was doing 112 m.p.g., which was afterwards increased to 132 m.p.g., by the use of "Fam-O," has fairly taken my breath away; I should like to hear how he attained even the former result—type of carburetter fitted, speed that he runs at, etc.

Upton-on-Severn. OLD BILL.

SILENCE!

Sir,—In view of the recent campaign against noisy motor cycles at Brooklands, I feel I must let you know the result of a few experiments I have recently carried out with considerable success. All that is necessary is to procure a selection of camphor balls in sizes varying from 1-2 cms. in diameter. These may be purchased from any chemist. A small quantity of permanganate of potash is also required. Dissolve 20 grains of the latter in 2 ozs. of water, and then grasping one of the balls in a pair of pliers immerse it in the aforementioned solution for 10 seconds. The ball should now resemble a fully ripe grape. My experience is that best results are obtained with 1 cm. balls for 500 c.c. machines, 1½ cms. for 750 c.c., and 2 cms. for big twins. I have not experimented in the 350 c.c. class yet, but assume that 0.75 cm. would be roughly correct.

All that is now necessary is to place the treated ball in the expansion chamber or fishtail. The results are quite amazing. My machine is a Norton, the flywheel of which has a decided tendency to revolve quickly, but on treating my fishtail as described above all that was audible was the pleasant "zipp" of the tyres as they sped me along.

I have used this method during my racing this season at Brooklands, and I am sure that all those who happen to know me at that delightful spot will agree that my machine was easily the quietest on the track, even though it was fitted with a "mouse-trap" carburetter. This was doubtless due to the natural repulsion that a mouse bears towards camphor.

The blue smoke caused by the permanganate has the effect of making the gentleman who is about to overtake you imagine that your plug is about to soot up, and he consequently closes down thinking he has you cold. This one property gave me three races. Other advantages are more m.p.h., 100 per cent. more m.p.g., lubricating oil not required, no tyre wear, greater riding comfort, safety from seizure (both mechanical and lawful), etc., etc. It is not on the market yet, but is sure to be before long! LIEUT. R. T. GROGAN, R.N.

INSIDE VERSUS *OUTSIDE FLYWHEELS.*

Sir,—Recently I was an interested observer of an argument relative to inside and outside flywheels. According to points scored by the party in favour of outside flywheels it would appear that this arrangement was all that could be desired. If this is so, I am curious to know why it should not be adopted by manufacturers of such machines as the A.J.S., Triumph, Sunbeam, Norton, etc., all of whom specialise in inside flywheels, and, incidentally, have turned out several winners in various races.

I would like to put a few questions on the subject:—

What actual advantage has an outside flywheel over an inside?

Is crankcase compression minimised at all in the outside flywheel type?

Does oil drag on the inside wheel type count for anything at high speeds?

Is any advantage gained in the outside type by having a large diameter wheel for the same weight, and consequently a higher peripheral speed? G. WALLER.

VALVES THAT CONTRACT WHEN HOT.

Sir,—I have noticed in my 550 c.c. Triumph that with the engine thoroughly hot the gaps between the valve stems and tappets are wider than when cold.

Careful measurement, however, proved this to be due to the expansion of the cylinder and crank case being greater than the valve stems, and so giving the impression that the valves had contracted. The tappets being to some extent insulated from the rest of the engine would remain cool and scarcely expand at all.

I rather think that if those whose valves apparently contract on being heated were carefully to caliper the length when cold, and then bring to a working heat in a gas flame, they would find a considerable expansion.

H. W. BAKER.

WHERE CAN SIDECARS BE IMPROVED?

Sir,—The greatest improvement in sidecars—incorporating all and more than your correspondents desire—is the Scott Sociable. It is surprising that this fascinating little vehicle is not more widely known and appreciated among sidecarists, so completely does it overcome the inherent drawbacks of the sidecar outfit without corresponding disadvantage or increased running costs. It is essentially to sidecarists that it makes appeal, and in particular to those who wish at times to carry three aboard, in reasonable comfort. My fellow motor cyclists will appreciate the point when I recall the weather conditions of August Bank Holiday Sunday. I was on the road most of that day in company with my wife and daughter, and we blessed "Scottie." My interest is that of one who enjoys and appreciates the brainiest little "'bus" on the road. TWO-STROKE.

Newbury.

TEMPERAMENTAL ENGINES.

Sir,—The sometimes fertile mind of "Ixion" has been concentrated, I believe, upon a question which has puzzled a good many readers of your admirable journal, and, in my humble opinion, he has *unwittingly* solved the problem. I must admit that it was his journalistic flair, and not his mechanical ability that was responsible. Merely his happy choice of words.

I refer to the temperamental Rudge. "Ixion's" words were "Super Rudging." Super! That is the key to the whole question. I possess an I.O.M. Rudge. Sometimes it is below par. Sometimes it Rudges. Sometimes it super Rudges. All within a space of a few miles.

The Rudge is the only machine, I believe, which is identical with the T.T. model in every respect. Even to the separate oil tank clipped to the down tube. The air intake almost touches the centre of a broad plane surface, the oil tank, to wit. Sometimes the wind strikes this surface, shoots across, and pumps out the mixture. My Rudge is below par. Anon, a position of equilibrium is reached. My engine Rudges. Again, the wind veers round, relatively to the machine; I get forced induction owing to the ricochetting effect, and I super Rudge.

Some of the Brooklands people have noticed that oil tanks in similar positions have most peculiar effects on the induction system.

This is the only reason which satisfactorily accounts for the undoubtedly temperamental running of my Rudge. Perhaps some other Rudge riders will investigate on the same lines. I.O.M.

Stockport.

HUB LUBRICATION.

Sir,—We are interested to see a friendly reference to our hub lubricant in *The Motor Cycle*. We venture to point out, however, that we have two grades of this material, and that the "stiff" is the one specially adapted for hubs, fork spindles, and steering heads. The soft grade, on the other hand, is most suitable, and is widely used, for motor-cycle gear boxes, such as the Sturmey-Archer, Indian, and Clyno.

If by any chance a motor cyclist uses soft hub lubricant for the hubs, he may expect, except in cold weather, to be troubled with leakage from the ends, which makes a nasty mess on the tyres, for which we may be blamed, although unfairly. PRICES' COMPANY, LTD.

SOLDERED BOWDEN NIPPLES.

Sir,—Probably the chief reason why Bowden cables snap so readily at the soldered nipple is that the acid soldering fluxes one sees so regularly used rapidly eat away the strands. After using acid flux (such as Baker's mixture) one should give the part a thorough washing with water, and then smear with oil.

But much better would it be if every motor cyclist knew and used Blake's Tube Flux, which is an ideally prepared composition for non-corrosive soldering, in a particularly convenient type of tube. It is obtainable from Messrs. Mosses and Mitchell, Chiswell Works, 122-4, Golden Lane, London, E.C.1, at 1s. tube, and for all sorts of soldering jobs incidental to motor cycling the writer is glad to have made its acquaintance. CHARLES REID.

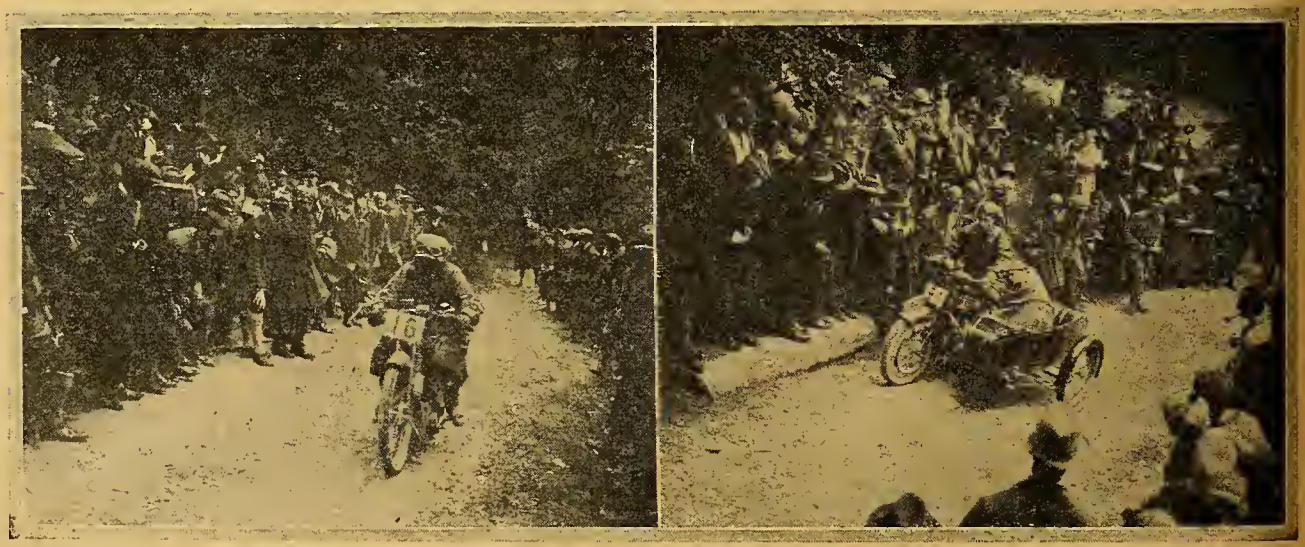
CHAR-A-BANCS ON NARROW ROADS.

Sir,—After the dreadful accident recently on the Romney Marshes, is it not clear that regulations should be put into force with regard to the routes along which char-à-bancs may be allowed to travel and as to their speed?

I have driven a medium-powered sidecar outfit along this same road some eight or ten times during the past fortnight, and feel sure I am only voicing the opinion of all who have also traversed this route when I assert that it, together with many others, is totally unfit for char-à-banc traffic.

From my own personal observation I can state that, at the spot where the accident occurred, there is barely room for two ordinary cars to pass one another without one or both going on to the grass. What chance, then, has larger traffic of doing so in safety?

Such routes, I maintain, should be absolutely barred to char-à-bancs, not only on account of the danger mentioned,



Keen interest in the climbing was shown by spectators on Alms Hill, the last severe test hill in the Six Days Trials.

Mrs. O. M. Knowles (349 A.J.S.) whose riding was applauded on many hills. She was awarded a gold medal.

P. Pehrson (499 Dunelt sidecar) making a clean ascent of the hill. He also gained a gold medal.

but also on account of the damage admittedly done to roads which were never constructed for, nor intended to be used by, such heavy and fast vehicles.

The proper place for char-à-bancs is on the great highways and on them alone, and surely under no circumstances whatever should they be allowed to exceed a speed of 15 miles per hour. Many at present exceed 20.

I am far from wishing to curtail in the slightest degree the pleasure of the many, but for their own safety, as well as the safety of other users of the road, something ought to be done. Surely the drivers themselves would prefer the wider thoroughfares.

In conclusion, I should like to put in a word for these drivers. As a rule, they are very clever and show much consideration for those who are manipulating smaller craft.

Sussex. TOURIST.

GOGGLES FOR THE SPECTACLED RIDER.

Sir,—Having to wear spectacles I take care to choose a pair of goggles which will fit comfortably over them, and the particular pair I have at present have curved glasses. I do not suffer any of the inconveniences stated by your correspondents up to date, but find that when I take the goggles off there is quite a difficulty in focussing my eyes; I can see perfectly well with the goggles on, but as soon as I take them off it is just as though I were looking through someone else's glasses, and it is a matter of some 30-50 seconds before I can see properly. AWAHAWAHAWOO.

N. Devon.

CANCELLED COMPETITIONS.

Sir,—I am writing to deplore the growing habit of motor cycle clubs postponing or cancelling competitions at the last moment through insufficient entries. I engage in a certain amount of competition work, and three times in the last few weeks events have been cancelled at the last moment.

Not only does the procedure give the club a bad name, but it is most annoying after having prepared a machine specially for an event, and made arrangements for a day's absence, to receive a letter the night before stating that the event is cancelled. Occasionally, too, I have the option of entering more than one event on a given day, and the cancellation notices always arrive too late to enable me to enter for anything else.

Apparently clubs will not run events unless they are assured of being financially on the right side, but would it not be a better policy to run an event, however few entries, and if a loss be incurred, to avoid an event of that nature in future? One club of which I am a member recently carried through an event with only six entries, but surely that is the right spirit, and at least shows consideration for the entrants. The club is one of those that I *shall* rejoin next year, but I will think seriously before rejoining those which continuously cancel or postpone events.

E. C. GORDON.

A NARROW ESCAPE.

Sir,—Possibly the enclosed may interest your readers. It reminds me of a very narrow escape. When passing through the New Forest recently on a motor cycle and sidecar, I felt a sudden jar, but, thinking perhaps I had dropped into a pot hole, I did not trouble to stop; however, on arrival at Gosport, I found that one of the back stays of the motor cycle had been broken, but did not then know it had been pierced by a bullet which was discovered on my visit to the garage to have the stay repaired.

The bullet (actual size) which damaged Mr. Kempton's machine whilst riding in the New Forest.

GEORGE KEMPTON.

TOO INDEPENDENT BUSINESS METHODS.

Sir,—A friend of mine desired to buy one of the best known of our three wheelers, and wished to have a body to his own design. On enquiring as to the price of the chassis he was informed that only the complete machine was sold.

Could any policy be more idiotic and shortsighted? Had the gentleman in question been in need of a large car, a chassis of course would have been listed as a regular thing, but, as the requirements only amounted to a three-wheeler—oh, no!

As a result, my friend (who is determined to have his own design of body) will have to scrap the standard body and substitute the other. L. W. G. HARTLEY.

HOT WEATHER LUBRICATION.

Sir,—"Ulysses" complains of the mechanical oiling system of the 595 c.c. Douglas in a hot climate.

I experienced the same trouble in this country in the hot weather of last summer, also suffering a partial seizure until I tried Castrol X.L. oil. As soon as this oil was in the sump the trouble disappeared and has never recurred.

I take it that "Ulysses" has tried the effect of lessening the tension on the control spring of the pump.

LESLIE EVELEIGH.

ON A SINGLE-GEARED TWO-STROKE.

Sir,—As I enjoy the main item on Thursday's breakfast menu, I notice friend "Ixion" comments on the number of Levises upon the road "doing the knots." I recently went from here (Croydon) to Lytham, Lancs., *via* St. Albans, Coventry, Lichfield, Stafford, Tarporley, Warrington, Ormskirk, in exactly 12 hours running time (roughly 250 miles). This was my first long ride, and my mount was a single-gear 211 c.c. Levis (5¾ to 1 gear).

Croydon. LITTLE MARVEL OWNER.

GEAR RATIOS FOR A SCOTT SQUIRREL.

Sir,—Mr. E. Hodgkinson asks for information regarding the most suitable gear ratios for the Scott-Squirrel. It is hard to better those provided by the makers, *i.e.*, 3.75 and 5.4, for the top and bottom respectively. With these gears the machine will do everything short of climbing the most extreme of freak hills. The 5.4 to 1 gear will take the machine up a 1 in 3 gradient, and it is also ideal for traffic riding. On the other hand, it is not easy to get a smooth start on a steep hill.

I should not advise altering the ratio between top and bottom gears by changing the low gear sprocket. There is no need for a much lower bottom gear, and any alteration can be made by merely changing the driving sprocket. This of course affects the high gear as well.

In my own case I obtained a definite and immediate increase of 6 m.p.h. maximum speed on top by substituting a 20-tooth for the 22-tooth driving sprocket supplied, *i.e.*, by slightly lowering the gears; but this may not apply to every machine.

If Mr. Hodgkinson is about to order a Squirrel, I should advise the standard gears of 3.75 and 5.4. He can alter them later if he so desires.

The top gear will take him up most main road hills at 50 m.p.h., and when he sees many riders of four-stroke machines, whose top gear is lower than his low, changing down on hills up which he can hum on top, he will bless the day on which he bought a Squirrel.

N. WILLIAMS.

Sir,—In reply to Mr. E. Hodgkinson's query regarding the ideal gear ratios for the Scott-Squirrel, I think he will find the usual top gear perfectly satisfactory, but I would recommend him to have the 6.9 low gear. Last year I ran a Squirrel for six months, and won several medals at both speed and reliability trials, using the 6.9 low gear, and found it sufficiently low to climb all the rough-surfaced freak hills we had to climb, and also could get about 40 m.p.h. on it. My new Squirrel has the 5.4 low gear ratio, and although it is simply astonishing how well it pulls on this gear (I occasionally fit a Scott sporting sidecar on it), I really think the 6.9 would be the better of the two for anyone who has not had previous experience with this model. WATER-COOLED.

Cardiff.

EASY PAYMENTS.

Sir,—I recently had occasion to ask a large corporation what their terms were for certain household fitments if supplied on the "hire-purchase" system. They told me they charged five per cent. interest for monthly payments spread over three years. They arrived at the monthly payment by adding fifteen per cent. to the principal and dividing the sum by 36. They were a little surprised when I told them that, as a matter of fairly elementary mathematics, they were charging, approximately, twelve per cent. per annum for the accommodation.

This led me to inquire into the actual rates of interest charged for "easy payments" in various trades. It may interest your readers to know that the rate charged by the majority of motor cycle factors lies between ten and twelve per cent. I will give two instances:—Firm A adds 10 per cent. to the cash price, requires a deposit of a quarter of the sum, and payment of the remaining three-quarters in 24 equal monthly instalments. The rate of interest is about 12 per cent. Firm B requires a deposit of ten per cent. of the cash price, and either twelve monthly payments of 79/1200ths of the cash price, or eighteen of 9/200ths. In each case the actual rate of interest charged is about 11 per cent.

These rates may not be excessive, taking everything into consideration, but it is as well that prospective purchasers should know what they really are paying when they accept these terms. The methods of calculation will be found in Chambers's "Mathematical Tables" (in the "Explanation" at the beginning). H. G. LE MESURIER, Lt.-Col.

CAPACITY HANDICAPS IN THE SIX DAYS TRIALS.

Sir,—A glance through the entries in Class B in the Six Days Trials will show you that three houses competed in this class (which is for machines up to 350 c.c.) with engines of less than 300 c.c. It is obvious that the A.C.U. cannot make a class for every manufacturer's cubic capacity, but we do think it is only fair that the small engines giving away some 57-60 c.c. in a class should be given a handicap, and we suggest that for the next trials 5 marks for every 10 c.c. should be allotted to those whose engines are below the maximum capacity of that class.

The O.K. Junior engines are of 292 c.c., as also were the Allons and one Connaught.

HUMPHRIES & DAWES, LTD.
(E. H. Humphries.)

THREE-WHEELERS IN THE SIX DAYS TRIALS.

Sir,—An account of the performance of cycle cars in the A.C.U. Six Days Trials, the premier competition of the year, may be of interest to those who wish to compare the performance of various types of passenger machines.

Cycle cars first competed in 1912, when there were five entries (three four-wheelers). Two Enfields, a Morgan, and a G.W.K. obtained gold medals, an A.C. a bronze. In 1913 there were twelve entries (nine four-wheelers). The awards were a gold for a Morgan and a G.W.K. and a silver for a J.B.S.

In 1914 thirteen cycle cars competed (seven four-wheelers). A Calthorpe and a Morgan obtained golds, a Morgan, J.B.S., and A.C. bronze medals.

The next Six Days Trials were held in 1919 and four-wheelers were excluded; there were six entries, but only three awards were made, a gold, a silver, and a bronze, all to Morgans.

In 1920 there were five entries, and Morgans obtained three golds.

In 1921 four-wheelers were again included, but there were only six entries: three Morgans, two G.N.s, and a T.B.; all obtained golds—a quite unique triumph for the cycle cars engaged, but it does not seem to have encouraged the rest.

This year there were again six entries: three Morgans, a T.B., a Scott Sociable, and an L.S.D. The four first obtained golds; the Scott finished the course.

While the number of cycle car entries has decreased, the number of sidecar entries has increased by leaps and bounds. In 1912 there were only six sidecar entries, this year there were 56. On the other hand, the percentage of golds in 1912 was 100 per cent., in 1922 less than 50 per cent.

It would seem therefore that, although the cycle cars which have been entered have of late obtained a better percentage of success than the sidecars, the number of cycle cars competing has been so small (the successful cars being limited to the Morgan, T.B., and G.N.) that the position of the sidecar is not challenged. The heavier and more expensive light car at present hardly comes into competition with the sidecar; it appeals to another class of driver. Until the numerous makers of cycle cars take their courage in both hands and compete with the sidecar, the popularity of the latter is not seriously threatened, though the popularity of the successful cycle car is assured.

H. GEORGE MORGAN.

SIX DAYS TRIALS MARKING.

Sir,—My object in writing to you is to call your attention to the grossly unfair way the awards have been arrived at in connection with the Six Days Trials.

My only failure throughout the event was losing 28 marks for being 14 minutes late at a secret check. Through this I received no award whatever, although I passed every other test satisfactorily, with the exception of losing 4 marks for silencing, and climbed every hill in the trials, including Alms Hill. Further, on looking through the results I find that other competitors losing as many, and in some cases more, marks than myself received a silver medal. Also, a machine that fails on three hills qualifies for a gold medal. Does this represent the true reliability of my machine?

F. C. PARKES.

[An article dealing with the awards in the Six Days Trials appears in this issue. The whole fault would appear to be that gold medals were won too easily by a great many competitors. If this had not been so, the anomaly complained of would not have arisen. This is not the only case where a rider fails to gain a premier award with a total of marks greater than some of the successful ones.—Ed.]

WHERE FOUR-CYLINDERS ARE POPULAR.

Sir,—With reference to "Ixion's" comments under the heading, "Not for us?" it will perhaps interest him and others of your readers to learn that the four-cylinder motor cycle has already achieved quite a vogue in this country (Holland). Both the Henderson and Ace are familiar sights on Dutch roads and cost is no deterrent here, as the Ace with full electrical equipment and 3½in. tyres sells at f.1,200 (£105), whilst the price of the Henderson is only slightly higher.

Both machines are capable of the same speeds as the Talbot car, on which "Ixion" enjoyed his 600-mile scurry, and the Henderson especially is almost as silent as a Rolls.

On the other hand, it is curious to note that the four-cylinder F.N., which was quite popular here in pre-war days, has practically disappeared from our roads. No doubt the absence of electrical equipment on this machine and its shaft-drive have something to do with this.

F. H. LAMPEN.

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POPULAR PROPRIETARY GEAR BOX IMPROVED.

A New Sturmey-Archer Three-speed for Heavy Machines. Shock Absorber Embodied in Chain-drive Model. Kick-starter Mounted Directly on Layshaft.

WHEN one of the pioneers of the countershaft gear box produces a modified type of gear, it is a matter of considerable interest to the thousands who will, as a matter of course, employ this gear box on new model machines.

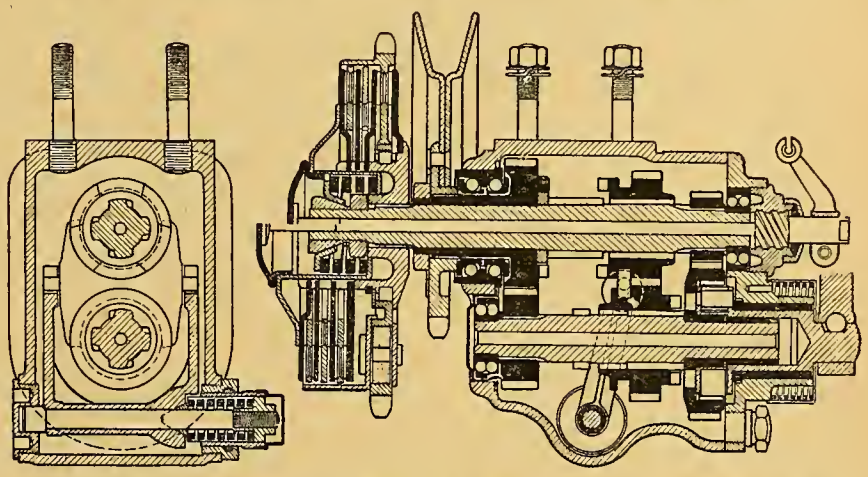
The latest three-speed Sturmey-Archer gear for heavyweight motor cycles is a remarkably neat piece of work; it is smaller, lighter, and more compact than the previous models, and whilst retaining all the advantages of easy changing and quiet running, it possesses several new and distinctive features.

Improved Clutch.

A single adjustable clutch spring now replaces the series of small springs in the earlier type. In addition, a number of rubber rings are inserted in the clutch sprocket of the all-chain model, and the drive is transmitted through these to a series of pegs in the clutch case; this arrangement provides a certain amount of flexibility and shock-absorbing capability. The clutch itself is of the cork-inserted type, having seven discs.

As is usual in Sturmey-Archer construction, all gears are in constant mesh, the intermediate wheels being moved together by a common plate; this plate is operated by a fork lying below the box and is particularly simple and robust in construction. The relief device or delay action mechanism is now integral with the shifter fork spindle in the gear box and is not carried on the control lever box.

Both sliding members in the gear are splined internally and engage with corresponding splines on their shafts when



In the latest Sturmey gear box the kick-starter is mounted on the layshaft and the final chain drive model, illustrated by the lower section of the clutch, embodies a shock absorber.

required. In general layout the box is a replica of the Sturmey-Archer lightweight three-speed gear, and the direct gear is obtained by moving the sliding members to the left so that dogs on the upper intermediate wheel engage with similar dogs on the high gear wheel, locking it to the main shaft by means of splines. Movement to the right disengages the dogs, the drive being through the intermediate wheels, both of which are locked by splines to their respective shafts; a further motion to the right engages dogs on the lower intermediate wheel with recesses in the low gear wheel on the layshaft, locking it to the layshaft, and thus the lowest ratio is obtained. A kick-starter pedal operates by a simple form of pawl mechanism through the low gear wheels, thus avoiding the necessity for an additional kick-starter quadrant. Double row ball bearings are used on the main shaft and the clutch side of the layshaft, plain bearings being used for the kick-starter end of the layshaft. The clutch sprocket revolves on a roller bearing when running loose. Particular care has been taken to avoid oil leakages, and the box appears, both mechanically and as regards compactness, to be a distinct improvement on the already well-known products of the makers.

LIGHTING REGULATIONS UNIFIED.

No Rear Lamps on Solo Machines. Head Lamp Power to be Limited. Earlier Lighting-up Times in Winter.

TO come into operation on January 1st, 1923, the new Lights on Vehicles Bill does not entail any serious alterations so far as motor cycles are concerned.

On bicycles "not having sidecars attached thereto, whether propelled by mechanical power or not, and in the case of tricycles not propelled by mechanical power, only one lamp showing a white light to the front need be carried. In the case of bicycles and tricycles not propelled by any mechanical power, the Ministry may, by order, authorise the use of a single lamp so placed to show continuously without risk of obscuration a white light to the front and a red light to the rear." It seems, therefore, that motor bicycles need not carry a rear red lamp, but a pedal cycle may have to carry a lamp which shows a red light to the rear.

The Bill first of all stipulates that every vehicle on any street, highway, or road to which the public has access during the hours of darkness must carry two lamps showing to the front a white light visible from a reasonable distance, and a lamp showing a red light to the rear. Single-track vehicles are excepted in a later section.

According to the Bill, from April 1st to September 30th the "hours of darkness" is the time from one hour after sunset to one hour before sunrise; and from October 1st to March 31st the time between half an hour after sunset and half an hour before sunrise. This section will repeal the present regulation requiring the lighting of one number plate half an hour after sunset.

A restriction is placed upon the number of lamps to be carried as well as the range of forward illumination. If a vehicle carries more than two lamps showing a white light to the front, the lamps which the vehicle is required to carry by law shall not have a range exceeding 60ft.; while no other lamp may have a range of illumination of more than 150ft.

Indefinite Rulings.

The penalty for a contravention of the Act is not exceeding £5 for the first offence or not exceeding £20 in the case of the second or subsequent offence.

The Act applies to vehicles of every kind, and it seems unfortunate that the regulations are not more definite and that certain specified exceptions may be made at the discretion of the Ministry of Transport. It is to be hoped, therefore, that these powers will not be abused.

It is also worth mentioning that no specific position is mentioned for the lamps; for example, it is not stated that they must show the extreme width of the vehicle or that the rear lamp should be placed on the offside of the vehicle.

CURRENT CHAT

Times to Light Lamps.

Sept.	7th	.. ..	8.3 p.m
,,	9th	.. ..	7.58 ,,
,,	11th	.. ..	7.54 ,,
,,	13th	.. ..	7.50 ,,

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Determined Thieves.

The audacity of thieves seems to be unlimited. Recently several men broke into a cycle car owner's garage. Apparently they were unable to start the engine of the car, so they carefully removed and decamped with the dynamo, lamps and wiring.

A Real Veteran.

A paragraph recently appeared in a paper advertising a well-equipped machine of a noted make complete with clutch and kick-start—and tax paid—date 1621. A correspondent, historically inclined, enquires whether this machine was ridden by Charles I.!

Goggle Deafness.

There is probably quite sound reasoning in the argument that impaired hearing when wearing goggles is caused by pressure of the strap upon the auditory nerves. This suggestion seems to be proved by the fact that one's hearing is often slightly affected even while wearing goggles pushed up on to the forehead.

Hero-worship.

A motor cyclist was recently very much amused to see a group of street-urchins clustered round his machine and arguing hotly. This is the conversation he heard: "Yus, that's the bike wot killed 'im." "No, it ain't." "Betcha it is—look, 'ere's the bloke comin' wot did 'im in!" The boys retreated with looks of awe as the "murderer" approached.

Inverfarigaig in Scottish Two-Day Trial.

This year's Scottish Two-Day Trial will take the competitors into Highland scenes familiar to all who have ridden in the Six Days proper. The latter event was remarkable for the great distances traversed, and the forthcoming trial is equivalent to two of the severest days in that memorable event. An early start (7 o'clock; assemble 6.30) will be made from Murrayfield Tram Terminus, Edinburgh, on Saturday, September 16th—the Scottish General Holiday—and thence the competitors will proceed *via* Stirling, Sheriffmuir, to Perth, Braemar, Tomintoul, Grantown-on-Spey, Nairn, and finally Inverness, will complete the day—approximately 200 miles. Sunday will be spent at the Highland capital. On Monday the distance covered will be approximately 190 miles: Inverness, Inverfarigaig, Kyllachy, Carrbridge, Dalnacardoch, Kenmore, Sheriffmuir, Stirling, Edinburgh. The observed hills on Saturday will be Sheriffmuir, Rinloon, Cockbridge, and Bridge of Brown. None of these hills are abnormally severe, though the terrors of Cockbridge and Bridge of Brown depend upon the weather. The tit-bit of Monday's run is Inverfarigaig Corkscrew. A large number of entries have already been received by Mr. Campbell McGregor, 6, Castle Terrace, Edinburgh. A club team prize and a manufacturers' team prize are offered, in addition to the usual gold, silver, and bronze medals. It is a pity that the date of this sporting event concurs with one equally strong in its appeal to hardy riders—the Scott Trial.

A Motor Cycling Farmer.

One of the Bromley (Kent) farmers who opened roadside retail stores on their farms this week for the sale of farm produce direct at wholesale prices is Mr. Bruce Wood, an old competition rider and a member of the Woolwich Club. Many motor cyclists from London are amongst his customers, and several sidecars were seen leaving with bags, and even sacks, of produce.

A.1. Efficiency.

The fact that they are worked hard at all hours, and appear to receive practically no attention, speaks well for the machine (nearly all of well-tried makes) used by the newspaper distribution companies.

Warm!

For Brooklands use Col. Stewart has fitted a silencer of generous dimensions over the back wheel of his machine in the place ordinarily occupied by the carrier. We hope he will not give anyone a "lift"!

New M.C.C. Chairman Elected.

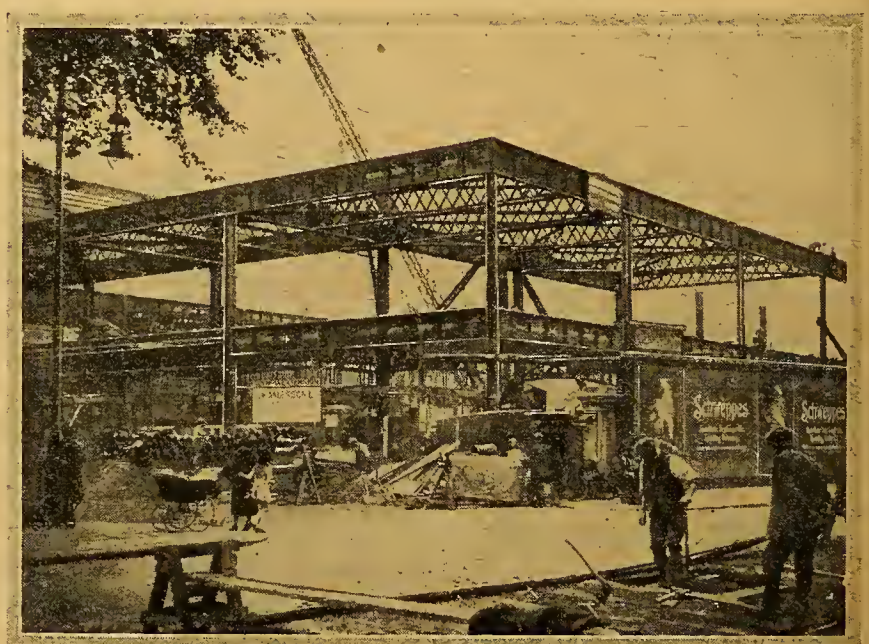
To fill the vacancy caused by the sad death of Mr. Robert Head, Mr. L. A. Baddeley, who has been so long connected with the Motor Cycling Club, has been elected chairman, while Mr. J. Ogilvie has been chosen to fill temporarily the position of honorary treasurer.

Misleading Statements.

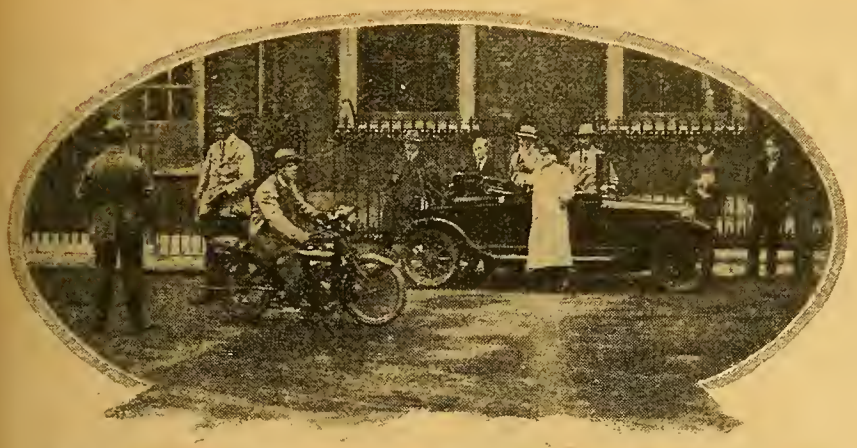
A weekly publication asks "How many 'pillion girls' have to be killed before the obviously requisite law is passed?" It is quite time that the lay Press stopped publishing nonsensical paragraphs such as this on matters about which it invariably displays supreme ignorance.

"Received too late for Publication."

It is not very helpful to give a review of the regulations of a club event in the issue of *The Motor Cycle* published two days before the event takes place. Recognition of this fact would prevent much heart-burning.



Details and plans of the new wing of Olympia have already been published in *The Motor Cycle*. This photograph shows that the work is now well in hand. A great increase of floor space will be available for this year's motor shows, and the chief entrance will be brought into the main Hammersmith Road.



A machine—the silence of which is under dispute—being submitted to test by the audiometer under A.C.U. observation.

500 Mile Race Cancelled.

Owing to complaints by Weybridge residents to the Brooklands authorities regarding the noise of long-distance motor cycle races, the 500 mile race has been abandoned. The matter is dealt with on pages 325 and 351.

Brooklands Silence Campaign.

People not in the know will be surprised to learn that there is a permanent injunction against noises on Brooklands track, which was the outcome of the first 24-hours record, made so long ago as 1907.

More Records on Monday.

On Monday last, D. R. O'Donovan, V. Horsman, and R. N. Judd, on a standard 490 c.c. Norton, started an attempt on the double-twelve record. On the first day they broke the following records—

300 MILES.—4h. 47m. 5s. Speed, 62.69 m.p.h.
400 MILES.—6h. 24m. 24s. Speed, 62.43 m.p.h.
500 MILES.—7h. 59m. 40s. Speed, 62.54 m.p.h.
5 HOURS—314 mls. 194 yds. Speed, 62.82 m.p.h.
6 HOURS.—377 mls. 1,719 yds. Speed, 62.99 m.p.h.

Exact Capacities More Interesting.

Club secretaries would make their notices of hill-climbing etc., much more interesting if they always specified the exact capacities of the competing machines. For example, when we hear that a "3½ h.p." Sunbeam has made fastest time of the day, we can only surmise whether it is a 492 c.c. or a 499 c.c. model.

Speed Trials in the Bois de Boulogne.

Unless the Paris Municipality withholds its sanction, motor cycle and cycle car speed trials will be run in the Bois de Boulogne (the Hyde Park of Paris) on the morning of Saturday, September 23rd. Last year the energetic Motocycle Club de France induced the authorities to allow it to have the use of the famous Avenue des Acacias for kilometre speed trials, this being the first time in history that speed tests had been held over a highway within the City of Paris. Application was again made this year for the use of the avenue, and while the authority responsible for the care of the Bois de Boulogne gave immediate consent, there has been a little difficulty, owing to political controversy, in getting the consent of the Municipality.

M.C.C. One-Day Sporting Trial.

Entries are being received for the M.C.C. one-day sporting trial for motor bicycles, which will start from Caterham on September 30th. Marshals are wanted for this trial, and if any readers would care to help the M.C.C. in this capacity they are requested to communicate with the trials hon. sec., Mr. F. T. Bidlake, 84, North End Road, Golder's Green, London, N.W.1. Mr. E. A. Bridgman will be chief marshal.

Police Campaign Against Open Exhausts.

There has lately been unparalleled police activity against noisy motor cycles in the Coventry and Birmingham district. The amount of noise created is apparently a secondary consideration, the main factor being whether or not the arrangements on the machine conform to the law—fish-tailed, long exhaust pipes are taboo. Now, since the law itself only asks for a reduction in the volume of sound and does not make compulsory any particular way of reducing it, the attitude of the police is not easy to understand.

Obtaining Evidence for Silencer Cases.

On a recent occasion Mr. Stanley Vine, of Sittingbourne, was stopped by the police near West Wickham, Kent, for using too noisy a motor cycle. He appealed to the A.C.U., which immediately took action and arranged a test by means of Professor Low's audiometer. This instrument was rigged up in Professor Low's car in St. James's Square, and Mr. Vine was requested to pass between two officials of the A.C.U. in front of the audiometer, so as to ensure being at the same distance therefrom on each occasion, travelling at a speed of about 18-20 m.p.h.

The noise emitted by Mr. Vine's motor bicycle was recorded photographically by the audiometer, which consists of a diaphragm on which there is a small mirror 1 mm. square. A strong light is directed on to this mirror, and is projected on to a photographic film. The film is then developed and printed, and the oscillations caused by the sound are permanently recorded, and can then be compared with the record of a machine which is accepted as being reasonably quiet

For Continental Tourists.

An article which appeared in *The Motor Cycle* of February 16th, 1922, giving all the necessary information concerning touring abroad, has been reprinted, and a copy will be sent on application to any reader thinking of visiting the Continent.

New 1,000 c.c. Records.

On Friday last E. Remington, on a 998 c.c. Blackburne, covered a mile at Brooklands from a standing start in 45.58 secs. (78.98 m.p.h.), constituting a British record. In the reverse direction he took 48.08 secs., and the mean speed international record is claimed at 74.87 m.p.h. (120.49 km.p.h.).

Maintaining Tune.

A remarkable example of maintainance of efficiency after 800 miles' strenuous road-work was given in the Six Days Trials by E. Searle's 350 c.c. Sheffield-Henderson, which actually maintained 48.3 m.p.h. during the speed test at Brooklands. Incidentally a revision of the official placings credits Searle with a tie for the second best individual performance of the trials.

Speed Trials at Morecambe Carnival.

In conjunction with the Morecambe Autumn Carnival Committee, the Lune Valley Motor Cycle Club is organising flying kilometre speed trials, to be held on the newly-constructed road between Morecambe and Lancaster on Friday, September 22nd. The road, which has just recently been completed at a cost of £27,000, is of tar macadam, dead straight, and level, being 1,900 yards long and 60 ft. wide, and has never been used for traffic. There will be a flying start of 300 yards, and at each side of the road there is accommodation for something like 7,000 spectators.

Entries should be sent to the hon. secretary, Mr. R. L. Ducksbury, Elms Hotel, Morecambe.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Road Tests of New Models

The 925 c.c. fully sprung Clyno Sidecar Outfit.

Midland riders will recognise the familiar hill up the Bull Ring, Birmingham. With a full load of three and luggage the Clyno can re-start with ease on the worst part of the gradient.

SPECIFICATION.

ENGINE: Clyno 42° V twin, 76 × 102 mm. (925 c.c.); side by side valves.
GEAR BOX: Clyno 3-speed, Ratios 4·85, 7·6 and 16·3 to 1.
TYRES: 28in. × 3in.
TRANSMISSION: All chain enclosed.
FORKS: Brampton bi-flex.
CARBURETTER: Semi-automatic.
FRAME: Leaf-springing.

EVER since the days of the selective clutch two-speed Clyno, its makers have had a high reputation as manufacturers of sidecar outfits, and it was with pleasure that a few weeks ago we were able to announce that the big twin Clyno was once again in production.

The early post-war design was most promising in every respect, but its production was delayed for some time for works and financial re-organisation, and this delay has enabled even further improvements to be made in the final article.

Comfort and Speed.

In spite of the fact that the machine which we tried had never been on the road previously, it ran without a falter throughout a total distance of some 200 miles, and proved itself capable of maintaining very high average speeds with heavy loads. The high averages put up were undoubtedly due not only to the power and smooth running of the engine, but also to the comfort provided by the excellent spring frame and spring sidecar wheel, which absorb severe bumps to such a degree that one can maintain high speeds over rough roads, pot-holed streets or tram tracks.

Even through thick traffic top gear can be used on the 925 c.c. Clyno outfit.

After a preliminary run we left Coventry by the Holyhead road for Wellington, thence to the Wrekin to watch the competitors ascending that hill during the course of the A.C.U. Six Days Trials. The trip was accomplished in remarkably short time in spite of the new engine, and in extreme comfort. Thence on to Shrewsbury and back again to Wellington for the night.

The following day the return trip was made *via* Birmingham, and the average speed maintained was as high as could reasonably be expected of any sidecar machine. The maximum speed is about 50 m.p.h.

Throughout this trip the load consisted of an 11-stone passenger, light luggage, and spare can of petrol and a spare wheel. In addition the machine was equipped with full electric lighting and electric horn.

Cool Running.

So smooth and cool running is the engine that it may be left on three-quarters throttle for mile after mile without showing any signs of distress. It is also quiet as regards mechanical noises, though a slight improvement might be made by lengthening the tail pipe another six inches, for though the exhaust is not unduly noisy, thanks to the large cast aluminium expansion chamber, the sound

Road Tests of New Models.—

of the explosions is clearly audible to the rider, which would not be the case were a slight extension fitted.

Mechanical lubrication by a small pump driven from the timing gear relieves the rider of all responsibility, though since the engine was a new one and we were driving somewhat fast the auxiliary oil pump was employed on two or three occasions.

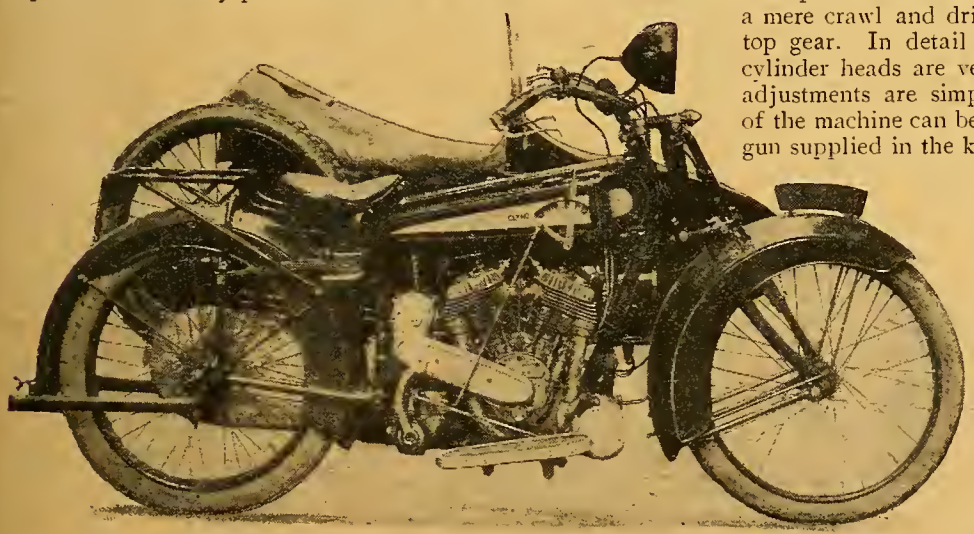
An internal expanding rear brake works smoothly and powerfully. It is in fact sufficiently powerful to lock the rear wheel, though a steel-studded tyre such as was fitted to the machine is question is not well adapted to rapid deceleration on smooth tarred roads.

With regard to the front brake, however, there is considerable room for improvement, a horse-shoe type being fitted at present which not only interferes with the quick detachability of the interchangeable wheels, but has the additional disadvantages of scoring the rims and being insufficiently powerful for use with a heavy sidecar. An external expanding brake could easily be arranged, avoiding both these defects, and we understand that the manufacturers already have this matter in hand.

Mudguarding.

The front mudguard is no less than 8in. wide, and is valanced throughout the complete arc, and these sensible proportions help to keep both machine and rider reasonably clean, and the rear guard which moves with the spring wheel is exceptionally free from rattles.

A most excellent metal-to-metal multi-plate clutch is fitted on an extension of the gear shaft, and it is particularly sweet and smooth in action. It is operated by a pedal conveniently placed on the left footboard.



The 925 c.c. Clyno outfit showing the distinctive finish and very complete equipment. Rear springing, mechanical lubrication and detachable cylinder heads are noteworthy features.

The gear box is unusually silent on all ratios, and it appears to be impossible to make a noise when changing gear, though, owing to slight stiffness in the new quadrant, we did not always change as smartly as desirable.

Rear suspension by two laminated springs seems to be ideal; no trace of side rock could be detected, and the springs were just sufficiently flexible to absorb the shocks without causing roll or bounce. The same may be said of the sidecar wheel springing, which removed all traces of those shocks usually transmitted to the cycle by the sidecar wheel, yet was stiff enough to prevent serious rolling on corners.

As to the sidecar itself, the two passengers who tested it on different occasions agreed that the springing was the most comfortable they had ever experienced, and though the leg room is a little cramped for a tall man it is ample for a passenger of normal proportions.

Suitable for Rough Tracks.

High ground clearance is a strong point for overseas buyers, and the frame with its duplicate saddle tube construction is sufficiently rigid for all requirements.

With the exception of the front brake already mentioned, the only serious criticism we have to make has regard to the petrol consumption, which was somewhat high, working out at approximately 35 m.p.g. It is perhaps hardly fair to raise this point, since the engine and carburetter were untuned and the machine was driven at more than average speed throughout the greater part of our test.

Except for the exhaust noise it would have been difficult to tell that the engine was a V twin, and from maximum speed the machine could be throttled down to a mere crawl and driven through thick traffic on top gear. In detail work the Clyno excels; the cylinder heads are very easily detachable, chain adjustments are simple, and every moving part of the machine can be greased by a special grease gun supplied in the kit.

A two-way tap enables the gear box to be lubricated en route, and the system of feeding oil (by mechanical pump) to wells surrounding the cylinder bases appears to answer admirably.

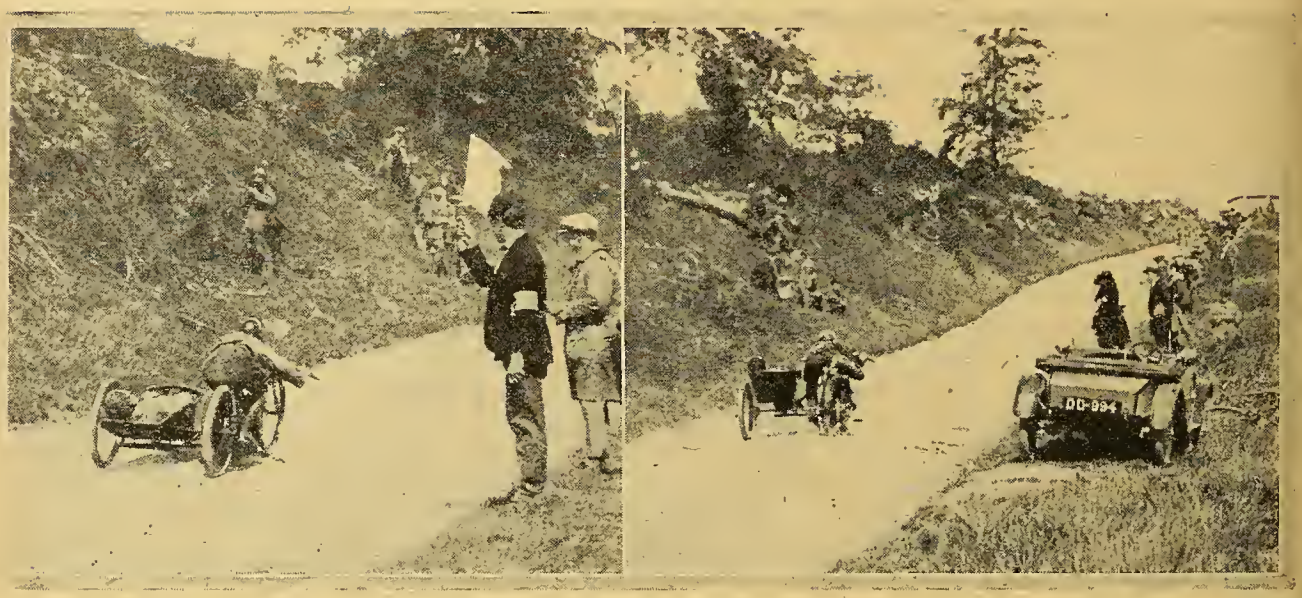
It is very seldom that we have felt so thoroughly enthusiastic over a heavy sidecar outfit as was the case after our trip on the 925 c.c. Clyno, and we wish the company every success in its latest venture.

500 MILE RACE ABANDONED.

The British Motor Cycle Racing Club has been compelled definitely to abandon the 500 Miles Race at Brooklands, which was to have taken place on the 23rd inst. This decision has been come to owing to the uncompromising attitude of the proprietors of Brooklands track, but "is taken without prejudice to any or all of the club's rights existing under the agreement now in force between the proprietors of Brooklands track and the British Motor Cycle Racing Club."

Although the resolution of the B.M.C.R.C. would seem to infer that the proprietors of Brooklands are antagonistic to the motor cycle movement, this is not so, since their hands have been forced by a few people residing close to the track.

CLUB NEWS.



By adopting these characteristic attitudes at Chatcombe hill climb, passengers and drivers reduced wind resistance to the minimum. (Left). Geo. Dance (499 Sunbeam sidecar) winner of the unlimited sidecar class. (Right). W. B. Gibb (494 Douglas sidecar) riding with one leg over the saddle.

Barrow and District M.C.

A successful hill-climb was held at Buckman Brow, Broughton, on the 27th ult., over a course measuring 557 yards. Results:

350 c.c. (ON TIME).

1. J. C. Dearden (349 Massey-Arran) ... 26⅕s.
2. Mrs. Roberts (349 Sheffield-Henderson) 28⅖s.
3. Geo. Roberts (349 Sheffield-Henderson) 32⅕s.

600 c.c. (ON TIME).

1. H. Jackson (492 Sunbeam) ... ... 24⅗s.
2. J. C. Dearden (349 Massey-Arran) ... 26⅕s.
3. B. Hill (532 Scott) ... ... 27⅖s.

1,000 c.c. (ON TIME).

1. J. Illingworth (998 Trump-Anzani) ... 23⅖s.
2. H. Jackson (492 Sunbeam) ... ... 23⅘s.
3. J. C. Dearden (349 Massey-Arran) ... 26⅕s.

1,000 c.c. SIDECARS (ON TIME).

1. J. Illingworth (998 Trump-Anzani sc.) 28⅕s.
2. R. Dixon (494 Douglas sc.) ... ... 32⅕s.
3. H. T. Wilson (490 Norton sc.) ... ... 36⅕s.

500 c.c. (HANDICAP).

		Allowed	
1.	J. Morrison (498 P. and M.)	35⅖s.	13⅕s.
2.	H. Holmes (499 Rover) ...	28s.	5⅕s.
3.	B. Hill (Scott) ... ... tied	24s.	2⅖s.
	H. Jackson (492 Sunbeam) ...	26⅕s.	3⅕s.

1,000 c.c. (HANDICAP).

		Allowed	
1.	J. Illingworth (998 Trump-Anzani	23⅗s.	scr.
2.	H. Holmes (499 Rover) ×	28⅖s.	4⅗s.
3.	B. Hill (Scott) ... ... tied	27⅖s.	3⅕s.
	H. Jackson (492 Sunbeam) ...	24⅗s.	⅘s.

1,000 c.c. SIDECARS (HANDICAP).

		Allowed	
1.	H. Holmes (499 Rover sc.) ...	36s.	8⅗s.
2.	H. T. Wilson (490 Norton sc.)	35⅘s.	8s.
3.	B. Fisher (490 Norton sc.) ...	38s.	9⅗s.

600 c.c. (NOVICES).

1. H. Holmes (499 Rover) ... ... 28⅗s.
2. W. D. Mackenzie (499 Rover) ... ... 32⅕s.
3. J. Morrison (498 P. and M.) ... ... 36⅖s.

FASTEST TIME OF THE DAY.

J. Illingworth (998 Trump-Anzani) ... ... 23⅖s.

Epsom and District M.C.C.

The best performance in the first reliability trial, which took place on August 27th, was made by F. Mellish (349 o.h.v. Blackburne) with a total loss of 18 marks. The silver medal went to G. Alder (650 Zenith), who only lost 2 marks more than Mellish, whilst H. Cropley (550 Verus-Blackburne) carried off the bronze medal with a loss of 30 marks. In the sidecar class, R. B. Furniss (678 Martinsyde sc.) won the silver medal, and R. Brookman (550 Triumph sc.) secured the bronze medal. The next reliability trial has been arranged to take place on October 1st.

Scottish Western M.C.

The official results of the one day open reliability trial held on the 26th of last month are now to hand, and are given as follows:

JAMES CHALLENGE SHIELD.—R. D. Robertson (976 Matchless sc.).

PALMER CHALLENGE CUP.—R. Watson (678 Martinsyde).

BEST SOLO NOT EXCEEDING 275 c.c.—W. Kennedy (249 New Imperial).

BEST SIDECAR NOT EXCEEDING 350 c.c.—A. D. S. Barr (348 Barr and Stroud sc.).

BEST PRIVATE OWNER SIDECAR.—R. D. Robertson (976 Matchless sc.).

BEST PRIVATE OWNER SOLO.—W. B. Anderson (349 A.J.S.).

GOLD MEDALS were awarded to the following, who lost no marks: R. M. Wilson (349 A.J.S.), J. W. Burton (293 Coventry-Eagle), Chas. McAllister (346 Francis-Barnett), J. M. Cowan (499 Rover), C. Hope Wilson (348 Barr and Stroud), R. Watson (678 Martinsyde), W. Kennedy (249 New Imperial), Geo. Grinton (989 Harley-Davidson sc.), R. D. Robertson (976 Matchless sc.).

SILVER MEDALS were won by these riders, who lost marks as stated below: E. A. Small (499 Sunbeam) 5, W. B. Anderson (350 A.J.S.) 6, Jas. Neil (346 Francis-Barnett) 9, J. G. Porter (348 New Gerrard) 2, Ian H. McGrowther (500 N.U.T.) 1, T. J. Parry (499 Rudge) 6, John May (349 A.J.S.) 6, G. A. Mann (799 A.J.S. sc.) 2, J. E. Robertson (976 Sunbeam sc.) 3, Thos. McCreadie (749 Bradbury sc.) 10.

BRONZE MEDALS.—Mrs. D. Bell (799 A.J.S sc.) 20, A. D. S. Barr (348 Barr and Stroud sc.) 19.

Tiverton M.C. and L.C.C.

An inter-club speed hill-climb, open to the clubs affiliated to the South-Western Centre of the A.C.U., was held on Holne Hill Chevilthorne. The course was approximately half a mile in length, and the event resulted in the following times being recorded:

600 c.c. SIDECARS.—1, Stagg (499 Sunbeam sc.), 40s.; 2, Parmiater (595 New Hudson sc.), 63s.

LIGHT CAR CLASS.—1, H. S. Eaton (G.N.), 36.5s.; 2, Miss Pink (Horstman), 47.3s.; 3, Holland (Salmson), 57.5s.

1,000 c.c. SIDECARS.—1, Stagg (499 Sunbeam sc.), 40.3s.; 2, Freeman (557 B.S.A. sc.), 44.8s.; 3, Parminter (595 New Hudson sc.), 63.1s.

500 c.c. SOLO.—1, Stagg (499 Sunbeam), 35.6s.; 2, Pincott (398 A.B.C.), 36s.

600 c.c.—1, Pincott (398 A.B.C.), 34.6s.; 2, Parminter (499 Sunbeam), 34.8s.; 3, Stagg (499 Sunbeam), 35s.

UNLIMITED SOLO.—1, Stagg (499 Sunbeam), 33.2s.; 2, Parminter (499 Sunbeam), 33.8s.; 3, Pincott (398 A.B.C.), 35s.

An all-night reliability trial to Yeovil was also held under unfavourable weather conditions.

Ipswich and District M.C.C.

The full results of the speed trials held at Langham Moor on Saturday, August 26th, are now to hand, and are as follow:—

TWO-STROKE MACHINES.—A. V. Adams (269 Excelsior), 19⅖s.; W. J. Coe (249 Velocette), 20⅕s.

TOURING MACHINES (350 c.c.).—G. F. Clutten (349 A.J.S.), 15⅗s.; J. F. Rose (350 Beardmore-Precision), 17s.; W. J. Pretty (349 A.J.S), 17⅕s.

500 c.c.—G. F. Clutten (349 A.J.S.), 15⅖s.; L. W. Harrison (499 Rudge-Multi), 15⅗s.; W. J. Pretty (349 A.J.S.), 16⅕s.

750 c.c.—W. R. Fison (678 Martinsyde), 16⅖s.; W. L. Harrison (499 Rudge-Multi), 17s.

TWO-STROKES (EXPERTS).—A. V. Adams (269 Excelsior), 17⅗s.; W. J. Whistock (247 Levis), 19⅖s.; W. J. Coe (249 Velocette), 20⅕s.

350 c.c. (EXPERTS).—G. F. Clutten (349 A.J.S.), 15⅖s.; J. F. Rose (350 Beardmore-Precision), 18⅕s.; A. V. Adams (350 Diamond), 17s.

500 c.c. (EXPERTS).—R. F. Fenn (499 Triumph), 12⅗s.; E. C. Rose (500 N.U.T.) and F. K. Portway (490 Norton) tied, 13⅕s., F. K. Portway winning on re-run at 13⅗s. as against E. C. Rose 13⅘s.

600 c.c. (EXPERTS).—R. F. Fenn (499 Triumph), 13s.; A. G. Mann (492 Sunbeam), 13⅕s.; F. K. Portway (490 Norton), 13⅗s.

750 c.c. (EXPERTS).—R. F. Fenn (499 Triumph), 12⅘s.; E. C. Rose (500 N.U.T.) ties with A. G. Mann (492 Sunbeam), 13s., A. G. Mann winning on re-run at 13 1-10th sec. as against E. C. Rose, 13⅘s.

UNLIMITED (EXPERTS).—R. F. Fenn (499 Triumph) tied with F. K. Portway (490 Norton) at 13 1-10th secs., R. F. Fenn winning on re-run at 12⅘s. as against F. K. Portway, 13 3-10th secs.; A. G. Mann (492 Sunbeam), 13s.

SIDECARS UNLIMITED (GENERAL).—G. Bird (650 Zenith sc.), 17 1-10th secs.; S. C. Butler (650 Zenith sc.), 20 3-10th secs.; C. O. Rose (598 Beardmore-Precision sc.), 23 3-10th secs.

SIDECARS, 600 c.c. (EXPERTS).—A. G. Mann (492 Sunbeam sc.), 15⅘s.; E. C. Rose (500 N.U.T. sc.), 15 9-10th secs.; R. F. Fenn (499 Triumph sc.), 16⅕s.

SIDECARS UNLIMITED (EXPERTS).—A. G. Mann (492 Sunbeam sc.), 15⅘s.; E. C. Rose (500 N.U.T. sc.), 16s.; R. F. Fenn (499 Triumph sc.), 16 3-10th secs.

R. F. Fenn (499 o.h.v. Triumph) made fastest time of the day, securing the Gilbert Challenge Cup; he also won the Triumph Gold Medal for the fastest time of the day made by a 500 c.c. single-cylinder machine. G. F. Clutten (349 A.J.S.) was awarded the Robinhood Engineering Co. prize for the fastest time in the 350 c.c. experts' class. L. W. Harrison (499 Rudge-Multi) carried off the novices' prize.

Yorkshire Centre A.C.U.

Organised by the Harrogate and District M.C.C., the team trials for the "Haggas Shield" will be held on Saturday next, starting from Harrogate.

Midland C. and A.C.

Nine teams, consisting of six riders in each, are competing in the Midland Centre A.C.U. inter-club team trial for the "Easting" Trophy, arranged to be run off on Saturday next, 9th inst.

Rochester, Chatham and District M.C. and L.C.C.

Events for September include a run to Chislehurst Caves on the 10th, to Perry Wood on the 17th, and the Mart Cup Trial on the 24th inst., all leaving Rochester Esplanade at 10 a.m.

Connaught M.C.C.

Apple bobbing, pole and rings, a treacle bun race, and other amusing features were included in the programme of the gymkhana held at North Harrow on August 26th. There were twelve events in all.

Belfast and District M.C.C.

A very successful fifty-mile handicap race was held on the 19th of last month at Dundonald over a four-mile triangular course. The winner, W. P. Metcalfe (976 Brough Superior), completed the distance in 55m. 30s., an average speed of 54.6 m.p.h. Second place was secured by J. Andrews (249 New Imperial), and W. Caughey (350 Mohawk) ran a close third.

Birmingham M.C.C.

The Austin playing fields have been lent by Sir Herbert Austin for the third annual gymkhana on Saturday the 16th inst., commencing at 2 p.m. The whole of the proceeds will be devoted to local charities, and the various events featured in the programme promise an excellent afternoon's sport. Particulars may be obtained from Mr. T. F. Watson, 131, Conybere St., Birmingham.

Stocksbridge and District M.C. and L.C.C

Competitors in the Moore Cup trial, held on Saturday, the 26th of last month, were fortunate in having excellent weather conditions, and as the circular route lay through delightful scenery the run was voted a great success. The winner of the cup was F. Battye (11.9 Morris-Cowley), but G. Moorhouse (532 Scott sc.) put up a strong fight, and E. Hinchcliffe (M.A.C. twin) came in a close third.

Colne and District M.C.

The reliability trial for the Starkie Cup was run off on August 20th over a course of 116 miles in the Yorkshire Dales. The winner of the event was R. F. Haigh (499 Sunbeam), who was closely followed by G. W. Spencer (211 Levis). W. Denton (799 A.J.S. sc.) secured third place. Proceeds from the gymkhana held on Saturday, August 26th, were devoted to the local hospital funds.

Basingstoke M.C.C.

Farleigh Hill has been chosen for the fourth annual hill-climb to be held on Thursday, the 21st inst., at 2.30 p.m. This event, which includes classes for practically every type of machine, is open to all members of clubs affiliated to the Southern Centre A.C.U., and a special gold medal will be awarded for the fastest time of the day. Entries should be addressed to Mr. A. T. Fleming, The Castle, Reading Road, Basingstoke.

Ross and District M.C. and L.C.C.

At the first hill-climb held recently, F. C. Morgan (349 Cotton) was successful in the open 350 and 600 c.c. classes and L. Paynter (490 Norton)—who made fastest time on the hill—won the open unlimited class and the sidecar class. W. Griffin (350 Douglas) was successful in the closed 350 c.c. and unlimited classes and second in the open 350 c.c. and closed 600 c.c. classes—a very creditable performance. The closed 600 c.c. class was won by Vincent Howell (490 Norton).

West Kent M.C.

Five competitors tied for fastest time of the day at the hill-climb on the 27th ult. On the re-run A. G. Williams (492 Sunbeam) cut down the time by ⅕s.

The winners of each class were:

250 c.c.—S. Smith (249 New Imperial).

350 c.c.—Expert: G. Fraser (349 Sheffield-Henderson). Expert barred: A. Watson (349 A.J.S.).

600 c.c.—Expert: G. Fraser (349 Sheffield-Henderson). Expert barred: H. Fitzgerald (490 Norton).

1,000 c.c.—Expert: A. G. Williams (492 Sunbeam). Expert barred: H. Fitzgerald (490 Norton).

600 c.c. SIDECARS.—H. Fitzgerald (490 Norton sc.).

1,000 c.c. SIDECARS.—G. Maund (398 A.B.C. sc.).

Week-End Club Events.

Sept. 8/9th.—Bristol M.C. and L.C.C.—24-Hour Trial.
Sept. 8/9th.—Essex M.C.—24-Hour Reliability Trial.
Sept. 9th.—Yorkshire Centre A.C.U.—Team Trial.
Sept. 9th.—Eastbourne and District M.C.C.—Speed Trials.
Sept. 9th.—Coatbridge Airdrie and District M.C.C.—Social Run.
Sept. 9th.—Gloucester M.C. and L.C.C.—Despatch-carrying Competition.
Sept. 9th.—Coventry Triangle M.C.—Gymkhana.
Sept. 9th.—Middlesbrough and District M.C.—Reliability Trial.
Sept. 9th.—Yorkshire Centre A.C.U.—Team Trial.
Sept. 9th or 10th.—Reigate, Redhill and District M.C.C.—One-day Trial.
Sept. 10th.—York and District M.C.—Club Run.
Sept. 10th.—Middlesbrough and District M.C.—Ladies' Day.
Sept. 10th.—Coventry Triangle M.C.—Run to Braunston.
Sept. 10th.—Sheffield M.C.C.—Run to Lanehan.
Sept. 10th.—Halifax and District M.C. and L.C.C.—Run to Aldborough.
Sept. 10th.—Colne and District M.C.—Sporting Event.
Sept. 10th.—Kelso and District M.C.C.—Reliability Trial.
Sept. 10th.—Prestwich and District M.C.—Gymkhana.
Sept. 10th.—Leeds M.U.—Run to Sutton Bank.
Sept. 10th.—Bulwell M.C.—Reliability Trial.
Sept. 10th.—Newcastle and Northern M.C.—Speed Trials at Muggleswick.
Sept. 10th.—Manchester M.C.—Reliability Trial.
Sept. 10th.—Ashford M.C. and L.C.C.—Run to Margate.
Sept. 10th.—Rochester, Chatham and District M.C. and L.C.C.—Inter-club Reliability Trial.
Sept. 10th.—Woolwich and District M.C.C.—Mayor of Taunton's Cup Trial.
Sept. 10th.—Atherton and District M.C.C.—Run to Monsal Dale.
Sept. 10th.—West Kent M.C.—Combined Kent Clubs' Reliability Trial.
Sept. 9/10th.—Wolverhampton M.C.C.—Social Run.
Sept. 9/10th.—Barrow and District M.C.—Reliability (Moonlight) Run.
Sept. 13th.—Leeds M.U.—Impromptu Run from City Square.
Sept. 13th.—York and District M.C.—Paper Chase.
Sept. 13th.—Reigate, Redhill and District M.C.C.—Hill Climb.
Sept. 13th.—Eastbourne and District M.C.C.—Run to Brighton.
Sept. 14th.—North Wales M.C.C.—Reliability Trial.
Sept. 14th.—Gloucester M.C. and L.C.C.—Visit to Worcester Pottery Works.

Wallington and District M.C.C.

Commencing at 3 p.m. on the 30th inst., a hill-climb is being held at Marlpit Lane, Coulsdon, when all the usual classes will be included. Entrants are forbidden to practice on the hill beforehand. Any other particulars may be obtained from Mr. Allan Gruzelier, 168, Regent Street, London, W.

Scarborough and District M.C.

The speed trials taking place at Scarborough on Saturday the 23rd inst. form an outstanding feature of North Country motor events for the year, and an even bigger field than last year, when 180 competitors entered, is expected. The event, open to motor cycles, sidecars, cycle cars, light cars, and cars, is being held on the North Foreshore with the support of the local authorities, and is timed to commence at 1.30 p.m. Further particulars may now be obtained from Mr. J. D. Fell 2, Harcourt Place, Scarborough.

Coleraine M.C. and L.C.C.

Another successful hill-climb was carried out, despite unfavourable weather conditions, at Keady, near Lunavady, on Thursday afternoon, 31st ult. The lightweight machines monopolised the prizes, but numerous thrilling finishes were witnessed. The course measured one mile, the results on handicap being:—

Class A: (1) W. Hunter (Hunter), 8s.; (2) D. T. Carson (349 A.J.S.), 8s.; (3) C. Reid (249 New Imperial), 8s.

Class B (Lightweights): (1) W. Hunter (Hunter), scr.; (2) C. Reid (249 New Imperial), scr.; (3) D. T. Carson (349 A.J.S.), scr.

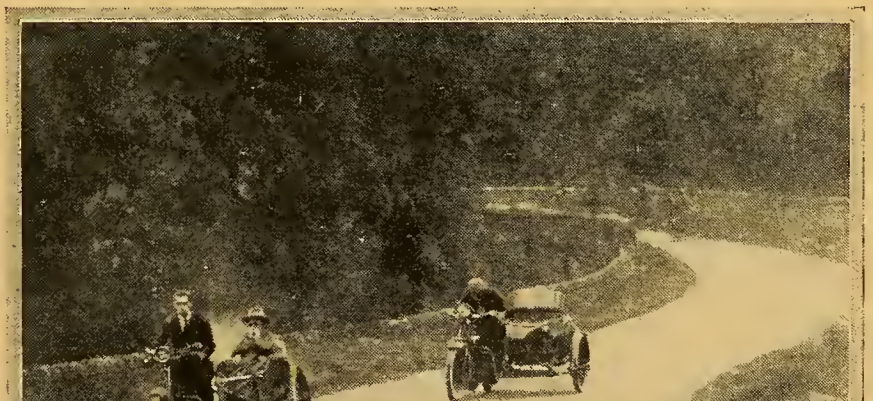
Class C: (1) W. Hunter (Hunter), 8s.; (2) C. Reid (249 New Imperial), 8s.

Class D (Scratch Event): (1) J. Craig (490 Norton), (2) J. Harrison (494 Douglas).

Dublin and District M.C.C.

Open speed trials were run off over a distance of a kilometre on the Ballyogen road in the southern portion of Co. Dublin on Saturday last. The results were as follows:—

	Handicap. (secs.)	Time.
TWO-STROKES (300 c.c.).		
(1) G. V. B. Cooke (220 Velocette)	10	38
(2) R. Humphreys (220 Velocette)...	4	37⅘
(3) L. A. W. Orr (225 Royal Enfield)	9	40⅕
FOUR-STROKES (350 c.c.).		
(1) D. M. Murphy (346 Trump-Jap)	10	30
(2) R. Hewitt (348 Douglas)	15	31⅘
(3) T. V. Murphy (293 Coventry Eagle)	8	31⅕
FOUR-STROKES (600 c.c.).		
(1) R. Walsh (500 James)	10	27½
(2) H. Adair (557 B.S.A.)	13	27½
(3) H. V. Briggs (550 Triumph) ...	12	29½
SPORTS AND RACING MODELS (600 c.c.).		
(1) D. M. Murphy (346 Trump-Jap)	15	25⅖
(2) R. Humphreys (220 Velocette)...	15	25⅘
(3) G. V. B. Cooke (220 Velocette)...	20	27⅗
PASSENGER MACHINE CLASS.		
(1) D. Allan (633 Norton sc.) ...	3	39⅓
(2) E. F. Ashton (998 Indian sc.) ...	scr.	41⅖
(3) J. E. Mills (Talbot car)	3	42⅖



An evening "stunt" event of the Harrogate M.C.C. was a slow hill climb up Pot Bank—a local test hill. Competitors went up in pairs, the slowest rider winning the heat. W. Inman (748 A.J.S. sidecar) and H. Acklan (770 B.S.A sidecar) on the lower portions of the hill.

TWO, THREE AND FOUR WHEELS.

Mixed Meeting of the South-Eastern Centre A.C.U. at Brooklands. A Series of Handicap Races.

MANY times it has been pointed out in the pages of *The Motor Cycle* that handicap races are overdone at Brooklands. What, then, is to be said of an afternoon's racing, consisting of eleven events, in which each item is a handicap race? On the other hand, what was the organising club, the Surbiton M.C., to do with absolutely unknown quantities on un-Brooklands machines and such well-known quantities as Remington and Le Vack, entered in the same race? Running level the unknown quantities would have packed up in disgust; thanks to the handicapper they had a run for their money.

In a club centre event, which should be largely amateur-private-owner (but wasn't), the handicap race is justifiable, since the riders are primarily out for their own fun and the spectators, mostly wives or ardent supporters, are not much concerned. On Saturday last the spectators certainly were numerically unimportant, being probably outnumbered by the bookies with their clerks and "tic-tac" men.

Seventeen in 350 c.c. Race.

Out of an entry of twenty-three there were six defaulters at the start of the first race, a three-lap handicap for solo machines up to 350 c.c. E. Remington (348 Edmund) and H. Le Vack (346 New Imperial) were the scratch men, H. L. Biggs (247 Sun Vitesse) being at the other end of the scale with 2mins. 30secs. start.

Le Vack appeared slow in getting away, but soon established a lead over Remington. It was clear that both these had the speed to overhaul the earlier starters, which included Mrs. Janson (248 Trump Jap) and a fleet of four Ivy's.

W. N. Peet (349 A.J.S.), 1min. 42secs. start, was clearly a dangerous element, however, for he crossed the line on to his third lap as Le Vack started his second, but the J.A.P. engine exponent was well into a 90 m.p.h. gait. A. Frazer (348 Sheffield Henderson) dropped out with a broken push rod. Finally Peet was overhauled by both Le Vack and Remington.

	Start.
H. Le Vack (346 New Imperial)	0m. 0s.
E. Remington (348 Edmund)	0m. 0s.
W. N. Peet (349 A.J.S.)	1m. 42s.

Winner's speed, 79.20 m.p.h.

Next came a car event, then followed a private owner's handicap for any type of machine not exceeding 1,100 c.c. Distance—three laps. Thirteen started out of an entry of twenty. The limit men were D. Fitzgerald (490 Norton sc.) and O. Clark (1086 G.N.) with 1 min. 42secs. start; the scratch man rode a 997 c.c. Indian. It was interesting to observe that the Norton sidecar got away much better than the G.N., and was the first machine to complete a lap, closely followed by R. Charlesworth (986 Zenith sc.), with W. H. Purdy on a nicely tuned A.B.C. hot on his tail; the scratch man was eight places behind and had a hopeless task. The next lap saw Charlesworth increasing his advantage and pressing Smith closely, while scratch, Turner (997 Indian), was "up" four places. Meanwhile, G. G. Burford (490 Norton) walked in, having left his compression somewhere on the track, G. H. Symonds (499 Duzmo) apparently had valve trouble, and C. F. Ashby (498 N.U.T.), who had been going well, now limped along on one cylinder. The first three finished at fifty yard intervals, with scratch just behind a couple of Nortons.

R. Charlesworth (986 Zenith sc.) ..	1m. 3s.
W. H. Purdy (398 A.B.C.)	0m. 54s.
D. Fitzgerald (490 Norton sc.)	1m. 42s.

Winner's speed, 66.11 m.p.h.

Waiting for the starter's flag.

Handicapping Astray.

In the senior solo handicap a dark-horse tricked the astute inhabitants of Chronograph Villa. By virtue of a non-starter, E. Headlam (496 Zenith-Bradshaw) became limit man with 2m. 9s. start from T. Allchin (989 Harley-D.), and he re-passed the line as the latter started. W. H. Sheraton (490 o.h.v. Norton) hung on to him closely for two laps and then disappeared, while G. Packman (976 Packman-Jap) was forging ahead, in turn being chased by F. A. Longman (994 Ariel-Mag). Headlam won by a clear mile, and the two last-mentioned riders changed positions as they reached the finishing line.

E. Headlam (496 Zenith-Bradshaw) ..	2m. 12s.
F. A. Longman (994 Ariel-Mag) ..	0m. 57s.
G. Packman (976 Packman-Jap) ..	1m. 9s.

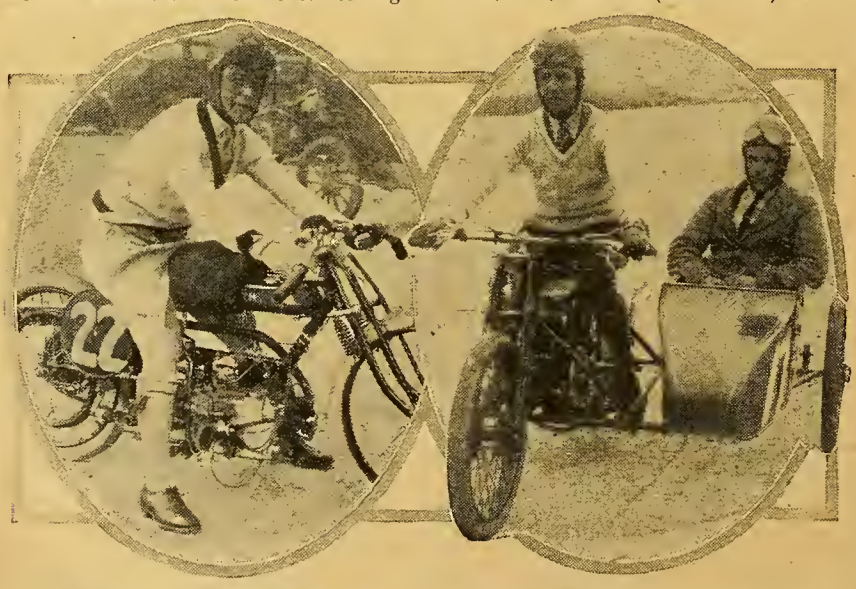
Winner's speed, 72.10 m.p.h.

Sidecars *v.* Cycle Cars.

After some "over 100 m.p.h." speeds in a car event, a passenger race followed for anything up to 1,100 c.c.

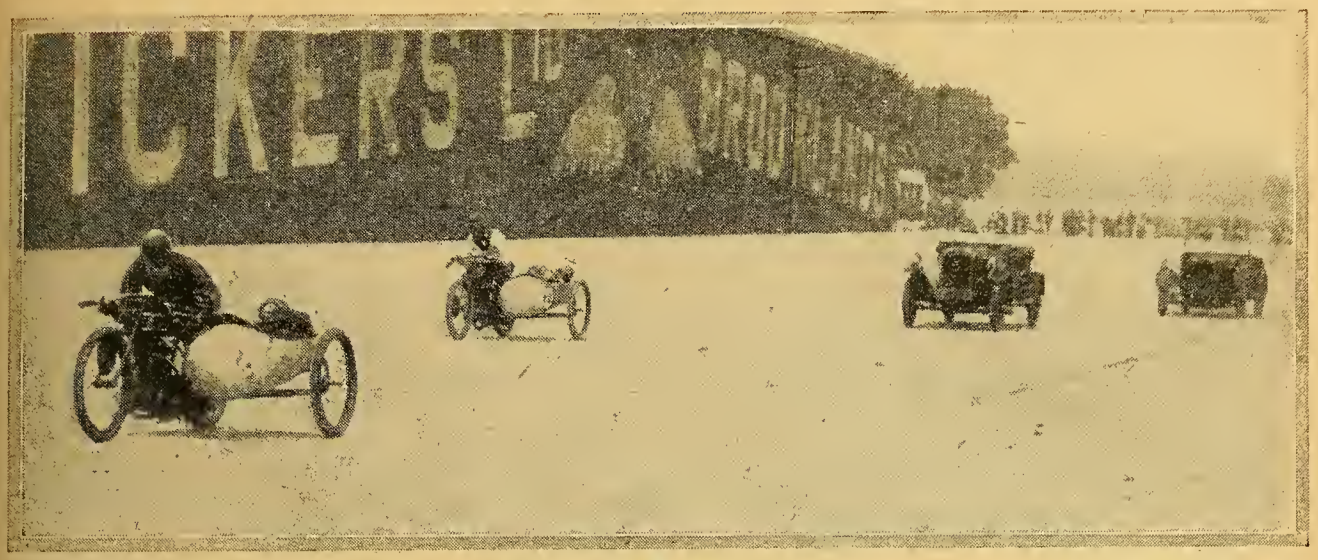
Scratch was H. R. Godfrey (1086 G.N.), while B. Alan Hill (1086 Rhode), L. A. Pollard (968 Talbot), F. W. Jelpke (348 Weatherell sc.), and S. M. Greening (348 Francis-Barnett sc.) were at the other end of the scale, with ten sidecars and a Salmson car in between.

None of the cars were placed, and Greening maintained a handsome lead for two laps. On his third round he was overhauled from the Byfleet banking by C. Volk (494 Douglas sc.), who



E. Headlam (496 Zenith Bradshaw), the limit man, who won the 3-lap senior handicap by a mile at a speed of 72·01 m.p.h.

Cecil Volk (494 Douglas sidecar) who scored another runaway win—at 59·80 m.p.h.—in the 3-lap passenger handicap. He was severely re-handicapped for the next race.



Sidecars *v.* cars in the 3-lap passenger handicap. F. W. Jelpke (348 Weatherell sidecar) and S. M. Greening (348 Francis Barnett sidecar) followed by B. Alan Hill (1086 Rhode) and L. A. Pollard (968 Talbot). A Douglas sidecar won the event.

had been favourably handicapped, and G. Packman's big J.A.P.-engined outfit was thundering up in the rear, only just failing to run into second place as the line was reached.

C. Volk (494 Douglas sc.) .. .. .. 2m. 3s.
S. M. Greening (348 Francis-Barnett sc.) 2m. 48s.
G. Packman (976 Packman-Jap sc.) .. 1m. 9s.
Winner's speed, 59.80 m.p.h.

The last big race of the meeting proper was a three-lap all-comers' handicap. Sixteen of the thirty-eight who entered their names did not materialise. Most of those who had been so misguided as to win by a good margin in previous events suffered the penalty, and were fairly and squarely handicapped. Despite this, however, the event was a ding-dong affair, exciting to watch, with Allchin (989 Harley-D.) going like the wind from scratch, but a handicap race at its worst—who was doing what it was impossible to say.

R. Charlesworth (988 Zenith-Jap sc.) .. 2m. 9s.
G. S. Werts (350 Curtis-B. and S.) .. 3m. 3s.
R. O. Lowe (490 Norton sc.) .. .. 1m. 45s.
Winner's speed, 68.90 m.p.h.

Public Schools M.C.C. Race.

In the last event of the day, which was confined to Public Schools M.C.C. members, the handicapper had been specially kind to the limit men, H. B. Browning (349 A.J.S.) and A. Fielden (348 Trump-Jap). They had the lead for two laps, then Fielden gave place to a Norton sc., closely followed by Charlesworth's big Zenith, which just fell short of annexing second place.

Fitzgerald, on the Norton, actually covered two laps with a broken handlebar, for the left half came away in his hand on the second lap.

H. B. Browning (349 A.J.S.) .. .. 4m. 6s.
D. F. C. Fitzgerald (490 Norton sc.) .. 3m. 27s.
R. C. Charlesworth (976 Zenith sc.) .. 1m. 42s.
Winner's speed, 57.01 m.p.h.

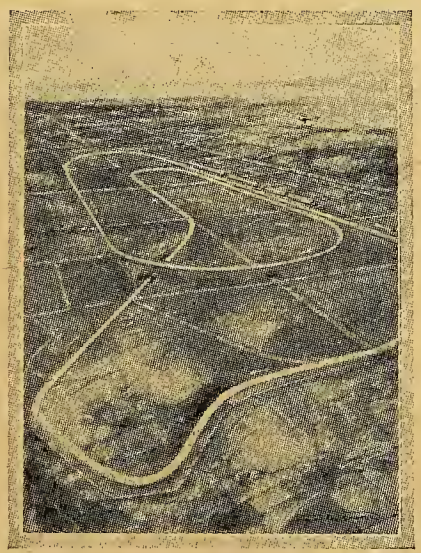
INAUGURAL MEETINGS ON NEW ITALIAN TRACK.

First Motor Cycle Event on the Monza Speedway To-morrow; 65 Entries for 248 Miles Race.

THIS week marks the opening of the new Monza 10 kilometre race track in Italy.

A voiturette race on the 3rd inst. was the first event held, while to-morrow (Friday) will be held the motor cycle race known as the Gran Premio delle Nazione, and on the 10th there will be a motor car race—the Italian A.C. Grand Prix.

The track has been built on absolutely up-to-date lines. It is situated in an erstwhile royal park seven miles north of the city of Milan, and formerly belonged to the King of Italy, who gave it to the State. The track itself has been built in country consisting of agricultural land, vineyards and woods. It is of peculiar form; one lozenge-shaped portion is described as a track, while the other is called a circuit, the two, however, forming one continuous speedway, with an underground passage, the circuit passing under the track while the grandstand will be outside, consequently the spectators therein will have in front of them a couple of parallel tracks with vehicles running over them in opposite directions. It is owing to this arrangement that the cars will pass the grandstand three times per lap.



Italy's new race course, the Monza track, near Milan.

The track measures approximately 2¾ miles round, and this, together with the circuit, makes a distance of 6¼ miles, or 10 km. The width of the track is 30ft. in front of the stand, so that vehicles may be started in groups.

Friday's motor cycle race is an international contest of 400 km. (248 miles), and in the 1,000 c.c. class there are 20 entries consisting of 12 Harley-Davidsons, 2 Excelsiors, 1 Indian, 1 Humber, 1 Norton, and 3 Gallonis. All the riders mentioned are Italian. In the 500 c.c. class the entries consist of 3 Fongris, 3 Triumphs, 3 Borgos, 3 Douglases, 1 New Hudson, 2 A.B.C.s, 3 Saroléas, 2 Veruses, 3 Sunbeams, 3 Freras, 3 Motosacoches, 2 Nortons, 2 Garellis, 2 Gileras, 3 Guzzis, 2 N.U.T.s, 3 S.A.R.s, and 1 A.J.S., amounting to 44 in all. In this case the majority of the riders are Italian, but Bartlett, who is an Englishman, will be riding one of the French A.B.C.'s, and Naas the other, while of the Saroléa riders one is a Belgian. As is common in Continental entry lists many riders are missing, but at the time of writing there is no evidence that any of the English machines will be ridden by Englishmen.

REMARKABLE DOUBLE-TWELVE RECORD.

346 c.c. Douglas Sidecar Averages over 41 m.p.h. for 24 hours. Two other Attempts Abandoned.

NO fewer than three attempts were made on the "double-twelve" record on Thursday and Friday last; but the riders scarcely bargained for encountering such extremely unfavourable weather conditions as prevailed intermittently during the whole of the two days.

Three Aspirants.

The machines were a 346 c.c. Douglas sidecar, a 989 c.c. Harley-Davidson, and a 998 c.c. Rudge, ridden, respectively, by C. G. Pullin, T. Allchin, and J. H. Mathers. Only the Douglas was successful.

A start was made at 8.26 a.m. on Thursday in a downpour of rain that continued for about two and a half hours, making the going both difficult and thoroughly unpleasant.

So bad was the weather in fact that Allchin, after experiencing a certain amount of engine trouble, gave up the attempt, and thus C. F. Temple (his relief rider) was not called upon to show his powers of endurance.

This left the Douglas and the Rudge still running, but after about seven hours under unimproved weather conditions the Rudge, which had suffered a certain amount of engine trouble, was also withdrawn, and Pullin had the field to himself.

J. D. Marvin acted as relief man on the Douglas, he and Pullin taking spells of two hours at a time.

Previous Times Broken.

The first record to fall was the five hours, previously held by Pullin at 201 miles 189 yards (40.22 m.p.h.). This time he covered 222 miles 932 yards, an average speed of 44.50 m.p.h.

Following this came the 6-hour record, previously held by J. F. Newey (293 New Comet-Climax) at 234 miles 526 yards (39.05 m.p.h.). The new record stands at 266 miles 1,362 yards (44.46 m.p.h.). Then, later, the 12-hour record suffered a similar fate, going up to 510 miles 1,623 yards (42.57 m.p.h.).

A new 300-miles record was also set up, the Douglas covering the distance in 6 hours 42 minutes 33.9 seconds (44.71 m.p.h.), followed by the creation of the "400" in 9 hours 22 minutes 1.3 seconds (42.10 m.p.h.) and the "500" in 11 hours 44 minutes 4.04 seconds (42.57 m.p.h.).

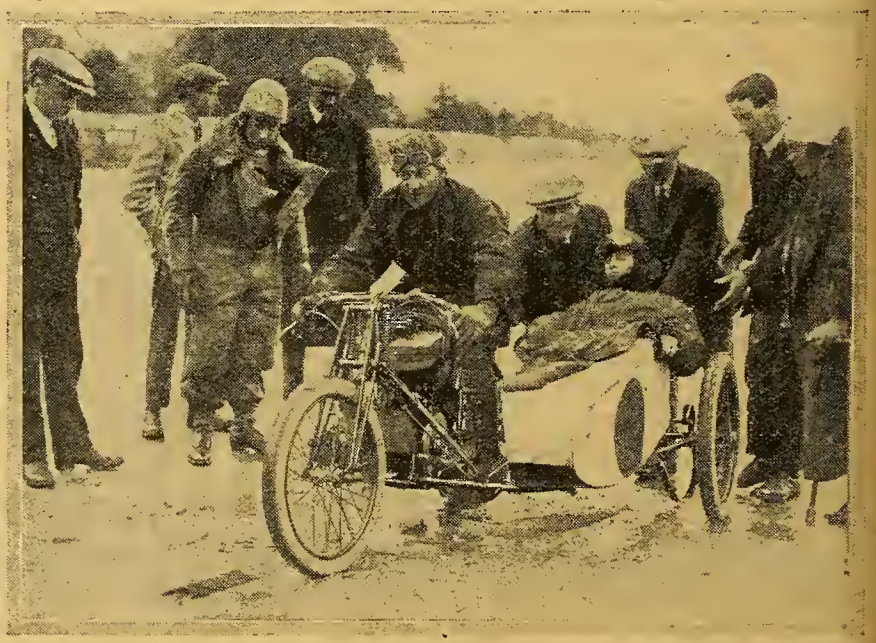
During the first half of the attempt 510 miles 1,623 yards were covered at an average speed of 42.57 m.p.h., and on the second day 491 miles 480 yards, giving a grand total of 1,002 miles 343 yards in the 24 hours, an average speed of 41.76 m.p.h.

Heavy rain fell again on Friday afternoon, and Pullin complained that whenever his turn for duty arrived it rained the hardest. He wore a serviceable-looking Sidcot flying suit, but even this was not fully proof against the elements.

Fortunately, the weather conditions improved considerably later, and the few spectators present were witnesses of a remarkable finish by the one machine which had stood up to the gruelling test—and stood up to it in a manner that is beyond all praise.

The last lap was really remarkable. After running continuously for nearly 500 miles the Douglas showed itself easily capable of a final speed burst, and lapped at 50.12 m.p.h.

With the exception of one broken valve spring, and fitting one plug and two new tyres, the Douglas riders had practically no trouble. The tyres were all Hutchinsons, and Lodge sparking plugs were employed. The fuel used was Pratt's spirit and the oil, Castrol R.



J. D. Marvin taking over the Douglas sidecar from C. G. Pullin in their recent successful attempt on the double twelve-hour record. Pullin, who had just finished two hours in the saddle, is on the left thoroughly soaked.

WHY NOT?

The Coventry Club's Combined Speed Trial and Hill Climb.

SO discouraging are the Midland police in the matter of hill-climbing competitions that the Coventry and Warwickshire Motor Club had to journey into Northamptonshire for a venue for the annual closed hill-climb. There an ascent, rejoicing in the name of "Why Not," was discovered near West Haddon.

As the new hill has a gradient of but 1 in 15 or so (its main attributes being its dead straight nature and the large stretches of grass at the roadsides for spectators to watch the proceedings), the event was termed a speed trial—and so it proved. The fastest motor cyclist averaged exactly 60 m.p.h. for half a mile—that is, if the crude timing system employed can be relied upon. This was in the open class, the rider being M. G. A. Scally on a T.T. Sunbeam. E. Poppe, mounted on a 976 c.c. J.A.P.-engined P. and P., was expected to shine, and did indeed get off the mark like a stone from a catapult, but had the bad luck to wrench the clutch off when half-way up the hill.

Motor-Cycles Beat Cars.

Apart from the motor cycle and sidecar events, there were two classes for cars, but the times of the latter were not so good as the motor cycles.

Quite a goodly crowd attended, and only one tradesman's cart descended the hill during the afternoon. A fleet of eight lightweight McKenzie's was noticed at the hill summit, but none were entered for the competition.

The names of winners of the different classes which were decided on time only are appended:—

550 c.c. SIDECARS:—
F. H. Brown (539 Rex-Acme sc.), 44⅗s.

750 c.c. SIDECARS:—
S. R. Philpot (739 Martinsyde sc.), 42⅖s

1,000 c.c. SIDECARS:—
W. J. Montgomery (976 Brough Superior sc.), 34⅕s.

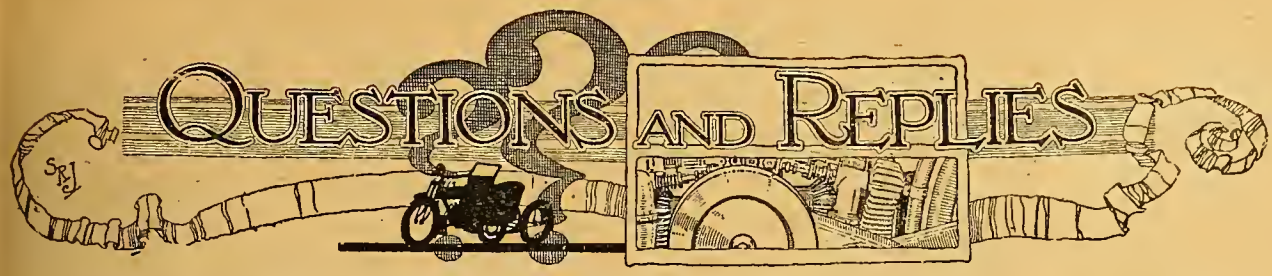
300 c.c. SOLO MACHINES:—
M. G. A. Scally (249 Rex-Acme), 35⅗s

350 c.c. SOLO MACHINES:—
M. G. A. Scally (348 Rex-Acme), 36⅕s

550 c.c. SOLO MACHINES:—
R. Elliott (499 Rover), 31⅘s.

750 c.c. SOLO MACHINES:—
M. G. A. Scally (492 Sunbeam), 30s.

1,000 c.c. SOLO MACHINES:—
W. J. Montgomery (976 Brough Superior), 30⅖s



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

PUSH STARTING.

Is there any objection to starting my 550 c.c. Triumph (which has a kick-start) on second gear, as I find it is at times much easier to get it going in this way in cold weather than on low gear, when I push the machine instead of using the pedal?—W.S.M.

There is no objection whatever to starting the machine on middle gear in the way you describe.

DIRECT CHAIN DRIVE.

How many teeth, half in. pitch, are needed on back wheel sprocket to give a ratio of 5 to 1 or 5¼ to 1 with 17 tooth sprocket on engine shaft. The wheels are 26 in. diameter and the engine is a 350 c.c. two-stroke. What width of chain should I use?—R.S.

A direct chain drive from engine to back wheel would in all probability prove very unsatisfactory, and it would be advisable to use a countershaft and two shorter chains. For a 350 c.c. two-stroke a chain of ½ in. width would be ample. You will need sprockets of 85T and 89T for 5 to 1 and 5¼ to 1 gears, respectively, with 26 in. wheels.

WEIGHT AND BRAKES.

When having a motor cycle weighed for registration, should lamps and generators, horn, petrol, oil, and tools be included? My machine is a 1911 Triumph, clutch model, with Philipson pulley, and I am a little concerned about its weight for declaration purposes. Also is one brake only (on rear wheel) sufficient to comply with law?—E.R.W.

The machine when weighed for registration purposes should be in its ordinary running condition, less petrol and oil, lamps and tools. One brake only (on the rear wheel) is insufficient to comply with the law, which requires that a machine shall be equipped with two brakes independently controlled, each one capable of locking the wheel.

NEEDS AN OPEN EXHAUST.

Since having my engine, a 1915 Connaught two-stroke, dismantled, I have been quite unable to make it go with even the two short lengths of exhaust pipe on, let alone silencer. The machine fires for a few yards and then loses power and stops. It will not even run on the stand. Owing, however, to the excellent law preserved in the country in which I reside I have been able to run with no exhaust pipes at all, when the engine will fire for ever, speed is good, and hill climbing and pulling excellent. The noise, of course, is deafening. I wish to sell the machine now, and shall have to replace the exhaust pipes. These are quite clean, as are the ports and carburetter intake. There is not very much crank case compression, but cylinder compression is good. Timing is, I think, all right. When the pipes are in position a distinct pressure is discernible for each explosion at the air intake of the carburetter. The pipes are quite clear, with no obstruction whatever.—D.S.

We cannot understand why it is that the machine will run without exhaust pipes and yet refuses to go at all if the silencing system is reinstated, unless there is some definite obstruction either in the pipes or silencer which sets up the back pressure you appear to get. Probably you have overlooked some obstruction in the pipes, and we think that if you clean them, making sure that all burnt oil and carbon, etc., is removed, the engine will give the same satisfaction as it does when the exhaust pipes are detached.

Important Dates.

Fri., Sept. 15th, to Mon., Sept. 18th—Anglo-Dutch Trial in Holland.

Sat., Sept. 16th—The Scott Trial.

Sat., Sept. 23rd—500 Mile Race at Brooklands.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd.—Olympia Motor Cycle Show.

NUMBER PLATES REQUIRED BY LAW

Having been stopped by the police for carrying only one number plate (at the rear) on my motor cycle, I argued that I was not failing to comply with the law since, as only one number plate need be illuminated after dark there was no need for me to have two while riding in daylight. Will you tell me whether I am right or not, also the best proceedings for me to take in the matter?—O.H.C.

The law requires that two number plates shall be fitted, one at the front of the machine and one behind, but in the case of solo motor cycles, one of these plates, not necessarily the rear one, must be illuminated after dark. Cars must have the rear number plate illuminated. You are, therefore, in the wrong, and do not appear to have any defence if a summons is issued against you.

CONFUSION IN TIMING MAGNETO.

In six months my 557 c.c. B.S.A. ran between 6,000 and 7,000 miles without any trouble. A month ago I found I was not getting the full power but decarbonising, grinding in valves, and fitting new plug made no difference. I also found my petrol consumption much higher than usual, and engine got very hot. I may say the rings, bearings, etc., are all quite sound, so I came to the conclusion that the timing was wrong. A week ago the engine stopped, and nothing would induce it to start. It was impossible to get a spark from the magneto. After pushing the outfit a couple of miles to a garage, the magneto was taken down, found rather dirty, cleaned, and put back. It now gave a good spark, but still I could not get the power. The carburetter was examined, and found perfectly sound, and petrol pipe was also clean. Now nothing remained but the timing. All authorities appear to contradict each other. Your excellent little handbook "Hints and Tips," advises a medium timing for touring; the booklet issued by the makers of the machine advises: Piston top of stroke, control lever three-quarters retarded, points just about to break; while the magneto makers' booklet says: Time with the spark fully advanced. If the magneto is timed with the lever in the retarded position, the spark may occur too early for normal running when the lever is placed in the fully advanced position. Every mechanic I have spoken to on this timing subject says he has never heard of any engine being timed with the lever set at full advance, that it is absurd, a misprint, etc., etc. In the meantime I

want more power and a lower petrol consumption, also a cooler engine.—PUZZLED.

The details you give do not sufficiently indicate the nature of the defect (if any) which prevented the magneto from sparking; possibly the falling off in power of your machine, all other things being in order, resulted upon the slipping of the magneto timing, due to one of the sprockets moving on its shaft. The easiest way to time an engine is to adopt the method mentioned in the B.S.A. handbook, and the one we invariably recommend ourselves, *i.e.*, with piston on top dead centre, control lever three-quarters or two-thirds retarded, and contact breaker points just about to separate. For greater accuracy of timing, however, it is often recommended that the fully advanced position of the magneto should be used. In this case the piston setting must be arranged to suit the particular engine under consideration. With the B.S.A., for example, the piston would need to be approximately 9 mm. from the top of the compression stroke when the spark occurs.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"H.F." (Wigton).—269 c.c. Cleveland; 269 c.c. O.K. Junior.

"T.C." (Birkenhead).—349 c.c. Barr and Stroud engine.

"L.M.L." (Consett).—Cox Atmos or other carburetter on 799 c.c. A.J.S. sidecar.

"G.S.A." (Edinburgh).—654 c.c. Quadrant and sidecar; 595 c.c. New Hudson and sidecar.

"G.C.P." (London).—398 c.c. A.B.C.: oiling system, m.p.g., m.p.h., hill-climbing capacity.

"E.S." (Langholme.) -499 c.c. Rudge-Multi, with pillion passenger: speed, consumption, hill-climbing, and belt slip.

"H.B.B." (Barrow-in-Furness).—349 c.c. A.J.S. standard sports model: speed, m.p.g., reliability, and suitable sidecar (Lake District).

"P.S.M." (Eastbourne). — 770 c.c. B.S.A. and sidecar with Amac carburetter.

"F.S." (Cheshire).—499 c.c. Rudge-Multi with light sidecar.

READERS' REPLIES.

REBORING CYLINDERS.

Replying to "L.E.F.," we have reground and fitted with oversize pistons some hundreds of cylinders, and have taken out as much as $\frac{50}{1000}$ and have never heard of one going wrong. We hold a large stock of $\frac{30}{1000}$ oversize pistons (genuine make) of a certain firm, the machines of which are most popular, and they certainly would not make these unless they thought this amount could be taken out with perfect safety. The majority of Douglas cylinders can be taken out $\frac{20}{1000}$.—ROBERT HARVEY (Harvey and Co.).

Another Price Reduction.

As from August 31st, the British list price of the "Henderson" *de luxe* motor cycle, with electric equipment, has been reduced from £165 to £137.

Retired in Protest.

The retirement of J. A. Leyland from the Six Days Trials was in no way due to his P. and M. machine; he informs us that he withdrew as a protest against inaccurate recording of hill failures.

Measuring Gradients.

An interesting treatise on the value of measuring gradients accurately has been issued by Tapley and Co., Belvedere Works, Totton, Southampton. It points out how the Tapley gradometer provides interesting data on the behaviour of a machine.

Competing Under Difficulties.

P. N. Hills, reported as a Royal Ruby rider in the "Six Days," found himself unable to compete at the last moment, and his place was taken by B. Browning, who, although inexperienced in trials riding, successfully completed the course on a machine taken straight from stock.

For Valve Grinding.

Quick-cutting qualities are a feature of a valve-grinding compound recently submitted to use for test by Mr. P. H. White, 62, High Street, Kingston, Surrey. P.H.W. compound is supplied in two grades, packed in a double tin, price 1s.

The Reason.

The reason that G. E. Austin lost a "gold" at the conclusion of the "Six Days" at Brooklands on account of poor speed was due to his inability to hold the machine (688 Coventry-Victor) above about 45 m.p.h. owing to the back wheel being out of alignment. The engine itself was not responsible for the failure.

Puncture Prevention in the "Six Days."

Ninety-nine riders in the Six Days Trials used Jackson's Impervo in their tyres, and of these 56 secured gold medals, 6 silver, 3 bronze, and 4 certificates. None retired through puncture trouble. Six of the ninety-nine reported withdrawal of nails from tyres without loss of pressure.

British Carburetters in International Trials.

For the third year in succession the winning team in the International Trials has been equipped with Amac carburetters, despite the fact that its machines have been foreign productions. The same make of carburetter was also fitted to the winning manufacturer's team (A.J.S.) and to the individual winners in the 750 c.c., 500 c.c., and 350 c.c. classes.

Flywheel Magnetos in the "Six Days."

Three Allon motor cycles which won gold medals in the Six Days Trial were all fitted with Villiers flywheel magnetos.

Cylinder Lubrication.

Of the 79 gold medals awarded in the recent A.C.U. "Six Days Trials" 70 were won by riders who used Miracle oil.

A Correction.

J. N. Roberts, who rode a 249 c.c. New Imperial in the 250 c.c. fifty miles race during the recent "Welsh T.T.," secured first place, and not second, as was stated in our issue of August 17th.

Sidecar Taxi Popularity.

As many as thirty motor cycle and sidecar taxis have now been licensed in Birmingham for public hire, whilst twenty other towns have adopted the "County" 976 c.c. B.S.A. and sidecar, supplied by the County Cycle and Motor Co., 300-1, Broad Street, Birmingham.

Broken Records.

A number of international and British records have recently been broken by V. E. Horsman whilst using a Binks racing carburetter. Also the sidecar records won at Brooklands on the 16th of last month by D. R. O'Donovan were secured on a machine fitted with a carburetter of a similar make.

A Super Sports Machine.

A limited number of exceptionally fine "Sports" solo motor cycles is being offered by the Coventry Victor Motor Company, Ltd., of Coventry, fitted with their 688 c.c. flat twin engine, to be supplied at the same price as the standard "Sports" model. A Brooklands certificate guaranteeing 80 m.p.h. will be given for an additional fee.

Correct Lubrication.

An extremely useful booklet dealing with motor cycle lubrication is issued by the Vacuum Oil Co., Ltd., Caxton House, Westminster, London, S.W.1. It is an exceedingly full and lucid treatise on the subject which cannot fail to be of great value to the motor cyclist. Numerous useful hints and tips, and a chapter of recommended grades of oil for all motor cycles, are included.

Found on the Road.

By Mr. G. Shayler, Caversfield House, Bicester, on the 23rd inst., two miles from Bicester on the Banbury Road, a licence holder and card off a Sunbeam motor cycle.

By Mr. H. J. Youngs, 2, The Parade, High Road, Kilburn, N.W., a sidecar lamp twelve miles out of London in Essex.

By Mr. C. Hunt, 29, Parkholme Road, Dalston, E.: a motor cycle inner tube at Puckeridge at 10.30 a.m. on August 27th.

By Mr. B. W. D. Lacey, 33, Woodbridge Road, Moseley, Birmiogham: a pair of overalls on the Maenturog-Penrhyndeudraeth road.

By "Observer": a pannier bag in White Hart Lane (North London) at 10.30 p.m. on August 22nd. Application should be made to Tottenham Police Station.

MARTINSYDE

"THE TWIN TO WIN"

Overhead valves, V Twin, interchangeable wheels, coach-built side car with roomy locker and luggage carrier; complete with lamps, horn, licence holder, full comprehensive insurance policy for 12 months. Ready for the road.

6 MONTHS GUARANTEE **£50** **Down, and 12 payments of £10 3s., or £63 down, and 12 payments of £9.**

SPECIAL TERMS FOR LARGER DEPOSITS. 18 months period by arrangement.

CASH PRICE £150. Delivery from Stock. Carriage Paid.

NOTE.—We not only have the pleasure in selling you a Martinsyde, but we endeavour to keep your good-will by means of our "After-Purchase Service," which absolutely assures you of satisfaction.

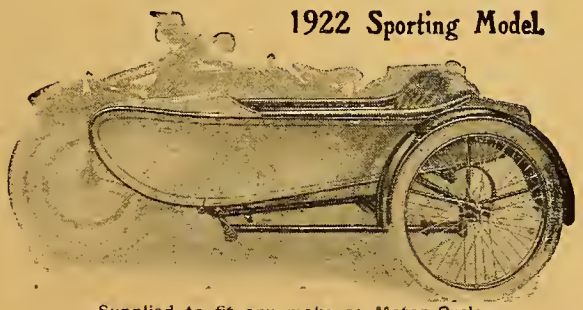
Write, call, or 'phone us NOW!

SOLE AGENTS **WATSON CAIRNS & Co., Ltd.,**

Lower Briggate, LEEDS.

Telephone – 23379 Leeds.

1922 Sporting Model.



Supplied to fit any make of Motor Cycle.

The product of 20 years' riding and manufacturing experience. More comfortable than most heavy touring models. Graceful and distinctive appearance. Strong enough for use with 8 h.p. machines, light enough for use with 3½ h.p. sporting mounts. £23 10 0 ready for the road.

COMPREHENSIVE CATALOGUE FREE ON REQUEST.

DOUBLE YOUR PLEASURE

MONTGOMERY SIDECARS

W. Montgomery & Co., Coventry

Then, IN CASE OF WET,

WATERPROOF CLOTHING

MACKINTOSH LEGGING OVERALLS

Extremely comfortable, and give absolute protection from wet.
In various weights and qualities. Either clip or strap fastening.

2346/60 Trouser Overalls, with seat.	2347/60 Without seat.	2348/60 Single Leg Overalls.
A £2 5 0	A £1 17 6	A £1 12 0
B £2 0 0	B £1 11 6	B £1 8 8
C £1 15 0	C £1 7 0	C £1 5 0

JACKETS.

2345/60. Double-breasted jacket, 36in. long, made in strong waterproof material, well cut and smart in appearance, and very durable. In various weights and qualities. Patterns sent on application.

Without Belt.		With Belt.	
A	£3 3 0	A	£3 5 6
B	£2 15 0	B	£2 17 6
C	£2 5 0	C	£2 7 6

2344/60. Double-breasted jacket with belt and saddle-piece, 42in. long, as illustrated, in various weights and qualities.

A .. £3 10 0 B .. £3 3 0 C .. £2 12 6

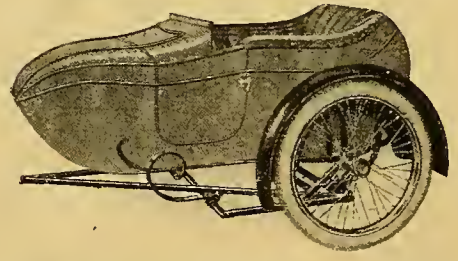
There is no extra charge for garments made to individual measure. We can, however, give immediate deliveries of stock sizes, while there is bound to be a delay of two or three days in the case of specially made garments.

We serve you as well by post as if you actually called in at our showroom.

You may therefore order through the post confident of receiving every attention and absolute satisfaction.

Patterns of material and a copy of the Dunhill Illustrated Catalogue of Motor Cycling Clothing or Motor Cycling Accessories sent post free on request.

The DUNHILL patent SIDECAR



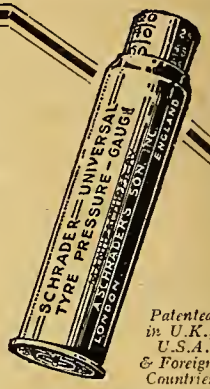
Dunhill (patent) triangular-frame-chassis Sidecars are the strongest, the lightest and the safest sidecars on the road.

The patent triangular design and construction ensures maximum strength and rigidity combined with minimum weight. Frame distortion is impossible.

If you are interested in Sidecars do not fail to send for the Dunhill Sidecar Catalogue. It illustrates and describes a fine selection of up-to-date chassis and bodies, and a copy should be in the hands of every Motor Cyclist. Send for one to-day.

Dunhills Limited

Head Office and Post Order Department :— 359-361, Euston Road, N.W.1. Glasgow : 72, St. Vincent Street.



IT doesn't take very long for "not enough air" to do a lot of damage to the carcass of a tyre—weakening the fabric or cord construction.

Own a "Schrader Universal" Tyre Pressure Gauge and know how much air you are carrying in your tyres and your spare.

Prices 6/- and 6/2.

Of all good dealers.

Patented in U.K., U.S.A., & Foreign Countries

Be sure it's a "Schrader" — Look for the name.

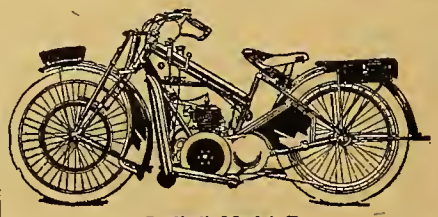
A. SCHRADER'S SON, Inc., British Factory: Victoria Road, Willesden Junction, London, N.W. 10. Manufacturers of the "Schrader Universal" Tyre Valve.

British Made

Schrader Universal TYRE PRESSURE GAUGE

IVY TWO-STROKE MOTOR CYCLE

This ideal Ladies' machine has the power to go anywhere. It averages 110 miles per gallon of petrol at a speed of 36 miles per hour, giving the maximum of comfort at a minimum cost of upkeep. It is exceedingly well guarded for cleanliness—low built, and no special dress is necessary when using this machine. Easily controlled and fitted with two powerful brakes, it inspires confidence.



With Clutch and Kick Starter, Two Speed Gear, etc., all inclusive. Catalogue free on request.

£62

Ladies' Model D.

S. A. NEWMAN, Ltd.,

Ivy Motor Works, Lichfield-Road, Birmingham.

London : Maudes' Motor Mart, Gt. Portland St. W.1

Radco

THE KING OF LIGHTWEIGHTS.

WRITE FOR BOOKLETS

100% HOLIDAY SUCCESSES

ONLY ONE MACHINE ENTERED IN EACH TRIAL AND EACH ONE **GUARANTEED STANDARD.**

A.C.U. SIX DAYS TRIAL — **GOLD MEDAL**
G. A. LOVEGROVE — 2½ H.P. "RADCO."

NORTH LONDON REL. TRIAL — **SILVER CUP**
REG. BAXTER ON HIS — 2¼ H.P. "RADCO."

E. A. RADNALL & CO., VAUXHALL WORKS,
Dartmouth Street, BIRMINGHAM.

CLUB BLACK ENAMEL.
Special Hard Drying ... Jars 11½d. & 1/6

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CLUB COLOURED ENAMEL.

Dries in 24 hours. Does not crack or chip.	Motor Cycle size Tins	1/9
	Made in: Large Tins	3/-
	Royal Mail Red. Black.	
	Elswick Green. White.	
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	French Grey. Brown.	
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CLUB TRANSPARENT ENAMEL FINISH, 1/6

ANY ARTICLE SENT POST FREE IF LOCALLY UNOBTAINABLE.

PLEASE SEND NAME OF AGENT.

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6d. & 1/9. 1 lb. Tin.

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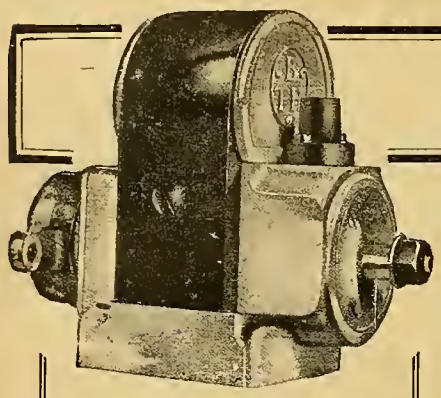
CLUB ENGINE BLACK.
For Radiators, Exhaust Pipes, etc. Tins 1/- & 1/8

FOR ALL ENGINE JOINTS. 1/- & 3/9.

IN ALL COLOURS. (See Above) 1/9 & 3/-

SOLE MANUFACTURERS:
SILICO ENAMEL CO.——STRATFORD, LONDON



Unexcelled on the Track and in the Air, B.T.H. Magnetos are ideal for the road.

ANOTHER SUCCESS!

A B.T.H. Magneto was fitted to the machine of Mr. G. Antoine, the winner of the Belgian Grand Prix in the 500 c.c. Class.

Unexcelled on the track and in the air, Standard B.T.H. Magnetos have this year again added numerous successes to their enviable list of achievements in many hill and road trials, the T.T. Races, the Brooklands Races and Tests, and in the Aerial Derby.

The British Thomson-Houston Co., Ltd.,

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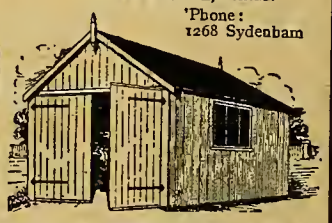
A. TURRELL & SONS, PORTABLE BUILDING WORKS. FOREST HILL, S.E.23.

'Phone: 1268 Sydenham

Lth. ft.	Wth. ft.	Height to Ridge ft. in.	Height to Eaves ft. in.	£	s	d.
7×	5 ..	7 0 ..	5 0	7	5	0
8×	6 ..	7 6 ..	5 3	9	0	0
9×	7 ..	8 0 ..	5 6	11	7	0
10×	8 ..	8 4 ..	5 9	12	19	0
12×	8 ..	8 4 ..	6 0	17	5	0
14×	8 ..	8 7 ..	6 3	21	0	0
16×	9 ..	8 9 ..	6 4	26	0	0
18×	9 ..	8 9 ..	6 4	31	0	0
20×	10 ..	9 0 ..	6 6	36	0	0

Prices Carriage Paid England and Wales.



Made in sections, with double doors, with ⅝in. tongued and grooved matchboards on strong framing. Roof matchboarded, and covered with good quality felt, making same thoroughly weatherproof. Doors hung on strong garnets, and fitted with lock and key and tower bolts. Windows glazed: 21oz. glass. Flooring: Strong joists, one inch boards. All bolts supplied for erecting house.

Modernise your machine by fitting an

ALBION LIGHTWEIGHT COUNTERSHAFT GEAR

Three-Speed with Clutch and Kick Starter.. £13 10 0
Two-Speed with Clutch and Kick Starter .. £10 0 0
Two-Speed Plain Box.. .. .. .. £6 0 0

IMMEDIATE DELIVERY.
From Stock.

ALBION ENGINEERING CO., LTD.,
Upper Highgate Street, BIRMINGHAM

SPEEDON MOTOR OILS

HIGH GRADE AND UNEXCELLED FOR CYCLES.

John S. Morris & Son (Oils), Ltd., Cross Lane Oil Works, Manchester

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns First 12 words 3/–, and 3d. for every ad- tional word. Paragraphs of under 8 words e charged double rate. Each paragraph is arged separately. Name and address must counted. Series discounts, conditions, and eclal terms to regular trade advertisers will quoted on application.

Postal Orders and Cheques sent in payment for vertisements should be made payable ILIFFE & SONS Ltd., and crossed & Co. easury Notes, being untraceable if lost in nsit, should not be sent as remittances.

All advertisements in this section should be companied with remittance, and be addressed the offices of "The Motor Cycle," Dorset ouse, Tudor Street, London, E.C.4. To sure insertion letters should be posted in ne to reach the offices of "The Motor Cycle," the first post on Friday morning previous to e day of issue. Advertisements that arrive o late for a particular issue or that are owded out will automatically be inserted in e following issue unless accompanied by structions to the contrary.

All letters relating to advertisements should ote the number which is printed at the end of ch advertisement, and the date of the issue which it appeared.

The proprietors are not responsible for clerical printers' errors, although every care is taken avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be dressed to numbers at "The Motor Cycle" Office. hen this is desired, the sum of 6d. to defray the cost of distration and to cover postage on replies must be added the advertisement charge, which must include the rds Box 000, c/o "The Motor Cycle." Only the number l appear in the advertisement. All replies should be dressed No. 000, c/o "The Motor Cycle," Dorset House, dor Street, London, E.C.4. *Readers who rep y to Box No. ertisements are warned against sending remittance through post except in registered envelopes; in all such cases the of the Deposit System is recommended, and the envelope uld be clearly marked "Deposit Department."*

n the case of motor cycles offered for sale under a box nber, as it is unusual for these to be sold without first ng inspected by the intending purchaser, advertisers will ilitate business by embodying in their advertisements ne mention of the district in which the machine red may be seen and tried.

☞ DEPOSIT SYSTEM.

ersons who hesitate to send money to unknown persons y deal in perfect safety by availing themselves of our posit System. If the money be deposited with "The tor Cycle," both parties are advised of this receipt.

he time allowed for a decision after receipt of the ds is three days, and if a sale is effected we remit the ount to the seller, but, if not, we return the amount the depositor. Carriage is to be paid by the buyer, but the event of no sale each party pays carriage one way. e seller takes the risk of damage in transit. For all nsactions up to £10, a deposit fee of 1/- is charged; on nsactions over £10 and under £50, the fee is 2/6; over and under £75, 5/-; over £75 and under £100, 7/6 l on all transactions over £100, ½%. All deposit tters are dealt with at Dorset House, Tudor Street, ndon, E.C.4, and cheques and money orders should be de payable to Iliffe & Sons Limited.

he letter "D" at the end of an advertisement is an ication that the advertiser is willing to avail himself of Deposit System. Other advertisers may be equally irous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no swer to their enquiries are requested to regard the nce as an indication that the goods advertised have ady been disposed of. Advertisers often receive so ny enquiries that it is quite impossible to reply to h one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. Combination, 1921, original tyres; £70; com- plete, sound condition.—10, Kimberley Rd., Cam- idge. [9823

There is always "a Base to fall back upon"—at Godfreys, where a sale is but the prelude to personal sustained interest in the welfare of the customer. Once a customer your smallest requirement becomes a matter of urgent importance, your slightest difficulty our opportunity to prove the worth of real service.

1922 MODELS.

It is at Godfreys you will find all the latest models, which can be supplied from stock either for cash or on easy terms of payment.

EXCHANGES.

It is at Godfreys where the most favourable allowance is made for your present mount in part exchange for another machine, and, if desired, the outstanding balance can be paid in monthly instalments.

SECONDHAND MACHINES.

You can buy a secondhand machine at Godfreys with perfect confidence, as every machine is thoroughly overhauled in our own workshops. The same guarantee is given as with a brand new machine. The following list is but a selection.

Our full list of both new and secondhand machines, also any catalogue required, sent post free on receipt of a postcard.

SOLO MACHINES.

1921.	3½ h.p. SUNBEAM. Sports Mod.	£90
1920.	I.O.M. RUDGE MULTI - -	£50
1920.	3½ h.p. LEA FRANCIS - -	£62
1921.	2¾ h.p. COVENTRY EAGLE (New) - - - - -	£64
1920.	3 h.p. A.B.C. Dynamo - -	£72
1921.	4 h.p. INDIAN SCOUT. Dynamo	£98
1919.	2¼ h.p CHATER LEA. 2 sp. -	£32
1919.	2¾ h.p. OMEGA. J.A.P. 2 sp.	£35

PASSENGER MACHINES.

1921.	3¾ h.p. SCOTT. Standard Mod. Squirrel Sidecar - - -	£92
1919.	4 h.p. DOUGLAS Combn. -	£58
1914.	4 h.p. B.S.A. Combn. - -	£68
1920.	5/6 h.p. RUDGE. Bulbous back s/c. - - - - - -	£58
1920.	4¼ h.p. B.S.A. Mod. H. and s/c.	£88
1917.	4 h.p. TRIUMPH. Sports s/c.	£74
1914.	4 h.p. B.S.A. Combn. - -	£65

Get your 8 h.p. Rover Car from Godfreys.

GODFREYS LTD.

208, Gt. Portland St., London, W.1.

'Phone - Langham 1300 (2 lines).

The Service House for B.S.A., Indian Levis and Scott Spare Parts.

MOTOR CYCLES FOR SALE.

A.B.C

WAUCHOPE'S, 9, Shoe Lane, London.—A.B.C., Sports model, £295; immediate delivery. [1279

A.B.C. 3h.p. solo, electric lighting, 1922, tax paid; £70.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [1311

£55.—1920 A.B.C., fully equipped, licensed, in splendid tune, a smart turnout; after 4 p.m.—4, Elm Gardens, Hammersmith. [1202

1920 3h.p. A.B.C., 4-speed, Lucas lamps, tax paid, specially tuned, 60 m.p.h., excellent condition; £60.—22, Whitehorse Rd., W. Croydon. [9283

1921 A.B.C., T.T. bars, twin copper exhausts, very sporty and excellent tune, just overhauled, accessories; £60.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [9698

A.B.C. 1920 solo, 4-speed, Tan-Sad, tax paid, fully equipped, perfect condition; £62.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

Spare Parts:

THE Service Depot for all A.B.C. Spares.—Maudes' Motor Mart, 100, Great Portland St., W. [1046

Ace.

ACE, made by Henderson, 1920, 4 cylinders, high power, new sidecar and engine, electric, splendid condition; £125.—A. Pope, c/o Brown Shipley, 123, Pall Mall, London. [9350

Acme.

1921 8h.p. Acme Combination, as new, detachable wheels, spare wheel, J.A.P. engine, fully equipped, hood and screen; bargain, £75.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [1327

A.J.S.

A.J.S.—New 2¾h.p. Touring and B1 models in stock; £85.—Moss, Wem. [1028

A.J.S. 1922 2¾h.p., model B, new; £85.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [1313

A.J.S. 2¾h.p. to 7h.p. in stock.—Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [5069

A.J.S. Motor Cycles on Easy Terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [1280

1922 A.J.S. B1 Sports Model, ridden 200 miles only; snip, £75.—F. Wilderspin, Chatteris. [1305

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175; in stock. Dorset trade supplied. [0817

A.J.S. Motor Cycles, deliveries from stock, all models. —Derby agents, H. Palin, Ltd., Bourne St., Derby. [5091

A.J.S. 2¾h.p., 3-speed, 1921, taxed, electric lighting, new condition; £65.—Clark, 7, Exhibition Rd., S.W.7. [9164

A.J.S. 6h.p. Combination, 1916, complete, in good running order.—Milward's Garage, 45a, West Hill, Wandsworth. [9403

£36.—S-6h.p. A.J.S. Coachbuilt Combination, 2-speed countershaft gears, clutch, K.S., taxed.—King, Egrove, Oxford. [9966

£70.—A.J.S. 1922 2¾h.p., Model B1, very small mileage, as new.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [5501

1920 A.J.S. Combination, Magdyno, spdeedometer, excellent; £110.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [1060

A.J.S. 1922 B1, in stock; also 7h.p. combination; cash, deferred, or exchange.—Ward and Co., 51, Upper Richmond Rd., Putney. [1185

1920 6h.p. A.J.S. Combination, complete, spare wheel unused, Tan-Sad; what offers?—Heaton, 406, Manchester Rd., Bolton, Lancs. [9285

NEW A.J.S. Combination, £183 model, shop-soiled only; special price, £165.—D. & S. Autocar Co., 33, The Parade, Golders Green. [1298

A.J.S. 7h.p. Combination, £175; 2¾h.p., 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [9461

A.J.S. 1916 2¾h.p. T.T., 2-speed, C.K.S., all-enclosed chain, Binks, recently renovated (cost £10), fully equipped; £45.—117, East Rd., London, N.1. [9930

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

1920 A.J.S. 6h.p. Combination, full accessories, spare wheel, Lucas dynamo, new condition, any trial; £105.—G., 21, Market Place, Kingston, Surrey. [9189

A.J.S., late 1919, 6h.p. Combination, spare wheel, screen, speedometer, side mirror, very fine condition; £85, or exchange lower power solo or combination.—Hillier (side bell), 9, Wallingford Avenue, North Kensington. [9903

All letters relating to advertisements should quote the number at the end of each advertisement and the date of the issue b37

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 6h.p. Combination, 1920, lamps, windscreen, hood, speedometer, spare wheel, perfect; trial; £120; not Sundays.—48, Somerset Rd., Tottenham. [9615

A.J.S. 6h.p. Combination, new tyres, good condition; any examination; £70; or exchange Morgan or small 2-seater.—Lancaster, Worminghall, Thame. [9362

LATE 1920 A.J.S. Combination, licensed, speedometer, in excellent condition; £100.—Apply Risden, Compass House, North Petherton, Somerset. [9209

A.J.S. 1920 6h.p. 2-seater Combination, spare wheel, many accessories; £115; perfect condition.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [8922

A.J.S. Combination, 6-6h.p.; £45; countershaft gears, kick-starter, lamps, horn, speedometer, tax paid for year, tyres good.—Cross, "Roseneath," Greenford Rd., Sutton, Surrey. [1175

A.J.S. Combination, 1921, magnificent turnout, little used and unscratched, fully equipped, electric light, horn, etc., perfect condition guaranteed; £130, or offer.—Guise, Hunstanton. [9949

129 GNS., Exchanges.—1921 A.J.S. Combination, lamps, screens, spare wheel, luxurious turnout, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [6966

1920 (registered March, 1921) A.J.S. 6h.p. Combination, dynamo lighting, spare wheel, hood, speedometer, etc., excellent order; reasonable offer accepted.—H. Newman, 7, Milton Avenue, Bath. [9188

1922 A.J.S., Sports B1, special Palmer cord tyres, machine absolutely unsoiled, only 3 weeks' old, tax paid, mileage 26; £80.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1257

SHOWROOM Soiled.—1922 A.J.S. 7h.p. Combination, spare wheel, windscreen; reduced to £165; easy payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [9335

6h.p. A.J.S. Combination, 1919, with 1922 front brake, etc., dynamo lighting, horn, Triplex windscreen, hood, curtains, mechanical pump, etc., recently overhauled; 100 gns.—26, Walbeck Rd., West Ealing. [9724

6h.p. 1920 A.J.S. de Luxe Combination, spare wheel, speedometer, lamps, mirror, etc., exceptionally fine condition; cost £225, accept £110 for quick sale.—Kingsley and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [9699

1920 A.J.S. Combination, Cowey speedometer, Terry saddle, electric lighting, 2 horns, best mechanical lubrication, luggage carrier, spare wheel, carefully driven, new condition; £125.—Gibb, 100, Northgate, Gloucester. [1076

1922 A.J.S. 7h.p. Combination, Magdyno, electric horn, trip speedometer, spare wheel, special car tyres, insurance, maker's guarantee, few miles only, absolutely new, bought car; £160.—51, Upper Richmond Rd., East Putney. [8420

A.J.S. 7h.p. Combination, September, 1921, hood, screen, spare wheel, Lucas electric lighting, speedometer, tax paid to December, splendid condition; 100 gns., or near offer.—74, Brighton Rd., Surbiton. 'Phone: Kingston 3025. [9986

A.J.S. 1922 2¾h.p., only done 240 miles, faultless, 21in. tyres, Bowden, largest Lucas, B. and L. mechanical pump, horn, etc., insured and licensed; cost £110, accept £75.—Kelley, 2, Hilltop Avenue, Cheadle-Hulme, Cheshire. [9786

1921 A.J.S. Combination, 7h.p., dynamo, Lucas electric horn, speedometer, spare wheel, hood, screen, etc., indistinguishable from new; tax paid; guaranteed faultless; £160.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1256

A.J.S. Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement.)—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [6160

PHOTOGRAPHS Free.—1922 A.J.S. 2¾h.p., 3-speed, lightweight combination, run few weeks only; 89 gns. Also 1922 A.J.S. 2¾h.p. 3-speed solo; 79 gns. Also 2¾h.p. 2-speed A.J.S.; 39 gns. All have hand-clutch and kick-start; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1064

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7662

A.J.S. Spares, early models.—Harry C. Boham, St. Paul's Terrace, Wolverhampton. See Parts and Accessories Column. [1306

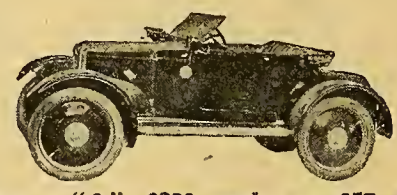
Albion.

FOR Sale, Albion, 3-speed, K.S., gear box, not run 300 miles, nearly new; cost £13/10, accept £12; N.S.U. gear, new gears, etc., good condition, £4.—2, Chinley Avenue, Moston, Manchester. [9850

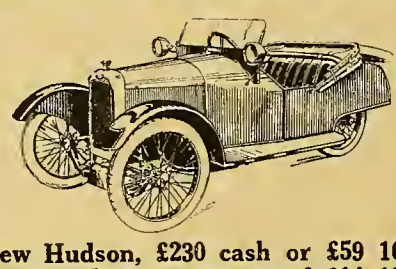
Alldays.

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Allons; unequalled service, repairs, etc. [3559

IN STOCK



Rover "8" £220 cash, or £57 4s. down and 12 payments of £14 6s.



New Hudson, £230 cash or £59 16s. down and 12 payments of £14 19s.

SECONDHAND BARGAINS.

1920	Enfield Comb. Magdyno, hood screen, speedometer	£105 0
1921	O.K. 2-speed Clutch, all accessories	£39 10
1922	Rudge Multi, tax paid, scarcely used	£62 10
1916	B.S.A. Comb., very little used	£62 10
1920	B.S.A. Comb., with accessories	£78 0
1920	Enfield Comb., excellent condition	£97 10
1917	Douglas 2¾ h.p. 2-speed, in nice order	£35 0
1922	Coventry Premier, Dynamo, Speedometer ...	£175 0
1915	B.S.A. Comb., Montgomery S/car	£62 10
1919	Triumph Comb. A bargain	£67 10
1921	Rudge, Solo, very fast...	£57 10
1917	Douglas, W.D. 2¾ ...	£29 0
1922	New Hudson Comb. ...	£115 0
1914	Chater-Lea comb.	£55 0
1919	Enfield comb.	£89 10
1922	A. J. S. dynamo lighting	£175 0

Only 4% extra for deferred payments.

LAMB'S Ltd

EUSTON ROAD, LONDON, N.W. (Opposite Gt. Portland Street). 'Phone: Museum 4978.
Open until 7.30 Monday to Friday. Open until 4 Saturday.

WOOD GREEN, LONDON, N., 50, High Road.
'Phone: Hornsey 1956.

WALTHAMSTOW, LONDON, N.E., 151, High Street.
Phone: Walthamstow 169 (2 lines).

MOTOR CYCLES FOR SALE.

Alldays

1921 Alldays Allon, 2-speed, clutch, K.S.; £29/10—67, Fernlea Rd., Balham. [1193

ALLON 2-speed, 2¾h.p., splendid condition; £23.—Noel Wheeler, "Sunnyside," Alcester. [9328

ALLDAYS Allon, 2-speed, clutch, lamp and tools, first-class order; £32, or offer.—54, Duchess Rd., Edgbaston, Birmingham. [9349

1922 Allon, 2-speed, kick, clutch, absolutely as new, taxed; £50; rare opportunity.—4, Gaywood Rd., Walthamstow. [9462

1922 Allon Combination, electric lighting, tax paid, original tyres, unscratched; £65.—8, Hall Moon Lane, Herne Hill, S.E.24. [1346

£30.—Alldays-Matchless Combination 4h.p., 3 speeds, handle start, coachbuilt sidecar, lamps, horn, etc.—13, Crooklog, Bexley Heath, S.E. [9634

ALLDAYS Allon 1917 2¾h.p., 2-speed, lamps, horn, Tan-Sad, overhauled recently, tax paid, insured; £30.—5, Poplar Walk, Herne Hill, S.E.24. [9298

ALLON Combination, 1921, Cowey speedometer, lamps, spares, complete, cost about £100; sacrifice, 50 gns., or nearest offer.—Ernest Woodcock, Kettering. [9222

25 GNS., Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452. [4773

1922 Allon, 2-speed, clutch, kick-start, good lamps, tools, and accessories, tax paid, insured, little used, and perfect order; £47/10.—H., The Cottons, London Rd., Romford. [1176

PHOTOGRAPH Free.—1921 Allon, 2 speeds, clutch, kick-start, new condition; 38 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1063

1921 2¾h.p. Alldays Allon, 2-stroke, 2-speed, clutch, kick-starter, legshields, tax and insurance paid, all accessories, excellent condition; £45, or near.—F., 14 King's College Rd., Hampstead, N.W. [1235

1921 guaranteed Alldays Allon, 2-speed, clutch, kick-start, lighting set, horn, disc wheels, leg shields, tax paid, etc., in practically new condition; £39.—Walker, 769, Romford Rd., Manor Park, London, E. [9691

American X.

SPECIAL Racing American X., £50; light sidecar, £7.—Rosekilly, 92, Savernake Rd., N.W.3. [9569

1920 American X Combination, dynamo lighting, speedometer, 69 gns.—75, High St., Witney, Oxon. [9584

AMERICAN X 7-9h.p. Combination; selling through illness; perfect order; bargain, £53.—171, Hatfield Rd., St. Albans. [1173

1919-20 American X Combination, 8h.p., 3-speed, kick-start, Henderson Elite sidecar with exhaust heater; price £90.—171, High St., Chatham. [9398

AMERICAN X Combination 1916, 3-speed, clutch, kick-start, acetylene lighting, must sell, no reasonable offer refused.—Hatton, Coombe Green, Coombe Hill Rd., Kingston Hill, Surrey. [9191

Antoine.

£8.—3½h.p. Antoine, m.o.v. magneto, good running order.—King, Egrove, Oxford. [9967

Ariel.

1920 3½h.p. and 6h.p. Ariel Combinations; see under Exchanges.—Walbro. [9548

1922 3½h.p. Touring Ariel, Rideezi sidecar; bargain, £95.—33, Stradbroke Rd., Ipswich. [9416

ARIEL 1922 (May) 3½h.p. Combination, perfect condition, tax paid; £105.—John, Lyndale, Narberth. [9982

ARIEL 6-7h.p. Combination, late 1920, first-rate condition; offers wanted.—274, Heaton Rd., Newcastle-on-Tyne. [9830

1922 Ariels; immediate delivery; best value; 6-7h.p. combination, £125.—Pion's Garage, 12, High St., Fulham. [6535

ARIEL Combination, 3½h.p., 2-speed, good running order; £35.—H. Smith, 86, Manor Park Rd., Harlesden, N.W. [9393

ARIEL 1920 3½h.p. Combination, 3-speed countershaft, new condition; £59.—Laundry, 49, South Lambeth Rd., Vauxhall. [1230

ARIEL 6h.p. 1921 Standard Combination, Magdyno lighting, tax paid; bargain, £127.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [1310

SOUTHPORT.—1920 Ariel 3½h.p. Combination, Ariel sidecar, Easting, all on, excellent lot; 69 gns.; exchanges.—Kents, 417, Lord St., Southport. [8588

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

1922 Ariel Special Combination, 6-7h.p., cost £125, shop-soiled; £108 cash, or deferred payments.—Taylors, 52-53, Sussex Place, S.W.7. 'Phone: Kens 7260. [0921

MOTOR CYCLES FOR SALE.

Calthorpe.

CALTHORPE-PRECISION 4¼h.p., 3-speed countershaft combination; 48 gns.; take lightweight part.—57, Kenbury St., Camberwell, London. [9777

1918 Calthorpe 2¾-3h.p., 2-stroke, clutch, 2-speed, requires slight adjustments; any cash offer.—20, Marlborough Flats, Walton St., Chelsea, S.W.3. [9821

2½h.p. Calthorpe Motor Cycles.—New 1922 models, £36, or £7 down and 12 monthly payments of £2/9/6, balance paid in 18 months if required.—Vauchope's, 9, Shoe Lane, London, E.C.4. [1284

SOUTHPORT.—Calthorpe 1916 Combination 4h.p. J.A.P. twin, Calthorpe sidecar, luggage grid, all-chain, smart appearance, gift, 39 gns.; 2¼h.p. 2-speed, 2-stroke Calthorpe, sound, taxed, 17 gns.; exchanges.—Kents, 417, Lord St., Southport. [8589

Campion

CAMPION-J.A.P. 8h.p. 1920 Combination, perfect; £76.—176, Walmer Rd., North Kensington. [8349

Chater-Lea-Villiers

CHATER-LEA-VILLIERS 1920 2½h.p., 2-speed, free engine, drip feed, magneto control, all on, tax paid, perfect condition, as new; £40, or nearest.—17, Richmond Crescent, Barnsbury, N.1. [9429

Cleveland

£12 secures Cleveland 1921 3h.p., 2-stroke, absolutely new, mileage under 100, fully equipped; balance 12 monthly payments 55/-.—Martin, 10, Herbrand St., Russell Sq., W.C.1. [9233

Clyno.

1920 2¼h.p. Clyno, 2-speed, clutch; £30.—Hughes, 245, Lovely Lane, Warrington. [9231

CLYNO 1920, 2-speed, as new; £28.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [9594

CLYNO 2-speed Lightweight, absolutely new and unused, shop soiled only; £50.—Girling's, Maldon, Essex. [1294

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Clyno 1920 2¼h.p., 2-stroke, 2-speed, and K.E.; £35. [1285

CLYNO 5-6h.p. 1918, 3-speed, mechanically sound, new condition; a bargain, £45, or nearest.—13, Charles St., Barnes. [9996

2½h.p. Clyno, 2-speed, 2-stroke, clutch, fully equipped; £25, or exchange.—91, Burntwood Lane, Earlsfield, S.W. [9898

£39/10.—Clyno Combination, late W.D. type, spare wheel, etc., good running order; bargain.—406, York Rd., Wandsworth. [9894

NEW 1922 8h.p. spring frame Clyno Combination in stock; 158 gns.; exchange or deferred payments if desired.—Kays, 8, Bond St., Ealing. [8536

8h.p. Clyno-Jap Combination, dynamo lighting, spare wheel, all on, splendid condition; bargain, £80.—L., 69, Warwick Gardens, Kensington. [9314

CLYNO, 1920, 2½h.p., good condition, electric, all on; £35; also Lightweight sidecar if required.—Eustace, 11A, Lyndhurst Rd., Hampstead, N.W.3. [9197

CLYNO Combination, 6h.p., 3-speed, new tyres and tubes, and new Amac carburetter fitted, splendid condition; £65.—Owner, 2, Burnside St., Bow, E.3. [9421

CLYNO Combination, 1917-18, 6h.p., splendid condition, new Sandham double sidecar, Tan-Sad, lamps, windscreen; £88.—181, Upland Rd., Dulwich. [9237

5-6h.p. Clyno Combination (Ex W.D.), interchangeable wheels, 3-speed, K.S., good order; bargain, £45. Exchanges.—W.J.C. Motor Exchange, 5, Addison Ave., Holland Park, W.11. Park 2071. [1211

2½h.p. Clyno 1920, 2-speed and clutch, overhauled in our own workshops, complete with accessories, tax paid for 1922; £37/10; convenient easy payments.—Harrods Motor Sales Rooms, 118, Brompton Rd., S.W.1. [9476

8h.p. Clyno-Jap Combination, 1918 model, new in 1920, large bulbous black and and gold sidecar, winged dash, 4 interchangeable wheels, 3 new 28×3 Duolops, 3-speed, clutch, K.S., pillion seat, lamps, Stewart horn, hood, speedometer, screen, luggage carrier, mechanically perfect; £90; seen after 6.30, Saturday 3.30, or by appointment.—Poole, "Ivydene," Alexandra Rd., Hounslow. [9255

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7664

Connaught.

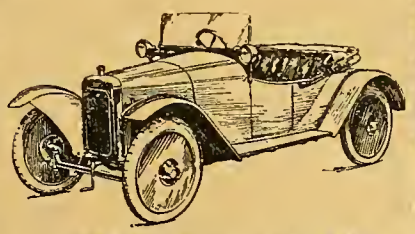
CONNAUGHT.—Some shop-soiled and second-hand machines, all in perfect condition, thoroughly overhauled, some never been on the road, at greatly reduced prices; from £35.—Connaught Depot, 111, St. Portland St., London, W.1. [9448

1922 Connaughts, all models, for immediate delivery; single speed, £39/18; Sturmey 2-speed, clutch and K.S., £57/10; 3½h.p. 3-speeds, clutch and K.S., all chain drive, £75; 3½h.p. Combination, 3-speeds, clutch and K.S., £95. Deferred, 4% extra.—Homac's 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1258

1922 COVENTRY PREMIER

REDUCED PRICE, £230.

8 h.p. W.C. 4-wheeler, dynamo lighting, spare wheel, hood, screen, speedometer, dickey seat and 12 months' insurance.



LIBERAL ALLOWANCES
for secondhand models in exchange.
Deferred payments quoted.

NEW 1922 LIGHT CARS.

B.S.A., CALTHORPE, COVENTRY PREMIER, LAGONDA, L.S.D. AND RHODE.

NEW 1922 MOTOR CYCLES.

B.S.A., BRADBURY, DOUGLAS, ENFIELD, EDMUND, LEVIS, MARTINSYDE, NEW IMPERIAL, NORTON, REX, ROYAL RUBY, SCOTT, SUNBEAM AND TRIUMPH.

SECOND-HAND BARGAINS.

SOLOS.

ARIEL, 1919, 3½ h.p., 3-speed countershaft	£55 0
FEATHERWEIGHT, 1½ h.p., spring forks	£9 15
HUMBER, 3½ h.p., wants attention	£14 10
ROVER, 3½ h.p., 3-speed, Good	£39 10
RUDGE, 3½, clutch model, wants attention	£19 10
RUDGE-MULTI, 1920, 3½ h.p., I.O.M.	£55 0
RUDGE-MULTI, 1921, 3½ h.p., I.O.M.	£59 10
RUDGE-MULTI, 1920, 6-6 h.p., tax paid	£62 10
RUDGE-MULTI, 1920, 7-9 h.p.	£70 0
SINGER, 3½ h.p., Clutch, Mag.	£25 0
T.D.C., 1921, 2½ h.p., 2-stroke, tax paid	£35 0

PASSENGER MACHINES.

ARIEL, 1919, 3½ h.p., 3-speed comb.	£69 10
B.S.A., 1921, 6 h.p., comb. tax paid	£129 10
COVENTRY VICTOR, 1921, 5-6, flat twin	£97 10
CHATER LEA, 8 h.p., 3-speed comb.	£65 10
HARLEY, 1918, 7-9, 1920 Grindlay sc.	£87 10
HARLEY, 1919, electric comb.	£97 10
INDIAN, 7-9 h.p., 2-speed comb., tax paid	£57 10
MATCHLESS, 8 h.p. comb., wants attention	£39 10
MARTINSYDE, 1920, 6 h.p. comb.	£85 0
NEW IMPERIAL, 8 h.p., 3-speed comb.	£87 10
REX M.O.V., 6 h.p., 2-speed comb.	£39 10
REX-JAP, 6 h.p., 2-speed comb., tax paid	£52 10
RUDGE, 1920, 5-6, and sidecar, tax paid	£72 10
RUDGE, 7 h.p., 1920 comb.	£82 10
SCOTT, 3⅜, 2-speed comb., tax paid	£55 0
SCOTT, 1920 comb., screen, etc., tax paid	£87 10
TRIUMPH, 3½, 2-speed comb., tax paid	£39 10
ZENITH, 4-5, countershaft clutch comb.	£57 10
ZENITH, 8 h.p., countershaft clutch comb.	£69 10

RUNABOUTS.

LAGONDA Coupe, 1922, 1,200 miles	£275 0
A.V MONOCAR, 1920, 8 h.p., 2-sp. Jap	£69 10
FORD, 4-seater Tourer, wants attention	£49 10
H.F.G., 1920, 8-10 h.p., 2-seater, dynamo	£97 10
RANGER, 8 h.p., 2-seater, wire wheels, etc.	£75 0

SPECIAL OFFERS.

£7 10s. deposit and 10s. weekly buys

BUCHET, 4 h.p., low frame, tax paid	£19 10
F.N., 4-cylinder, spring forks, Bosch mag.	£19 10
STEVENS, 4½, single gear, spring forks	£17 10
HUMBER, 3½ h.p., 2-speed	£27 10
RUDGE, 3½ h.p., clutch, wants attention	£19 10
REX, 1913, 6 h.p., 2-speed comb.	£42 10
NEW IMPERIAL, 2½, single speed	£22 10
PREMIER, 3½ h.p., 2-speed	£29 10
SINGER, 3½ h.p., clutch, tax paid	£25 0
BRADBURY, 3½ h.p., 3-speed, tax paid	£32 10
HUMBER, 3½ h.p., engine wants attention	£15 0

Halifax Motor Exchange,

25, Horton Street, Halifax.

'Phone: 1400. 'Grams: "Perfection."

MOTOR CYCLES FOR SALE.

Connaught

1922 2-speed Connaught, unused but slightly scratched, very fine machine; £48.—198, King St., Hammersmith. 'Phone: Hammersmith 2474. [9372

Coulson

1921 Coulson B, 2¾h.p. Blackburne engine, 2-speed, spring frame, lamps, horn, licensed, mileage 800; £40.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [9768a

Coventry Acme.

LATE 1920 Coventry Acme Combination, J.A.P. 975, unused spare wheel, new Terry saddle, Easting windscreen, Cowey speedometer, D.A. cylinder, P. and H. lamps, small mileage, condition perfect; £120, or near offer.—J. Richardson, St. Ives, Hunts. [9625

Coventry Eagle

COVENTRY EAGLE, 2-stroke, countershaft, electric, new condition; trial; £28.—10, Boundary Rd., Merton. [1009

1922 Coventry Eagle Utility Model, 3h.p. J.A.P., Sturmey-Archer clutch, kick-starter, all chain, unused; catalogue price £90, accept £80.—J. Richardson, St. Ives, Hunts. [9627

Dayton

DAYTON 2½h.p. 2-stroke, stand, carrier, Druid forks, new belt, good running order; bargain, £14.—Murray, 37a, Charles St., Hatton Garden, Holborn. [9407

De Luxe.

1920 De Luxe, 2 speeds, perfect order, taxed; £22.—Fisher, Springwell Rd., Heston, Hounslow. [9668

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DENE 1920 8h.p. Combination, fully equipped, lamps, horn, speedometer, good order; £65.—The Layton Garages, 30, Holywell St., Oxford. [1146

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ROBERTSON'S Motors, Ltd., are the Londoo and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P. engines.—157b, Great Portland St., W.1. [5931

Douglas.

DOUGLAS 2¾h.p., very fast; £35.—L. Clark, 112, Thorpe Rd., Forest Gate. [9274

1918 and 1920 4h.p. Douglas Combinations; see under Exchanges.—Walbro. [9550

1916 2¾h.p. Douglas, excellent condition; 30 gns.—11, Chaucer Rd., Herne Hill, S.E. [9216

1918 2¾h.p. Douglas, 2-speed, perfect condition; £33.—217, Belsize Rd., Hampstead. [9826

DOUGLAS 2¾h.p., 2-speed, excellent condition; £32, bargain.—80A, High St., Bexley. [1215

DOUGLAS 1918 4h.p. Combination, tax paid; £55.—Sheldrick, 4, Stratford Grove, Putney. [9632

1919 4h.p. Douglas Solo, everything as new; £48.—117, Loughboro' Park, Brixton, S.W.9. [9215

DOUGLAS 1914, 2-speed, kick-starter, fully equipped; £25.—Jackson, "Sunnyside," Alcester. [9327

DOUGLAS, 1921, all on, taxed, perfect; 46 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5851

2¾h.p. 2-speed Douglas, just overhauled, any trial; £21.—Fairhurst, behind 68, Standishgate, Wigan. [9736

1920 Douglas 2¾h.p., 3-speed, new condition, accessories; 50 gns.—Eames, Westgate, Peterborough. [9360

DOUGLAS 4h.p., late 1921, run 600 miles only, new; £60.—Blackburne, 82, Loodon Rd., Kingston. [9394

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£35.—1916 Douglas, 2-speed, all on, superb condition; ride away.—323, Queen's Rd., Peckham, S.E.14. [9225

1919 2¾h.p. Douglas, 2-speed, lamps, horn, good condition; £40.—11, Kilmartin Av., Norbury, S.W.16. [1056

LATE 2¾h.p. Douglas, guaranteed perfect and absolutely unscratched; 29 gns.—67, Fernlea Rd., Balham. [1199

1918 Douglas Combination, new sidecar, perfect condition; £45, any trial.—120, Sutherland Rd., Croydon. [9998

DOUGLAS 2¾h.p., 2-speed, tax paid, in excellent running order; £25/10.—74, Brighton Rd., Surbiton. [9990

1916 2¾h.p. Douglas, Lucas lamps, good condition, tax paid; accept £30.—2A, Kew Foot Rd., Richmond. [9867

1921 2¾h.p. Douglas, good condition; £50, or nearest offer.—13, Willputte Terrace, Ebbw Vale, Mon. [9228

£45.—2¾h.p. Douglas 1921, 2 speeds, fully equipped, licence, new condition. Exchanges.—63, Solon Rd., Brixton. [9709

GOING Cheap, posh 2¾h.p. Douglas, sound, condition, insured; what offers?—14, Church Rd., Islington, N.1. [9374

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2¾h.p. Douglas, fully equipped, pillion seat, good condition; £30; exchange.—Wright, 167, Malvern Rd., Kilburn. [9542

DOUGLAS 1919 4h.p. Combination, perfect condition and appearance; any trial; £63.—159, Ebury St., Victoria. [1074

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2¾h.p. Douglas 1916, little used, thorough inspection invited, all on; £35.—Smith, Heron Court Hotel, Richmond, Surrey. [9932

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1919 4h.p. Douglas, 3-speed, no clutch, lamps, horn, discs, sporting, tax paid; 42 gns.—24, Brackley Rd., Beckenham. [9531

2¾h.p. Douglas, recently overhauled by Douglas, Bristol; 40 gns.—Apply, 35, Telferscot Rd., Balham, S.W., evenings 7-8. [9570

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SOUTHPORT.—1919 Douglas semi-T.T., Lucas head lamp, horn, tools, tax; bargain, 38 gns., exchanges.—Kents, 417, Lord St., Southport. [859

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NEARLY New 1921 Douglas 2¾h.p., 2-speed Miller, electric lighting, horn, tax paid, want seeing; gift, £49/10.—379, King St., Hammersmith. [101

1921 Douglas 2¾h.p., 3-speed, hand clutch, kick start, speedometer, all on, perfect; £70, or offer; must sell.—Box 3483, c/o *The Motor Cycle*. [9474

1917 2¾h.p. Douglas, good appearance and mechanical condition, tax paid, insured, and all accessories £35.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [132

DOUGLAS 1920 2¾h.p., 3-speed, clutch, kick starter, fully equipped and tax paid; bargain at £55.—The Layton Garages, 30, Holywell St., Oxford. [114

1918 Douglas Combination, just thoroughly overhauled, very complete, tax paid, etc.; £60.— 5, Putney Bridge Rd., Wandsworth. Putney 2728. [9463

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1922 3½h.p. Sports Douglas, indistinguishable from new, lamps, horn, absolutely in new condition; 92 gns.—Edwards, 50, Harrington Rd., South Kensington. [8070

2¾h.p. Douglas, 2-speed, 1914, many 1921 parts cylinders, pistons, valves, mudguards, Binks, new belt, tyres; £30.—3, Parkfield Rd., Shipley, Yorkshire. [9819

4h.p. Douglas Combination, maker's blue, looks just like new, grand order; absolute bargain, £75.— Marlborough (The Motor House), 20, Finchley Rd., N.W.8. [9578

2¾h.p. Douglas, 2-speed, fullest equipment, Tan-Sad, spare belt, chain, etc., new Dunlops, thoroughly reconditioned as new, bargain; £32.—7, Riverdale Terrace, Richmond. [1226

1918 Douglas 2¾h.p., 2-speed, fully equipped, licence paid, a real good one, just overhauled by us, any trial; £42/10.—Gibb, Douglas Depot, Gloucester. [1081

DOUGLAS, late 1921, 4h.p. Combination, complete with all accessories and Tan-Sad, small mileage, and absolutely as new; £105.—Smith, High Rd., Goodmayes. [7694

DOUGLAS Late 1921 4h.p. Combination, sidecar Silver Swan, all accessories, Tan-Sad, speedometer, as new; what offers.—Garstang, 1, Water St., Chorley, Lancs. [9630

3½h.p. Douglas 1922 Sports, fully equipped, winner of several cups and medals; a real goer, and capable of winning again; £100.—Gibb, Douglas Depot, Gloucester. [1077

2¾h.p. Douglas, 1915, perfect condition, fully equipped, P. and H. lamps, Cowey horn, spares, etc.; £35, or near offer.—Maslen, 54, The Vineyard, Richmond, Surrey. [9984

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1920-21 Harley-Davidson Combination, electric model, discs, hood, screen, speedometer; £120, Mrs.—17, St. Charles Square, W.10. [9739

1919 Harley Combination, overhauled, renovated 50 gns., sidecar; £90; lower power part.—The Haven, 120, Sutherland Rd., Croydon. [9999

SACRIFICE.—Harley-Davidson combination, special finish, electric screen, late model, excellent order; quick sale, £80.—18, Hestercombe Av., Fulham. [9617

HARLEY Combination 1919, fully equipped, perfect condition; £75.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

HARLEY-DAVIDSON. — 1920-21 Harley, fully equipped, first-class order, tax paid; £65.—198, King St., Hammersmith. 'Phone: Hammersmith 374. [9871

HARLEY-DAVIDSON 1916 7-9h.p. Combination, fully equipped, tax paid, windscreen, etc., good order; £50.—The Layton Garages, 30, Holywell St., Oxford. [1152

HARLEY Combination, new 1920, recently overhauled and renovated, new chains, speedometer, Easting; cash wanted; £70.—Woolf, 27, Hoxton St., London, N.1. [9707

HARLEY Combination, 1919, dynamo lighting, recently re-enamelled, overhauled, Easting, spares; £65.—Smith, c/o Burns, 4, Burton Mews, South Eaton Place, S.W.1. [1227

1921 Harley-Davidson Combination (November), electric, exceptionally good condition throughout; £110; exchanges.—Goad, 122, Maida Vale, W.9. Telephone: Hampstead 1353. [1059

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HAZELWOOD Combination 5-6h.p., 1920, perfect Easting, speedometer; 75 gns.—5a, Sedgemere Av., West Finchley. [9756

1920 Hazlewood Combination, 5-6h.p. J.A.P. engine, just overhauled, rebushed, 3 speeds, leg guards, windscreen, Tan-Sad, lamps, and spares; £68.—47, West Burne Grove, Scarborough. [9792

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HOBART-VILLIERS, 1921, 2½h.p., 2-speed, equipped, taxed end year, as new; £32/10.—S., 68, Grange Rd., Leyton, E.10. [9464

2¾h.p. Hobart-Villiers 1919, good condition and 1914 reliable; accept £20; an absolute bargain.—Kinsey and Co., 350, Lower Addiscombe Rd., Croydon. [9701

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INDIAN Scout, 1920, Bonniksen, new condition; £68.—4, Hanover St., W.1. (P) [9230

FOR Indian Chiefs, Standards, and Scouts, try Horswills, 42, Bridge St., Chester.

INDIAN Specialists.—For riders who do their own decarbonising, send for one of our special Indian cylinder spanners, 1916 to 1922 models; 2/6, post free. [8226

1922 Indian Scout, electric lighting, as new; £90.—Brunswick Lodge, Thames Ditton. [9890

BARGAIN.—7-9h.p. Indian, private owner.—Further particulars, apply, 134, Durham Rd., Wimbledon. [9623

1913 5-6h.p. Indian, licensed, fast; £19; lightweight wanted.—Smith, 46, Adelaide St., Crewe. [9958

KICKHAM, Stokes Croft, Bristol, Sole District Agent for Indians; unequalled service, repairs, etc. [3561

3½h.p. Sports Indian, excellent condition, clutch; price £37/10.—Waite, Field Place, Littlehampton. [9445

INDIAN 7-9h.p., condition excellent, tax paid; must sell, sacrifice, £38, or near.—73, Tranmere Rd., Earlsfield. [9431

1919 Indian Combination, good condition; £90; tax paid, insured to July, 1923.—580, Green Lanes, Harringay. [9271

INDIAN 7-9h.p. 1919, perfect, lamps, etc., mileage 1,000; £55, or offer.—Freeman, 17, Union St., Winchester. [9253

1915 7h.p. 3-speed Indian Combination, electric light, spares, perfect condition; £60.—35, Pitt St., Rotherham. [9719

£48.—Indian Combination, 1915, electric lighting, tax, insurance paid.—The Gables, Kensington Avenue, Norbury. [9693

INDIAN 1915 7-9h.p., 2-speed, H. and F. clutch, electric horn, perfect; £35.—10, Knatchbull Rd., Camberwell, S.E.5. [9603

1922 8h.p. Indian Chief, complete, not run 120 miles, licensed, absolutely as new; £125.—Smiths' Garages, Grantham. [9332

1922 Indians.—Immediate deliveries, deferred payment, exchanges.—Brown, 3, Parker Lane, Burnley. Tel.: 1032. [6332

7-9h.p. Indian Combination, spring frame, speedometer, hood and screen, perfect; £65.—Newman, 6, Norbury Rd., Reigate. [9304

5-6h.p. 1915 Indian Combination, 3 speeds, lamps, tools, speedometer, tax paid; £42.—Whittaker, Station Rd., Dalton-in-Furness. [9783

7-9h.p. Indian Combination, wants coupling, splendid running machine; £38, or nearest.—Williams, 22, St. Martin's Rd., Stockwell, S.W.9. [9554

INDIAN Scout, 1921, dynamo lighting, speedometer, ampmeter, tax paid, good condition; £80, or offer.—Freeman, 16, Gold St., Tiverton, Devon. [9369

INDIAN Powerplus Combination 1916, fully equipped, discs, excellent condition, new Binks; £58; taxed.—Cranleigh, College Slip, Bromley, Kent. (P) [9914

1921 Indian Scout, dynamo lighting, speedometer, etc., tax paid; £85. Exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1255

£55.—Indian Combination, 1918-19, 7-9h.p. Powerplus, 3 speeds, etc., fully equipped, licence, splendid condition. Exchanges.—63, Solon Rd., Brixton. [9711

LATE Powerplus Indian Combination, licensed, electric lighting, 3 speeds, kick-start, spring frame, drive away; £45, exchange.—89, East Hill, Wandsworth. [9650

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1918-19 7-9h.p. Indian, semi-T.T. bars, 3 speeds, etc., taxed, enamel and condition excellent, very fast; £54, bargain.—35, Upper Tooting Rd., S.W.17. [9321

1921 Indian Combination, electric lighting, tax paid for the year, Easting windscreen, speedometer, in excellent order; 90 gns.—Edwards, 50, Harrington Rd., South Kensington. [8071

INDIAN 5-6h.p., 1915, and sidecar, good running order; no reasonable offer refused; bought car; any trial.—Write, Lilleshall Co., Ltd., Engineering Dept., Oakengates, Salop. [9753

INDIAN Powerplus Combination, 1916-1917. Swan sporting sidecar, Tan-Sad, good tyres, 3-speed, clutch, etc., disc wheels, engine in splendid condition; first £60 secures, bargain.—21, Rosefield Rd., Staines. [9328

MOTOR CYCLES FOR SALE.

Indian.

1917 Indian Powerplus with bulbous back coachbuilt sidecar, also new Scheibler carburetter, chains, tyres, and engine, etc., in perfect condition; £55.—Bronucker. 2, Inverine Rd., Charlton. [9611

1920 Indian, big valve, dynamo, spotlight, speedometer, B.T.H. magneto, sporting sidecar, new pistons and bearings throughout; £110.—Williams, 31, Alexandra Rd., Finsbury Park, N.4. [9598

1921 Powerplus Indian Combination, electric dynamo, horn, lights, ammeter, speedometer, Easting windscreen, handsome condition; nearest 100 gns.—19, Clipstone Rd., Darrall, Sheffield. [9387

1914 Hendee Special 7-9h.p. Indian Combination, fast, powerful, mileage 9,000, stored during war, 1½h.p. dynamo, electric starter, lighting, horn, 2 accumulators, speedometer, luggage grid, £28 overhaul; £55.—Box 3502, c/o *The Motor Cycle*. [1318

7-9h.p. Powerplus Indian Solo, late 1921, electrically equipped, rear-drive speedometer, tax paid, practically new, and in guaranteed perfect mechanical condition, a wonderful end-of-season bargain; £80 cash, or gradual payments arranged.—On view at Juno Showrooms, 248, Bishopsgate, E.C. [1122

FOR Sale, 1919 7-9h.p., spring frame, Powerplus Indian motor cycle, with new Miller lamps, separate generators, aluminium top tube tool box, new sprockets, engine overhauled recently, enamel and plating in good condition; £55.—To be seen at Youngs, Motor Agent, 2, 3 and 5, The Parade, High Rd., Kilburn, N.W.6. [7105

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kaye, 8, Bond St., Ealing. [7668

INDIAN Spares, new and second-hand, for all models; cheap.—Pleasant, 85, Carleton Rd., Tufnell Park, N.7. [9658

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [6301

Invicta.

£30.—1921 2¾h.p. Invicta, 2-stroke, 2 speeds, clutch, K.S. (Sturmey).—King, Egrove, Oxford. [9969

NEW 3½h.p. Invicta, smart coachbuilt sidecar with adjustable seat and locker at back, new outfit, offered as shop-soiled, at clearance price, £100; 3½h.p. ditto solo, £85; convenient easy payments.—Harrods Motor Sales Rooms, 118, Brompton Rd., S.W.1. [9475

Ivy.

IVY 3h.p. 1921 Sports Combination, guaranteed perfect; £65.—2, Woodhall Terrace, Thornbury, Bradford. [9386

IVY 1921 3h.p., 2-speed, clutch, kick-start, lamps, horn, speedometer; £44.—Buchanan, Burwash Weald, Sussex. [9325

1922 3h.p., Model J, Sports Ivy, delivered March, engine No. 2061, perfect order; £68.—Richards, High St., Marlborough. [9315

IVY, 1919, 2½h.p. 2-stroke, 2-speed, complete, lamps, horn, tax paid, smart appearance; £32/10.—The Layton Garages, 30, Holywell St., Oxford. [1141

1922 Ivy Three Combination, 3-speed countershaft, kick-starter, chain drive, Lucas lighting, Cowey horn, speedometer, Easting windscreen, spare tyre, tax and licence paid, perfect condition, 2,000 miles only; £90.—Kendall, Motor Engineer, 81A, Dalmain Rd., Forest Hill, S.E.23. [9926

James.

JAMES 7h.p. Combination, top-hole condition; £105; also 10h.p. Morgan.—Briggs, Whitby. [9656

JAMES, Dec., 1919, 4¼h.p. Combination, lovely condition; £97.—Berryman, 8, Kensal Rd., Westbourne Park, W.10. [9417

JAMES 3½h.p. Sports, shop-soiled only; at the special price of £94.—Ratcliffe Bros., 200, Gt. Portland St., W. [1101

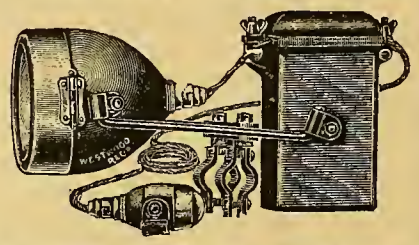
JAMES 2-stroke, 2-speed, shop-soiled only, clutch and kick-starter; £54.—Ratcliffe Bros., 200, Gt. Portland St., W. [1102

JAMES 7h.p. Combination, shop-soiled only; at the special price of £144.—Ratcliffe Bros., 200, Gt. Portland St., W. [1103

£40.—Special 4¼h.p. James coachbuilt combination, 3 speeds, clutch, K.S., perfect condition, equipped.—King, Egrove, Oxford. [9970

1920 5-6h.p. James Combination, lamps, horn, Cameo windscreen, perfect condition, insured, lack of accommodation; £75.—Hill, 109, Bath St., Ilkeston. [9910

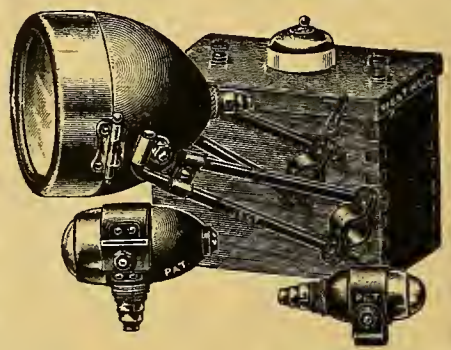
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

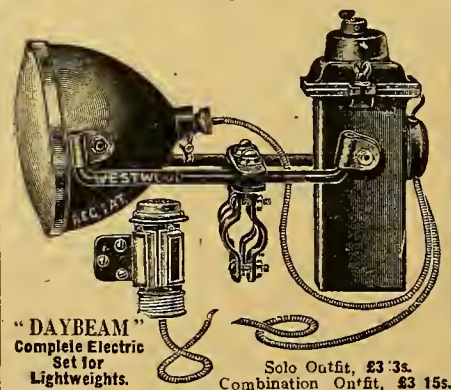
Complete Outfit, List No. 30/1, Price £5 5 0

"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

Complete Outfits, List No. 30/2, Price £7 7 0



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Combination Outfit, £3 15s.

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MOTOR CYCLES FOR SALE.

James

SPECIAL Bargain.—New 1922 3½h.p. twin, 3-speed sports model James; reduced to £90; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [9336

1916 James 4¼h.p. Combination, 3-speed, chain drive, dynamo lighting, electric horn, Binks, 3 jet carburetter; bargain, £65.—Bowen, 29, Jersey Terrace, St Thomas, Swansea. [9307

1919 3½h.p. Twin James, 3-speed, lamps, spares, including racing cams, valves, springs, etc., excellent condition; £52.—Watson, Railway Hotel, Paddock Wood, Kent. Tel.: 7. [9229

1922 (April) 7h.p. James Combination, electric lighting, fully equipped, perfect condition, tax paid; £145; buying car.—42, Freegrove Rd., Holloway, N.7., or 'phone: City 4944. [9530

1920 5-6h.p. James, fast solo machine, recently overhauled by makers, in perfect order, T.T. bars, long exhaust, lamps, horn, tax paid; owner going abroad; £57/10; Croydon.—Box 3492, c/o *The Motor Cycle*. [9977

JAMES 1914 4¼h.p. Countershaft Coachbuilt Combination, thoroughly overhauled, re-enamelled, new frame, forks, gears, piston, rings, rebushed, sound; bargain, £60.—Williams, Roberts Wall, Penally, Pembrokeshire. [9289

JAMES 4¼h.p. Combination, 3 speeds, clutch, kick-starter, removable extra seat sidecar, Orto windscreen, Atkinson hood, side windows, Tan-Sad, lamps, tools, excellent appearance, mechanically perfect; £65. —31, Goldsmith Rd., Acton. [9437

MAGNIFICENT 1922 7h.p. James de Luxe Combination, Lucas dynamo lighting set, Lucas No. 60 horn, Bonniksen speedometer, spare wheel (unused), dickey seat in rear locker, luggage grid, tax paid and fully insured, ridden 264 miles, indistinguishable from new, cost £203, must sell owing to illness; £160, or nearest.—Seen at Messrs. Whitby's, 7, The Vale, Acton, W.3. [1027

Spare Parts:

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5079

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

J.E.S. excellent condition, fully equipped; £13, nearest offer.—Streets, Olive Terrace, Highbridge, Somerset. [9320

J.E.S.—A few 1921-22 4-stroke 1½h.p. Lightweights taken in part payment for our larger models. All will be thoroughly overhauled and carry our full guarantee. Prices from 23 guineas. Send for lists of these bargains.—J.E.S. Motor Works, Gloucester. [7335

Kerry.

3½h.p. Kerry-Abingdon coachbuilt combination, 2-speed, clutch, chain and belt, splendid condition; £29.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [9702

Kingsbury.

1921 Kingsbury, 2-speed, Enfield gear, as new, mileage 300, list price £68, must realise; 50 gns. —67, Fernlea Rd., Balham. [1196

Lea-Francis.

1916 3½h.p. Twin Lea-Francis Combination, dynamo lighting, full accessories; £75.—Ross, 86, High Rd., Lee. [9765

£45.—1920 3½h.p. twin Lea-Francis, 2-speed, clutch, kick-start, perfect condition.—Premier Motor Co., Aston Rd., Birmingham. [9337

45 GNS.—Lea-Francis, 1921, 3½h.p. Twin J.A.P., chain drive, oil bath chain cases, interchangeable wheels, hand and foot clutch, K.S., legshields, electric lamps, spares, very fast, guaranteed perfect.—After 5 p.m., 20, Treen Av., Hoggers Corner, Barnes. [9864

Levis.

PREMIER Motor Co. for 1922 Levis.

BARGAINS in slightly showroom soiled 1922 models; write for stocktaking clearance sale list; model S 2¾h.p., 2-speed, clutch, reduced to £46; model G, 247 c.c., 2-speed, clutch, reduced to £53; this offer cannot be repeated; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [9344

GIBB, Gloucester, Sole District Agent for Levis; immediate delivery from stock. [7545

LEVIS 1916, perfect £21, or exchange higher power. 11, Stromness Place, Southend. [9385

LEVIS, 1920, single, excellent condition; best offer over £25.—S., 35, Holmewood Gardens, S.W.2. [9178

LEVIS, Bosch, Senspray, licensed; £22; offers, exchange.—38, Orchard, (Park Rd.), Sunbury-on-Thames. [9643

1920 Levis Popular, in good condition, insured till April next, lamp, spare belt; £25.—27, Brecknock Rd., N.7. [9930

MOTOR CYCLES FOR SALE.

New Imperial.

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

NORTON, 1921, perfect, as new, all accessories: £75. —110, Wood Vale, Honor Oak, S.E.23. [9427

NORTON 1921 3½h.p., all accessories, mileage 3,500.—Grey, 105, Herrick Rd., Loughborough. [9444

NORTON 1921 16H, O'Donovan tuned, 75 m.p.h.; bargain, 75 gns.—Clark, 7, Exhibition Rd., S.W.7. [9168

JULY 1921 6h.p. Norton; £80; exchange for 1922 or late 1921 Sports Zenith.—Ivydene, Tichborne St., Leicester. [9649

NORTON 1921 16H, close ratio, excellent condition throughout, lamp and horn; £75.—28, Minford Gardens, Shepherd's Bush. [9571

F.O.C.H. have 1922 Norton, 16H model, little used, excellent condition, licensed; bargain.—5, Heath St., Hampstead (near Tube). [9451

NORTON 1922 models to clear; very special exchange allowances. Write us quickly.—Halifax Motor Exchange, Norton St., Halifax. [1026

NORTON, late 1921, 16H, lamps, speedometer, taxed, as new; £75, or exchange.—Norrington, Terrace Garage, Turnham Green Terrace, Chiswick. [1178

NORTON 1921 Countershaft 16H, new tyres, licensed, equipped; £73/10. Also 1919 Philipson model; £35/10. Evenings.—18, Manor Grove, Richmond. [1090

75 M.P.H.—Norton 3½h.p., 5-speed, April, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £85.—77, St. Mary's Rd., Sheffield. [1001

NORTON 16H, brand new, 1922 model, but shop-soiled, £95; Big Four ditto, £100; exceptional opportunity and cannot be repeated.—Bradbury, 224, London Rd., Sheffield. [1128

BRAND new 1922 16H Norton, unregistered, maker's guarantee, oversize tyres; list price £117/10; best offer over £100, or exchange.—379, King St., Hammersmith. [1014

SOUTHPORT.—1921 16H Norton, Bonniksen speedometer, spare aluminium piston, all on, full tax, excellent appearance, very fast; 75 gns., exchanges.—Kents, 417, Lord St., Southport. [8586

1921 Norton Big Four and Sidecar, speedometer, horn, all lamps, windscreen, 1922 tax paid, exceptional condition; £95.—Homac's 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1260

NORTON, October, 1921, 3½h.p., 16H, chain drive, kick-start, 3-speed, as new, Cowey speedometer, Lucas lamps, Tan-Sad, licensed, insured; bargain, £80, or nearest.—131, Icknield St., Birmingham. [9851

NORTON.—New, all 1922 models supplied. Big Four and De Luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115. Exchanges and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [1272

1919 B.R.S. Norton, engine No. 19696, condition as new, just been re-stoved and engine overhauled, new tyres and belt, F.R.S. Major headlamp, Philipson pulley, Bonniksen, any trial; £52/10.—Staniland, Abbey Park, Louth. [8798

1922 guaranteed big 4 Norton Combination, Canoelet sporting sidecar, oversize tyres, 3-speed, clutch, kick-start, lighting set, horn, speedometer, 1922 tax paid, in practically new condition throughout; £104.—Sidney, 769, Romford Rd., Manor Park, London, E. [9692

STOCKTAKING Clearance Sale.—Special offer of new slightly showroom soiled 1922 Nortons: No. 9, 3½h.p., £70; 16H, 3-speed, £95; Big 4, 3-speed, £99; carry maker's full guarantee; easy payments 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [9339

NORTON Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5162

N.S.U.

6h.p. N.S.U., 2-speed, splendid condition, cheap; take lightweight part.—57, Kenbury St., Camberwell, London. [9776

N.S.U. 2-speed 4h.p. Twin, coach sidecar, new tyres; £27/10; trial.—25, Ambergate St., Kennington, London. [9629

5-6h.p. N.S.U. Twin, running order, needs adjustment; exchange lightweight; £10.—Houlston, 22, Sands End Lane, Fulham. [9616

N.U.T.

3½h.p. O.H.V. twin N.U.T., very fast, perfect; £50; tax paid.—Page, 26, Earl's Court Gardens, S.W.5. [9305

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£80	**Ariel,** 1922, 3½ h.p., Sports model, with K.S.	£23 10 6	£6 10 0
£50	**Enfield,** 1922, 2¼ h.p., 2-stroke, 2-speed.	£15 5 0	£3 11 8
£103	**Zenith-Bradshaw,** 1922, all-chain drive.	£29 4 6	£7 5 0
	SHOP SOILED COMBS.		
£108	**Ariel,** 1922, 5-6 h.p., Special Comb.	£30 15 0	£7 13 4
£120	**B.S.A.,** 1922, 4¼ h.p., all-chain drive.	£33 14 6	£8 6 8
£108	**P. & M.,** 1922, 3½ h.p. Comb.	£29 10 6	£7 6 8
£128	**P. & M.,** 1922, 4 h.p. De Luxe, 4 speeds.	£36 16 6	£9 0 0
	SECOND-HAND SOLOS.		
£58	**Lea-Francis,** 1919, 3¾ h.p., equipped.	£15 10 0	£4 3 4
£30	**Clyno,** 1919, 2½ h.p., 2-stroke, 2-speed, clutch and kick-starter, tax paid.	£9 9 0	£2 6 8
£50	**Ivy,** 1921, 2½ h.p., 2-stroke, 2-speed, clutch and kick-starter, tax paid.	Cash	only.
£75	**A.J.S.,** 1922, 2¾ h.p., Model B, fully equipped.	Cash	only.
£48	**Rover,** 1920, 3½ h.p., Phillipson pulley, fully equipped, in fine order.	Cash	only.
	SECOND-HAND COMBS.		
£95	**A.J.S.,** 1922, 2¾ h.p., Model B Comb., fully equipped, special demonstration outfit.	£27 14 0	£6 16 8
£85	**Douglas,** 1921, 4 h.p., screen, lamps, horn.	£24 14 0	£6 0 0
£170	**A.J.S.,** 1921, 7 h.p. chassis with "Plus One" body, dynamo lighting, electric horn, speedometer, hood, etc., run only 1,700 miles.	Cash	only.
£170	**Henderson,** 1921, 11.6 h.p., De Luxe, C. & M. sidecar, dynamo ltg., electric horn, speedometer and ample supply of spares. Cost over £340, and as new.	Cash	only.
£100	**A.J.S.,** 1920, 6 h.p. Comb., spare wheel, acetylene lighting, horn, etc.	Cash	only.

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MOTOR CYCLES FOR SALE.

N.U.T.

N.U.T. 1921 3½h.p., 3-speed, chain-cum-belt drive Watsonian sidecar; £110.—Maudes', Walsall Garage, Walsall. [1041

1921 5h.p. N.U.T. Combination, dynamo lighting, electric horn, Grindlay sporting sidecar, mileage 3,500-4,000; £85.—James, H.M.S. Warwick, Devonport. [9951

1921 N.U.T. 3½h.p., Lucas Magdyno lighting, electric horn, Binks, licensed, absolutely perfect condition throughout; 70 gns; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [6978

O.K.

O.K., 2-speed, very nice, take 2 to Scotland; bargain, 22 gns.—67, Fernlea Rd., Balham. [1190

O.K. 2½h.p., fully equipped, licence paid; £25.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1092

O.K. Junior, 4-stroke, 2 speeds, good condition; £22/10.—16, Brassey Sq., Battersea, S.W.11. [9596

1921 O.K.-Villiers, 2-speed, clutch, kick-start, Lucas lamps, horn, licensed; £38.—Seachiffe, Silverdale, nr. Carnforth. [9313

1921 O.K., with 1922 350 c.c. Broler engine, 2-speed, and sidecar; £40.—Garlt, Winchburgh, Linlithgowshire. [9436

O.K. 1921 2½h.p., 2-speed, clutch, K.S., all on, Tan-Sad, good condition; £37.—Lloyd, 7, St. Mary's Sq., Kennington, S.E.11. [9941

£27/10.—1921 2½h.p. O.K. Junior, semi-T.T., very fully equipped, tyres as new, 110 m.p.g. guaranteed, taxed, and perfect throughout, real bargain; evenings.—2, Downe Terrace, Richmond. (D) [9818

O.K. 2½h.p., Mark XI., new, 1921 model, Villiers engine, flywheel magneto, 2 speeds, only ridden 20 miles, £40, tax paid; also new 1921, Mark X. model, single-speed, 32.—Eagles and Co., 275, High St., Acton, London, W. [1115

Omega.

OMEGA model 2B, shop-soiled only, at the special price of £58/10.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1098

OMEGA 2¾h.p. J.A.P., 1921, as new, S.A. 2-speed, long exhaust; £27/10.—D. S., 93, Dolphin St., Newport, Mon. [9264

OMEGA Model No. 3, shop-soiled only; at the special price of £39/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [1099

1922 Omega 3h.p., 2-speed, special competition machine, brand new and unpacked; 40 gns.—Box 3503, c/o *The Motor Cycle.* [1321

OMEGA-J.A.P. 2¾h.p., 1919, 2-speed, clutch, kick-start, perfect; £35/10; consider McKenzie part exchange.—Simons, Stafford House, Ashburton. [9889

Orbit.

2¾h.p. Orbit-Precision, 2-speed, clutch; £20; photograph.—Fisher, Springwell Rd., Heston, Hounslow. [9939

P. and M.

1920 3½h.p. P. and M. Combination; see under Exchanges.—Walbro. [9549

1920 4h.p. P. and M. Solo, fully equipped and tax paid; £42/10.—Kays, 8, Bond St., Ealing. [8540

1919 P. and M., complete, lamps, horn, tax paid; bargain, £35.—198, King St. Hammersmith. [9873

1918 P. and M., new cylinder and piston, lamps, taxed; £30.—337, King St., Hammersmith. [9526

P. and M. Combination, 1918, condition as new, fast; £43.—38, Sherrift Rd., West Hampstead. [9836

1919 P. and M. and sidecar, good condition and perfect running order; £65.—Smiths' Garages, Grantham. [9333

1918 P. and M. Combination, 6819S, completely equipped; £40.—26, The Promenade, Palmer's Green, N.13. [9249

P. and M. C.B. Sidecar, Pillion, all on; £48, no offers; not W.D., very reliable.—48, Hoe St., Walthamstow. [9404

P. and M. Combination, 1919, mechanically perfect, all on; bargain, £55.—Davidson, 56, Shaftesbury Rd., W.6. [9196

1918 P. and M., tax paid, excellent condition; £38/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [1061

P. and M., late R.A.F., in splendid condition, any trial, tax paid; £40, or offer.—Gomm, 17, Cardigan St., Luton. [9293

1919 P. and M., overhauled and repainted, new tyres and accessories; £55.—After 6.30, 7, Holtham Rd., South Hampstead. [9564

RENOVATED P. and M.'s, 1918, guaranteed machines; £45; immediate delivery.—Inman and Co., Durham Rd., Sealorth, Liverpool. [5882

1920 P. and M. Combination, 3½h.p., lamps, etc., Easting screen, in excellent condition; £55, or near offer.—Monk, Gunmaker, Chester. [9861

MOTOR CYCLES FOR SALE.

P. and M.

1920 4h.p. P. and M. Combination, equipped with Lucas lamps and horn, perfect condition, tax paid; £57/10.—Kays, 8, Bond St., Ealing. [8539

1918 P. and M., perfect order, just re-bored and thoroughly overhauled, tax paid, insured; no reasonable offer refused.—165, Glebe Rd., Letchworth. [9732

PRIVATELY Owned P. and M. Combination, 1919, in perfect condition, insurance and tax paid, a real bargain; £70.—Write, H., 156, Ferndale Rd., S.W.4. [9282

1920 P. and M. Combination, hand brake, electric lighting, horn, Easting screen, very good condition; cash wanted; £57/10.—391, King St., Hammersmith. [1011

BARGAIN.—P. and M. 3½h.p. Combination, new 1920, fully equipped, splendid condition; £46.—143, Ravensbury Rd., Earlsfield, S.W. Take lightweight part exchange. [1251

P. and M. Combination 1917, electric lighting, full equipment, excellent order; £50.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

P. and M. Combination, coachbuilt, delivered 1918, tax paid, Lucas and electric lamps, excellent condition; £55, offers, exchanges considered.—115, Holland Park Avenue. 'Phone: Park 518. [9410

1922 P. and M. de Luxe Combination, 4h.p., 4 speeds, all on, cost £150, shop-soiled; £127/10 cash, or deferred payments.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0919

P. and M., late R.A.F., complete, in parts, 2-speed, K.S., fitted with new cylinder and piston, new tank, Bosch magneto, aluminium chain cases, wheels rebuilt; £25.—1, Springfield Park Crescent, Catford, S.E.6. [9676

P. and M. 1918 Combination, 3½h.p., 2-speed, K.S., new gears, 1922 B. and B. carburetter, aluminium chain covers, all lamps, horn, licence paid; trial any time; £63.—Flint Bungalow, Croydon Rd., Warlingham, Surrey. [9614

P. and M. R.A.F. solo models, rebuilt, re-enamelled, lined and plated, fitted with new T. and B. magnetos, B. and B. carburetters, tyres and tubes; 40 gns.—Voltaire Motor Works, 4, Voltaire Rd., Clapham, London, S.W.4. [7718

P. and M. 1918 Combination, first-class order, new tyres, speedometer, watch, etc., underslung, bulbous back, sidecar, Easting screen, tools, spare tube, fitted electric; £65, lowest.—Coe, 206, Licks Rd., Tooting Junction, S.W.17. [9297

1921 P. and M. Sporting Combination, Swan sidecar, just thoroughly overhauled, plated and enamelled, fully equipped, tax paid, etc., guaranteed six months; £85; exchanges.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [1007

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7.9h.p. Premier Combination, countershaft gear, clutch, good tyres, lamps, perfect condition, taxed; absolute bargain, £48, offers.—2, Belle Vue Rd., Upper Tooting, S.W.17. [9208

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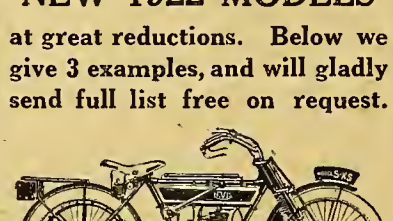
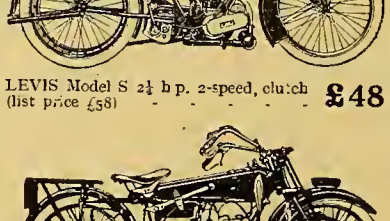


LEVIS Model S 2¼ h.p. 2-speed, clutch (list price £58) - - - - - - **£48**



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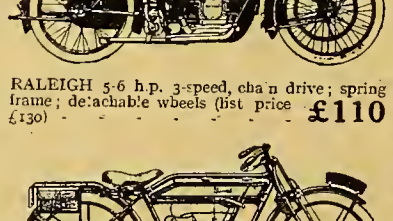

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WAUCHOPE'S, 9, Shoe Lane, Fleet Street, London E.C.4.—Quadrant, 1921, 4½h.p. Combination, dynamo lighting, all on; £65. [1272

4½h.p. 1922 Quadrant Combination, 3-speed, kick starter, all-chain drive; £105; your old motor cycle taken in exchange, remainder on easy terms.—Wauchope's, 9, Shoe Lane, London. [1274

Spare Parts:

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£30.—Radco 1922, single, tax, as new.—Bull, Imber horne Lane, East Grinstead. [9317

Raleigh.

RALEIGH.—New 2¾h.p. Touring and Sporting models in stock; £68.—Moss, Wem. [1029

RALEIGH 2¾h.p. 2-speed, never ridden; £60.—Johnson, Provision Merchant, Palmer's Green. [8543

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RALEIGH.—Immediate delivery of 1922 models; exchanges or deferred payment.—Edwards, 50, Harrington Rd., South Kensington [4052

IMMEDIATE Delivery Raleigh, all models in stock 5-6h.p. £130, combination £165; 2¾h.p. £68 £73; 3h.p. combination, £103; cash or deferred payments 4% extra.—Mitchell Garage, Roundhay Rd., Leeds. [0890

STOCKTAKING Clearance Sale.—Slightly showroom soiled 1922 5-6h.p. Model de Luxe Raleigh Combination; list price £165, reduced to £150; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [9340

RALEIGH Combination, 1922, 5-6h.p. twin, used once, spring frame, Tan-Sad carrier, Easting windscreen, Lucas lamps, speedometer, cover to sidecar, tax paid; a bargain, £159/15.—Wilkins Simpson, Opposite Olympia, London. [9357

5-6h.p. Twin Raleigh Combination De Luxe, spring frame, Grindlay spring wheel sidecar, very fully equipped, run only 3,000 miles; 125 gns.; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1069

Reading-Standard.

READING-STANDARD 8-10h.p. 1921-22, dynamo lighting, lamps, horn, etc., new, shop-soiled; £90.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [1314

READING-STANDARD, dynamo lighting, Tan-Sad, Plus-one sidecar, mileage under 1,000, complete; £145, bargain.—Slinger, Norwich St., Dereham. [9368

1916 10h.p. Reading-Standard Combination, renovated like new, tax paid, full accessories, including hood, Easting, windscreen, and pillion seat; £75.—Ross, 86, High Rd., Lee. [9761

1917, about, Reading-Standard, 3-speed, reverse, Montgomery 2-seater sidecar, outfit just overhauled at cost of £30; reasonable offer accepted, or exchange with cash for 1922 chain-drive B.S.A.—Ryder, Nurseryman, Stratford-on-Avon. [9608

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Rex.

TWIN Rex, 5-6h.p.; bargain, £11.—Fenn, The Garage, The Warren, Handcross, Sussex. [9239

£20.—5-6h.p. Twin Rex, perfect, equipped, fast.—Chapman, 28, Beresford Rd., Gillingham, Kent. [9875

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3½h.p. 1920 Sunbeam with Dunhill sidecar and Easting, electric lamps, Klaxon, etc., insurance policy, small mileage, excellent condition; accept £95.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd. Croydon. [9703

SOUTHPORT.—1920 Sunbeam 3½h.p., luxurious combination, Sunbeam sidecar, electric lighting, detachable wheels, Easting, luggage grid, Lucas horn, full tax; bargain, 95 gns., exchanges.—Kents, 417, Lord St., Southport. [8585

SUNBEAM, 1920, 3½h.p., complete, lamps, horn, licence, tax paid, and semi-sports sidecar with windscreen; very good condition, £110. Exchanges, easy payments.—The Layton Garages, 130, Holywell Rd., Oxford. [1139

1921, October, 3½h.p. Sports Sunbeam, with spare, special racing piston and cams, lamp set, footer, taxed to Sept. 30th, almost new condition, mileage 1,500; £95; any trial.—Benny, 4, Furneaux Villas, Paignton. [9745

SUNBEAM, December, 1920, 3½h.p., interchangeable wheels, leaf spring forks, Lucas lamps, generator and horn, Cowey speedometer, complete Sunbeam tool kit in perfect condition, only ridden during summer months; 90 gns. cash.—Apply Yates, Highgate Brewery, Walsall. [9735

1922 Sunbeam (late May) 3½h.p. Light Sports, Bonniksen trip speedometer, Lucas horn, special J.C. piston, racing cams, very fast, economical, 90 m.p.g., privately owned, insurance, licensed, any inspection, genuine bargain; 98 gns. cash.—W. J. Beaumont, 83, Grundy St., Poplar, E.14. [8395

1921 8h.p. Sunbeam Combination, dynamo lighting (Lucas), electric and mechanical horns, spare wheel and tyre, speedometer, Tan-Sad pillion seat, special saddle, hood, Easting windscreen, cost £300 all on, in excellent condition, small mileage, owner going abroad; what offers?—Apply G. S. H., 19, Pbilbeach Gardens, London, S.W.5. [9262

SUNBEAM Combination (Whitsun 1921) 3½h.p., leaf springs, interchangeable wheels, kick-start, Lucas magdyno lighting set and electric horn, leg shields, spare wheel, speedometer, hood, Triplex windscreen, apron, mats, insurance, and all accessories complete; mileage 2,571; cost £260; everything guaranteed perfect and practically new; any trial and expert examination; sacrifice for £142, a genuine bargain.—Laurence, 1, Wyndham St., Bridgend. [9376

T.D.C.

T.D.C. De Luxe 2-stroke, accessories, good condition; £17.—176, St. Alban's Avenue, Bedford Park, Chiswick. [9646

Triumph.

1921 4h.p. Triumph Combination; see under Exchanges.—Walbro. [9547

TRIUMPH 1913, excellent order; £21.—Clark, 7, Exhibition Rd., S.W.7. [1343

£28.—Baby Triumph, 2-stroke, about 1917, 2 speeds, fine order.—King, Egrove, Oxford. [9972

TRIUMPH, 4h.p., new 1922, S.A. 3-speed gear box; £60.—33, Hackford Rd., Brixton. [1240

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0868

TRIUMPH 1913, clutch model, overhauled, good tyres, excellent condition; £25.—Below. [9234

TRIUMPH 1919 4h.p., countershaft, privately owned, taxed, insured; £65.—K.J. Motors, Bromley. [9917

MOUNTERSHAFT Triumph, fine condition, perfect; £35, cheap.—9, Church Rd., Harlesden. [9536

'38.—Triumph, 3-speed, clutch, coach sidecar.—Collyer, 286, High St., Wood Green, N. [9234

1919 Triumph Combination, full equipment; £55. —24, Balliol Rd., North Kensington. [9665

LATE 1918 Triumph 4h.p., lamps and horn, tax paid; £48.—19, Orbel St., Battersea, S.W.11. [9520

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1921 Junior Triumph, fully equipped, licensed; £47/10.—White, 20, Springbank Rd., Liverpool. [9740

TRIUMPH, Type H., new; at the special price of £94/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [1105

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3½h.p. Triumph, good condition, Tan-Sad; trial; £22/10.—Lyndale, Crutchfield Lane, Walton-on-Thames. [9727

1921 Triumph, Millford sidecar, Cowey screen, lamps, taxed, insured; £68.—106, North End Rd., W.14. [9862

1922 all-chain Triumph, full equipment, as brand new; £80, or nearest.—24, Balliol Rd., North Kensington. [9666

1919 Triumph 4h.p., speedometer, lamps, spares, small mileage; £65.—Springthorpe, 44, Russell Terrace, Leamington. [9183

TRIUMPH 1921 4h.p. Model H, perfect condition, new lamp and horn; any trial; £78.—H. Tippen, Marden, Kent. [8451

LATE 4h.p. Countershaft Triumph, fully equipped, taxed; £55; exchanges entertained.—82, Church Rd., Mitcham. [9825

TRIUMPH Combination, appearance, condition as new; bargain, £65.—Seen 14, King's College Rd., Swiss Cottage. [9601

£25.—5½h.p. Triumph, excellent condition, ride away. —J. Groom, 86, Rhodes St., St. James Rd., Holloway, N.7. [9302

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TRIUMPH-MILLFORD Combination, 1921, equipped, Eastings; £82/10.—90, Cornwall Rd. (top bell), North Kensington. [8700

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1918 4h.p. Countershaft Triumph, 1920 Gloria sidecar, as new; £65, exchange.—2, Fortune Gate Rd., Harlesden, N.W.10. [1221

TRIUMPH 3½h.p., lamps, horn, splendid order; £20, or offer.—Cole, 457, Rathgar Rd., Loughborough Junction, S.W.9. [1170

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1918 Countershaft Triumph, equipped and licensed, in first-class condition; £46.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [9747

TRIUMPH 1919, Middleton sidecar, equipped, taxed, new condition throughout; £65.—120, Fairbridge Rd., Highgate, N.19. [9848

3½h.p. Triumph, 1912, drop frame, new Dunlop, lamps, horn, taxed, good order; £22, or near.—Box 3491, c/o *The Motor Cycle.* [9978

TRIUMPH 1919 4h.p., 3-speed, kick-start, clutch, Binks carburetter, Gloria sidecar, screen; £100.—Maudes', Walsall Garage, Walsall. [1045

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SEVERAL second-hand Triumphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56 Terminus Rd., Eastbourne. [1181

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TRIUMPH 1916 C.S., good condition, tax and insurance paid; £47/10.—R. G. Honchin, Triumph Specialist, 188, High St., Peckham, S.E.15. [9859

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TRIUMPH 1920 Combination, 4h.p., Sturmey-Archer 3-speed, coachbuilt sidecar; £85, or will sell separately.—16, The Mount, Whitley, Reading. [9273

1920 4h.p. Triumph Countershaft, smart, perfect, licensed December, complete accessories; 55 guineas.—Fersfield, Westbury Rd., New Malden. [9832

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TRIUMPH, late 1919, 4h.p. countershaft, excellent condition, all accessories, Henderson C.B. sidecar; accept £75 for quick sale.—Ellis, 39, Erith Rd., Belvedere, Kent. [9414

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£47/10.—Triumph Combination, 1914, 3 speeds, coachbuilt sidecar, speedometer, lamps, horn, tax paid, all in exceptional condition.—13, Crooklog, Bexley Heath, S.E. [9633

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	Clincher de Luxe. Ex. Hvy...	26/6
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	Dunlop R/S. Heavy.....	30/-
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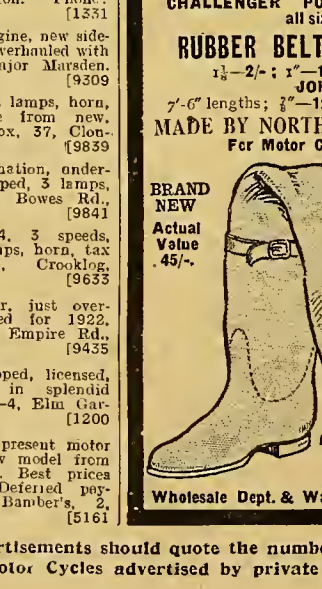

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TRIUMPH Combination, 1919, engine No. 66701, Easting, Tan-Sad, taxed, insured, accessories, genuine bargain, £68; evenings.—22, Teynton Terrace, Lordship Lane, Tottenham. [9711

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TRIUMPH, 1922, model H, and special coachbuilt sidecar, completely equipped and very small mileage; cost £142/10, accept £115.—The Layton Garages, 30, Holywell St., Oxford. [1144

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TRIUMPH Combination 4h.p., countershaft, 1921, splendid condition, windscreen, speedometer, spring footboards, Tan-Sad, accessories, tax, insurance; £90. —68, Bolingbroke Grove, Wandsworth Common. [1210

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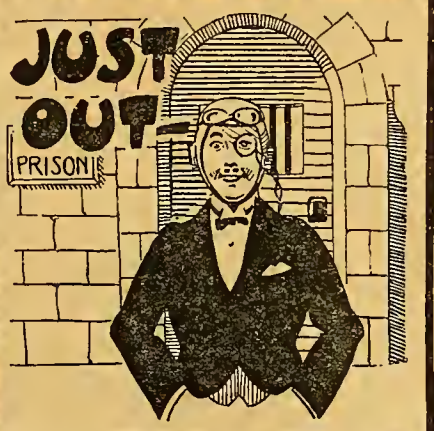

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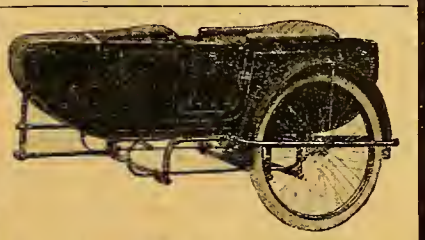

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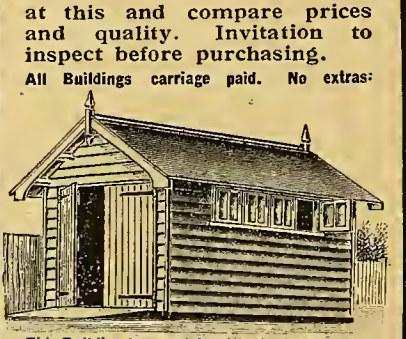

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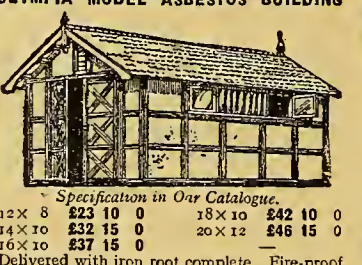

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The South-Western Appliance Co.
Dear Sir,
The St. Helier Building arrived on Saturday, two days before the promised delivery. We are more than satisfied with it.

Illustrated Catalogue Free.

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High Street, Fulham, London, S.W.
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MOTOR CYCLES FOR SALE.

Miscellaneous.

BROUGH SUPERIOR 1921 Combination, 8h. J.A.P.; bargain, £130. Also Harley combination; cheap.—A. E., Well's Mews, Well's Rd., Shepherd's Bush. [11

WAUCHOPE'S, 9, Shoe Lane, London, have for new 1922 shop-soiled machines of various make at bargain prices for cash, inspection cordially invited. 'Phone: Holborn 5777. [12

P. and M., 1918, equipped, excellent order, £3 Precision 2¼h.p., 1915, 2-speed, equipped, excellent order; £15; any trial; reasonable offer for lot.—2, Whiteheads Grove, Chelsea. [951

ALLBER Garage, Thornsett Rd., Earlsfield, London S.W. (opposite station, L.S.W. Railway). 'Phone: Latchmere 4386. Terms: no extra with good deposit immediate delivery; no enquiries; satisfaction guaranteed.

ALLBER.—Douglas 1914 3½h.p., 2-speed, complete with all accessories, tax paid; £29.

ALLBER.—Blackburne 1920 4h.p., 3-speed, clutch kick-start, all accessories, tax paid; £65.

ALLBER.—Triumph-Gloria 1921-22, all-chain model Easting Royal, luggage grid, complete acetylene lamps, most beautiful combination, as new, tax paid £110.

ALLBER.—1916 B.S.A. Combination, 4¼h.p. countershaft, Easting, all accessories, in good order, tax paid; £52.

ALLBER.—Chater-Lea-Jap Combination, special built, 1921, 5-6h.p., S.A. 3-speed, clutch, kick-start Ariel coach sidecar, all accessories, tax paid; £55.

ALLBER.—Humber Combination 1914 3½h.p., speed, clutch, kick-start, all accessories, tax paid good order; £32

ALLBER.—New Imperial 2¾h.p., 2-speed, complete with all accessories, tax paid, runs splendidly £26/10. [108

TRIUMPH 4h.p., countershaft gear, clutch, licensed trial, £35; Calthorpe-Jap 2¾h.p., Enfield 2-speed licensed, £27; coachbuilt torpedo body, £2; 4-cylinder Nilmelor magneto, perfect, 50/-.—Rogerson, Newtown Wigan. [929

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariel 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories Waterloo Rd., Blackpool.

BLACKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £95/10.—Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination, spare wheel, £150; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6 ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6 —Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Humber, £20/10/6 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed £24/10/6; Phelon and Moore, £19/19/6; another £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6 New Imperial, 2 speeds, K.S., £45/10/6.—Booths Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel. £110/10/6; 1920 Tamplin £59/10/6; Morgan De Luxe, £147/10/6; 1920 6h.p. Ruby combination, £79/10/6; 1920 3½h.p. New Scale 2 speeds, K.S., £38/10; 6h.p. Bat, countershaft, 2 speed, £39/10/6; 1920 2¾h.p. Excelsior, £27/10/6 3h.p. Enfield, £37/10/6; 6h.p. Indian, £32/10/6; 192 Enfield lightweight, £39/10/6; 1920 Sun, £35/10/6 several others cheap; push cycles taken in exchange.—Booths' Motories, 294, Waterloo Rd., Blackpool. [548

JONES' Garage, Broadway, Muswell Hill, N.10 this week offer a few special machines at prices to suit all. 1916 Douglas 2¾h.p., 2-speed, equipped £25. 1913 Premier 3½h.p., 2-speed, equipped £22/10. 1915 new Ryder-Villiers, 2-speed, equipped £25. 1915 Lea-Francis 3½h.p. twin, 2-speed equipped, £39. 1917 James 2¼h.p., 2-stroke, 2 speed, equipped, £30. 1921 New Hudson, 2-stroke 2-speed, equipped, £45. 1922 Royal Enfield, 2 stroke, 2-speed, equipped, £50. 1918 Douglas 4h.p. combination, £55. 1914 B.A.T. 6h.p. combination, 3 speed box, £65. 1913 Matchless 8h.p. combination £55. 1915 Harley 7-9h.p. combination, £59/10. All tax paid; guaranteed, and in first-class order. You can see them tested on Muswell Hill, about the worst hill in London; that's a point to consider.—Jones' Garage, Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [134

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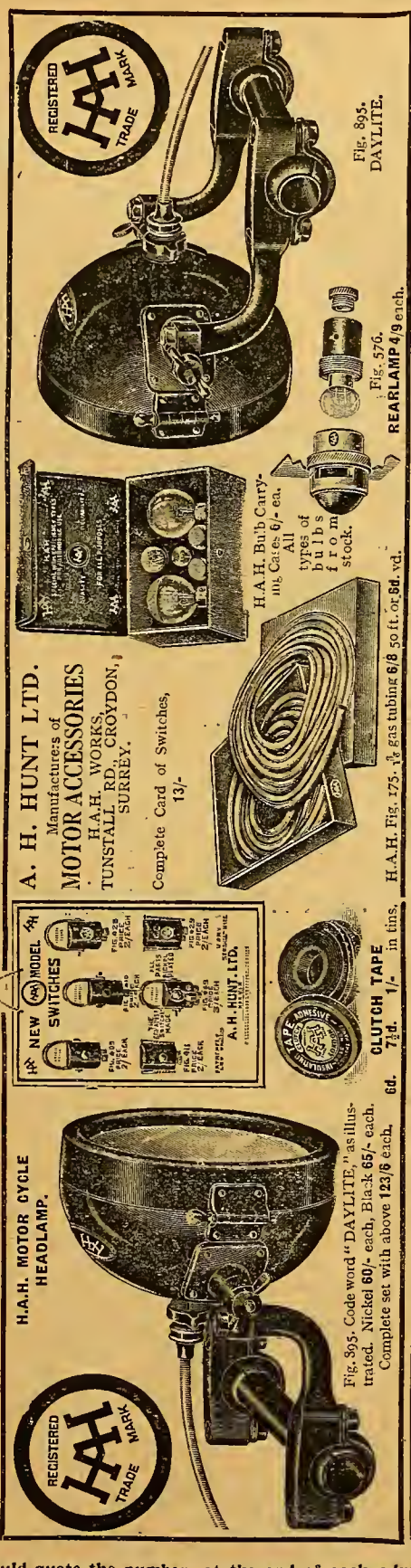
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KINGSBURY Scooters and Spare Parts.—Beanfort Works, Richmond Rd., Twickenham. [2590

KINGSBURY Scooter, with seat, running order, tax paid; £8.—Creber, Union St., Plymouth. [9382

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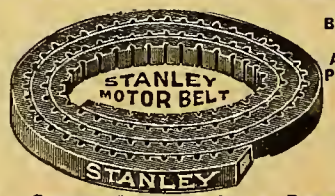

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LARGE 2-seater Sandum Sidecar and hood off Harley, nice condition; £14. Montgomery sports sidecar, brand new, with door; cost £25, accept £20.—391, King St., Hammersmith. [1016

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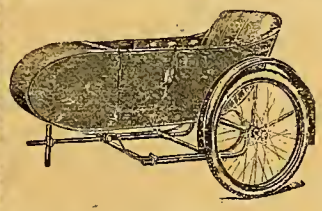

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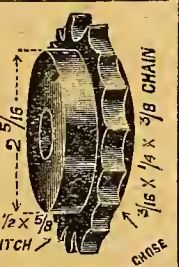

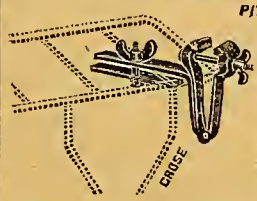

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MORGAN De Luxe, a.c. M.A.G., new gears; any trial; complete; £80.—Wharton, 30, Elgin St., Bolton. [9295

MORGAN, late 1920, M.A.G., Grand Prix, equipped, taxed, perfect; £126.—Clark, 7, Exhibition Rd., S.W.7. [5854

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STELLITE 1914 2-seater, tax paid, very good condition; £125.—The Layton Garages, 30, Holywell St., Oxford. [1161

LATE 1921 Morgan de luxe, W.C., as new; £130.—Nerrington, Terrace Garage, Turnham Green Terrace, Chiswick. [1179

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1921 Carden 2-seater, spare wheel, electric lighting, hood, and full accessories; £55.—Ross, 86, High Rd., Lee. [9759

1921 Carden 2-seater, dynamo lighting, very smart little car; first cheque for 49 gns. secures.—19, Valnay St., Tooting. [1191

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A.C. Sociable, good appearance, splendid mechanical condition, Bosch, equipped; £29, bargain.—34, Cawley Rd., South Hackney. [9562

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WAUCHOPE'S, 9, Shoe Lane, London.—G.N. 1921 model, fully equipped, in excellent condition, spare wheel and tyre; £130. 'Phone: Holborn 5777. [1291

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1920 Tamplin 2-seater, hood, screen, lamps, licensed, Klaxon, new tyres, 3 speeds, hardly used, guaranteed; £62, exchanges.—89, East Hill, Wandsworth. [9653

1921 Coventry Premier, as new, guaranteed perfect, dynamo, spare wheel, many extras; £138.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9883

LE ZEBRE 1922, dynamo lighting and starting, licence paid, not yet done 500 miles; sacrifice at £230.—The Layton Garages, 30, Holywell St., Oxford. [1162

MORGAN de Luxe 1919, M.A.G. engine, speedometer, disc wheels, licensed to December, very smart and fast; £95.—Hockerill Works, Bishops Stortford. [1130

HAMILTON Light Car, fully equipped, ready for service; early delivery; £175; write for booklet.—Smith and Co., Ltd., Compton Works, Wickford, Essex. [5449

MORGAN De Luxe 1920, J.A.P., fully equipped, disc wheels, spare chains, valves, tube, cover, excellent condition; £115.—Lloyd, Victoria Ter., Leamington. [7651

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1921 Grand Prix Morgan, completely equipped and tax paid, very small mileage, and almost new condition; £140.—The Layton Garages, 30, Holywell St., Oxford. [1155

CROUCH 1920 2-seater, dynamo lighting, spare wheel, perfect condition throughout, not done 2,000 miles; £150.—The Layton Garages, 30, Holywell St., Oxford. [1164

89 GNS.; Exchange.—Baby Pengeot, 3 speeds, lamps, horn, Stepney, tax paid; any examination, trial.—Seabridge, Hansler Rd., E. Dulwich. Sydenham 2452. [8600

A.V. 2-seater, late 1921, dynamo lighting, speedometer, very small mileage; cost over £180, accept £108 for quick sale.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [9705

BAYLISS-THOMAS 1922 10h.p, Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; 300 gns.; immediate delivery.—Godfrey's Ltd., 208, Gt. Portland St., London, W.1. [0736

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GRAND Prix Morgan, special competition model, 10h.p. J.A.P., electric light, guaranteed condition, wonderful hill-climber; £110; photo forwarded.—Snow, Laurel St., Dalston, E.8. [1224

1922 G.P. Morgan-Jap, cheap, bought May, mileage negligible, several extra fitments; £160, cost £189; ride 60 miles to purchaser; appointment.—6, Eynella Rd., East Dulwich, S.E.22. [9270

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59 GNS., exchange.—1919 Carden 2-seater, ready for a tour, 8h.p. J.A.P., 3 speeds, kick-start, disc wheels, screen, hood, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [3610

MORGAN G.P., 1921, August, 8h.p. J.A.P., w.c., hood, screen, accumulator lighting, tools, new tyre, plum colour, insurance June, tax December; any trial after 7; £140.—2, North View, Brentham, Ealing. [9378

A.C. Sociable, improved body, tail like Morgan and bulbous front, mechanical condition and tyres excellent, hood, lamps, windscreen, spares, reliable all-weather machine; £45.—Beaumont, Isleham, Cambridgeshire. [9323

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A.V. 2-seater, experimental model, usual guarantee. £130; A.V. runabout, fully equipped, dynamo lighting, speedometer, detachable wheels, etc., an absolute bargain, £160.—Ward and Avey, Ltd., Park Rd., Teddington. [9277

MORGAN-DE-LUXE (late 1921), water-cooled M.A.G., Lucas dynamo lighting, electric horn, speedometer, front starting handle, most lavishly equipped, and practically unused, smartest Morgan on road, guaranteed; £140; sole or combination part.—7, Riverdale Terrace, Richmond. [1225

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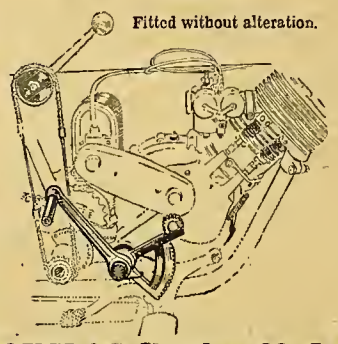

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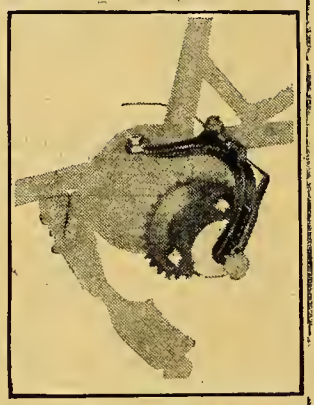

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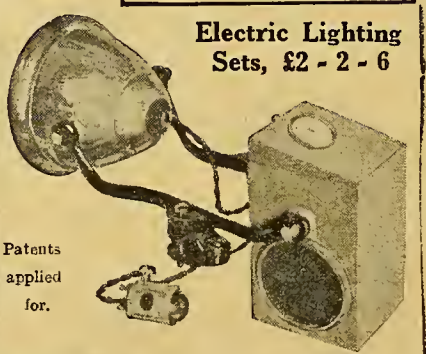

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1921 Carden (date guaranteed), splendid 2-seater electric lighting, hood, screen, any trial; sacrifice, 49 gns.; exchange combination; also easy terms —Wandsworth Motor Exchange, Ebner St., Wandsworth (Town-Station). [125

COVENTRY-PREMIER 4-wheeled super-runabout 8h.p., water-cooled, spare wheel, dynamo, fully insured, etc.; £230; motor cycles, etc., taken in part exchange; instalments if desired.—Frank Whitworth 139, New St., Birmingham. [508

BUCKINGHAM 1914 Sporting 2-seater, 10h.p., w.c. 2 speeds, dynamo lighting, excellent condition fast and economical, all accessories; £75; exchange Matchless (H), Harley, or Indian combination.—12 Ancona Rd., Plumstead, S.E. [105

MORGAN De Luxe, w.c., 1921, late, as new Coventry-Premier 1921, dynamo lighting, 3 wheeler, perfect order; G.W.K. 2-seater, splendid condition; exchange any one for combination and cash or sell.—Norrington Ter. Garage, Turnham Green Ter Chiswick. [118

T.B. Three-wheeler, 1922, standard model, dynamo lighting, shop-soiled only, carrying makers' guarantee; bargain for cash only, £185; list price £215 —Mebes and Mebes (Est. 1893), the original light car specialists, 144, Gt. Portland St., W.1. 'Phone: Langham 2230. [914

1921 Coventry Premier; £46 down, balance £ weekly over 12 months; taxed, dynamo lighting, spare wheel, 3 speeds and reverse, 3-wheeler, good condition, any trial; discount for cash; exchanges.—McNeille and Platt, 57, Great George St., Liverpool 'Phone: 1092 Royal. [979

Spare Parts:

MORGAN.—Spare parts from stock; trade supplied —Maudes', 100, Great Portland St., W.1. [105

MORGAN Spare Parts Depot.—Spares for all models from stock, list free.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [007

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1922 8h.p. Rover Car, only run a few miles; £185 exchanges.—24, Balliol Rd., North Kensington. [966

ROVER 8h.p. 1922 (April), taxed, dickey, scarcely used; bargain, £182/10.—Clark, 7, Exhibition Rd., S.W.7. [124

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St London, W.1. [035

7-9h.p. De Dion 2-seater, perfect; sell £80; or exchange combination.—19, Fairfield South, Kingston-on-Thames. [992

WEST Norwood!—60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne West Norwood. [193

ROVER 8h.p. 1921, perfect, £160; exchange 192 Morgan and cash; Salisbury.—Box 3393, c/o *The Motor Cycle*. [921

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ROVER Cars.—The famous 8h.p. model in stock £220; for immediate delivery.—Eagles and Co 275, High St., Acton, London. [076

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COVENTRY-PREMIER, 1922, 4-wheel model; £230 immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [073

MATHIS, 1921, 3½-seater, mileage 3,500, entirely owner-driven; many accessories, spares; practically new.—Campbell, Trevona, Ashtead, Surrey. [957

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash, deferred payments 4 extra.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [073

CARS FOR SALE.

1922 Calthorpes and G.N.'s.—All models awaiting any reasonable exchange, cars or motor cycles, or pay out of income.—Marlborough, 20, Finchley Rd., N.W.8. [9580

£35 down and 12 monthly payments of £7/10 buys excellent running Waverley 2-seater, nice dickey, Warland rims; bargain.—Marlborough, 20, Finchley Rd., N.W.8. [9581

G.N. 1922, dynamo, spare wheel, speedometer, dickey. This car is absolutely unsoiled and a gift at £165, no offers.—Hillier (side bell), 9, Wallingford Avenue, North Kensington. [9901

GARDEN Car 1921, practically new, electrically equipped, speedometer, clock, hood, original tyres, tax paid; exchanges; £65, real bargain.—9, Bayham Rd., Bedford Park. [9568

SINGER, 1919, dynamo, self-starter, excellent condition; £185; best allowance made on your motor cycle and extended payments arranged.—Service Co., 292, High Holborn, W.C.1. [8186

1922 Rover 8h.p., mileage only 800, lavishly equipped, unscratched; £175, or exchange good combination and cash.—Hillier (side bell), 9, Wallingford Av., North Kensington. [9900

ROVER 1921 8h.p., small mileage, fully equipped, mechanically perfect, as new; £150, or exchange Standard Scott and cash; privately owned.—Prestidge, 128, Thoroley St., Burton-on-Trent. [9854

NEARLY new 1921 Rover, 8h.p., 2-seater, full equipment, speedometer, mascot, very handsome, unscratched, painted chocolate, taxed 1922; bargain, £172/10.—379, King St., Hammersmith. [1015

1921 Carden Car, in excellent condition, electric lighting; any trial or examination; £70.—Eric Snapp and Harrisson, Montpelier Rd., Queen St., Hammersmith. 'Phone: Hammersmith 2432. [1293

STUDEBAKER 15-20h.p. 6-seater, detachable wheels, 2 spare, screen, side curtains, tax paid, splendid condition; sell £120; or exchange combination and cash.—27, Brooke Rd., Wood St., Walthamstow. [9925

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ANY make of cycle or any combination completely equipped; licensed, insured on 12, 15, 18 months' extended payments system.—Write for particulars, Ideezi Sales, Ltd., 5, Victoria St., S.W.1. [0830

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ENGINE, 4-cyl., £12; 8h.p. J.A.P., air-cooled, new, £27/10.—5, Palace Mews, Enfield. [1295

J. and M. Engines, £4/10; overhauled and completed, £6/10; spares.—7, Hereford Rd., Bayswater. [6104

BRAND new 2¾h.p. J.A.P. engine, Amac carburetter; £13.—Taylor, 637, Seven Sisters' Rd., Totnham. [9589

A.B.C. Flat Twin, complete unit, perfect; £12; delivered. Dynamo, 60 watts switchboard; £2. Gerard, Island Farm, Canvey, Essex. [9595

SPARE Parts for Villiers, Blackburne, and A.B.C. engines from stock; trade supplied. Write for spare list.—Maudes', 100, Great Portland St., W.1. [1051

4h.p. Douglas, T.B. magneto, carburetter, large silencer, flexible exhausts, excellent condition; £7.—Endrick, 56b, Edward St., Parade, Birmingham. [9180

½h.p. Engine, mechanical valves, complete, magneto, carburetter, £5; 2¾h.p. Kerry Engine, I.V., 30/-; bargains, both good condition.—Kersill, 56, Lawrence Hill, Bristol. [9533

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Established 16 years.

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26×1¾	**Clincher,** Rubber non-Skid	15/-
24×2	**Clincher de Luxe,** Junior	17/6
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	Clincher de Luxe, Heavy	23/-
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26×2¼ to fit 26×2¼	**Goodrich,** Safety Tread, ex-Heavy	36/-
	Clincher Dreadnought, ex-Heavy	36/-
	Hutchinson, Passenger, Rubber Stud	36/-
	Dominion, Usco Rubber, non-skid, Heavy	25/6
	Dominion, Corrugated, Heavy	28/6
	Hutchinson, T.T., Rubber Stud	27/6
	Hutchinson, Super Stud, ex-Strong	55/3
650×65	**Goodrich,** Safety Tread	35/-
	Hutchinson, T.T., Rubber Stud	25/-
	Spencer Moulton, 3-ribbed, ex-Heavy	22/6
	Michelin, Fine Ribbed	19/-
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700×80	**Goodrich,** Safety Tread, ex-Heavy	38/6
	Clincher Dreadnought	34/-
	Clincher, 3-ribbed, ex-Heavy	47/-
	Goodrich, Safety Tread, ex-Heavy	48/-
	Goodyear, All Weather	52/-
	Super Chain, ex-Heavy	42/-
	Hutchinson, Super Stud, ex-Strong	61/-
28×3	**Goodyear,** All-Weather Tread, ex-Heavy	49/-
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24×2 and 24×2¼	each	4/3
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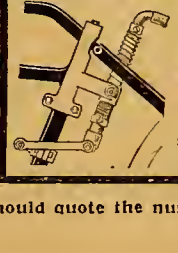

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Patent
SPRING SEAT PILLAR

Fit one to your motorcycle and laugh at bad roads and potholes. Ideal Rear Springing. Price 35/- Post Free.

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BARGAIN.—Brand new 1½h.p. Whippet 4-stroke engine, overhead m.o. valves, aluminium piston, new waterproof magneto and carburetter, H.B. controls; £8; worth treble.—Wortham-Blake and Co., Waltham Cross. [8180

T.D.C. Engine Parts.—3½h.p. 4-stroke, 2¾h.p. 4-stroke, and 2¾h.p. 2-stroke, 2¾h.p. 2-stroke engines complete; £7/10 each.—Write actual manufacturers, W. H. Cross, 108, Yardley Rd., Acocks Green, Birmingham. [8049

WHATEVER type of engine you require, we can supply. Special bargains:—Brand new Coventry-Premier, pattern 1915, 4h.p., £12/10; 3½h.p. Rudge, £10/5; 2¾h.p. Calcott, £5/5.—Forfield Motors, Forfield Place, Leamington Spa. [1348

8-10h.p. Douglas water-cooled engines, horizontally opposed, mechanical lubrication, brand new, and second-hand, suitable light car, stationary power plant.—Stamp specification, Derrington, Grafton Rd., New Malden. 'Phone: 256. [1324

HARLEY 7-9h.p., as new, £15; 2¾h.p. J.A.P., as new, £9/10; 4¼h.p. B.S.A., £10; J.A.P., 4h.p., £8/10; 3¾h.p. Precision, £7/10; 4h.p. Minerva, £5; ditto, 2¾h.p., £4; Noble, 3h.p., £4/10; water-cooled Bat, 4h.p., £5; Swift, 7-9h.p. single, water-cooled, £8; Douglas 4h.p., £10; Clyno, as new, £15; others in stock.—DeCort and Flynn, 39, Essex Rd., London, N.1. 'Phone: North 1846. [9995

HEPPELTHWAITE'S hold the largest stock of J.A.P. spares in London. List upon application. New cylinders, £2; pistons, 15/- and 17/6; crank cases, £2/10; new 4h.p. J.A.P.'s, £12; sets of 8h.p. parts, less flywheels and a few small parts, £10/10; W.C. front cylinders, £3. Second-hand engines: 5-6h.p. Peugeot, £5/10; 5-6h.p. N.S.U., £4/10; 3½h.p. Triumph, £4/10; 4h.p. L.M.C., as new, £9/10. Set of 4h.p. J.A.P. parts to build up, £9/10.—17-19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [1334

IGNITION, LIGHTING, ETC.

A REAL BARGAIN

IN Magnetos can be secured from the Marble Arch Motor Exchange.

950 Motor Cycle Magnetos to be cleared.—See below.

PLEASE note our stock consists of genuine Motor Cycle Magnetos, all variable ignition, and guaranteed not converted or reconstructed aeroplane starter mags.

WE guarantee we can supply you a magneto cheaper than anyone.

SINGLE-CYL. Anti-clock, M-L, 45/-; C.A.V., 38/-; U.H., 35/-; Berling, 30/-; Dixie, large type, 30/-; all above suitable for Triumph, B.S.A., etc.—Below.

SINGLE-CYL. Clock, C.A.V., 38/-; Dixie, 30/-; Berling, 30/-.—Below.

180° Anti Clock, C.A.V., 38/-; Splitdorf, 35/-; Dixie, 30/-.—Below.

180° Clock, Thomson-Bennett, 38/-; C.A.V., 37/6; Splitdorf, 35/-.—Below.

42°, 50°, 55°, Thomson-Bennett, Splitdorf, or Dixie; hundreds of others in stock. All guaranteed and sent on approval against cash.—Marble Arch Motor Exchange, 155, Edgware Rd., W.2. 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. [9079

H.B. I. Co.

H.B. for new and second-hand magnetos; all spares stocked.

H.B. Specialise in Thomson-Bennett, complete for fixing to Triumph.

P.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

C.A.V. New, twin and single, clock and anti; £3.

DIXIE, single and twin, all degrees; £2/5.

H.B. Guarantee all magnetos one year.

H.B. will take your old machines in part payment.

H.B. Despatches all goods per return, carriage paid, on approval against cash, or through *The Motor Cycle* deposit system.

H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. 'Phone: Brixton 610. [0694

M.L. Singles, 30/-; C.A.V., 37/6; W.D. variable ignition, guaranteed.—84, Greenside Rd., Croydon. [1355

MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton St., Camberwell [3584

37/6.—C.A.V. Magnetos, singles and 1800 twins, variable, guaranteed new and perfect; approval against cash.—Below.

£3/15.—ZE1 Bosch pattern, new, singles only, exceptional value; please state rotation; approval against cash.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1351

IGNITION, LIGHTING, ETC.

COUNTY of London Engineering Works, Ltd.

MAGNETO Factors and Repairers.

ALL Magneto Spares Stocked.

BOSCH Single, Type D.A.L., variable ignition; £3/5.

M-L Single, enclosed, waterproof, variable ignition; £3/15.

THOMSON-BENNETT, single or twin, enclosed, waterproof, variable ignition, all degrees; £2/15 each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed, waterproof, variable ignition; £2/15 each.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle, suitable for Rudge.

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required. Please state make of engine when ordering.

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed. Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade. Write for list.

COUNTY of London Engineering Works, Ltd., 27, Stockwell Rd., London, S.W. (1 min. from Stockwell Underground Station). T.A.: Ignitionac, Clapham, London. Tel.: Brixton 2841. [2717

RELIANCE Magneto Repairing Co. (the largest London Repair Depot), for repairs and magnetos.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a 12 months' written guarantee against all defects.

RELIANCE test every magneto after repair, under all running conditions, and as we contract for many of the largest concerns, you need have no hesitation in placing your orders with us.

RELIANCE stock spares for all makes. Special line, genuine platinum screws for all types, 12/- per pair. Magneto work of every description is carried out solely on our premises. We are, therefore, enabled to give you quicker and more efficient service at the right price.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co. for new and second-hand magnetos. See following list.

THOMSON-BENNETT singles and twins, brand new any degree, enclosed waterproof, variable; 55/-.

THOMSON-BENNETT, large type single or twin, enclosed, waterproof, variable, suit Harley, Indian, etc.; £3/10.

C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

E.I.C. enclosed, waterproof, variable, suitable for Triumph, B.S.A., or any Lightweight; £3.

BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern; ideal for Douglas, 2¾h.p. and 4h.p.; £4.

BOSCH D.A.L. twins, enclosed, waterproof, any degree, suitable for Indian, Harley, etc.; £4/10.

FELLOWS new magnetos always in stock, any degree for any engine; also a large selection of second-hand magnetos, all makes.

GUARANTEE—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute.—Reliance Magneto Repairing Co. (1914), 283, St. John St., London E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco, Smith, London. [9816

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THE PERFECT PASSENGER MOTORCYCLE

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We are now supplying a

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Specially designed for the makers of the Matchless Motorcycle for use on the following parts:—

All Spring Frame Joints,
including Front Fork Spindles.
The Clutch.
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Packed in 1 lb. tins — 2/3 each.

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218/220, Queen's Road, Battersea, LONDON, S.W.8.

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CYCLE BLACK

(AIR DRYING)

Lieut. ———, R.N., writes:—

"A pint of your Cycle Black and a lick of Varnish has made my 1915 Studebaker look like a new car."

NOTE. — A small tin of Cycle Black will do the same for your motor cycle combination.

Stocked by ironmongers and accessory dealers everywhere.

ASPINALL'S ENAMEL Ltd.,

NEW CROSS, S.E.14.

Varnish Works, Mitcham. Telephone: New Cross, 42 & 206.

IGNITION, LIGHTING, ETC.

MAGDYNAMO Engineering Co., Ltd., for magneto spares, and repairs.

MOTOR Cyclists fit reliable high quality magneto now and avoid certain failure of inferior magneto

BOSCH Enclosed Waterproof Type D.A.L. Magneto Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds, makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines therefore we have every confidence in claiming them to be the magneto you require for your big machine Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

ZENITH Owner writes: "Since fitting magneto have completed a run of 250 miles; highly satisfied will certainly recommend these magnetos."

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service supplied by Magdynamo, beat all other Magnetos.

MAGDYNAMO will take your old Magneto in part payment.

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry a smoother running, and more powerful engine and better results from your Douglas? Then send for the latest enclosed waterproof type Bosch ZA2 magneto now, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos, latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting pounds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparking plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it, we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row, E.C.2. 'Phone: London Wall 4570. (One minute from Brown Bros.) [7497

DYNAMO Lighting Set, brand new; £10.—12, Churchfield Rd. East, Acton, W.3. [9935

25/-—M-L single magnetos, as new.—31A, Compton Rd., Kensal Green, N.W.10. [9641

MAGDYNO 6 volt Accumulators, large head, side and rear lamps, suit heavyweight, set complete, 6 guineas.—Davies, 22, Piercefield Place, Cardiff. [9232

ANY Motor Cycle Magneto repaired, no matter what condition, provided complete, for 30/-; 24 hour service.—Kays, Electrical Dept., 8, Bond St., Ealing, W. [5077

DOUGLAS 2¾h.p., magnetos, waterproof variable ignition, genuine Dixie instruments, late type 20/- each, post free.—Griffin and Son, 97, Angel Rd., Brixton. [9825

DASH Switchboards, 4-way, with ammeter, 20/-; with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept. H.1), 9, Colonial Av., Minories, E.1. [0768

JEBRON, registered 291298, greatly superior to platinum, for blades, screws, etc., cures misfiring Jebron screws, fits Bosch mag., 10/6 pair; old screws any make, Jebronised, 4/9 each, return post.

JEBRON Contacts, used by Messrs. Collier Bros., Culver Martin, making world's records.—Jebron, 38, Herbert Rd., Woolwich, London, S.E.18. [0000

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
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MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

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Unwarranted Activity Against Noise.

SILENCE in a motor cycle is a very excellent attribute, but surely the police campaign against noisiness is going too far.

The Motor Cycle has always advocated the effective silencing of motor vehicles, and we believe that much can be done in this respect without hampering the actual motor cycle user in any way. Furthermore, we agree that many machines on the market to-day are far too noisy, and that very often the manufacturer is not wholly blameless. Therefore a certain amount of activity on the part of the police is understandable. But it begins to be serious when events occur such as happened at Coventry recently.

In the same day, at the same police court, two motor cyclists were summoned. In one case the alleged offence was that of being drunk in charge of a machine; in the other, that the machine was too noisy. The first man was fined 10s.; the latter, 40s.

The case simply supplies confirmation for what we have already said; the present campaign against noise has, in the Midlands anyhow, far over-stepped the bounds of commonsense. Even more, it has over-stepped the strict letter of the law.

The Motor Cars (Use and Construction) Order No. 11, 1912, says:—

> "(7) He shall not use any cut-out . . . which will allow the exhaust gases to escape . . . without first passing through a silencer, expansion chamber, or other contrivance suitable and sufficient for reducing as far as may reasonably be practicable the noise. . . ."

This regulation is ignored, and the fact that a motor cycle has a long exhaust pipe, however silent it may actually be, is accepted as conclusive evidence of guilt. Any action by the authorities against noisy motor cycles ought always to be based on volume of noise, as the law requires, and not on a technical point of expansion chamber arrangement.

Anglo-Dutch Trial Cancelled.

IN Holland, no less than in this country, there will be considerable disappointment at the falling through of the arrangement for the annual Anglo-Dutch trial, as is now definitely announced elsewhere in this issue.

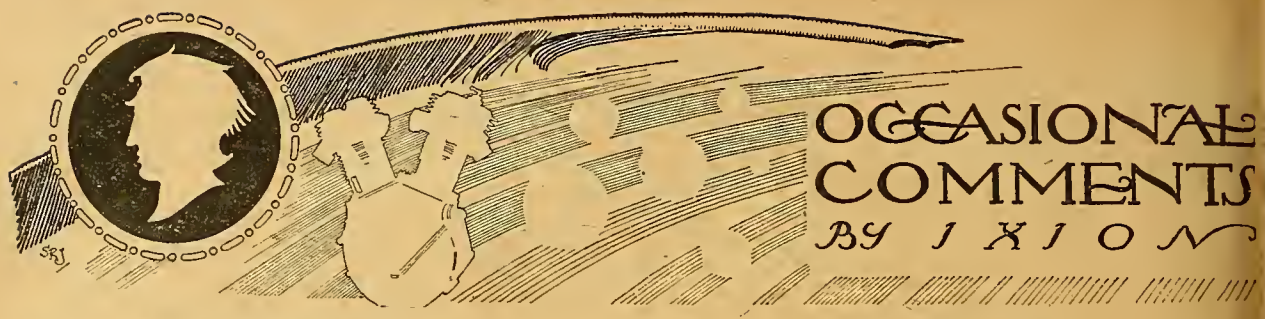
By allowing the event to die out, those responsible have abandoned one of the most valuable of international trials; not a trial valuable as a technical test, but one of inestimable worth as an opportunity of demonstrating to the keen and sportsmanlike riders of a friendly disposed Continental country the excellence of British motor cycles.

This year the trial was to have taken place in Holland, and the organisation, at a late hour, appears to have been deputed by the A.C.U. to its Eastern Centre. Between the two stools a popular event has fallen to the ground, the parent body apparently indifferent, and the subsidiary body handicapped by the suddenness and lateness of the commission; certainly no blame attaches to the latter.

Strong complaints on the matter have already reached us, and it has been pertinently asked why a slightly supported International Trial (which costs each participant from £50 to £70 and ten days of time) should be so strongly fostered while a deservedly popular event occupying but a week-end and costing about £10 per head should be allowed to die away.

Worst phase of all is the apparent unsportsmanlike slight which the Hollanders must feel after they had got forward the entire arrangements for the trial about two months ago.

An index to the advertisements in this issue will be found on the page facing the back cover.



Solo and Passenger Golds.

EARLY this summer I heard a number of cracks disputing as to whether a solo or a sidecar machine gave an ambitious rider his best chance of a gold medal in a Six Days; they were being consulted by an aspiring amateur, who desired to secure his English and Scottish golds in the same year. Discussion waxed hot, the voting being, on the whole, in favour of the solo machine. The soloists argued that structural fractures were more likely with sidecars; that wheelslip on freak hills was more probable; and that "blinding" to regain lost time was more perilous. On the other hand, the sidecar enthusiasts held that a good driver with a good machine could go steadily from start to finish; that interchangeable wheels simplified the puncture problem; that wheelslip on freak hills was merely a matter of pathpicking *plus* sensible throttle management; and, above all, that in a wet week the three-wheeler ensured its jockey a far easier passage, as he was saved the eternal effort of holding the machine up.

No Nearer Solution?

THE dispute was interesting, and the A.C.U. trials have brought it no nearer a solution, to my thinking. True, a sidecar filled the first place for the Hopwood prize (best performance of the week). True, again, that a sidecar won the Centre Premiership. On the other hand, a solo rider tied with the runner-up for Hopwood award, and several solo machines were only pushed out of the list for reasons which the average rider does not regard at all seriously—the three 500 c.c. Sunbeams were all mulcted five marks on the score of silence, and two of them lost a further two marks for a brake test which very few machines in daily use could pass, perfectly safe though they are for all ordinary purposes. If percentages be taken as a guide to the vexed question of what type of mount offers the best chance of a gold, the 350 c.c. solo machine must have our vote. With twenty-seven starters, this class secured eighteen golds—66%—and only shed four of its number by the way. The big sidecar class had thirty-seven starters, twelve retirements, and eighteen golds—less than 50%. The 500 c.c. solo class attracted twenty-two starters, won thirteen golds, and finished eight under strength, slightly better than the sidecars.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Featherweights.

UNQUESTIONABLY the top spot of the whole trial was the splendid performance of Purnell's 169 c.c. J.E.S. That he only gained a certificate was a misfortune which will obscure the real merit of the feat. He had five hill failures—on roads which no private owner of a utility lightweight would ever desire to travel. He was fifty minutes late on the first day. He was mulcted of two marks for noisiness. On the other hand, he accomplished far, far more hill-climbing than any buyers of a J.E.S. would tackle in a year. He kept dead time for four whole days. He was awarded a bonus—the only bonus of its kind in the list—for the excellent condition in which his lilliputian mount completed the course; and he averaged over 27 m.p.h. for his seventy odd miles on Brooklands. Only one factor obstructs a boom in the featherweight motor bicycle—namely, its usual lack of reliability, expressed particularly in terms of power maintenance. Ladies and elderly men want a featherweight which does not ask for perpetual tinkering. The J.E.S. performance is the first real hint we have had that the day of the trustworthy tiny may be nearer than some people fancy.

Those Second-hand Dealers.

A NOVICE friend bought a machine at quite the top market price from a very eminent dealer in second-hand stuff. This dealer had obviously passed the machine on just as he took it over from its last owner, who may or may not have been the original buyer. One proof was furnished by the cylinder, which was scored. Another was the heavy internal carbonisation of the piston, which no professional mechanic worthy the name, would have neglected. A third indication of my charge was the fact that the two top piston rings had lots of up-and-down play in their grooves. A fourth was the fact that a small chunk was missing from one side of the face of the exhaust valve, and that this in turn had reacted on the valve seating. Ought a leading dealer, disposing of a used machine at a high price, to pass it on without instructing his men to remove the cylinder, and peep at the innards of the beast? No one of these defects was really serious. They had not put my friend to any great expense. They did not produce any aggravating roadside trouble. But they betrayed both to me and to him the methods of the firm in question. It evidently accepts a used machine in a deal; sends it for a brief run; and vets. it as sound if there is no appalling noise and no glaring lack of power.

Occasional Comments.—

Brake and Chain Adjustment.

WE can all remember the days when the gear control always needed adjustment if the gear box was shifted to set the chain tension; on most modern machines this auxiliary job is obviated by sounder design. Another "combined" adjustment dies much harder. When we reset the rear chain by moving the back wheel in the forks, the adjustment of the rear brake is usually disturbed. If this brake is of the belt rim type, the rider generally leaves the brake alone, trusting to its long movement to preserve plenty of stopping power. The point wants watching. Only last week I saw a sports solo involved in a nasty little crash, and the expert rider confessed to me privately that he had tightened his rear chain the night before, and left the brake alone. Result—when he wanted to stop in a hurry, the brake hardly responded at all; and as his front wheel was disfigured by an obsolete stirrup brake, he was helpless. Good design will obviate these "consequential" adjustments; the ideal rear brake remains unaffected by sliding the wheel in its draw-bolts. While I am on this topic, I should like to stir up designers to notice how many hard riders are substituting internal expanding or dummy belt rim front brakes for the stirrups to which some makers cling so obstinately. These people recognise that an effective front brake has more than a mere legal value—down 1 in 3, for instance.

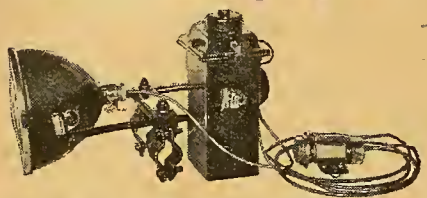
Easy When——

YOU know how. The other day I had occasion to dismantle the pump portion of a drip feed by the roadside. At the base of the pump was a gauze filter disc, secured by a light screwed ring with slots on each side. Behind gauze and ring was a terrific spring, equal to about three ordinary exhaust valve springs, superimposed. I took it out reluctantly, not daring to think how I should get it back. Repairs complete, I made several essays to replace it before I hit on a simple dodge. With one hand I held the ring and gauze against the edge of my rear number-plate, so that the plate engaged the slots of the ring. With the other hand I registered the pump barrel (with its spring inside) against the threads of the ring, and screwed it on. What threatened to be a very awkward job was successfully concluded in 10 sec. from devising the correct method. Incidentally, I have never previously had to take down a drip feed by the roadside, which indicates the reliability of these gadgets.

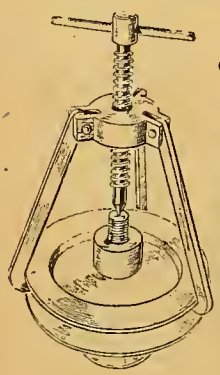
A CHESHIRE BEAUTY SPOT. This typical and charming bit of "old England" is at Eccleston Ferry on the Dee, three miles from Chester. It is a landscape that many American visitors look upon as a perfect gem among English pastoral scenes

AMONG THE ACCESSORIES

Self-contained Lighting Set.



Well-made and well-finished this Westwood self-contained accumulator lighting set is marketed complete with rear lamp, wiring and switches. (Westwood Rim and Patents, Ltd., London Road, Bordesley, Birmingham).



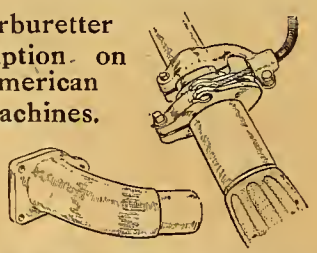
For Garage or Workshop.

Pulleys, magneto sprockets, or any other members that come within the range of its two sizes, may be readily detached by the Endolite pulley remover, 15s. (A. J. Dew & Co., 21–25, Endell Street, Long Acre, London, W.C.2.)

Piston Groove Scraper.

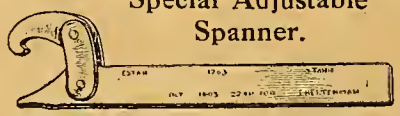
Piston ring grooves are easily cleaned by the B.H. scraper, 1s. 6d. (The B. H. Co., Eliot Works, Castle Street, Liskeard, Cornwall).

Carburetter Adaption on American Machines.



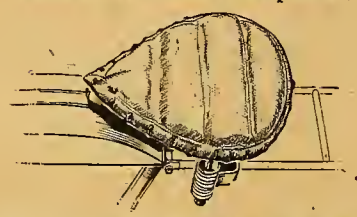
Special aluminium inlet pipes and adapters to twist grip control are now supplied to enable Binks carburetters to be fitted to Harley-Davidson machines. (C. Binks, Ltd., Church Street, Eccles).

Special Adjustable Spanner.



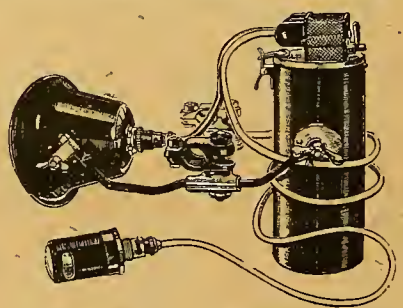
For adjusting conventional steering-head nuts and some types of exhaust pipe fastenings of various sizes, the Estar hinged spanner is specially useful. 4s. 6d. (U.S. Tarr, Pittville Garage, Winchester Street, Cheltenham).

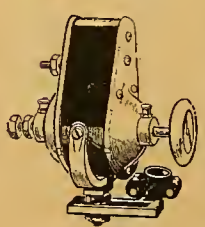
Comfort at Small Expense.



Elderly riders of rigid frame machines may derive considerable comfort from the Pontifex pneumatic cushion, which laces round the saddle and may be inflated by the mouth. £2 2s. (J. H. Pontifex, Ltd., Buckingham Palace Road, London, S.W.1.)

Low Priced Dynamo Lighting.



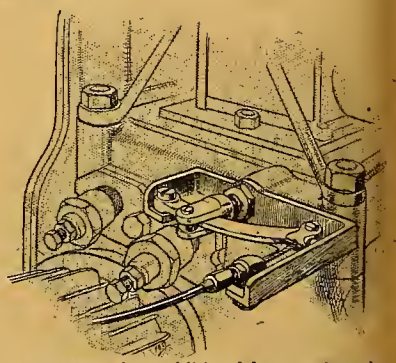


Ward and Goldstone, the makers of the Voltalite dynamo so well-known in the pedal cycle world, have marketed an improved set for motor cycle use. The handlebar lamp and large capacity dry battery for use when the dynamo cuts out of action are mounted together, and a rear lamp and, if required, a sidecar lamp are supplied It is impossible to wire the set up wrongly. £10 (solo set), £11 10s. (sidecar). (Ward and Goldstone, Ltd., Frederick Street, Pendleton, Manchester.)

Three in One.

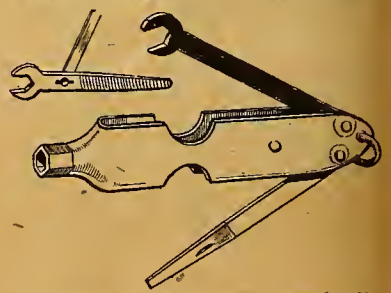
Watch-holder, licence carrier and switch are all incorporated in the accumulator case of the lighting set produced by the Motor Cycle Accessories Co., 43a, New Cross Road, London, S.E.

Lever-aided Valve Lifter.



By means of an additional lever action, the Eli Clarke fitting for 595 c.c. Douglas engines lessens the strain on the exhaust lifter wire. 15s. 6d. (Eli Clarke, Cheltenham Road, Gloucester.)

Handy Magneto Pocket Tool.



Comprising two flat spanners, a magneto file, platinum point gauge, screwdriver and a box spanner, a handy pocket tool is sold at 5s. 6d. by the Hobson Manufacturing Co., Ltd., 29, Vauxhall Bridge Road, London, S.W.1.

Insurance Problems.

A Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

An Unusual Collision.

A reader says an acquaintance of his had a curious experience the other day whilst riding his machine through Epping Forest with a passenger on the pillion seat. He collided with a deer which ran out from the woods. He asks what claim for damage to the machine would be allowed in a case of this sort where the cause of the accident is of so unusual a nature.

If the machine in this case was damaged by collision with the deer, it would undoubtedly be a claim under the ordinary policy just as much as if the collision had been with cattle on the road or any other object.

* * * *

Insuring Accessories.

Mr. W. Dewsbury, Liverpool, writes:—"I have on my machine at least £40 worth of accessories, and it is quite conceivable that a thief may effect a complete clearance of these one night. Yet if he leaves the machine I do not recover a penny. Can you tell me what the premium would be on, say, lamps (2 sets), speedometer, horn, electrical and other things, to the value of £40? Would a reputable office accept the proposition?"

As the accessories of your machine appear to be of rather higher value than usual, you will probably find that if you placed full particulars before your insurance company, it will be willing to issue a separate burglary policy in respect of the accessories. Unless the company which insures the cycle will do this for you, we doubt whether any other office would cover the accessories alone. The premium would be the subject of a special quotation.

* * * *

Malicious Damage.

Mr. E. C. Willcot, of West Drayton, says:—"A friend of mine had all three of his tyres gashed with a knife so badly as to render them useless. The insurance company tells him to recover from the perpetrator. The culprit was thought to be a small boy, but this cannot be proved. Although a premium of £8 had been paid he cannot recover a penny. Should the company have refused payment?"

The policies issued by the Autocar Fire and Accident Insurance Company, Limited, include compensation in respect of damage caused by the malicious act of third parties. If this risk is not covered by your present policy, we are afraid that the only thing you can do is to consider transferring your insurance to another office, so that in the event of such damage occurring again you would be covered.

Agent's v. Makers' Repair.

Mr. J. Hendrie, jun., Glasgow, writes: "I took delivery of a new motor cycle on Saturday, August 26th, 1922, from the firm's Glasgow agent. Immediately I got delivery, I registered and insured it to cover everything. On Sunday my brother had an accident with it. I reported and claimed on Monday, leaving the machine at the agents to be returned to the makers for repair. The machine was a special super sports model for competition work. I wanted the machine returned from the maker exactly the same as I had received it on Saturday. On Tuesday, when I went to the agent, the insurance agent had been there, and gave the motor cycle agent the machine to repair. The handle-bars were twisted, the tank was dented and scratched, the footrests were twisted and bent, the front mudguard was dented in several places. I want all the articles removed. The steering column was also twisted. I went back to the insurance office and told them I would not be satisfied unless the machine was sent to the makers and I got the makers' guarantee that everything was the same as it was originally. They said that they could get it repaired cheaper in Glasgow than sending it back to the makers. The motor agent gave them an estimate of £3 10s. to put the machine in order, but I am not satisfied with this procedure.

The driver of the other machine that caused the accident admitted that it was his fault, and the police constable gave my brother his name as a witness. The other machine is also insured. Would you oblige me by letting me know if I can force the insurance company to send the machine back to the makers?"

From the details you give of the damage to your machine, it does not appear to us that this is severe enough to justify any extra cost which would be incurred by sending the machine back to the makers. If the insurance company gives instructions to the motor agent for the repairs, it takes the responsibility of seeing that the work is properly carried out. Should, however, you decide to insist upon the cycle being sent to the makers, a detailed estimate should be procured and forwarded to the insurance company, so that it will have an opportunity of discussing the matter with the makers before the repairs are put in hand.

Following the Blue Trail

The Personal Impressions of "The Motor Cycle" Representative on the Six Days Trials. The Sporting Aspect of the Event.

WHEN a member of *The Motor Cycle* staff is allotted an event like the Six Days Trials, those of his colleagues who have never had the same task themselves are inclined to talk enviously about another holiday and so forth. Whereas, except that it means a week in the open air, the stern reality resembles a holiday as much as did a spell of trench digging to an infantry battalion out on rest in the days of the war.

It means a week of sheer hard work for the man and, of course, an even greater strain on his machine. That is why, although 250 c.c. machines in the competition win gold medals with apparent ease, the Pressman invariably uses something hefty of 500 c.c. or more. My machine for the recent big A.C.U. event was a four-valve Triumph with 3,000 miles already to its credit, and there were but very few occasions when I wished it were anything else.

Where were the Private Owners?

In consequence, I thoroughly enjoyed the affair, and am constrained to wonder why more private owners' names did not appear on the entry list. Had I had any mechanical troubles I would probably now be feeling amazed that anybody at all had been mad enough to attempt to follow the wonderful blue trail that led (usually) to nowhere desirable by the most round-about route! Of course, in reality this does not apply to the amateur competitor, to whom a breakdown is merely momentarily galling; to myself, at times, it would have been sheer disaster.

There is something extraordinarily fascinating in bumping round a trials course, in keeping upright on viscous slime, in clambering up landslides like Rosedale Abbey Bank without putting one's feet down. Whether the sidecarist gets the same feeling of achievement is a matter upon which I am not qualified to write, but certainly the soloist extracts real pleasure from a section of difficult going. Furthermore, in my case there were no secret checks and my schedule was generally to get along just as quickly as I safely could.

The Triumph seemed to enter into the spirit of the game. It took advantage of every little opportunity of acceleration, up or down hill, confidently because it has an exceedingly excellent rear brake. It climbed every hill in the event in a pushful manner, usually on top or second gear. It alternately bucketed or ploughed over colonial sections with never a desire to wobble or lie down—except once—and if its tail wagged slightly on certain particularly unpleasant, deep wet clay tracks towards the end of the week—the 3in. rear tyre had little of its original tread left—it was always possible to right it by gripping a little more tightly on the enormous Pedley rubber grips and knee grips of the same ilk.

"Fools Step in . . ."

Perhaps it was the way it conquered Rosedale Abbey Bank that put me in such good humour with it for the rest of the week. I had never seen that fearful acclivity before—possibly it was just as well—and I am no George Dance.

Following the Blue Trail.—

Anyhow, although dogged by sooting sparking plugs, I contrived to draw fifteen minutes ahead of No. 1 on Monday morning, and, eluding a frantic Yorkshireman with a red flag, rattled up a loose and stony hillside, dotted with many spectators, which I judged was the much vaunted tit-bit of the trials. The first bend was easy—the old rule of keeping to the outside once more proved its usefulness; so was the cross over for the more acute left-hand turn immediately following; but the bend itself demanded a surprising amount of concentration, and it was with a sigh of relief that I straightened out again—only to find that I had in reality but started the climb. Approaching the worst gulley with caution, I remembered that machines with far more clearance than mine were reputed to ground thereon, and for the life of me I could not recall which side was most suitable for a jump.

Compromising, and because there was little time to think, I went hard at the centre. There was a sickening jar and grating sound as the silencer and footrest hanger-bars scraped over. For the first time I kicked out with my feet, and to my great surprise was able to replace them a couple of yards further on as I sailed easily to the summit.

The Baulking Nuisance.

Had the competitors been sent up one at a time I am sure there would have been many more perfectly clean ascents, for, as I have inferred, I am not nearly such a clever rider as many a man who failed completely on the same hill.

Colonial sections did not worry me; in fact, I averaged the legal limit over some of the most difficult

(Top). It is suggested in the article that sidecarists do not gain the same sense of achievement as the soloists on such a hill as Rosedale. Their difficulties, if of a different variety, are, anyhow, just as great. (Left). For some Whitehorse Hill was a fairly easy second gear climb; for others it provided most unpleasant surprises in the shape of grounding crank cases, or wagging rear wheels. Two Allon riders making cautious ascents. (Bottom). J. H. Davies became one of the heroes of the event by persuading a high-geared, long-stroke T.T. Sunbeam round a course where 20 to 1 gears were often not too low.

Following the Blue Trail.—

15 m.p.h. stretches. From what was casually said by a competitor on a lightweight who followed me over the wet, boulder-strewn track a few miles from Rudyard on Tuesday, I fear that my progress at times was far from elegant; but, anyhow, I always got there, and almost invariably without footing. By the way, to the true solo enthusiast the avoidance of footing becomes alike an obsesssion and an ideal, almost a religion.

By the time the blue dye began to indicate a definite homeward trail on Friday morning I had reached the stage where driving on treacherous roads became a purely mechanical sequence of operations, instinctive rather than by conscious effort. It proved to be a dangerous phase. Ten miles from Gloucester I hit an unnoticed stretch of grease at 30 m.p.h. with alarming suddenness, and a Lucas electric head lamp and front number plate occupied the positions hitherto held by the tyres. Neither of these members was improved thereby, but nothing else was damaged.

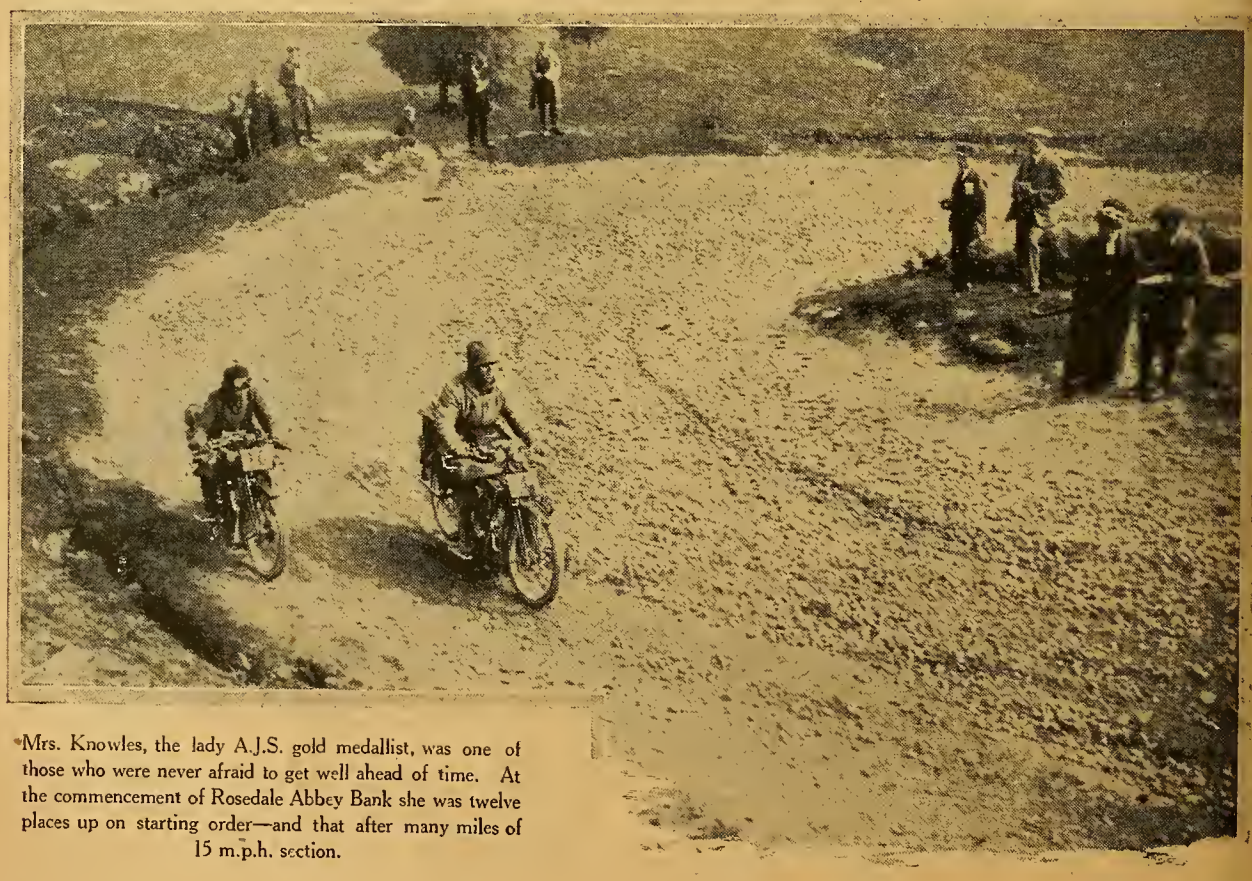
As I kicked things straight by the roadside I had the consolation of seeing everybody else who passed wobble alarmingly, and at least one take a similar toss. This was Lovegrove, the Radco rider, upon whom hinges another tale.

The True Sporting Spirit.

When he slithered into the mud with his machine more or less on the top of him I was engaged in hauling the Triumph on to its stand, and confess that I looked on his predicament more with amusement than anything else. However, Mrs. Knowles, who followed hard at his heels, was quicker-witted, and realised at once that the Radco had pinned its rider to the road. She pulled up, dismounted in a flash, and flung her A.J.S. into the hedge, rushing to the assistance of the unfortunate rider before I had realised that anything serious was amiss. Although I still feel somewhat ashamed at my own unfeeling attitude, I think Mrs. Knowles' sporting spirit deserves the widest publicity.

Alms Hill was the scene of my next discomfiture—slight, it is true. I had been up before when it was so wet that ninety-five per cent. of a trials entry had failed entirely. Consequently on Friday afternoon, when it was lined with hundreds of spectators, I faced it in a spirit of great caution and in low gear all the way. It was distinctly galling to witness later competitors, who had never seen the hill before, come charging up at speed on middle gear.

Every mile of the route, except from the summit of Mow Cop to Rudyard, was covered, but the fifth day finished the trials so far as the Triumph was concerned. I have no doubt, however, that it would have lapped at Brooklands at well over the required speed of its class. W. N. G. Phillips, a genuine private owner who spent the first week of his holiday winning a gold medal on a similar machine, averaged 49.7 m.p.h. on the track without opening out fully; and,



Mrs. Knowles, the lady A.J.S. gold medallist, was one of those who were never afraid to get well ahead of time. At the commencement of Rosedale Abbey Bank she was twelve places up on starting order—and that after many miles of 15 m.p.h. section.

Following the Blue Trail.—

ever since I discovered a plug—a 15s. K.L.G.—that stands up to the task, I have usually been able to send my own Bonniksen needle well past the sixty mark for quite considerable spells.

Accommodation Difficulties.

On the whole, the organisation of the event itself was quite good, although it was not courting popularity to mention the Scottish Six Days Trials to an A.C.U. official! The hotel arrangements, particularly at Shrewsbury and Llandrindod Wells, on the other hand, were not all that could be desired. Billeting-out may have been unavoidable, but many of the competitors felt that they were paying too much for the privilege of sharing towels, and so on. The man who said that there were too many officials was probably not very far off the mark.

I used neither Jackson's Impervo nor Miracle Oil, and in this respect I may have been at a disadvantage to the great bulk of the competitors. But although I found a large hairpin embedded in my rear tyre on Wednesday morning—and the tyre itself has done a strenuous 4,000 miles, during which a rear brake block was worn to uselessness—I had no tyre trouble; and, after many sooted plugs on Monday and Tuesday, I effected a cure by cutting down the oil and declutching on steep descents. Incidentally I found that Wakefield's X.L. oil suits the Triumph engine admirably. Fuel consumption for the whole trip averaged well over 90 m.p.g.

Ground Clearance and Riding Position.

Only two faults on the part of the machine call for ventilation. (1) The crank case clearance is inadequate. At the same time, one may ground regularly a dozen times a day without doing the slightest damage—if permanently bowed footrests are excepted. (2) Previously I had considered the riding position as ideal—certainly the steering is superb—but after five days in the saddle I am forced to the conclusion that the handle-bars are either too far forward or of the wrong shape for continued comfort—if not for controllability. At the finish my right wrist and left arm both ached slightly.

These, however, are not important points when considered beside the real comfort of the machine as a whole.

Beyond adjusting the push rods three times and cleaning the plug once or twice I had no occasion to open the toolbags during the whole trip. Excepting perhaps R. M. Knowles' Norton, the Triumph was the only machine connected with the trial that reached the finish without attention from oilcan and cleaning rag. And it does not appear to be much the worse for that!

TANGENT.

OVER THE ROOF OF SCOTLAND.

Historical Facts Concerning Communications in the Highlands; General Wade's Military Roads Across Mountains and Moors.

By E. M. WRIGHT.

IF you follow the popular belief and accuse your Scottish acquaintance of a lack of sense of humour he may retort that "his jokes are not yours—that's all." More probably he will just chuckle; certainly he will if he is an official of the Edinburgh Club. For *hoc genus omne* has the real sense, very highly developed, and I believe I have found out why.

More than half the chief (you could hardly call them "main") roads in the Highlands were made in the seventeen-thirties by General Wade, of useful if not pious memory—as true an Englishman as ever carried all before him in the land of the heather. The Ordnance Survey map has each of them marked, good and strong, not merely as "military road," but "General Wade's military road"; like that, as though to rub it in. (Bartholomew's, made in Edinburgh, are strangely careless on this point.)

Not for Speed and Comfort.

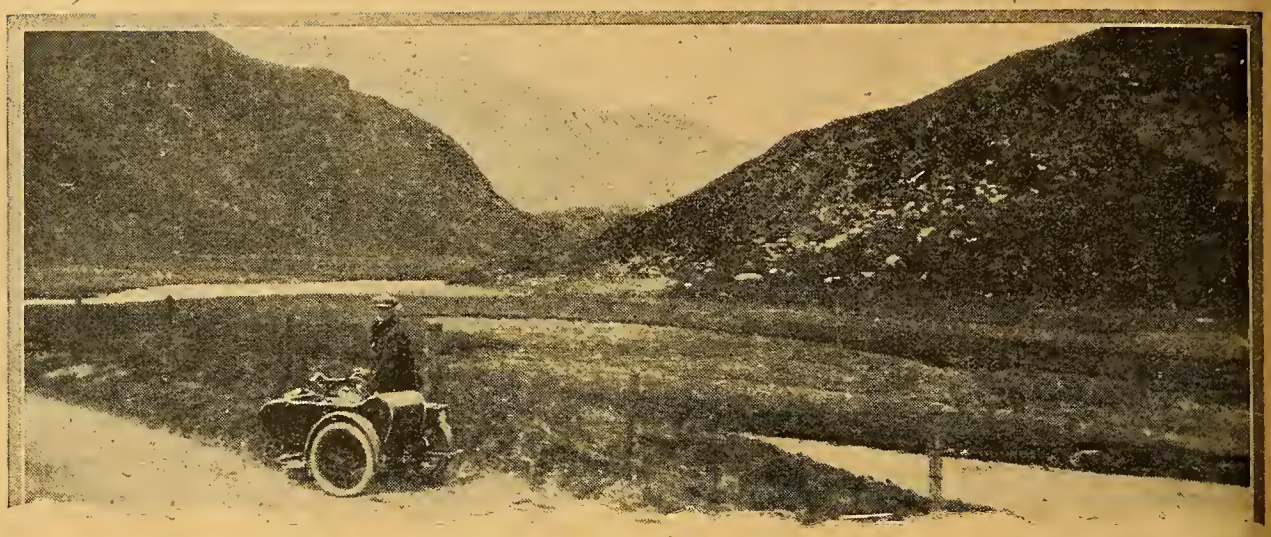
They are good roads in the broad engineering sense. Old man Wade knew his job, and was far from blind to the scenery. (Was it not he who opened up the grand pass of Sma' Glen—who showed us where to get the best view of Glencoe . . . .?) But, oh—the detail work! To describe it as "painfully" crude is but literal truth. These surfaces were never designed for pleasure-seekers—never built, be sure, for either speed or comfort. And it is over General Wade's *English-made* military roads that the Edinburgh clubmen drag their string of Sassenachs every season. Theirs is surely what one might call an historical sense of humour.

Mysterious sounds heard "off," for instance, on the moors between Rinloon and Tomintoul, should not be mistaken for the grouse or partridge of that region. They are the extra deep chuckles, I firmly believe, of some Edinburgh men in a secret check by the roadside. For this vile stretch of cross-gullied mountain track is one of the most typical pieces of General Wade's work—difficult enough to "sit" in peace-time, so to speak, without any thought of time-keeping.

The Roof of Scotland.

This has been called the Roof of Scotland, from Glenshee, where, on a shoulder of the Cairnwell, the road rises to 2,200 feet, to Tomintoul, with minor "humps" between Balmoral and Rinloon, Rinloon and Crathie, Cockbridge (properly called Allargue), and Tomintoul. Above the Cockbridge Ladder, the upper-middle stretches of which are not unlike Trinafour, the road rises to 2,090 feet, and I would rather climb fifty ladders than have to make up time on the loose and steep descent beyond.

The Roof of Scotland describes more than a semi-circle round the Cairngorms. It is always some comfort, one likes to feel, to the dazed and dithering rider on this stretch, to remember that for thousands of local motorists it is the only road from the Dee and Don



Sma' Glen through which competitors in the Scottish Two Days Trial return. It is said to have been the first road General Wade made in Scotland.

valleys and the country south-east of them, to Grantown and Inverness, unless a *détour* half the breadth of Scotland be undertaken. A magnificent range like the Cairngorms has its disadvantages.

On next Monday, in the Scottish Two Days Trial, there is Inverfarigaig. This is not a hill in the sense of a climb; the "ascent" of it is much more like stunting round the paths in one's back garden.

Inverfarigaig itself resembles a miniature imported from the south of France—high cliffs hung with silver birches to their very summit, and a deep gorge between. The "corkscrew" is a series of five narrow terraces, exactly reminiscent of a cliff promenade in sunnier climes, each joined to the next by a *very* sharp turn indeed. The length of each terrace is not much more than thirty yards, if that, and it has no gradient in itself; but as the whole promenade is set on the face of one of the cliffs overhanging the gorge, the whole sting of the hill to the motor cyclist lies in its hairpins.

Here too, on Monday, there are bound to be some historical chuckles, for it was down the gorge of Inverfarigaig that Prince Charlie himself came hurrying on his flight from Culloden Moor.

As a hill-climb, pure and simple, Kenmore will probably prove the test piece. They have been cutting wood and carting lumber on its sacred slope this summer, and I leave to the imagination what that means to a road so shut in by trees and so well-softened by the local climate! Then the lumber-men have been making a road for themselves straight down the hillside, regardless of its gradient, to the mill below. If it is in use, why shouldn't the club use it? Its sense of humour is very adaptable.

WARNING FROM SCOTLAND.

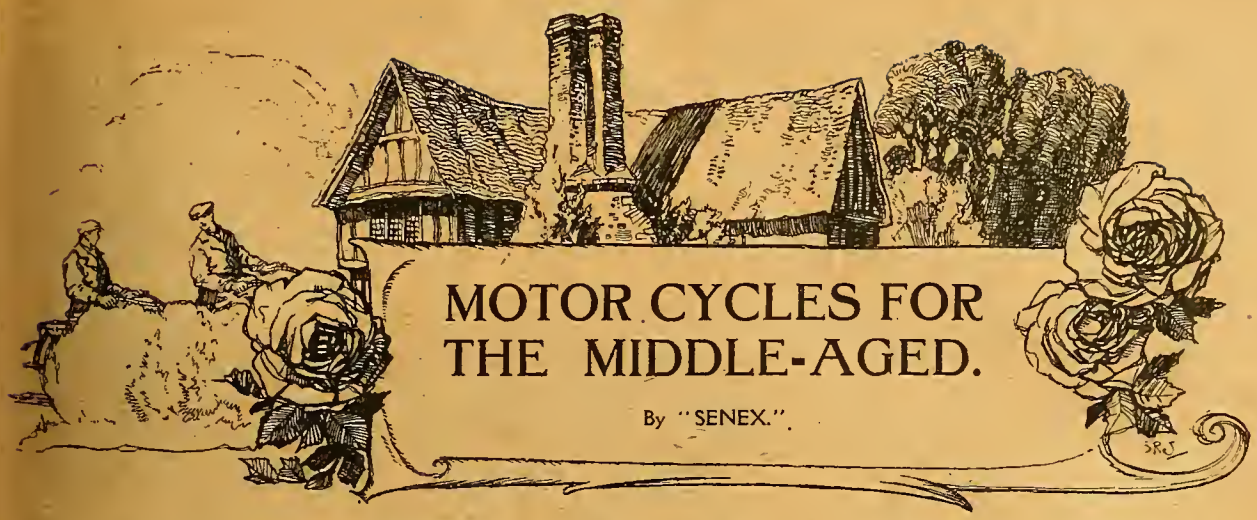
A WARNING in regard to the number of avoidable accidents that occur on Scottish roads, due to inconsiderate driving, has been issued by the Scottish Section of the Automobile Association. One of the principal causes of such accidents, it is stated, lies in the tendency of drivers to accelerate unduly when ascending inclines, beyond the crown of which the road is invisible. Tourists, particularly in the far north, should realise that where the roads are narrow and visibility is limited, great caution should be observed when rounding corners, and the correct side of the road should be strictly kept; the tendency to cut corners is too prevalent.

Considering the disinclination of chief constables throughout Scotland to take drastic action, it is incumbent upon motorists to endeavour, by taking ordinary care and precaution, to obviate the necessity of a large increase being made in the number of controls already in operation. It would be a pity if the Scottish police became anti-motorists.

IMPROVING THE ROADS.

SCHEMES for carrying out urgently needed road improvements are being prepared by the R.I.A. for submission to the local authorities and to the Ministry of Transport. The Ministry has lately invited local authorities to create schemes of road work to provide employment during the coming winter.

The roads it is proposed to deal with first are the London-Brighton road, the London-Eastbourne road, the Bath road, the Warrington-Carlisle road, and the Leicester-Coventry road. Part of the schemes involve improvements to the roadside, by voluntary effort, such as cutting hedges, removing unsightly hoardings, weeding and cleaning out stagnant pools. Those desirous of bringing particular information before the R.I.A. relative to these matters should communicate with Mr. Wallace E. Riche, General Secretary to the Roads Improvement Association, 15, Dartmouth Street, Westminster, S.W.1.



MOTOR CYCLES FOR THE MIDDLE-AGED.

By "SENEX."

Present Day Machines Criticised by a Rider who is No Longer Young. Suggestions and Improvements Required for those who value Comfort, Silence and Cleanliness.

Motor cyclists who retain the priceless possession of youth are apt to regard efficiency and speed as the Alpha and Omega of motor cycle performance. Himself a sidecar owner, attracted by the motor cycle's economy, "Senex" discusses in what way the average machine falls short of the needs of a great body of men and women who are not interested in the sporting side of the motor cycle movement. This body of potential motorists needs economical machines but is attracted by the silence and easy starting of the small car and the apparent comfort of the cycle car. Can manufacturers of sidecar outfits give them the same refinements in an inclusive self-contained machine?

DURING the last year or two a new class of motor cyclist has appeared.

Professional men with small incomes, pensioned members of the Services, and so on, who formerly looked to a pony and trap, or even a small car, for means of locomotion, have turned their attention to the motor cycle, especially in its passenger-carrying capacity.

To a number of the people who form this class the motor cycle, once the mount of imagined road-fiends, has proved, on closer acquaintance, a veritable godsend; its handiness, power, and general convenience, together with its comparatively low cost, were a revelation.

It must be observed, however, that the middle-aged men—and a few ladies—who mostly represent the new genus have accepted their motor cycles with reservations. The article is a good one, but it is far from perfect. In certain respects, as silence, driver's comfort, complication and starting, although material advances have been made of late, even the highest-grade machines leave something to be desired.

It is well known that *The Motor Cycle* calls attention, in season and out of season, to the existence of weaknesses in design or construction. Moreover, the framers of official reliability trials seldom fail to throw the weight of their authority on the side of reform by, say, penalties for noise, or the like. Nevertheless, the time has come to voice the middle-aged man's view of the situation, because immediate action—in the sense of improvement—is now required. Otherwise, the competition of the small car and cycle car (which offer substantial advantages in comfort) will prove more formidable than ever before.

Mr. J. L. Norton, who handles a sidecar at speeds very few middle-aged men ever attain. He retains his youthful zest, and says that sidecarring keeps him young.

For instance, take the item of silence. Apart from the danger of police interference and the unpleasant sensation of being classed as a road-nuisance, there is the point of view which is fairly represented by the writer's passenger. Nothing will induce her to part with her comfortable sidecar. Nevertheless, she invariably hails

Motor Cycles for the Middle-Aged.—

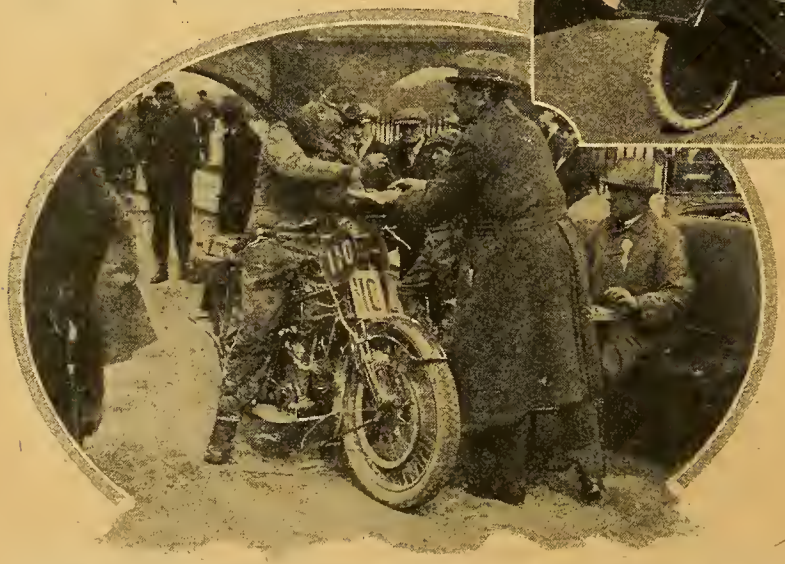
the last beat of the engine with a profound sigh of relief, usually followed by the plaintive query, "When are they going to make motor cycles quiet?" The culprit, be it understood, is no roaring sports single, but a high-priced heavyweight twin.

Surely it is not beyond the wit of man to devise means of silencing both exhaust and engine, so that the passenger may talk to the driver without shouting herself hoarse, or that one may proceed down a quiet street without attracting every householder to the windows? Is this too much to ask?

Again, is the unfortunate driver never to be released from the unsightly goggles, waterproof coat and leggings which he has suffered already too long?

Of course, this part of the problem has been tackled. Front mudguards are deeper, leg shields are beginning to cease to be an extra, and advertisements of handle-bar screens show the trend of ideas. But more is needed.

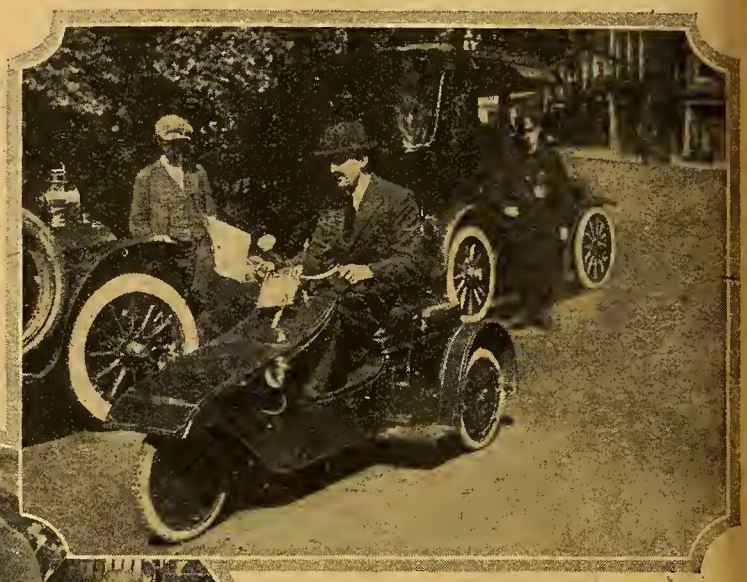
The goal of invention should be a machine so built and provided with protection that a waterproof for actual rain would represent all the special clothing necessary. The elderly man wants to mount his machine in ordinary clothes and travel to his destination with the same absence of fuss and trouble, robing and disrobing, as does his car-owner friend. Perhaps the ideal machine will appear at the next Show. It is time.



Col. McKechnie is a contrast to the middle-aged men who forsake the motor cycle for the car. In his enthusiasm he has designed and marketed a revolutionary springing device, which is probably the most effective that has ever been incorporated on a machine, and on it he competes in many of the big trials.

Next, there is complication of machinery. No one wants to see the mechanism, I assure you. The smooth, clean contours of the car are desired. So long as machines expose their engines, carburetters, and the rest, in the present shameless manner, the car has the best of the argument. Moreover, this exposed machinery is one of the chief sources of the dirt complained of in the foregoing paragraph, to avoid which special clothing is a necessity. It is also a contributory cause of the difficulty in cleaning a motor cycle. Our car friends turn the hose on to their machines at the end of the day's run; we have to spend hours over our work.

A beginning has certainly been made. Enclosed transmission is to be found on many makes, and the advent of one or two special types shows that enclosed mechanism and covered wheels are not necessarily the sole prerogative of the car—all honour to the designers. But more progress is essential. Is it too much to pray for an entirely enclosed big twin? Instant success should be its reward.



A miniature runabout that will appeal to the man who prefers the stability of three wheels and objects to the use of overalls. The Harper runabout, which incidentally seats an extra passenger at the rear, performed well in the Scottish Six Days Trials.

Another point affecting the driver is the springing. Relief from the terror of post-war roads is imperative, and it is not easy for the lay mind to understand why a motor cycle cannot be sprung fore and aft like a car. Difficulties of lateral rigidity are admitted; but are these really beyond the power of the designer to tackle? It is scarcely believable, for there are already spring frames on the market. So why do some of the leading makes stick to the rigid frame?

Starting is yet another item in the list. The spectacle of a respectable middle-aged gentleman, red-faced and perspiring, kicking savagely at an entirely unresponsive engine is one to make the angels weep. It is useless to tell us that this or that dodge will set things right. Starting should be as much a matter of course as it has become on cars. Why should it loom gigantic in motor cycles?

Motor Cycles for the Middle-Aged.—

The sidecar must next be considered. If the passenger is consulted, it will be found that there is not much room for complaint in the best types. But still it may be hinted that passengers are not invariably slim and supple—a trifle more space might be given in many sidecars, also wide-opening doors, lift-up dashes, hoods, and screens should be part of the outfit, not extra, as is often the case with the two latter. Who-ever heard of a car being sold without hood or screen?

Lastly, inasmuch as passenger-carrying capacity is becoming of increasing importance, not only does Paterfamilias want to take out all the olive branches, but Materfamilias not infrequently desires to offer the hospitality of a seat to a friend. Considering all these things, is it not time, if a humble layman may venture a suggestion, to develop the adult two-seater sidecar?

With the modern big twin there is plenty of power, as witness the success of the sidecar taxi in certain centres of population. The sidecar taxi itself is not quite what is required. For, though offering the indispensable comfort of side-by-side seating (your tandem is a hopelessly unsociable expedient), it is too heavy and cumbersome, with its fixed top, for touring and general purposes.

What is required is a light side-by-side two-seater with room for two adults; it must be light and yet strong. Surely herein lies the answer to the cycle car!

360 h.p. AIR-COOLED ENGINE.

A Remarkable Unit which Demonstrates the Great Advance of Air Cooling.

VERY few motor cycle engines have a cylinder bore greater than 86 mm., and the popularity of three- or four-cylinder machines is still delayed by the oft-quoted fear of too much complication and consequent unreliability.

What, then, would the average motor cyclist think if he was put in charge of a huge machine with fourteen air-cooled cylinders each having a bore of 127 mm. (5in.)?

Such a unit has been made for aero work, and it has survived searching tests, including five non-stop runs of 10 hours' duration by the Air Ministry as well as a 70-hours' test by its makers.

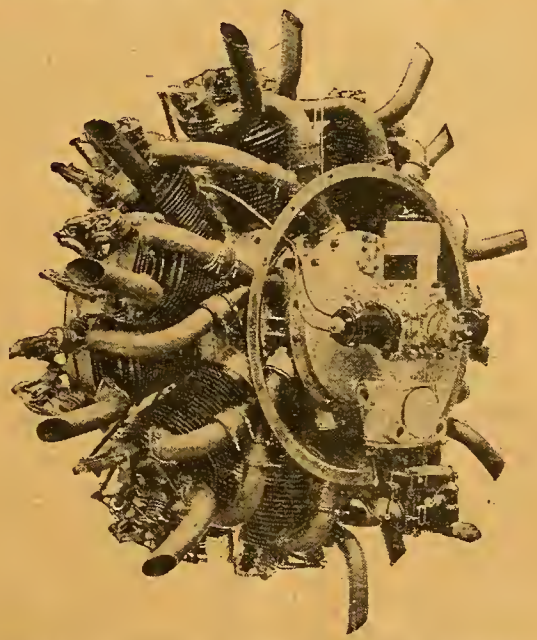
Fourteen-cylinder Radial.

The engine in question is the product of Armstrong-Siddeley Motors, Ltd., Coventry, and is known as the Jaguar. It is of the radial type having two rows of seven cylinders working on a two-throw crank. Six connecting rods of each group are hinged to the big end of the master rod, and light aluminium alloy pistons are attached to the small ends by large but very light floating gudgeon pins. The cylinder barrels are of steel screwed into aluminium heads, each head having an overhead inlet and an exhaust valve working on special bronze seatings.

A dual carburetter supplies the mixture, which is well warmed before reaching the cylinders, and an ingenious distribution system is employed to ensure an equal flow of gas to all cylinders.

Dry Sump Lubrication.

As may be imagined, the lubrication system for such an engine is of the highest importance, and considerable ingenuity has been shown in details; suffice to say, however, that the system, which is of the dry sump type, has proved most satisfactory. To this we can testify, for by courtesy of the manufacturers we have been able to examine every part of a Jaguar engine which had been stripped after 70 hours' test. Even after this gruelling the valves were in excellent order, and there was only a trace of carbon on pistons and cylinder heads, while all working parts were in perfect condition.



There are several features in this fourteen-cylinder Jaguar engine of interest to the motor cyclist of a technical bent.

A few figures will give some idea of the proportions and capabilities of this monster:—

No. of cylinders	14
Bore and stroke	5 in. × 5½ in. (127 × 140 mm. = 24,822 c.c.)
Normal rated h.p.	320
Maximum rated h.p.	360
Normal r.p.m.	1,500
Petrol consumption	0.52 pt. per b.h.p. hr.
Oil consumption	0.03 pt. per b.h.p. hr.
Weight (dry but including carburetter coils, distributors, and propeller boss)	716 lb.
Clear diameter of valves	1.875 in.

The horse-powers as above stated are not, of course, the maximum figures obtainable, and a series of readings to hand show that 372 h.p. can be obtained 1,650 r.p.m., and even higher powers have been obtained.

Road Tests of New Models

The 600 c.c. Flat-twin Sports Humber.

SPECIFICATION.

ENGINE: Flat-twin 75 × 68 m.m. (600 c.c.), detachable valve seats.	*CARBURETTER: Claudel-Hobson, single lever.*	*TYRES: 26 × 2½.*
TRANSMISSION: All chain.	*GEAR BOX: Humber three-speed.*	*WEIGHT: 235 lbs.*
		Price: £100.

WHEN taking over a typical sports solo machine one does not expect to find such a luxury as a kick-starter, nevertheless this invaluable fitting is part of the equipment of the 600 c.c. sports Humber, and it should be added that the starting of this machine is remarkably easy.

Again, the first impression received on the road is of extraordinary flexibility, another feature not usually associated with sports machines. One can crawl along on top gear at a speed but little higher than a fast walk and yet accelerate to a maximum of approximately a mile a minute with no other alteration than a movement of the throttle lever. The carburetter, it should be added, is a car type Claudel-Hobson single lever.

Midland Test Hills.

It is not altogether easy to find a suitable testing ground for a powerful solo machine in the immediate neighbourhood of Coventry, so we bethought us of the standard course employed by *The Motor Cycle* staff when testing pre-war machines. This course, though straightforward, includes several good hills, such as Frizz Hill, Edge Hill, Tysoe, and Sunrising, and provides a sufficiently varied assortment of surfaces to form a good test. Accordingly we set forth on a showery day with the side roads just sufficiently treacherous to test the stability of the machine.

Over main roads to Warwick, Barford, and Wellesbourne the Humber covered the ground smoothly and fast, giving a sense of security on corners due to a low centre of gravity and beautiful steering. The first rise to be encountered was Frizz Hill, which is sufficiently steep and long to test the top gear pulling powers of most touring machines. The Humber, however, slid up fast on a threequarter throttle opening and continued down the corresponding descent past the beautiful grounds of Compton Verney. Down this hill we took the opportunity of testing brakes. The rear brake, operating in a dummy belt rim, is smooth and powerful, but the front brake, of the horse-shoe type, though capable of slowing the machine, will not bring it to a stop on any severe grade. This point, in fact, requires attention, and the present fitting—of a rapidly disappearing type—might reasonably be replaced by something more modern.

At the foot of Edge Hill we took the precaution of adding an additional charge of oil to the oil sump, from which lubricant is circulated by mechanical pump.

Top Gear Hill Climbing.

The surface of the hill was good and dry, and we experienced no trouble in making a comfortable ascent on top gear (this with a ratio of 4.5 to 1 is no mean performance), thence down Sunrising a further excellent brake test, sharp to the left at the bottom, and through the old-world village of Tysoe, thence up the least known hill of the Edge Hill range. Tysoe Hill is a good test, though its deceptive gradient does not

Road Tests of New Models.—

appear to be steep to the eye. Again a top gear ascent was made in spite of the S bend just before the steepest part. Here we stopped for a few moments to admire the view over the surrounding country, the sun came out, and the marvellously clear atmosphere permitted great distances to be seen, though it forecasted further rain. Returning over the same route, Sunrising was used as a second gear test, for, since we had already proved the top gear pulling powers of the engine, we dropped into middle on the right-handed hairpin in order to try the performance on the lower ratios. On a gear of 7.5 to 1 it was possible to accelerate even on the steepest part of the hill, and the engined toyed with the gradient. Middle gear is reasonably quiet, excepting at very high revolutions, when something of a whine procceds from the gear box. As in most flat-twins, the vibration at high speeds was barely noticeable.

Disadvantage of Sports Mudguards.

Throughout the run the Humber was not spared, and on the many open and almost trafficless roads high speeds were attained. Before reaching home rain fell and provided an opportunity for testing the mudguards. We can only say that they are of the usual sporting type, and, though they are fitted fairly close to the tyre and consequently stop a certain amount of wet, they are not very practical from the point of view of cleanliness; where sports models are concerned this is usual, however.

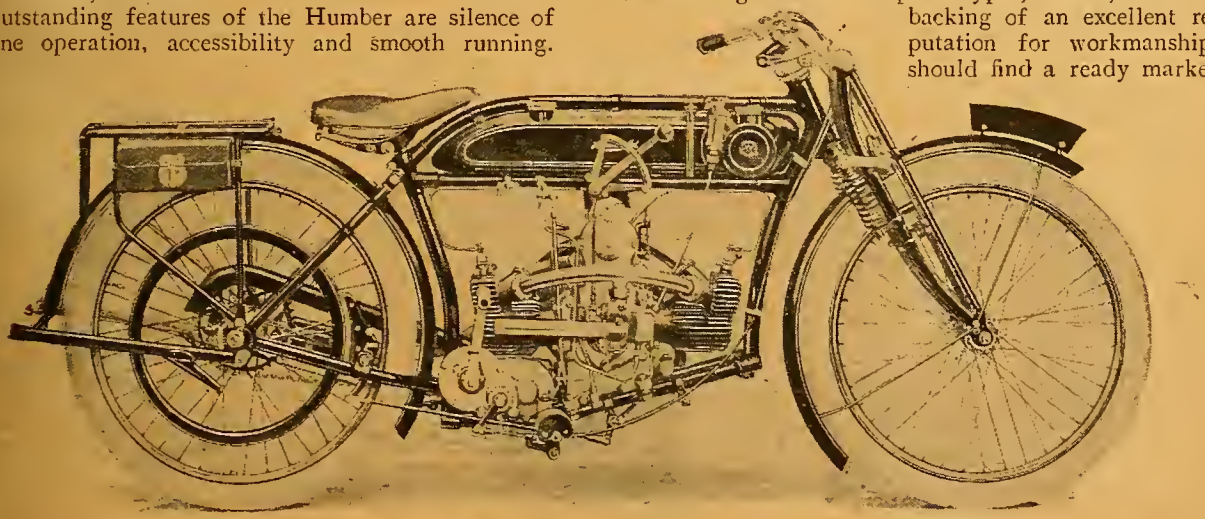
Outstanding features of the Humber are silence of engine operation, accessibility and smooth running. The engine is not vibrationless, but is so comparatively free from vibration that it is far ahead of the normal V twin. The silencing arrangements might be improved, though, in spite of the plain exhaust pipes with fishtail ends, the exhaust note is reasonably quiet until the throttle is more than half-way open.

Detachable valve seatings have long been a feature of the flat twin Humber models, and these, of course, are retained so that the complete valve spring and pocket may be removed for inspection and "grinding in." Oil is pumped from a capacious sump to feed the various bearings, plain split big-ends being employed and lubrication scoops fitted thereto.

Quiet Valve Gear.

The timing gear is quiet and the valve tappets reasonably silent; but without doubt the most striking feature is the wonderful top gear flexibility. So pronounced is this feature that we could not help thinking what a fine single-geared machine, free from the extra weight and complication of gear box, kick-starter, clutch, etc., could be produced using the flat twin Humber engine as the power unit. The suggestion, of course, sounds old-fashioned, and there are but few who would take an interest in such a machine were it produced. Nevertheless the point is worth recording, since it emphasises the wonderful flexibility of the machine.

Altogether the Humber company has a right to pride itself on turning out a useful compromise between the touring and ultra sports types, which, with the backing of an excellent reputation for workmanship, should find a ready market.



A kick-starter, single lever carburetter and mechanical lubricator are none too common on sports models, but these specifications are included in the Humber equipment

COPENHAGEN'S NEW RACE TRACK.

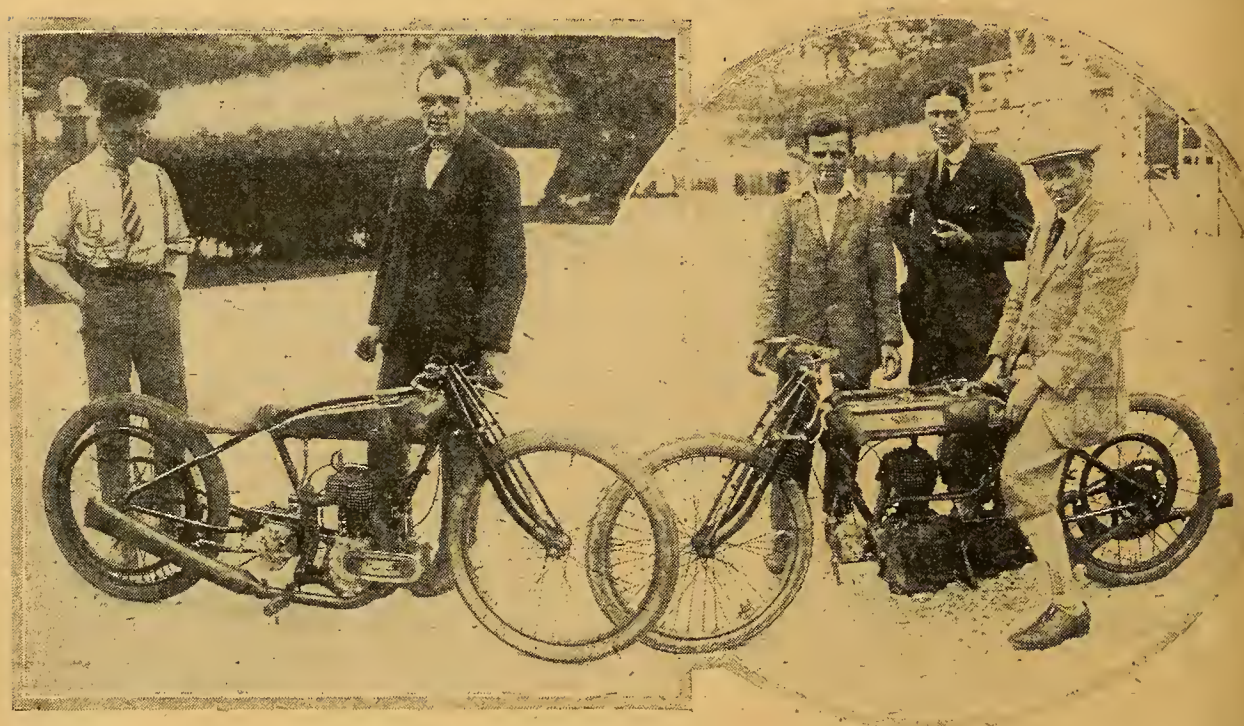
MOTOR racing tracks have recently been built in several places on the Continent. The first to be constructed after the war was outside Berlin; another has just been completed near Copenhagen; and yet a third was lately opened for the Italian Grand Prix in the Monza Park, near Milan.

Apropos of the Danish track, a correspondent writes: "It is 1 mile in length approximately (or 3 laps = 5 kilometres). The surface is good, and an uninterrupted view is obtained right round. Two enormous stands, which will seat several thousand, are nearly completed. There is a fine finishing straight.

"The admittance is 2s. and 3s., 6d. for parking a motor cycle, and 1s. for motor cars, which is reasonable. The track is situated 10 km. from Copenhagen, about 15 minutes by a good train service. Like every other sport here, one can back one's fancy on the totalisator, the profits of which go to the State."

60 M.P.H. FOR 24 HOURS

Double-Twelve Record by a Norton; and Side-Valve O.K.-Blackburne Successes. A New Name on the Record Lists.



W. L. Handley and W. D. Marchant who between them broke records up to 400 miles and 7 hours on the new 250 c.c. side-valve Blackburne-engined O.K.

R. N. Judd, Victor Horsman and D. R. O'Donovan, a trio of Norton exponents who, riding in turns, captured the double-twelve hour record.

THERE has been considerable activity at Brooklands during the last few days. On the 4th inst. Victor Horsman, D. R. O'Donovan, and R. N. Judd, riding a 490 c.c. Norton in turns, captured the double-twelve (at 60 m.p.h.) and other records in addition to those published in last week's issue, which were as follows:

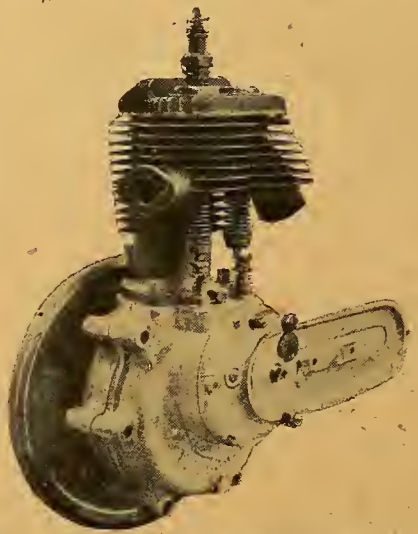
300 MILES.—4h. 47m. 5s. Speed, 62.69 m.p.h.
400 MILES.—6h. 24m. 24s. Speed, 62.43 m.p.h.
500 MILES.—7h. 59m. 40s. Speed, 62.54 m.p.h.
5 HOURS.—314 mls. 194 yds. Speed, 62.82 m.p.h.
6 HOURS.—377 mls. 1,719 yds. Speed, 62.99 m.p.h.

The 600 miles was accomplished at an average speed of 62.05 m.p.h. in 9h. 40m. 9.20s., and the 700 miles at the same speed (time, 11h. 16m. 49.39s.), while in the 12 hours 741 miles 431 yards were covered (61.77 m.p.h., or 99.40 km.p.h.).

A Mile a Minute for 24 hours.

The riders thus succeeded in completing a double-twelve hours record, accomplishing a distance of 1,447 miles 839 yards at an average speed of 60.31 m.p.h.—the first time this has ever been accomplished on a motor cycle. The only troubles experienced were a broken tyre valve in the rear wheel, and numerous broken exhaust valve springs caused by the stripping of the thread of the adjustable tappet.

The 300, 400, and 500 miles and 5 and 6 hours records are in Classes C and D (500 c.c. and 750 c.c.) only, but the latter times also apply to Class E (1,000 c.c.).



Except for its very deep radiating fins and the fact that it has no detachable head the new Blackburne engine is not unlike the existing design.

On the 5th inst. W. D. Marchant and W. L. Handley put up a successful series of records on a 250 c.c. side-valve Blackburne-engined O.K. The ride was started with the idea of carrying on as long as possible, but it was brought to an unlucky end after 400 miles owing to a broken saddle pillar, causing Handley to complete the lap sitting on the tank. They broke the 50 and 100 miles records, which is quite unusual in long-distance attempts, as on these occasions records are not usually attained until after 300 miles or so have been covered.

The following Class A records were beaten:—

Distance.	Time. h. m. s.	Speed. m.p.h.	km.p.h.
50 MILES ...	48 31.96 ...	61.81 ...	(99.47)
100 MILES ...	1 40 33.76 ...	59.66 ...	(96.01)
200 MILES ...	3 31 14.16 ...	56.80 ...	(91.41)
300 MILES ...	5 16 28.54 ...	56.87 ...	(91.52)
400 MILES ...	7 3 27.41 ...	56.67 ...	(91.20)

Time.	Distance. Miles Yards.	Speed. m.p.h.	km.p.h.
1 HOUR ...	61 1,345 ...	61.77 ...	(99.40)
2 HOURS ...	119 729 ...	59.70 ...	(96.07)
3 HOURS ...	175 340 ...	58.40 ...	(93.98)
4 HOURS ...	228 167 ...	57.02 ...	(91.76)
5 HOURS ...	283 1,089 ...	56.72 ...	(91.28)
6 HOURS ...	341 917 ...	56.92 ...	(91.60)
7 HOURS ...	396 1,146 ...	56.60 ...	(91.09)

During the first hour the front fork springs collapsed, and the whole of the remaining run was made with what amounted to rigid forks; the steering, however, was quite unaffected.

RECORD-BREAKING SIDE-VALVE 250 c.c. ENGINE.

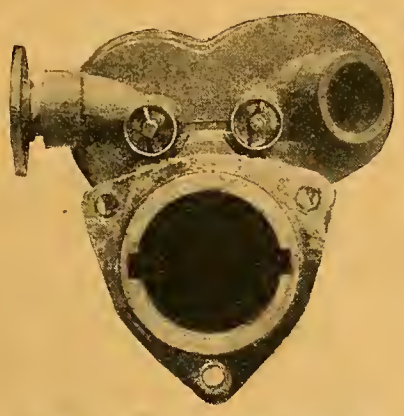
THE Blackburne engine, fitted to an O.K. machine which put up so remarkable a performance at Brooklands last week, departs only very slightly in design from the standard model. It has a bore of 60 mm. with a stroke of 88 mm., giving a cubical capacity of 248 c.c.

Designed for Cool Running.

Externally the engine appears to be large, this impression being strengthened by the unusually generous depth of the cooling fins. These are largely responsible for the coolness which this little unit is proved to be capable of maintaining both on the bench and on the track.

Another departure from standard Blackburne practice is the employment of a one-piece cylinder casting in place of the detachable head construction previously used on both side-valve and overhead-valve models.

As may be seen from the illustration, special care has been taken to facilitate the gas flow, the inlet and exhaust valve orifices being offset approximately $\frac{1}{32}$in. from the valve centre. The valves themselves are $1\frac{7}{16}$in. diameter. The tappets appear slightly offset in this instance, but in the standard models these will be central.



Some idea of the size of the valve pockets may be gathered from this view of the cylinder..

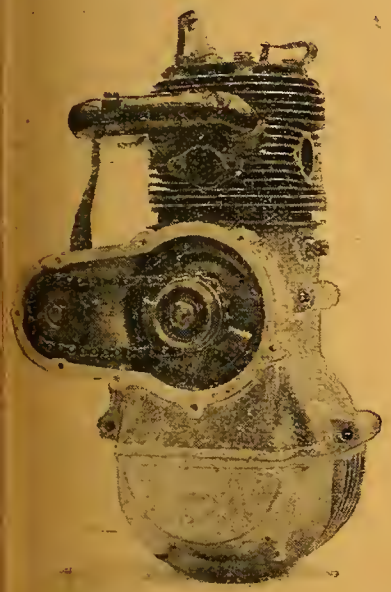
Roller Bearing Big-end.

A roller bearing big-end is used, and the moving parts are sturdy, the usual Blackburne layout of outside flywheel being followed.

Despite the high power output for its small capacity, the little engine showed no sign of distress at the end of its 400 mile run.

SLEEVE VALVE RACING MACHINE.

An Experimental 347 c.c. Barr and Stroud Unit Designed for Maximum Speed and Acceleration.



Side view of the racing Barr and Stroud engine, showing magneto drive and arrangement of ports.

SO much interest has been evinced from time to time in an experimental Barr and Stroud racing engine which has appeared in public on two or three occasions, that we have induced the manufacturers to permit us to publish a few details of the internal construction of this most interesting engine.

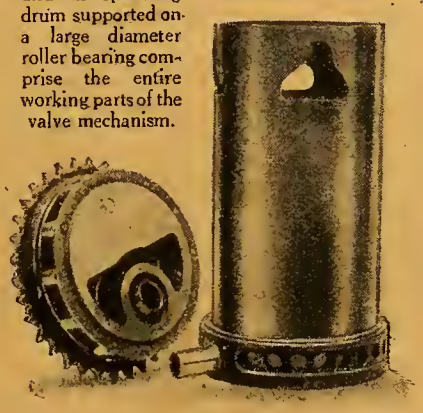
The standard 347 c.c. Barr and Stroud has now become a popular unit with the public on account of its silence and flexibility, and the principle by which its single sleeve valve is operated is fairly well known, therefore it will be necessary only to touch on the difference between the standard and the experimental racing engine. First of all, inside flywheels are employed in the latter unit, and this involves a chain drive to the sleeve operating drum, since the height of the shaft above the crank would necessitate a train of several gears. A second chain from the sleeve operating drum drives the magneto.

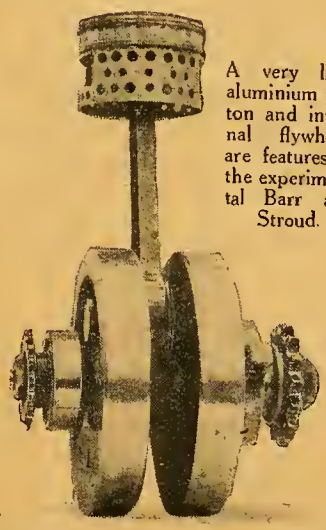
Experiments have shown that these chain drives are thoroughly satisfactory, and after prolonged tests no sign of wear can be detected, a fact which is probably accounted for by the ideal conditions under which the distributing transmission operates.

Special Roller Bearings.

The sleeve operating drum itself is of considerable diameter, and is supported by a special roller bearing on its outer periphery, there being a comparatively small number of rollers equally spaced on supporting rivets. Since the trunnion which engages the sleeve operating pin lies directly within its bearing, rigid support is provided. Similar in principle to the standard type, the sleeve is modified in certain respects, and has four double purpose ports, that is to say, that each port operates both as inlet and exhaust, so that the four sleeve ports serve to open and close four inlet and four exhaust ports in the cylinder casting. A double row of roller bearings is fitted to the big-end bearing, and the gudgeon pin floats in an aluminium alloy piston.

A four-port sleeve and an operating drum supported on a large diameter roller bearing comprise the entire working parts of the valve mechanism.





A very light aluminium piston and internal flywheels are features of the experimental Barr and Stroud.

As in the standard engine, the crankshaft bearings are supported in steel housings bolted to the top half of the crank chamber, which is split horizontally, the base being provided with a number of cooling ribs. The manufacturers express themselves as thoroughly satisfied with the performance of the engine, especially as regards acceleration and maximum speed, which features are chiefly accounted for by the large port area, and the rapid opening and closing obtainable.

Although this promising engine has already performed well in competition work, at the present moment it is not available to the public, since further experimental work will be required before the utmost limit of efficiency can be reached.

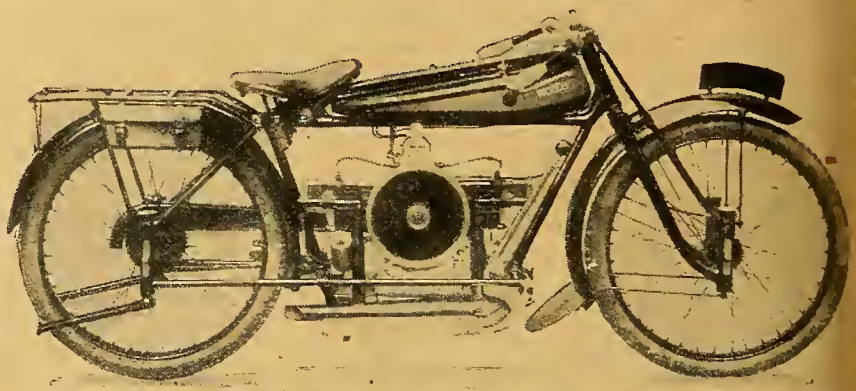
ORIGINALITY IN A 1923 DESIGN.

A Wooler 348 c.c. o.h.v. Sports Engine; and Improvements to the Standard Machine.

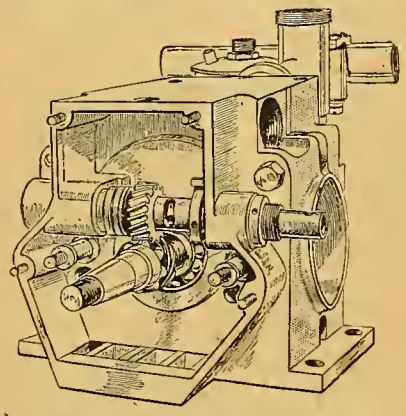
A VISIT to the works of the Dederich-Wooler Engineering Co., Alperton, is on every occasion of an educative and instructive nature. Originality and ingenuity are always present in Wooler designs, and the latest productions are well worthy of careful study.

The 1923 programme of the firm will include a 500 c.c. sidecar model, but at the present moment the popular 348 c.c. type is being concentrated upon, and has now appeared, in a new form, as a sports model.

The engine fitted in this case has been designed for the purpose of attaining high road speeds and will undoubtedly acquit itself well on the track. Having dimensions of 60×60.5 mm., it has detachable cylinder heads, the ports of which are so designed as to give the clearest possible passage for the exhaust and inlet gases. To obtain access to the valves after the cotter and spring have been removed, the guides, which are of ample dimensions, are unscrewed, and a special washer removed, disclosing a slot, provided for the easy withdrawal of the valves, which otherwise could not be taken out at all. The valves are placed at the side of the cylinder head, the inlet above and the exhaust below. For decarbonisation or for access to the valves the cylinder head must be removed. To attach the cylinder head to the main portion of the cylinder an interrupted thread is utilised on the same principle as on the breech block of a gun, the thread on the cylinder head engaging with a similar type of thread cut in a phosphor bronze ribbed ring held on to the cylinder by means of the usual holding down bolts. This casting also forms a portion of the cam case; consequently, once the head is removed, attention may be paid to the valves without interfering with the cam case or the rest of the cylinder.



This illustration shows the pleasing lines of the new 348 c.c. chain-driven Wooler. Note the low saddle position, and conveniently disposed change speed lever on this machine.



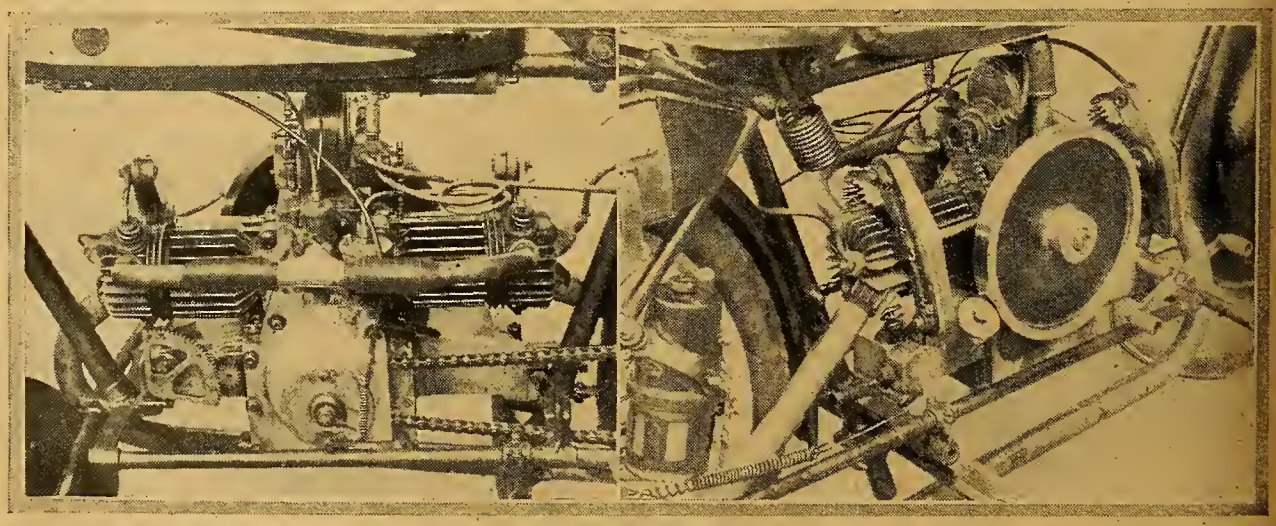
The Wooler sports model crank case, showing the skew timing gear, timed release valve and the hot air intake through the crank case to the carburetter.

Both hollow camshafts are driven by means of skew gearing off the main shaft, the larger skew wheel running on a sleeve in ball bearings. Each end of the sleeve is provided with dogs engaging with the two camshafts. In the sleeve or hollow journal on which the larger skew gear is fitted is a port which is a timed crank case release, and oil forced by the crank case compression passes up the hollow camshafts, lubricating the cams and eventually draining through the bottom of the case back into the main oil sump.

Direct Acting Rockers.

Inside the cam case are two long rocker arms which are actuated by the cams, and on the outer rocker shafts flat surfaces are cut against which the locking screws abut. These screws provide an adjustment which takes up the clearance between valve stem and rocker.

It will be noticed that the C.A.V. magneto is carried transversely on the top



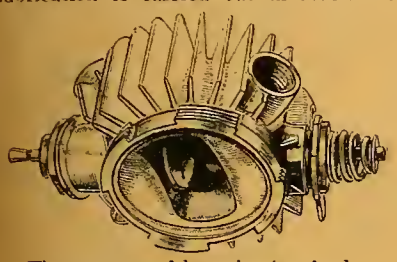
A high efficiency flat twin, the new Wooler with detachable heads in which the valves are situated; the carburetter takes warm air through the crank case casting.

Disposition of the valves and valve gear. As will be seen the valve mechanism is entirely enclosed, and the magneto is placed transversely across the line of the cylinders.

Originality in a 1923 Design.—

of the timing case casting and is driven by chain off the rear camshaft. On future models this chain will be enclosed.

Transmission is by chain from a gear-driven gear box in the crank case. Lubrication is carried out in much the



The sports model combustion head, showing the interrupted thread joint.

same manner as on previous Wooler models of recent construction. Oil is lifted by the gear wheel embodying the clutch into a trough, thus keeping a constant level in an upper sump just sufficiently deep to allow the crank webs to dip into it. These webs are drilled and oil flows up through a specially cut channel to the big-end roller bearings. Above the crank case is an oil breather which discharges surplus oil through a rubber pipe into the top tube of the frame, whence it drains down the down tube and flows back into the sump. Great efforts are being made towards oil economy, and at the present time the consumption varies between 600 and 800 m.p.g., but it is hoped eventually to get as much as 1,000 m.p.g. Half a gallon of oil is carried in the main sump.

Drilled aluminium pistons with slightly domed tops are fitted, the gudgeon pin being held by two spigotted brass discs. Larger gudgeon pins than before are now supplied.

The carburetter takes warm air through the crank case casting.

Considerable improvements have been effected in the standard chain-driven model, which has very pleasing lines. Engine alterations have been in detail only, but important changes have been made in the material. Air-tightness has been ensured in the copper inlet pipes by fitting a cone-shaped felt washer enclosed in a coned copper ring and kept in position by a spring abutting against a shoulder on the inlet pipe. To remove the inlet pipe it is only necessary to undo two nuts on the exterior of the inlet valve gear casing. Incidentally, practically all the nuts on the machine fit one double-ended spanner.

Foot Gear Control Abandoned.

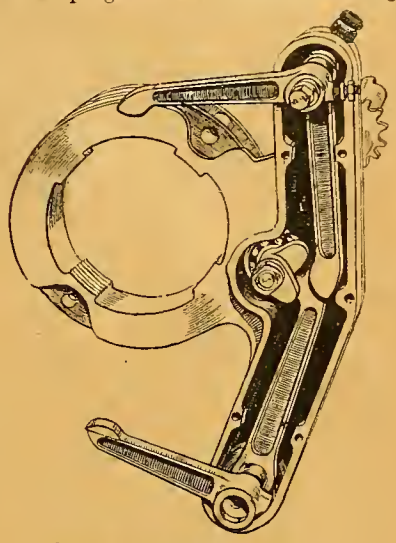
For the first time the Wooler is fitted with girder forks.

Instead of foot control the gear can now be changed by means of a long lever worked by hand; when in the neutral position this lies parallel to the front down tube of the frame. So as to give a lower saddle position the saddle pillar has been abandoned and in its place a special lug has been incorporated at the rear of the frame, to which the saddle is fitted. This also gives a greater clearance, and more play for the springs

The present gear ratios are 5, 8 and 16½ to 1, but the sports model is fitted with a close-ratio gear box. Great improvements have been brought about as regards the mudguarding, the mudguards being wider and an efficient flap being fitted to the front guard in such a manner that it cannot rattle or work loose.

Naturally the Wooler spring frame has been retained, but an improvement has been made in the rear brake, which is now actuated by the rider's left heel.

The tightening of the single chain is quite a simple matter. It is only necessary to loosen the engine bolts and screw up the special adjuster provided, which abuts up against the crank case casting.



Cam case casting showing cams and rockers.

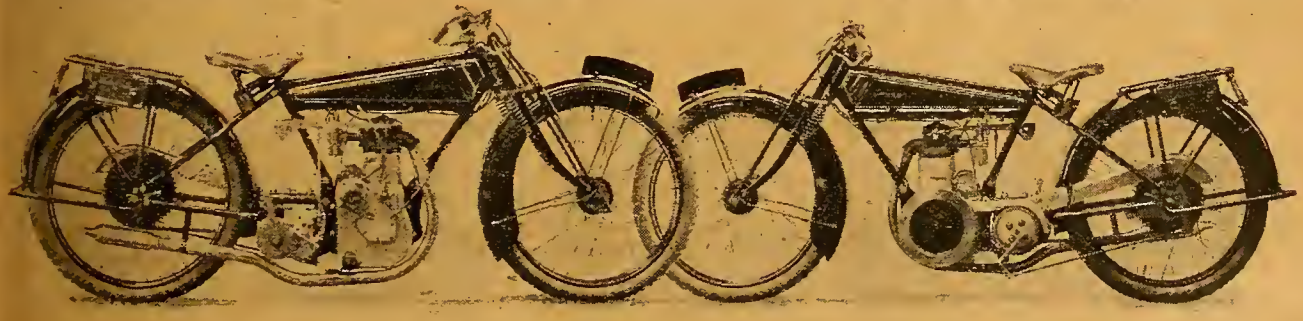
OIL-COOLED SOLO SINGLE.

New Henley Model with 350 c.c. Bradshaw Engine and All-chain Drive.

WHEN many so-called new machines follow such a standard specification that it is difficult to tell one from another except by the colour of the tank, it is a pleasure to come across an assembled machine which has individual characteristics and which without being freakish stands out from the normal run.

Such a machine is the new 350 c.c. Bradshaw-engined Henley, made by the Henley Cycle Co., 18, Doe Street, Birmingham.

The engine is of the latest pattern and is of course oil-cooled, having overhead valves. The principle on which the Bradshaw units are designed has been fully dealt with on more than one occasion in the pages of *The Motor Cycle*, but slight alterations have been made, the most noticeable being a modified exhaust port casting. Transmission is by chain throughout, through a three-speed Burman gear box with clutch and kick-starter; the chains are protected over the upper runs only, but the guards are of cast aluminium and should be considerably less liable to develop rattles than sheet metal protectors. Both brakes are of the internal expanding type, Druid forks are employed, and the rear mudguard is of exceptional width, so wide in fact that the chain and chain guard pass through a slot therein; while the front mudguard, though considerably narrower, is valanced throughout its length. Every detail has been carefully thought out, even to the rubber grips which are supplied on the handle-bars. Our photos show a plain exhaust pipe, but a special silencing arrangement is supplied attached to the end of this pipe so as to reduce noise and comply with the law. The footrests fitted are of considerable width, and the riding position is most comfortable. At £79 16s. this machine is of excellent value, more especially as the price includes 26×2½in. tyres. The finish throughout is excellent, the colour scheme being black and gold.



A new model of particularly attractive specification—the 350 c.c. Henley fitted with a Bradshaw engine.

Along the Mawddach Estuary

An Impression of the Country which, according to John Ruskin, affords One of the Three Finest Prospects in Europe.

By "FRIAR JOHN.

Near the Mawddach Estuary. This illustration shows how photography can, with a wide angle lens in sunless weather, reduce a fine subject to the commonplace.

THE road from Dolgelly to Barmouth has been described by one writer thus: "Dolgelly-Barmouth, 9 miles, rather twisty and narrow in parts." He says also of Snowdon: "To make the tour complete an ascent of Snowdon should be undertaken; a small restaurant is situated at the summit, but best take your food with you."

I forgive this Philistine his dismissal of Snowdon, because each time I have made the ascent rain has fallen heavily. But indifference to that magical bit of road from Dolgelly to Barmouth I cannot forgive. It is a colossal affront to Nature.

A First Impression.

My first impression of this road will never be effaced. After a 200 miles' sidecar run we had reached Dolgelly and were climbing the range of hills overlooking the Mawddach estuary, when suddenly the curtain of mist on our left was torn away. Through the rent we saw the sun gleaming on a vast spread of golden sand. On the foothills below Cader Idris patches of brilliant-coloured vegetation gleamed for a moment like bright enamels, then dissolved away in greyness again. As we ambled along the road to Barmouth the fog rolled down the mountain side and swallowed us once more. For several miles we gingerly felt our way; then suddenly the veil was lifted again. We plunged into a new world, into an atmosphere as clear as crystal, leaving the clouds behind for good. This transformation from grey-green to brilliant sunlight was uncanny and heady. It was like a draught of champagne after a day's forced march in full kit, like ether on an aching tooth. It is a thousand-to-one chance against a similar phenomenon to that described being witnessed again, but even without dramatic lighting effects the beauties of the Mawddach estuary must demand appreciation. Cader Idris (only less by 633ft. than Snowdon), towering over the lower peaks, dominates the estuary, and provides sport as thrilling as can be wished for by the most ardent cragsman.

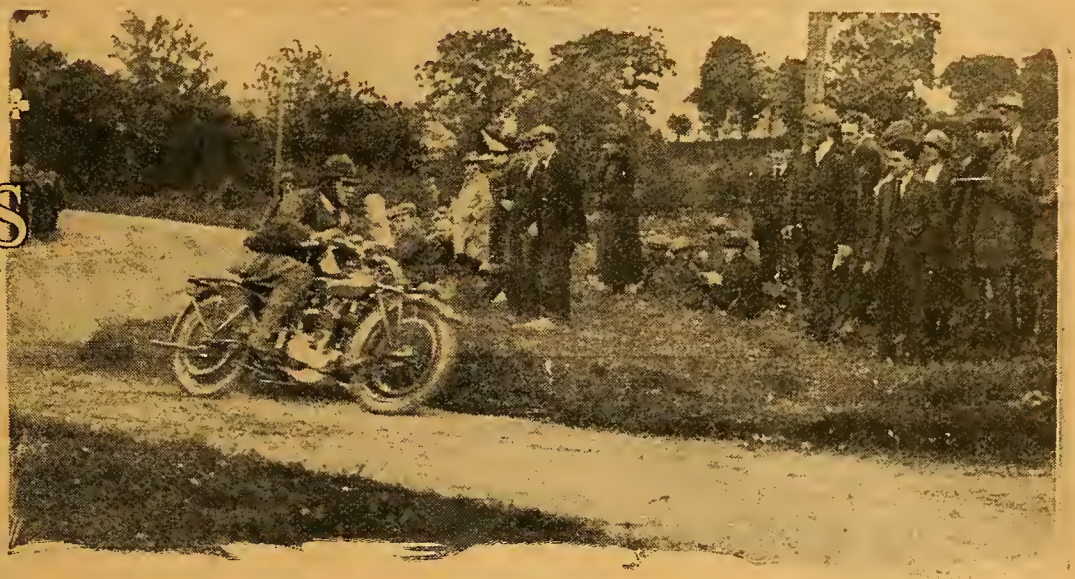
John Ruskin's Opinion.

As Barmouth is approached the Mawddach widens, and unless a stay is anticipated in the district, leave the sidecar just before entering the town and ask the way to the Precipice walk, which overlooks the gulf. The climb will be worth the effort. John Ruskin has left on record in "Modern Painters" that the Mawddach estuary, as seen from Barmouth, affords one of the three finest prospects in Europe. These are bold words. If one is fortunate enough to view it on a clear day, when the west wind sends billowy clouds from Cardigan Bay to cast fleeting shadows on the water and purple mountain sides, then Ruskin's opinion will be upheld. It is a sublime panorama, well worth a fifty mile detour to see.

MOTORISTS COMMON RIGHTS.

THAT a motorist cannot be deprived of his right of access to a common by a local byelaw was shown by the result of a recent case in the Bromley police court. A member of the A.C.U. was summoned by the police for taking his machine on Keston Common at a spot adjoining the Bromley-Westerham road, a favourite rendezvous for motorists. The A.C.U. solicitor, who defended, argued that the particular section of the byelaws under which this prosecution was brought applied only to those portions of the common which have been enclosed for cricket and other games. The court took the same view, and dismissed the case, giving costs (£2 2s.) against the police.

CLUB NEWS



W. P. Metcalfe (976 Brough-Superior) winner of a recent fifty mile race organised by the Belfast and District M.C.C. at Dundonald.

Cardiff M.C.C.

Permission has been obtained to hold speed trials on the promenade at Penarth on the 30th of this month, commencing at 1.30 p.m. Entry forms and other particulars may be obtained from Mr. A. Davies, 91, Penywain Road, Cardiff.

Western Centre A.C.U.

The third inter-team trial for the Western Centre fifty guinea Challenge Cup will take place on Saturday, the 23rd inst., commencing at 2 p.m. Competitors will be required to cover a course of about 17 miles, twice. Rules and other particulars are available from Mr. F. R. Ware, "St. Sidwells," Lutley Avenue, Gloucester.

Aberdeen and District M.C.

G. K. Ferres (349 Massey Arran) carried off the silver rose bowl presented by Mr. Peter Smith for the best performance at the hill-climb which was held on Slins Hill, near Alford, on the 26th of last month. Some good riding was witnessed by the large crowd of spectators. A. Brown (490 Norton) ran a close second.

Westmorland M.C.C.

Results of the speed trials held on the 2nd inst. are now to hand and are given as follows. The event was held at Old Town, near Kirkby Lonsdale, commencing at 4 p.m.:—

275 c.c. (Solo).—J. Atkinson (249 Velocette), 41⅘s.

350 c.c. (Solo).—J. N. Yates (349 Sheffield-Henderson), 35s.

550 c.c. (Solo).—1, B. Hill (481 Scott), 32⅕s.; 2, P. Hoggarth (490 Norton), 33⅕s.

Unlimited (Solo).—B. Hill (481 Scott), 31⅖s.

Unlimited (Solo) Handicap.—1, J. N. Yates (349 Sheffield-Henderson), 34⅗s.; 2, P. Hoggarth (490 Norton), 35⅗s.

Unlimited (Solo) Handicap for Milnthorpe Cup.—B. Hill (481 Scott), 34⅗s., who also made the fastest time of the day on the half-mile incline.

Bradford M.C. and L.C.C.

Bank House Hill, near Pudsey, was the scene of a freak hill-climb for solo machines on Saturday, the 2nd inst. The hill is about half a mile in length, and has an average gradient of 1 in 5, and a large crowd of spectators gathered to see the contest, which was for the Wilson Cup. W. Clough (532 Scott), who carried off the cup last year, was again successful, gaining the full 120 points, and F. Dean (499 Sunbeam) was awarded the gold medal for the second best performance, securing 114 points. Other good climbs were made by E. P. Dodd (492 Sunbeam), T. Bullns, jun. (550 P. and M.), A. Smith (293 New Imperial), R. A. Bonner (500 N.U.T.), and J. Calvert (532 Scott).

Twenty-eight competitors entered for the Priestley Cup reliability trial which was held on the same day over a course of 149 miles in length.

The results of this run were announced as follows:

(1) J. Conchar (10.5 McKenzie car), Priestley Cup. 105 error.

(2) W. Marriott (293 Coventry Eagle), three silver bonnet cups. 108 error.

(3) A. W. Brittain (B.S.A. car), special gold medal. 111 error.

(4) E. P. Dodd (492 Sunbeam), silver medal. 123 error.

Surrey M.C. and L.C.C.

The hill-climb arranged for the 16th inst. has been postponed and speed trials substituted; entries should reach Mr. C. B. D'Anson, Meadow Close, Epsom, not later than to-day.

Clitheroe and District M.C.C.

In spite of the bad weather which prevailed throughout the Captain's reliability trial during the last week-end of August, quite an enjoyable time was spent.

Week-End Club Events.

Sept. 16th.—Surrey M.C. and L.C.C.—Hill Climb.
Sept. 16th.—Dumfries and District M.C. and C.C.—Reliability Trial.
Sept. 16th.—Mid Bucks M.C.C.—Third Trophy Run.
Sept. 16th.—Liverpool M.C.—Reliance Cup Trial.
Sept. 16th.—Essex County and Southend A.C.—Gymkhana.
Sept. 16th.—Worcester M.C. and District M.C.C.—Annual Hill Climb.
Sept. 16th.—Coventry and Warwickshire M.C.—Redditch M.C. Trial.
Sept. 16th.—Coatbridge, Airdrie and District M.C.C.—Hill Climb.
Sept. 16th.—Ashford M.C. and L.C.C.—Club Run.
Sept. 16th.—York and District M.C.—Run to Scarborough.
Sept. 16th.—East Midland Centre A.C.U.—Hill Climb.
Sept. 16th.—Surbiton M.C.—Reliability Trial.
Sept. 16th–17th.—Coventry Triangle Club.—Run to Chepstow and Wye Valley.
Sept. 17th.—Reigate, Redhill and District M.C.C.—Captain's Surprise Run.
Sept. 17th.—Eastbourne and District M.C.C.—Penalty Run.
Sept. 17th.—Leeds M.U.—Run to Nun Monkton.
Sept. 17th.—Exeter M.C. and J.C.C.—Week-end Social Run and Trial.
Sept. 17th.—Sheffield M.C.C.—Run to Cheedale and Miller's Dale.
Sept. 17th.—Bridgnorth and District M.C.C.—Gymkhana.
Sept. 17th.—Doncaster and District M.C.C.—Run to Clumber.
Sept. 17th.—York and District M.C.—Social Run.
Sept. 17th.—Middlestrough and District M.C.—John Gjer's Trial.
Sept. 17th.—Halifax and District M.C. and L.C.C.—Reliability Trial.
Sept. 17th.—Atherton and District M.C.C.—Run to Tarporley.
Sept. 20th.—York and District M.C.—Old Crocks' Climb.
Sept. 20th.—Leeds M.U.—Impromptu Run from City Square.
Sept. 21st.—Bulwell M.C.—Dovedale and Via Gellia.
Sept. 21st.—Basingstoke M.C.C.—Annual Hill Climb.

Richmond, Twickenham & District M.C.

It is proposed to organise a motor cycle club for this district at an early date if sufficient support is forthcoming. Persons interested should communicate with Mr. V. F. G. Fowke, c/o Troomes Transport, Edwin Road, Twickenham.

Worcester and District M.C.

In conjunction with the Worcestershire M.C. and the Malverns M.C.C. a run took place to Madresfield Court, Malvern, on Saturday, the 2nd inst., at the invitation of Earl Beauchamp, K.C., patron of the clubs included. Fine weather favoured the event, and a pleasant afternoon was spent inspecting the grounds.

Southport M.C.

Another race meeting is being held on Saturday, the 30th inst., on the sands at Southport, for solo and passenger machines. The last meeting was a great success, over 140 entries being received. It is intended to have 5 mile races for 350 c.c., 500 c.c. and unlimited solo motor cycles. Full particulars can be obtained from Mr. Rowland Hill, 75, Sefton Street, Southport.

East Midland Centre A.C.U.

Normans Hollow, near Mansfield, has been chosen for holding the half-mile flying start hill-climb on Saturday the 16th inst., open to motor cycles and passenger machines. A club team championship, together with the annual reliability trial for the centre premiership, will be held on the last Saturday of the month. The course will be one over which any standard machine should be capable of travelling. Individual entries, club teams, and teams of one make will be accepted.

Wolverhampton M.C.C.

On the Saturday before last members competed in a reliability trial for the "Eric Williams" shield and other awards, with the following results:—

(1) Dr. Harvey (Matchless sc.), "Eric Williams" shield, gold medal, and silver cigarette case. Time, error, 23⅖s.

(2) H. Green (925 Clyno sc.), silver medal. 35⅕s. error.

(3) E. Wheeler (499 Sunbeam sc.), bronze medal. 36⅕s. error.

The Lady's Prize was won by Miss K. Smith (976 Sunbeam sc.), with a total time error of 48⅖s., carrying off the Club silver cup.

Central Cornwall M.C.

Speed trials on Davidstow Moor on Saturday last attracted a large gathering of motorists. The course was a measured half-mile, with a flying start, and between thirty and forty entrants, including cars and motor cycles, were timed electrically by the club's special timing apparatus. The results are as follows:—

350 c.c.: (1) O. G. Whitlock (349 A.J.S.), 33s.; (2) R. Dyer (293 New Imperial), 34⅖s.

650 c.c.: (1) G. R. Symons (499 Sunbeam), 23⅖s.; (2) P. Philips (490 Norton), 27⅕s.

Unlimited: (1) G. R. Symons (499 Sunbeam), 21s.; (2) G. R. Symons (600 Humber), 25⅗s.

The weather was cold but mainly fair.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

?0,000 MILES RUNNING.

Sir,—I think that I should be serving a useful purpose in affording motor cyclists my experience in the use of a 550 c.c. Triumph for a period of about two and a half years.

I purchased my cycle in April, 1920, and to date I have completed 19,500 miles, during the whole of which time I have used a sidecar and frequently a pillion seat for a second passenger.

I have completed the whole distance without any trouble beyond the blowing out of a valve cap, which had worked loose, and an occasional punctured tyre. My experience includes a strenuous club trial, which I completed successfully, my only fault being that I arrived in advance of time and was penalised accordingly. I won first prize in a petrol consumption test, with 127 miles per gallon. I followed the Six Days Trials in 1920 with two passengers, and proceeded from Brooklands to Land's End and thence *via* Bristol to Liverpool, covering a distance of 1,475 miles. A fortnight ago I rode to London from Liverpool, with two passengers, in a little over ten hours. On the return journey, at Rugby I experienced my first engine trouble, and I dispatched the cycle and sidecar to Coventry for attention.

The trouble was caused through the shearing of the crank-pin rivets, which necessitated a new piston, main shaft, sprocket, and chain. This was made good by the Triumph Company without charge.

Put shortly, my experience shows 19,500 miles with no frame, engine, magneto, carburetter, or plug trouble. During the whole period I have used two plugs (Lodge waterproof); the first, still perfect, is kept as a spare.

A. D. HARPER.

MAKE BROOKLANDS WORTH VISITING.

Sir,—May I trespass to reply, on behalf of the "motor cycle crowd at Brooklands to "Tangent's" article?

As a reader since 1912, and a regular habitue of Brooklands for the same time, I think I am in a position to take up cudgels on their behalf. At every meeting, car or cycle, you will find the humble motor cyclist *well in evidence*. Brooklands with some folk is almost a religion, and I think with all its shortcomings the "old lump of cement" wants a lot of beating for an enjoyable afternoon's sport.

MATCHLESS.

London, N.16.

Sir,—"Tangent" is, in my opinion, very wide of the mark. The reason why Brooklands is unpopular is simply because of the expense of racing there. A man, before he can enter an event, has to become a member of the club that happens to be running it, which means that to do any racing one has to be a member of six or seven clubs. The average man cannot afford it, and will not run a stunt machine to enter his club's one meet of the year at Brooklands.

What would track racing of the running and bicycling world be if every competitor had to join each club at whose meeting he wished to compete?

NOT A CRACK.

Essex.

SCORING ON THE CORNERS.

Sir,—I was very interested in "Ixion's" remarks on the subject of the Scott Squirrel. I am the owner of a 4-valve Triumph and a Sports Sunbeam, and I pride myself that I am never overtaken on the road. Recently, however, I went for a run on the Sunbeam with a friend who owns a Scott Squirrel. On the straight I reckon that my machine is a good 5 m.p.h. faster than his; but all the same I found that I had the greatest difficulty in keeping up with him, as he could corner at an astounding speed, and although his machine is far lighter than mine it appeared to be glued to the road. At first I thought that my bad riding was the trouble, but later on we changed machines, when I found that corners did not appear to exist.

What is the secret?

J.B.R.

Invergordon.

WHY?

Sir,—I cannot understand why some manufacturers do not study details more than they do.

Why do not all firms fit a spring back stand, as on the Rudge and Norton?

Why do they not fit the change gear lever in a forward position, such as on the 349 c.c. A.J.S. and Sports Sunbeam, so that one can grip the tank with one's knees? Or if the machine is supplied with touring handle-bars, in the middle of the tank, as on the two-stroke James and some of the Rovers?

Why do so many still fit the rim brake instead of a front brake such as on the B.S.A., A.J.S., or A.B.C.?

Why do a large number fit such small tool bags and supply a cheap set of tools on a machine which is looked upon as first-class in other respects?

Why do not all carburetter levers all work the same way?

Okehampton. DARTMOOR.

UPPER-CYLINDER LUBRICATION.

Sir,—The matter of "upper-cylinder lubrication" is exceedingly interesting to me, because the M.A.G. engine has been designed with this end in view As a matter of fact, the upper portion of the cylinder is already in most engines properly cared for from the crank case. The inlet valve and its guide, and the overhead rocker and the push rod guides, are lubricated from the crank case in all overhead inlet valve M.A.G. engines, the oil being drawn up from the crank case, lubricating these parts *on its way into the top of the cylinder*. This system, I might mention, has been well covered by patents.

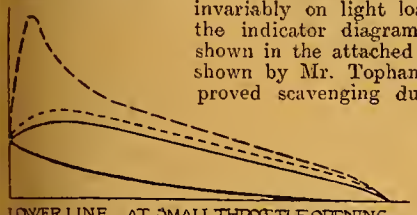
There is no question about the fact that these parts require lubricating, and if it can be done automatically—as is the case with the M.A.G. engine—it means that the engine will last very much longer, and will not require constant adjustment, the carburation is better owing to no air being drawn through the inlet valve guide, and, generally speaking, the engine runs in a very much sweeter and softer manner.

OSBORNE DE LISSA,
Managing Director, The M.A.G. Engine Co., Ltd.

MUSICAL TWO-STROKES.

Sir,—Mr. Topham-Haynes' suggestion, though interesting, is not entirely convincing. I write not in the spirit of idle criticism, but in the hope that he may be able to furnish further evidence on one or two points.

I quite agree that in four-stroking better scavenging occurs than when two-stroking, other circumstances being the same; but is it not the fact that four-stroking occurs almost invariably on light loads? In this case the indicator diagram is rather flat, as shown in the attached sketch, and not as shown by Mr. Topham-Haynes; the improved scavenging due to four-stroking will then raise the pressures to form the dotted diagram herewith. This diagram shows pressures which are still less than those of Mr. Topham-Haynes full-load two-stroking diagram, and thus his explanation appears to fail.



To regard the matter from another point of view, one may safely say that the pressures which occur in a two-stroke motor cycle engine are never as high as those which occur in the four-strokes. The paper by Dr. Lanchester and Mr. Pearsall read last session before the Institution of Automobile Engineers, leaves little doubt on that point. If Mr. Topham-Haynes' suggestion were the true explanation, one might reasonably expect the ordinary four-stroke to emit a similar noise. Actually this does not occur.

In conclusion, may I ask if Mr. Topham-Haynes' diagrams have actually been obtained from a two-stroke engine? If so, was the four-stroking quite normal, or was it artificially produced by some means such as tampering with the ignition? If it was not artificially produced, what caused it on fairly full throttle, as shown by the diagram?

E. P. WILLOUGHBY.

THE NEED FOR CAUTION.

Sir,—I have read with considerable interest "Ixion's" comments on the need for careful driving on holidays.

I returned yesterday from a twelve days' motor cycling tour in North Wales, and, from my experience there, I can substantiate his remarks in every detail. I can truthfully say I have had more "wind up" on this holiday than I had whilst serving for two or three years in a "suicide club" in Flanders. In every case the person responsible was a car driver—more often than not, a Ford merchant. These people seem to think they are the only people on the road, and in the narrow winding lanes near Rhyl, which I made my centre, they drive like veritable maniacs. On at least a dozen occasions I have been compelled to stop in a hurry because one of these madmen came careering round a corner at a dangerous speed, and without any audible warning of approach.

Regarding motor coaches, I must say that I have met with more consideration from the drivers of these vehicles than from any car drivers I have met. When overtaking one I have invariably been waved on, and when passing one going in the opposite direction I have always been allowed my fair share of the road.

Barnsley. "FAMILY SIDECARIST."

UNSATISFACTORY SILENCE LAWS.

Sir,—I am not a motor cyclist, and abhor a noisy exhaust, but at the same time must say that in my opinion the order regarding silence is being stretched to cover something it does not say.

The Motor Cars (Use and Construction) Order No. 11, 1912, says:—"(7) He shall not use any cut-out . . . which will allow the exhaust gases to escape . . . without first passing through a silencer, expansion chamber, or other contrivance suitable and sufficient for reducing as far as may reasonably be practicable the noise. . . ."

Hence it appears that neither a silencer nor expansion chamber is compulsory, so long as some other contrivance does the work. The wording of the Order seems to imply that so long as you quieten the exhaust the law does not care a brass farthing how it is done, and to talk such nonsense as about not having a silencer on the expansion chamber (a police officer's evidence at the Coventry police court recently) is about as good as talking about a man not having a carburetter on his back wheel brake.

As the question of noise is simply a matter of opinion, the quickest and easiest way would, in my opinion, be to try the machine before the magistrate, due precautions to be taken for no alteration between the time of alleged offence and the official trial. Better still, for a duly appointed official to hear the machine before it goes on the road, and to issue a certificate stating the means by which the requisite amount of silence has been obtained, so as to obviate any question of alteration after the certificate has been issued.

This is only my opinion, and, not being a lawyer, do not advise any motor cyclist to take it as good law.

M. W. DANKS.

THE ENTHUSIASUM OF THE MOTOR CYCLIST. One of the most pleasing features of a big trial like the recent Six Days event is the way it attracts local motor cyclists out to see the competitors on their own little hills. This is well exemplified in these pictures of well-known riders—O. S. Bridcutt (499 Dunelt) and J. A. Watson-Bourne (976 Brough-Superior) laughingly refusing a fruit offering—on an easy hill near Blaenavon. In both cases the roadside is lined with non-competing machines.

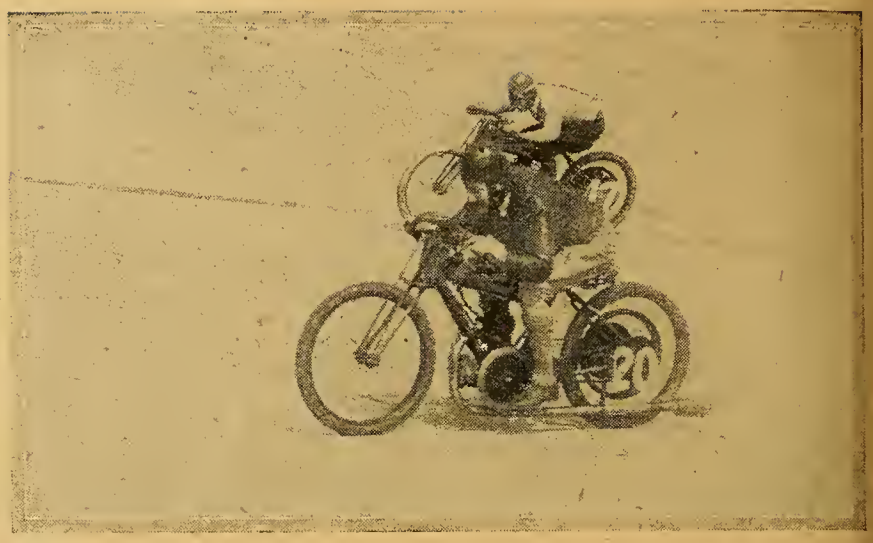
TO SUBSTITUTE THE SIDECAR.

Sir,—In a recent issue there is a paragraph headed "Indispensable," in which it is stated that "New high-powered sidecars are as much in evidence as ever they were. There appears not the slightest likelihood of any waning in their popularity, and once again may be asked, 'Where is the vehicle that can replace them?'"

Some of us in the North and a few in the South can afford to smile at this paragraph and at the question asked, because we know that the answer has been found. I can say that for my part I never want to go back to the powerful sidecar again, and other users of the L.S.D. three-wheeler that I know are equally sure.

With a J.A.P. engine that does not overheat, a comfortable roomy body which will take two adults, as well as a youngster on a seat fixed to the floor; with accommodation for more luggage than a sidecar can carry, on the tailboard, which itself will easily carry a passenger if necessary; with running cost certainly no higher than that of a heavy sidecar; with far greater comfort, sociability and safety—well sprung, soundly designed, and faultlessly made from A to Z, its working parts very accessible, and able to surprise the majority of cars on ordinary hills, steering perfectly with none of the sidecar side-drag and side-shake, and produced at £165, complete with lamps, horn, screen, hood, and tools, the L.S.D. already answers the question, and no one who has ever tried the two would think twice about it.

J. A. HUBBARD.



TWO-STROKES AT SPEED. There is nothing like two machines of the same make competing together for adding a little excitement to the average Brooklands meeting. R. Dequin and F. W. Carryer, both on 348 c.c. Ivys, having a friendly tussle at the Surbiton Club's event.

LARGE TYRES ON SLIPPERY ROADS.

Sir,—In your issue of August 31st appear the following two statements about oversize tyres:—

On page 297: "The disadvantages are found in the greater weight of the tyre, and a slightly increased tendency to sideslip. . . ."

On page 310: ". . . which reminds us that, excepting perhaps the solo Sunbeams, the large tyred machines were infinitely steadier in grease than the 26 × 2¼in. brigade."

On behalf of the thousands who are financially unable to experiment, may I ask which of your staff experts is right? I, personally, am not going to ride any more 2½in. tyres if 3in. are comfier, but at the same time I have no use for 3in. if they are jazzier. Looks as if I shall have to walk.

Sheffield. WIFFLES.

[Opinion on the relative steadiness of 2½in. and 3in. tyres on treacherous road surfaces is sharply divided. Probably "Auriga's" view that the larger tyre is more liable to side-slip is the more commonly held; the fact that practically all the competitors started the trials on brand new covers may account for the steadiness of those who used the larger sizes in the six days event. The slightly increased tendency to skid comes, if ever, when the 3in. tyre has worn its tread away, and certainly not before.—ED.]

"BUS" TABOO.

Sir,—I read with much interest Mr. J. Fairfax Blakeborough's article in *The Motor Cycle* recently.

Having been connected for some time with the naval side of flying, and thus in contact daily with many types of "aeronauts" (his term), may I say that the expression "'bus" as applied to machines is strongly deprecated and very warily used in the Services to-day.

I once overheard one delinquent report to his C.O. that "his 'bus" was ready for flying. He was told to remember that he "wasn't in London."

In my opinion, the expression is as bad as "mount" when applied to a motor-cycle. ARGUS.

Hants.

SATISFACTORY PUNCTURE PREVENTIVE.

Sir,—May I commend to your earnest notice, and that of all motor cyclists, the puncture sealing "dope" known as Jackson's Impervo? Myself and twelve friends have just returned from a 700 miles camping tour in the West Country. There were nine push cycles, two motor cycles, and an 8 h.p. Rover car, with a home-made two-wheel trailer behind it. The only tyre trouble was with the car, two large punctures and a burst. We rode a great deal on flinty roads, with quite heavy packages and by no means new tyres, and we had left the mascot behind! So what we should have mended had not Impervo done it for us, I do not know.

G. L. PARKS.

THE CANCELLATION OF THE 500 MILE RACE.

Sir,—As one interested in motor cycle racing, I see with great regret that the 500 mile race on the 23rd inst. has been cancelled owing to the alleged likelihood of annoyance to the neighbouring Weybridge residents. I have for some time regarded the attitude of the track authorities towards the B.M.C.R.C. with misgiving, and fear that the restrictions imposed are but the thin end of the wedge. First we have compulsory silencers, now the cancelment of an important fixture: What are we to expect next? There seems to me little doubt that the B.A.R.C. is trying to push all the responsibility of noise on to the shoulders of the handy scapegoats, the motor cyclists, in an effort to propitiate its neighbours. As to the latter, surely they can be more or less disregarded in view of the fact that they have put up with the so-called nuisance, *i.e.*, open exhausts, for fifteen years. In any case, it would be interesting to know whether these residents have any power to take action against what occurs on neighbouring *private* ground during the daytime, any more than people living near shipyards, aerodromes, etc., can prevent the activities of the latter. It would appear to me that the B.A.R.C. should take a firm attitude in the matter. Surely it must be realised that the more it gives, the more will be demanded of it, in which case the prospects of long-distance racing, both car and motor cycle, at Brooklands look very black.

Is there not still time to organise a 500 mile race in which silencers of a certain size in proportion to engine capacity could be made compulsory, and, if so, would Mr. Locke King consent to allow the use of the track for it? I have no doubt that a race on these lines would be even more interesting from a technical point of view than one in which open exhausts were used. A. ARNOLD.

What Was It?

A yellow two-seater three-wheeler was seen on the Brighton road last week-end. It was nicely streamlined, the two heads of a big flat-twin poked through its sides, and it had a central front wheel.

New Road Open.

The new stretch of road between St. Albans and Harpenden, which has been prepared to cut off a dangerous corner, is now completed, and has been opened for general use. The surface is excellent, and the advantage of the change beyond question.

Well on the Way to Recovery.

R. Clayton Russell, the Norton rider who had a serious accident in the Six Days Trials, sends us a cheery letter thanking all enquirers for their sympathy. He alleges that his ear was found being chewed by a puppy dog, but that it was retrieved in time and has now been successfully riveted in place by the house surgeon of the Stafford General Infirmary.

The Oldest Motor Cyclist.

Recently the daily newspapers have become alive to the fact that motor cycling is not wholly a young man's pastime, and a controversy has started as to who is the oldest motor cyclist. Three years ago, in June, July, and August, 1919, a similar discussion took place in the columns of *The Motor Cycle*, when it was discovered that a Mr. Elias Blackburn, aged 89, of Redcar, easily earned the honour.

Amateurs on Alms Hill.

Whether private owners can even approximate the performances of trade riders on freak hills will be seen on the afternoon of the 17th inst., at Alms Hill, Henley, which competitors in the recent Six Days Trials ascended with such monotonous regularity. On this occasion the hill will be the scene of an impromptu climb by members of the Oxford Motor Club. All motorists in the vicinity are invited to help by exhibiting the prowess of their mounts, and adding thus to the interest of the proceedings.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

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Was He Wearing Goggles?

From a local paper :—" James —— was summoned for riding a motor cycle not having an efficient silencer. Defendant said that the silencer must have fallen off, and he did not notice its absence until stopped by the constable. Fined twenty shillings."

No Anglo-Dutch Trial.

Inquiry at the A.C.U. headquarters last week elicited the information that the Anglo-Dutch trial arrangements have been dropped.

Justice Travestied.

A 10s. fine for being drunk in charge of a motor cycle and 40s. for riding a machine with a straight-through exhaust pipe is how the Coventry magistrates administered justice last week.

Three-speed Scott in Yorkshire Trial.

Scott enthusiasts all over the country will be interested to hear that a three-speed model made its appearance in an experimental form at last Saturday's Yorkshire Centre team trial.

Victimisation of Glasgow Garages.

Three young men, evidently working together, have been engaged in victimising Glasgow garages by the very simple method of ordering and paying for one article, while helping themselves to others.

Further Norton Records.

On the evening of the 6th inst., V. Horsman (588 Norton) made successful attempts on two short distance records as follows :—10 mile standing start, 8m. 38.79s., 69.39 m.p.h. ; 5 miles flying start, 4m. 12.2s., 71.37 m.p.h.

A Week-End Rescue.

Apropos of what some machines can do when put to the test, a 496 c.c. Martinsyde was seen, in a part of the country by no means free from hills, gallantly towing a well-laden family sidecar which had broken down—and apparently making light of the effort.

SIX DAYS HIGH SPEED TEST. Last week a 48 hour trial was undertaken by W. B. Pickering, riding a 770 c.c. B.S.A. sidecar. His plan was to ride eight hours daily on Brooklands, for six days, under A.C.U. observation. Despite some valve trouble 40 m.p.h. was maintained each day from Monday until Thursday. On Friday the forks broke and the crank case was damaged. This resulted in oil leaks and a seized engine on the Saturday.

YORKSHIRE TEAM TRIAL.

Haggas Shield Event Organised by Harrogate Club attracts 17 Teams. 9 Finish.

HELD under the auspices of the Harrogate Club, the inter-club team trial of the Yorkshire Centre A.C.U. took place on Saturday last. The winning team will hold the Haggas Shield, and gold, silver, and bronze medals are also presented.

The event drew entries from 17 teams, each consisting of two solo machines and one sidecar, with the exception of two cases where an L.S.D. and a Morgan figured as the three-wheelers.

Considerable interest had centred in the Ilkley Club's entry, which consisted of three Scott machines, including what was described as the "hush machine," and which turned out to be a new type with three-speed gear box.

Of the 17 teams four were from Bradford, Harrogate coming next with three, while others were from clubs covering a wide area, in which Scarborough and Sheffield were both represented.

On Boltby Bank.

Commencing at Harrogate the first portion of the course led by way of Knaresborough and Boroughbridge up into the wolds east of Thirsk, the first real test being the ascent of Boltby Bank. This hill proved a stern obstacle to some of the sidecar machines, but there were comparatively few failures. Amongst conspicuous successes, the Scott team showed up well, while G. M. Townsend went up at speed on his P. & M. sidecar.

Later on in the morning Ingleby Greenough was tackled, followed by a really tough piece over the moors, where the going literally represented ploughing through the wiriest varieties of Yorkshire ling and heather.

The lunch interval followed arrival at Helmsley, and on the resumption the way led back to Ingleby Greenough, where a detour was made. The ascent of Arden Bank was the next obstacle, but this was generally overcome in good style, the recent spell of dry weather having left the surface fairly firm, though the gullies were both numerous and deep.

A striking effect caused by exhaust smoke and reflections at the watersplash near Boltby village.

Moorland Going.

After another moorland run of some five miles, the descent of Keppic Bank was made, the route then leading back into the Yarm-Thirsk road. A milestone check was made on the main road back to Harrogate, where the first competitor was due at 6.40.

The results have not yet been announced, but nine teams completed the course, namely:—

ILKLEY M.C. AND L.C.C.—W. Moore (532 Scott), J. S. Duxbury (481 Scott), W. H. Clough (592 Scott sc.).

BRADFORD M.C. AND L.C.—W. Haggas (499 Triumph), H. S. Moorhouse (499 Triumph), G. M. Townsend (555 P. and M. sc.).

HARROGATE AND DISTRICT M.C.—D. Moore (499 Sunbeam), A. Hill (348 New Imperial), G. W. Hill (481 Scott sc.).

LEEDS AND DISTRICT.—W. T. Brand (550 Triumph), W. Backhouse (499 Triumph), S. Jepson (A.J.S. sc.).

SCARBOROUGH AND DISTRICT M.C.C.—M. Marriott (348 Coventry-Eagle), C. E. Jackson (595 Beardmore-Precision), D. Brigham (678 Omega sc.).

DARLINGTON AND DISTRICT M.C.C.—B. M. Catherick (499 Dunelt), C. Bone (349 Wetherell), W. Brown (A.J.S. sc.).

YORK AND DISTRICT M.C.—G. Bower (490 Norton), E. Wasling (499 Triumph), G. W. Shepherd (L.S.D.).

HARROGATE AND DISTRICT M.C.C.—C. Botterill (248 Excelsior), T. F. Leak (348 Massey-Arran), B. Stuttard (Morgan).

SHEFFIELD AND HALLAMSHIRE M.C. AND L.C.C.—H. M. Beeden (499 Sunbeam), W. L. Adams (249 Levis), E. Smith (Martinsyde sc.).

Of the casualties W. Holloway (770 B.S.A. sc.) retired early with broken bearings to front wheel, while H. Robinson (976 Zenith) succumbed to belt trouble.

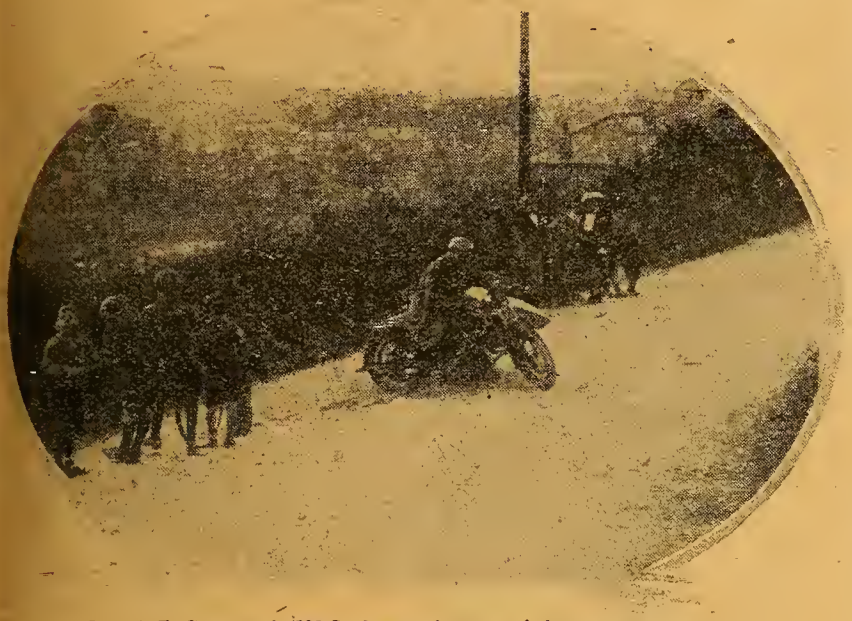
P. Shaw (555 P. and M.) had the misfortune to meet an erratic Ford van outside Harrogate and continued his journey minus the front portion of his sidecar. Even then he might have stayed the course had the Fates been kinder, for he continued until the bottom of his sidecar dropped out, and only then had perforce to retire.

The event can be considered an entire success and another credit to the enterprise of the Ilkley Club. The Haggas Shield, presented by Mr. W. R. Haggas, is held for one year and carries with it title of Yorkshire champion team, at present held by Bradford.

S. M. Haigh (555 P. & M. sidecar) on a steep portion of Boltby Bank.

A MIDLAND INTER-CLUB TRIAL.

An M.C. and A.C. Sporting Half-day Event for Club Teams.



J. E. Greenwood (599 Sunbeam sc.) on one of the many hairpins.

EIGHT teams gathered near the top of Rose Hill, Rednal, on Saturday last, to compete for the handsome cup offered by Mr. Easting, of windscreen fame.

The event was organised by the Midland Cycle and Athletic Club over three 24-mile laps of a sporting though comparatively easy course in the vicinity of Bromsgrove. The chief obstacles consisted of one good watersplash, which was responsible for a number of failures, a stop and re-start test on Hagley Wood Hill (each lap), Walton Hill, a sharp loose-surfaced corner part of the way up Beacon Hill, an acute right-handed hairpin a few miles further on, and an acceleration test on Rose Hill (first lap only).

The following clubs were represented by teams of three solo and three passenger outfits each :—

Birmingham, Wolverhampton, Kidderminster, Coventry and Warwickshire, Sutton Coldfield, West Birmingham, South Birmingham, and the M.C. and A.C.

Watersplash as Eliminating Test.

Within a few miles of the start the watersplash was encountered, and since it consisted of a ford some 14 inches deep (in the worst part) and twenty yards long, lying parallel to a main road, it afforded much amusement to quite a large crowd of spectators.

On the first lap only the Sutton Coldfield team emerged from this obstacle with clean sheets. W. Lovegrove (633 Norton sc.) spoiled the chances of the Birmingham M.C.C. by taking the water too fast and coming to a standstill. Of the Wolverhampton team Frank Smith (925 Clyno sc.) dropped on to one cylinder but came through clean, though J. Price (349 Diamond) failed and lifted his machine on to the bank. F. Adam (490 Norton), representing the Kidderminster M.C.C., failed. George Dance, who turned out with a sidecar attached to a 500 c.c. Sunbeam, was steady and good. C. A. Potts (1087 G.N.) failed, and though he made a gallant effort to restart and actually got his engine running, the water thrown up by the flywheel drowned his plugs. On subsequent laps he took the path of discretion and followed the main road.

Great hopes were entertained of the Coventry Club, only to be sadly dashed, for F. H. Brown (539 Rex-Acme sc.) was the only member of the team to make a clean crossing. The three 600 c.c. Humbers, ridden by H. Crisp, L. Crisp, and R. Grindley, were at a disadvantage owing to their outside flywheels, which threw the water over riders and ignition systems.

Momentary Stops.

The failures in the West Birmingham team were F. R. Dixon (490 Norton), R. G. Smith (349 Henley), and P. Ahearne (633 Norton sc.). N. Hall, riding a 292 c.c. O.K. for the South Birmingham club, entered the water confidently, but one unlucky splash just at the end caused a momentary stop, a fault which was retrieved by his excellent performances on subsequent laps. L. E. Clulee (292 Allon), of the same team, stopped momentarily, but restarted and rode out in good style. The record of the organising club's team was spoilt by T. Woodcock (498 Ariel) and T. Lloyd (733 Brough-Superior).

Restarting on Hagley Wood Hill proved too easy for the majority, and in the first lap only F. Adam (490 Norton) and C. A. Potts (1087 G.N.) failed to get

H. Collins (633 Norton sidecar) making the ascent of a narrow, stony portion of the course.

A Midland Inter-Club Trial.—

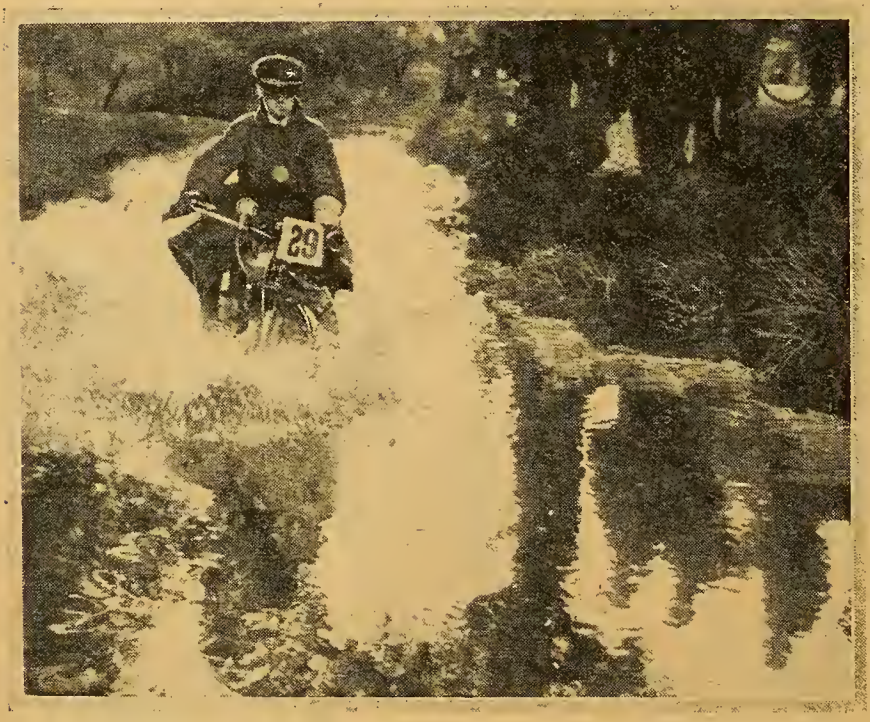
away clean, while T. Lloyd (735 Brough-Superior) made quite the star performance.

Foot Balancing Not Penalised.

Touching with the foot was not penalised, and this somewhat nullified the severity of the tests on Beacon Hill and the subsequent hairpin. During the first and more than half the second lap, only Lloyd (733 Brough Superior) was penalised on Beacon Hill, while at the hairpin Roberts (799 A.J.S. sc.) and E. Boydell (595 New Hudson sc.) came to grief, and while Potts (G.N.) was forced to reverse two or three times in order to get round. Previous to this T. Peck (498 Ariel sc.), and E. Boydell (595 New Hudson sc.), had, for some mysterious reason, failed on Walton Hill, a rise which is not sufficiently serious to cause failure except owing to bad luck.

In the acceleration test on Rose Hill the following shone, and managed to cover the required distance in less than 20sec.: V. Smith (490 Norton), F. Price (349 Diamond), C. Hough (349 A.J.S.), W. H. Smith (398 A.B.C.). E. A. Barnett (249 Francis Barnett), R. Grindlay (600 Humber), J. Montgomery (986 Brough Superior sc.). A. W. Thrush (499 Sunbeam), E. Arthur (733 Brough Superior). F. R. Dixon (494 Norton), R. G. Smith (349 Henley), A. Rollason (498 Ariel), and Woodcock (498 Ariel).

On each succeeding lap the water splash drew its toll of victims, and proved easily the centre of attraction to spectators. W. H. Smith, who was baulked on the first lap, caused much amusement on a subsequent occasion by taking the water at speed, but the A.B.C. is not a hydroplane, and the fireworks ended in a very damp fizzle. On the second and third laps there were 18 failures at this spot on each occasion.



E. Arthur (733 Brough Superior) made one of the only two non-stop performances of the Sutton Coldfield team. In the deep watersplash.

Only Six Fail to Finish.

Of the whole entry (48) there were two non-starters, C Greenwood (492 Sunbeam), and S. Marshall (349 A.J.S.), while F. Adam (490 Norton), J. Roberts (799 A.J.S. sc.), H. Collins (633 Norton sc.), A. Rollason (498 Ariel), T. Peck (498 Ariel), and T. Blumfield (994 Ariel sc.), failed to complete the course.

The organisation was excellent in every way, but by a curious coincidence the ascent of Hagley Wood Hill was somewhat complicated by the Birmingham club's run to Llangollen, which ascended the same hill at the same time. Confusion was, however, avoided by a red cross on the number plates of the latter club.

The results were as follows:—

(1) BIRMINGHAM M.C.C. (MARKS LOST, 26).
V. Smith (490 Norton), 1 stop.
W. Lovegrove (633 Norton sc.), 3 stops.
J. Lidstone (349 James).
F. Cotton (749 James sc.).
G. Kimberley (349 James).
R. G. Bedsley (599 Sunbeam sc.).

(2) WEST BIRMINGHAM M.C.C. (MARKS LOST, 48).
F. R. Dixon (490 Norton), 1 stop.
A. Cope (492 Sunbeam sc.).
R. Dumbleton (349 Henley), 3 stops.
P. Ahearne (499 Sunbeam sc.), 2 stops.
S. Sprang (499 Sunbeam).
H. Turner (490 Norton sc.), 1 stop.

(3) SOUTH BIRMINGHAM M.C.C. (MARKS LOST, 70).
N. Hall (292 O.K.), 1 stop.
H. Uzzell (976 New Imperial sc.), 2 stops.
L. E. Clulee (292 Allon), 1 stop.
H. Perrey (770 B.S.A. sc.).
J. Wilkins (249 New Imperial).
E. Boydell (595 New Hudson sc.), 3 stops.

ESSEX MOTOR CLUB'S 24 HOURS TRIAL.

From London to Bala *via* Bwlch-y-Groes and Return to Dunstable.

THE Essex Motor Club held its annual London-Bala-Dunstable 24 hours trial, a distance of 420 miles, last week-end. Starting from the Castle Hotel, Woodford, on Friday night the route lay through St. Albans, Daventry, Tamworth, and Welshpool to Bala, returning through Llangollen to Welshpool, thence up Long Mountain, a detour of 5½ miles, when the road covered on the outward journey was rejoined and followed back to Dunstable.

Although twenty-four cars were entered the motor cycle entry was disappointing, only five solos, three sidecars, and three three-wheelers participating.

There were two non-stop sections, that on the outward run being Dinas Mawddy to the summit of Bwlch-y-Groes, the last mile of which was timed, a cup being presented in each class to the competitor whose time over this mile was nearest to 15 m.p.h. E. A. Marks (349 A.J.S.) made a good climb, although he had suffered lamp troubles during the night. W. A. Newell (490 Norton) failed on the hairpin, and W. H. Norris (698 Raleigh) came to rest with his rear wheel spinning in the grease just after negotiating the corner.

The Pass Still Difficult.

W. P. Browning (799 A.J.S. sc.) came to rest just before the corner and was baulked by a car further up the hill. H. E. K. Sawtell (1,098 Morgan) made a good climb, but S. W. Dame (1,098 Morgan) failed, and after nearly running over the precipice he baulked several cars. S. Biss (1,098 Coventry-Premier three-wheeler) was most unfortunate, for after breaking a spring near Tamworth he punctured on the hill and then burnt out his clutch.

After breakfast at Bala the second non-stop section was up Long Mountain, about three miles after leaving Welshpool on the return journey. The surface was quite dry, though rough and rutty. W. P. Browning (799 A.J.S. sc.) came to rest by the bottom corner owing, we understand, to an air-lock in his petrol pipe, and W. A. Newell (490 Norton) fell off near the same spot. E. A. Marks (348 A.J.S.), W. H. Norris (698 Raleigh), W. P. Browning (799 A.J.S. sc.), H. W. Glendinning (976 Zenith sc.), S. W. Dame (1098 Morgan), and H. E. K. Sawtell (1098 Morgan) checked in at the finish at Dunstable.

RENOVATING AN OLD ENGINE.

How an Amateur Mechanic Rebushed and Rebalanced a 1916 A.J.S. twin.

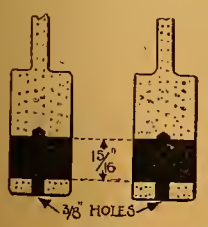
THE rebushing and general overhaul of a motor cycle engine is by no means such a difficult affair as is often supposed, and, while ordinary care is, of course, essential, there is little in these operations beyond the power of the average amateur, provided he has access to a lathe. The writer at any rate does not claim to be an expert mechanic, and was, nevertheless, very successful in the renovation of his 1916 A.J.S. twin.

Work Scarcely Necessary.

Engines of the type mentioned had plain bearings throughout; and although the writer's specimen was running at the top of its form, it was expected, as it had over 12,000 miles to its credit, that some at least of the bushes would be showing signs of wear. The engine was therefore taken out of the frame and entirely dismantled. The only difficulty here was the unscrewing of the nuts which hold the crank pin in the flywheels, but after gentle persuasion with hammer and punch they came loose and the flywheels were taken apart. An examination of the various bearings showed that, as was to be expected, the big-end bushes had developed most play. Even they were not very bad, for, although there was a great deal of side shake, up and down movement was barely perceptible. The main bearings and small end bushes were very free, but could hardly be described as badly worn. It was decided, however, to renew them all. The crank pin, being slightly oval, was sent away to be reground, but the main shafts were not touched.

Making and Fitting Bushes.

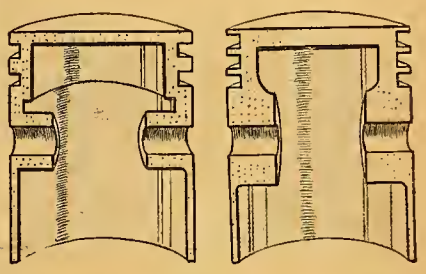
The old bushes were first driven out—this requires care, particularly in the case of the crank case—and new ones turned to a good fit on their respective housings. For the big-ends a specially hard piece of phosphor bronze was used; Muntz metal was employed for the main shaft bushes, and the small-end bushes were purchased from the local A.J.S. agent. Though the big-end bushes were an easy enough fit on the crank pin before they were forced into the ends of the connecting rods, after this had been done they refused to go on at all, owing to the pressure of the surrounding metal reducing the diameter of the bush. This necessitated careful lapping in with metal polish before a good working fit was obtained. The main shaft bearings were similarly affected, though to a smaller degree.



Method of fixing balance weights in the flywheel.

The next operation was the assembling of the flywheels. The truing up was done between centres in a lathe, and proved much easier than was anticipated. After the crank pin nuts had been screwed home, the flywheels were again put between centres to make sure that nothing had shifted.

The cylinders were next taken in hand. At the outset it had been realised that the truing up of these and fitting with new pistons was a specialist's job, and accordingly they were entrusted to a local firm which was instructed to fit the new pistons with three rings, as it was suspected that the rather excessive oil consumption of the engine might be due to oil getting past the two rings with which the 1916 type of piston was fitted. The cylinder bore was ground out from 74 mm. to 74.5 mm. Unfortunately, A.J.S. castings were not obtained for the pistons, and these turned out much too heavy—7½ oz. each to be exact. Although this difference of nearly 1 lb. in the reciprocating weight was bound to affect the balance, it was decided to try the engine on the road before anything was done; and it was therefore assembled.


Neglecting to procure a proper casting resulted in the new piston (right) being too heavy.

Here a slight hitch occurred. The writer, in his anxiety to have everything a good working fit, had left the bushes a trifle on the tight side, and the effect of this in conjunction with the new pistons was that only by jumping vigorously on the kick-starter could the engine be persuaded to move at all. Starting by this means was evidently out of the question. After much cogitation the services of a sporting friend were requisitioned, and the whole outfit (with the writer in the saddle) was shoved vigorously down a slight hill and the engine after being started was run gently for some time with copious lubrication.

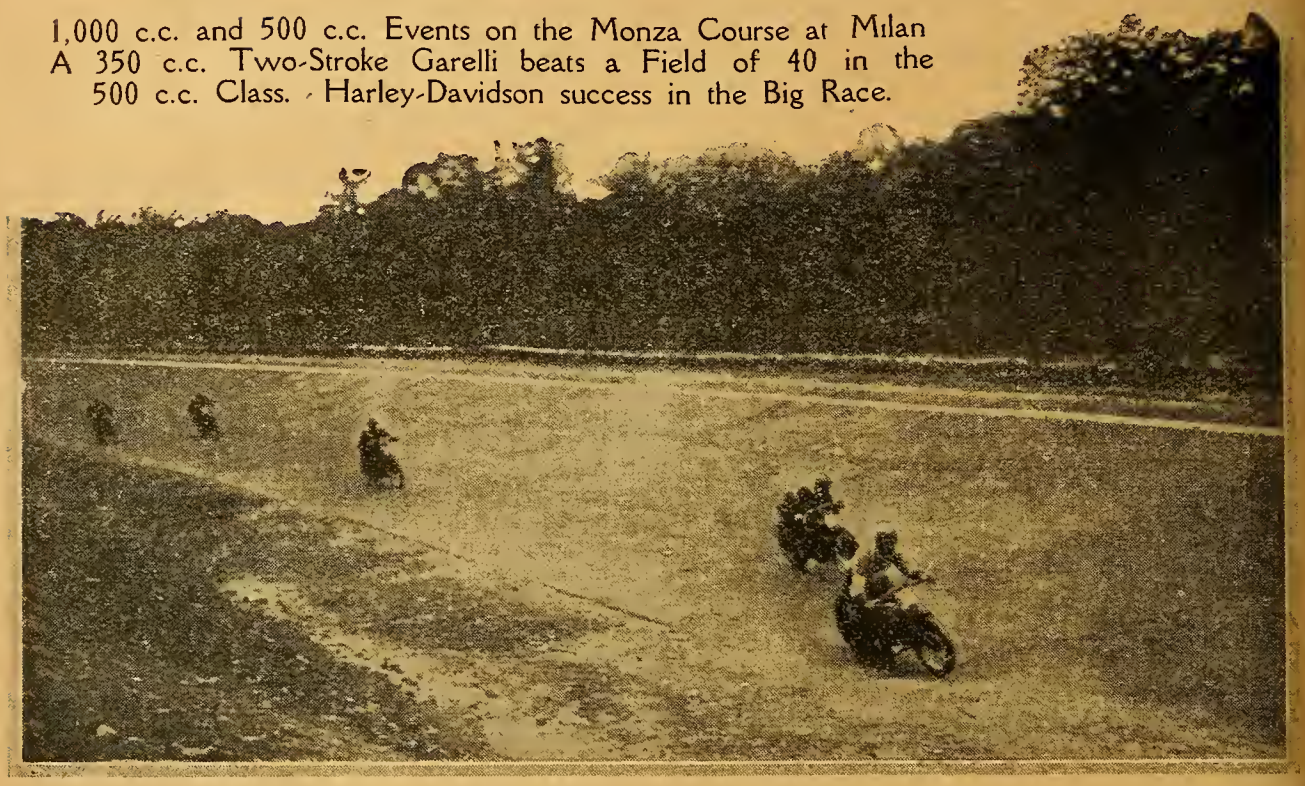
Adjusting the Balance.

There was no very noticeable vibration when on the road, but a slight harshness showed in the running. The pistons therefore were lightened by removing metal internally and drilling the skirts, but they were still 4 ozs. each overweight. Back numbers of *The Motor Cycle* were then consulted, and an article on "The Balance of Motor Cycle Engines" was found in the issue of February 3rd, 1921. Working on the lines therein laid down a test was made, and it was found that additional weight opposite the crank pin was required, to the amount of 12.5 oz. at a distance from the centre of 43.5 mm. This suggests that possibly the engine was originally slightly underbalanced. It was decided to add the weight at a distance of 79 mm. from the centre, and two $\frac{15}{16}$in. holes were bored right through both flywheels, with $\frac{3}{8}$in. holes at right angles to keep the weights from shifting. By filling these with lead the weight was increased by about 7¾ oz.

On reassembling and running on the road, a big improvement was evident, particularly in steadiness and smoothness of running. I. C.

FIRST RACES ON ITALY'S NEW TRACK.

1,000 c.c. and 500 c.c. Events on the Monza Course at Milan
A 350 c.c. Two-Stroke Garelli beats a Field of 40 in the 500 c.c. Class. Harley-Davidson success in the Big Race.



Competitors in the 500 c.c. class at speed on a fast portion of the track.

ON Friday last the first motor cycle races took place on the new Italian track in the royal park of Monza, near Milan.

The track was described and illustrated in our issue of September 7th, and has a circuit of 10 kilometres (6¾ miles).

Two events were run. The first, for 1,000 c.c. machines, was held in the morning over forty laps of the course (248½ miles), and in the afternoon there was another race over the same distance for 500 c.c. machines.

The 1,000 c.c. race was won by the Italian rider Ruggeri, on a Harley-Davidson, in 3h. 50m. 3s., or at an average speed of 64.8 miles an hour. The 500 c.c. race was won by Gnesa, on a Garelli, in a total time of 3h. 57m. 23s., or 63½ miles an hour.

Start of the 500 c.c. class. Douglases, a Triumph, and a Norton are among the machines on the first line.

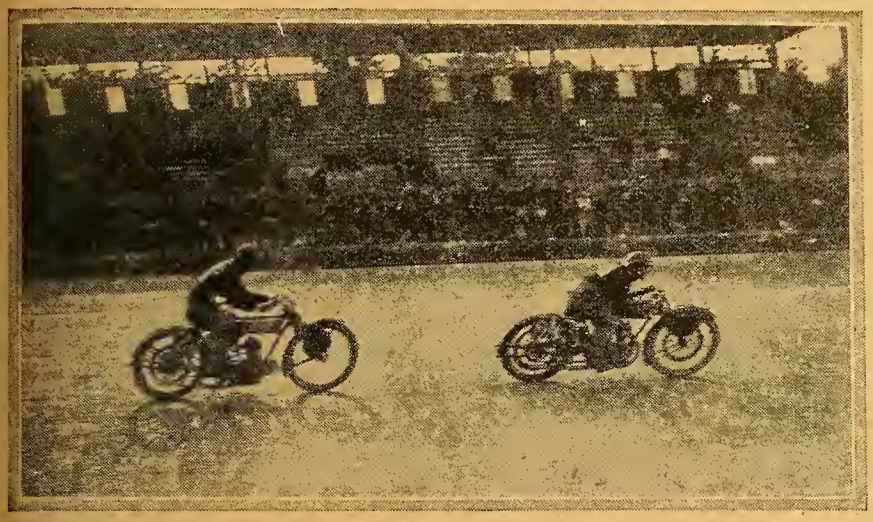
The Italian track is quite different, both in its nature and its environment, from anything existing elsewhere. The club responsible for the venture has been very fortunate in getting possession of a richly-wooded former Royal park, quite close to Milan, and in it has built a speedway which unites track and road conditions.

Well Designed Track.

To get the biggest track in the smallest area, the Monza speedway has been laid out with a small oval inside a bigger, roughly shaped oval track, there being one point where one track passes under the other, and in front of the main stands the inner and the outer tracks are parallel.

From the grand stands the spectators have immediately in front of them two parallel tracks, divided only by a white line with inverted V checker boards at intervals, while about 150 yards away is a third parallel track, the whole of the inner curve, the half of an outer curve, and a portion of another curve.

On the Monza track the competitors are not in view the whole time, but pass three times per lap. The periodical disappearance of the competitors tends to keep up interest in the race, and as they come into view three times every six miles



British machines passing the grand stand. Sunbeam and Norton riders keeping well together.

there are few dull moments, even with a small field of competitors.

An advantage which the Monza possesses over all other tracks is the arrangement of roads and bridges, allowing the spectators to move from point to point while a race is in progress. Because of thick woods, all idea of an artificial track is lost when once the grand stands have been left behind. With the Alps as a background, the setting is delightfully attractive.

Nineteen 1,000 c.c. Starters.

In the 1,000 c.c. class 19 machines were sent away in a group at 8 a.m. The makes were Excelsior, Harley-Davidson, Indian, one Humber, and the Italian Gallonis and S.A.R.'s. All the riders were Italians.

The race was a struggle from beginning to end among the Harley-Davidson men, who numbered ten out of the nineteen starters. Although the leader changed, it was always a Harley-Davidson which led the field, and the fastest lap was made by Winckler, one of the members of this team, at an average of 74½ m.p.h.

First Four of One Make.

At half-distance the leader was Rogai, followed by Ruggeri, Contarini, and Faraglia, all on Harley-Davidson. The latter half of the race was keenly contested, and brought about changes, the final result being as follows :—

1. Ruggeri (Harley-Davidson) .. 3h. 50m. 3⅕s.
2. Contarini (Harley-Davidson) 3h. 53m. 3⅕s.
3. Faraglia (Harley-Davidson) .. 3h. 58m. 8⅕s.
4. Winckler (Harley-Davidson) .. 4h. 17m. 12⅕s.
5. Rava (Indian) .. .. .. 4h. 27m. 12⅕s.

Winner's speed, 64¾ m.p.h.

Group Start of Forty Machines.

In the afternoon race a magnificent grouped start was made by the forty 500 c.c. machines of British, French, Italian, and Belgian makes. A special class was not provided for the 350 c.c. mounts, and among those starting with the handicap of a small piston displacement were the Garellis, which won at Strasbourg. Although British makes were well represented by Triumph, Douglas, New Hudson, Sunbeam, Norton, and N.U.T., the only British riders were Edmond and Brandish, on Triumphs. One of the French A.B.C.'s was ridden by Bartlett, an Englishman residing in France.

British Lead in Early Stages.

Two Triumphs, ridden by Brandish and Opessi, and a Douglas mounted by Fieschi, took the lead at the outset, hard pressed by the A.B.C. trio. The end of the fifth lap saw Brandish in the lead, with Opessi on another Triumph second, and Fieschi on a Douglas third.

The first hundred kilometres (62 miles) were covered by Brandish in 56m. 53s., with Fieschi on a Douglas only one-fifth of a second behind him. Then came Opessi (Triumph), followed by the two French A.B.C.'s ridden by Naas and Bartlett.

Flat Twin takes the Lead.

At this distance Edmond (Triumph), who had been among the first half-dozen, went out with magneto trouble. Fieschi's Douglas got into the lead after fifteen laps, followed closely by the French champion, Naas (A.B.C.) and by Brandish and Opessi (Triumphs).

Naas, who appeared to have been taking things easy, jumped into action at this point and took the lead away from the Douglas. After twenty laps, half distance, he had a lead of almost two minutes, and as Opessi's Triumph had dropped out with magneto trouble, Brandish got second place, with the Douglas third, and a couple of Italian machines, the Guzzi and Garelli, fourth and fifth.

Anglo-French Duel.

There was a particularly fine duel between Naas and Brandish. The Frenchman kept in the lead for nearly fifty miles, but the Englishman gradually crept up to him and got the lead after thirty laps. Just when excitement was running high Naas broke the frame of his machine. He fastened it up with straps and covered five more laps, losing ground to Brandish all the time. Declaring that it was really too dangerous, Naas came to the pits and announced his intention of retiring. Hardly had his A.B.C. been lifted off the track than Brandish, the last of the Triumph team, had to drop out of the race with a broken tappet.

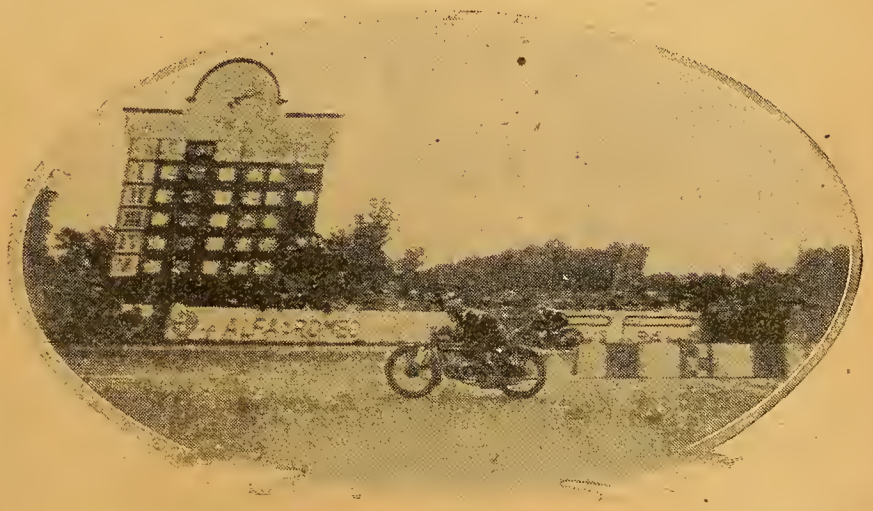
Great Excitement.

These incidents caused wild excitement among the spectators, for they placed a 350 c.c. two-stroke Garelli, ridden by Gnesa, in the lead with Fieschi's Douglas second. The rider of the English machine did his best, but each lap he lost about 20 yards to the two-stroke Garelli, the rider of which won the Italian Motor Cycle Grand Prix by covering 248½ miles in 3h. 57m. 23s., equal to an average of 63.5 miles an hour. The final result was :

1. Gnesa 349 Garelli) .. .. .. 3h. 57m. 23s.
2. Fieschi (494 Douglas) .. .. 3b. 58m. 12s.
3. Morabito (492 Sunbeam).. .. 4h. 2m. 11s.
4. Maffeis (499 Maffeis) .. .. 4h. 6m. 5s.
5. Fergnani (349 Garelli) .. .. 4h. 6m. 34s.

Winner's speed, 63½ m.p.h.

Out of the forty starters only three other machines were running when the race was called off. For the afternoon race the weather was fine but dull. A little rain fell during the morning race.



A Douglas rider passing the huge scoring board which recorded lap by lap the numbers of the foremost competitors.

AN IRISH ROAD RACE.

Spectacular Event over a 4¾ Mile Course, Won by J. W. Shaw (490 Norton).

ON the first Saturday in September a 51½ mile road race was held by the North Down M.C.C. at Clandeboye, in Co. Down.

It was the biggest event of its kind ever held in Ireland; in fact, it is hoped that it marks the approach of the much-discussed Irish T.T. race.

Prizes ranged from 1 to 10 guineas, and there was a special prize for the rider of the fastest standard machine to complete the course. Perhaps this last-mentioned honour influenced J. W. Shaw—the winner—to appear on his side-valve Norton.

The course, which had to be covered eleven times, was of a rectangular natnre, containing one right-angled and three acute corners, while the sides were hilly and by no means straight.

There were 34 entries, and nearly all the well-known makes were represented.

The passing of machines was continuous, so that interest never ebbed, but the 4¾ odd miles of the course were rather congested, as sometimes three or four riders arrived at the corners together.

Although there were no serious accidents, some riders were down as often as three times, and quite a few riders and machines showed signs of ugly falls, but they all pluckily carried on.

Two of Ireland's premier speedmen. J. W. Shaw (490 Norton) following up H. Chambers (349 A.J.S.) in the Irish road race at Clandeboye, Co. Downe.

"Jimmy" Shaw (490 Norton), completed the 51½ miles in 56m. 10s., and made the fastest lap time of 4m. 56s., a speed of over 61 miles per hour. His average speed for the whole course was 55.6 m.p.h.

Harry McGimpsey was second on a 349 c.c. New Imperial, the fastest in his class to finish; his time was 67m.

Both the foregoing riders gave beautiful exhibitons of cornering. Shaw, in his fastest lap, held the spectators spellbound.

The following are the official times of the first four riders to finish :—

	Gross Time.	Handi. Nett cap. Time.
	m. s.	m. m. s.
J. Shaw (490 Norton) ...	75 10 ...	19=56 10
H. McGimpsey (349 New Imperial)	77 0 ...	10=67 0
F. Hamilton (490 Norton)	78 15 ...	14=64 15
J. Thompson (499 Sunbeam)	78 50 ...	15=63 50

CLUB NEWS (continued from p. 379)

North London M.C.C.

On Monday of last week the club held a very successful social at the headquarters, The Gate House, Highgate.

South Midland Centre A.C.U.

On September 23rd Kop Hill will once again be the scene of an important speed event, open to members of any club in the Centre. A big entry is anticipated, arrangements being in the hands of Mr. W. H. Hardman, Westcott, Northaw, Potter's Bar.

Neath and District M.C.

Final speed trials of the year will be held in Margam Park on Saturday, September 23rd, at 2.30 p.m. (postponed from September 2nd).

Surbiton M.C.

Motor cycles, three-wheelers, and cars of any capacity will compete in the one-day reliability trial for the Sopwith Challenge Cup and other awards on Saturday. The start will be made from the Talbot Hotel, Ripley, at 10 a.m. over a secret route.

Macclesfield and District M.C.

Particulars of the hill-climb to be held on the 23rd inst. may be obtained from Mr. T. Sinister, Jordangate, Macclesfield.

North Liverpool M.C.

At Southport Sands on October 7th the club will hold its first speed trials. Particulars may be obtained from Mr. F. E. Marsden, 258, Walton Rd., Liverpool.

Sheffield M.C.C.

Resnlts of a trial for the S.M.C.C. Trophy, run on September 3rd over a 70-mile course, were as follows: 1, H. Oscroft (976 Enfield sc.), with a total loss of 5 marks; H. Bennett (770 Hazlewood sc.) and J. Cox (976 Matchless sc.) tied for second and third place with a total loss of 11 marks each.

Dundee and Montrose M.C.C.

Speed trials were run off over Lewan Sands, Montrose, in delightful weather on Saturday, the 2nd inst., and some good times were recorded. Each class was a separate race.

350 c.c. (Two Laps; 1 Mile).—1, C. K. Ferres (349 Massey-Arran); 2, R. Scott (349 A.J.S.); 3, A. Lamond (349 A.J.S.); winner's time=1m. 32⅖s.

350 c.c. (12 Laps; 6 Miles).—1, G. K. Ferres (349 Massey-Arran), 10m. 34⅘s.; 2, R. Scott (349 A.J.S.); 3, A. Lamond (349 A.J.S.).

650 c.c. (2 Laps).—1, A. Brown (490 Norton), 1m. 30s.; 2, G. K. Ferres (349 Massey-Arran); 3, J. Adamson (490 Norton).

650 c.c. (12 Laps).—1, J. Adamson (490 Norton), 9m. 55s.; 2, A. Brown (490 Norton); 3, G. Stuart (490 Norton).

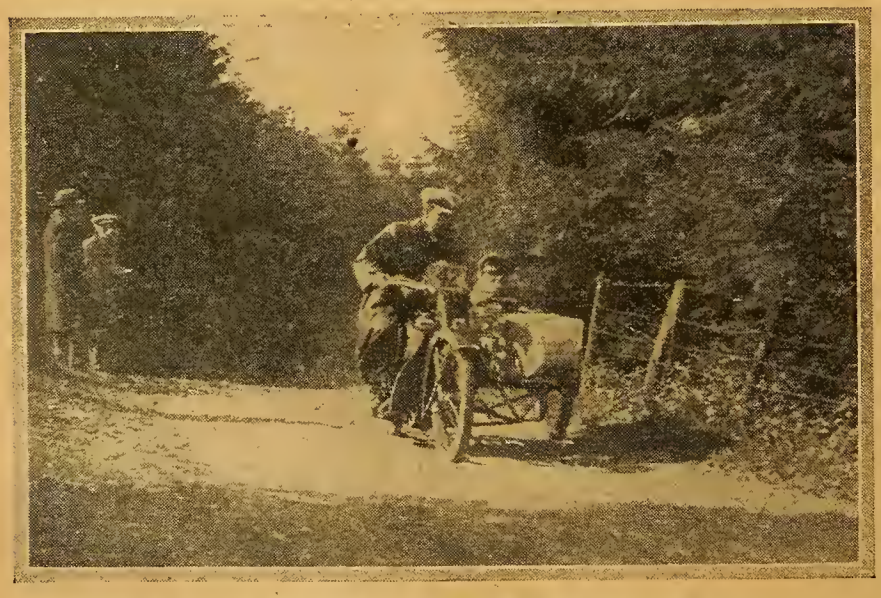
1,000 c.c. (2 Laps).—1, D. M'Lean (976 M. and S.), 1m. 29s.; 2, J. Adamson (490 Norton); 3, A. Brown (490 Norton).

1,000 c.c. (12 Laps).—1 J. Adamson (490 Norton), 10m. 14s.; 2, G K Ferres (349 Massey-Arran); 3, A. Brown (490 Norton).

The inter-club team race was won by the Dundee Club team, consisting of J. Adamson, G. Stuart, and D. M'Leau, and results of the 4-lap race for the Club Championship were as follows:—

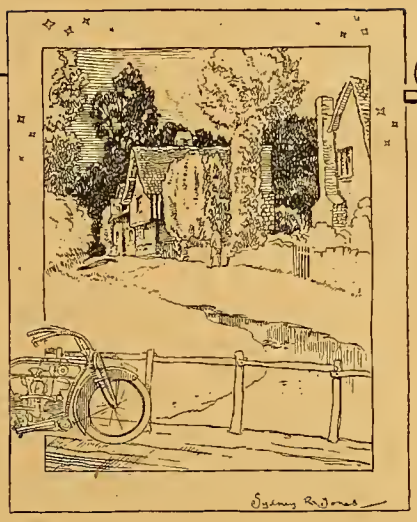
1, A. Brown (490 Norton), 3m 30s.; 2, J. Edwards (499 Sunbeam); 3, G. K Ferres (349 Massey-Arran).

The Rudge Cup for the competitor making the fastest time of the day was awarded to G. M'Leau, who led the unlimited class.



W. H. Clough on a Scott, fitted with a newly designed three-speed gear, making a good ascent of Boltby Bank in the Yorkshire Centre Team Trial on Saturday.

QUESTIONS & REPLIES



A Selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

MEASUREMENT OF GRADIENTS.

[?] Is a hill with an incline of 45° a gradient of 1 in 1 or is it, as I contend, a gradient of one in the distance traversed on the actual surface of the road during one foot of rise? In other words, is it height gained in a given length of road or in a given horizontal distance?—T.B.D.

The incline referred to is 1 in 1, but although not strictly correct, the gradients of hills are frequently expressed in terms of one foot rise in a distance measured actually along the surface of the road and not along a horizontal base line. Road gradients steeper than one in six are the exception rather than the rule, and it is only when this degree of steepness is exceeded that any serious discrepancy occurs when the surface distance and not the horizontal distance is taken.

OLD TYPE METAL PLATE CLUTCH.

[?] (1) When I gently put in the clutch of my 557 c.c. 1920 B.S.A. in order to move away it makes a very loud grinding noise. I have tried adjustments both on the gear box and on the rod; also cleaning out with paraffin and re-oiling, but without a cure. (I use B.S.A. gear box oil only). (2) Do you think the gear box will have to be taken to pieces, and is it too big a job for me to attempt? The grinding noise is the only trouble, the clutch otherwise being perfect.—F.G.

The clutch of the 1920 B.S.A. machine was rather small in area for the load it had to transmit, and, in consequence, the spring pressure is necessarily very strong; a certain amount of noise is frequently associated with the engagement of this clutch, and providing it functions correctly we do not think you need trouble to dismantle the gear box. Some improvement might be effected in the more delicate engagement of the clutch by fitting a handle-bar control. It is possible to dismantle the clutch without special tools, but it is rather difficult unless you have seen it done previously by a mechanic who is familiar with this piece of mechanism.

Important Dates.

Sat., Sept. 16th—The Scott Trial.

Sat., Sept. 16, and Mon., Sept. 18.—Scottish Two-Days Trial.

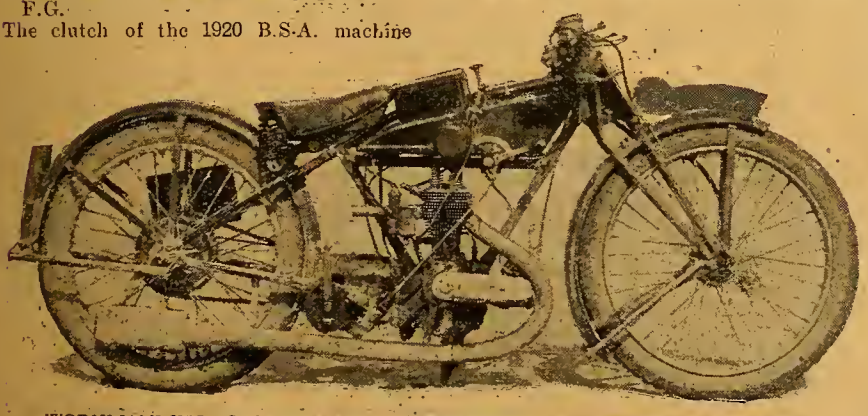
Sat., Sept. 30th.—M.C.C. Sporting Trial.

Wed., Oct. 4th, to Sun., Oct. 15.—Paris Salon.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.



WORKMANLIKE SPORTING LIGHTWEIGHT. It is inevitable that machines embodying standard components should all look very much alike, and for this reason the new Grindley, which made quite a creditable *debut* in the Six Days Trials, deserves praise for its air of distinction. This latter attribute is gained by the large tyres (28×3 in.) fitted, and by the neat frame design. With a 249 c.c. sports J.A.P. engine, Burman two-speed gear box and chain drive, the price is £75. (The Grindley Motor Co., Prees, Salop.)

OVER RICH MIXTURE.

[?] I have a T.D.C. two-stroke and having lately taken off the cylinder and replaced it I find that it does not go at all satisfactorily. When running to start nothing takes place until I release the compression; when an explosion occurs it will then go for a few yards and then stops, until I release the compression again. When the machine is running, the only way to keep it going is to release the compression constantly. Everything else appears to be in good order; the engine is airtight and there is a good spark. What do you think is the cause of this behaviour? I do not think I have increased the compression ratio, as I have put quite as much packing between cylinder and crank case as there was before.—N.P.

The particulars you give us are not sufficiently clear and detailed to enable a conclusive answer to be given. We think, however, that the trouble is caused by an excessively rich mixture. Black smoke from the exhaust or a fine sooty deposit on the sparking plug would indicate the condition. In such a case as yours it is almost impossible to say definitely what is amiss without seeing the machine, and we can only advise you to check over every item point by point, making sure that all is in order. The help of such a handbook as "Two-stroke Motor Cycles" would be an advantage to you in doing this.

LOOSENING TRIUMPH SPROCKET NUT.

[?] (1.) How can I take off my W.D. Triumph engine sprocket and small half of countershaft chain-guard nearest the engine? (2.) What methods are usually employed to prevent the engine flywheels rotating while loosening the nut on the end of the engine-shaft?—J.L.

(1.) The chain sprocket on the W.D. Triumph engine is of the self-withdrawing type; that is to say, as the nut is unscrewed the sprocket comes away from the engine-shaft. (2.) It is not usually necessary to employ any special method of holding the flywheels while the sprocket nut is being loosened, if the engine is

first rotated until the piston is up against compression. A sharp tapping of the spanner with a hammer is usually quite sufficient to loosen the engine-shaft nut. If this is not effective, however, put in the low gear and get a friend to hold the back wheel while you hammer round the spanner.

SUITABLE TOP GEAR FOR SIDECAR

I am fitting up a 976 c.c. Clyno-Jap machine and would like to know what size the engine-shaft sprocket should be for sidecar work. The rear sprocket is of 47 teeth, gear box 15 teeth, and clutch 30 teeth.—J.H.

We would recommend a top gear ratio of about 5 to 1, and with the sprockets which you enumerate you would need one of 19 teeth on the engine-shaft.

READERS' REPLIES.

WORN BEARINGS.

With reference to "J.E.W.'s" query as to the rattle he experiences on his machine, I may say that I have exactly the same trouble with my 499 c.c. Sunbeam. I have done 18,000 miles, and on getting up speed on the level or slightly down hill a peculiar rattle appears. This I have found, after exhaustive searching, to be piston slap. This has got no worse during the last six thousand miles, and is not objectionable if plenty of oil is given.—S.T.B.

REMOVING B.S.A. BELT RIM.

If "H.D." fastens two stout pegs, or, say, chisel heads in a strong vice, removes lock ring, places belt rim spokes over the pegs in the vice and then gets someone to give a hand with the unscrewing (gripping tyre and not forgetting left-hand thread) he should be able to remove his belt rim. In the event of failure heat with a blow lamp and try again. Perhaps "H.D." would prefer to repair his rim, as they are rather dear—I have just paid £2 5s. 6d. for one. It is quite easy to patch a cracked rim with one or more pieces of soft material bent to shape. One rivet on each side of the U-shaped patch will do, but both sides of each hole must be countersunk. The inside countersink is to draw the rim down and keep rivet head clear of belt. I have run thousands of miles on one I repaired.—P.H.D.

[The method of removing must be adopted with care, it being remembered that the spokes are tubular and (comparatively) easily damaged.—ED.]

A TWO-STROKE RATTLE.

To add yet another opinion to the two-stroke controversy, I have found that a rattle in my Villiers engine appeared to be caused by endplay in the crankshaft. Anyone who has watched a "balanced" electric motor running will know that endplay can cause a considerable amount of hammering on bearings. This is damped out under load possibly owing to greater friction, or possibly to damping action of eddy currents. When I took the crank case apart of my relatively unbalanced engine, I turned off a small portion of the crank case on each side to make the shaft a tight fit, and then inserted a paper washer to suit. The rattle has now disappeared.

Also, have your correspondents tried a plug which is not designed for a two-stroke, the Lodge "Aero B," mica-insulated. I have been using one for five months now, which was discarded by a car owner. It has never given any trouble. Also a friend of mine has had one in his Villiers engine for two years. Between us we have about thirty plugs discarded as second-raters.—K.C. 1960.

[Thin packing washers on the crankshaft would stop endplay with less trouble.—ED.]

LAMP ON SIDECAR.

[Several readers have pointed out that our reply to "H.C." under the above heading in the issue of Angnst 31st does not now apply. We regret that as a result of long usage we quoted the now defunct D.O.R.A. regulation. At the same time there may be local byelaws in operation in various places which affect the matter, and we would like to have any information if such exist.—ED.]

A West country reader obtained the following clear statement of the law on motor cycle lighting from the chief constable of his district:—

"In the case of a motor bicycle with sidecar attached, a lamp is required showing a white light in front, which need not be on the extreme off side. A red light must be shown to the rear, and this may be attached to either the sidecar or the bicycle. If, however, the sidecar projects from the off side, then the lamp showing a white light in front is required to be attached to the extreme off side of the sidecar, and in such case it must show a red light in the reverse direction, unless a separate rear red lamp is carried. These lights are required between one hour after sunset and one hour before sunrise.

"Either the front or rear identification plate must be illuminated between half an hour after sunset and half an hour before sunrise, except that in the case of a motor cycle of a weight unladen exceeding 3 cwt. the rear identification plate must be illuminated."

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"A.B.C." (Chester).—596 c.c. Indian Scout: reliability, speed.

"C. W." (Lutterworth).—998 c.c. Indian or 989 c.c. Harley-Davidson sidecars.

"R.C.S." (Hull).—499 c.c. Rudge Multi, I.O.M.: suitable touring carburetter, hints on tuning for speed.

"W.E.S." (Liverpool).—398 c.c. Royal Enfield: suitability for light sidecar.

"A.M.L." (Carmarthen).—348 c.c. Ivy; 292 c.c. Allen.

"G.A.S." (Hamilton).—555 c.c. P. and M.

"J.E.E." (Tyseley).—348 c.c. Raleigh: consumption, speed, possibility of fitting light sidecar, suitability for tall rider.

"R.C.B." (Littlehampton).—1,301 c.c. Henderson; 999.5 c.c. American X; 976 c.c. Brough-Superior (side valve): solo and with sidecar for speed, durability, and steering.

"E.R.B." (Darlington).—345 c.c. Wooler; 350 c.c. De Luxe Barr and Stroud, model D, for reliable solo work.

"J.R.C." (Malvern).—976 c.c. Royal Enfield and sidecar: reliability, speed, hill-climbing capacity, and fuel consumption.

"G.R." (Rawtenstall).—349 c.c. A.J.S.; 225 c.c. Royal Enfield; 211 c.c. Levis; 348 c.c. Raleigh.

"A.E.B." (Ampthill).—269 c.c. Villiers engine, flywheel magneto, Amac carburetter: speed, climbing, consumption; suitable oil and jet.

"C.O.R." (Cardiff).—600 c.c. Humber sports model: cooling of rear cylinder, lubrication.

"W.R.C." (Knaphill). — Suitable machine for 12-mile daily journey (normal country). Reliability before speed.

A Good Record.

Three team prizes and fifteen gold medals were won by machines fitted with E.I.C. magnetos in the Six Days Trials.

Found on the Road.

By Mr. A. Sharvell Cullwick, The Beeches, 74, Tettenhall Road, Wolverhampton: A pair of waterproof overalls at Newquay, on August 24th.

Collision Causes Retirement.

V. F. Long, who entered a 976 c.c. Excelsior for the Six Days Trial, was forced to retire owing to a collision with a cart which seriously damaged his machine.

A Removal.

In future the head offices and sales department of the Eynsford Engineering Co., manufacturers of the Economic motor cycle, will be at Primrose Works, Eynsford, Kent.

The Plugs Pullin Used.

In our account of the double-twelve hour records set up at Brooklands on September 1st by C. G. Pullin, it was stated that his Douglas was equipped with Lodge plugs. We are now advised by the makers of the K.L.G. sparking plug that their products were employed.

Catalogues Received.

T. C. Jones and Co., Ltd., 93-95, Wood Lane, Shepherds Bush, London, W.12: A catalogue listing small tools of every description.

The Goodyear Tyre and Rubber Co. (Great Britain), Ltd., 162, Shaftesbury Avenue, London, W.C.2: Leaflet giving the most recent prices of Goodyear motor cycle tyres.

The Watsonian Folding Sidecar Co., Ltd., Conybere Street, Birmingham: Stocktaking leaflet of sidecars and components, which are being cleared at low prices.

Sir,—It would certainly appear that some person, or persons, antagonistic to motor cycles and motor cyclists, and having influence in the right quarter, has been working to banish the motor cyclist from Brooklands track.

One is asked to believe that it is the noise of motor cycle exhausts, as distinct from that of racing cars, which is particularly offensive to certain residents in the vicinity of the track. That this is a gross piece of bluff is obvious to the meanest intelligence, and is disgusting to anybody having the most elementary sense of fair play.

I have personally been in the paddock when a certain racing car of foreign manufacture was started up, completely drowning the sound of the exhaust of several motor cycle engines which were running at the time. One of these happened to be my own, and I had a few minutes previously been informed by a B.A.R.C. official that my machine was too noisy. Needless to say, there was no question of the barest suggestion that any noise was being made by the juggernaut with a German engine which was bellowing in our midst.

Incidentally, I had that day, and have before and since, ridden my machine in exactly the same condition on my way to the track, through Aldershot and Guildford amongst other places, without the slightest comment from the police.

Are we really expected to go on believing this cock-and-bull story about the astonishing discrimination between sounds possessed by the residents around Brooklands track, or are we going to hear the truth of the matter—or are the vested interests concerned too sacred or expensive to be disturbed by mere fairplay!

Is it not possible that complaints have been made about noise in general proceeding from the track, and that the motor cyclist as the smaller was the easier man to hit?

The thing certainly becomes crudely blatant in its latest development—the running of the 200 miles light car race, and the cancellation of the 500 miles motor cycle race.

Incidentally, with reference to these local residents, if they are people who have lived in the neighbourhood since before the track was constructed, they have been strangely forbearing in suffering in silence all these years—not murmuring until now. If they are residents recently arrived in the locality—well, the track was there first. XF 573.

Aldershot.

Sir,—We are extremely surprised at this late date to receive a notification of the abandonment of the 500 Miles Race, and consider that the matter is sufficiently serious for the intending competitors to get together and endeavour to save the situation even at the eleventh hour.

It appears almost incredible that about five local residents should be in a position to hold up the whole motor industry and cause the wastage of, at an estimate, somewhere between £20,000 and £40,000 of the trade's money, without giving the trade any opportunity to submit a scheme for making the competing machines reasonably silent. In fact, we understand that the point has been put to the complainants' solicitors, who refused even to discuss the matter.

The 500 Mile Race is, to our mind, the most important racing event of the year, and we believe that next year the public would have given it precedence over the T.T. races, on the ground that in the T.T. the man counts for more than the machine, whilst the 500 Mile Race is almost entirely a test of the machine. Any rider who is sufficiently skilled to keep a machine on Brooklands [illegible] speed has an equal chance with a crack rider of securing the prize.

It appears to us to be one of those occasions calling for a little sportsmanship and commonsense.

It would appear to the non-legal mind that when the present proceedings, the outcome of the 200 Mile Light Car Race, come before the courts, the fact that the competitors are willing to silence cars and cycles to the extent that the noise from the track would be no greater than the ordinary noise of passing traffic on the roads, will put the complainants in a very weak position, and it should surely be possible for the complainants' solicitors to give one of those concessions (with an unnecessary Latin name) for the race to be held subject to the machines passing, immediately before the race, a standard of silence test set by the R.A.C. Engineer and defined well in advance of the actual date, so that there will be no excuse for competitors arriving with machines which would not pass the test.

We have been experimenting with and have evolved a particularly efficient silencer for our "Quick Six" machines which does not involve the fitting of an expansion box nor create any back pressure, and which does make our "Quick Six" machines quiet. We should be only too pleased to submit this device as a standard of silence, and to supply all competitors with similar silencers suitable for their individual machines at cost price. All machines would then be under the same disadvantage, if any.

We trust that very active steps will be taken in this matter, and that when the full circumstances are available to the public it will be found that the B.M.C.R.C., A.C.U., and B.A.R.C. have used every endeavour and adopted a bold policy.

GEO. TILGHMAN-RICHARDS,
F.R.Ae.S., M.I.M.E., M.I.A.E., M.I.Ae.E.,
Martinsyde, Ltd.

COLD FEET.

Sir,—May I suggest a new item of comfort for winter riding? Each foot-board may be replaced by a hot-water box a few inches deep, with the usual fastening brackets underneath. The upper surface of the water box will serve as foot-plate and should be about six inches wide. A filler and drain tap can be fitted so as not to interfere with foot-operated brakes. Perhaps some manufacturer will produce this winter need at a reasonable cost, and before the cold weather is upon us. "BUN-DOOLA."

London.

FOREIGN TYRES ON BRITISH MACHINES.

Sir,—One at least of our important manufacturers fits a foreign magneto as standard. Such an action is reasonable, as the magneto may outlast the cycle, and a manufacturer who does not fit the best, in his opinion, is being false to his company. But why fit foreign tyres? The best tyres of to-day are all nearly alike in service. Why then force a buyer to import goods in these days of unemployment, the tyre being only a "transient phenomenon," replaceable after 10,000 miles, more or less, at the same cost as the one fitted as standard? K.C. 1960.

Watford.

SUMMARY OF CORRESPONDENCE.

Mr. W. A. Warwick would be glad if the owner of a Premier, to whom he lent a foot pump recently on the London-Bristol road, would return it to him at 54, Howitt Road, Belsize Park, N.W.

The Delancey Motor Garage, of Camden Town, N.W., write with reference to the incorrect dating of second-hand machines, and advise all purchasers of such machines to insist on the advertised date being stated on the receipt of the transaction.

The owner of a New Imperial and sidecar pays high tribute to the Sandum windscreen. As the result of an accident, the outfit turned a complete somersault, but thanks to the strength of the windscreen and the nature of its construction, the occupant of the sidecar was scarcely hurt.

Books & Maps for Motor Cyclists.

Issued in conjunction with *The Motor Cycle.*

"MOTOR CYCLES AND HOW TO MANAGE THEM."
The standard handbook of the motor cycle.
Price net, 2/6. By post, 2/10.

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Eighth Edition. Price net, 2/-. By post, 2/3.

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With 32 pages of Road Maps. Price net, 2/6. By post, 2/10.

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CURRENT TAT

Times to Light Lamps.

Sept.	14th	.. ..	7.43 p.m.
,,	16th	.. ..	7.43 ,,
,,	18th	.. ..	7.38 ,,
,,	20th	.. ..	7.34 ,,

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

The Paris Show.

October 4th to 15th (inclusive) is the period during which the Paris Show will be open.

Olympia Extensions.

Despite every effort to complete the new wing of Olympia for this year's Motor Show, it was decided last week that the extensions could not be completed in time. The car show, therefore, will be divided between Olympia and the White City.

Race Track for Derby.

A new track is under consideration at Derby, in which the chief person interested is Mr. C. A. Clews, borough surveyor to that town. Professor A. M. Low is being employed as consulting engineer, and we understand that the banking will be made suitable for motor cycle racing, and perhaps also to accommodate light cars.

Silence is Golden.

Both in Leicester and Birmingham courts riders of machines fitted with Villiers engines have been summoned for inefficient silencers. The manufacturers defended the cases, and defendants in both instances were dismissed, the authorities expressing themselves satisfied that there was no cause for complaint.

Silencer Test Case.

In our last week's issue appeared an account of a silencer test by means of Professor Low's audiometer for the purpose of obtaining evidence on behalf of a motor cyclist whose machine, in the opinion of the police, was not properly silenced. The A.C.U. advises that the hearing of the case has been adjourned until the 25th inst.

Silence Danger Zones.

This week's batch of warnings against police activity, incidentally all in the matter of noise, indicate that particular caution is required in Putney High Street, in the Potteries (particularly Trentham), in Northallerton, and around Coventry, Birmingham, and Wolverhampton.

French Speed Trials.

As announced in last week's issue, the speed trials organised by the Moto-Cycle Club de France are to be run on the 23rd inst. on the Avenue des Acacias in the Bois Boulogne, Paris. Entries, which close on the 19th inst., should be sent to the Secretary, The Auto-Cycle Union, 83, Pall Mall, London, S.W.1.

Weybridge Residents Want Brooklands Races.

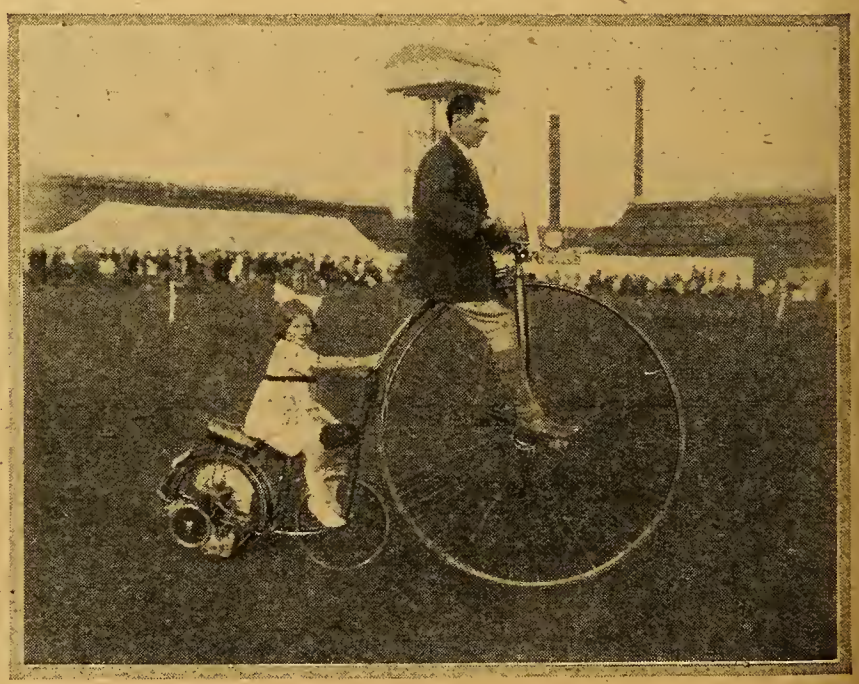
A body of residents in Weybridge is petitioning the B.M.C.R.C. against the abandonment of the 500 Mile Race at Brooklands. The petition is worded as follows: "We, the undersigned residents of Weybridge, having heard of your decision to scratch the proposed 500 Mile Race, hereby express our regret and disappointment, as the abandonment of this race has caused considerable financial loss to the district. We respectfully and earnestly request you to reconsider your decision."

The Gas Attack.

Some cyclists have an annoying habit of pedalling along furiously in the wake of a motor cyclist. A Norton rider advises us that a pumpful of Castrol "R" given to the engine makes an effective "gas screen" which will repel the most determined hanger-on.

New Offences.

For riding a Ner-a-car "hands off" in Shrewsbury, T. O. Mullings, a local motor agent, was fined £5 and his licence suspended for six months. Evidently the Bench did not know that it is often unnecessary to grip the handle-bars to steer safely on the machine in question. But that is not all. It was discovered that the defendant was deaf; and apparently it is because "it was a very dangerous thing for a deaf man to be riding a motor cycle" that such a heavy penalty was imposed. Of course there is no law against deaf people holding driving licences, and the element of danger involved is small.



A QUEER COMBINATION. This amusing "outfit" was entered in a recent comic cycle parade on the Humber Sports Ground at Coventry. Several of these old "penny farthing," or "ordinary" bicycles were entered, but the idea of attaching an Auto-wheel caused the greatest amusement among the spectators

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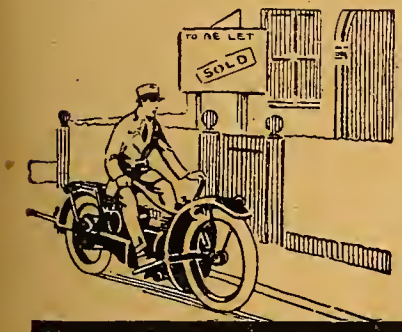
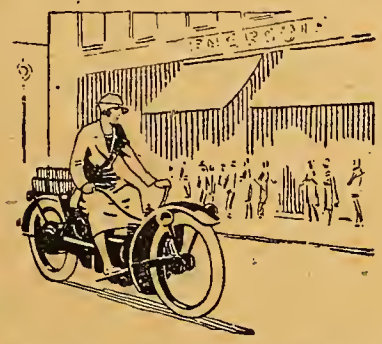
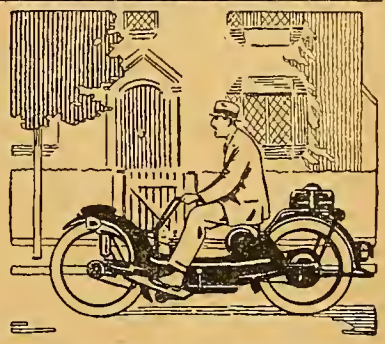
The Doctor needs the Ner-a-Car; so does the housewife when shopping or visiting. The Estate Agent or other professional men need the Ner-a-Car every time they go out on business.







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The 'Referee' Improved Helmet
Gives added protection to the neck, which will be appreciated in cold and wet weather. Cut from selected tan skins, lined warm fleece. Buckle and strap fastening under chin. Neat fitting ear flap that can be rolled. Price, post 4d., **8/6**

The "HENDON" Fur-Trimmed Helmet.
A most comfortable and serviceable helmet, ideal for cold weather wear. Cut from best tan skins, peak and neck trimmed fur. Fits close and snug, and gives good protection to neck. Price, post 4d., **12/6**

The "T.T." Safety Helmet.
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Price complete **32/6** Post free.

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ROYAL RUBY, 1917, lady's model, 2½ h.p., 2-sp., fully equipped, as new..... £32 10
BRADBURY 1913–14, 2½h.p., N.S.U., 2-sp. gear, re-enamelled black and gold, very sound £27 10
CONNAUGHT, 1916, 2¾ h.p., 3-sp., snip £28 0
KINGSBURY, 1922, 2¾ h.p., 2-sp., clutch, all lamps, run under 500 miles..... £35 0
LEA-FRANCIS, 1921, 3½ h.p., M.A.G., 3-sp., cl. and k.-s., Lucas lamps, horn, speedometer, London-Edinburgh gold medal winner, as new, £75 0
READING STANDARD, 1920, 7-9 h.p., comb., dynamo ltg., hood and screen £85 0
HARLEY-DAVIDSON, 1920, 5-6 h.p., comb., Easting windscreen, all lamps & horn £85 0
MATCHLESS, 1920, model H, 2-seater, spare wheel, Easting windscreen £115 0
MATCHLESS, Victory model comb., Lucas dyn. ltg., spare wheel, Easting windscreen £90 0
TRIUMPH, 1921, 4 h.p. comb., Lucas lamps, speedometer, horn, Easting windscreen £110 0
P. & S., 1921, 2¾ h.p., cl. and k.-s., splendid condition £40 0
ALLON, 1921, 4 h.p., 2-sp., cl. and k.-s., lamps and horn, as new..... £45 0
ENFIELD, 1920, 8 h.p., Lucas dyn. ltg., screen, speedometer £105 0
A.J.S., 1920, 6 h.p., comb., spare wheel, just been thoroughly overhauled £105 0
B.S.A., 1917, 4½ h.p., all-chain combination, fully equipped..... £75 0
SPARKBROOK, 1920, 2¾ h.p., 2-sp., all lamps and horn, splendid condition..... £37 10
TRIUMPH, Baby, 2¼ h.p., 2-speed, thoroughly overhauled £30 0
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TRIUMPH, 1922, Ricardo O.H.V., run under 50 miles, soiled only £105 0
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SHEFFIELD-HENDERSON, 1922, Blackburne, O.H.V., 2¾ h.p., spare aluminium piston, 3 weeks old, done 100 miles Cost £110, sacrifice..... £90 0
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SCOTT, 1921, Squirrel, 3½ h.p., Brooklands winner, many special fitments, rare opportunity..... £70 0
NORTON, 1922, Big Four, and Montgomery semi-sports sidecar, fully equipped, in new condition..... £110 0
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NORTON, 1920, BIG FOUR sports, electric lighting, speedometer, long copper exhaust..... £78 0

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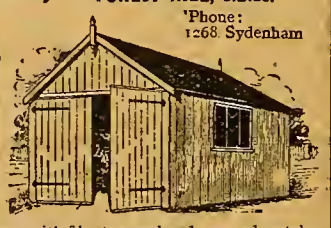
8×	6 ..	7 6 ..	5 3	9	0	0
9×	7 ..	8 0 ..	5 6	11	7	0
10×	8 ..	8 4 ..	5 9	12	19	0
12×	8 ..	8 4 ..	6 0	17	5	0
14×	8 ..	8 7 ..	6 3	21	0	0
16×	9 ..	8 9 ..	6 4	26	0	0
18×	9 ..	8 9 ..	6 4	31	0	0
20×	10 ..	9 0 ..	6 6	36	0	0



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Beardmore.

BEARDMORE 3½h.p., all chain, spring frame, speed; £42/10.—47, Leigh Rd., East Ham. [1798

BEARDMORE PRECISION Light Combination 1921, tax, fully insured, equipped, perfect condition, appearance; £60; offer.—Plester, 71, Wendell Rd., Shepherds Bush. [1716

Beaumont.

BEAUMONT 1921, 2¾h.p. Blackburne, will do 60 m.p.h., Druid check action, Burman close ratio, horn, lamps, Bonniksen, perfect; first £55.—Stuttard, New Park, Harrogate. [1424

Blackburne.

4h.p. Blackburne and Montgomery sports sidecar; £65.—114, Brixton Hill. [1962

BLACKBURNE 4h.p., 3-speed Sturmey hub, new tyres; £25.—17, Heaton Rd., Mitcham. [1463

4h.p. Blackburne Combination De Luxe, 1921, hood, screen, all accessories, as new; London district.—Box 3553, c/o *The Motor Cycle*. [1410

BLACKBURNE 1920 4h.p. Combination, fully equipped, electric lighting, tax paid, condition excellent; £80.—The Layton Garages, 30, Holywell St., Oxford. [1144

1921 Blackburne 8h.p., Sturmey-Archer 3-speed, most beautiful combination, massive sidecar, 4 detachable wheels, absolutely unscratched; owner buying car; cost £250; 72 gns. secures.—67, Fernlea Rd., Balham. [2366

BLACKBURNE 1921 8h.p. Magdyno Combination, complete with horn, speedometer, spare wheel, luggage grid, licensed, screen, etc., a very excellent combination; £120.—The Layton Garages, 30, Holywell St., Oxford. [1145

Blumfield.

5-6h.p. Blumfield, fast, reliable; £25, or exchange good lightweight.—Drew, Webheath, Redditch. [1491

Bradbury.

4h.p. Bradbury, clutch, Bosch, licensed; £23; after 6 p.m.—68, Gordon Rd., Ealing. [1533

£20.—Bradbury combination, 4¼h.p., 2-speed, overhauled.—84, Terrace Rd., Upton Manor, E.13. [1759

BRADBURY 1914 4h.p. Combination, 2-sneed, excellent condition; £25.—7, Exhibition Rd., S.W.7. [2307

BRADBURY 2¾h.p., 1922, tax paid, 2-speed, clutch and kick-starter; £55.—Wauchope's, 9, Shoe Lane, London. [2083

4h.p. Bradbury, 2-speed countershaft, chain drive; bargain, £25, or exchange with lightweight.—"Westwood," Orchard Rd., Belvedere. [1797

1915 4h.p. Bradbury Combination, countershaft, clutch and K.S., all-chain, tyres perfect, taxed, stripped; £35.—103, Moore Park Rd., Fulham. [2068

1922 Bradbury 4h.p., 3-speed, clutch, kick-start, licensed year, fully equipped, indistinguishable from new; 70 gns.; exchanges or deferred.—Edwards, 3, Harrington Rd., South Kensington. [2285

Brough.

SHOWROOM-SOILED.—New 1922 Brough 3½h.p., flat twin Sports model; reduced to £85; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [2270

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1920 B.S.A. 4¼h.p., all-chain drive, lamps, horn, in perfect condition; £55.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [1989

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B.S.A. Combination, 1921, 7h.p., Magdyno, unscratched, spare wheel; £120.—Top bell, 90, Cornwall Rd., North Kensington. [1764

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1922 B.S.A. Combination, Model E, 6h.p., No. 3 sidecar, slightly shop-soiled; £142.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1519

B.S.A. 4¼h.p. 1922, K2, 3 speeds, hand clutch, kick-starter, brand new, slightly soiled; £90.—Eagles and Co., 275, High St., Acton, London, W. [2150

1919 4¼h.p. B.S.A. Combination, all-chain drive, fully equipped, speedometer, windscreen, tyres nearly new; £80.—Spink, 140, New Walk, Leicester. [1922

B.S.A. 4¼h.p. chain-cum-belt and tradesman's carrier sidecar, shop-soiled only; at the special price of £121.—Ratcliffe Bros., 200, Gt. Portland St., W. [1104

1921 B.S.A. Combination, speedometer, Easting, Tan-Sad, lamps, horn, spriog seat, low mileage, original tyres; £95.—55, Poplar Walk Rd., S.E.24. [1439

1917 B.S.A. Combination, 3-speed, clutch, kick-starter, very smart turnout, expensively equipped; sacrifice, 47 gns.—67, Fernlea Rd., Balham. Exchange. [2370

B.S.A. 4¼h.p. 1920 all-chain Combination, lamps, horn, luggage grid, Eastiog, mileage 4,000, good condition, smart appearance; £75.—Kippington Grange, Sevenoaks. [1856

B.S.A. 1921 6-7h.p., with large Canoelet sidecar, electric light, very good condition; £110.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1886

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AT Edwards'.—1921 4¼h.p. B.S.A., fully equipped, No. 3 sidecar, Eastiog screen, perfect condition; 92 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2229

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SUPER-HOT-STUFF, 60 miles an hour, Cotton 19 equipped; £55.—Seymour Hotel, Gloucester. [1

COTTON 2¾h.p., 3-speed, all chain, shop-soil reduced from £76 to £65.—Brockbank, 58, L St., Southport. [2

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1920 Coulson B., 2¾h.p. Blackburne, spring fra perfect.—Chuter, High Rd., Byfleet. [1

COULSON.—About 20 slightly shop-soiled machin £10 reduction on all models.—London Moto 61, Holborn Viaduct, London, E.C. [1

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14 Enfield 6h.p. Combination, tax paid, lamp, screen, speedometer, only wants seeing; £50.—nay, 541, Green Lanes, Harringay, N.8. [1821

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3 GNS.—Royal Enfield 6h.p. Combination, in very good order, equipped, taxed; photograph.—Peter don, Ltd., 110, Upper Richmond Rd., East Sheen. [1068

NFIELD.—Complete range of 1922 models for immediate delivery. Cash. Exchanges. Easy pay- ts. P. J. Evans, John Bright St., Birmingham. [2202

922 Royal Enfield Combination, Model 190, 8h.p., Magdyno, slightly shop-soiled; £136/10.—Mor- and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1520

918 Enfield Combination, 40 gns.; sidecar, beautiful condition, many gadgets ; cash, £75; great ain.—W., 8, St. Michael's Rd., Stoke, Coventry. [1600

NFIELD 1921, 2-stroke, kick-start, lamps, horn, tax paid for year, indistinguishable from new; e 40 gns.—Edwards, 50, Harrington Rd., South sington. [1338

NFIELD 1921 8h.p. Combination, dynamo lighting, Easting screen, speedometer, mirror, spare chain, s, tubes, tax paid; £125.—W.A.H., 23, Melne Rd., Ilford, Essex. [1655

' Edwards'.—1920 Enfield 2¼h.p., 2-stroke, fully equipped with lamps, horn, and speedometer, llent condition; 35 gns. Deferred payments and anges.—101, Great Portland St., W.1. [2222

' Edwards'.—1919 3h.p. Enfield and sidecar, fully equipped with lamps, horn, speedometer, etc., n seat, tax paid for the year; 42 gns. Deferred ents and exchanges.—101, Great Portland St., [2223

21 Enfield Combination 8h.p., Vickers engine, mechanical lubrication, lamps, speedometer, windscreen, licensed, in splendid condition; £95, ar offer.—Hucklebridge, 133, Sloane St., Chelsea, [1839

21 Enfield 8h.p., Vickers engine, Lucas Magdyno lighting set, Watford speedometer, front and windscreens, new hood and cover, tax paid, con- perfect; price £125.—Bass, 428, Hackney Rd., on, E. [1402

16 Enfield 3h.p. Twin, M.A.G. engine, 2 speeds, clutch, appearance and mechanical condition as excellently equipped; any trial; first reasonable or exchange.—Bryant, Milton Villa, Sterne St., erd's Bush. [2538

21 8h.p. Enfield Combination, splendid condition throughout, windscreen, speedometer, : bargain, £105, or near offer; buying car. 6 o'clock.—Hennig, 60, Thornbury Rd., Isle- t, Middlesex. [1430

22 Enfield-Vickers Combination, electric lighting, speedometer, horn,-tax paid, hood, screen, and urtains, etc., etc., only done 150 miles, absolutely atched, and guaranteed; accept £135, or near exchanges.—41, The Grove, Finchley. 'Phone: [1816

FIELD 8h.p. Combination, Magdyno lighting, aint and tyres excellent condition, mechanically present owner since new, tax paid, insured demonstration within 100 miles at small write, best offer over £90.—Nelson, Crescent e. Ramsgate. [1950

FIELD Specialists.—Wanted, your present motor cycle in part exchange for any new model from No waiting. Distance no object. Best prices for second-hand machines. Deferred pay- s. (See column advertisement).—Bumber's, 2. ank St., Southport. 'Phone: 607. [5159

CHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Enfield 1916 combination, 8h.p. J.A.P., d, tax paid, all on, £80; Enfield 1919 com- on, 8h.p. J.A.P., 2 speeds, all on, £95; 8h.p. 922 Royal Enfield combination, £140; dynamo ng model, £158; 2¼h.p. model, £55; with kick- r, £57; your old machine taken in exchange and d as first payment down, remainder in 12 equal nthly payments or more. [2090

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26×2	Elite, 3-rib., ex. heavy ..	24/6	38/6
"	Englebert, rubber studded	17/6	39/–
26×2¼	Palmer, cord, heavy	38/10	47/9
"	Palmer, cord	32/6	43/4
"	Bates, spec. hvy. wired-on	32/6	36/6
"	Dunlop, heavy, rub. stud.	27/6	37/3
"	Bates, spec. heavy beaded	27/6	40/–
"	Michelin, steel stud	20/–	—
26×2½	Palmer, cord	34/3	45/8
"	Dunlop, heavy rub. stud..	29/6	41/6
"	Hutchinson, T.T.	22/9	49/6
26×2¼	Goodyear, all-weather ...	38/6	—
26×2¼	Palmer, cord	36/–	48/–
26×2½	Clincher de Luxe, heavy .	25/–	28/3
26×3 or 27×3½	Ajax, rub. non-skid, for 650×65 or 700×80 rims	42/6	47/6 —
28×2½	Clincher, Dreadnought ..	32/6	—
28×3	Clincher, Dreadnought ..	57/6	70/–
"	Palmer, cord, heavy	53/–	71/6
"	Goodyear, all-weather ...	47/6	65/3
"	Palmer, cord	47/3	63/–
"	Ajax, rubber non-skid ...	42/6	61/–
"	Goodrich, safety tread ...	37/6	—
"	Rodace, rubber non-skid .	35/–	—
650×65	Goodrich, safety tread ...	40/–	67/6
"	Clincher de Luxe, ex. hvy.	30/–	64/6
"	Soly, rubber non-skid ...	21/6	63/–
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MOTOR CYCLES FOR SALE.

Enfield.

1921 Enfield Combination, Magdyno, Easting, etc. perfect condition; £95; cash, exchange, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7636

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [6300

Excelsior.

EXCELSIOR, 2-speed, Villiers engine, new, shop-soiled; £46.—Frank Eele, Thame. [1400

EXCELSIOR 5-6h.p. Combination, 2-seater body, all-chain drive, 3-speed, C.S., electric lighting set; £70.—Redhead, 42, Wellingboro' Rd., Northampton. [1571

EXCELSIOR-VILLIERS 2-stroke 1920, 2-speed, Cowey speedometer, all on, perfect condition, tax, insurance paid.—63, Brooke Rd., Walthamstow, E.17. [2004

PHOTOGRAPH Free.—British Excelsior 6h.p. Combination, 3-speed countershaft, clutch, kick-start, good order; 52 gns.; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1066

Fafnir.

3½h.p. Fafnir, m.o.v., enclosed Bosch, B. and B., Druid forks, tax; £9/10.—P. Willcocks, Datchet, Bucks. [1845

F.N.

F.N. 5-6h.p. 4-cyl., good running order; £12.—17, Heaton Rd., Mitcham. [1462

5-6h.p. F.N., 2-speed, H.C. clutch; first £20.—106A, Great Moor St., Bolton. [1855

1922 4-cyl. F.N. Combination, nearly new; bargain, £115.—59, Gregory Boulevard, Nottingham. [1730

F.N. 2¼h.p. 2-speed, clutch; £18; exchange 3½h.p. Triumph.—Bingham, Clayton Wickham, Hassocks. [1532

F.N. 4-cyl. (m.o.v.), 2-speed, clutch, good condition and running order; trial by appointment; what offers?—2, Warham Rd., Harringay, London. [1650

F.N.'s.—8h.p. new type, overhead valves, £125; with sidecar, £160; 3h.p., new type, overhead valves, with kick-starter, hand-controlled clutch, and 2-speed gear, £72; a 2½h.p., 2-speed, hand-controlled clutch and kick-starter, side valves, £55.—Wanchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. Easy terms and exchange. [2091

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1553

Harley-Davidson.

1919 Harley Combination, overhauled May last, perfect condition.—53, Sutherland Av., Maida Vale. [1440

1919 Harley Combination, electric model, speedometer, all accessories, taxed; £75.—K.J. Motors, Bromley. [1579

1919 Harley Solo, 7-9h.p., K.S., all on, mechanically perfect, also enamel; £65.—Saw, Mill Rd., Chinnor. [1416

1915 Harley-Davidson Combination, 7-9h.p., 3-speed, Easting, lamps, good order; £60.—97, Chesnut Rd., Plumstead. [1628

HARLEY Combination 1918, overhauled makers, new tyres; £70; exchange solo.—67, Burntwood Lane, Earlsfield. [1901

HARLEY Combination, 1921, electric model, as new; £110.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1958

1919 Harley 7-9h.p. Combination, excellent condition; bargain, £95; any evening.—Jones, 44, Penn Rd., Holloway. [1397

1915 7-9h.p. Harley Combination, sound running condition guaranteed; £50; no offers.—69, Queensland Avenue, Coventry. [1498

7-9h.p. Harley Sports, Montgomery sidecar, electric, gas lighting; £115, or offer; must sell.—Harmer, 2, Church St., Kingston. [1805

1920 Harley Electric Combination 7-9h.p., fully equipped, perfect condition £85.—4, North Side, Wandsworth Common. [1972

HARLEY-DAVIDSON Combination, K magneto model, windscreen, hood and lamps, tax paid; £65.—66, Gt. Percy St., E.C. [1514

1918 Harley-Davidson, 7-9h.p.; Montgomery Sidecar, overhauled, condition perfect, £65.—25, Flanders-mansions, Bedford Park, W. [2269

53 GNS.—Harley-Davidson 1917 model 7-9h.p., clutch, 3-speed, kick-starter; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2411

HARLEY-DAVIDSON Combination 7-9h.p. 1914, disc wheels, tax paid; £60; take lightweight part exchange.—Johnston, 44, New Walk, Leicester. [1550

HARLEY-DAVIDSON Combination, brand new and not even registered, fully equipped, lamps, speedometer; £135.—Gill, 11, Craven Park, Harlesden. [2263

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue b20
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY 7-9h.p., fully equipped, perfect, only wants seeing; 70 gns., or exchange Indian Scout or similar.—26, Addison Av., W.11. Park 379. (P) [2073

1919 Harley Combination, mag. model, 50 gn. sidecar, overhauled, renovated, as new; £90 solo part.—The Haven, 120, Sutherland Rd., West Croydon. [1946

55 GNS.—1916 Harley-Davidson Coachbuilt Combination, splendid condition, not W.D.; exchange countershaft Triumph considered.—1, Priory Rd., Kew. [1729

1921 Harley-Davidson Combination, new Coupette sidecar, electric model, guaranteed; £120; exchanges.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2162

HARLEY Combination 7-9h.p. 1915, 3-speed, clutch, K.S., electric lighting, tax paid, fully insured, any trial, accessories; £55.—44, Clissold Rd., Stoke Newington, N. [1673

HARLEY Combination 1919, re-enamelled, overhanled April, dynamo lighting, equipped, spares; £80.—Smith, c/o Burns, 3, Burton Mews, South Eaton Place, S.W.1. [1668

HARLEY-DE-LUXE Combination, electric model, cost £240 last year, mileage under 8,000, tax paid, insured till March; accept £130, offers.—187, Westbury Ave., Wood Green. [1663

HARLEY-DAVIDSON 1921 (June) 7-9h.p. electric-de Luxe Combination, disappearing hood, triplex screen, excellent condition; no reasonable offer refused.—238, High St., Acton, W.3. [1669

HARLEY 1922 7-9h.p. Solo, full electric equipment, many extras, perfect condition and appearance; £100, or easy payments if desired; will ride 50 miles to purchaser.—Watson, 16, Silverdale, Sydenham. [1503

HARLEY Flat Twin late 1920 Combination, speedometer, lamps, tools, etc., in perfect condition and very smart, recently decarbonised; £85.—Roberts, 291, Green Lanes, Finsbury Park. 'Phone: North 3270. [1684

HARLEY Flat Twin Combination, 3-speed, clutch, K.S., speedometer, Klaxon, lighting set, lovely sidecar, tyres unpunctured, new last year, perfect, faultless; bargain, £78 cash.—100, Station St., Burton-on-Trent. [1535

HARLEY-DAVIDSON 1919, magneto and separate dynamo, C. and M. sidecar, just overhauled, very good appearance, tyres good, very seldom used; £80.—37, Daleham Mews, Hampstead. 'Phone: Hampstead 4608. [2002

THIS Week's Bargain.—1921 electric model 7-9h.p. Harley and Henderson Elite sidecar, fully equipped, speedometer, in excellent condition.—Youngs, 2, 3, and 5, The Parade, High Rd., Kilburn, London, N.W.6. [2352

1921 Harley-Davidson 7-9h.p. Combination, electric model, Mills-Fulford bulbous sidecar, Easting screen, speedometer, small mileage, spares, tools, tax and insurance paid, in beautiful condition; £128.—A. Southorn, 44, Abbeville Rd., S.W.4. [1959

1920 Harley 7-9h.p. Combination, electric model, elaborately equipped, separate switchboard, electric horn, discs, hood, screen, child's seat with triple Triplex screen if required, outfit perfect throughout and guaranteed; £85, or exchange.—51, Upper Richmond Rd., East Putney. [2387

HARLEY Combination, late 1921, 7-9h.p., Grindlay, top bonnet aluminium, silver mascot, screen, discs, speedometer, watch, mirror, electric lighting and horn, spot light, gas lighting, 3 new Goodyear spares, etc., taxed, photo, cost over £250, illness cause surrender; £140.—Taylor, Lansdowne, Bournemouth. [1543

NEWLY Enamelled, lined and plated, 1917 Harley-Davidson combination, was electrical model, guaranteed not W.D., unused 3 years, recently fitted new Bosch, Renolds chains, valves, springs, rings, fork rockers, and heavy tyres, 1921 dimmer head light, Easting Royal screen, equals new macbine at half price; £85, genuine bargain; any trial; owner bought car.—96, Bedford Rd., East Finchley, N.2. [2309

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7667

Hazlewood.

NEW 1921 Hazlewood Combination, 5-6h.p. twin J.A.P.; £90; exchanges.—Lacey, c/o Snipe, 330, Euston Rd. [2290

Henderson.

1920 Henderson Special Sports Solo, absolutely as new; £85.—114, Brixton Hill. [1963

1920 Henderson Combination, discs, dynamo, speedometer; £110.—Willson, Southampton St., Farnborough. [2021

HENDERSON Combination, just overhanled, splendid condition; sacrifice, £45.—164, Tylecroft Rd., Norbury. [1782

ROBERTSON'S Motors, Ltd., the original Henderson importers, offer the following: 1920 Standard combination, all accessories, tax paid, £115; 1915 Standard, with luxurious sidecar, speedometer, and accessories, £65.—157b, Gt. Portland St., W.1. [5937

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MOTOR CYCLES FOR SALE.

Henderson.

ROBERTSONS Motors, Ltd.—1922 de luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [23

HENDERSON, 4-cylinder, 2-speed Combination, overhauled, equipped; £49; Lightweight up £35 part.—3, Norbury Parade, Norbury, S.W. [17

1921 Model K Henderson Combination, single double-seater at will, small mileage, reverse gear, dynamo; cost £300, accept £135.—307, Camden Rd., Holloway, N.7. [23

145 GNS.—Henderson 1921 ¾ Elite Combination, 12h.p., 4-cyl., side valvee, 3 speeds, reverse, model, dynamo lighting, licensed, as new throughout, exchanges.—12, Cornwall Mews, Gloucester Rd., S.W. [24

Hobart.

1921 Hobart-Villiers, brand new, shop-soiled, £39/10.—Shepherd, Enfield Highway. Tel. Waltham Cross 31. [09

Humber.

1922 4½h.p. Twin Humber, lamp set, speedometer, Tan-Sad, all as new; £90; snip.—Slade, Penn, Bucks. [20

1922 4½h.p. Sports Humber, low mileage, fast as new, tax paid, insured; £86.—14, Wayte St., Reading. [14

£19.—1913 2¾h.p. V-twin Humber, copper exhaust, D.R. bars, Bosch, tyres good.—Warner, 55, Dresstead Rd., Streatham, S.W. [15

HUMBER Combination 3½h.p. Twin, 1919 model, accessories, in excellent condition; £50.—4, Rugby Mansions, Addison Bridge, W.14. [18

HUMBER 1922 4½h.p. Flat Twin Sports, full equipped, excellent condition, as new; £80, or near offer.—51, St. Dunstan's Crescent, Worcester. [15

BARGAIN, £50.—Humber, water-cooled, combination 3½h.p., 3-speed, 1915, Mills-Fullford sidecar, recently completely overhanled, owner buying car. Apply 96, Lawrence Hill, Bristol. [14

HUMBER Flat Twin water-cooled 6h.p. Combination, fully equipped, engine in the pink, any trial or examination; £75, or terms.—Bunting's Motor Exchange, Wealdstone, Middlesex. [21

HUMBER 6h.p. water-cooled Flat Twin Combination, dynamo lighting, hood, triplex windscreen, new condition, any trial, mechanically perfect; £90.—Cook, 16, Wingfield St., Gorse Hill, Stretford, Manchester. [18

HUMBER 1922 4½h.p. Flat Twin and coachbuilt sidecar, completely equipped, lamps, horn, licence, Easting windscreen and Benniksen, not done 1,000 miles, unscratched; bargain at £115.—The Layton Garages, 30, Holywell St., Oxford. [11

Indian.

INDIAN 2-speed twin combination; £15, bargain.—7, Exhibition Rd., S.W.7. [23

INDIAN 7-9h.p. 1915, 2-speed, excellent order; £2.—17, Henton Rd., Mitcham. [14

INDIAN Scout, 1920, Bonniksen, new condition; £6.—4, Hanover St., W.1. (P) [92

FOR Indian Chiefs, Standards, and Scouts, try Horwills, 42, Bridge St., Chester.

INDIAN Specialists.—For riders who do their own decarbonising, send for one of our special Indian cylinder spanners, 1916 to 1922 models; 2/6, post free. [822

£35.—7-9h.p. Indian, 2-speed, in good order, ride away.—Thomas, 84, Tachbrook St., S.W. [14

7-9h.p. Indian, sporty clutch model, semi-T.T. bar, discs, good order; £30.—Ventham, Leatherhead. [160

£25.—1914 T.T. Indian, clutch model, all on, fast and in good condition.—Long, Rectory, Wokingham. [166

1919 7-9h.p. Indian, 3-speed, kick-starter, clutch, excellent condition, tax paid; £58.—Ventham, Leatherhead. [160

1916 2¾h.p. Indian, 3-speed, clutch and kick-start, tax paid; £22.—Prospect House, Staples Hill, Freshford, nr. Bath. [147

1914 Spring Frame Indian, 2-speed, kick-start, equipped, as new; £30; exchange.—4, Thornton St., Kempston, Bedford. [173

1919 Indian Powerplus Combination, 3 speed, clutch, lamps, Easting, perfect; £65.—Leith House, Oakdale, Weybridge. [203

INDIAN Combination, 7-9h.p., spring frame, new sporting sidecar, splendid condition; £65, or offer.—Lynedock, Margaretting, Essex. [232

1921 dynamo lighting Indian Combination, big valve model, absolutely unscratched; bargain, 73 gns.—19, Valnay St., Tooting. [235

INDIAN, clutch, K.S., speeds, overhauled, new tyres, new Easting, new carburetter, Swan touring; £45; exchanges.—27, Vernon Rd., Luton. [169

1921 Indian Scout, dynamo lighting, speedometer, etc., tax paid; £85; exchanges.—Homac's, 24, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [214

MOTOR CYCLES FOR SALE.

Indian.

INDIAN Standard Combination (genuine 1922), electric model, speedometer, windscreen, Ace discs, mileage 2,500; £140.—23, Hamilton Rd., Reading. [1656

7-9h.p. 2-speed, clutch, Indian spring frame, new Dunlops, engine overhauled, tax paid, B. and B., Bosch; bargain, £39.—17, St. Andrew St., Hertford. [1714

1922 Indian Scouts.— £30 under list price; exchanges arranged; new and second-hand.—Write, "Parwood," Indian Agents, 89, East Hill, Wandsworth. [1987

1920 Indian Powerplus, electric, solo, 7,000 miles, every bearing, chains, sprockets, renewed, re-enamelled; £78.—Wilkinson, 160, Shirebrook Rd., Sheffield. [2024

1918-19 Powerplus Indian Combination, electric lighting, licensed, 3-speed, kick-start, spring frame; genuine bargain, £45; exchanges.—89, East Hill, Wandsworth. [1986

1916 Indian 5-6h.p. Combination, 3-speed, K.S., electric, Easting, hand and foot clutch, very fast, perfect; £55; or exchange lower power.—Sanders, Stratford Rd., Hendon. [1357

AT Edwards'.—1922 4h.p. Indian Scout, gear-drive, speedometer, Lucas horn, tax paid, perfect condition; 79 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2227

INDIAN 7-9h.p. Combination, October, 1914, spring frame, 2-speed, clutch, kick-starter, lamps, tools, good order, must sell through illness; £36.—G. Sims, 22, Cotteoham Rd., Holloway, N.19. [1717

1919-1921 Indian Powerplus Combination, speedometer, tyres nearly new, spares, etc., will ride 100 miles to view; £64.—Ayers, 9, Johnson St., Notting Hill Gate, London. 'Phone: Park 3447. [2237

INDIAN Late 1920 Combination, spring frame, Mill-Ford de Luxe sidecar, dynamo lighting, electric horn, speedometer, Easting, luggage grid, fullest equipment possible; bargain, £98.—104, Mortlake Rd., Richmond. [2054

£110.—1921 Indian standard 7-9h.p., dynamo, big valves, Mills-Fulford De Luxe combination, new tyres, guaranteed perfect, windscreen; cost £240; speedometer, 1922 tax; bargain.—Box 3584, c/o *The Motor Cycle*. [1444

1922 Indian Chief and Princess Sidecar Combination, electrically equipped, only used in A.C.U. Six Days' Trial, in which event it gained a gold medal; £150, an exceptional bargain.—Hendee Manufacturing Co., 366, Euston Rd., N.W.1. [1382

INDIAN 7-9h.p. Powerplus, 3-speed, kick-starter, double-seated sidecar, Easting, back electric, powerful gas headlight, all new 1921, done 1,000, climb anything, speed 3 or 60.—Apply 17, Dornton Rd., Balham, or 46, York Rd., New Southgate. £90 or offer. [1390

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7668

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indina spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [6301

James.

JAMES 3½h.p. Twin Sports, fast, as new; bargain, £39.—229, Maryvale Rd., Bournville. [1912

BRAND new James 2-stroke, list price £60; reduced to £52.—Whitby's, 7, The Vale, Acton, W.3. [2248

JAMES 3½h.p. Twin 1920 model; £40; licensed for year.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [2191

£30.—4½h.p. James, 3-speed, countershaft gears, clutch, kick-starter, good running order.—King, Egrove, Oxford. [1892

NEW 1922 3½h.p. Sports Model James; list £105; our price £85.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [1887

JAMES 2-stroke, 2-speed, shop-soiled only, clutch and kick-starter; £54.—Ratcliffe Bros., 200, Gt. Portland St., W. [1102

JAMES 7h.p. Combination, shop-soiled only; at the special price of £144.—Ratcliffe Bros., 200, Gt. Portland St., W. [1103

JAMES 3½h.p. Sports, shop-soiled only; at the special price of £94.—Ratcliffe Bros., 200, Gt. Portland St., W. [1101

FAMOUS James.—Bargains.—1922 shop-soiled 4¼h.p. Combination, £121/10; 3½h.p. Sports Twin, £94/10; 2¼h.p., 2-speed, clutch, and kick-starter, £54; 2¼h.p., plain 2-speed, £49/10.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [1527

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Brand new 1922 models with makers' full guarantee. Slightly shop soiled.

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£185	8 h.p. **B.S.A.** Combination	£140 0
£68	2¾ h.p. **DOUGLAS,** 2-speed	£59 10
£82	2¾ h.p. **DOUGLAS,** 3-speed	£72 0
£115	3½ h.p. **DOUGLAS** Sports	£100 0
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£58	2¼ h.p. **LEVIS,** Model S, 2-speed	£50 0
£73	2¾ h.p. **NEW IMPERIAL,** 3-speed	£63 0
£115	3½ h.p. **NORTON,** Model 16H	£90 0
£120	**BIG FOUR HORTON,** 3-speed	£98 0
£39 18s.	2½ h.p. **O.K. JUNIOR**	£32 10
£130	4½ h.p. **P. & M.** Combination	£120 0
£105	4½ h.p. **QUADRANT** Combination	£96 0
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£65	2¼ h.p. **VELOCETTE,** Model E2	£59 0
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£73	2¾ h.p. **RALEIGH,** 3-speed	£64 0
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272-274, Gt. Western Rd., GLASGOW.

MOTOR CYCLES FOR SALE.

James.

1919-20 5-6h.p. James Combination, fully equipped, mechanical and appearance as new; £88.—Long, 144, King Edward Rd., S. Hackney. [2323

1919 6h.p. James Combination, tax paid, new Easting screen and accessories, overhauled, perfect order; £70.—81, Warwick Rd., Banbury. (D) [1490

JAMES Combination, 4¼h.p., late model, countershaft, 3 speeds, clutch, kick-starter, lamps, hood, licence; £37.—63, Solon Rd., Brixton. [1933

JAMES 1920 de Luxe Combination, perfect running and condition, tax and insurance paid; £78.—26, Webbs Rd., Battersea Rise, S.W.11. [1941

JAMES 1922 3½h.p. Twin, sports model, exceptionally fast machine, in excellent condition; £80.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1878

6h.p. James Combination, late 1919, screen, lamps, etc., very small mileage, fine condition, mechanically perfect; bargain, £80.—Hall, Thornton Rd., Stoke-on-Trent. [1356

JAMES 5-6h.p. Combination, with lamps, horn, speedometer, Orto screen, hood, in new condition, mileage 1,200; £85.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1881

1919 4¼h.p. James Combination, 3-speed, clutch, kick-start, all-chain, lamps, horn, speedometer, just repainted, competition winning machine, specially tuned; 70 gns.—"Elmleigh," Teaterden Grove, Hendon. [1664

SHOWROOM-SOILED Only.—New 1922 7h.p. De Luxe James Combination, detachable wheels, windscreen, child's dickey seat; reduced to £134, exceptional bargain.—Premier Motor Co., Aston Rd., Birmingham. [2272

OUR 1922 demonstration 7h.p. James Combination for sale, a genuine bargain, complete with spare wheel, Lucas dynamo lighting, Lucas electric horn, legshields, £10 insurance policy, tax paid, actually run 524 miles, magnificent outfit, cost in all £204; price £148.—Whitby's, James Service Depot, 7, The Vale, Acton, W.3. [2247

Spare Parts:

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5079

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

J.E.S. Lightweight, very nice condition; first cheque for 8 gns. secures.—67, Fernlea Rd., Balham. [2362

BARGAIN.—J.E.S. lightweight, first-class condition; £10.—98, Scarboro St., West Hartlepool. [1505

Kingsbury.

KINGSBURY 1921 2¾h.p., 2-speed, all chain, good condition; 33 gns.—Lewis, 46, Bellevue Rd., bury. [1508

1921 Kingsbury, 2-speed Enfield gear, list price £63; sacrifice, 29 gns.—67, Fernlea Rd., Balham. Exchange. [2360

Lea-Francis.

1916 Lea-Francis Combination, 3½h.p. twin J.A.P., 3-speed, clutch, K.S.; £48.—114, Brixton Hill. [1965

LEA-FRANCIS, 3¼h.p. J.A.P., 2 speeds, splendid condition; £45.—Curtis, 66, Colvin Rd., East Ham. [1639

NEW 1921 Lea-Francis Combination 3½h.p., 2-speed; £70; exchanges.—Lacey, c/o Snipe, 330, Euston Rd. [2291

LEA-FRANCIS 3½h.p., kick-start, 2-speed, all enclosed chain drive, band clutch, good as new; £35.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [1755

Levis.

PREMIER Motor Co. for 1922 Levis.

BARGAINS in Showroom-soiled 1922 Models.—Model S, 2-speed, clutch, kick-start, reduced to £48; 2¼h.p. Popular, single gear, £40; model G2, kick-start, 247 c.c., reduced to £53; exceptional value; write for stocktaking clearance sale list; deferred payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [2273

GIBB, Gloucester, Sole District Agent for Levis; immediate delivery from stock. [7545

LEVIS 1922, 2-speed, kick-starter, fully equipped, licence paid; £60.—Frank Eele, Thame. [1401

1921 2-speed Levis, mechanically perfect; £26.—Grimes, 18, Brunton Place, Bond St., W.1. [2056

LEVIS (single), excellent order, taxed; £20; exchange £6 for Douglas.—Macfadyen, Boghead, Arbroath. [1457

LEVIS Popular, all on, excellent mechanical condition, taxed; £22.—Sage, 36, Grenard Rd., Peckham. [1574

LEVIS 2¼h.p., lamps, horn, good running order, taxed, best offer over £16, gift.—Ambrose, Post Office, Shaftesbury. [1547

MOTOR CYCLES FOR SALE.

Levis.

LEVIS 1919 2¼h.p., excellent condition, fully equipped, tax paid, photograph; £22.—128, London Rd., King's Lynn. [1705

1922 Levis 2¼h.p., Sturmey-Archer 2-speed, clutch, slightly soiled, horn, tax paid; for quick sale, £50.—Bulgarelli, Manchester Rd., Swindon. [1849

1922 Levis, 2 speeds, Sturmey, hand clutch, for immediate delivery, shop-soiled, brand new; £55; exchanges, or deferred 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2139

LEVIS New 1922 Models.—2¼h.p. Popular, £48; 2¼h.p., 2-speed and clutch, £58; Levis sports model, £51; all models supplied on easy terms and exchange, one-fifth down.—Wauchope's, 9, Shoe Lane, London. [2092

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

Lincoln-Elk.

19 GNS., sacrifice, must sell.—Lincoln-Elk 3½h.p., 2 speeds, lamps, overhauled, newly enamelled.—20, Dalby Rd., East Hill, Wandsworth. [1827

Lloyd.

LLOYDS 4h.p. Combination, tax paid; £23.—31, Somerford Grove, Park Lane, Tottenham. [2023

L.M.C.

L.M.C. 6h.p. Twin, suspension frame, brand new, never been ridden; original cost, £150; great bargain at £65, for cash only. New sidecar to fit if required.—Mebes and Mebes, 144, Gt. Portland St., W.1. 'Phone: Langham 2230. [7329

Martinsyde.

1921 Martin-Jap 2¾h.p., 2-speed, clutch, fast, reliable, small mileage; £37.—Dawson, 3, Springfield Rd., Kingston-on-Thames. [1831

1922 Martinsyde Combination, 6h.p., slightly shop-soiled; £128.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1521

ROBERTSON'S Motors, Ltd., are the London Martinsyde Service Agents; trial runs arranged; spares stocked.—157b, Gt. Portland St., W.1. [5929

MARTINSYDE Combination, 6h.p. twin, new August, 1921, well kept, tyres nearly new, hood; accept £105, or near offer.—Pile, Tetford, Horncastle. [1423

6h.p. Martinsyde Combination, dynamo lighting, hood, screen, electric horn, fast, reliable, taxed; £80, or near offer; genuine bargain; owner bought car.—Tune, 34, Sussex Av., Ashford, Kent. [2053

LET your Motto be: "A Martinsyde for me." Nothing better made, finest value for money; cash, exchange, or deferred payments.—In stock at the Service Depot, Marlborough Motor Works (The Motor House), 20, Finchley Rd., N.W.8. [9583

THE three successful Martinsyde Competition Combinations are now for sale. Condition is better than new. Can be seen and tried at the works. Price includes special sporting body complete with storm apron, spare wheel carrier, and spare wheel. Offers considered over £160.—Martinsyde, Ltd., Maybury Hill, Woking, Surrey. [1619

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones' Garage, The Broadway, Muswell Hill, London, N.10. [0918

Massey-Arran.

MASSEY-ARRAN 1922, 350 c.c. J.A.P., supersports, special competition engine, close ratio gear, speed and power marvellous, all on; £65.—Brown, Pine Cottage, Downe, Kent. 'Phone: Bromley 664. [1975

Matchless.

MATCHLESS, all models; free delivery to any address.—Gibb, Northgate, Gloucester. [7548

8h.p. Matchless-Jap, 1,000 miles; bargain, £130, nearest; complete.—82, Market St., Colne. [1746

MATCHLESS 8h.p. Combination, 2-speed, K.S., equipped; £38.—17, Heaton Rd., Mitcham. [1464

7-9h.p. Matchless Combination; £75; offer, quick sale; genuine.—22, Queen's Rd., Basingstoke. [1582

1921 model H. Matchless-M.A.G., dynamo lighting, hood, screen, good tyres, taxed; £90.—12, Ditton Rd., Surbiton. [1578

1922 Matchless, all models, immediate delivery; cash exchange or easy terms.—The Agent, Sam. E. Clapham. 'Phone: Greenwich 751. Also for

A.J.S., Beardmore, Connaught, Chater-Lea, Douglas, Edmund, Economic, F.N., Horley, Hobart, Hazlewood, James, Levis, Monopole, McKenzie, P. and M., Royal Ruby, Rex-Acme, Rudge-Raleigh, etc. All makes light cars.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4933

1921 8h.p. Matchless Combination, spring frame, detachable wheels, spare, dynamo lighting; perfect; £139.—Gooch, Bootmaker, Thetford. [2043

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IF YOU WILL kindly let us know the type or make of machine you require, and approximately how you wish to pay for same, we shall be only too pleased to give detailed particulars of a suitable one, and a definite quotation.

REMEMBER, Deposit required is one-fifth only, and the balance—while you ride—in 12, 15 or 18 monthly payments. Bonus given for regular payment.

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289-293, HIGH HOLBORN, LONDON, W.C.1.

MOTOR CYCLES FOR SALE.

Matchless.

£65.—Matchless combination, 7-9h.p. M.A.G. engine, 3 speeds, countershaft, double sidecar, beautiful order; exchanges.—406, York Rd., Wandsworth. [1981

£130 Buys the Latest Matchless Outfit, cash or payments; also we have 1921 and 1922 second-hand bargains.—Knight's, 126, Upper Tooting Rd., S.W.17. [0769

MATCHLESS Touring Model J Combination at 1923 price (£130); exchanges, deferred; finest value on market.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [9167

TASSELL, 1a, Bloomfield Rd., Plumstead, for Matchless Combination; deferred payments; spares of all dates; trade supplied where agents not appointed. [2241

1921 Matchless 2-seater Combination, M.A.G., spare wheel, hood, screens, lamps, horn, shields, perfect condition; 140 gns.—Hancox, 74, King St., Belper, Derbyshire. [1398

1920 Matchless Combination, J.A.P., Magdyno, all extras, fixed complete; £95; evening appointments only.—Colbron, 1, Windsor Rd., Forest Gate, E.7. [1752

MATCHLESS 1920 (late), model H, Magdyno combination, thoroughly overhauled and renovated, as new; bargain, £115.—The Layton Garages, 30, Holywell St., Oxford. [1150

MATCHLESS.—The advanced 1923 Model J Combination, the World's Best, at £130, complete, immediate delivery. Cash or easy terms.—Sam E. Clapham (Motors), Greenwich. [2279

MATCHLESS Combination, 8h.p., 2-speed combination, lamps, horn etc., overhauled, good running order; £40; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5545a

1922 Matchless 2-seater, Magdyno, spare wheel, speedometer, 2 screens, hood, electric horn, legshields, sidecar step, 55 miles per gallon 3 up, mileage 2,000; cost £220 last March; accept £160.—24, Sandby Green, Well Hall, S.E.9. [2433

8h.p. Matchless-M.A.G., almost new, just run in, Magdyno lighting, electric horn, bulb horn, speedometer, Tan-Sad, hood, all complete, elaborate turnout; giving away, £160; cost £230.—Willoughby, Decorator, Wolverhampton. [1712

MATCHLESS Combination, August, 1921, licensed December 31st, M.A.G. engine, spare wheel, windscreen, all accessories, perfect order throughout, privately owned; £135.—It can be seen at Down St. Garage, Piccadilly, W.1, at any time. [0913

1922 Matchless Combination, H2, electric lamps, speedometer, hood, screen, spare wheel, year's tax paid, cost over £200, new last month; selling through accident; best offer over £150; evening appointments only.—Barnett, 37, Marquess Rd., N.1. [9228

LATE 1920 Model H Matchless, spare wheel, Lucas Magdyno lighting, fitted with Matchless patent front rim brake, electric horn, legshields, Sandiog windscreen, perfect in detail, used week-ends only; £100, or very near offer.—Chemist, 137, Woodlands Rd., Ilford. [1927

NEW 8h.p. 1922 Matchless Combination, 2-seater model, spring frame, £187; 8h.p. standard model, £170; sports model, £160; easy payments, one-fifth down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [2093

MATCHLESS Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5164

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lea Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [5669

Spare Parts:

MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

McKENZIE; £25; from makers fortnight, perfect condition, climbs Welsh hills, accessories.—MacMunn, Tiptree Hall, Essex. [2355

Metro

1920 Metro-Tyler 2¾h.p. Sports Model, single-speed, in perfect order, tax paid; £27/10.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2138

Middleton.

MOTOR Cycle, the celebrated Middleton 2h.p., 2-stroke, 100 miles to gallon, 26in. wheels, chain-cum-belt drive, licence paid, new in June last, fully guaranteed; approval willingly; £30.—L.Y., 71, Church Rd., Richmond, Surrey. [1383

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MOTOR CYCLES FOR SALE.

Minerva.

£6.—Minerva 2h.p., ride away; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [2117

MINERVA 2¾h.p., just overhauled, splendid condition, licensed; £15.—31, Stonhouse St., Clapham. [2003

Monarch.

1921 Monarch-Villiers, 2-speed, clutch, kick-start, equal to new; £32/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [1587

Moto-Reve.

MOTO-REVE 2¾h.p. twin magneto, lightweight; £10.—158, Gordon Rd., Kingston-on-Thames. [1701

Spare Parts:

MOTO-REVE Spares for all models, also repairs, overhauls, gears, new engines.—Motor Supply Co., Sole Concessionaires, 223a, High St., Lewisham, S.E. [8321

Ner-a-Car.

NER-A-CAR, perfect condition, mileage 400; £45.—Osborn, 115, Rustlings Rd., Sheffield. [1867

1922 Ner-a-Car, in excellent running order, tax paid; nearest £45.—Cossham, Arcade, Cheltenham. [8304

NER-A-CAR, late 1921, guaranteed perfect condition, mileage under 2,000, tyres unpunctured; £55, or offer.—23, Roundswood Rd., Ipswich. [1384

New Hudson.

£17.—3½h.p. New-Hudson, 3-speed, clutch, dropped frame, equipped.—King, Egrove Farm, Oxford. [1893

NEW HUDSON 3½h.p., 3-speed combination, in very good running order; £30.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1883

5-6h.p. Twin New Hudson Combination, lamps, fully equipped, tax paid, chain-cum-belt, 3-speed, clutch and kick-start; £42/10; bargain.

1919-20 4h.p. New Hudson Combination, 3-speed, clutch and kick-start, mechanically as new, special child's seat attachment for sidecar, Easting, lamps, tax, etc.; bargain, £68/10.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [1589

NEW HUDSON Combination, 1920, fully equipped, screen, etc., perfect order; £55.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1953

BARGAIN.—New Hudson 2¾h.p., and gears, new tyres, lamps, tools, tax, perfect condition; £18.—98, Scarboro St., West Hartlepool. [1506

NEW HUDSON Motor Cycles.—London Depot, 45, Grays Inn Rd., London, W.C.2. All models in stock. Easy payments. Spares. Trade supplied. [0851

1922 2¼h.p. Hudson de Luxe, £63; one shop-soiled de luxe, £55; also Popular model, £50.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0911

6h.p. New Hudson Combination, 3-speed countershaft, clutch, K.S., fully equipped, taxed December, insured July, 1923, perfect, any trial; £65.—14, George St., Brighton. [1531

NEW HUDSON 6h.p. Combination Sturmey countershaft, clutch, kick, Binks, lamps; 45 gns.; exchange countershaft Triumph.—Danford, 22, Farnham Rd., Seven Kings. [1657

NEW HUDSON 4h.p. Combination, 3-speed, kick-start, clutch, taxed; £45, exchange cash, twin combination. spare wheel preferred.—20, Catherine's Cross, Darlaston, S. Staffs. [2126

NEW HUDSON 2¼h.p. 1922 De Luxe, demonstration model, £40; ditto, Popular, £30; 4½h.p. combination, demonstration model, £100.—New Hudson Depot, 45, Gray's Inn Rd., London, W.C.2. [1317

1920 (November) 2¼h.p. Hudson de Luxe, 2-speed, countershaft, Dunlop tyres, fully equipped, not done 1,000 miles, in better condition than new; privately owned; £40 for quick sale.—85, Bonner Hill Rd., Kingston-on-Thames. [1806

New Imperial.

VAUCHOPE'S, 9, Shoe Lane, London.—New Imperial-Jap, 1917, 2-speed gear; £35. [2094

NEW 1921 New Imperial Combination 8h.p.; £95; exchanges.—Lacey, c/o Snipe, 330, Euston Rd. [2289

£35.—1921 New Imperial-Jap, 2 speeds, tax paid; exchanges.—Smith's, 86, Chalk Farm Rd., N.W.3. [2116

1922.—2¾h.p. New Imperial, J.A.P., 2 speeds, good running order, equipped.—King, Egrove, Oxford. [1894

LATE New Imperial 2¾h.p. J.A.P., unscratched; 25 gns.; 2-speed.—67, Fernlea Rd., Balham. Exchange. [2361

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

VAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Japs, 1922; No. 3, £73; No. 2, £60; easy terms and exchange. [2095

NEW IMPERIAL, late 1919, 2¾h.p., 2-speed, clutch, K.S., tax paid, good condition, lamps; £32.—Willcocks, Datchet, Bucks. [1844

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(NON-TRIP.)

Brand New. Fully Guaranteed.

Carr. paid 55/-

Send make of machine and size of tyre.

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Leather front. 2 clips supplied with each bag. Best value obtainable.

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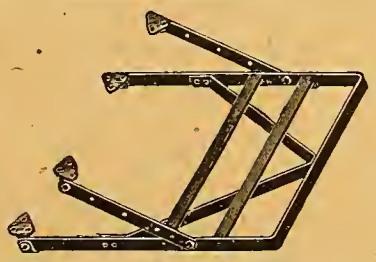

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MOTOR CYCLES FOR SALE.

New Imperial.

NEW IMPERIAL 2¾h.p. Model, July 3, 1922, lamps, horn, mileage 40; £60.—Walker, 38, Francemary St., Brockley, S.E.4. [1670

NEW IMPERIAL 1922, J.A.P. special competition engine, winner of several trials; £50.—Bunting's Motor Exchange, Wealdstone, Middlesex. [2155

1920 New Imperial, 2-speed, clutch, kick start, fully equipped, tax paid, Binks carburetter; £35.—Edwards, 50, Harrington Rd., South Kensington. [9134

1919 2¾h.p. New Imperial, 2-speed, fully equipped, good condition; 30 gns. Deferred payments and exchanges.—Edwards, 101, Great Portland St., W.1. [2233

1920 New Imperial 8h.p. Combination, perfect condition, lamps, horn, speedometer, screen, etc.; £85; exchange Henderson.—Curran, 150, Lochee Rd., Dundee. [1852

NEW IMPERIAL 1921 8h.p. Combination, electric lighting, Easting screen, exceptionally fine condition; £85.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1882

NEW IMPERIAL, 2¾h.p. J.A.P., 2-speed, 1916, equipped and licensed, with Tan-Sad, nice condition; £28.—Godfrey's Garage, Cranbrook Rd., Ilford. 'Phone: 83. [1621

BRAND new New Imperial, 3-speed, 2¾h.p., super-sports model; £60; exchanges.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [2178

1916 New Imperial 2¾h.p. J.A.P., 2-speed, long copper exhaust, guaranteed perfect throughout, tax paid, all accessories; bargain, £23.—Brooker, Mill House, Salters Rd., King's Lynn. [1706

NEW IMPERIAL 2¾h.p., Model No. 3, 3-speed, kick-start, all-chain drive; £73. Immediate delivery. Cash. Exchanges. Easy payments.—P. J. Evans, John Bright St., Birmingham. [2205

NEW IMPERIAL 1920 2¾h.p., 2-speed, clutch, kick-starter, full equipment, spares, small mileage, guaranteed perfect condition throughout; £38.—Caldecourt, 105, Mount Pleasant Lane, Clapton. [1757

1920 8h.p. New Imperial Combination, licensed, fully equipped, enamel, plating, mechanical condition as new. Exchange Lightweight, cash.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [1776

NEW IMPERIAL Combination 1917 8h.p., Colonial model, tax paid, splendid order, £65; also 2¾h.p. 3-speed, all-chain, New Imperial, shop-soiled, reduced from £73 to £63.—Brockbank, 58, Lord St., Southport. [2166

AT Edwards'.—1922 3h.p. New Imperial, Model 3, all-chain drive, kick-starter and clutch, Maglita electric lighting equipment, horn, tax paid, as new throughout; 60 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2225

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

New Ryder.

NEW RYDER, latest model, 2¾h.p. J.A.P., 2-speed, genuine bargain; £25, approval.—Box 3653, c/o *The Motor Cycle*. [2200

NEW RYDER 2-stroke, drip feed, fully equipped, licensed, good condition; trial; £20.—Box 3656, c/o *The Motor Cycle*. [2395

NEW Ryder-Villiers 2½h.p. 1921, speedometer, mileage 2,671, complete with horn and lamps, tax paid, in excellent condition, any trial.—Judd, Fringford, near Bicester. [1851

New Scale.

NEW SCALE 3½h.p., 2-speed, kick-start and clutch, mileage 300, practically new.—Bundy, 4, Francis Av., Portsmouth. [1772

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

NORTON 1921 16H, O'Donovan tuned, 75 m.p.h.; bargain, 75 gns.—Clark, 7, Exhibition Rd., S.W.7. [9168

1921 3½h.p. Norton, Philipson, very fast, condition new; £65.—Jenkins, 39, Caeran Rd., Caeran, Bridgend. [1720

NORTON, new 1922, Model 16H; list price £115; our price £94.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [1888

1922 16H Norton, ridden 400 miles, licence, insurance, lamps; bargain, £90.—W. Sisson, 137, Yorkshire St., Rochdale. [1559

1921 3½h.p. Norton, with Canoelet sidecar, F.R.S. lamps, Argus silencer, etc.; £85.—Falconer, Bradley, Alresford, Hants. [1376

NORTON 16H., 3-speed, K.S., 1921, as new, speedometer, lamps, taxed; £75.—5, Terrace Garage, Turnham Green Terrace, Chiswick. [2254

NORTON Big 4, Canoelet sidecar, Cameo, Tan-Sad, tip-top condition; quick sale, £50.—20, Mayes Rd., Wood Green. 'Phone: Hornsey 3265. [1594

MOTOR CYCLES FOR SALE.

Norton.

1922 Big 4 Norton, quite new, Lucas lamps, horn, licence; cost £130; £105, or nearest.—22, Sandbourne Rd., Ward End, Birmingham. [1921

NORTON 1922 Motor Cycles. Special liberal exchange quotations to reduce our stock. Write us quickly. —Halifax Motor Exchange, Horton St., Halifax. [2188

NORTON, 1921 model, 16H., 3-speed, clutch, kick-starter, electric lighting, very little used; bargain, £75.—The Layton Garages, 30, Holywell St., Oxford. [2245

NORTON, B.R.S. engine, 1921, October, 70 m.p.h. Brooklands certificate, Philipson pulley, fully equipped, licensed, excellent condition; £69.—Lambert's, Thetford. [1858

NORTON 1921 Countershaft 16H, new tyres, licensed, equipped; £73/10. Also 1919 Philipson model; £33/10. Evenings.—18, Manor Grove, Richmond. [1090

75 M.P.H.—Norton 3½h.p., 3-speed, April, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £85.—77, St. Mary's Rd., Sheffield. [1001

1922 3¾h.p. T.T. Norton, as new, fully equipped, taxed, etc.; £60.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London, W.2. Padd. 1177. [2177

NORTON 16H, brand new, 1922 model, but shop-soiled, £95; Big Four ditto, £100; exceptional opportunity and cannot be repeated.—Bradbury, 224, London Rd., Sheffield. [1128

NORTON.—New all 1922 models supplied; Big Four and De Luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115; exchanges and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [2096

NORTON Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5162

STOCKTAKING Clearance Sale.—Some wonderful bargains in new slightly showroom-soiled 1922 Nortons: 16H 3½h.p., 3-speed, £95; No. 1 Big-Four, 3-speed, £99; Montgomery Sporting sidecar, £20; De Luxe sidecar, £30; carry maker's full guarantee; easy payments 4% extra; carriage paid to any address. —Premier Motor Co., Aston Rd., Birmingham. [2274

80 m.p.h. 16 H Norton.—This machine has gained 18 firsts in speed trials and 2 Brooklands firsts since April last; complete with interchangeable close and standard gear ratios, aluminium piston and new cast-iron piston, racing Amac plated tank and oversize exhaust pipe, T.T. bars, no carrier, racing and standard mudguards. This machine will do over 80 in capable hands, and is in no way worn out. Photos on application. With Watsonian aluminium sidecar, £98; solo, £88.—G. MacWatters, Almondsbury, near Bristol. [1940

N.S.U.

N.S.U. Small Twin, 2 speeds, kick-starter, lamps, generator, horn, nice condition; £18, or exchange. —Edwardes, 277, Camberwell Rd., S.E.5. [1792

N.U.T.

N.U.T. 1921 3½h.p. Twin, well equipped, in almost new condition; £75, or near.—Bunting's Motor Exchange, Wealdstone. [2062

N.U.T. 3½h.p. (Feb., 1921) and Swan sidecar, discs, dynamo, electric horn, speedometer, watch, in perfect condition, all Ali parts buffed, smartest little outfit on the road, tax and insurance; £90; after 6 p.m.—E., 84, Regina Rd., Finsbury Park, N.4. [1651

O.K.

O.K. 2½h.p., fully equipped, licence paid; £25.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1092

O.K. 2¼h.p., new May, 1922, perfect, all on; £32. —174, Walmer Rd., North Kensington. [1358

1920 O.K.-Villiers 2-stroke, good order, fully equipped; £32.—Ventham, Leatherhead. [1607

O.K., 2-speed, very nice condition, nicely equipped; bargain, 21 gns.—67, Fernlea Rd., Balham. Exchange. [2363

1921 O.K. Villiers, 2-speed, clutch, kick-start, Lucas lamps, horn; £36.—Gillman, Seacliffe, Silverdale, near Carnforth. [2001

O.K.-J.A.P. 1916, 2¾h.p., 4-stroke, 2-speed, clutch, condition perfect; £30; evenings.—99, Landells Rd., East Dulwich. [1719

AT Edwards'.—1922 O.K., clutch, fully equipped, as new; 34 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2224

Omega.

2¾h.p. Omega-Jap 1919¾, 2-speed clutch, kick-starter, original tyres; £35.—153, Knollys Rd., Streatham. [1595

OMEGA model 2B, shop-soiled only, at the special price of £58/10.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1098

OMEGA Model No. 3, shop-soiled only; at the special price of £59/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [1099

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METRO-TYLER 2½ H.P., 2-speed, clutch and k.-s. Insured for 12 months. (Shop-soiled only.)

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ORBIT Single Speed, fully equipped, insured and tax paid.

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MOTOR CYCLES FOR SALE.

Omega.

1921 2¾h.p. Omega-Jap, 2-speed, Sturmey-Archer clutch and kick-start, taxed, equipped, etc.; £42/10; bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [1588

Orbit.

2¾h.p. Orbit-Precision, 2 speeds, clutch, chain; bargain, £17; photograph.—Fisher, Springwell Rd., Heston, Hounslow. [1833

P. and M.

P. and M., 2 speeds, kick-start, equipped; £35.—83, Breakspears Rd., S.E.4. [1676

P. and M. motor cycle, 2-speed, clutch; £15.—A. W. Platts, 602, King's Rd., Fulham, S.W.6. [1838

P. and M. Combination 1919, accessories, good order. —Kenyon and Scott, 8, Crouch Hill, London, N. [1495

1922 P. and M. Combination, shop-soiled; reduced from £130 to £115.—Brockbank, 58, Lord St., Southport. [2169

1922 4½h.p., 4-speed, model A, £115; model B, £102; immediate delivery from the authorised agents.—Below.

1921 P. and M. Sporting Combination, Swan sidecar, re-enamelled, plated and overhauled, guaranteed six months; £75; exchanges.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [2176

P. and M. July, 1921, very little used, as new, fully equipped, taxed and insured; £70.—Foulkes, Wales and Co., Ltd., Shrewsbury. [1722

P. and M. Combination, equipped, taxed, splendid condition throughout, trial; £38; exchange.—7, Cowdrey Rd., Wimbledon. [2033

1921 P. and M., legshields (aluminium), just overhauled; £85, or nearest.—Parkinson, Old Bank House, Southam, near Rugby. [1973

P. and M. Combination 1918, overhauled, complete; £45; exchange 5.6h.p. Rover.—50, Haverstock Hill, N.W.3. Hampstead 6609. [2342

1918 P. and M. R.A.F. Combination, new sidecar, lamps, etc., tax paid; seen after 7 p.m.; £50. —83, Longlands Park Rd., Sidcup, Kent. [2161

1917 P. and M. 3½h.p., 2 speeds, kick-starter, newly enamelled, new Palmer tyres; must realise; 29 gns.—77, Arthur Rd., Wimbledon Park. [2208

P. and M., 1919, 3½h.p., 2-speed, with sports sidecar, completely equipped and tax paid; bargain, £52/10.—The Layton Garages, 30, Holywell St., Oxford. [2243

P. and M. Combination, late R.A.F., 3½h.p., recently overhauled, coachbuilt sidecar, Tan-Sad, tax paid, good condition; £48.—Heard, 25, Woodwarde Rd., East Dulwich, S.E.22 [1493

1921 3½h.p. Phelon and Moore Combination, complete with lamps, horn, speedometer, mirror, etc., like new, £95.—Mr. Bingham, 69, Blade St., Lancaster. [1455

1922 P. and M. de Luxe Combination, 4h.p., 4 speeds, all on, coat £150, shop-soiled: £130 cash, or deferred payments.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0919

P. and M., 1918, B.B. carburetter, 1922 Pilot, new tyres, tubes, chains, all on, Tan-Sad, chain cases, spares, mechanically perfect; £49; photo.—Murray, 109, Fenchurch St., E.C.3. [1417

P. and M. 1918 Combination, 3½h.p., 2-speed, K.S., new gears, 1922 B. and B. carburetter, aluminium chain covers, all lamps, horn, licence paid; trial any time; £63.—Flint Bungalow, Croydon Rd., Warlingham, Surrey. [9614

P. and M. R.A.F. solo models, rebuilt, re-enamelled, lined and plated, fitted with new T. and B. magnetos, B. and B. carburetters, tyres and tubes; 40 gns.—Voltaire Motor Works, 4, Voltaire Rd., Clapham, London, S.W.4. [7718

P. and M. 1918 2-speed Combination, kick-start, acetylene head and side lamps, electric rear. Best and Lloyd mechanical lubrication, comfortable sidecar, luggage carrier, licensed; 55 gns.—Wale, "Wulstanhurst," Hendon Lane, Finchley. 'Phone: Finchley 2028. [1758

SOLO P. and M., 2-speed, clutch, all-chain, overhauled and rebushed throughout, new rings, valves, ball races, largely restored, aluminium chain covers, footboards, fircone, good as new, quiet, economical, make excellent little combination; honest value £38.—75, Leeside Crescent, Golders Green. [1944

Spare Parts:

P. and M. Spares at the Right Price.—1, Springfield Park Cres., Catford, S.E.6. [2080

ALL Spares in Stock; please write for quotations for any parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

P. and M. Spares at the right price; your enquiry solicited.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd 1177. [218?

MOTOR CYCLES FOR SALE.

Peco.

2¾h.p. 2-stroke Service Peco, new, 2-speed, clutch and K.S., Albion gear box, tyres and belt perfect, equipped, taxed for sidecar; £25; accept bicycle part.—117, Sheen Lane, E. Sheen. [2069

Peugeot.

£8.—3½h.p. Peugeot, good order, ride away, tax paid.—254, Earlsfield Rd., Wandsworth. [1566

£10.—5-6h.p. Twin Peugeot, 2 speeds, clutch, must sell.—King, Egrove Farm, Oxford. [1895

£25.—Sports Twin Peugeot, discs, electric lamp; or exchange for good single.—11, Glenelldon Rd., Streatham. [1971

TWIN-CYLINDER Pugeot 5h.p., tyres, tubes new; £20, or nearest offer.—Fearon, Cleabarrow, Windermere. [1388

Premier.

PREMIER 3½h.p. Combination; £25 to clear.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1884

PREMIER 3½h.p., 3-speed hub, recently overhauled, tax paid; £28.—Weatherill, River Place, Gargrave, Leeds. [1426

29 GNS.—Premier 3½h.p., 3-speed, clutch, Canoelet Combination, licensed 1922, equipped. Exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2408

PREMIER Coachbuilt Combination, 3-speed countershaft, clutch, new Dunlops, accessories, perfect condition; £30.—196, Gladstone Av., Wood Green. [1781

Spare Parts:

PREMIER Spares.—I am the merchant for these. By Return Service.—All. Holland, Hearsall Lane, Coventry. 'Phone: 1945. [1906

PREMIER Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Forfield Motors, Forfield Place, Leamington Spa. [3167

Priory.

PRIORY-J.A.P., brand new; £50.—Clark, 7, Exhibition Rd., S.W.7. [2305

PRIORY.—Immediate delivery of 1922 models, 2¾h.p. J.A.P., 2-speed clutch and kick starter, 52 gns.; 2¾h.p., 2-stroke, 2-speed, £38. Exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [9133

Quadrant.

CLIFFORD WILSON Company, 16 years' experience with Quadrants. [9925

£8.—3h.p. Quadrant, dropped frame, magneto, good running order.—King, Egrove, Oxford. [1896

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Quadrant 1921 4½h.p. combination, dynamo lighting, all on; £65. [2097

£80.—1922 Quadrant All-chain Combination, electric lighting, windscreen, speedometer, mechanical horn, overhauled.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [2288

4½h.p. 1922 Quadrant Combination, 3-speed, kick-starter, all-chain drive; £105; your old motor cycle taken in exchange, remainder on easy terms.—Wauchope's, 9, Shoe Lane, London. [2098

QUADRANT 4½h.p., 1920, all-chain, 3-speed, kick-start, Canoelet sidecar, Sandum windscreen, accessories, tax paid; trial; £55, or offer.—Catford, "Shenehurst," Benhillwood Rd., Sutton, Surrey. [1442

QUADRANT 1922 4½h.p., all-chain, Douglas chassis, all-metal Sun sidecar, electric lighting and horn, windscreen, speedometer, tax paid, fully insured, perfect condition, any trial, mileage 2,000; £90.—6, Epple Rd., Fulham, S.W.6. [1671

Spare Parts:

CLIFFORD WILSON Mfg. Company, Quadrant Works Representatives and Sole Wholesale Distributors for London, Southern and Eastern Counties; official repairers and spare part stockists; deferred payments; exchanges; all models in stock. Special insurance facilities applicable to Quadrants only.—177, Westminster Bridge Rd., London, S.E.1, opposite Waterloo Station Approach. Telephone: Hop 210. [9926

Radco.

1922 Radco, unerated; 28 gns. accepted; must clear.—30, Park St., Islington. [1509

RADCO, 2 speeds, equipped, taxed; bargain, £16; photograph.—Fisher, Springwell Rd., Heston, Hounslow. [1832

£35.—1922 2½h.p. 2-speed Radco, T.T. bars, long exhaust, perfect condition, all on.—Westoning Vicarage, Ampthill, Beds. [1449

Raleigh.

RALEIGH—All models in stock.—Premier Motor Co., Birmingham. [2276

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OUR NEW AUTUMN ILLUSTRATED LIST AND PATTERN BUNCH OF CLOTHS, TOGETHER WITH SELF-MEASUREMENT FORM, WILL BE SENT ON TO YOU POST FREE, AND WITHOUT ANY OBLIGATION, ON RECEIPT OF YOUR NAME AND ADDRESS.

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MOTOR CYCLES FOR SALE.

Raleigh.

RALEIGH 2¾h.p. in stock; exchanges, deferred.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [9166

RALEIGH.—Immediate delivery of 1922 models; exchanges or deferred payment.—Edwards, 50, Harrington Rd., South Kensington. [4052

RALEIGH 1922 2¾h.p., 2-speed, fully equipped, tax paid, little used; £60, or nearest offer.—34, Rownsley St., Chapeltown Rd., Leeds. [2020

1922 Raleigh 2¾h.p., 3-speed, lamps, horn, tax paid to end of year, very fine condition, little used; £60.—Stubbs, Rempstone, Loughborough. [1743

RALEIGH Lightweight Models.—We have a few shop-soiled models to clear at very attractive prices. Call and inspect.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1880

IMMEDIATE Delivery Raleigh, all models in stock; 5-6h.p. £130, combination £165; 2¾h.p. £68, £73; 3h.p. combination, £103; cash or deferred payments 4% extra.—Mitchell Garage, Roundhay Rd., Leeds. [0890

RALEIGH Combination 1922, 5-6h.p., twin spring frame, only used once, speedometer 238, Tan-Sad, Lucas lamps, Easting screen, tax paid, and many extras; £159/15. — Wilkins, Simpson, Opposite Olympia, London. [2157

5-6h.p. Twin Raleigh Combination De Luxe, spring frame, Grindlay sprung wheel sidecar, very fully equipped, run only 3,000 miles; 125 gns.; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1069

1922 5-6h.p. Raleigh Standard Combination, spare wheel, luxuriously upholstered sidecar with Easting windscreen, Lucas electric lighting, tax paid to December 31st, used only for one demonstration run; list price £188/10; offered at £150, cash only; an exceptional bargain.—Premier Motor Co., Aston Rd., Birmingham. [2275

Reading-Standard.

READING-STANDARD Combination, demonstration model, dynamo, unregistered; £105.—Brockbank, 58, Lord St., Southport. [2165

READING-STANDARD 8h.p. Semi-sports Combination, new condition, overhauled, perfect, electric; £75; trial.—3, Trafford Rd., Thornton Heath. [2045

1921 Reading-Standard Combination 10h.p., 50 m.p.g., luxurious sidecar, spring frame, kick-start, 3-speed, foot clutch, dynamo lighting set, electric horn, speedometer, Binks' latest carburetter; £120, no offers.—Leah, Bankfield Ter., Huddersfield. [1747

Revere.

REVERE-VILLIERS 2½h.p., new 1921, single speed, excellent condition, tyres new, tax paid; sacrifice, must sell; £20.—Allen, 228, Cricklewood Lane, N.W.2. [1497

Rex.

REX-ACME, new, 4½h.p., catalogue price, £110; accept £75.—Heath Garage, Newmarket. [1835

1914 Rex Combination, smart and reliable, any trial; £26.—406, Garratt Lane, Earlsfield, S.W. [2379

REX 3h.p., spring forks, 2-speed, less magneto; £6, gift.—Wheatley, 49, Riverside, Kingston-on-Thames. [1443

8h.p. 1920 Rex Combination, fully equipped, perfect condition; £90.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1094

REX 6h.p., free engine, pedal start, new condition, with sidecar; £22, bargain.—28, Woodford Rd., Forest Gate. 'Phone; Maryland 2598. [1756

REX Combination, 5-6h.p., 2 speeds, K.S., Bosch, coachbuilt sidecar, lamps, horn, tax paid; £30, or near offer.—22, High St., Ware Herts. [1768

REX-ACME 1920 J.A.P. 8h.p. Combination, interchangeable wheels and spare, all accessories; best offer accepted.—Perriv, Private Rd., Enfield. [2121

2¾h.p. Rex-Acme Combination, Blackburne engine, new, fast, just delivered, 3 speeds, Sturmey-Archer gear, kick-starter and hand-controlled clutch; £96/15; exchange and easy terms.—Wanchope's, 9, Shoe Lane, London. [2099

Roc.

ROC 3½h.p., drip feed, 2-speed, clutch, lamps, etc.; £25.—Write, 58, North Birkbeck Rd., E.11. [1686

Rover.

£8.—Rover 3½h.p., ride away; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [2118

1921 T.T. Rover, as new, tax paid; accept £45.—Heath Garage, Newmarket. [1836

ROVER 1919 3-speed Combination, equipped, excellent order; £65.—R. B. Clark & Co., 7, Exhibition Rd., S.W.7. [8072

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Rover 1914 3½h.p., Philipson hand-controlled V pulley; £37/10. [2100

ROVER 6h.p. Combination, 3-speed, K.S., lamps, done 500 only, like new; bargain, £80; offer.—6, Silvester Rd., E. Dulwich. [1818

MOTOR CYCLES FOR SALE.

Rover.

ROVER 1914 3½h.p. Philipson, thoroughly overhauled, new piston and big-end, specially built for 1914 T.T., taxed; £40.—K.J. Motors, Bromley. [1580

1920 Rover 3½h.p. Combination, new Coupette sidecar, fully equipped, perfect; £80.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2163

1922 Rover 4h.p. Combination, fully equipped and taxed, mileage negligible, condition new; £85, or offer; exchanges entertained.—P., 149, Castelnau, S.W.13. [1452

ROVER 1920 5-6h.p. Combination, Henderson Elite sidecar, windscreen, speedometer, under 4,000 miles; £80.—Marshall, 40, Normanton Rd., Croydon. [1666

ROVER 4h.p., Canoelet sidecar, 3 speeds, clutch, lamps, tools, etc.; price £47/10, or close; would sell cycle separate. Exchange Lightweight considered. —Moore, South Rd., Hayward's Heath, Sussex. [1696

1920 Rover Combination, 6h.p., 3-speed, hand foot clutch, kick-start, in beautiful condition, not done 2,000 miles, fully equipped, any trial; £65.—Ward, South Western Garage, New Malden, Surrey. [2257

1920 Rover Combination, 3½h.p., 3-speed, clutch, kick-start, windscreen, speedometer, lighting set, etc., completely equipped, taxed, excellent condition; appointment; £80.—Hughes, 37, Manville Rd., Balham, S.W. [2160

ROVER Combination, late model, Rover sidecar and chassis, 3½h.p., 3-speed, clutch, kick-start, Easting screen, lighting set, horn, taxed etc.; beautiful engine, and in fine condition throughout; best offer over £60.—Walker, 769, Romford Rd., Manor Park, London, E.12. [1917

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [5081

Royal Ruby.

1919 8h.p. Royal Ruby Combination, perfect condition; £50, bargain.—9, Church Rd., Harlesden. [1698

NEW 1921 Royal Ruby 3h.p., 2-speed, spring frame; £55; exchanges.—Lacey, c/o Snipe, 330, Euston Rd. [2296

£39/10.—Royal Ruby 3h.p. 1920 lightweight, perfect, accessories; any trial; exchanges considered. —406, York Rd., Wandsworth. [1982

1922 Royal Ruby, the spring frame combination, immediate delivery, cash, exchange, or easy terms. —Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4934

1920 Royal Ruby, 3h.p., full equipment, spring frame, excellent condition; £47/10; cash, exchange, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

1920 (late) 8h.p. Royal Ruby Special, J.A.P. engine, dynamo lighting, large head lamp, 2 spot lights, electric horn, speedometer, fitted electric light, mechanical horn, T.T. bars, Swan sporting sidecar, fitted Aero windscreen, dash, fitted with ammeter, switches, etc., discs, special plated exhaust pipe, successful machine in many trials, etc, looks as new, perfect mechanical order, fast, the smartest and sportiest outfit on the road, open to any trial or examination, fully insured, cost £260; bargain, 118 gns.; exchanges, or easy terms.—W.J.C. Motor Exchange, 5, Addison Avenue, Holland Park, W.11. Park 2071. [2405

Rudge.

£68/10.—Rudge-Multi, 1921, new, 3½h.p.—Townson and Ward, Ltd., Barrow. [1407

1920 Rudge, T.T., unscratched; 39 gns.; very fast; owner abroad.—67, Fernlea Rd., Balham. [2366

1922 Rudges.—All models in stock.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0900

3½h.p. I.O.M. Rudge 1922, fully equipped; £65.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1093

39 GNS.—1920 Rudge-Multi, T.T., clutch, lamps, Klaxon, tax, any trial.—2, Madrid Rd., Barnes. [1793

RUDGE I.O.M., shop-soiled only, at the special price of £69.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1097

WAUCHOPE'S, 9, Shoe Lane, London.—3h.p. Rudge-Multi, 1921, including accessories, tax paid; £62/10. [2102

WAUCHOPE'S, 9, Shoe Lane, London.—New 1922 Rudge 3½h.p., I.O.M.; £77; easy terms arranged. [2101

NEW Shop-soiled 1922 Rudge 3½h.p., 3-speed, chain drive; £79; exchanges.—Lacey, c/o Snipe, 330, Euston Rd. [2294

SHOP-SOILED Brand New 5-6h.p. Rudge Solo, £69; also ditto combination, £87/10; also ditto 7-9h.p. combination, £97/10.—Shepherds, Enfield Highway. Tel.: Waltham X 31. [0925

27 GNS.—3½h.p. Rudge-Multi, late 1914, exceptional condition and appearance, taxed; exchanges.—W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [2407

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1922 Rudge Combination, absolutely unscratched; must realise; owner at sea; 54 gns.—67, Fernlea Rd., Balham. [2368

RUDGE-MULTI 1922 3½h.p., slightly shop-soiled; £72.—Godfrey's Garage, Cranbrook Rd., Ilford. 'Phone: 83. [1623

RUDGE I.O.M. model 1921, exceptional condition, fully licensed; £52/10.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [2192

LATE 1921 I.O.M. Rudge and Swan Sports Car, only run few miles, every accessory; £55.—24, Balliol Rd., North Kensington. [1995

1922 3½h.p. Rudge, 3-speed, new; list price £94; our price £77.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [1889

1922 Rudge, brand new, taxed, equipped, cost over £80; sacrifice, 58 gns.—51, Upper Richmond Rd., East Putney. [2386

RUDGE Combination, 3-speed, clutch, full equipment, lovely sidecar, absolutely reliable; £30.—Box 3652, c/o *The Motor Cycle.* [2199

RUDGE-MULTI 3½h.p. 1921, splendid condition, accessories, complete, trial; bargain, £50.—Dickinson, Milborne Port, Somerset. [1365

RUDGE-MULTI 3½h.p., I.O.M. model, in perfect condition; bargain, £32/10 cash.—The Layton Garages, 30, Holywell St., Oxford. [1153

1922 3½h.p. Rudge-Multi I.O.M. Model, complete, tax paid, good as new; £65.—Coucill, 31, Holly Av., Walkden, nr. Manchester. [1369

£77 is the price of a new Rudge. Get it from the Agents; in stock; cash or payments.—Knight's, 126, Upper Tooting Rd., S.W.17. [0836

£45.—1920 Rudge-Multi 3½h.p., T.T., good condition, lamps, horn, tools, Tan-Sad, variable jet.—121, St. George's Rd., Stoke, Coventry. [1728

AT Edwards'.—1921 Rudge-Multi 3½h.p., equipped, splendid condition; 50 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2223

£40.—1920 I.O.M. Rudge, new handle-bars, tyres, belt, rollers, chain case, fully equipped, Tan-Sad.—A. Cox, 161, Rye Lane, Peckham, London. [1421

PRACTICALLY Brand New Specially Tuned I.O.M. Rudge, with every accessory, unsoiled condition, original tyres; £48.—24, Balliol Rd., North Kensington. [1994

RUDGE 1922 7-9h.p. Twin, with 3-speed gear box and all-chain drive; £70.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1879

1922 T.T. Rudge-Multi 3½h.p., tax paid, lamps, speedometer; £65; seen by appointment only.—Martin, "Solva," Engayne Gardens, Upminster, Essex. [2313

1921 3½h.p. Sporting Rudge-Multi, not done 1,000 miles, Wix's variable carburetter, tuned for competition; nearest 48 gns.; any trial.—168, Clapham Park Rd., S.W. [1640

1921 ¾ Rudge-Multi 3½ h.p., T.T., as new, guaranteed perfect, lamps, knee grips, mirror, horn; owner returning Colonies, must sell; insured, licensed; 48 gns.—Everson, Hale Crescent, Farnham. [1979

1920 7-9h.p. Rudge-Multi Combination, as new; 75 gns. Also a 1916 3½h.p. Rudge-Multi combination, electric lighting; 39 gns. Exchanges; photographs free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1070

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RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

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SCOTT, 1921, August, low mileage, as new; £65; bargain.—229, Maryvale Rd., Bournville. [1910

SCOTT Combination, in good mechanical order, Binks carburetter, lamps; £60, or offer.—61, Mersey St., Hull. [1378

1914 Scott, 2-speed, excellent condition, very fast, numerous spares, licensed; £35.—69, Kingston Rd., New Malden. [1770

SCOTT Squirrel, 1922, as new; will accept reasonable offer to clear.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [1877

1 SCOTT Standard, also Squirrel; used less than 6 miles for demonstration; £100 each.—Gibb, Northgate, Gloucester. Service Agent. [7543

1922 Scott 3½h.p., slightly shop-soiled, otherwise new; £90; or with Watsonian sidecar, £110.—Gibb, Northgate, Gloucester. [1080

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ROTARY Scott, very hnt, royal blue, looks like new, Parker frame; who's game to make a bid of Sixty Quid?—Brockbank, 58, Lord St., Southport. [2172

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1920 (October) Standard Scott, lamps, speedometer, horn, pillion seat, absolutely O.K.; owner abroad; £60, or offers.—136, Aldermans Hill, Palmers Green. [2201

SCOTT, engine 2932, recently overhauled hy mnkers, re-enamelled, new chains, lamps, horn, aluminium number plates, excellent condition throughnut; £50.—Sims, 8, Penrith Rd., Basingstoke. [1558

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WARD Mntors, Ltd., 32, Hustler St., Bradford, for serviceable second-hand Scott parts on approval against cash. [0889

SOUTH London Scott Service Depot.—Spares and repairs.—350-352, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [9697

GODFREYS', Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Singer.

SINGER 3½h.p., splendid condition; must sell immediately; sacrifice, £30; nnly wants seeing.—65, West Wycombe Rd., High Wycombe. [1629

3½h.p. Singer 1913, Bosch magneto, 2 brakes on rear wheel, re-enamelled, completely overhnuled, every part in perfect condition, licensed; £20.—Bernard, Queda, Shepherdswell, nr. Dover. [1479

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SINGER Parts.—I have the genuine stock; get in touch.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [1907

Slaney.

1921 Slaney, Cannelet sporting sidecar, 7h.p. Coventry-Victor engine, Sturmey-Archer countershaft, all chain, stored since April, 1921; owner abroad.—Offers tn Sunbury Motor Co., Sunbury. 'Phone: 57. [1372

Spark.

NEW 1922 Spark 2-stroke, shop-soiled; £36.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [1528

SPARK 1922, Villiers engine, flywheel magneto, single-speed, unused, slightly soiled; £34.—Eagles and Co., 275, High St., Acton, London, W. [2151

Sparkbrook.

SPARKBROOK 1917 6h.p., J.A.P., 2-speed countershaft, 2-seater sidecar, fine order; 52 gns.; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1071

Spur.

1919 Spur 2-stroke, full equipment, nice condition; £22/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

Sun.

SUN-VILLIERS 1914; £15; good order.—Brockbank, 58, Lord St., Southport. [2174

24 GNS.; Exchange.—1917-18 Sun-Villiers, 2-speed, lamps, legshields, smart; any examination.—76, Neate St., Albany Rd., Camberwell. [8601

1916 Sun-Villiers 2-stroke, 2½h.p., lamp, horn, new belt, perfect running order, seen any time; £20, or nearest offer; must sell; owner going abroad; a bargain.—N., 17, Dunster Gardens, N.W.6. [1515

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Sunbeam.

SUNBEAM 1922 (May) 4½h.p., slightly soiled only; bargain, £112.—Clark, 7, Exhibition Rd., S.W.7. [1341

100 GNS.—Sunbeam 3½h.p., 1921, as new, Lucas Magdyno, all on.—47, Mortimer Rd., Dalston, N.1. [1435

1921 Sunbeam, Lucas lamps, horn, etc., perfect condition, guaranteed mileage 500; £110.—Annan, Stourport Rd., Kidderminster. [2065

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6h.p. Sunbeam Combination, all-chain drive, kick-start, tax paid, fully equipped; £48, genuine bargain.—S., 2, Cadogan Rd., Surbiton. [1454

1922 I.O.M. Racing Sunbeam, many special fittings, 80 m.p.h., lapped in race in 40.34, new condition; £135.—Crabtree, Bridgefoot, Warrington. [2018

1922 3½h.p. Sunbeam, sporting model, low mileage, speedometer, horn, and lamps complete; nearest offer to £115 secures.—C.D.H., Dudley Hotel, Hove. [1771

SUNBEAM 1921 Sports Model, fully equipped, speedometer, electric lighting, tax paid; 92 gns.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2267

1920-21 3½h.p. Sunbeam Combination, interchangeable and spare wheel, legshields, Easting, excellent condition and appearance; £120.—83, Glehalla Rd., Llanelly. [1603

1920 3½h.p. Sunbeam Combination, detachables, lamps, horn, knee grips, excellent condition; £115; exchange Morgan; cash adjustment.—1, Monk Rd., Bishopston, Bristol. [2029

AT Edwards'.—1920 3½h.p. Sunbeam, fully equipped, lamps, horn, screen, and speedometer, tax paid; 80 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2230

1919 Sunbeam 3½h.p., fully equipped, lamps, mechanical horn, tax paid, engine just overhauled, perfect; £70.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2145

1920 Sunbeam 3½h.p., engine No. 14510294, Cowey horn and speedometer, Lucas lamps with D.A. cylinder, 5,000 miles, perfect condition; offers.—Sunningdale Motors, Ltd., Sunningdale, Berks. [9179

SUNBEAM 8h.p. Combination, 1922, Lucas Magdyno and electric horn, cantilever saddle, Cowey trip, spare wheel, tax and insurance paid, all complete; £200.—2, Allington St., Victoria, S.W.1. [1649

1919 Sunbeam 8h.p., 3 speeds, Brooks cantilever saddle, fully equipped, Montgomery sidecar, guaranteed perfect, tax paid; £85.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2142

SUNBEAM Combination 1917, 3½h.p., kick-start, Henderson Elite sidecar, good tyres, many extras, tax paid, all in splendid condition; 100 gns.—183, Church Row, Northwood, Middlesex. 'Phone: 158. [1672

1922 3½h.p. Sunbeam, brand new, Magdyno lighting, electric horn, detachable wheels, cost £170; sacrifice, £120, or exchange solo or combination and cash.—51, Upper Richmond Rd., East Putney. [2384

3½h.p. Sunbeam, 1915, re-enamelled January, 1921, new engine July, 1921, mechanical pump, Lucas, Watford, Binks, splendid condition throughout; £70.—Moseley, 70, St. Ann's Rd., Harrow. [1434

SUNBEAM, 1920, 3½h.p., complete with lamps, horn, licence, and semi-sports sidecar with windscreen, a very fine outfit, very small mileage; £110; approval anywhere.—The Layton Garages, 30, Holywell St., Oxford. [2242

SUNBEAM 6h.p., twin J.A.P., 3-speed countershaft, clutch and kick-start, all chain, coachbuilt sidecar, lamps, Easting screen, tax, excellent condition; £72.—Rhind and Co., Stone Place, Rusholme, Manchester. [1590

SUNBEAM 1922 4¼h.p., and Watsonian sidecar, Easting screen, only done about 300 miles, absolutely like new, Klaxon horn, tax paid; a bargain, £149/15.—Wilkins, Simpson, Opposite Olympia, London. [2158

3½h.p. Sports Sunbeam, April, 1922, K.S., largest Lucas lamps and horn, hand grips, tyres unpunctured, carefully driven small mileage, tax, insurance; cost £143, nearest £100.—Hill, Yelverton Rectory, Norwich. [2354

1921 8h.p. Sunbeam Combination, de luxe model, Magdyno, Cowey trip, electric horn, special oversize tyres 29×3½, spare wheel, engine just completely overhauled at works, perfect condition, cost £285; accept £150.—30, Nora St., Barrowford, Nelson, Lancashire. [2064

EXCEPTIONALLY Smart 1920 (Late) 3½h.p. Sunbeam combination, lavishly equipped with spare wheel, speedometer, side mirror, Lucas lamps, Tan-Sad, and leg shields, perfect condition throughout, any trial; £85.—Hillier, 9, Wallingford Av., North Kensington. [1869

AT Edwards'.—1922 3½h.p. semi-Sports Sunbeam, with Burlington semi-Sports sidecar, equipped with lamps, horn, speedometer, and knee-grips, tax paid, absolutely indistinguishable from new; 110 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2231

1919 Sunbeam 3½h.p., speedy, new Bonniksen speedometer, new inner tubes, Stepney tyres, Lucas lamps, new footboards, semi-T.T. handle-bars (May, 1922), also tank re-enamelled and gold leaf, always kept well; ridden by owner; grand chance; £72, or better; cost double.—Stuart, Highgate House, Walsall. [1364

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1914 3½h.p. Swift, 3 speeds, clutch, decompressed tyres, and belt, almost new, whole machine been stove enamelled, tank black and gold, equipped, licensed December; £25.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [1810

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TRIUMPH 3½h.p., clutch model, equipped, ride away; £24.—Below.

TRIUMPH Countershaft 1920, in splendid condition, as new; £65.—Below.

TRIUMPH Countershaft, as new; £85.—Miles, 11, Chichester Rd., West Kilburn, N.W.6. (1 minute Kilburn Park Tube.) [2331

TRIUMPH 1919 4h.p., all on, fine order; £35.—59, Muswell Avenue, N.10. [1475

4h.p. Countershaft Triumph, complete and tax paid; £46.—Cross, Agent, Rotherham. [2252

1919 Triumph 4h.p., 3-speed, as new; £54.—406, Garratt Lane, Earlsfield, S.W. [2377

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0868

1918 Countershaft Triumph, very fine condition; £48, bargain.—9, Church Rd., Harleeden. [1700

1922 All-chain Triumph, full equipment, as new; £75.—24, Balliol Rd., North Kensington. [1993

1922 4h.p. Triumph, shop-soiled only, great end of season bargain; £92.—114, Brixton Hill. [1964

1919 Triumph Combination, full equipment, as new; £55.—24, Balliol Rd., North Kensington. [1996

CROSS, Effingham Sq., is Agent for the Trusty Triumph for Rotherham; all models from stock. [2250

TRIUMPH 1921, all-chain, as new, accessories, insured, etc.; £75.—100, Lincoln St., Norwich. [2125

1920 Baby Triumph, as new, tax paid; £35.—Rhind and Co., Stone Place, Rusholme, Manchester. [1591

MODEL R. o.h.v. 3½h.p. Triumph, complete, lamps, and tax paid; £105.—Cross, Agent, Rotherham. [2249

TRIUMPH, Type H., new; at the special price of £94/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [1105

50 CNS.—Countershaft Triumph 1918, lamps, Tan-Sad, perfect.—42, Clifton Gardens, Chiswick, W.4. [1823

1918 Triumph Combination, Millford, perfect throughout, any trial; £45.—Rutter, 340, High Rd., Balham. [1691

1911 Triumph, new adjustable pulley, new belt and tyres, sound and reliable; £20.—52, Blythe Vale, Catford. [1478

£40.—4h.p. Countershaft Triumph, 3 speeds, clutch, kick-starter, equipped.—King, Egrove Farm, Oxford. [1897

TRIUMPH 3½h.p., splendid condition; £22; take push cycle part.—57, Kenbury St., Camberwell, London. [1732

TRIUMPH, Type S.D., new; at the special price of £103/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [1106

1914 Triumph, fully equipped, 3-speed, clutch, kick-start, mechanically as new, tax paid; £43/10.

1917 Model 4h.p. Triumph Combination, excellent condition, bargain, equipped; £62/10.

1920 Triumph, 3-speed countershaft, clutch, kick-start; £62/10.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [1586

TRIUMPH Combination, genuine, splendid condition, late 1920; lowest £100.—Hughes, Lenham. Phone: 1. [1386

£21, bargain.—Triumph 3½h.p., clutch, Philipson, equipped, taxed.—143, Ravensbury Rd., Earlsfield, S.W. [2113

1918 Countershaft Triumph, fine equipment, as new, £48; ditto 1919, £52.—24, Balliol Rd., North Kensington. [1992

TRIUMPH Coachbuilt Combination, splendid order throughout; £32.—Speechley, 86, Churchfield Rd., Acton, W.3. [1978

1914 Triumph, 2-speed, £27/10; Canoelet minor sidecar, £7/10; what offers?—5, Ridgmount Rd., Wandsworth. [1474

BEBE Triumph, new May, small mileage, perfect order and condition, licence paid; £55.—Frank Eele, Thame. [1399

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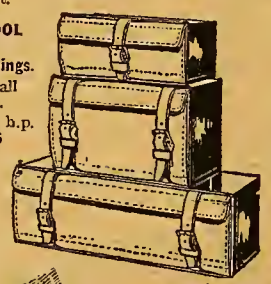

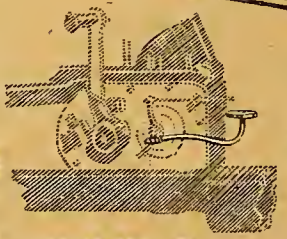

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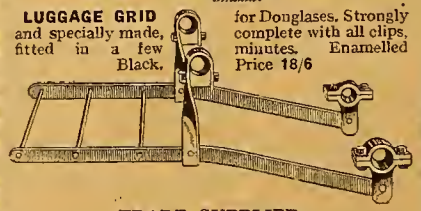

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MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH-GLORIA Combination, Lucas dynamo lighting, taxed December; £85.—121, Acton Lane, Chiswick, W.4. [2035

JUNIOR Triumph, Nov., 1921, little ridden, new condition, all on; £45.—14, Nelson Rd., Whitton, Twickenham. [1710

3½h.p. Countershaft Triumph Combination, coach-built, tools, etc.; £36.—Thomas, 84, Tachbrook St., S.W.1. [1415

TRIUMPH Combination, 1921, Henderson car, fully equipped; £82/10.—Top bell, 90, Cornwall Rd., North Kensington. [1763

1922 Baby Triumph, 2-speed, soiled, Lucas gadgets; cost over £70, accept £55; licensed.—4, Gaywood Rd., Walthamstow. [1572

1913 Clutch Model Triumph, W.D. bars, good tyres and belt, taxed, perfect; £24.—103, Moore Park Rd., Fulham. [2067

£45.—Countershaft Triumph 4h.p., engine No. 58653, fully equipped, tax paid, new tyres.—204, Ladbroke Grove, W.10. [1687

1919 Triumph Coachbuilt Combination, perfect, all accessories; £70, or near offer.—Peebles, Burmington, Shipton-on-Stour. [1484

TRIUMPH Junior 1921, well equipped and in splendid order; £38, or near.—Bunting's Motor Exchange, Wealdstone. [2061

TRIUMPH Five 1918, fully equipped, £45; Five 1917, £37/10, fully equipped.—155, Ladbroke Grove, W.10. 'Phone: Park 5541. [1688

TRIUMPH-RICARDO, 1922, condition as new, fully equipped, subject any examination; £98.—E. Lambert, Castle St., Thetford. [1857

TRIUMPH Model H, also S.D. combination, brand new; bargain prices; cash or exchange.—Bunting's Motor Exchange, Wealdstone. [2060

TRIUMPH Model H, shop-soiled only; your old machine in part payment; £88.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [2190

TRIUMPH 1920 4h.p. countershaft, excellent condition, lamps, horn, new rear tyre; £55.—Foulkes, Wales and Co., Ltd., Shrewsbury. [1721

1914 Triumph Combination, electric lamps, all accessories, excellent condition; £55, or near offer.—21, Bramble St., Coventry. [1387

TRIUMPH 1916 C.S., recently renovated, tax and insurance paid, fine condition; £46.—Honchin, 188, High St., Peckham, S.E.15. [2050

1919 Triumph Combination, fully equipped, perfect condition; £58/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2164

1921 Triumph 2-stroke, 2-speed, Ace discs, lamps, horn, perfect condition; 38 gns.—55, Queen's Gate Mews, Gloucester Rd., S.W.7. [1929

TRIUMPH-MILLFORD Combination, 1920, Easting, in splendid condition; £67/10.—M. Hillier, 216, Portobello Rd., North Kensington. [1762

1912 3½h.p. Triumph, good condition, new carburetter, fast, offers; also Carden, £17, snip.—March, East St., Farnham, Surrey. [1403

SEVERAL second-hand Triumphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1181

ROBERTSON'S Motors, Ltd.—1922 chain drive Triumph combination, tax paid, all accessories; £132.—157b, Gt. Portland St., W.1. [5935

£63.—Triumph combination, 1917-18, Easting, new tyres, fully insured; £70; all accessories.—114, Shepherd's Bush Rd., Hammersmith. [1799

£38.—Triumph combination, coachbuilt sidecar, 3-speed, fully equipped, perfect condition, insured.—119, Cambridge Rd., Kilburn, N.W.6. [2326

TRIUMPH Combination, 1918, equipped, taxed, insured, perfect condition; £70.—42, Sunny Gardens, Hendon. 'Phone: Chancery 7246. [1745

1922 Triumph Combination, all-chain, electric lighting, used once only; £100.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1952

TRIUMPH 1919 4h.p. countershaft, excellent condition, recently overhauled, spares, any trial; no offers, £65.—5, Dennett Rd., West Croydon. [1492

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

TRIUMPH and Millford Sidecar, 3½h.p., lamps, etc., tax and insurance paid, good condition; £45.—Cummings, 64, Knowle Rd., Brixton. [1511

TRIUMPH 4h.p., 1918, and Millford S.C., in splendid order; any trial; £70, no offers.—Dyson, 17, St. Mary's Grove, Chiswick, W.4. [1441

1918 C.S. Triumph, new Henderson sidecar, lamps, horn, screen, tyres good, tax paid, splendid condition; 65 gns.—Streeter, 51, South St., Reading. [1990

ALL Triumph models always in stock; also full range of Triumph Spares. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1180

MOTOR CYCLES FOR SALE.

Triumph.

1918 Countershaft Triumph, hand and foot clutch, equipped and licensed, in first-class condition; £46.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [1990

TRIUMPH.—Immediate delivery of all models; liberal exchanges or deferred payments if desired. —Edwards, 50, Harrington Rd., South Kensington. [6979

£55.—Countershaft Triumph, 4h.p., engine No. 58653, renovated, also others; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Stn.). [0912

TRIUMPH 1922, Ricardo model, lamps, horn, and licence paid, winner of two cups and gold medals this season; £100.—Smith, 42, Evesham St., Redditch. [1581

BABY Triumph, 1921 engine, Bosch, all on, and cash, for late 2¾h.p. to 4h.p. with clutch, kick-start; sell £38.—106, Chesterfield Gardens, Harringay. [1679

1921 Triumph-Gloria all-chain combination, fully equipped, mileage, 3,300, new condition; £120.—Rev. Watts, Nether Broughton Rectory, Melton Mowbray. [1577

1921 Triumph-Gloria Combination, has been carefully used, fitted complete with lamps, Easting windscreen; £66.—406, Garratt Lane, Earlsfield, S.W. [2376

LATE 1918 Triumph Combination, Montgomery sports sidecar, new, very fast, lot guaranteed; bargain, must realise, 56 gns.—67, Fernlea Rd., Balham. [2368

TRIUMPH 1918, Bastone's lightweight sidecar, windscreen, apron, speedometer, lamps, etc., excellent condition; £65, or near offer.—Hine, 527, King's Rd., Chelsea. [1540

TRIUMPH-GLORIA Combination, 1922, all chain, fully equipped, as new, handsome outfit; £100, or exchange.—5, Terrace Garage, Turnham Green Terrace, Chiswick. [2253

1914-15 Triumph Combination, 3-speed, clutch, Bosch, lamps, speedometer, tools, good condition; £45, or nearest.—8, Cape Rd., High Cross, Tottenham. [1667

TRIUMPH 4h.p., 1922 model H, 3 speeds, hand clutch, kick-starter, brand new, slightly shop-soiled; £95.—Eagles and Co., 275, High St., Acton, London, W. [2152

TRIUMPH, 1913, fully equipped, tax paid, new cylinder and pistons, Binks carburetter; 26 gns. —Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2266

1922 brand new all-chain Triumph Combination; £125; exchanges.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [2175

1918 Triumph Combination, splendid condition, licensed, equipped; £58; exchange late solo, cash adjustment.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [2391

EXCEPTIONAL Bargain.—Triumph, 1914, 3-speed, kick-start, tyres good, lamps, horn, accessories, overhauled; private owner; £35.—Alder Rd. Garage, Main Rd., Sidcup. [1740

1912 Triumph, T.T. bars, lamps, Philipson pulley, aluminium piston, fast, reliable; any trial; £22.—Victoria Garage, 10, Eccleston Place, S.W.1. 'Phone: Victoria 3618. [1456

TRIUMPH.—Immediate delivery of all 1922 models. Sidecars to suit from £20. Write for catalogue and full particulars of easy payments.—P. J. Evans, John Bright St., Birmingham. [2203

TRIUMPH-GLORIA Combination (late 1920), Lucas electric lighting, speedometer, Easting, pares, perfect, cost £215; sacrifice, £93.—Farrand, Greenhill Rd., Bramley, Leeds. [1850

TRIUMPH, 1922, model H, and special coachbuilt sidecar, completely equipped and very small mileage; cost £142/10, accept £115.—The Layton Garages, 30, Holywell St., Oxford. [1142

1920 4h.p. Triumph Combination, special sidecar, complete lamps, tools, small mileage, genuine; £70; cash or deferred.—Marlborough (The Motor House), 20, Finchley Rd., N.W.8. [9577

SEVERAL Countershaft Triumphs, fully renovated and guaranteed, at £55 cash, or extended payments.—Hackford Engineering Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [2316

TRIUMPH Combination, late 1919, new coachbuilt sidecar, lamps, 2 generators, speedometer, spring footboards, Easting Royal windscreen; £85; seen after 6.—Hazell, 20, Hoyle Rd., Tooting, S.W. [1633

EXCEPTIONALLY good Triumph Combination 1920, electric dynamo lighting, fully equipped, pare parts, any trial, Montgomery sidecar; £87/10.—Richardson, 110, Wilton Rd., S.W.1. (P) [1804

1921 Trimph-Ricardo, £120; also 4h.p. all-chain drive, £115; in stock for immediate delivery; exchanges, or deferred 4% extra.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2141

1922 Triumph-Ricardo, guaranteed perfect, trial machine 75 m.p.h., all accessories, many spares, insurance, Swan sports sidecar if required.—Offers to the Chauffeur, Warfield, Radlett, Hertfordshire. [2127

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TRIUMPH 4h.p. Combination, perfect condition, Mills-Fulford sidecar new this summer; any trial in this district by appointment; price £80.—Write full particulars to Capt. Jay, Alford, Lincs. [1585

AT Edwards'.—1922 4h.p. Triumph, Model H, fully equipped, lamps, horn, licensed, indistinguishable from new in every respect; 85 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2226

84GS., exchange.—1921 Triumph, 3 speeds, clutch, kick start, smart and comfortable coach sidecar, well equipped, smart turnout, new condition.—Seabridge, Hansler Rd., East Dulwich. (Sydenham 2452.) [2399

TRIUMPH Combination, Rideezi sidecar, pillion seat, new tyres, new guards, electric light, screen, year's tax paid, overhauled last week; selling through accident; best offer over £50; evening appointments only.—Barnett, 37, Marquess Rd., N.1. [9227

TRIUMPH Specialists.—Wanted, your present motor cycle in part exchange for any new model from stock. No waiting. Distance no object. Best prices allowed for second-hand machines. Deferred payments. (See column advertisement).—Bamber's, 2, Eastbank St., Southport. 'Phone: 607. [5161

TRIUMPH, 1921, all chain, complete with lamps, horn, licence, spring footboards, legshields, and very luxurious sidecar fitted with hood and screen and dickey seat, exceptionally fine condition; £105.—The Layton Garages, 30, Holywell St., Oxford. [1137

4h.p. 1921 Triumph, 3-speed, clutch and kick-starter, all on, tax paid, £85; 4h.p. 1919 Triumph, 3-speed, clutch and kick-starter, £70; 4h.p. 1916 Triumph combination, £60; 4h.p. Triumph and sidecar, 1918 model, Sturmey-Archer countershaft 3-speed gear, etc., £65; also 4h.p. 1914 3-speed gear model, with clutch and kick-start, £45; easy terms.—Wauchope's, 9, Shoe Lane, London. [2103

TRIUMPHS.—Buy from official appointed agents. New 1922 4h.p. combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D., all chain, £115; Model H, chain-cum-belt, £105; Junior 2¼h.p., £65; second-hand machines taken in exchange, remainder on easy terms; value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [2104

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

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TRIUMPH Spares per return. Full discount to traders.—Shuker and Son, Authorised Service Agents, Shrewsbury. [8795

COMPLETE stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Parts.—I am the merchant for these. Parts for all models, second-hand and new. By Return Service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [1908

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

THE Light Car and Motor Cycle Engineering Co., Ltd., hold large stocks of Triumph parts at exceptionally low prices; catalogues free.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (½ minute from Brixton Skating Rink.) [2195

SEND to the Rhosha Motor Garage, South St., Romford, for Triumph and Sturmey-Archer spares. No disappointing delays; every part in stock. Repairs by skilled mechanics. We are official service agents.—Tel.: Romford 584. [7766

Trump.

TRUMP-J.A.P. 4h.p. 1922 sports, 3-speed, clutch, T.T. close ratio gears, very fast; £80.—87, Worple Rd., Wimbledon. [2122

Velocette.

STOCKTAKING Clearance Sale.

SPECIAL offer of slightly showroom soiled 1922 Velocettes at great reductions.

MODEL E.2, 2-speed, £58; model E.L.3, ladies, open frame, 3-speed, £65; model E.3, gent.'s, 3-speed, £63; easy payments 4% extra; write for special clearance list; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [9343

VELOCETTE 1921, 2-speed, December licence, accessories, tools and spares; £35.—Manton, 77, Bushey Grove Rd., Watford, Herts. [1551

VELOCETTE, 1921, 2¼h.p., 2 speeds, lamps, horn, licence, new tyres; as new, £42/10.—The Layton Garages, 30, Holywell St., Oxford. [1138

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OPPORTUNITY!—George Denley's 1921 competition Velocette, 3-speed, many awards (including Travers Trophy); 52 m.p.h., sidecar anywhere, Lucas accessories, spares, perfect; £50.—70, Station Rd., Harborne, Birmingham. [1689

Wolf.

1915 3½h.p. Wolf, just overhauled; bargain, £15; trial.—Fairhurst, 68, Standishgate, Wigan. [1697

WOLF 2½h.p., 2-speed, excellent condition; £33; seen by appointment.—Bond, 22, Priory Rd., N.W.6. [1561

WOLF, 2-stroke, 2-speed, clutch, kick-starter, fully equipped, licensed; £25.—3, Norbury Parade, Norbury, S.W. [1779

WOLF-ARNO 3½h.p., detachable sidecar, 2-speed, and clutch, lamps, tax paid; £35.—24, Cottage Av., Bromley Common, Kent. [1731

WOLF-J.A.P. Combination 4h.p., 3-speed, countershaft, beautiful condition; 38 gns.; take Lightweight part.—57, Kenbury St., Camberwell, London. [1733

Wooler.

WOOLER 2¾h.p., Aug., 1921, perfect condition, spring frame, 9-speed, equipped, mileage 3,000, overhauled Wooler's this month, exceptionally good engine, satisfied owner, buying another Wooler; £45; appointment.—F., 163, New Park Rd., S.W.2. [2128

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OUR Stock includes: Super sports all-chain eight, £130; 1922 Bradshaw model, £75; new 1921 8h.p. countershaft model, 90 gns.; new 1921 5h.p. countershaft model, £85; 1920 8h.p. countershaft combination, £75; 1921 8h.p. countershaft combination, £95; 1922 super speed model 3½h.p. chain-driven Bradshaw, 80 m.p.h., mileage only 1,400, as new throughout, £120, or nearest offer.—Allan Gruzelier, Ulster Chambers, 168, Regent St. Regent 205. Works: Knight and Wheatley's Garage, Coulsdon, Purley 1277. [2353

5-6h.p. Zenith Sports, all on, taxed; bargain, £45.—Chuter, High Rd., Byfleet. [1830

ZENITH 5-6h.p. Countershaft, clutch, kick-start; 84 gns.; listed £118.—Below.

1922 3½h.p. Zenith-Bradshaw, slightly shop-soiled; 75 gns.; listed £113; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2286

ZENITH 1922, Bradshaw chain, very special; £78.—Clark, 7, Exhibition Rd., S.W.7. [2306

£95.—Zenith-Gradua Sports Model, shop-soiled, 8h.p.—Townson and Ward, Ltd., Barrow. [1404

SPORTS Zenith 1920 8h.p., equipped; £65; photograph.—6, Mount Pleasant Rd., Ealing. [1690

£92/10.—Zenith-Gradua Countershaft Model, shop-soiled, 6h.p.—Townson and Ward, Ltd., Barrow. [1406

ZENITH 1916 5-6h.p., countershaft, all on; £40; or exchange lightweight.—Old Bank, Clifton, Bristol. [1741

1921 5h.p. Zenith Sports, very smart, fast, and sporty; 44 gns.—67, Fernlea Rd., Balham, Exchange. [2365

£97.—Zenith-Bradshaw, 1922, oil-cooled, Gradua gear, shop-soiled, 3½h.p.—Townson and Ward, Ltd., Barrow. [1405

F.O.C.H. again lead the way.—Zeniths far below any anticipated price reduction.—5, Heath St., Hampstead (nr. Tube). [1605

ZENITH 1921 Sports 8h.p., as new, electric, tax paid; £65.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1954

ROBERTSON'S Motors, Ltd. — 1922 shop-soiled Zenith-Bradshaw, Gradua gear; £98.—157b, Gt. Portland St., W.1. [5932

1920 6h.p. Zenith, very little used, perfect condition, fully equipped; £65.—Thomas Batcheller, Highfield, Maidstone. [2044

ZENITH 5h.p. Sports, special machine, small mileage, seen evenings; £35; no offers.—Vickers, 158, Foxley Lane, Purley. [1766

ZENITH Combination 1921, as new, cost £200; nearest £95.—2, Criterion Buildings, Windows Bridge, Thames Ditton. [1802

ZENITH 8h.p all-chain Super Sports in stock. Exchanges, deferred.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [1342

ZENITH-BRADSHAW, new, unused, 1922 model, Gradua gear; 75 gns.—Eagles and Co., 275, High St., Acton, London, W. [2149

ZENITH Sports 1921, 8h.p., D.A. lighting, done 500 miles, speedometer, licensed, as new; £65.—3, Norbury Parade, Norbury, S.W. [1780

48 GNS.—Zenith-Gradua 1915 6-8h.p. Combination, handle start, licensed; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2413

1922 Zenith-Bradshaw, all chain, 3-speed; £101/10; slightly shop-soiled.—Merriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1518

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6h.p. Zenith Combination, Swan sidecar, lamps, spares, a sporty outfit in good condition.—Write Bird, 8, Harvard Court, West Hampstead. [1923

ZENITH Combination, Sept., 1921, 8h.p. countershaft, super-sports J.A.P., £85; 1920 ditto, standard J.A.P., £72.—Clark, 7, Exhibition Rd., S.W.7. [2304

ZENITH-BRADSHAW 1922, and Swan sporting sidecar, completely equipped and equal to new; £115.—The Layton Garages, 30, Holywell St., Oxford. [1154

ZENITH-BRADSHAW, 3-speed, chain drive, brand new 1922 model, but shop-soiled; £98; cannot be repeated.—Bradbury, 224, London Rd., Sheffield. [1129

1922 3½h.p. Zenith-Bradshaw, belt drive, shop-soiled only; 75 gns.; list price £113.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [1529

AT Edwards'.—1922 5h.p. Sports Zenith, excellent condition, two months old; 68 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2218

ZENITH 1919 8h.p. sports model, excellent condition; £70, or offers.—Haverstock Hill Garage, 50, Haverstock Hill, N.W.3. 'Phone: Hampstead 6609. [2341

1920 8h.p. Zenith countershaft, speedometer, lamps, guaranteed perfect; £50. Exchange entertained.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [1773

ZENITH-BRADSHAW 1922 3½h.p., shop-soiled; 82 gns.; exchanges; photographs free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open week-ends. [1072

1922 Zenith-Bradshaw Combination, all accessories, just thorough overhauled, very smart turnout, fast, chain drive; sell solo; must sell.—Apply 13, Alfred Place, South Kensington. [2206

ZENITH-BRADSHAW-GRADUA, new April, done 800 miles, perfect, tuned by Gruzelier, racing Amac; sell or exchange 1922 sports solo or combination.—85, Wiverton Rd., Sydenham. [2319

1920 8h.p. Zenith Countershaft, kick-start model, with £48 Henderson sidecar, screen, speedometer, etc., lovely outfit, almost unsoiled, £75, or separate.—Jeweller, 605, Garratt Lane, Earlsfield, S.W.18. [1814

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

Ladies' Motor Cycles.

2¾h.p. New 1922 New Comet, lady's machine, fitted 4 with Comet sidecar; £65; easy terms arranged.—Wanchope's, 9, Shoe Lane, London. [2105

FRANK WHITWORTH (Agent), 139, New St., Birmingham, emphatically recommends special lady's model of famous Ivy, daintiest of all ladies' machines; £62, complete; send for list. [5086

1922 Lady's Douglas, 3-speed, kick-starter, H.B. clutch, fully equipped, low saddle position specially made, not driven 50 miles, guaranteed as new; health only reason for selling; £90; approval with pleasure.—Gibb, 100, Northgate, Gloucester. [1075

STOCKTAKING Clearance Sale. — Showroom-soiled model E.L.2 Lady's open-frame Velocette, 2-speed clutch, kick-starter, reduced to £60; E.L.3, 3-speed £67; easy payments 4% extra; an exceptional opportunity.—Premier Motor Co., Aston Rd., Birmingham. [2278

Miscellaneous.

J. H. VILLIERS 1919, 2-speed, overhauled; £25.—Brookbank, 58, Lord St., Southport. [2173

1915 Precision 3½h.p., 3-speed, clutch, licensed £19; magneto, 25/-.—Bolton House, Southowram, Halifax. [2334

RUDGE-MULTI 1922, shop-soiled, £72; Norbreck 2¾h.p., new, £33; Mabon gear for Triumph, excellent order, £3/15.—Oswald and Son, Damacre Rd., Brechin. [1538

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash, inspection cordially invited. 'Phone: Holborn 5777. [2107

1922 Edmunds 2¾h.p., not been on the road, all chain drive, kick-start; £80. 1922 Monopole 2½h.p., quite new; 40 gns. 1920-21 Rudge-Multi been overhauled thoroughly; £50.—R. Evans, Newport Salop. [2026

KNOCK-OUT Prices.—Exceptionally good Rudge Multi, £25/10; 4h.p. o.h.v. J.A.P., running and appearance perfect, £24/10; 1910 Triumph unit, Chater Irame, very reliable, £9; any trial.—268, Ingleton St., Brixton. [2013

1914 Triumph, gears, etc., fully equipped, £43/10. 1917 Triumph combination, £62/10; 1920 Triumph solo, £62/10; 1921 Monarch 2-stroke, as new, £35; 1921 Omega-Jap, £52/10; 1920 Baby Triumph, £35; 5-6h.p. New Hudson combination, £42/10; 1919 New Hudson combination, family sidecar, £68/10; 6h.p. Sunbeam combination, £72; exchanges arranged.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [1592

MOTOR CYCLES FOR SALE.
Miscellaneous.

BLACKPOOL Bargains.—1922 Rudges, 1922 Ariels, 1922 O.K.'s, 1922 New Imperials, 1922 Quadrants, 1922 Royal Rubys. Quick deliveries. Good price for your machine; exchange.—Booths' Motories, Waterloo Rd., Blackpool.

BLAOKPOOL Bargains.—New 1921 4h.p. Bradbury, all chain, £78/10, with sidecar £98/10.—Booths' Motories.

BLACKPOOL Bargains.—New 9h.p. Rudge Combination, spare wheel, £160; new Bradbury lightweight, 2 speeds, K.S., £60; new Martinsyde combination, £150.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Triumph, £18/10/6; ditto, 2-speed, £22/10/6; ditto, 3-speed, £22/10/6.—Booths' Motories.

BLAOKPOOL Bargains.—3½h.p. Humber, £20/10/6; 6h.p. 3-speed Rudge, £29/10/6; 3½h.p. Premier, £24/10/6.—Booths' Motories.

BLACKPOOL Bargains.—3½h.p. Singer, 2-speed, £24/10/6; Phelon and Moore, £19/19/6; another, £35/10/6; N.S.U. lightweight, £13/10/6; 2-speed O.K., £23/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Rudge, dynamo lighting, £59/10/6; good Douglas, £25/10/6; 4h.p. Douglas with new sidecar, £69/10/6; 8h.p. Premier combination, £47/10/6; Enfield combination, £39/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 Matchless combination, spare wheel, hood, screen, lamps, £99/10/6; New Imperial, 2 speeds, K.S., £45/10/6.—Booths' Motories.

BLACKPOOL Bargains.—1920 G.N., dynamo lighting, spare wheel. £110/10/6; 1920 Tamplin, £59/10/6; Morgan De Luxe, £147/10/6; 1920 8h.p. Ruby combination, £79/10/6; 1920 3½h.p. New Scale, 3 speeds, K.S., £38/10; 6h.p. Bat, countershaft, 3-speed, £39/10/6; 1920 2¾h.p. Excelsior, £27/10/6; 4h.p. Enfield, £37/10/6; 6h.p. Indian, £32/10/6; 1921 Enfield lightweight, £39/10/6; 1920 Sun, £35/10/6; several others cheap; push cycles taken in exchange.—Booths' Motories, 294, Waterloo Rd., Blackpool. [5483

SOUTHPORT.—1919 Invicta-Jap 2¾h.p., 2-speed, 26 gns.; semi-T.T. Triumph 1911-12, 23 gns.; 1915 Diamond-Villiers, 15 gns.; 2¼h.p. Calthorpe 4-stroke, 2-speed, 16 gns.; 4-cyl. F.N., 2-speed, 16 gns.; 3½h.p. Royal Ruby Thrasher combination, 3-speed, electric lighting, 27 gns.; 2¼h.p. F.N., 2-speed, brand new tyres, excellent solo, 22 gns.—Kents, 417, Lord St., Southport. 'Phone: 1273. [2423

JONES' Garage, Broadway, Muswell Hill, N.10. this week offer a few special machines at prices to suit all. Big list free. Easy payments. 1916 Douglas 2¾h.p., 2-speed, equipped, £25; 1913 Premier 3½h.p., 2-speed, equipped, £22/10; 1915 New Ryder-Villiers, 2-speed, equipped, £25; 1915 Sa-Francis, 3½h.p. twin, 2-speed, equipped, £39; 1917 James 2¼h.p., 2-stroke, 2-speed, equipped, £30; 1921 New Hudson, 2-stroke, 2-speed, equipped, £45; 1922 Royal Enfield, 2-stroke, 2-speed, equipped, £50; 1918 Douglas 4h.p. combination, £55; 1914 B.A.T. 9h.p. combination, 3-speed box, £65; 1913 Matchless 8h.p. combination, £48; 1915 Harley 7-9 h.p. combination, £59/10. All tax paid; guaranteed, and in first-class order. You can see them tested on Muswell Hill, about the worst hill in London; it's a point to consider.—Jones Garage, Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [2431

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WANTED, Lightweight; up to £30 offered.—13a, Worple St., Mortlake. No. 9 'bus. [1796

WANTED, solo, cheap for cash.—Thompson, 32, Clarance Rd., Kentish Town, London. [2315

WANTED, Matchless double-seater or 2-seater small car.—Thompson, 253, Munster Rd., Fulham. [1783

WANTED, good solo and combination, reasonable.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [8433

MATCHLESS, Model H, wanted, cheap; call or write.—143, Ravensbury Rd., Earlsfield, S.W. [1254

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COUNTERSHAFT Triumphs, any condition, also pre-war models.—Jack Ward, 11, Radford Rd., Leamington Spa. [2043

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SOLO Sunbeam, Norton, Triumph, give 1918 Matchless combination and £20; also 1912 P. and M., Triumph wanted.—Potter, 28A, High St. 'Phone: 5298 Hampstead. [1644

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KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2590

1921 Whippet Scooter; £10; demonstration machine.—Broadhurst, 887, Lea Bridge Rd., Walthamstow. [1568

A.B.C. Skootamota, excellent condition; £25, or near offer.—A. Stapleton, Rotherwick, Basingstoke. [1485

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A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £20; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

MOTOR Scooter.—A.B.C. Skootamota, 1920 model, 1½h.p., very little used, and is in good condition; what offers?—John T. Young, Ltd., The Motor House, Newport, Fife. [1409

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CYCLOTRACTEUR, only shop-soiled, new price, £21; my price, £10/10, carriage paid.—Edwardes, 277, Camberwell Rd., S.E.5. 1789

£9/10.—Wall Auto-wheel and gent's Humber 2-speed cycle, taxed, running order, or separate.—Ewers, Newton Rd., Burton-on-Trent. [1861

1921 1¾h.p. Young's Attachment, James cycle fitted by makers, clutch model; £20, or exchange motor cycle.—18, Newton Rd., Ipswich. [1805

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SIDECAR, Torpedo Sports model, off Triumph; £7/10.—59, High St., Hampton Hill. [1489

SCOTT Sidecar, Cancelet type, complete, excellent condition; £7/10.—17, Heaton Rd., Mitcham. [1466

TORPEDO Sporting, navy; £6/10; low, perfect, all fittings, roomy.—26s, Ingleton St., Brixton. [2013

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MONTGOMERY Sidecar, excellent condition; £12/10 or offer.—256, Trinity Rd., Wandsworth Common. [2071

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SIDECARS, 1922, underslung, bulbous back, coach, £10/10; trade boxes for above chassis, 2-minute conversion, £2.—Taylor, 637, Seven Sisters Rd., Tottenham. [1680

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August 17, 1922.

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LIGHT Car and Motor Cycle Engineering Co., Ltd.—Millford chassis in new condition, £5; special Triumph type light chassis, brand new, £7; heavyweight chassis, brand new, £10.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (½ minute from Brixton Skating Rink.) [2194

PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0388

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BLERIOT-WHIPPET, as new, spare wheel and tyre; £75.—Mylam, 197, London Rd., Croydon. [1950

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TAMPLIN 2-seater, unscratched, as new; sacrifice, 68 gns.; exchange.—19, Valnay St., Tooting. [2357

MORGAN De Luxe, 1922 J.A.P. (a.c.), excellent condition; £130.—Main, 36, Parade, Leamington. [1817

SWIFT 7-9h.p., 2-seater sporting body, dynamo; £55.—Patrick, 28, Daleham Gardens, Swiss Cottage. [1919

MORGAN, late 1920, M.A.G., Grand Prix, equipped, taxed, perfect; £126.—Clark, 7, Exhibition Rd., S.W.7. [5854

1922 G.N., mileage negligible, wide dickey, dynamo, 5 detachable wheels; the season's bargain, £180.—Below.

TWO Lovely G.N.'s, little used, privately owned, dynamo; open to any reasonable offer of exchange; to be sold cheap.—Marlborough, 20, Finchley Rd., N.W.8. [9579

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MORGAN, overhauled, repainted, new tyres, excellent condition; £60.—Parker, c/o Powell, Swillet, Chorley Wood. [2124

COVENTRY-PREMIER 1921 3-wheeler, dynamo, splendid condition; £125.—Wallis, 32, Aberdeen Rd., Bristol. (D). [2159

58 GNS.—1921 A.V. Monocar, with dickey, 8h.p., 2-speed, lamps, etc., as new; exchange.—2, Madrid Rd., Barnes. [1795

1920 G.N., dynamo lighting, 3 new tyres, spare wheel, mileage 3,500; price £100.—Lake, 33, High St., Camden Town. [1560

MORGAN, 1921, dynamo, De Luxe model, equipped, and taxed; £140.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1957

A.V. Monocar 2-seater, sports model, Enfield 2 speeds, disc wheels, less power unit; £12.—59, High St., Hampton Hill. [1487

MORGAN 1913, 8h.p. J.A.P., good condition throughout, discs, any trial or examination.—Stubbs' Garages, Loughborough. [1744

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MORGAN-DE-LUXE w.c., J.A.P. 1922 model in stock, colour maroon.—Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [2396

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£65.—1921 Tamplin 2-seater, 8h.p. J.A.P., 3-speed, fully equipped, not done 500 miles.—Speechley, 86, Churchfield Rd., Acton, W.3. [1977

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GRAND PRIX Morgan, water-cooled, disc wheels, electric light, a beauty, no rubbish; £95.—Full particulars, 280, Gloucester Rd., Horfield, Bristol. [1859

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HALIFAX.—A.V. 8h.p., 2-speed, £75; 1921 A.B.C. sports 2-seater, £210; Morgan Grand Prix, water-cooled, overhead valves, £95.—Halifax Motor Exchange, Horton St., Halifax. [2184

COVENTRY PREMIER, 1921, dynamo, spare wheel, etc., new condition; accept £130; or exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1955

MORGAN.—1922 10h.p. M.A.G., water-cooled, complete oversize tyres, Watford speedometer, guaranteed perfect; £140.—Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [2398

BAYLISS-THOMAS 1922 10h.p, Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; .300 gns.; immediate delivery.—Godfrey's Ltd., 208, Gt. Portland St., London, W.1. [0736

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1922 Coventry Premier, dynamo, etc., as new; first reasonable offer secures; must sell this week; or exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [1956

1920 Morgan De Luxe, 10h.p. Precision, fully equipped, hood, screen, in really excellent order; £115.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2144

CYCLECAR Chassis, belt drive, 2-speed, tandem body, all tyres, £10. Monocar body and chassis, central pivot steering, front axle with wheels, tyres, £5.—28, Daleham Gardens, Swiss Cottage. [1920

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M.B. 3-wheeler, 1921, 10h.p. water-cooled Precision, aluminium bonnet, Zenith, spare wheel, screen, hood, not done 1,000 miles; £125, or exchange sporting combination.—Paradwys, Bodorgan, Anglesey. [1557

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1922 Reynolds Runabout, 2¾h.p., 2-stroke, 2 speeds, clutch, new, used 40 miles only, guaranteed faultless, suit lady or gent.; bargain, £45.—Stepney Garages, 77, Salmon Lane, Stepney. 'Phone: East 4542. [2006

IMMENSE Bargain.—Practically brand new 10h.p. 2-seater Car, latest model De Luxe J.A.P., cost £195; accept £95, or exchange anything valuable by arrangement.—Bradford, 191, Sweetman St., Wolverhampton. [2428

FAMILY Morgan, M.A.G. air-cooled engine, dynamo lighting, self-starter, tyres as new, foot accelerator; £120; several others from £70 to £160; cash or terms.—Bunting's Motor Exchange, Wealdstone, Middlesex. [2153

MORGAN, Grand Prix, M.A.G., water-cooled, 1920, sprockets, brakes, and bevels 1922, Auster side screen, Ace discs, speedometer, electric lighting oversize tyres, perfect condition; £135.—Outram, Ingatestone, Essex. [2310

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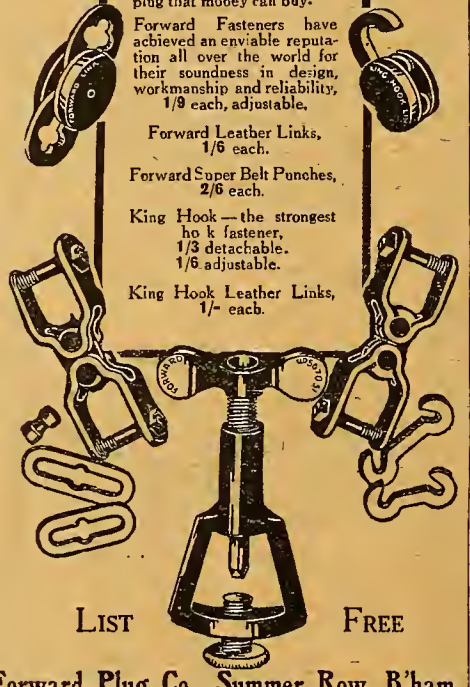

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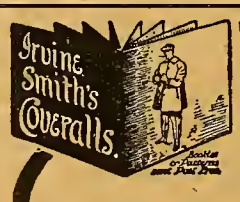

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HILLMAN Coupe, 1920, dynamo lighting, self starter, 2 spare wheels, excellent condition; sell 235 gns.; or accept G.N. in part payment with cash difference.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2258

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T.B. Three-wheeler, 1922, standard model, dynamo lighting, shop-soiled only, carrying makers' guarantee; bargain for cash only, £185; list price £215. —Mebes and Mebes (Est. 1893), the original light car specialists, 144, Gt. Portland St., W.1. 'Phone: Langham 2230. [9147

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1921 Coventry Premier; £46 down, balance £2 weekly over 12 months; taxed, dynamo lighting, spare wheel, 3 speeds and reverse, 3-wheeler, good condition, any trial; discount for cash; exchanges.—McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [9793

MORGAN 1920 Grand Prix, 10h.p. water-cooled engine, electric lighting, speedometer, hood like new and hood cover, dash lamp, aluminium running boards, new back tyre, Klaxon horn, top hole condition; £115, and a bargain. No offers, please.—74, Lyndhurst Rd., Peckham. [1924

1922 Morgan, Aero model, dynamo lighting, speedometer, electric horn, dash light, aluminium instrument board, hood with side curtains, domed wings, discs, indistinguishable from new; £170; good combination taken in part exchange.—Edwards, 50, Harrington Rd., South Kensington. [2287

ROVER Eight 1921 2-seater, indistinguishable from new, newly painted mauve, black wings, very smart, new hood, spare wheel, speedometer; taxed for 1922, all new tyres, dynamo lighting, faultless; you can see it climb Muswell Hill, and have free tuition; £165.—Jones Garage, Broadway, Muswell Hill, N.10. [2429

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MORGAN Spares from stock for all models.—Send your enquiry to Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [2397

MORGAN Spare Parts Depot.—Spares for all models from stock; list free.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

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£55.—Swift 2-cyl. 13.9h.p. 2-3-seater, dickey, tax paid. —4, Aldrington Rd., Streatham. [1552

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EXCEPTIONAL.—Late 1921 8h.p. Rover car, special finish; £135; exchanges.—24, Balliol Rd., North Kensington. [1998

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfreys', Ltd., 208, Gt. Portland St., London, W.1. [0350

FORD Landaulet, Saukey detachable rims, magneto ignition; bargain, 48 gns.—118, Hither Green Lane, Lewisham. [1658

ROVER 8h.p., 1922, only run a few miles, unscratched; £175.—Hillier, 9, Wallingford Avenue, North Kensington. [1874

BRAND New 1922 G.N., run few miles, De Luxe model, £160; ditto 1921, £115.—24, Balliol Rd., North Kensington. [1997

ROVER 8h.p., late 1921, as new throughout, any trial given; £140.—Hillier, 9, Wallingford Av., North Kensington. [1872

ROVER Cars.—The famous 8h.p. model in stock, £220; for immediate delivery.—Eagles and Co., 275, High St., Acton, London. [0761

COVENTRY-PREMIER, 1922, 4-wheel model; £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

WAUCHOPE'S, 9, Shoe Lane, London.—G.N., 1921 model, fully equipped, in excellent condition, spare wheel and tyre; £130. 'Phone: Holborn 5777. [2106

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PALMER'S Garage, 187-199, High St., Tooting, will accept your old car or motor cycle as part payment for any car in stock. For cash price deduct 10% from above totals. [2298

ROVER 8h.p. 1922 (April), taxed, dickey, scarcely used; bargain, £182/10.—Clark, 7, Exhibition Rd., S.W.7. [1244

WEST Norwood!—60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, West Norwood [1932

8h.p. Rover Car, mid 1921, little used, laid by 6 months, appearance as new, never had accident; £160.—T., 13, The Square, Wolverton. [1431

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8h.p. Rover Car, 1909, two bodies, van, and 4-seater, sound condition; sell £40, or exchange combination; after 6.—87, Shakespeare Rd., Acton, W.3. [1362

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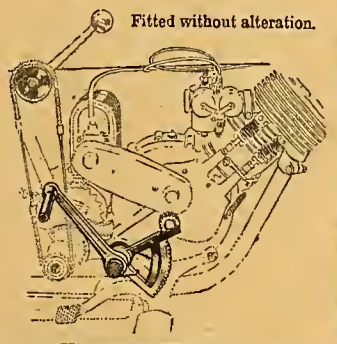

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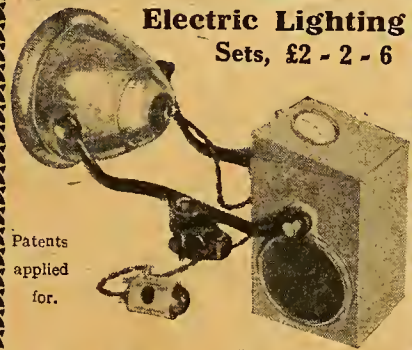

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SWIFT, 2-3-seater, double dickey seat, dynamo lighting set, horn, special side curtains and other extras, good tyres, chassis and engine recently overhauled and repainted; guaranteed in perfect condition throughout; licensed to December; £175. Part exchange with modern motor cycle or combination arranged. Write for list of other second-hand bargains.—Herbert Robinson, Ltd., Regent St., Cambridge. [2213

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P. and M. Engines, £4/10; overhauled and completed, £6/10; spares.—7, Hereford Rd., Bayswater. [6104

1920 2¾h.p. 2-stroke unit, less silencer, U.H. Amac, seen running by appointment; £10/10.—33, Clare St., Cardiff. [1549

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£3/15.—ZE1 Bosch pattern, new, singles only, exceptional value; please state rotation; approval against cash.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1351

2¾h.p. J.A.P. 1918, overhauled J.A.P. agent, £3 worth new parts, guaranteed perfect; £7/10; seen running.—86, Florence Rd., N.4. [1824

MOTO-REVE 2h.p., twin unit, magneto, carburetter, silencer, complete less front piston; £3.—E. Tranter, Hampton-in-Arden, Birmingham. [1548

ENGINES.—L.M.C. 3½h.p., Bosch and carburetter, perfect, £7; Peugeot 6h.p., a.i.v., Senspray and Bosch, in perfect running order, £8.—Marriott, Key Hill, Birmingham. [2017

1921 Villiers engine with late 1922 flywheel magneto, complete with silencer and engine plates; £10, or near offer; appointment by letter only.—A. E. P. Hunt, 4, Hobury St., Chelsea. [1564

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A SOUND 3h.p. 4-stroke engine, outside flywheel, Amac, complete less magneto, going order; 50/-.—Parkinson, 9, Prices St., Blackfriars, S.E.1. [1571

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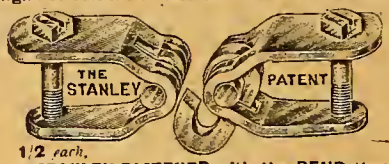

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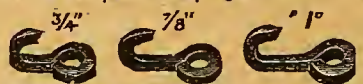

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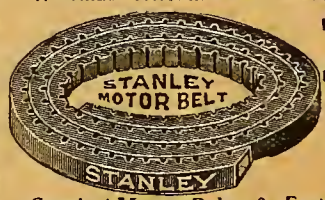

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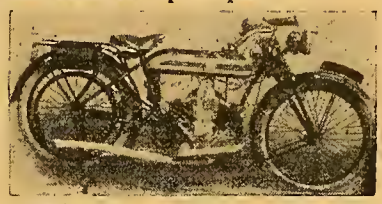

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26×2½.—Rom Combination, 30/-; Palmer cord 3-ribbed, 31/10; Hutchinson rubber studded or ribbed, 27/-; Macintosh chain tread, 28/-; Clincher de Luxe, E.H. rubber stud, 27/6; new tubes, 6/6.

650×65.—Emanuel's extra heavy rubber studded, 26/-; Hutchinson 3-ribbed, 32/-; Palmer cord 3-ribbed, 31/10; Burnett grooved, 30/-; Dunlop 3-ribbed, 40/-; new tubes, 6/6.

700×80 to fit 650×65 rim.—Emanuel's anti-rubber non-skids, 41/9; new tubes, 6/6.

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26×2¼.—Palmer cord, 32/6; Beldam all-rubber, 25/-; Wood-Milne 3-ply, 22/6; Clincher de Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

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26×2⅜.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Beldam all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6.—Below.

28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 8/-.—Below.

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4 ONLY, 26×2¼ side treaded covers, suitable for grass track work, used once only; 15/6 each.—Herbert Robinson, Ltd., Cambridge. [2214

500 New Beldam Covers to clear, all sizes, 15/- each, postage 1/6 extra.—Homerton Rubber Works, Brooksby's Walk, Homerton, E.9. [0351

SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 436, Argyle St., Glasgow. Lists post free. [5200

MASONS.—The most competitive market; 700×80 Palmer cord, 45/-; 650×65 Michelin Universal, 35/-; 28×3 Goodyear A.W.T., 47/6.—Below.

MASONS.—Great offer Wood-Milne Key-grip; 26×2½ heavy, 21/6; ditto, extra heavy, 25/-; 28×3 heavy, 30/-; 700×80 heavy, 35/-; 24×2¼ heavy, 18/6; 26×2¼ extra heavy, 23/6; 26×2¼×2¼ extra heavy, 28/6; 650×65 extra heavy, 25/-; 28×2½ extra heavy (American), 30/-; approval against remittance, satisfaction guaranteed; carriage paid.—Masons, The Tyre House, Ipswich. [0916

CLIPPER Ideal New Heavy Covers, 26×2¼, 24/-; 26×2⅜, 27/-; 26×2½×2¼, extra heavy, 32/-; carriage 1/3.—Davies, Union St., Wednesbury. [4452

WORLD'S Heaviest Tyre, 6-ply, ⅞ thick, puncture-proof, 26×2¼ and 2½, 25/-; 28×3, 30/-; 650×65, 38/-; 700×80, 45/-.—Durant, Bourne, Farnham. [1675

ECONOMIC Tyres.—We have the following blemished and clearance covers and tubes in stock. We send on 7 days' approval against remittance, carriage paid, passenger train.

ECONOMIC.—24×2, Clipper Ideal, 15/-; tubes, 5/-; 24×2¼ (also for 2in. rims) Clincher Junior de Luxe, heavy, 20/-.

ECONOMIC.—26×2 Clipper Rubberstud, 17/6; 26×2¼ Palmer heavy cord, 37/6; Firestone non-skid, 28/6; tubes, 5/6.

ECONOMIC.—26×2½×2¼ Goodyear All-weather, 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redfern heavy rubberstnd, 27/6; Clipper Ideal, extra heavy, 35/-; tubes, 7/-.

ECONOMIC.—28×3 Goodyear All-weather, 49/6; Goodrich Safety, 47/6; Firestone non-skid, 45/-; Portage non-skid, 41/-; tubes, 6/6.

ECONOMIC.—650×65 Stepney Roadgrip, 39/6; Goodrich Safety, 39/6; Clipper, extra heavy, 32/6; tubes, 6/6.

ECONOMIC.—700×80 Beldam V-grooved, 50/-; Ecooomic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warranted; 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26×2¼, 25/9.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14 (near Town Hall). 'Phone: New Cross 1393. [2238

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [3955

LONG-DISTANCE Retreads, three-ribbed pattern, returned like new, 26in. tyres, 20/-; 28in. tyres, 25/-; burst tyres made perfect, chafed beads remoulded, tube vulcanising, butt ends fitted; best work in the country.—Melton Rubber Works, Melton Mowbray. [0347

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Established 16 years.

No better or Cheaper House

26×1¾	**Clincher,** Rubber non-Skid	15/-
24×2	**Clincher de Luxe,** Junior	17/6
	Ditto, ex-Heavy	21/-
24×2¼	**Hutchinson,** T.T., Rubber Stud	21/-
26×2	**Hutchinson,** T.T., Rubber Stud	21/-
26×2¼	**Hutchinson,** T.T., Rubber Stud	22/-
	Spencer Moulton, Sq. ribbed	18/6
	Spencer Moulton, St. Stud, ex-Heavy	24/-
	Clincher de Luxe, Heavy	23/-
	Goodrich, Safety Tread, ex-Heavy	27/-
	Michelin, Semelle Steel Stud	20/-
26×2¾	**Hutchinson,** T.T., Rubber Stud	23/-
	Clincher de Luxe, Heavy	23/-
	Palmer, Cord, Heavy	29/-
26×2¼ to fit 26×2¾	**Goodrich,** Safety Tread, ex-Heavy	36/-
	Clincher Dreadnought, ex-Heavy	36/-
	Hutchinson, Passenger, Rubber Stud	36/-
	Dominion, UscoRubber, non-skid, Heavy	25/6
	Dominion, Corrugated, Heavy	28/6
	Hutchinson, T.T., Rubber Stud	27/6
26×2¼	**Hutchinson,** Super Stud, ex-Strong	55/3
	Goodrich, Safety Tread	35/-
	Hutchinson, T.T., Rubber Stud	25/-
	Spencer Moulton, 3-ribbed, ex-Heavy	22/6
	Michelin, Fine Ribbed	19/-
	Spencer Moulton, Steel Stud	25/-
	Englebert (Wired Edge)	25/-
650×65	**Goodrich,** Safety Tread, ex-Heavy	38/6
	Clincher Dreadnought	34/-
700×8	**Clincher,** 3-ribbed, ex-Heavy	47/-
	Goodrich, Safety Tread, ex-Heavy	48/-
	Goodyear, All Weather	52/-
	Super Chain, ex-Heavy	42/-
	Hutchinson, Super Stud, ex-Strong	61/-
28×3	**Goodyear,** All-Weather Tread, ex-Heavy	49/-
	Goodrich, Safety Tread, ex-Heavy	44/-
	Firestone, Rubber non-Skid, ex-Heavy	42/-
	Portage, Rubber non-Skid, ex-Heavy	40/-
	Clincher De Luxe, ex-Heavy	37/-
	Clincher Dreadnought, ex-Heavy	50/-
	Hutchinson, Super Studded, ex-Heavy	64/3

TUBES.

Goodrich, Clincher, Hutchinson, and **Red Fox.**

24×2 and 24×2¼	each	4/3
26×2¼ and 26×2½	each	5/6
700×80, 28×3 and 650×65	each	7/6
Goodyear Butted 28×3	each	7/6

The above New Clearance Covers and Tubes are sent on approval against remittance

HOURS—9 till 6: Saturdays 9 till 1.

228, Pentonville Road,
King's Cross Road, LONDON, N.1.

'Phone: 2481 North. 'Grams: Bastones, London.

Rhosha Motor Co.,

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Shop-soiled, brand new and second-hand motor cycles.

New type H TRIUMPH, list £105. Our price **£94 10 0**

Type H TRIUMPH 1921, perfect condition, fully equipped, tax paid ... **£75 0 0**

DOUGLAS 2⅜, 2 speed, perfect condition, tax paid **£29 0 0**

B.S.A. comb., Magdyno lighting, a splendid outfit, tax paid **£118 0 0**

TRIUMPH, S.D., Shop-soiled, chain drive, list £115. Our price ... **£103 10 0**

10% redaction on all TRIUMPH and Sturmey Archer gear box repairs.

TYRES.

CENTRAL Garage for Fair Dealing. All covers advertised are guaranteed. What is more, we will send with all lines a portable vulcaniser free of charge; no motor cyclist should be without one.

SPECIAL Offer of Palmer Cord Tyres.—26×2¼×2¼, 35/-; 26×2½, 35/-. These covers are brand new and guaranteed.

SPECIAL Offer of brand new and guaranteed Goodrich covers, 26×2¼, 27/-; 26×2½, 34/-; 650×65, 36/6; 28×3, 45/-.

26×2¼.—Firestone, 27/6; Clincher E.H. (oversize), 28/-; Clincher Junior, 19/-; Wood-Milne E.H. combination, 22/6; Hutchinson T.T., 21/6.

26×2⅜.—Avon tricar, 27/6; Hutchinson, 26/6; Clincher de Luxe (for 2¼), 28/-.

26×2½.—Hutchinson Passenger, R.S., 29/-; Clincher E.H., 29/6; Hutchinson T.T., 25/-.

26×2½×2¼.—Dunlop H., 46/-; Hutchinson T.T., 30/-; Avon E.H., 28/-; Belgrave cord, 25/-; Continental H., 32/6; Palmer cord, 35/-.

26×3.—Continental H., 35/-; E.H., 40/-; Dunlop H., 54/-; E.H., 62/9.

28×3.—Clincher E.H., ribbed, 42/6; Dunlop sidecar, 30/-; Macintosh chain tread, 25/-; Goodyear Diamond, 49/6; Firestone, 42/-; Goodrich, 45/-; Portage, 43/-.

650×65.—Goodrich (guaranteed), 36/6; Hutchinson H., 32/-; E.H., 37/6; Rom E.H., 37/6.

700×80.—Avon extra heavy, 44/-; Goodyear, 52/6; International, grooved, 50/-.

TUBES.—Small size, 5/6; 28×3 and 700×80, 7/-.

CENTRAL Garage.—Any covers sent on 7 day's approval against cash, plus 1/6 carriage.—302, London Rd., Thornton Heath. 2237 Croydon. [2234

26×2½ for 650×65 rim Palmer cord 2-ply, only 20/- each; Macintosh, 20/-; other makes same price; 700×80 Clincher tubes in boxes, perfect condition, 6/- each.—Mabie Arch Motor Exchange, 135, Edgware Rd., W.2. [2373

HEPPELTHWAITES.—Old Man Hep for tyres, 28×3-26×2½ oversize and 700×80-650×65-26×2¼ and ⅜, all makes and sizes. 28/- each; tubes, 2¼ and ⅜, 4/6 each; a few 26×2 covers at 25/-; money back guarantee.—19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [2282

MANUFACTURERS' clearance and shop-soiled bargains:—24×2¼ Moseley 3-ribbed, 25/-; 26×2¼ Moseley 3-ribbed, 30/-; 26×2½ to fit 2¼ Moseley cable, extra heavy, 45/-; heavy 3-ribbed, 35/-; 26×2½ Moseley, 30/-; Kempstall heavy, 30/-; Bates heavy, 30/-; 26×3 and 650×65 Bates, extra heavy, 40/-; John Bull heavy studded, 40/-; 28×3 Bates double treaded, motor car weight, 50/-; Cuthbe heavy, 45/-; 700×80 extra heavy Ajax, 45/-; inner tubes, all brand new, 26×2, 5/-; 26×2¼, 6/-; 26×2½, fit 2¼, 6/6; 26×2⅜, 6/6; 28×3, 8/-; 650×65, 8/-.—Herbert Robinson, Ltd., Regent St., Cambridge. [2215

TANKS.

TANKS for B.S.A., new, 38/6; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [7107

25/-.—Brand new latest pattern tanks for Douglas machines.—Beechwood, Stapleton, Bristol. [1760

TANKS for Triumphs, new, 38/6; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [7106

TANKS for Humber, 1921 pattern, to fit 1912; 38/6.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [7108

TANKS Renovated, makers' colours, from 11/6.—De la Cour, Enamelling Works, 298, Kennington Rd., S.E. [2032

TANKS Re-enamelled, makers' colours with transfers; 15/6.—Bright and Hayles, 78, Church St., Camberwell, London. [2132

DOUGLAS pattern tanks, new, enomelled and fitted with B. and L. pump; 55/- complete.—Day, 85, Cheapside, Birmingham. [7734

COVENTRY Tankers, Ltd., makers to the principal manufacturers, petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [7109

TANKS Re-enamelled to Pattern; high-class work only.—D. Jenkins and Sons, 6, Richard St., Atkinson St., Deansgate, Manchester. Established 25 years. [2245

TANKS Made or Repaired, re-enamelled, lined, transferred; handle-bars, etc., plated. Established 30 years.—Attwood's, 86, Rosebery Av., London, E.C.1. [7073

TANKS.—We undertake partition leakage, fastenings, and every repair with re-enamelling as new in six days. Tanks in stock for all makes from 35/-.—Park Tank Works, 1A, Paradise Rd., Highbury, N.5. [9647

TANKS.—All kinds made to order, 32/6 each, including 2 plated fillers, 2 taps. Delivery 14 days, carriage paid. Satisfaction guaranteed or money returned. Enamelling, one colour, 10/6; two colours, 17/6.—Order forms from H. Peel, The Liverpool Tank Hospital, 5, Smithdown Lane, Puddington, Liverpool. [9194

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
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Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

The Charm of the 1,000 c.c. Solo Machine.

EVERY now and then readers battle in our correspondence pages over the old question of the big twin solo mount's justification. It is after all neither original nor unnatural to ask why the type continues to exist in face of present-day 250 c.c. and 350 c.c. machines of astounding efficiency and remarkable road capabilities. At the same time it is not difficult to make a satisfactory answer.

The querist in this case is a distinct type; the man who takes up cudgels on behalf of the 1,000 c.c. mount is another. Usually the one cannot see the other's viewpoint, and the argument between the two may be interminable.

It amounts to this. The best sports or semi-sports 350 c.c. singles have sufficient speed and hill-climbing powers for ninety-nine per cent. of the world's motor cyclists. But it is not effortless speed, nor is it sheer power. "Revs" in the first place and "revs" *plus* a low gear in the second are the means whereby the small engine does big things. People of a certain temperament object to both; they dislike fussiness.

Particularly is this the case with really hard riders who think little of a 300 miles trip between breakfast and supper. The average man seldom if ever rides his machine hard enough and long enough even to notice the trait at all.

Furthermore, when a 350 c.c. mount is driven at as high an average speed as prudence permits, it is often working very nearly at the limit of its capacity. Under similar circumstances the big twin retains a proportionately great reserve of power. Not only, therefore, is the latter, with its higher gear, more pleasant to drive; it also wears longer and requires less tuning and adjustment during any given yearly mileage. Possessing larger tyres, it is less tiring to drive.

There will always be a demand for a well-designed big twin solo mount. Even to-day the British market does not too well cater for the soloist who appreciates the deceptive smoothness of a 1,000 c.c. engine driving through a $3\frac{1}{2}$ to 1 gear.

Hill Climbing Contests.

REGULAR attendance at modern hill-climbs arouses wonderment as to whether the present policy regarding these events is the best one. Easy gradients which are hills in name only are becoming the rule. We recognise that modern hill-climbing is not popular with the police authorities in many districts, and it is becoming particularly difficult, especially in the Midland counties, to obtain permission to run a climb on a hill that is in any way suitable.

Not infrequently the only available venue is quite unsuitable as a test; either the hill is on a main road where traffic causes long delays, or the hill is too easy or too tortuous for safety. A straight hill with a gradient reaching perhaps the easier single figures becomes a speed trial pure and simple, and the honours are usually carried off by a machine which covers the measured distance at well over a mile a minute.

On the other hand, with regard to freak hills, reliability trials cover all the ground that is necessary, and prove that the only machines which are mishandled or are out of tune are likely to fail under any test which would be applied by the touring motor cyclist.

The alternative appears to be a climb on American lines, wherein an impossible gradient (not necessarily on a road) is chosen and the award goes to the competitor who reaches the highest point. Suggested venues would be interesting.

An index to the advertisements in this issue will be found on the page facing the back cover.

For the Novice.

I HAVE latterly had intercourse with sundry novices, who complained that the starting up of their engines was uncertain, both when cold and hot. In every case the trouble was of their own making, and was connected with flooding of the carburetter. They variously tickled their float chambers much, little, or not at all. They leant their machines against the kerb, now on the offside, now on the near; and as all the machines had their float chambers mounted at one side of the jet chamber, the petrol level was raised or lowered accordingly. In spite of such vital variations in the fuel supply, they expected the engine to start at the first kick on a lever setting which they never altered by a hair. Furthermore, they used the same lever setting whether the engine was ice-cold or red-hot, whether its cylinder was full of gas, or contained nothing but dank, stale air, inhaled the night before. Every practised rider is aware that circumstances alter cases when an engine has to be started up; and a very few experiments teach him whether the air lever should be closed right off for starting or not; and if not, how far it should be opened. But these unfortunate beginners had struggled vaguely and hopelessly for weeks, never getting a quick start except by some gorgeous fluke. Let them take heart. *Moi, qui vous parle*, pass through a similar phase, lasting perhaps twenty-four hours—with most new machines which I take over. At the expiry of that period I can generally set the levers to guarantee a first kick start, cold or hot.

Celluloid Over the Eyes.

THERE are several very obvious objections to goggles. They make one look like a cross between a deep-sea diver and a bullfrog. They are always getting broken. They are uncomfortable, unless the fit is perfect and the quality good. They soon get dusty inside. They dim with condensed moisture when first adjusted on the face. It is now alleged that they hamper hearing. So it is not surprising that a variety of celluloid vizors are on the market. Within the last few months I have tested three different devices of the kind. The "Phace Screen"—comfortable; unwieldy; and hostile to tobacco and alcohol. The Pidko cap—a good tweed cap, with a celluloid vizor which folds into the peak when not required for use. The C.G.P. screen—a light, cheap, unframed mask, which rolls up into small compass for the pocket. All of these gadgets afford as good protection as goggles. The two small devices are perfectly sightly. None of the three are breakable. Yet I cannot vote heavily for them as against goggles, for the simple reason that celluloid imparts a faint yellowish tinge to the landscape, and scratches so easily. If somebody will invent a celluloid which is absolutely colourless and does not scratch, he will do us a good turn and line his own pockets most opulently. Until then, glass will remain more popular than celluloid. Many people who have purchased modern cars fitted with featherweight all-weather equipment are growing somewhat discontented with the jaundiced aspect their windows impart to the scenery. Can the doctors do nothing to help us? There are many motorists with rheumy eyes and noses, apt to run freely against a stiff wind. One would fancy that a chemical injection of a drop or so might be the best expedient? In the meantime I take glass goggles when I am out for speed, and wear a Pidko cap on ordinary occasions.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

In Winnipeg.

IF I am ever deported, I shall go to Winnipeg. The local motor cycle speed championships were held on a dirt track, and a gentleman named Johnson, of Fargo, N.D., managed to finish second in the three-mile professional championship after riding the last five laps with his back tyre off the rim. I think I might possibly win in company where such mishaps do not spoil one's time at all seriously. But I am rather intrigued as to the technical details; he must have had a few security bolts fitted. If Mr. Loughborough really wants to brighten Brooklands, he may be glad to know that at Winnipeg they relieve the tedium of a track programme by introducing a lady rough-rider on a broncho. Unfortunately the broncho bolted to its stable before she could finish all her stunts. No. On second thoughts I will not go to Winnipeg. My correspondent concludes with the remark that the hinterland is gumbo, and that if a shower catches you afield, you have to push home, for no man can hold up a two-wheeler on wet gumbo. Moreover, the city streets are crammed with Fords, and for six months in the year you have to boil your lubricating oil before it will flow out of the can. Incidentally, how do the Winnipegians manage to distinguish the professional rider from the amateur? It is more than we have ever achieved over this side.

No, Thank You!

A KINDLY reader has no doubt that I am an expert chemist, and desires me to test and report on the actual efficiency of various chemical dopes now advertised for motor cycle purposes, ranging from carbon removers to "stunt" oils, and substances designed to improve the power output or fuel economy of petrol. As a matter of fact, I make a point of testing most of these things. But it is often impossible to decide on the precise value of such dopes with no other data than road tests afford. In many cases the claims amount to no more than a fractional improvement in some item of the performance, and if such an improvement is noted under rough riding conditions, the difference may easily be due to some extraneous factor. I think it is up to the salesman to convince the buying public. The A.C.U. and Faraday House between them can usually devise a scientific and reliable test of almost any motor cycle invention; and I do not care to commit myself without irrefragable evidence.

Look to Your Lamps.

DAYS are already shortening, and in a week or two the clock will be put back an hour. It is high time for us all to overhaul our lighting equipment. Happy will be the man who has a good dynamo. Especially if he remembers to replace that spare bulb which he used up last spring. I do not intend to cover eighteen miles with a pocket flash lamp strapped on to my headlamp, as happened this time last year.

No Punctures.

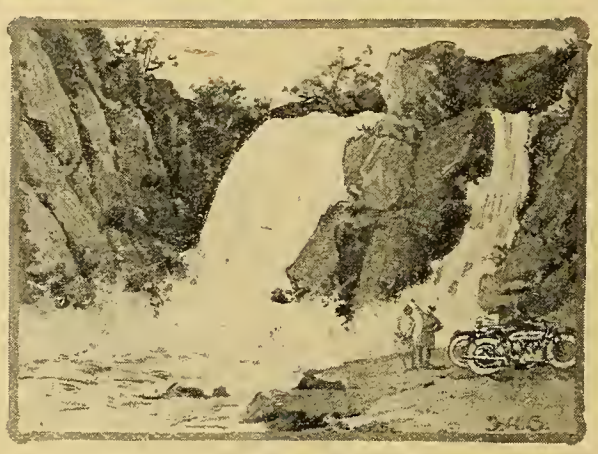
ALL this summer I have run on Challenger tubes, which now deserve a fuller report than I was able to make a year ago. It is perhaps unfortunate from the standpoint of any interested reader that my tyres have dodged any large gashes all this year. The tubes have proved perfectly efficient in promptly sealing small nail punctures, against which they form a most useful insurance. Whether they would succeed against major injuries is doubtful, and I should not feel sanguine on the point. I have tested them in 3in. tyres, which very seldom pick up a nail; and also in ordinary small tyres, which are perpetually collecting ironmongery from the road. The sealing is so prompt and complete that one remains unaware of the puncture until one notices a projecting nail at a stoppage, or detects a hole when examining the dismounted cover later on. If there is any loss of pressure during the sealing process, it is too slight to be noticeable except to instruments.

Views.

MY colleague "Friar John" started a hare which should prove full of running when he asked for the finest prospect in Great Britain. I suppose he is ruling out scenes which depend on the temporary camouflage of fog, moonlight, and other auxiliaries? If not, even Trafalgar Square or Euston Station can be impressive under certain conditions, and Mr. Joseph Pennell's pencil could make the interior of a steel works look beautiful. However, I will make three serious contributions to his list. The pass of Brander, running down to Oban, deserves a vote, especially in certain lights. The prospect from the top of Blagdon Hill, between Taunton and Honiton, is always worth a visit. On the crossing of Dartmoor from Moreton to Tavistock there are some gorgeous panoramas, probably at their best as dusk comes on in summer, or when a heavy covering of snow brings up grey shadows diversified with the vivid green of the grass edging the moorland brooks. I would warn anybody who wishes to sample the view from the summit of Applecross which is recommended that they should take a tent with them, and rations for a week; for the view obtainable on three of my visits can be reproduced cheaply at home by dipping a linen sheet in the bath, and wrapping one's head in it. Furthermore, no motor cycle will quite go where the best views are.

BOLTBY VILLAGE IN THE HAMBLETON HILLS. This little-known and beautiful district in North-East Yorkshire was first revealed to many motor cyclists in the Six Days' Trials, and later to competitors in the recent Yorkshire Centre team trial.

By Becks and Broad Acres



A Motor Cyclist's Week-end in the Yorkshire Dales: History and Legend of an Interesting District.

By G. BASIL BARHAM, C.E.
Illustrated by F. HAMMERSLEY BALL, R.A.

WITHOUT doing too much adventuring along bad surfaces and up almost impossible gradients, there is a vast deal to be seen and enjoyed in Yorkshire that is missed and unsuspected by those who only see the county when they dash through it in the wild Whitsun run to Edinburgh.

Richmond in Swaledale was our starting point.

There is little to say about Richmond that has not been said. The castle, eleventh-century work chiefly, is noteworthy in that King Arthur and his knights of the Round Table sleep in a cave beneath the keep, a fact not generally known. Years ago, someone actually found his way into the cave, after partaking of quantities of a strange brown decoction of malt bittered with hops and known locally as "stingo." He seems to have lost his nerve momentarily and fled as the knights awakened. For years after, until his death in fact, he searched for the lost entrance, but never again found the narrow passage leading to the cave, nor did the townsfolk, who sought it diligently for years after old Potter Thomson had gone to rest. Even to-day the children spend hours every fine day in paddling in the Swale and scrambling up the castle hill, searching for King Arthur's cave.

We visited St. Mary's church (to see the fine old carving removed centuries ago from Easby Abbey) and also Holy Trinity, where you can buy beefsteak or tobacco, as the church has been turned into shops. The bells, however, still hang in the tower and ring reveille and curfew every day in the year. We also rode to see the Grey Friar's Tower, all that remains of a huge building erected by the Franciscans in 1258.

The ten or eleven miles to Reeth are said to form the most beautiful road in England. There is a certain local prejudice evident in the statement, but, still, the scenery is not only charming but also impressive, just as is the approach to Torrington, the first view of Ulleswater, and the North End Road, Fulham, on a Saturday night. Just after leaving Richmond one passes through Grinton, where stands Swale Hall, the first place in Yorkshire where a cup of tea was made. It is said that the man who drank it went out in desperation and invented Yorkshire stingo.

There is little to see at Reeth except the old lead workings. The district seems heavy with lead ore and no doubt when road transport is improved it may pay to re-open the numerous abandoned mines. From Reeth, to Muker, nine miles of indifferent road lead through Helaugh, where a number of lead mines were once worked; a horn used to be blown here at night to call home the Swaledale cattle from the reach of wandering wolves and lawless men. From Muker, of course, we had to try Buttertubs Pass, which a few years ago was one of the wildest and least-known highways in England. Originally the ancient Neolithic military road between Swaledale and Wensleydale, it was once of great importance. We found the surface badly worn, and the gradient, although not steep, was trying.

The view from the top of Buttertubs—by the way, don't believe that guide book yarn about the name having been given to the hill because those curious round pits at the top look like buttertubs; they don't, and never did, and the name was given to the pass when people didn't know how to make tubs, but carted their butter round in skins!—is certainly very fine; one looks over apparently scores of miles of hills and dales, with a wonderful blue haze colouring every valley and a thousand jewels sparkling in the sunlight as it touches the millions of tiny rills, springs and streams. And when the beauty of the countryside has been ab-

Picturesque falls near Bainbridge, near which are pools famous for their trout.

"Perhaps the most forbidding looking ruin in England," Bolton Castle, in picturesque Wensleydale.

sorbed, it is a short run down into the old-world village of Hawes, where a lunch of country bread, milk with a sort of yellow scum on top, and Wensleydale cheese may be enjoyed.

When in Hawes, Hardaw Force, a waterfall with a drop of 100 feet and which, I should say, would provide the district with electric light were it properly taken in hand. must not be missed. At present it is a bathing place for elves and fairies, which dash in and out of the blinding spray and wonder why motor cyclists' hands are not so clean as could be desired. Near here is the Green Dragon, where there is bread and yellow butter and pale cheese and a quaint-looking, frothy, brownish liquid!

A Stone Age Road.

We turned sharp to the left at Hawes, up Scar Head, past Gayle, and on until a lane from the left joined our road. About 700 yards from here a green road crosses the track; this is a pathway of immense age, made by the Stone Age men thousands of years before the Romans came, and leads on the right to Arkholme and the sea. We turned along it to the left (there are a couple of awkward corners here, a right and left turn) to Marsett and on to Carr End. Here is the Devil's kingdom.

On the right is Semmerwater, which is no ordinary lake. On the contrary, it is a judgment, a cataclysm, a—well, if you go along the bank until you come to Curlew Stone you will see where the Devil sat and rocked in paroxysms of mirth as the wicked city of Semmer crumbled before his eyes and the rising waters drowned the land. Semmer was a busy town where they did "nowt for nowt for nobody," and when a saintly visitor came to them asking alms they drove him empty away. One man—I hate to tell this story, but perhaps he was a Lancashire man—stole the holy mendicant's cloak! On the other side of the city lived a poor man from Surrey or Kent or Middlesex, and he gave the saint bread and butter and cheese and a nice cold drink of water. So, as a reward, the saint told him to save himself as the city was to be drowned. And drowned it was, too, before morning, and as the Essex or Bucks man, or wherever he came from, hurried away, he heard the raucous laughter of the Devil and the shrieks of hundreds of drowning people. Probably there is some truth in the Semmerwater legend; some Celtic

By Becks and Broad Acres.—

or Neolithic settlement may have been swept away by the bursting of a mountain reservoir when the lake was formed.

At the end of the lake the road crosses the Bain, just the place for trout, and goes on to Low and High Blean, where the view of the lake is nothing short of superb, and then turns sharp right and back along the other side of the river to Askrigg. Bainbridge, said to be the Bracchium of the Romans, is passed, and at Brough and Addleburgh hills are two camps said to be Roman. We did not climb to see, but incidentally about 90 per cent. of the camps in this country that are said to be Roman turn out on examination to be British camps of the Bronze or late Stone Age. Incidentally, there is a chest of gold lying about in this neighbourhood. The story is trimmed with witches and goblins, but there is some truth in it, as in most old legends. The basis of this story is that the paymaster of the Ninth Legion, coming to pay the troops at Bracchium, was ambushed by Celtic insurgents.

An Askrigg Legend.

Bainbridge is an unattractive town, so we went on to Askrigg, where a few years ago they made almost all the Yorkshire cheese. The stock story about Askrigg is that a drunken man, returning home late at night, fell into an open grave in the churchyard. Next morning he was awakened by the Bainbridge horn, which is blown summer and winter every morning at six o'clock, and which he took to be Gabriel's call. He looked round; the churchyard was perfectly still. "Only me?" he queried to himself. "Well, this is a shocking poor show for Wensleydale."

Instead of going on to Newbiggin, there is a turn along a narrow lane to the right, past Nappa Scar and Woodhall. This lane leads to Aysgarth, on the main road from Northallerton to Sedburgh, and things that are not to be missed are Aysgarth Falls and the High and Middle Force, as they are called. Aysgarth Bridge is, to my mind, *the* beauty spot of Yorkshire.

In the Heart of Wensleydale.

Here is the heart of Wensleydale, the most picturesque of all the dales, and past Wensley is Bolton Castle, perhaps the most forbidding looking ruin in England, haunted by all the evil of the past. To look at it makes one shudder, and we ran from Bolton on the moorland path to Redmire moor, and there along the green road to Broomber Rigg and left to Leyburn. From here a tolerably good road leads past the old Stone Age fort of Malden Castle to Reeth once more, but this time we ran straight on up the hill to Arkleton and Booze, or, rather, we would have gone to Booze had we not kept straight on at Langthwaite. Having made the mistake we kept on, and at the fork of the road turned right to Arkengarthdale. This leads into the main road, which we followed to Bowes, where Dotheboys Hall, Bowes Castle (which is a small ruined Norman affair), and a shop or two are the chief objects of interest. Westward stretches the wild road through Brough to Carlisle, or—if you have a pillion passenger—to Gretna Green. But the story of our run ends at Bowes, which was our temporary destination.

DO NOT BLAME THE POLICE.

Attention to Mechanical Details No More Important than Attention to Legal Requirements

THERE is no doubt that attention to detail results in success in all branches of life. The careful motor cyclist knows that if he looks thoroughly over his machine, keeps it clean, and makes adjustments where these are required, he will be trouble-free on the road. But, often, he is not so punctilious in his regard for the minor points of the law respecting motor cycles.

Fortunately, at the present time prosecutions for exceeding the speed limit are few and far between, but there is police activity in other directions. It is the policeman's duty to see that the law, such as it is, is carried out, and if the man in blue has been hampered in one direction it is pretty obvious that he will break out in another, and that is why there are continuous prosecutions for such details as incorrectly lettered number plates. At other times the pillion rider unwittingly obscures the number plate, and this is a heinous crime in the eyes of the authorities. Absence of a brake is another, and noisiness is almost most serious of all.

Before Taking to the Road.

These little details may seem quite trifling in the eyes of the motor cycling public, but if they are neglected trouble is sure to follow, and it is up to the motor cyclist to see that his machine conforms to the law before he takes it out on the road.

The correct dimensions for number plates, etc., were published in *The Motor Cycle* of July 13th (page 65).

It is pretty general knowledge that every motor cycle must have two independent brakes, and it is clearly the duty of the motor cyclist to see that his machine is thus equipped.

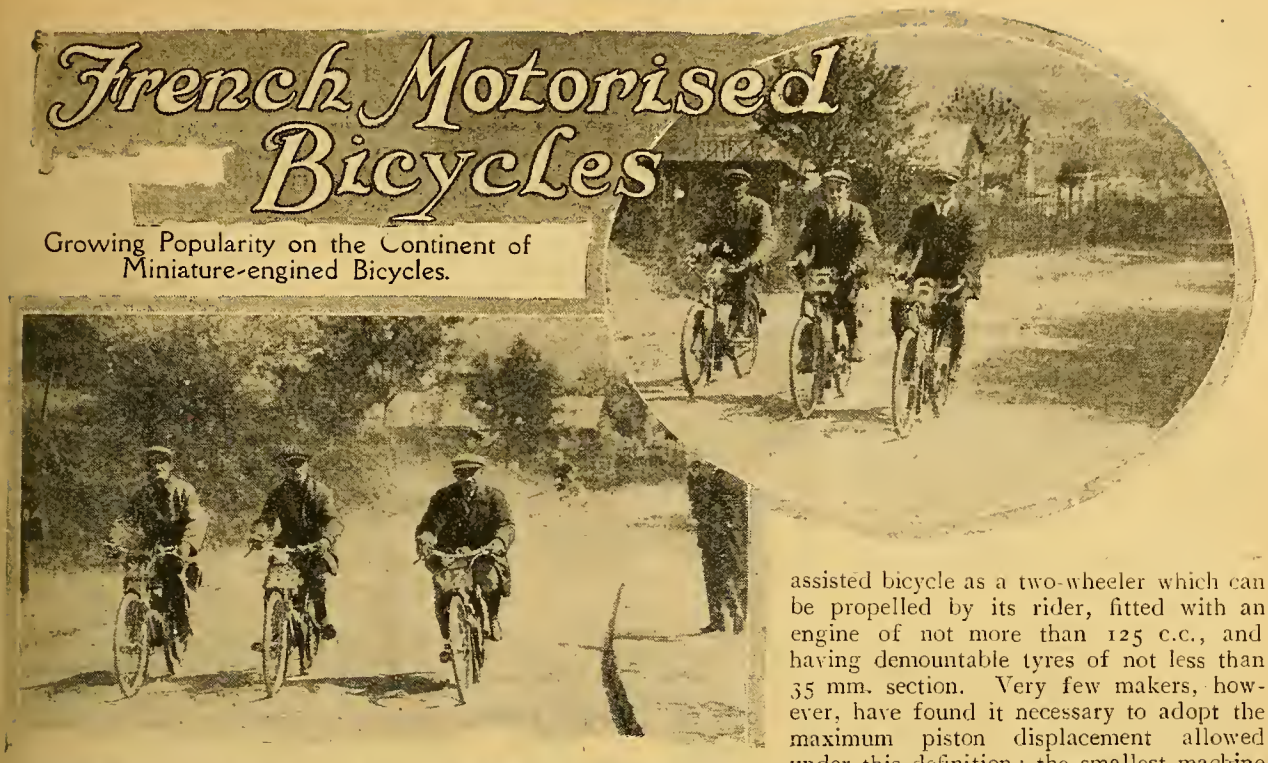
Noise the Deciding Factor.

So far as the silencer regulations are concerned, noise is a more important factor than silencer design. According to the law the exhaust must first pass through an expansion chamber. Probably a long, straight-through exhaust pipe is an expansion chamber, but as there is usually great difficulty in persuading a policeman or bench of magistrates that this is so it is obviously not wise to proceed along the highway with an exhaust pipe of a design which simply asks to be considered as a contravention of the regulation.

If attention to these details is observed we shall hear a great deal less of the annoying prosecutions of motor cyclists which have lately been so common.

French Motorised Bicycles

Growing Popularity on the Continent of Miniature-engined Bicycles.



Motorised bicyles in French trials. (Left) Three Griffons on a hill near Paris: these machines are fitted with two-stroke Sicam engines. (Right) A trio of Alcyon machines in the same trial.

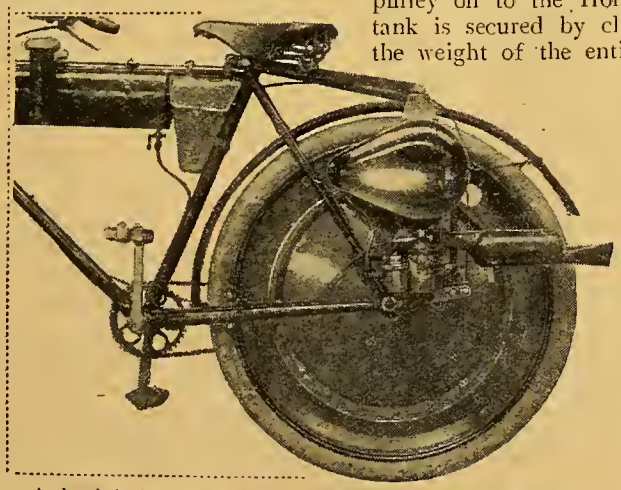
FRANCE is devoting a lot of attention at the present time to the question of motor-propelled bicycles, there being on the market not less than thirty different makes of these diminutive engines, while several thousands of them must be in use.

Motor-assisted bicycles do not appear to have been taken up to any great extent for touring, notwithstanding various competitions intended to popularise them for this purpose, but they are being used widely for utility purposes. To give a few local instances: having to call in the plumber the other day, he appeared on a motor-assisted bicycle, with his tool kit on the carrier.

Convenience and Handiness.

He maintained that for his short but frequent runs this type of machine was more convenient, as well as cheaper, than a full-sized motor cycle with sidecar. The gas inspector buzzed up not many days afterwards with a tiny two-stroke attached to a bicycle, and the village priest can be seen going round the district any day on a similar type of machine.

The authority responsible for the control of motor cycle sporting events in France defines a motor-assisted bicycle as a two-wheeler which can be propelled by its rider, fitted with an engine of not more than 125 c.c., and having demountable tyres of not less than 35 mm. section. Very few makers, however, have found it necessary to adopt the maximum piston displacement allowed under this definition; the smallest machine on the market, the Micromoteur, is only 63 c.c., while the average size is between 90 and 95 c.c.



A detailed view of the Voisin Fly. The two-stroke engine is suspended from the seat lug and rear forks.

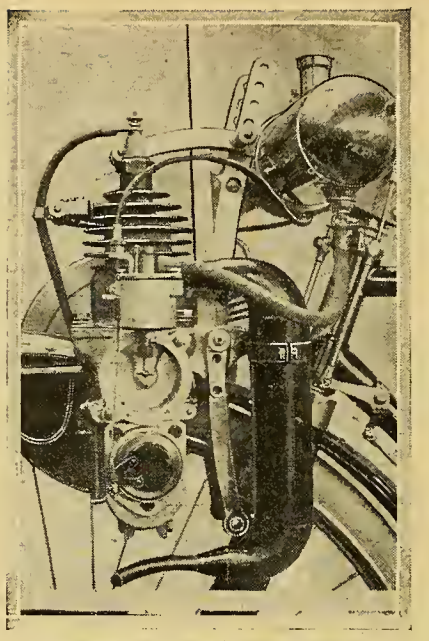
Motor Attachments.

Although the term "motor assisted bicycle" has been used in a general sense, there are really two distinct classes under this heading. A few firms sell an engine which they maintain can be attached to any bicycle in a few minutes without altering the machine in any way. The best-known machine in this class is the Cyclotracteur, which is made by one of the biggest taxicab companies in Paris. The engine is a two-stroke of 50 × 55 mm. (108 c.c.), which is mounted on the front forks of the bicycle and drives by friction pulley on to the front tyre. The small petrol tank is secured by clips to the handle-bars, and the weight of the entire equipment is between 24 and 25 lb.

The makers of the tiny Micromoteur have deliberately kept their engine size down to 46 × 38 mm. bore and stroke (63 c.c.), in order to secure low weight and make it possible to fit the little engine to any good bicycle without fear of breakage. They claim that with this small engine they can maintain ⅓ h.p., which is a higher power than the average cyclist can develop, and is quite sufficient to propel the machine at a good speed over all kinds

French Motorised Bicycles.—

of roads. In the matter of ease of attachment, this is undoubtedly the most satisfactory unit on the French market, for in competitions the little power plant has been taken off the cycle and then replaced in 13m. 55s. This, of course, was done by a rider very well acquainted with the mechanism, and the bicycle and engine were adapted to one another. The Micromoteur assembly, however, is so compact and so well laid out that it ought to be adaptable to the average bicycle in half an hour. The only change that might be necessary would be the removal of the forward extension of the front mudguard. As with the Cyclomoteur, the drive is by direct friction to the front tyre, but it is distinctive in having what is described as a " squirrel cage " type of roller and a complete spring mounting of the engine.



The smallest of France's many diminutive engines. It has a capacity of only 63 c.c. and is known as the Micromoteur.

Two-Strokes Predominate.

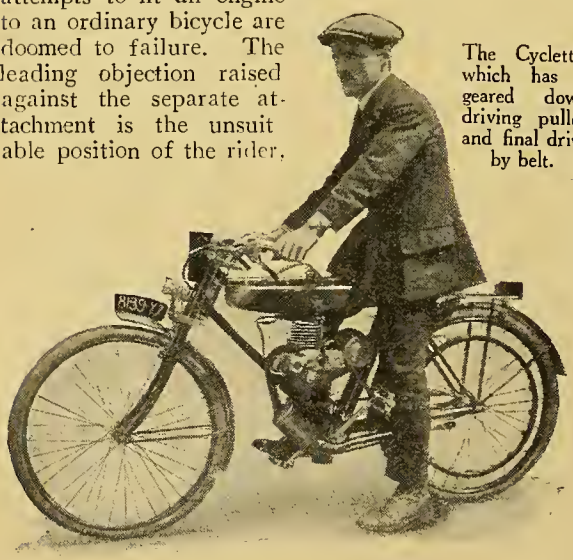
It is worth noting that the two-stroke engine is nearly always used for these lightweight machines. Indeed, the only exception appears to be the Anzani of 40 × 60 mm. bore and stroke (76 c.c.), designed for application to an ordinary bicycle. Some changes are necessary in the bicycle, however, for the engine is clipped in the frame to the saddle tube and transmits its power through reducing gears to a sprocket on the outside of the crank case. The driving chain runs round this sprocket, around the free wheel and over the bracket chain wheel. This, of course, calls for a chain of greater length than is required on a push bicycle; tension can be easily maintained on this chain by raising the entire engine slightly in the frame.

Many French makers appear to be convinced that attempts to fit an engine to an ordinary bicycle are doomed to failure. The leading objection raised against the separate attachment is the unsuitable position of the rider, who has to be placed high on a bicycle in order to get efficiency. When provided with an engine which will propel the machine under practically all conditions, there is every advantage in placing the rider as low as possible, in order to give him comfort and safety, but this cannot be done with the ordinary bicycle frame. Bicycle tyres are often found to be too small when an engine is added and the average speed is increased by at least 25 per cent. There is a tendency to overload after an engine has been fitted by adding a bigger saddle, a spring fork, a carrier and accessories, all of which, in conjunction with the increased speed, tends to stress the bicycle beyond reasonable limits.

True Miniature Motor Cycles.

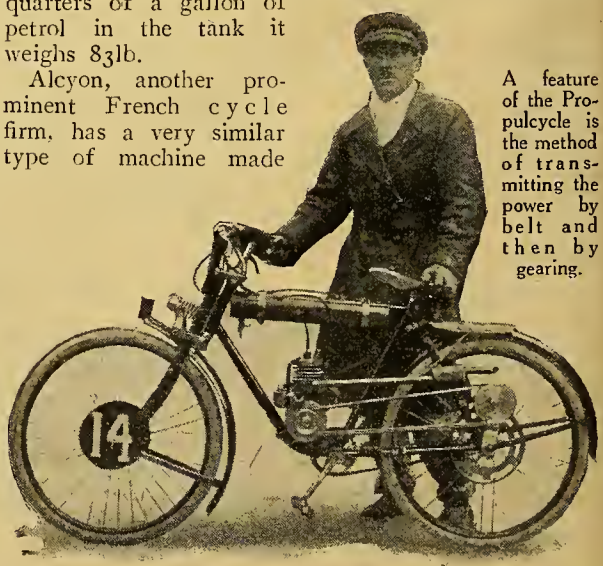
Because of this, several makers have adopted a modified type of bicycle, designed with the knowledge that it will more often be propelled by a petrol engine than by man power. It would be hardly correct to call these machines motor cycles as the term is generally understood. They are bicycles with lower and heavier frames, spring forks, bigger and more comfortable saddles, bigger section tyres, and possibly with a permanent pulley or belt drive. With the engine in position they do not usually scale more than 85lb., and if the engine is removed, which is a matter of thirty minutes at the outside, they can be used as push bicycles.

A good example of this class of machine is the Griffon, which is a strengthened bicycle with spring forks, fitted with the Sicam two-stroke engine of 50 × 50 mm. bore and stroke (98 c.c.). This engine has an external flywheel, chain drive to a countershaft, and V belt drive to the rear wheel. With three-quarters of a gallon of petrol in the tank it weighs 83lb.



The Cyclette, which has a geared down driving pulley and final drive by belt.

Alcyon, another prominent French cycle firm, has a very similar type of machine made



A feature of the Propulcycle is the method of transmitting the power by belt and then by gearing.

French Motorised Bicycles.—

with both a closed and an open type of frame. Incidentally, the open frame seems to be more often found in the hands of country priests than of ladies. The engine used on the Alcyon is a 50 × 50 mm. (98 c.c.) two-stroke, which transmits its power by an enclosed chain to a countershaft, then by an open chain to the rear wheel. With spring forks, a comfortable saddle, and tank filled, its weight is practically the same as that of the Griffon.

Engines Similar; Transmissions Vary.

The interest of these little machines more often lies in the method of transmitting the power to the wheel than in the engine; indeed, the same engine can often be found on several machines with different systems of transmitting the power. On the Propulcycle a belt is used from the engine shaft to a pulley on the rear fork, this pulley having combined with it a pinion which engages with a larger diameter gear wheel secured to the rear wheel spokes. On the Cyclette the first reduction is obtained by a chain inside the engine housing, and the final and greater reduction by the belt drive to the rear wheel, a low gear being thus obtained without employing a diminutive pulley.

Friction Drive.

Voisin, the well-known car and aeroplane builder, has quite a distinctive type of motor-propelled bicycle designated the Motor Fly. The rear wheel of the bicycle is replaced by a special disc wheel equipped with a broad-faced pulley. A small two-stroke engine is suspended from the saddle tube and from the rear forks in such a way that a geared-down driving pulley is brought in frictional contact with the big-diameter pulley on the wheel. The frame and the front portion of the bicycle are not changed.

It might be imagined, in view of the growing popularity of motor-assisted bicycles, that scooters would also find favour. This, however, is not the case. There have been several attempts to popularise scooters, but the French public, which is not at all easily convertible to novelties, has never seen in them anything more than a passing fad. The idea, however, of converting a bicycle into a motor cycle, or of having a motor cycle which can be used as a pedal cycle on occasion, is finding more and more favour among the four-and-a-half million cyclists of France, and this type of machine promises to become quite an important factor in French motor cycle circles.

INHERENTLY NOISY SILENCERS.

Hard Metals Unsuitable for Exhaust Pipes and Expansion Chambers.

So much has already been written on the subject of silencers for motor cycle engines that at first sight it would appear that every point in connection with the subject has been discussed and thrashed out on many occasions and that there was nothing more which could be said on this important topic.

This is partly true, and much ink has undoubtedly been spilt in describing, explaining, designing, and arguing about the various silencing systems at present fitted to our machines, but there is another and very important aspect of this subject which has received little attention.

So far, discussion has centred round the advantages and disadvantages of expansion chambers, baffle plates, "straight through" pipes, and so forth, but very little attention has been paid to the materials of which these components are made, and that this is important can quickly be proved by one or two extremely simple experiments.

Cost the Deciding Factor.

As a rule, cost is the deciding factor which determines the material selected, and for this reason cold-drawn steel tubing is almost invariably used for the exhaust pipes, whilst mild steel sheet is employed in the construction of by far the greater majority of expansion chambers. It is now a commonly accepted fact that by using a sufficiently large expansion chamber, together with an extension pipe of small bore, a satisfactory degree of silence can be obtained at the expense of a slight loss of efficiency; but is such a bulky system absolutely essential? By making silencers of other material than cold-drawn steel, greatly increased degrees of silence can be obtained, because in many cases the "ring" of this hard vibrating metal accentuates the noise of the explosion.

The Advantage of Annealing.

If cold-drawn steel tubing be thoroughly annealed, it will be found that a much more pleasant and altogether more mellow exhaust note will result. In the same way, the ordinary copper piping is hard, and produces an unpleasant crack, but if it be thoroughly annealed by heating it to a dull red heat for 20-30 minutes and cooling in air, a pleasant mellow note will result. So many aluminium alloys reharden after annealing that this method is not practicable, and therefore these alloys are unsuitable for the manufacture of silencers from this point of view. Arguing on this basis, soft lead should be one of the best metals for silencers, and although it is, of course, totally unsuitable because of its softness and weight, yet a very interesting and instructive experiment, to those who have the facilities and time to perform it, is to try the effect of a straight-through lead pipe, and it is found that it effectively deadens the exhaust note of an engine which is extremely noisy with the usual steel tube pipe. It is, of course, needless to say that the pipe will soon melt, and so the experiment is only a short one.

It can be said, therefore, that if silencers were constructed of well annealed copper instead of hard steel, or some other non-resonant material, a decided improvement in effectiveness would result.

KEMIST.

STUDYING OVERSEAS CONDITIONS.

An Interesting Interview with Mr. George Stevens on his Return from a 42,000 Mile Tour.

AFTER an eight months' tour, touching India, Ceylon, Australia, New Zealand, and South Africa, Mr. George Stevens, of A.J.S. fame, has returned to Wolverhampton looking very much better in general health, and full of interesting information which will be of extreme value to the motor cycle trade.

In his journeyings Mr. Stevens calculates that he has travelled approximately 42,000 miles, exclusive of road travel. After touching at Bombay and Columbo, he visited the following towns in Australia: Perth, Adelaide, Melbourne, Sydney, and Brisbane; in New Zealand: Auckland, Napier, Wellington, Christchurch, Timaru, Dunedin, and Invercargill; in South Africa: Durban, Johannesburg, Pretoria, and Capetown.

Mr. George Stevens.

Price the Governing Factor.

From a short interview with him immediately on his return we formed the conclusion that he took a most broadminded view of general conditions, and was prepared to see the good points of competitive articles just as readily as the advantages of his own make of machine. He emphasised the fact that in overseas lands price is quite naturally a governing factor, but that the Australian and New Zealander have a leaning towards British machines, although the prices of these are so very much higher than that of their American rivals that they have but little chance of popularity.

The road conditions are such that Mr. Stevens is not hopeful of the outlook for the medium-powered machine, holding that a big twin is necessary outside the towns, but that there is a good chance for lightweights in and near the big cities. The difficulties encountered by British manufacturers during the war are not realised in Australia, nor is there much keen interest in British competitions, even the Tourist Trophy Races being watched with comparatively little interest. In New Zealand he found a rather more distinct leaning towards British machines, and the fact that there are many good arterial roads in this country increases the chances of the medium-weight machine so common in the British Isles. The roads in Australia and parts of New Zealand are such that it is impossible to attain in comfort a speed of 30 miles an hour for more than a minute or so; therefore a cool running engine with a low top gear is essential.

Mr. Stevens pointed out that overseas trade is improving, and that now is the moment to make a push for this trade. He is convinced that much can be done to improve the British motor cycle trade if manufacturers in this country will get together and make a serious effort. As he points out, it is necessary to produce in quantities to produce cheaply. To produce in quantities one must have a market, and there is an ample market overseas for the right type of machine. It will be necessary, however, to ensure the co-operation of specialist manufacturers so that prices may be reduced to a reasonable minimum. For the overseas market many refinements, considered in this country almost as necessities, may be omitted. For instance, such luxuries as sidecar windscreens, detachable wheels, full chain cases, etc., are not appreciated, and much money might be saved on such details.

When queried as to necessary alterations in British machines, Mr. Stevens informed us that there is an almost universal demand for twist grip controls, a considerably smaller demand for hinged footboards, and not once did he meet with a request for spring frame machines. With regard to the difference between the American and British trades, he clearly pointed out that American motor cycle manufacturers rely almost entirely on export trade to keep their factories busy, whereas the British manufacturer depends on the home trade, and looks upon the overseas trade as a side line. This he considers is a great mistake, since by cultivating the enormous overseas market it would be possible to increase production and lower export prices, and thus make a steadier demand.

Possibilities in South Africa.

South Africa is only a 17 days' journey away from this country, and Mr. Stevens is convinced that it would well repay British manufacturers to take a trip to that country in order to study typical overseas conditions at first hand. Though previously he always made a point of trying to understand overseas requirements, he now frankly confesses that he knew nothing of the matter until he had had personal experience, and he believes that if more manufacturers were to take the opportunity of obtaining first-hand evidence, there is no reason why the British motor cycle trade should not regain its ascendency overseas. In South Africa, also, the British manufacturer is at an advantage, since freight charges are in our favour.

O.H.V. NORTON LIGHTWEIGHT.

Advance Details of a New 250 c.c. Model with a Possible Speed of 70 m.p.h.

FOR some time past it has been known to a select few that the famous house of Norton was likely to produce a small engine for next year. We are now permitted to divulge the main features of the new machine, though at the present moment it is not completed.

The 250 c.c. engine (63 × 80 mm.) is a beautiful piece of design, following the lines of the overhead valve racing Norton. Both cylinder and detachable head are very thick in the wall, and are well ribbed for cooling purposes. Overhead valves are set at approximately 45° to the vertical, the port design being excellent. These valves are operated by push rods through overhead rockers, and the reciprocating weight of the push rods is looked after by return springs. Two rings (probably in one groove) will be fitted to the aluminium piston and a very large light gudgeon pin floats both in piston bosses and small end bearing. Steel stampings, each forming a flywheel and crank axle, are employed in the crankshaft construction, the two being united by the crank pin; each is mounted in ball bearings. Both cams are carried on a common shaft, there being only two gear wheels in the cam drive, though rockers are interposed between the cams and the base of the push rods. The magneto is mounted behind the cylinder.

The equipment of the machine itself will be on generous lines. 26 × 2¼in. wheels, all chain drive, internal expanding brakes (front and rear) will be features, and it is not unlikely that mechanical lubrication will be fitted to the engine. The frame will have a slightly curved top tube sloping to the rear.

It is hoped that the sports model will exceed 70 miles an hour, and it is possible that Mr. Norton will depart from his usual practice by making two entirely separate engines, similar in outward appearance, but one for purely sporting work and the other for touring.

The increase in the number of small machines is likely to be a feature of the forthcoming Olympia Exhibition, and the advent of a Norton lightweight is bound to attract a very considerable amount of public attention.

SHORT DISTANCE RECORDS BROKEN.

New Imperial-Jap and Trump-Jap Successes. Mrs. Janson gains another Record.

H. Le Vack.

H. Hall.

ON the 12th inst. H. Le Vack, riding a 346 c.c. New Imperial-Jap, succeeded in putting up some wonderful speeds in his short distance record attempts, covering the flying kilometre (with the wind) in 23.85 sec., a speed of 93.79 m.p.h., his mean time for the same distance covered both ways being 26.97 sec. (83.56 m.p.h.). He also covered the flying mile in 39.18 sec. (speed, 91.88 m.p.h.); mean, 43.97 sec. (81.86 m.p.h.).

Colonel Stewart, Mrs. Janson, and H. Hall also attacked the new standing mile and kilometre records in Classes A. and D. on the same day, and so fierce was Colonel Stewart's "get-away" on his little Trump-Jap that his front wheel leapt nearly two feet in the air, completely jumping the electrical strip.

Mrs. Janson.

Colonel Stewart.

Their records were as follows:—

CLASS D.

Colonel Stewart (750 Trump-Jap).

Kilom. ...	...	39.92s.	60.59 m.p.h.
Mean ...	...	38.04s.	58.80 m.p.h.

H. Hall (750 Trump-Jap).

Mile ...	...	54.66s.	65.86 m.p.h.
Mean ...	...	57.17s.	62.96 m.p.h.

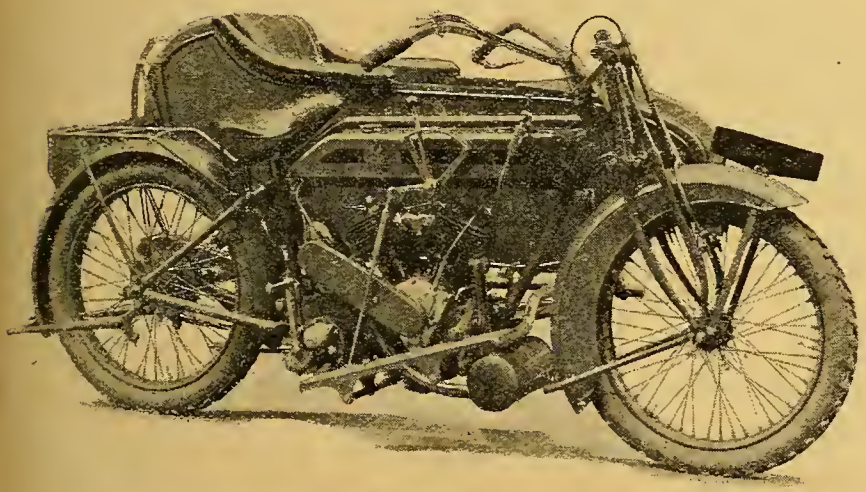
CLASS A.

Colonel Stewart (250 Trump-Jap).

Kilom. ...	...	45.73s.	48.91 m.p.h.
Mean ...	...	48.07s.	46.50 m.p.h.

Mrs. Janson (250 Trump-Jap).

Mile ...	...	80.98s.	44.45 m.p.h.



A utility Matchless outfit marketed, without the spring frame and one or two other luxury items, at £130.

NEXT YEAR'S MATCHLESS POLICY.

NEXT year there will be a three-speed, 350 c.c., single-cylinder, all-chain drive Matchless, fitted with 26in. × 2½in. tyres, to be sold at about £75. The engine will be of the high efficiency type.

Another attractive proposition of the 1923 Matchless programme will be a £130 sidecar outfit, fitted with either a 976 c.c. J.A.P. or 993 c.c. M.A.G. engine. This model, of course, is already available to the public. It has a rigid frame, clutch, and kick-starter, detachable wheels, and a comfortable sidecar. Extras are spare wheel, hood, screen, lamps, etc.

The sports model Matchless sidecar outfit will be considerably improved not only in detail, but in appearance as well. It will possess rakish lines and will be fitted with a "super-sports" M.A.G. or J.A.P. engine. The spring frame model will be unaltered.

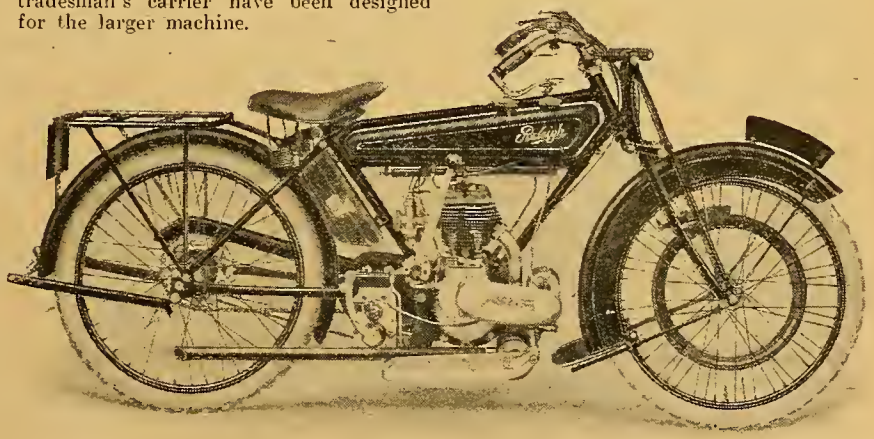
CHAIN-DRIVEN RALEIGH LIGHTWEIGHTS.

A CHAIN-DRIVEN version of the Raleigh lightweight made its first public appearance in the Six Days Trials, where it acquitted itself most creditably. Generally speaking, the new model has been little altered as compared with the belt-driven type.

In the engine the big end is now provided with a dipper or scoop to pick up oil from the crank case, and an adjustment is made possible for the exhaust lifter cable.

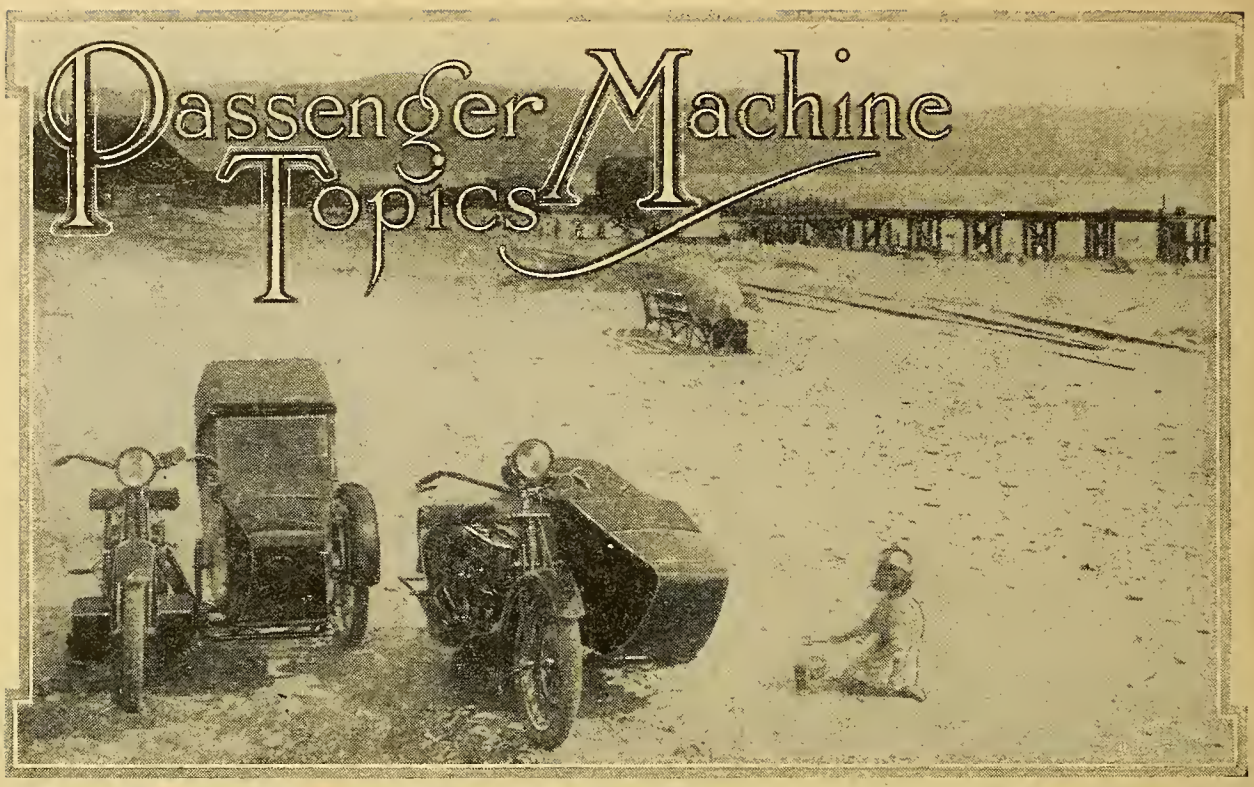
The rear brake is now of the internal expanding type of notably large diameter, and a quick adjustment is embodied. Small sprockets have been avoided in the transmission, 21 and 20 teeth being used at the engine and gear box respectively. For sidecar purposes a 19t. sprocket is supplied.

Either the 348 c.c. or the 398 c.c. engine is now available in the chain-driven form, and a special sidecar and a tradesman's carrier have been designed for the larger machine.



348 c.c. and 398 c.c. chain-driven lightweights have been added to the Raleigh programme.

Passenger Machine Topics



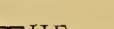
"Far from the madding crowd." Although one may not wish to spend an entire holiday in such a quiet spot as this, the sidecar enables one to visit the more remote and often attractive little villages within reach of the larger holiday resorts. The scene, showing two Enfield outfits, is near Aberdovey, Wales.

Air Cushions for Sidecars; Sidecar Screens; Weather Protection on Expensive Outfits; the Ultra-Light Chassis.

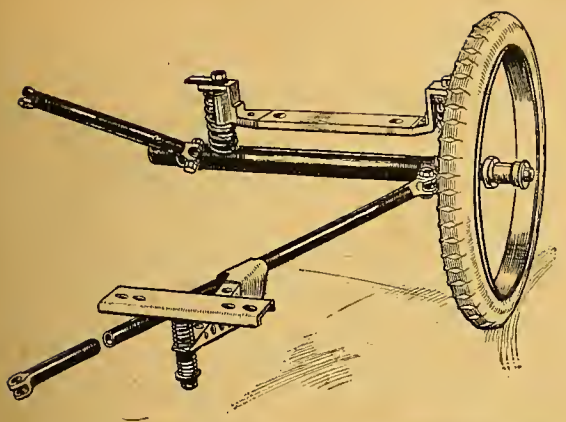
OUR grandmothers scorning the divans and huge Chesterfields of to-day, label us sybarites and decadents; they prefer a stiff-back pew to luxurious springing, but curiously enough they love their huge feather beds better than a mattress, evidently preferring luxury at night to luxury in the day. I have always thought a good deal of this high-falutin talk about our comfort-loving age to be merely whitewash. The old folk love comfort as much as we do. A certain grandmother loved for her candour in this age of compromise once rode in my sidecar and said rude things about its comfort. A while ago she saw me blow up with an air pump a big jelly-like seat and fit it in place of the ordinary spring seat. She asked, or I ought to say she commanded, me to take her a run, and I have never heard the last of that seat since. She has nothing but praise for it.

This wonderful air cushion is made by the Self Controlled Air Cushion Co., Sale, Manchester, and it is all that is claimed for it. It damps out road and machine vibration to a really wonderful degree, and transforms a badly sprung sidecar into a rideable vehicle, and a well-sprung sidecar into something much better than the average car.

THE tendency in sidecar design will in the future be towards lightness; lighter weight sidecars and light but scientifically designed chassis. Lighter weight means reduced running costs and fleeter machines. If three- or four-wheeled runabouts eventually usurp the big and powerful sidecar more attention will have to be given to the construction of ultra-light chassis capable of sustaining a roomy but lightweight touring body. Davis Bros., 14, Church Street, Rickmansworth, are undoubtedly on the right track with their Tritube chassis, a design minus bent tubes and malleable lugs. The chassis simply consists of three straight drawn weldless steel tubes, the rear axle actually being two inches in diameter. The illustration shows clearly the method of supporting the body on large coil springs. It is an admirable design not only for sports sidecars but for high-powered sporting machines. At present there is a lull in the craving for lightness in touring outfits, but it will soon be heard again and with greater insistence. The makers, who are studying this important matter of lightness with strength in both chassis and body design, will benefit eventually.



THE variety in sidecar screens is almost bewildering. This state of affairs is brought about because of the many difficulties and the many methods adopted in producing really effective protection for a sidecar passenger. After years of experimenting, efficacious screens have been made, but the problem was a more difficult one than that which car designers had before them. In a car the wind currents eddy round both edges of the screen with more or less the same inten-



Simplicity with strength is the keynote in the design of the Tritube chassis, made by Davis Bros., 14, Church Street, Rickmansworth.

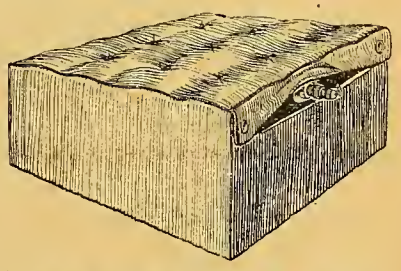
sity; certainly a side wind may produce more draught, but nothing like the draught that is deflected from the body of the driver on to the face of the sidecar passenger. The flat screen has proved almost worse than useless. Personally I would very much rather ride in a sidecar without a screen than in one fitted with the flat single-piece screen.

Many are the devices offered by manufacturers, but the chief aim of the majority of them has been the prevention of this irritating side draught. To combat this deflected stream of air effectively the obvious thing was to fit a side curtain from the flat screen to the rear of the sidecar. But unless neatly carried out this improvisation can spoil the appearance of an outfit. The A.J.S. concern has, however, in its steel-framed celluloid side curtain a particularly neat and effective design. But it is in the adjustable celluloid combined front and side screen where designers have shown most originality. The following two pages will show that all sizes and all manner of shapes are to be had to-day. Some of them attempt no more than to break the full impact of the wind; others, such as the Easting, aim at and succeed in producing a complete protection against the most violent storm.

QUITE an astonishing number of comparatively expensive sidecars are still fitted with 26 × 2¾in. tyres, and not a few with the 26 × 2¼in. size. Whilst a few of the arguments against the 3in. and 700 × 80 mm. type may hold good on solo mounts, there is none whatever against big tyres on sidecars. The astonishing difference between riding an outfit equipped with a set of 700 × 80 mm. instead of 2¼in. tyres should be sufficient to convince any manufacturer that the fitting of the largest possible tyres is all to his advantage, especially as the improvements to our roads are so slow in coming.

JUST now, due to price reductions of small cars anticipating the price changes in sidecar outfits, there is a good deal of discussion and comparison going on concerning the two types. A four-wheeled air-cooled Rover car now costs £180—very little more than the luxurious sidecars at to-day's price. Car advocates instance protection from the elements, whereas sidecar enthusiasts retort that carrying capacity for small families, storage accommodation, and the tax, petrol, and oil bills are all easier in the case of the three-wheeler. This lack of weather protection is my greatest grievance against the costly sidecar, and curiously enough I am always more peevish when driving in the rain with an elaborate machine complete with every trimming than I am when piloting a lightweight outfit. It is human nature, I suppose, to envy the owner of a little runabout who has paid but a few pounds more, and in some cases even less than you have, for a machine in which he can keep completely dry.

The sort of controversy I refer to has gone on for years and will continue for years no doubt. Many false prophets forecasted the early demise of the sidecar many years ago, but it is still very much alive and giving enjoyment to thousands of devotees. The writer personally thinks the future sidecar must be lighter and more simple. The man who pays £100 or less for a complete outfit rarely bothers to make comparisons; his vehicle is distinctive, there is nothing that can compete with it for economy, and with that big credit item in his mind he tolerates the wet rides with smiles of resignation. Nothing can ever usurp its present position; there is nothing, in men's minds, on the drawing-board or in the experimental workshops at present, that can possibly take its place. But one dare not judge so definitely the big and expensive sidecar outfit.

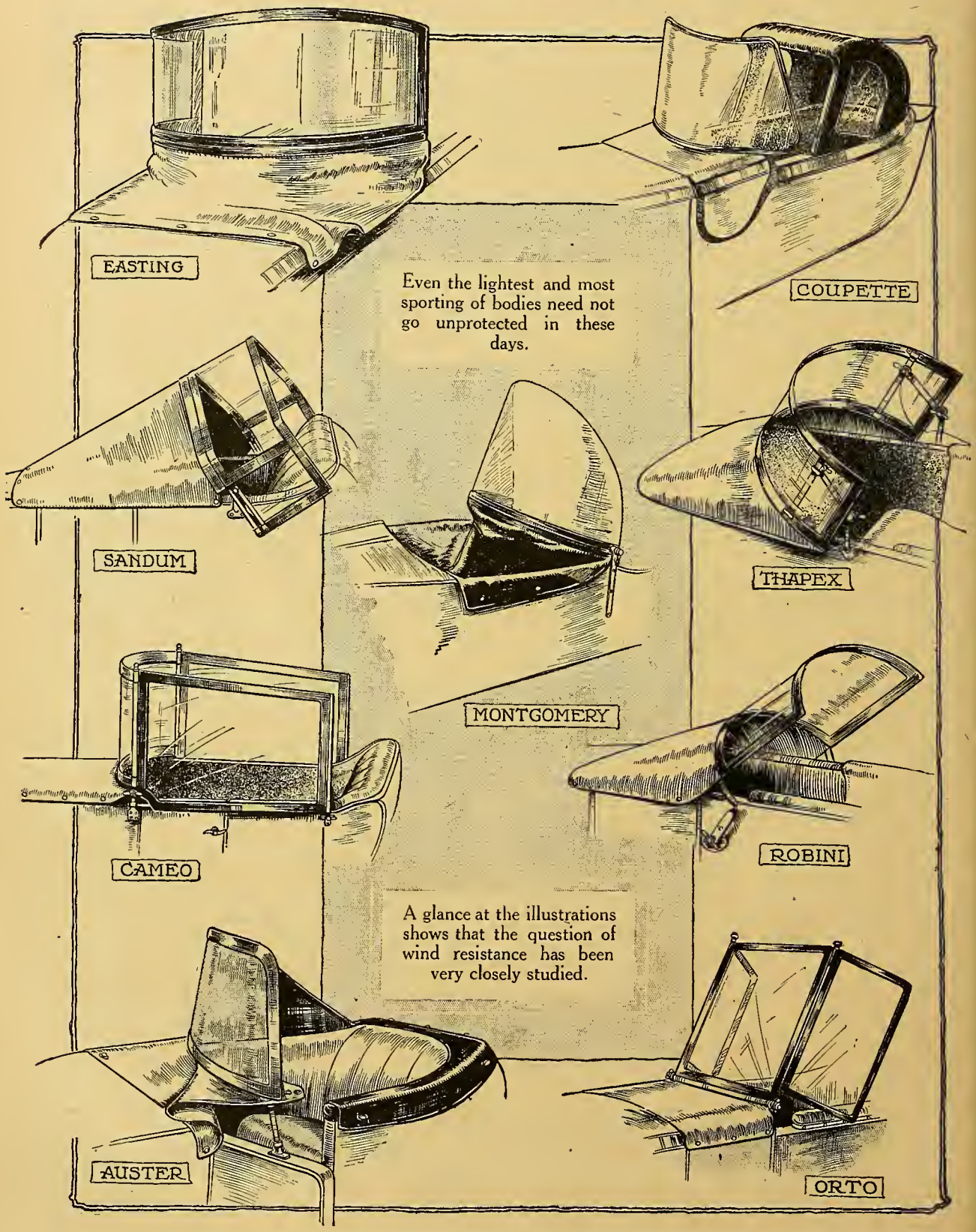


A sidecar air cushion made by the Self Controlled Air Cushion Co., Sale, Manchester. This type may eventually usurp the old spring seat, for its superiority is unquestioned.

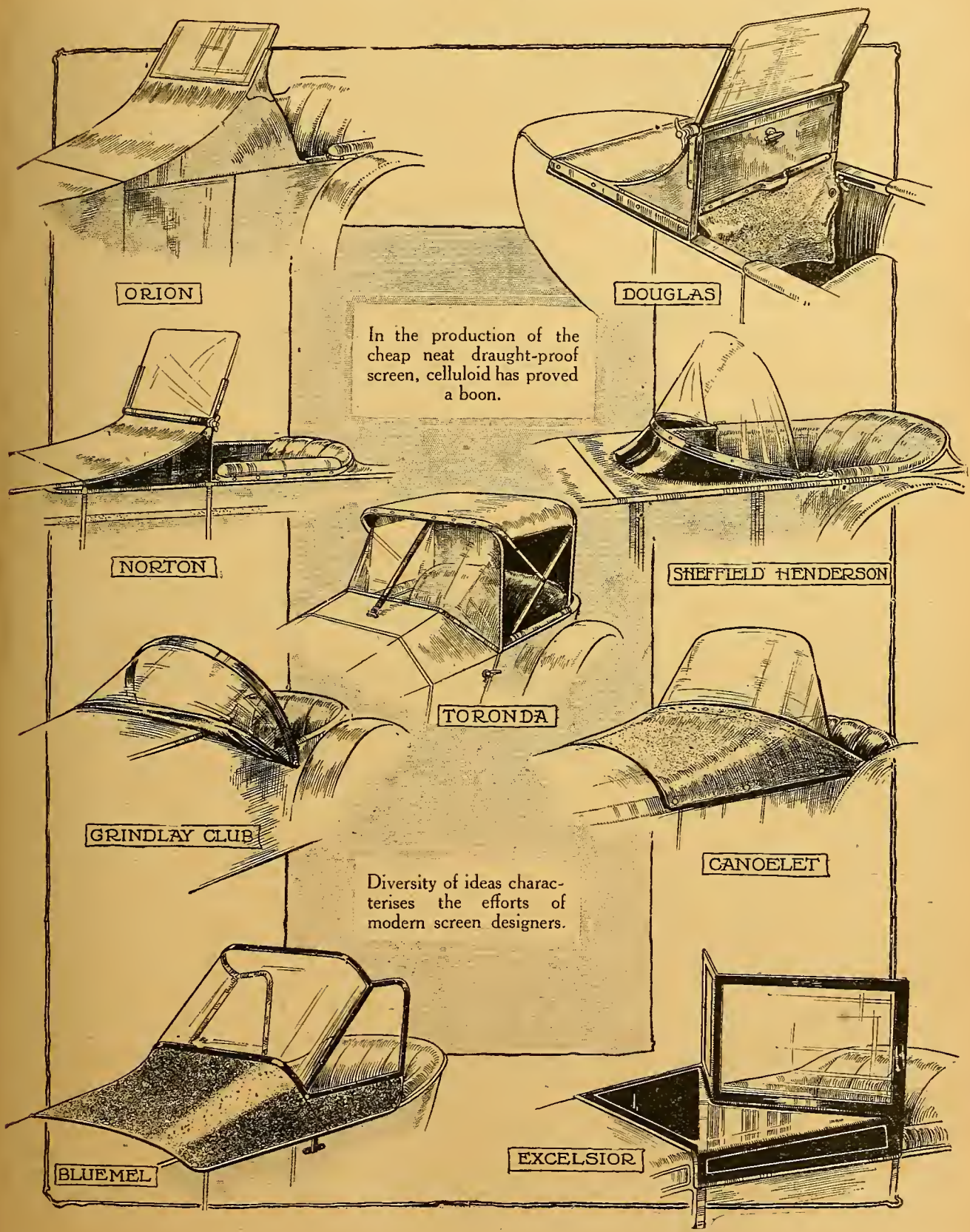
"TRACING TROUBLES" REVISED.

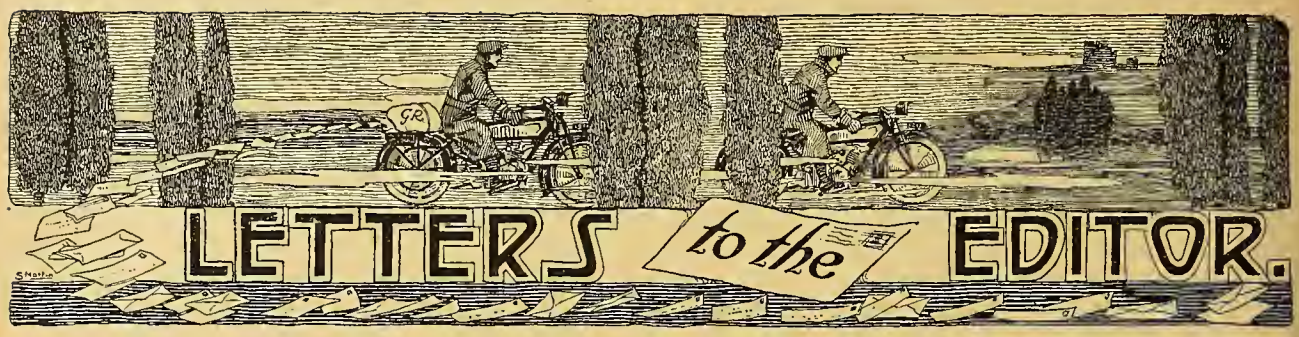
THE well-known and popular handbook published by Iliffe & Sons, Ltd., Dorset House, Tudor Street, E.C., under the title of "Tracing Motor Cycle Troubles"—a title which by constant reference has been curtailed to "Tracing Troubles" by its many users, has undoubtedly filled a definite requirement of the motor cycle fraternity. But the motor cycle industry has changed with the times and literature dealing with the pastime must necessarily change as well. With this object in view—that of keeping abreast of recent developments—an entirely new and revised edition of this little handbook has been completed and is now obtainable at the usual price (2s. net). This is the fifth edition, and many new features have been incorporated, so that the motor cyclist who relies upon it to extricate himself—or herself quite frequently nowadays—may not be disappointed. Two pages in front of the book are devoted to illustrating the quickest and most satisfactory way of making use of the information it contains.

MODERN IDEAS IN SIDECAR SCREENS.



SOME EXAMPLES AT PRESENT IN FAVOUR.





The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

TOO MANY GOLD MEDALS?

Sir,—After reading your account of the A.C.U. Six Days Trials, I am convinced the event is as *useless* as the organising body is to the *average motor cyclist.*

I read that A——, with a badly leaking tank on Brooklands, wins a gold medal; and now the makers claim a fine success. If my tank leaked after six days or six months I should be disappointed, to say the least of it.

B—— breaks a valve but gets a gold medal. I quote just two of the many examples in your report.

Mulhouse, Alsace. D. F. BRAND.

FUEL CONSUMPTION OF TWO-STROKES.

Sir,—I own a 211 c.c. Velocette (1921 model). It has not yet been touched with a key except for decoking. I get 130 to 150 m.p.g. from it, and the B. and B. carburetter has not even been cleaned yet, as I believe in leaving things alone when giving satisfaction.

Leeds. HUMPTY DUMPTY.

Sir,—As a well-satisfied Allon rider I cannot let "Old Bill's" letter pass without comment. I purchased last spring a 1922 model fitted with an Amac carburetter with 27 jet. The m.p.g. was 75, so I reduced the jet to a 25 and the mileage increased to over 100, at which figure it still stands. The machine also runs much better. ENN-ENN.

Retford.

Sir,—We are surprised to see the low mileages as quoted in your Correspondence columns, because we have in this office several spontaneous letters from people with whom we are not even personally acquainted claiming as much as 180 miles per gallon on absolutely standard Connaughts.

From 130 to 150 m.p.g. is quite a common mileage, which is borne out by some scores of spontaneous letters from—in some cases—novice drivers.

THE WARLAND DUAL RIM CO., LTD.

Sir,—I was very interested to read the remarks of "Old Bill" on the fuel consumption of his machine, and I am just as astonished to learn that he can only obtain 70 m.p.g. I am the owner of a fine machine of the same name as my "nom de plume," and without special tuning am obtaining 105 m.p.g. on short runs. On a recent tour of 364 miles last Easter I accomplished 114 m.p.g. on the outward journey and 125 m.p.g. on the homeward—measured exactly by a Bonniksen speedometer and checked by an A.A. route.

My carburetter is a B. and B. (not tuned for consumption), jet number 32, petrol level slightly lowered; average speed (182 miles) 24 m.p.h., and on the same carburetter setting have obtained 45 m.p.h. on the level.

Birmingham. "IVY THREE."

Sir,—Some of your readers find two-strokes thirsty and want the remedy. I have ridden five machines in three years. My first was a Levis, which gave 100 m.p.g and would have given more with a smaller jet. But being a timid novice I left the carburetter alone and put up with bad four-stroking for six months. Two others were of a well-known engine in different makers' cycles and both bad. Now I ride a Velocette and average over 150 m.p.g. I have averaged over 128 m.p.g. from the time it was new. These two good machines are quite as powerful and reliable as the slightly larger ones that were less satisfactory. The best machines cost more at first, but not so much as heavy petrol bills and numerous petrol saving devices. LEVELOCE.

Tewkesbury.

AMAZING LIGHTWEIGHTS.

Sir,—Two or three weeks ago I went from Chelmsford, Essex, via Peterborough, Stamford, Grantham, Newark, Selby, York, Pickering, to Scarborough in 10½ hours on my 1919 Hobart-Villiers. Coming back by exactly the same route a fortnight later, I did the journey in 9 hours. The distance is over 250 miles, and I had absolutely no trouble at all, not even tyres. "HOBART."

Chelmsford.

Sir,—"Ixion" seems to suggest that only the 1922 Levises are capable of keeping up the pace.

It is true that the 1922 models are a great improvement, but are they so vastly superior to the old models?

I own a 1915 211 c.c. single-geared model, on which the only alterations from standard are a drip feed in place of the original tap, and a Wex carburetter.

On August Bank Holiday Monday I returned from Herne Bay, a distance of 75½ miles (A.A. route), in 3 hours, *i.e.*, an average speed of 25⅛ m.p.h. The last 5 miles were through London Bank Holiday traffic. "R.E.T."

London, S.W.11.

Sir,—Recently I went from here (Wallasey) to Norwich on my single-geared two-stroke. I started at 4 30 a.m. and arrived at Norwich at 6 p.m. same day. The distance is 244 miles (I lost my way twice, which cost me eight miles and some time). I used about 2¼ gallons of petrol and just over one-third of a quart of oil. Three or four times I had to tighten the bolts of the handle-bar licence clip; apart from that I had no trouble whatever. Excluding stops for food and petrol, but including time lost through losing my way I averaged slightly over 21 m.p.h. I went at 30-35 m.p.h. for miles without stopping and the engine did not overheat at all. One day the following week I went to Gillingham, Kent (118 miles). Two days later I left Gillingham at 5 a.m. and arrived home (Wallasey) at 7.10 p.m., travelling through London, Birmingham, Wolverhampton, and Chester; the screw holding speedometer on handle-bar worked a bit loose, but beyond the mere details I have mentioned I had no trouble at all. (Gillingham—Wallasey is 240 miles.)

Total distance=824 miles.
Petrol used=9 gallons (£1 2s. 5d.).
Oil used=⅜ gallon (2s. 1d.).
Average cost per mile=0.357d.

It seems to me a very good performance for a single-geared baby two-stroke.

It is one of the little 'buses with the big heart (O.K. Junior). Usual disclaimer. F. TAYLOR.

NO BRITISH MOTOR CYCLES IN CUBA.

Sir,—I noticed "A.R.H.'s" letter in your issue of July 20th as to the British manufacturers' neglect of the foreign and Colonial markets, and can only say that exactly the same condition prevails in Cuba.

In Havana there are between four and five hundred Harley-Davidsons on the road and a large number of Indians, but I have not yet seen a single British machine, and the average Cuban does not know that motor cycles are manufactured in England.

This is the more to be regretted as Cuba should be a splendid field for the lightweight or medium-powered machine. The two American machines I have mentioned are both rather too heavy for many riders, especially for the middle-aged, but our choice lies between a powerful twin and nothing, as our home manufacturers seem entirely to have forgotten this beautiful and prosperous island.

I have no connection whatever with the motor trade myself, but I drive my H.-D. and sidecar every day in the year and am an enthusiastic motor cyclist. I shall be glad to answer any inquiries if anyone cares to hear further as to the motor cycling situation in Cuba.

Stores Department, KENNETH CARNE-ROSS.
United Railways of Havana,
Havana, Cuba.

UNIVERSALLY JOINTED SMALL-END BEARINGS.

Sir,—In his letter on page 300 Mr. Frazer states that he is experimenting with a universally jointed little-end bearing in his Levis engine, and I should very much like to hear at some future date, when experiments have been completed, whether or not the type of bearing in question would allow the piston to move round in the cylinder and alter the relation of the piston baffle to the transfer and exhaust ports. O.E.1382.

Birmingham.

[The normal type of universal joint does not permit a relative turning movement.—ED.]

THE LAST WORD IN MODERNISATION.

Sir,—Here are a few of the alterations which I made to a 1911 four-cylinder F.N. The forks were slightly shortened and their rake increased; the frame was cut down at the back and large tank bearers were brazed on to the middle tube; the carrier was altered and strengthened; a new tank was fitted, holding over two gallons of petrol and half a gallon of oil; wide valenced mudguards were fitted; foot-operated gear change and foot boards were arranged. The pedalling gear was utilised to work the back brake, one of the pedal cranks being now the foot brake pedal.

The automatic inlet valves were converted to the mechanical type; a Best and Lloyd mechanical pump was fitted on to the end of the camshaft, feeding the engine with oil through a sight drip feed on the tank. A copper exhaust manifold was made with a straight through pipe; the exhaust lifter was scrapped. A Binks carburetter greatly improved the running and consumption. A sidecar body was built up on ash hoops, the long pieces of wood being dark coloured and light coloured alternately. The two ends are dark, the whole being varnished with a light body varnish.

Most of my knowledge of motor cycles and their engines I have gathered by reading *The Motor Cycle*.

I am still patiently waiting for some concern to turn out a sports four-cylinder about "6-7 h.p.," with overhead valves driven by overhead camshaft, shaft driven, with a 3 to 1 top gear. It might interest some manufacturers to know that a four-cylinder F.N. (1911-12) only weighs 208 lb.

L. DESOUTTER.

SUGGESTIONS TO BRIGHTEN THE EXETER RUN.

Sir,—It was suggested after last year's run that if a gold medal in the London-Exeter Run is to retain its old prestige, the conditions governing this award must be considerably increased in severity. As a past and prospective participant, I venture to put forward for discussion the following suggestions :—

(1) The time allowance might be lessened to five minutes from schedule, early or late. This would relieve the tedium of the homeward journey, and put a premium upon sustained reliability of running.

(2) The non-stop sections might well be extended, *e.g.*, Chard-Honiton, and more particularly, Sidmouth-Peak, since several failed on Peak last year but lost no marks at the check at the top.

(3) A timed hill-climb might be included, as in the Land's End run; but, if so, the "baby" and 250 c.c. machines could hardly be expected to attain the same speeds as their 350 c.c. brethren. I believe that out of the sixteen machines of under 300 c.c. that were entered in the last Land's End Trial, only "Pa," on "Pa's" Levis, managed the 15 m.p.h. up Porlock that was expected from the "under 350 c.c. class." In view of the increasing popularity of the 100 c.c. per h.p. rating, would it not be fitting to have the points of division at 300, 400, and 600 c.c.?

In the first class there would be the "hot" 247-250 c.c. J.A.P. and Levis machines, and such "utility" mounts as the 293 c.c. Connaught, 292 c.c. O.K. Junior, 269 c.c. Villiers, and 292 c.c. Allon; in the second, the 349 c.c. A.J.S. 349 c.c. Raleigh, and the host of 350 c.c. J.A.P. and Blackburne-engined makes; in the third, or 600 c.c. class, we should find the sports Triumphs, Sunbeams, and Douglasses, along with "utility" models such as the 550 c.c. Triumph, 557 c.c. B.S.A., 592 c.c. Lea-Francis, and 598 c.c. Precision.

The "4" Norton (633) would be elbowed into another class, but it can very well look after itself!

Lastly, might not riders of similar machines be listed to ride together? It would be interesting for them, for spectators *en route*, and for pressmen to differentiate between the performances of the outwardly similar mounts. What do others think? FIDO.

Oxford.

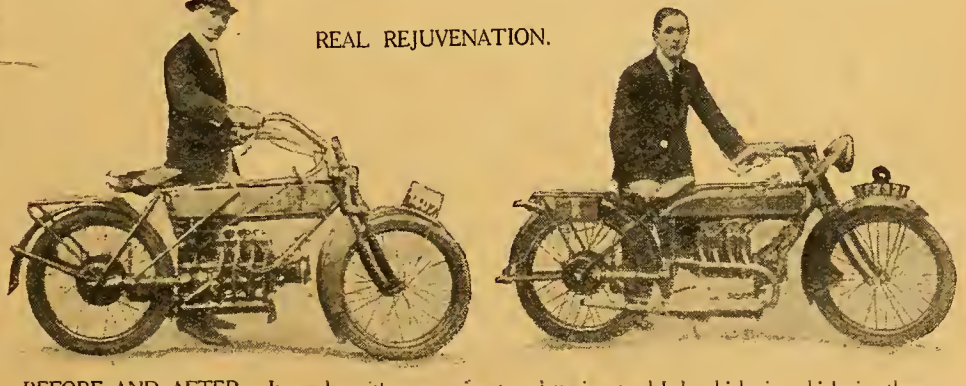
FUEL CONSUMPTION OF A LUXURIOUS SIDECAR.

Sir,—As the owner of an old Clyno sidecar outfit, I have been very pleased to see that the Clyno Company is again a going concern.

My present machine is a 1916 W.D. model, which I bought second-hand in the high price period following the war. Although it had had very rough treatment and hard usage, I am very satisfied with it and think that for slogging hard work year in and year out the Clyno productions want a lot of beating.

I have recently concluded a holiday in Cornwall and Devonshire from London. I covered 850 miles with only one stoppage for a puncture. The country involved a great deal of second gear work, the human freight was 18 stone, luggage for two, spare wheel, and a very heavy sidecar body.

REAL REJUVENATION.



BEFORE AND AFTER. It needs neither arrowing nor lettering to label which is which in these photographs of an ingenious conversion, outlined in the accompanying letter from Mr. L. Desoutter.

Yet for the whole tour the petrol consumption was 58 miles to the gallon, which I consider very good for such an old machine. No attempt was made to save petrol.

If ever I am in a position to cut the loss and get a new machine my inclination would be for one of the new Clyno outfits. If the necessary bank balance were available, I should, however, be torn between this and such a light car as the Rover. I consider a motor cycle a more sporty vehicle to drive, and should probably always hanker after it, even if I had a car. One thing I object to is having to dress in special clothes for a motor cycle. The real bed-rock consideration is, however, running expense.

I was, therefore, horrified to read in your article that the consumption on the Clyno on your trial trip worked out at the appalling figure of 35 miles to the gallon. Even allowing for the fact that it had not been specially tuned, this is very high. Most machines in the hands of the average rider lack, or soon get to lack, special tune. My present old outfit is anything but perfect. The Rover light car does, I believe, 45 m.p.g. The consumption on light cars appears to be creeping down, whereas that on high-powered and heavy but comfortable sidecar outfits steadily creeping up. When the two approximate to the same figure, motor cycling will lose many of its adherents. AN OLD CLYNO.

Chelsea.

Sir,—Referring to "Road Tests of New Models" dealing with the Clyno sidecar outfit, I was particularly interested in this article, as I am fortunate enough to possess one of the few machines that were turned out before production ceased in 1920. I entirely agree with your contributor on most of the points mentioned, but cannot understand his experience with petrol consumption.

I have driven my outfit a total of 14,000 miles, and on *no occasion* has the consumption been heavier than 50 m.p.g. Using pure benzol with 32 (Amac) jet and Bowden extra air, I have succeeded in reaching 78 m.p.g. with 3 up, and can definitely say that the average mileage on petrol is in the neighbourhood of 55 to 60.

I agree with your criticism of the front brake, but do not think that you give sufficient prominence to the excellence of the spring frame and sidecar wheel. These two points, in my opinon, raise the outfit to a level far above any competitor. My spring frame is untouched, and after 14,000 miles shows no sign of wear. Usual disclaimer.

A. E. COPE.

CANCELLATION OF CLUB EVENTS.

Sir,—Mr. E. C. Gordon's complaints in your last issue with regard to postponement and cancellation of competitions, give rise to several interesting points.

As one who has had some slight experience or trials organisation I cannot say that I consider it wise to run a competition in which the minimum number of entries fixed by the committee is not exceeded, but agree that it is up to the organisers to notify entrants at least a week before the date if the event is to be cancelled or postponed.

Perhaps Mr. Gordon has never been intimately connected with the running of a competition. Few, but the people who *do* these thankless tasks, realise the enormous amount of time and labour incurred in merely selecting a 100 mile course—not to mention money, which in most cases comes from the pocket of the luckless official!

As a case in point, I spent four complete week-ends in mapping out a course of 120 miles, covering no fewer than 800 miles, at my *own* expense. A lot of time was also spent drawing up details. Two valuable trophies were put up—also medals. With what result?

From a membership of over 130 only seven entries were received, representing two committee men, three "pot-hunters," and two *bona fide* club members.! Two offers of assistance were received, for a course on which at least twenty observers were required.

Now, would Mr. Gordon, as a member of this particular organising committee, carry this trial through, as he advises in his letter? Would he be prepared for a beggarly seven entries (one or two of which might well be non-starters!) to "arrow" a course of 120 miles, or try to persuade twenty unwilling people to act as observers, etc., miles from anywhere, and do all the other "little" jobs which fall to the lot of a trials organiser? I think not!

Mr. Gordon states that by running an event, however small the entry, it shows "consideration for the entrants." Now that is just the average club member's view! He considers himself, and his *own* convenience *always*—going "full throttle" to see what he can get *out* of the club, not what he can put in. What consideration do the officials of any club get—usually busy men who give up all their leisure for the benefit of others? None at all—not even support of the events they have worked so hard to organise!

It is useless to say "to run an event . . . and avoid an event of that nature in the future," as I fear in the majority of clubs ideas would soon become exhausted! It is also pretty obvious that, as far as possible, the entry fees of any one event should cover its expenses, or the club would soon be bankrupt.

And surely a *sportsman* could not feel very gratified to win a trophy from a miserable six entries!

So I am convinced that unless a sufficient number of entries are received for a competition, it is far better to cancel or postpone it, in the interests of the club, organisers, and of the entrants themselves.

"FED-UP."

Hertfordshire.

DEPOSITS ON OVERHEAD VALVE STEMS.

Sir,—"Ixion" mentions a curious experience which a reader has had after 1,000 miles' running with a certain o.h.v. engine. The engine in question appears to be a four-valve Triumph. As a rider of a similar machine I have had the same experience and put it down to the following cause:

With the standard carburetter as fitted by the makers, the gauze covered air intake is very close to the saddle tube. On a dusty day I have found the small part of the tube opposite the air intake is free from dust, although the rest of the machine is covered. The dust appears to be sucked from the tube and settles on the inlet valve stems, when, after being moistened with the damp vapour of the gas, it gets hardened by the heat of the engine.

In my case the deposit had to be cut off with a knife and resembled very hard rubber or vulcanite. I have mentioned this particular engine simply because it happens to have the same trouble as your other reader, who does not state any particular machine.

Apart from this, the machine I have is splendid and would not be given up in preference to any other make. Has "Ixion" had this peculiar trouble with the o.h.v. Triumph he often mentions in his weekly article? I was interested in this article, and would like to know from other readers if they have found any way of overcoming the trouble.

S. Wales. INTERESTED.

TEMPERAMENTAL ENGINES.

Sir,—I have read with interest the theories propounded by various readers on the cause of the temperamental behaviour of the Rudge engine. Personally, I do not believe one of your correspondents, including that almost super-man himself, "Ixion," has yet lighted on the correct solution. This contribution is in reply to "I.O.M.'s" letter.

My machine is a 1920 I.O.M. T.T. Rudge, but instead of the regulation Senspray, it is fitted with a B. and B. attached to the induction pipe by means of about a foot of suitably bent copper piping. *The air intake projects from the near side of the machine.*

This machine seems to be afflicted with the complaint similar to that experienced by your other correspondents, for at times it runs beautifully, at others it sulks a little, and occasionally—very occasionally, about 50 yards in a 100 miles—it super-Rudges, as "Ixion" terms it. Altitude does not make any difference, for it behaves the same whether on the moors to Appleby and Penrith or on the main road south. One of its super-Rudging fits nearly terminated in a violent ending to myself, for it occurred when I was rounding a bend at about 20 m.p.h. Without any warning of any kind it suddenly—in the true sense of the word—dug out an extra 15 m.p.h. from somewhere, and I found myself doing a slide along the grassy side of the road.

"I.O.M." attributes the cause of this to the alternate pumping and suction effect on the carburetter through its

air intake being almost flush with the plane surface of the oil tank. Now, my air intake is near to and flush with nothing except the outside atmosphere, and still sulkiness and super-Rudging occurs. I have no solution to offer; but perhaps the Rudge people themselves would contribute something towards this topic. O.P.Q.
Durham.

Sir,—I have fitted up a quart oil tin as oil tank on rear down tube of my 292 c.c. Omega-Jap, owing to failure of original tank, and had an aluminium tube over air intake of B. and B. carburetter, reaching to within about 1½ in. of the oil tank; with this arrangement my speed down a certain gentle slope was 45 m.p.h. Recently I fitted a short trumpet-shaped air intake, which is about 6 in. from tank. Immediately my speed rose to 50 m.p.h. down the same slope. This is with gauze in air intake, 26 jet, 6⅔ : 1 gear.
H. P. BOWLER.

EASY PAYMENTS.

Sir,—I regret an error made in typing out my letter that appeared in your issue of September 7th. "Firm B requires a deposit of ten per cent." should read "Firm B requires a deposit of a quarter." H. G. LE MESURIER, Lt.-Col.

CLUTCH SLEEVE ADJUSTMENT DIFFICULTIES.

Sir,—Can any reader tell me how the adjustment on a Rudge-Multi clutch is made so that the $\frac{1}{16}$in. end play is obtainable in the brass sleeve? I have just fitted all new parts, but cannot get the end play mentioned; in fact, I cannot get any at all. J. S. O. SMITH.

PRIVATE OWNERS IN BIG TRIALS.

Sir,—I notice in the article "Following the Blue Trail," "Tangent" asks, "Where were the private owners?"
I think the answer lies in the expense of such events. During this season I have spent some £80 in supporting some of the more prominent reliability trials, the cost of the Six Days event working out at about £25.
While it is very gratifying, etc., to win gold medals on equal terms with the trade, it cannot be expected that many private owners will be able to shoulder this expense. Personally, after I have had a shot at the Scottish Six I shall leave these expensive events to the trade.
In fact, in a trial like the Six Days event, the results of which may guide the buying public, it might be better to restrict the entries to three machines of a class from each manufacturer. These machines would be driven by the best drivers, and results could then be fairly compared. Under the present system a private owner may, through bad driving or inexperience, easily spoil the "average" success of the particular make he rides. MATCHY.
London.

[There is a good deal in what our correspondent says when applied to the A.C.U. Six Days Trials; but it would be fatal to exclude the private owner from any other event. —Ed.]

THE IMPORTANCE OF FRONT SPRINGING.

Sir,—I have no letters of distinction after my name but, having been a rider, and a reader of *The Motor Cycle*, for the last fifteen years, I should like to express my opinion *re* springing.
I have found that the speed of a machine over a bad road is invariably governed by the adaptability of the front springing to absorb road shocks. The average spring forks are, in my opinion, totally inadequate in this respect; this is practically admitted by spring frame enthusiasts.
I have never found the speed to be governed by vibration felt on the saddle. Most modern saddles actually have *more* range of movement than the spring fork, which is always threatening direct action to the frame over a bad road. I maintain that, however much the rear springing, only, of the frame is improved, it will not enable a higher speed to be attained unless the front springing is improved *pro rata*. Both wheels should have up and down movement of at least 4in.; then we can ride without the fear of our elbow joints getting red-hot, and other parts of the anatomy a "plum red colour" (with apologies to "Ixion").
H. E. CLEEVE.

COMPETING UNDER DIFFICULTIES.

Sir,—With reference to your recent paragraph under the above title, surely to the man in the street the performance of B. Browning on a Royal Ruby machine taken straight from stock in completing the course in the Six Days Trials is worthy of special notice and is, in my opinion, a better performance than many competitors who just managed to gain a gold medal. I think Six Days Trials with all machines taken straight from the crate would give the public a real test of reliability. "JUSTICE."
N. Shields.

GOGGLES FOR THE SPECTACLED RIDER.

Sir,—I would like to reply to the letter of "Awahawahawoo," since the trouble he has described is very common, and I have many times had similar complaints brought to my notice.
First of all I would recommend him to remove the glasses and smash them. If the goggles are made for curved or bent glasses, destroy those too. Now purchase a pair of good-fitting goggles with removable windows, which do not show any "cords" or streaks across the glass. Take these out and send them to a working optician (not an eye-testing spectacle supplier) and ask him to re-polish both sides of the glasses flat and fairly parallel, then replace them in the goggles. Your eyes will then accommodate themselves immediately for natural vision; trees and houses, etc., will appear in their natural shapes too.
There is not one goggle in ten thousand fit for any one to wear, and in consequence thousands of women and men are continually doing permanent and increasing damage to their eyes.
I would recommend this subject to parents who supply these things to their children. The bad effect can be very slight and unnoticed even by discriminating adults when goggles are worn only for short durations at a time; but no less sure and certain is the result in after years.
The lamp and filament makers give us bad and unsuitable lamps because they do not seem to trouble about the underlying principles of their wares, and in consequence we are troubled with "glare." In like manner the goggle maker knows and cares very little about the principles of vision; his object is to sell goggles at a cheap price. One sometimes feels that it is almost a criminal neglect in this case.
London, N.19. ROVER.

SUMMARY OF CORRESPONDENCE.

Mr. W. D. Riley, 141, High Street, Redcar, Yorks, complains that he loaned a new spare driving chain to a stranded motor cyclist and that it has not been returned.
Over the nom de plume of "Interested Member," a correspondent asks if the A.C.U. publishes a detailed balance-sheet giving salaries paid to permanent members of its staff.
Various readers send us newspaper cuttings, instancing fines for dangerous driving, etc., which in their opinion are excessive.

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CLUB NEWS

Sutton Coldfield and North Birmingham A.C.

A hill-climb will take place at Angel Bank on Saturday. All the usual classes are included in the programme, and a number of special awards are being offered.

Scottish Western M.C.

Open speed trials will be held over a half-mile course near Glasgow on Saturday next. Twenty-four classes are included in the programme.

Liverpool M.C.

Two important events, the Reliance Cup Trial and the Liverpool-Carlisle-Liverpool Trial, are announced for October 4th and September 30th respectively. A large number of challenge awards will be open for competition. Entries and any communications should be addressed to Mr. H. R. Caldwell, 14, Wood Street, Liverpool.

Redhill and Reigate M.C.C.

Fine weather favoured the one day inter-club team trial held on September 10th. Of the eight teams which attempted the very spoiling 130-mile course two only were intact at the finish. Provisional results show that the team prize was won by the Redhill and Reigate team, made up as follows:—

P. Cunningham (555 P. and M. sc.).
V. F. Long (976 Excelsior sc.).
R. Clapham (494 Douglas).

Heaton Moor M.C.C.

A challenge trophy trial was held on September 3rd over a very tricky course, including an ascent of Jenkin's Chapel Hill, Saltersford. Solo machines of 350 c.c. and under had the alternative of Pym's Chair, and all sidecars had to ascend Pym's Chair only. Result:—F. Bamford (499 Sunbeam), challenge trophy and gold medal; H. Moore (998 R. Ruby sc.), silver medal; J. Corcoran (499 Sunbeam sc.), silver medal; F. Slack (499 Sunbeam), bronze medal. Special Award:—Miss E. Foley (349 A.J.S.), meritorious performance.

Peterborough M.C.C.

The club held speed trials on the Old Race-course Road, Stamford, on a recent Thursday, invitations being extended to the Spalding and Stamford Motor Cycle Clubs to take part in the events, and accordingly there was an excellent entry. The contests were over a straight, level half-mile, and some good times resulted. A cup, presented by Captain Carnt for annual competition, was won by O. Collier (492 Sunbeam), who made the fastest time of the day at a speed of 75 miles per hour. Silver medals were awarded to the winner in each class, and a certificate was given for second place. Results:—

Standing Starts.

Not Exceeding 350 *c.c.*—(1) J. W. Turnill (349 Royal Ruby), 36½ secs.; (2) Le Bœuf (349 A.J.S.), 38⅘ secs.; (3) E. W. Greenwood (349 A.J.S.), 39 secs.

Not Exceeding 550 *c.c.*—(1) O. Collier (492 Sunbeam), 31½ secs.; (2) H. Robinson (492 Sunbeam), 32⅕ secs.; (3) A. Stapleton (492 Sunbeam), 32⅗ secs.

Unlimited.—(1) H. Robinson (492 Sunbeam), 31½ secs.; (2) O. Collier (492 Sunbeam) and G. North (496 Brough), 32⅗ secs. (tie). In the run-off Collier secured second place, his time being 30⅕ secs.

Flying Starts.

Not Exceeding 350 *c.c.*—(1) J. W. Turnill (349 Royal Ruby), 28½ secs.; (2) Le Bœuf (349 A.J.S.), 28⅘ secs.; (3) G. E. Henson (350 Coventry Eagle), 30½ secs.

Not Exceeding 550 *c.c.*—(1) O. Collier (492 Sunbeam), 24 secs.; (2) H. Robinson (492 Sunbeam), 24½ secs.; (3) G. North (496 Brough), 24½ secs.

Sidecars and Three-wheelers not Exceeding 1,100 c.c.—(1) H. Robinson (492 Sunbeam sc.), 35½ secs. (2) G. Gaunt (976 Matchless sc.), 37⅖ secs.; (3) G. E. Henson (997 Indian sc.), 48⅘ secs.

Solo Machines, Unlimited.—(1) A. Stapleton (492 Sunbeam), 24½ secs.; (2) H. Robinson (492 Sunbeam), 24⅖ secs.; (3) G. North (496 Brough), 24⅘ secs

Week-End Club Events.

Sept. 21st.—Norfolk M.C. and L.C.C. Speed Trials.

Sept. 23rd.—Sheffield and Hallamshire M.C. and L.C.C.—Reliability Trial.

Sept. 23rd.—Bristol M.C. and L.C.C.—Formula Hill-climb.

Sept. 23rd.—Western Centre A.C.U.—Half-day Inter-team Trial.

Sept. 23rd.—Doncaster and District M.C.C.—Gymkhana.

Sept. 23rd.—Middlesbrough and District M.C.—Gymkhana.

Sept. 23rd.—Exeter M.C. and J.C.C.—Club Trial.

Sept. 23rd.—Coventry Triangle M.C.—Run to Napton.

Sept. 23rd.—Essex County and Southend A.C.—Reliability Trial.

Sept. 23rd.—North Wales M.C.C.—Speed Trials.

Sept. 23rd.—Gloucester M.C. and L.C.C.—Social run.

Sept. 23rd.—Scarborough and District M.C.—Speed Trials.

Sept. 23rd.—Sutton Coldfield and North Birmingham A.C.—Hill-climb.

Sept. 23rd.—Scottish Western M.C.—Open Speed Trials.

Sept. 23rd.—Macclesfield and District M.C.—Hill-climb.

Sept. 23rd.—South Midland Centre A.C.U.—Hill-climb.

Sept. 23rd.—Matlock and West Derbyshire M. and M.C.C.—Gymkhana.

Sept. 24th.—Coventry Triangle M.C.—Run to Northend.

Sept. 24th.—Middlesbrough and District M.C.—Social run.

Sept. 24th.—Kelso and District M.C.C.—Social run.

Sept. 24th.—Prestwich and District M.C.—Social run.

Sept. 24th.—Newcastle and Northern M.C.—One Day Reliability Trial.

Sept. 24th.—Wallington and District M.C. and L.C.C.—Social run.

Sept. 24th.—North Western Centre.—Inter-team Trial.

Sept. 24th.—Ilkley M.C. and L.C.C.—Novelty Competition.

Sept. 24th.—Manchester M.C.—Social run.

Sept. 24th.—Colne and District M.C.—Run to York.

Sept. 24th.—Halifax and District M.C. and L.C.C.—Run to Linton Falls.

Sept. 24th.—Atherton and District M.C.C.—Run to Leek.

Sept. 24th.—Leeds M.U.—Reliability Trial.

Sept. 24th.—Sheffield M.C.C.—Run to Elksley.

Sept. 27th.—Reigate, Redhill and District M.C.C.—Hill-climb.

Sept. 28th.—Aberdare and District M.C.C.—Speed Trials.

Sept. 28th.—Gloucester M.C. and L.C.C.—Visit to B.S.A. Works.

Sept. 28th.—Worcester M.C. and District M.C.C.—Visit to A.J.S. Works.

Aberdare and District M.C.C.

Brecon Beacons is the venue of the club's annual speed trials, arranged to take place on the 28th inst. Open and closed classes for most types of machine are included in the programme, and a number of handsome prizes will be awarded.

Sunderland and District M.C.

Thirty competitors entered the sporting trial for the Northern Motor Exchange Cup and the Turvey Shield, held recently over a 40-mile course, starting from Sleights. Fifteen finished, the winner being J. Joynson (346 Francis-Barnett), second R. Scoon (Jowett car), and third S. Bell (490 Norton), who won the Manufacturers' Cup and Turvey Shield. D. Hall (249 Velocette), who secured fourth place, was awarded a special gold medal for his good performance on the lowest powered machine; and a similar award was made to the fifth man, T. W. Toovey (490 Norton sc.).

Lewes and District M.C.

An average gradient of about 1 in 9 over half a mile of winding road was chosen for the hill-climb held on the 3rd inst. at Sharnden, Mayfield.

300 c.c. (Two-strokes).—1, R. Green (249 Velocette), 45⅕s.; 2, S. Dunford (225 Royal Enfield), 49⅖s.

300 c.c. (Lightweights).—O. E. G. Brook (269 Verus), 45s.; 2, W. J. Hylands (269 Verus) and R. Green (245 Velocette), 47s.

350 c.c. (Lightweights).—1, S. Dunford (269 Verus), 34s.; 2, L. P. Greenwood (348 Royal Ruby), 41⅗s.; 3, E. G. Brook (269 Verus), 42⅖s.

500 c.c. (Solo).—1, C. Volk (494 Douglas), 33s.; 2, R. Green (490 Norton), 34⅕s.

Unlimited (Solo).—1, C. Volk (494 Douglas), 33⅖s.; 2, S. Dunford (269 Verus), 34⅕s.; 3, R. Green (490 Norton), 35s.

Unlimited (Sidecars).—1, S. Dunford (490 Norton sc.), 46⅖s.; 2, S. H. Colbourne (989 Harley-Davidson sc.), 48⅘s.

The gold medal awarded for the fastest time of the day was awarded to C. Volk (494 Douglas), who covered the distance in 33 seconds, which incidentally was only 1 second better than S. Dunford (269 Verus).

Central Cornwall M.C.

Beautifully fine weather prevailed at the hill climb held recently on Greymare Hill, near Bodmin Road, and there was a very large attendance of motorists from all parts of the district, the course, a measured half-mile, with several tricky corners, being lined with spectators. Fastest time of the day was credited to R. Dyer, on a New Imperial, in 52⅘ secs. The results, which have to receive the confirmation of the committee, were:—

Unlimited Sidecars.—H. F. Benny (499 Sunbeam sc.), 1 min. 9 secs.—walk-over.

300 *c.c. Solo.*—(1) R. Dyer (248 New Imperial), 55⅖ secs.; (2) J. W. Jenkin (248 Sparkbrook), 1 min. 9⅕ secs.

650 *c.c. Sidecars.*—H. F. Benny (499 Sunbeam sc.), 1 min. 4⅗ secs.—only competitor.

350 *c.c. Solo.*—(1) C. G. Whitlock (349 A.J.S.), 55⅘ secs.; (2) R. Dyer (248 New Imperial), 56 secs.

Unlimited Solo.—(1) G. R. Symons (492 Sunbeam), 52⅕ secs.; (2) H. L. C. Jennings (490 Norton), 57 secs.

500 *c.c.*-650 *c.c. Solo.*—(1) G. R. Symons (492 Sunbeam), 53⅓ secs..

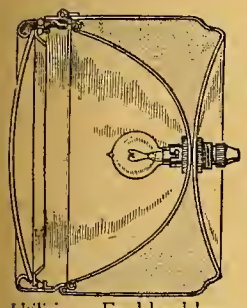
500 *c.c. Solo.*—(1) R. Dyer (248 New Imperial), 52⅘ secs.; (2) G. R. Symons (492 Sunbeam), 53 secs.; (3) P. Phillips (490 Norton), 54⅕ secs.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Effective Lamp Conversion.

NOT being satisfied with the light from an acetylene head-lamp converted to electric lighting by means of a lamp in the place of the burner, F.M. (of Oldham) decided to remake it as a thorough-going electric head-lamp.



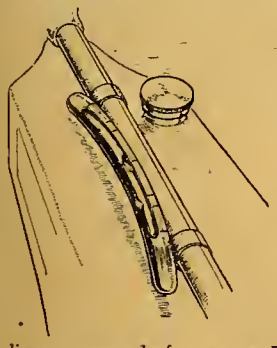
Utilising a Ford head-lamp reflector in a converted acetylene lamp.

A Ford head-lamp reflector was bought new for 4s. 6d., and wire ($\frac{3}{32}$in. dia.) was put round the edge by a tinsmith for a few coppers. The back of the lamp was domed inwards until it touched the reflector, which was inserted from the front, a suitable hole for the lamp-holder being drilled.

Made up, it gives a light of great brilliance with a 6v. 8cp. gas-filled bulb, and has the advantage of adjustable focus by the lampholder. The lamp itself has a 6in. front and is described by its owner as of "make unknown."

Gradient Meter.

HAVING purchased an ex-R.A.F. clinometer, A.H.S., of Chichester, adapted it as a motor cycle gradient meter with very little difficulty. One end of the clinometer body was much longer than necessary, and was therefore sawn off and plugged with putty. Brass



A gradient meter made from an ex-R.A.F. clinometer.

clips and $\frac{3}{16}$in. nuts and bolts served for attachment to the frame top tube, above the tank. If the frame tube slopes compensation may be made by modifying the clips.

With the gradometer fixed and the bicycle level, the "level" bubble position was marked. The other graduations were then obtained by removing the gradometer and testing it on a board on a table. The board was packed up till the bubble came to "zero," giving level position, whence gradients up to 1 in 4 were obtained by further packing and the corresponding bubble positions marked. Two coats of Robbialac gave a good finish, and the graduations were scratched through to the aluminium clinometer case, showing white by contrast. The total cost was about 3s.

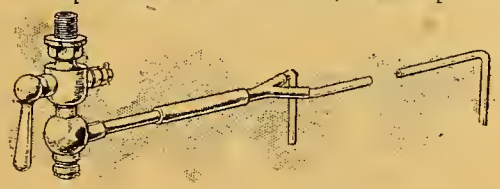
Care of Tyres.

RUB well into the tyre a mixture of equal parts glycerine and water, and dust over with French chalk. This mixture makes the rubber soft and pliable, and if applied once a month will prevent cracking or splitting of the rubber. I have found it extremely useful on my tyres.—R.J.P.

Injection Device for Twins.

STARTING troubles, in September, at any rate, should be independent of gummy pistons, but our summer weather is so arctic on occasion that an injection device may be considered as an all-the-year-round necessity, especially on big twins, which like a "thick" oil.

A Sheffield reader, borrowing his inspiration from the Zenith, fitted up a

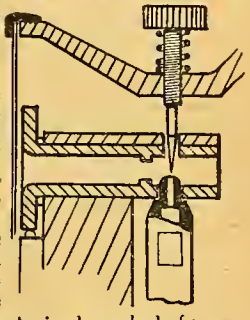


An idea for priming big twins.

Birmingham-made twin so that petrol injections could be made without recourse to loose squirts, oil cans, or bits of acetylene tubing. The items used were an injection tap with swivelling delivery pipe, a gas lamp brass Y piece, one bit of $\frac{1}{4}$in. copper pipe, and two pieces of $\frac{1}{8}$in. pipe. The tap replaced the tank drain tap, and the remaining items were so disposed as to bring a pipe over each cylinder compression tap. To get an even flow at both pipes the end of the shorter one is nipped up with the pliers, while to take the overhang weight the longer pipe is suitably wired or taped to the lower tank tube.

Variable Jet for a Senspray.

ALTHOUGH the Senspray carburetter is fitted with a device which increases or decreases the suction on the jet, so giving a permanently rich or weak mixture at will, C.B., a Glasgow reader, found that a variable jet was also an advantage. The materials used to construct this fitment were (1) a $\frac{3}{16}$in. screw with a knurled head, (2) a large gramophone needle, and (3) a small piece of coil spring to fit over the set screw.

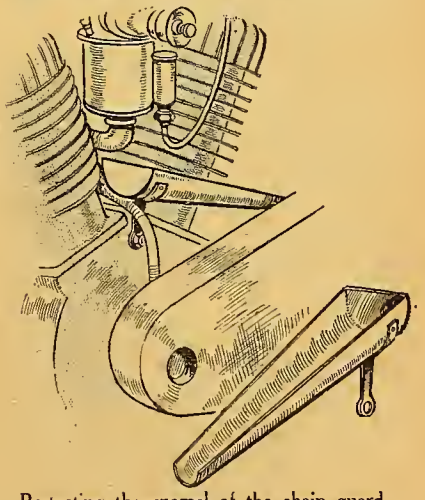


A simple method of transforming a single jet carburetter to a variable type.

The needle was soldered into a small hole drilled to the end of the set screw, and for the latter a hole was tapped in the carburetter body immediately over the jet. Drilling the vaporiser and jet to a loose fit for the needle completed the job.

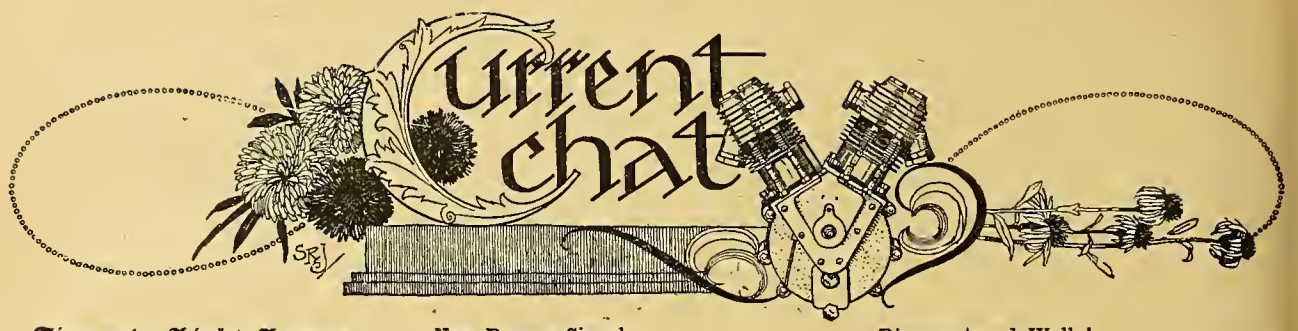
Preserving Appearance.

A DUTCH rider of an Indian (L.C.V., of The Hague) has devised the little fitting here described in order to protect the enamelled crank case and chain guard from the petrol drippings which result when the carburetter is



Protecting the enamel of the chain guard.

flooded. The fitting is a small tapered trough of sheet metal secured on a small stay held under the top crank case nut. The further end of the gutter leads the petrol overflow to a point behind the engine under the tool box and between the chain guard and oil tank.



Times to Light Lamps.

Sept.	21st	.. ..	7.31 p.m.
,,	23rd	.. ..	7.27 ,,
,,	25th	.. ..	7.22 ,,
,,	27th	.. ..	7.18 ,,

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Support for the 500 Mile Race.

Owing to the initiative of Mr. C. Holbeach, Weybridge residents, as announced in last week's issue, have petitioned against the abandonment of the 500 Mile Race. Up to the time of writing, 420 signatures have been received.

Disabled Drivers' Rally.

Last year's rally of disabled motor drivers is to be repeated on Saturday in the grounds of Capt. Woolf Barnato's house, "Ardenrun," Blindley Heath, South Godstone. The Junior Car Club and the Disabled Drivers' M.C. (48, Grosvenor Square, London, W.1), are the organisers.

A Sporting Event.

Single-gear enthusiasts are invited to enter the third annual trial of the Levis Athletic Club, to take place on the 30th inst. The event is unique in that only single-speed, direct belt drive machines are eligible to compete. Entries should be sent in, by September 22nd, to Mr. W. S. Banner, Levis Works, Stechford, Birmingham.

Exports Steady; Imports Down.

The statistics of our overseas trade in motor cycles during August, as given in the Trade and Navigation Accounts, are chiefly remarkable for the extraordinary fall in imports, the total value of machines and parts coming into this country last month being £2,959, compared with £12,066 in July, £12,756 in August, 1921, and £65,884 in August, 1920. The export figures, on the other hand, remain comparatively steady, £71,303 for August, against £77,901 for July, being a not unreasonable drop at this season of the year. Comparative tables are appended :—

MOTOR CYCLE EXPORTS.

	1920	1921	1922
	£	£	£
Value of machines	202,363	44,366	47,859
Value of parts ..	63,203	30,848	23,444
Total value	265,566	75,214	71,303

MOTOR CYCLE IMPORTS.

	1920	1921	1922
	£	£	£
Values of machines	51,618	1,823	714
Value of parts ..	14,266	10,933	2,245
Total value	65,884	12,756	2,959

New Danger Signals.

Road patrols of the A.A. now carry two red flags, which may be fixed as emergency warnings when temporary obstructions occur. In a number of instances they have already served to avert possible accidents.

Appreciation of Sportsmanship.

E. C. Barton, the Matchless sidecar driver in the Six Days Trials, who was injured by a following sidecar near Alms Hill, writes to express his appreciation of the manner in which other competitors stayed to help at imminent risk of losing their gold medals.

Sharing an Engine.

At the *concours Lepine*, an exhibition now going on at the Champ de Mars, Paris, originally founded for small inventors, kerbstone merchants who sell ingenious toys, and the like, there is one exhibit of interest to motor cyclists. It is an arrangement for attaching two ordinary pedal bicycles together with a small engine between them which drives on to the back wheels of both of them through a complicated arrangement of universally jointed shafts and belting. It is interesting but quite unpractical.

Dismount and Walk!

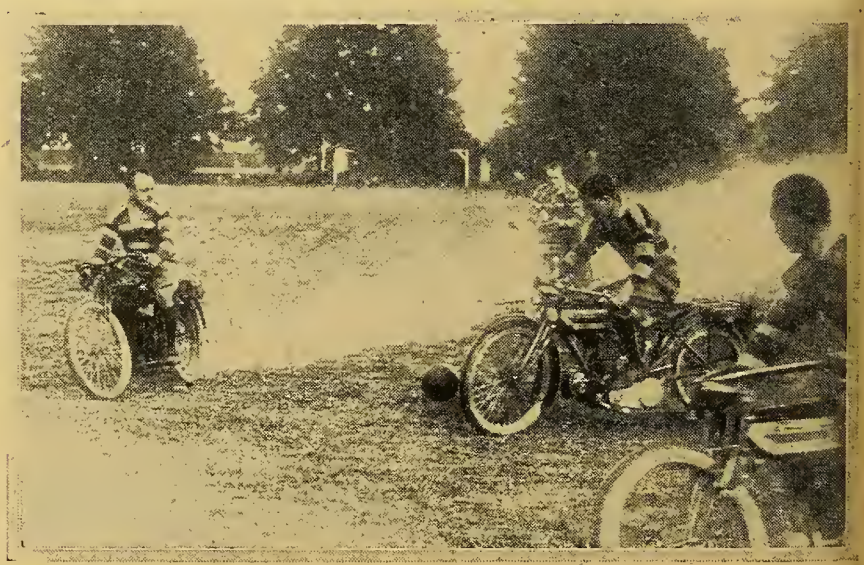
Motor cyclists passing through Aycliffe, near Darlington, should, according to a correspondent, dismount and push their machines past the constable on duty at a dangerous turning there.

Chameleon Motor Vehicle.

In a Ross silence prosecution, the offending vehicle was variously described as a cycle car and a car. Then, in his preparatory remarks to imposing the usual fine, the chairman talked about the noise of "these cycles."

Faults and How to Find Them.

Drawn up several years ago, much on the same lines as "Tracing Motor Cycle Troubles," the little handbook known as "Faults and how to Find Them," which deals with the subject from the car-owner's point of view, has constantly been revised and brought up to date to meet the growing requirements of our ever-changing industry. The sixth edition of this book is now published by the proprietors of *The Autocar* (Iliffe & Sons Ltd., of Dorset House, Tudor Street, E.C., at 3s. 6d. net), with every section carefully modernised, some deleted, some added to, and not a few entirely new ones embodied.



WHERE SKILL AND STRENGTH ARE NEEDED. We do *not* understand that a game of motor cycle football is to be included as a final test in the next Six Days Trials. But there is no telling what the future holds in the way of original "tests." This capital speed picture, full of life and movement, depicts a scene at a recent Northampton fête

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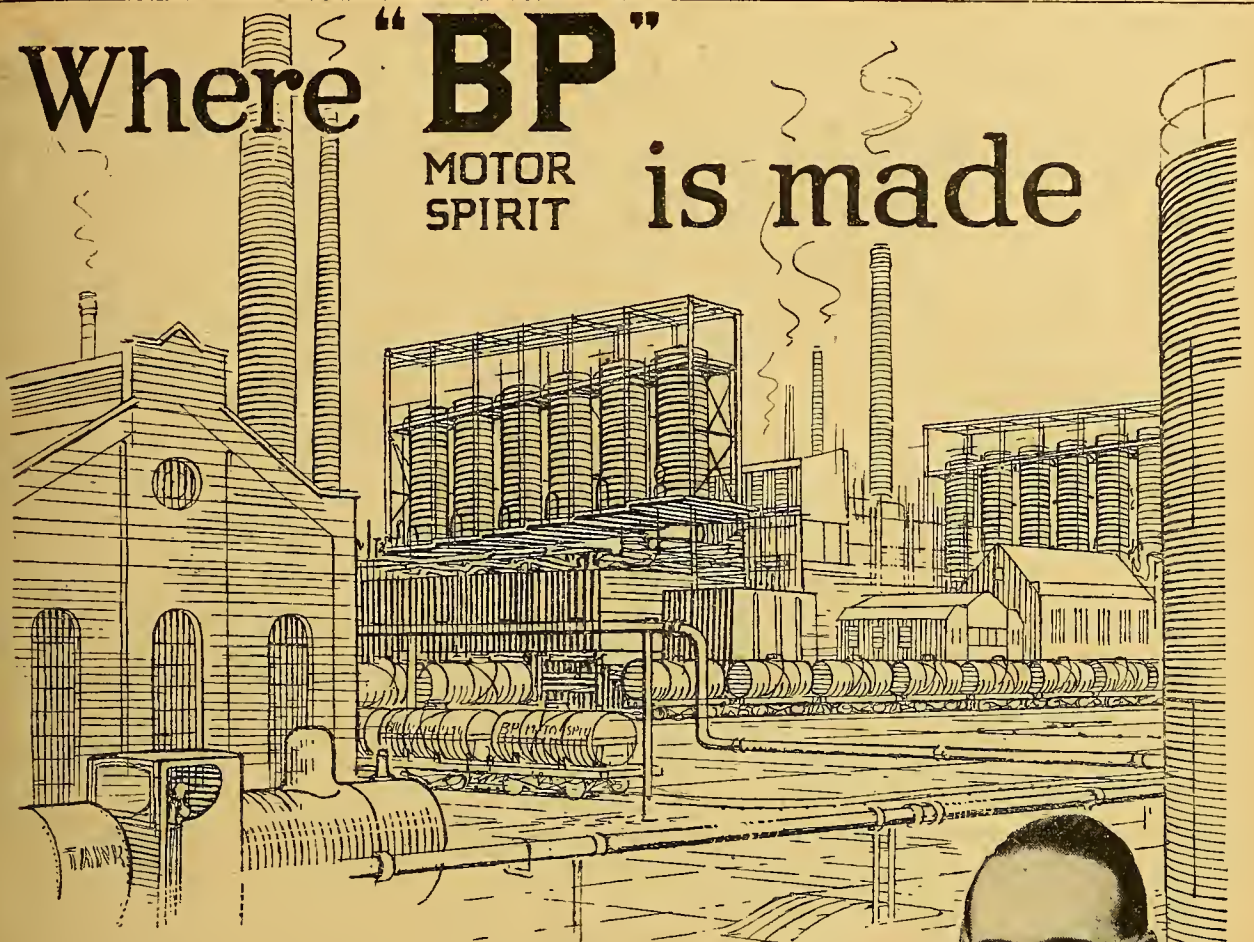

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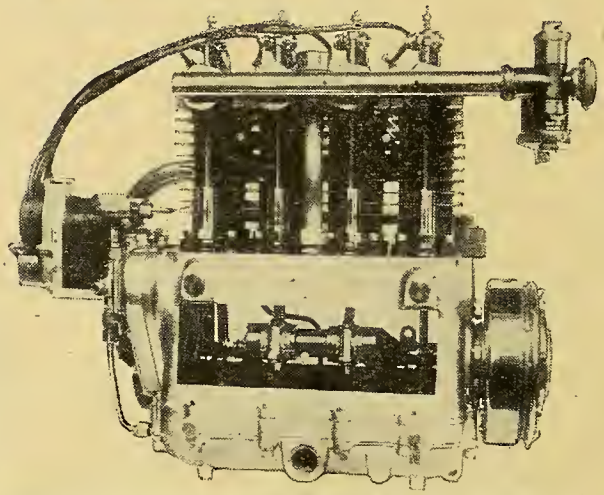

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French Grand Prix (Motor Cycles)—Winner.

Belgian Grand Prix (Motor Cycles)—Winner.

Scottish Speed Championship (Motor Cycles). (St. Andrews, July 29.)—9 firsts out of 10 races on programme. Also 9 seconds and 10 thirds.

200 Miles Cycle Car Race, Brooklands—3rd, 4th and 5th.

A.C.U. 6 Days Reliability Trial—70 gold medals out of 79 awarded.

MOTOR BOATING. Open Championship of Scotland, Clyde, September 4—Winner and open Boat Championship Winner.

For "Upper Lubrication"

Has anything other than Miracle Oil ever acquired such an astounding list of successes to its credit in the course of a single season?

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One Third Lorries.

Practically 33 per cent. of the motor vehicles on the road in France to-day are lorries.

Mr. George Stevens Entertained.

On Saturday evening last Mr. George Stevens was welcomed back from his trip to the Antipodes by several well-known members of the trade. The entertainment took the form of a dinner at the Midland Hotel, Birmingham, at which Mr. Alec Ross presided.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

H. R. Davies' Latest Win.

Howard Davies, the well-known T.T. rider, is now the father of a daughter.

The Three-speed Scott.

A new three-speed Scott will be on exhibition at Olympia. The Squirrel, we understand, will remain practically unaltered.

Two-stroke Expert Wanted.

There is a vacancy in a prominent Belgian factory for an English two-stroke expert. The type of man required is one who is used to speed work and tuning.

Scarborough Speed Trials.

Next Saturday's speed trials at Scarborough have attracted an excellent entry, including G. Dance and several other well-known Midlands and South Country men, as well as Yorkshire and North Country riders.

Lightweight Sidecar Record.

An excellent performance was recently made at Brooklands by H. Le Vack on a 350 c.c. J.A.P. sidecar, in accomplishing the 10 miles (standing start) record distance at a speed of 62.74 m.p.h. This will be claimed as a world's record.

Motor Cycles to Carry a Rear Lamp.

At first it was thought that the proposed Lights on Vehicles Bill, referred to in our issue of the 7th inst., exempted solo motor cycles from carrying rear lamps. We are now informed by the Ministry of Transport that this was not intended, and that the reference "only one lamp . . . need be carried" is applicable to head lights only, other vehicles having to carry two.

Car Prices in 1923.

According to *The Autocar*, which journal week by week chronicles price reductions of 1923 model cars, 15 per cent. represents approximately the reduction in 1923 prices.

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THE SPIRIT OF CARNIVAL.

CLUB events have a tendency to become serious, earnest affairs, and a safety-valve for members' enthusiasm becomes an increasing necessity. Of the several forms of serio-comic events the gymkhana is perhaps the most popular; certainly a better fun-provider than a well-organised gymkhana is hard to find.

The Birmingham M.C.C. third annual gymkhana, held on Saturday last, was no exception to the rule, and enthusiasm ran high among all concerned. The whole of the proceeds will go to charity.

The gymkhana was launched with a decorated parade, which traversed the main streets of Birmingham. The procession had a hearty reception from spectators as it wended its way to the Austin playing fields.

Motor Cycle Polo.

The opening event at the playing fields, prior to the arrival of the procession, was a motor-cycle polo match between the Birmingham University and the Austin Works; the teams were so well matched that after an exciting half-hour's struggle no goals were scored by either side. A large programme of amusing events followed, including such well-tried favourites as slow races, hairpin-course races for solo and sidecar machines, obstacle races, riding the greasy plank, and musical chairs.

POOR PROPAGANDA BUT EXCELLENT MAKE-UP. B. Dulsett caused much amusement with a sidecar faked to represent a crashed outfit, carrying damaged rider and passenger.

SCOTTISH TWO-DAY TRIAL.

Gruelling North Country Event. Worse Gales than Gradients during Run to Inverness.

The last rise of Cockbridge. A typical stretch of the route traversed on Saturday.

A dull, colourless sky, with every promise of an easterly "har" from the Firth of Forth, marked the commencement at 6-30 a.m. on Saturday, of what was to prove a most strenuous eleven hours for the Scottish Two-Day Trial competitors.

There were eight non-starters, seventy-five riders checking out. Trade teams were represented by:—Beardmore Precision; Douglas; Alexander & Co.; Sunbeam; D. R. Engineering Co.; A.J.S.; Andrew Downie, Ltd.; and Ariel. West Fife, Grantown-on-Spey, and Cumberland County were the club entries. A Scott Sociable arrived just in time to check out.

Leaving Edinburgh on a Highland trial there is always an uninteresting stretch of country to be crossed; but Stirling was soon passed, and having covered this first easy check, mostly through a driving drizzle, the sun shone out, and approaching Sheriffmuir the competitors obtained their first glimpse of autumn Highland scenery.

Not so Bad as Anticipated.

The hill was expected to claim many failures, as it was approached from a different point from that taken in the six days event. The difficulties of the climb are, however, dependent on the weather, and the surface was in excellent condition. Here it became evident that the standard of riding was exceptionally high; fast clean ascents were the common order, and Mr. Campbell McGregor (the secretary of the Edinburgh Club) began to show the first signs of anxiety! Clearly he had an unusually tough crowd to deal with, and the weeding out process was not to fulfil his expectations.

Practically all the climbs were excellent; but J. B. Porter (New Gerrard) approached the corner much too fast and fell, while an A.B.C. light car provided some sensation by charging a bank of nettles at the worst corner in order to save reversing.

Lunch was at Perth, and subsequently the heartbreaking work began. The day had turned out hot, with a following wind, so that hour after hour it seemed like travelling in a stationary atmosphere. Leaving Perth at 10.18, the route lay via Blairgowrie, the Devil's Elbow, Braemar, and Balmoral to the next observed hill, Rinloon. From Blairgowrie it was a steady climb for an hour and thirty minutes, constant gear changing, while the hot air could be felt rising in ever-increasing clouds from the engines. The scenery, of course, was grand, the birches and rowans on the mountain slopes having already acquired wonderful tints, but most of the riders were too busily employed making lightning changes and pumping oil into their engines to notice it. After seventy minutes of cruel, slogging work the Devil's Elbow, luckily unobserved, was reached. Never has there been a more remorseless test of efficiency and cooling than this part of the trial; practically all the engines were weeping and "konking." One rider had used a quart of oil in the last 30 miles, yet his engine was not smoking. Every one of the cars, official and otherwise, had steam up ere the Elbow was reached. Scarcely any of the sidecars had an ounce in hand.

Subsequently miles of all out "blinding" to make up lost time gave little chance of cooling down, and for the low powered sidecars it was neck or nothing. Few had time to spare at the Braemar check, and thereafter the trial seemed to evolve itself into one wearying struggle against time over appalling surfaces, by dizzy precipices and runs for the most part dead into the teeth of a gale.

On the Moors.

At Balmoral the Royal Standard was flying, and shortly after, in the Highlands proper, many interesting glimpses of deer stalking and grouse shooting activities were obtained. The cars attached to these were handled with much consideration for the competitors, waiting in the heather in the narrow roads till the long string had passed—possibly a case of prudence as much as anything.

On the whole, the hills claimed few failures. On Rinloon J. W. Turner (749 Bradbury sc.) was the only failure; this rider was unfortunate. Later he ran out

Scottish Two Day Trial.—

of oil, and finally he capsized his outfit, buckling wheels and forks and smashing up the sidecar body.

Cockbridge is both steep and long, but the surface was good, and it caused but two failures—T. Hussard (New Imperial) who was over-geared, and J. B. Richardson (Rover light car).

Bridge of Avon is a comparatively easy climb, straight, long, and steep, but without frills on it. Only D. Ralson (James sc.) failed to make a clean ascent, owing to a petrol union coming unsoldered. But the hills were nothing compared with the difficulties of combating the gale on the tortuous, hilly, rutty roads. For miles on end even the heavy sidecars were "all out," mostly on second gear.

After Bridge of Avon many of the riders were startled to find that they still had 16 miles to go and under 25 minutes in which to accomplish it, and the low-powered sidecars were again dead up against it. The last few miles into Grantown favoured everyone in making up time, but how some of the riders made up their lost time is still a mystery to everyone.

Tea at the salubrious Highland resort was heartily welcome, and everyone thought that the backbreaking part of the day was finished. Soon mountain roads were again the order of the day, and the contrary wind reached its utmost fury on the heights of Dava Moor and along the shores of Lochindord. Thirty miles or so of middle gear followed, with head down, blinded by storms which stung like shot. But on the last few miles into Nairn lost time was miraculously made up.

Unquestionably one feature of the trial was the high standard of riding; most of the competitors were experienced riders who knew the ways of Highland events. At Nairn everyone thought that his difficulties were over, but though the remainder of the journey into Inverness was by main road the fury of the gale and the driving storms proved as trying on this stretch as ever.

Truly may Saturday be described as one unending fight against time and wind. The low-powered passenger machines were the most severely taxed, the heavy sidecars were proportionately better off, but the solo men had it all their own way.

The results, which are subject to amendment and addition, speak well for the toughness of the competitors: Retired on Saturday—T. Hussard (New Imperial); J. W. Turner (Bradbury sc.); J. Cocker (Coventry Eagle); R. Spence (Sunbeam). Lost Marks on Time—Tom Gillies (Sunbeam); H. Hiscock (Morgan); W. S. C. Walker (Ariel sc.); A. Macgillivray (Rudge).

Bright sunshine greeted the starters on Monday, when all but one—a light car driver—commenced the homeward journey to time. Inverfarigaig corkscrew, however, caused many failures.

After passing Cockbridge. A loose and steep descent with one of the many hump-backed bridges met with on the trial.

SPORTING TRIAL IN SURREY.

Light Car Wins the Sopwith Cup. Only Four Motor Cycle Gold Medals.

MOTOR cycles and cars competed on equal terms in last Saturday's trial of the Surbiton M.C. for the Sopwith Cup; and reversing the usual order of things, the four-wheelers made the better performance.

The event, which had a total entry of 48, started at the Talbot Hotel, Ripley, and was favoured with dry if not very sunny weather. The afternoon's route was the morning section taken in a reverse direction, the whole course measuring only 100 miles.

High Button was the most severe test of the day, but only accounted for one outright failure among the motor cycle entry. That was J. A. Palmes (Scott-Squirrel), who was baulked, made two fresh attempts, and then sheared his chain sprocket and retired. The following required assistance: G. Baxter (Harley-Davidson sc.). E. A. Bridgman (Indian sc.), and J. A. Masters (Harley-Davidson sc.). E. O. Spence, on another Harley outfit, probably made the best ascent of all.

Gulley Lane is not steep, but on Saturday it was slippery and required very cautious negotiation. C. T. Ashby (N.U.T.) ran into a gulley and fell heavily, bending his handlebars. He did not retire, however.

Near the finish Shere watersplash was recrossed, and Alan Gruzelier (Zenith-Bradshaw) skidded in the water and came to a stop on the opposite bank, announcing that both brakes and one cylinder were out of action, and that he was going to retire.

A Salmson car won the Sopwith Cup, and a team of Salmsons won the team prize. The awards to the motor cyclists were as follows:—

Pole Cup (for best Motor Cycle Performance). C. E. Taylor (Vasco).

Gold Medals.

R. B. Clark (Zenith), C. E. Taylor (Vasco), W. Henry Wells (A.J.S. sc.), F. A. Longman (Ariel).

Silver Medals.

H. L. Wells (Norton), R. Staunton (Triumph), F. A. McNab (Trump-Jap), J. Holroyd (Rex Acme sc.), B. Fowke (——), R. Saltmarsh (Harley-Davidson), A. Fraser (Brough Superior), A. S. Guthrie (Diamond), F. E. Salter (Zenith), F. C. Townshend (Zenith-Bradshaw). R. Charlesworth (Zenith sc.), C. W. Johnson (Harley-Davidson), Geo. Baxter (Harley-Davidson).

RED REAR LIGHTS IN SCOTLAND.

SEVERAL Scottish riders have been fined on recent occasions for not carrying red rear lights on their motor bicycles. The exact position as regards Scotland has been rather obscure, but the matter of a red rear light is governed in England by the order issued by the Local Government Board of December 18th, 1913. As no similar order has been issued by the Secretary for Scotland, the matter is regulated by the Use and Construction Order, 1904.

It appears that the law officers for the Crown of Scotland have issued instructions to Procurator Fiscals that they are to enforce the necessity for a red light to the rear of motor cycles until such time as the High Court rules that such is not necessary. The matter was debated in a Sheriff's court recently, and the Sheriff took the view that the regulation is applicable and the motor cyclist was fined. It appears that the chances of success on an appeal are remote

A YORKSHIRE SCRAMBLE.

Grease, Boulders and Water in the Scott Trial. 58 Entries; 41 Starters; 27 Finishers.

ONCE again the Scott trial has been successfully carried through in the usual atmosphere of cheeriness and good sportsmanship. Rain somewhat marred the trial from a spectator's point of view, but it takes more than a drop of water to damp the spirit of enthusiasm which invariably surrounds this sporting event.

As far as competitors are concerned, a little water more or less makes but small difference, since the number and depth of the water-splashes are generally sufficient to ensure at least one wetting.

A Treacherous Surface.

Nevertheless, the grass and moorland tracks were undoubtedly more greasy and treacherous than usual, and this circumstance accounted for several spills.

Mostly these falls were of a minor nature, and resulted in nothing more serious than bent footrests and broken mudguards, but J. S. Duxbury—one of the Scott No. 1 team—was unfortunate enough to damage a collar-bone near Grassington, and was forced to retire, while M. G. A. Scalley (600 Humber) caught a boulder and snapped his footbrake rod, in consequence of which he slid over the side of a hill, after surmounting Park Rash, and rolled to the bottom. He was lucky enough to escape with a slightly damaged knee and bent footrests; pluckily he carried on to a finish.

The organisers managed to include three new water-splashes near Blubberhouses—all of some severity—and a nasty section of rocky hill at Hardcastle. These, however, merely acted as a set-off against the elimination of the Grimwith Reservoir section, which in previous Scott trials has been the most difficult part of the course.

As usual, there were many devices to ensure the safe passage of the splashes, some of which were effective, though a good rider with a knowledge of the course is the best safeguard of the mark sheet.

Trouble Preventatives.

Long upturned inlet and exhaust pipes were the rule, and many plugs were encased in weird and wonderful coverings. P. Pehrson appeared on an experimental chain-driven Dunelt, which performed well, though the rider lost time through a jury-rigged brake rod, which bent at awkward moments. C. S. Burney had an Ekon carburetter fitted to his B. and S. Beardmore-Precision, and spoke highly of the instrument.

As usual, the entry of 58 comprised a number of Scotts, Triumphs, and Sunbeams, and there was a sprinkling of small machines, amongst which the little 349 c.c. A.J.S. machines performed prominently. Brough, Martinsyde, and Harley-Davidson mounts represented the larger class.

Troubles began early in the day, for one of the late starters fell at Otley bridge, within a few hundred yards of the start, while within the first four miles the number of clean sheets could be counted on the fingers of one hand.

Dob Park watersplash was responsible for fearful casualties in the list of 41 starters, and the best crossings which we observed must be credited to W. Brand (550 Triumph), belt-driven, whose previous experience and good riding served him well, H. Langman (532 Scott), J. C. Thompson (678 Martinsyde), G. M. Townsend (555 P. and M.), and G. Clapham (532 Scott).

Whilst B. Crosthwaite (Edmund) and H. Smith (481 Scott Squirrel) paddled their way across this water-splash, G. M. Townsend (555 P. and M.) passes through and shoots up the hill.

Several others crossed without stopping their engines, though the wheels were checked momentarily by boulders in the bed of the stream. The many failures caused the surface of the stream to assume an iridescent and patchy appearance at frequent intervals.

Some trouble was caused by the subsequent greasy climb, and F. R. Rhodes (481 Scott Squirrel) was considerably delayed by water in the magneto.

Near Blubberhouses the new part of the course, with its three splashes followed by a fourth obstacle of a similar nature at Hey Slack, caused repetitions of the Dob Park performances to a greater or less degree, according to the rider's luck and skill.

Since circumstances prevented the inclusion of the Grimwith section, times to Burnsall were better than usual, but the Scott crack riders had picked up well, and looked like a winning team.

Over a Forgotten Track.

Immediately after lunch came one of the most trying sections of the route, the long, deserted, boulder-strewn track to the derelict lead mines at the head of Hebden Ghyll. Great boulders, remnants of rough paving, heaps of ore debris, and water-splash after water-splash were the obstacles.

No one could refrain from some foot assistance. The worst splash was followed by a stony right-angle bend, and a 1-in-3 path up a tip of mine refuse. Although barely four miles from the lunch control, H. Langman (Scott) was the third arrival at this point, despite his No. 26, and ploughed through the mud, water, and stones at speed. R. C. Morris (Scott) stopped, baulking E. Mainwaring (Scott). W. Backhouse (499 Triumph) jammed in the deep, waterlogged ruts approaching the stream. J. S. Whitby (499 Sunbeam), J. S. Duxbury (Scott), and G. M. Townsend (P. and M.) came through in close order. Duxbury was very neat, but a few miles further, on the steep descent from Yarnbury to Grassington, got into a gulley at speed, fell, and damaged his left arm. D. Bewsher (346 Francis-Barnett) made a fine attempt until his wheels jammed between two boulders.

Park Rash.

Park Rash, though in comparatively good condition, is never an easy climb, and few there were who could claim really clean ascents. Star performances were made by W. Moore (532 Scott), W. Clough (532 Scott), H. Langman (532 Scott), and F. Dean (498 Sunbeam). Good climbs were also made by G. M. Townsend (555 P. and M.), W. Brand (550 Triumph), G. Clapham (532 Scott), who, however, skidded all over the hill, W. Wells (498 Sunbeam), and D. Bewsher (346 Francis-Bennett).

R. C. Morris (532 Scott) caused a diversion by falling, his machine emitting such clouds of smoke that a few spectators thought it had caught fire.

W. Backhouse (499 Triumph) takes Jack Hill at a good speed in spite of the atrocious surface.

Just previous to the competitors' ascents C. P. Wood, who was not competing, made the hill look ridiculously easy by making a clean climb with his Scott sidecar outfit. His first attempt failed when round the corner and over the worst of the hill, but the second try was absolutely successful, and it should be added that his passenger was normally seated throughout, and his lowest wear was only 9.1 to 1.

Readers should not imagine from this that the hill is easy. Rather it should be inferred that the performance was a phenomenal one, rendered possible by fine riding and a good machine.

Crossing a River.

Driving mist and rain coming down the valleys made the conditions difficult for competitors and observers on the lonely tracks near Angram Reservoir.

Remarkably enough, nine or ten riders actually crossed the 30- or 40-feet width of the River Nidd non-stop, with the water up to the hubs. F. Dean (499 Sunbeam), M. G. A. Scalley (600 Humber), R. C. Morris (532 Scott), E. Mainwaring (532 Scott), H. Langman (532 Scott), J. M. Davies (486 Scott), W. Wells (499 Sunbeam), and F. H. Gutteridge (349 A.J.S.) made the best crossings.

On the ascent of The Scar, which followed the Nidd crossing, the length was difficult to allow observations. No hill ever included in a trial can be likened to it, and under the wet conditions it was a case of everyone floundering to the summit as best he could.

A list of the various troubles would take too long to print, so we must content ourselves by congratulating the organisers once again and by giving a list of provisional results as follows.

Of the 27 finishers the fastest times over the 83-mile course were :—

W. Moore (532 Scott), 3h. 49m.
H. Langman (532 Scott), 3h. 58m.
G. Townsend (555 P. and M.), 3h. 58m.
F. H. Gutteridge (349 A.J.S.), 4h. 5m. } tie.
G. Clapham (532 Scott), 4h. 5m. }

SPECIAL PRIZE BEST AMATEUR.
W. Moore (532 Scott).

FOLRIGG CUP—BEST PERFORMANCE OF SCOTT RIDER
G. Clapham (532 Scott).

MYERS CUP FOR TRADE TEAMS.
Scott No. 2.
J. H. Holmes (532 Scott).
R. C. Morris (532 Scott).
E. Mainwaring (532 Scott).

SCOTT TROPHY—AMATEUR TEAMS.
Sunbeam.
J. S. Whitby (499 Sunbeam).
W. Smith (499 Sunbeam).
W. Wells (499 Sunbeam).

CLUB TEAM PRIZE.
Keighley Club.
C. H. Slingsby (532 Scott).
W. Moore (532 Scott).
G. Clapham (532 Scott).

BEST PERFORMANCE BY TRADE RIDER.
Langman (532 Scott).

CONSOLATION PRIZE.
W. Smith (499 Sunbeam), who went through a wall, but made good performances on the subsequent obstacles and formed one of the winning amateur team.

NOTES.

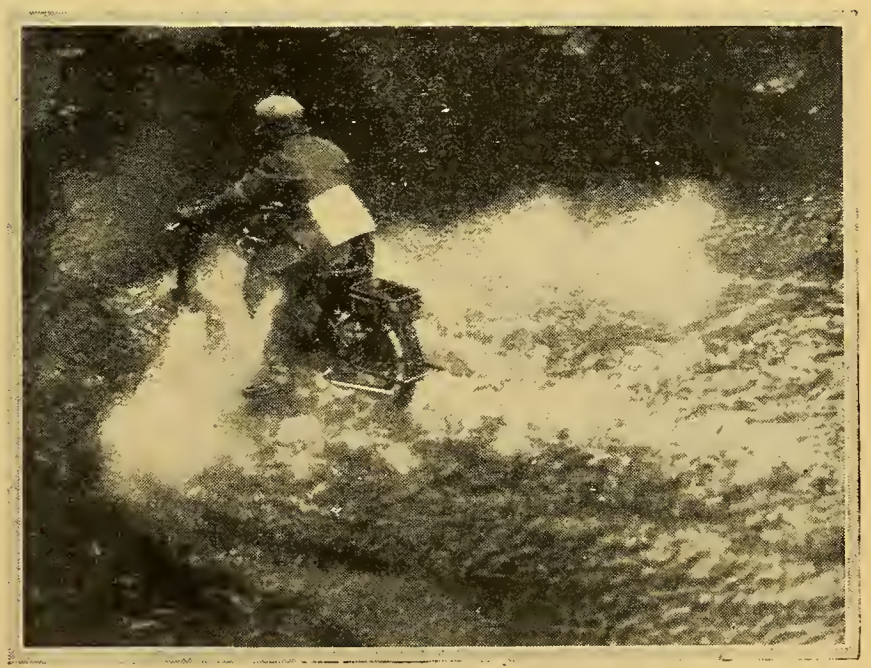
H. Langman, who was leading for some time, lost time before Park Rash with a puncture. G. Clapham went astray near Greenhow. W. Brand was delayed with a broken throttle wire; and so on.

M. J. Akam (flat twin Brough) was seen struggling round with a broken back mudguard, trailing stand, dangling footrests, and no carrier at all—yet he kept going

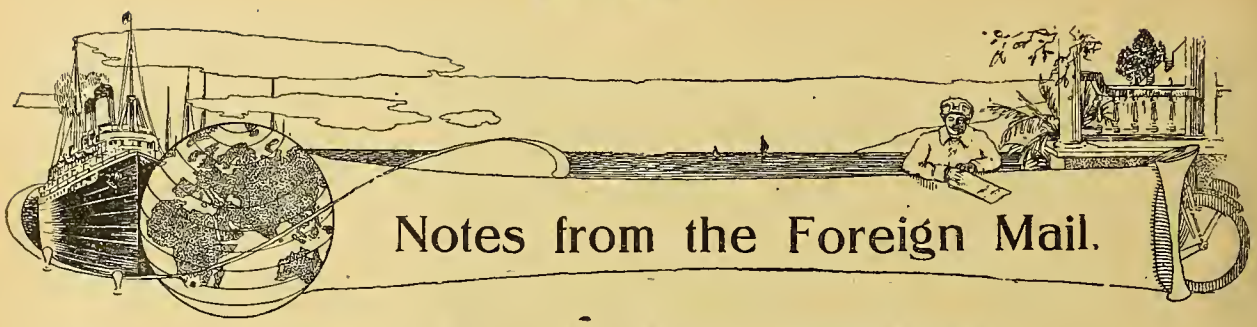
After a fall which delayed him three quarters of an hour, C. S. Burney (348 Beardmore B. and S.) restarted and completed the course about an hour behind time.

Using a 1911-12 Scott, which has done three Scott trials already, T. E. Oliver discovered a new cure for a damaged radiator. Before ascending Park Rash he purchased a strip of sticky fly-paper in Kettlewell and bound it round the leaking part; the cure was successful.

Thirty-six genuine amateurs out of an entry of fifty-eight competitors in a thorough-going rough-riding trial is a proof of the Yorkshire tykes' enthusiasm.



J. S. Whitby (499 Sunbeam) leaves a bow wave like a small torpedo boat.



Notes from the Foreign Mail.

Activity in the Antipodes. Honour to Italian Designer.

Motor Cycle Activity in the Antipodes.

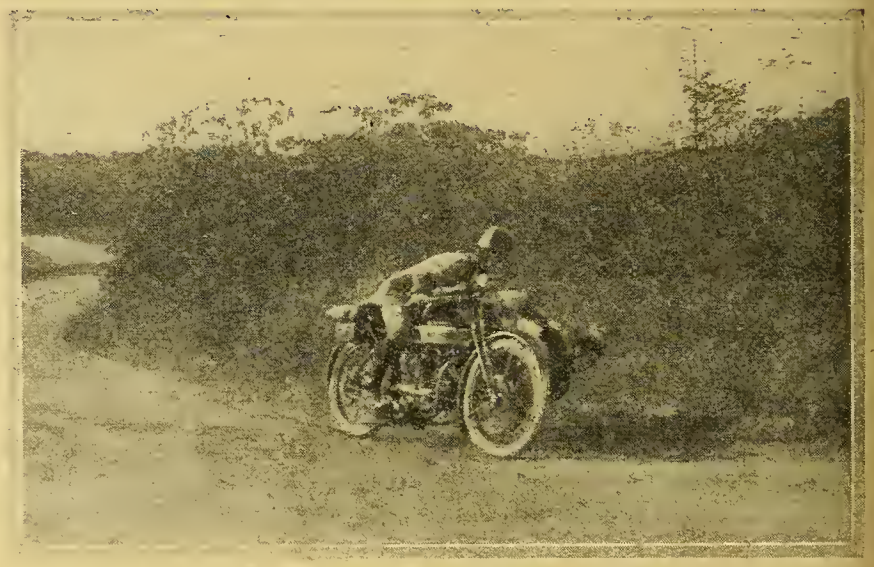
Wherever Englishmen or descendants of Englishmen are to be found there is plenty of motor cycle activity. Both in Australia and New Zealand we hear of numerous competitions and great enthusiasm. Nearly all the clubs in this part of the world are affiliated to the Auto Cycle Union of Great Britain.

New Italian Big Twin.

According to latest information the 1923 Della Ferrera will be a twin-cylinder of 1,000 c.c., with four valves of enormous size placed laterally in the heads. The gear reduction will be in a gear box forming a unit with the crank case, and the pinions will always be in mesh. Rear springing will be incorporated.

An Exciting Chase.

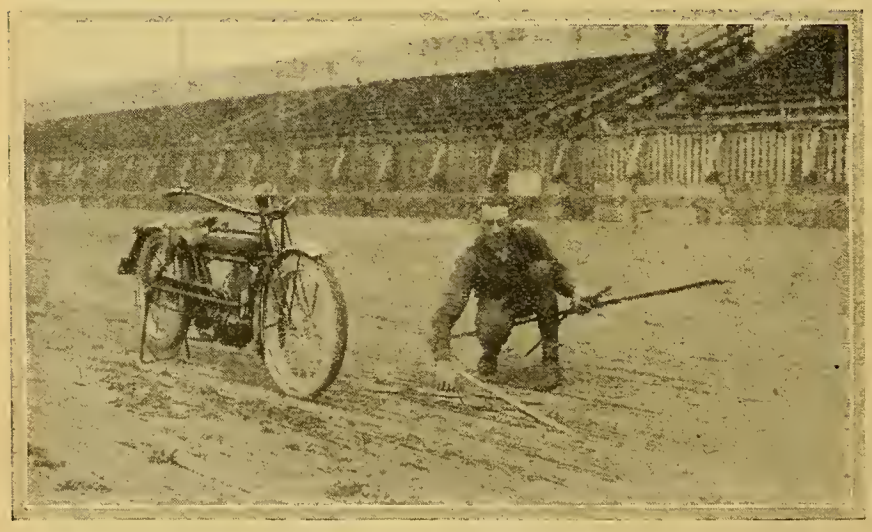
At the Borough Court, Durban, S.A., a native of Mauritius was stopped by a police constable for driving a noisy machine. He was stated to have been driving at 30 m.p.h., carrying three passengers, one astride the tank and two on the pillion. The policeman chased him and called upon him to stop, which he did, but just as the arm of the law came to take particulars he let in his clutch and escaped. The policeman apparently mounted his motor cycle and followed at about 40 m.p.h., but he had to give up the chase. The motor cyclist was eventually traced and fined £5 or 14 days on each of two counts.



"A RADIUM BLAZE." A Durban newspaper in describing a competition, held by the Natal M.C.C., said "The Douglas exposition of climbing with a passenger and sidecar was a radium blaze of efficiency." F. Zurcher won the event against bigger machines.

Next Year's Belgian Shows.

Motor cycles will be shown at the Salon de l'Automobile, which will be held in Brussels from the 13th to the 24th January, 1923. On the following month there is the Third Belgian Motor Cycle and Cycle Show, to be held at the Palais D'Egmont from February 24th to March 7th.



This is what happens when motor cycles are raced on the American board tracks built for cycle racing.

Honour to Italian Designer.

After the wonderful success of the Garelli in the French and Italian Grand Prix, H.M. the King of Italy officially and tangibly honoured the merits of Engineer Garelli by conferring on him the title of Knight of the Crown of Italy.

South African Track Wanted.

We learn from South Africa that the Rand Motor Cycling Club has been considering several schemes for the building of a first-class track for motor and motor cycle speed tests, but nothing suitable has yet been found.

Disunion in Belgium.

Unfortunately discord is again prevalent in Belgian motor cycle circles. It appears that the Motor Union of Liége has been organising trials without submitting rules to the Belgian Motor Cyclists' Federation. One of these trials was from Liége to Paris and back, and its rules should have been submitted to the French Motor Cycle Union as well. The outcome is the Liége Motor Cycle Union is no longer affiliated to the ruling body.

BIG TWIN MAKES FASTEST TIME.

East Midland Centre's Successful Event at Mansfield.

THE East Midland Centre held a very successful hill-climb at Norman's Hollow, Mansfield, on Saturday last. The hill permitted of some very fast speeds being made, especially as a flying start was allowed. The stretch chosen began with a down gradient for some 100 yards, which allowed machines to get well going before entering upon the up grade of about 1 in 13.

There had been heavy rain in the morning, but the road was perfectly dry when a start was made at 2.30. There were no less than 70 competitors. The new basis decided upon by the Auto Cycle Union for the calculation of horse-power was used, under which 100 c.c. capacity counts as one horse-power. Thus the 350 c.c. class became the class for solo machines not exceeding 3½ h.p., and the 550 c.c. class the class for solo machines not exceeding 5½ h.p. Though explained fully on the programme, this innovation caused some little confusion amongst spectators and competitors alike.

George Brough (976 Brough Superior) recorded 21s. for the half-mile, or 85.4 miles per hour, which was the fastest time of the day. Brough also made fastest sidecar time at a speed of 72.5 m.p.h. (24⅘s.), Halton, who was next best, making his best time of 25⅗s., and Dance running third at 26⅖s.

Each class was divided into three sections.

Section C was for all who had not previously been placed first, second or third at any hill-climb or speed trial this year. Section B for "non-experts" who had gained the aforementioned successes. Section A for experts under A.C.U. definition.

CLASS 1.—Sidecar machines not exceeding 550 c.c.

Section B.

1. F. Sisson (490 Norton), 27⅗s.
2. H. M. Barron (490 Norton), 30⅘s.
3. K. S. Topping (490 Norton), 32s.

Section A.

1. G. Dance (499 Sunbeam), 27⅕s.
2. G. Boston (349 A.J.S.), 30s.

CLASS 2.—For sidecar machines not exceeding 750 c.c.

Section B.

1. F. Sisson (490 Norton), 27⅕s.
2. J. G. Richards (688 Coventry-Victor), 30s.
3. H. Barron (490 Norton), 30⅕s.

Section A.

1. F. T. Hatton (733 Colmore-Douglas), 27s.
2. G. Dance (499 Sunbeam), 27⅘s.

CLASS 3.—For Sidecar Machines and 3-Wheelers of unlimited horse-power.

Section B.

1. F. Sisson (490 Norton), 28s.
2. J. Richards (688 Coventry-Victor), 30s.
3. H. M. Barron (490 Norton), 30⅕s.

Section A.

1. G. Brough (988 Brough-Superior), 24⅘s.
2. F. Hatton (733 Colmore-Douglas), 25⅗s.
3. G. Dance (499 Sunbeam), 26⅖s.

CLASS 4.—For 2-Stroke Machines not exceeding 350 c.c.

Section C.

1. S. Marshall (247 Velocette), 35⅕s.

Section B.

1. S. Baines (247 Levis), 29⅕s.
2. A. Bowerman (249 Velocette), 35⅕s.
3. E. Mundey (248 New Hudson), 41⅕s.

CLASS 5.—For Unlimited 2-Stroke Machines.

Section C.

1. W. Cudlip (482 Scott-Squirrel), 29s.
2. R. Doughty (482 Scott-Squirrel), 30⅖s.
3. W. Houghton (482 Scott-Squirrel), 32⅗s.

Section B.

1. S. Baines (247 Levis), 28⅗s.
2. F. Nash (482 Scott-Squirrel), 29⅗s.
3. C. Barnes (482 Scott-Squirrel), 31s.

CLASS 6.—Solo Machines not exceeding 300 c.c.

Section B.

1. S. Baines (247 Levis), 30s.
2. J. Heath (249 Coventry-Victor), 32⅗s.
3. A. Bowerman (249 Velocette), 34s.

Section A.

1. J. Roberts (249 New Imperial), 34s.

CLASS 7.—Solo Machines not exceeding 350 c.c.

Section C.

1. M. McEvoy (349 Douglas), 28s.
2. C. A. Belcher (349 A.J.S.), 30s.
3. C. Spearing (349 A.J.S.), 31⅖s.

Section B.

1. P. Norris (349 Sheffield-Henderson), 25⅕s.
2. F. Craner (349 Rex-Acme), 29⅗s.
3. M. Hill (349 Sheffield-Henderson), 32⅖s.

Section A.

1. G. Dance (349 Sunbeam), 24s.
2. R. Lucas (349 Sheffield-Henderson), 26⅗s.
3. J. Simpson (349 A.J.S.), 27⅕s.

CLASS 8.—Solo Machines not exceeding 550 c.c.

Section C.

1. J. Carter (490 Norton), 26⅘s.
2. P. Merriman (490 Norton), 28⅕s.
3. W. Cudlip (482 Scott-Squirrel) and H. Lavender (494 Douglas) 29s.

Section B.

1. F. Sisson (490 Norton), 23⅗s.
2. H. M. Barron (490 Norton), 24⅕s.
3. F. Stevenson (496 Brough), 25⅕s.

Section A.

1. G. Dance (499 Sunbeam) and H. Hassall (490 Norton) 22⅕s.
3. G. Boston (349 A.J.S.), 24⅕s.

CLASS 9.—Solo Machines not exceeding 750 c.c.

Section C.

1. J. Carter (490 Norton), 25⅗s.
2. P. Merriman (490 Norton), 27⅘s.
3. H. Lavender (494 Douglas) and S. Johnson (490 Norton) 29s.

Section B.

1. F. Sisson (490 Norton), 24⅖s.
2. H. M. Barron (490 Norton), 24⅗s.
3. — Colher (499 Sunbeam), 24⅘s.

Section A.

1. F. Hatton (733 Colmore-Douglas), 21⅗s.
2. G. Dance (499 Sunbeam), 22⅗s.
3. G. Boston (349 A.J.S.), 24s.

CLASS 10.—Unlimited Solo Machines.

Section C.

1. J. Carter (494 Norton), 25⅕s.
2. H. Ball (988 Brough-Superior), 25⅖s.
3. H. Lavender (494 Douglas), 29⅕s.

Section B.

1. F. Sisson (490 Norton), 24⅗s.
2. K. S. Topping (490 Norton), 24⅕s.
3. F. Stevenson (496 Brough), 25s.

Section A.

1. G. Brough (988 Brough-Superior), 21s.
2. F. T. Hatton (733 Colmore-Douglas), 22s.
3. G. Dance (499 Sunbeam), 22⅕s.

HIGH SPEEDS AT EASTBOURNE.

FASTEST time of the day at the speed trials on Eastbourne Front organised by the Eastbourne and District M.C.C., was made by Kaye Don (998 Indian), who covered the half-mile course at a speed of 87.36 m.p.h. This was the first time speed trials have been held at Eastbourne; and though the weather threatened at the start it improved later in the afternoon.

In the 350 c.c. class the amateur winner was J. B. Penn (348 Blackburne), while Bance (O.E.C. Blackburne) triumphed in the general and also in the expert classes.

In the 600 c.c. class R. O. Lowe (490 Norton) was winner among the amateurs, A. Fraser (499 Sheffield-Henderson) in the general class, and H. W. Hassall ran in the experts' category. Kaye Don's Indian and the Nortons swept the board in the unlimited classes.

The Eastbourne promenade as a race track. C. H. Chubb (349 Douglas) who gained third place in the 350 c.c. solo class for amateurs at the recent speed trials.

CLUB NEWS (continued from p. 414)

Luton and South Beds A.C.

The annual speed trials were held on the 9th inst. over the usual ½ km. course at Luton Hoo. Fastest time of the day was made by E. C. E. Baragwanath, on a 994 c.c. eight-valve Matchless, who covered the ½ kilom. in 15 seconds. Results:—

Time.

275 c.c.—A. A. Swan (249 New Imperial).
350 c.c.—G. H. Ruscoe (348 Ruscoe).
550 c.c.—C. G. H. Dunham (490 Norton).
750 c.c.—C. G. H. Dunham (490 Norton).
Unlimited.—E. C. E. Baragwanath (994 Matchless).
550 c.c. Sidecars.—J. Hill (494 Douglas sc.).
750 c.c. Sidecars.—H. H. Saddington (662 James sc.).
Unlimited Sidecars.—E. C. E. Baragwanath (994 Matchless sc.).
550 c.c. Amateur Solo.—W. Cox (490 Norton).
Unlimited Amateur Solo.—W. Cox (490 Norton).

Formula.

275 c.c.—H. Brosse (248 Reyre Newson).
350 c.c.—H. Brosse (248 Reyre Newson).
550 c.c.—H. Brosse (248 Reyre Newson).
750 c.c.—H. Brosse (248 Reyre Newson).
Unlimited.—H. Brosse (248 Reyre Newson).
550 c.c. Sidecars.—J. Hill (494 Douglas sc.).
750 c.c. Sidecars.—M. D. Borders (490 Norton sc.).
Unlimited Sidecars.—J. Hill (494 Douglas sc.).
350 c.c. Amateur Solo.—A. Bracey (349 A.J.S.).
550 c.c. Amateur Solo.—P. Child (247 New Hudson).
Unlimited Amateur Solo.—F. Child (247 New Hudson).
1,500 c.c. Cars.—D. S. Green (750 A.V. Monocar).

Norfolk M.C. and L.C.C.

Although no records were broken, some fast times were recorded at the club's hill-climb held at East Ringland on the 7th inst. The meeting was well organised, and a large crowd was present. Results in the motor cycle classes were as follows:—

TOURING CLASSES.

Solo (General).

250 c.c.—(1) G. H. Hanworth (247 Levis), 22⅘s.; (2) A. S. Bagshaw (247 Velocette), 28s.; (3) C. P. Reynolds (247 Sun Vitesse), 30s.
350 c.c.—(1) R. A. Bryant (349 A.J.S.), 21⅘s.; (2) H. C. Hanworth (349 Sheffield Henderson), 23⅖s.; (3) G. S. Sawyer (349 A.J.S.), 23⅘s.
500 c.c.—(1) D. R. Popplewell (499 Triumph), 18⅗s.; (2) H. C. Mack (499 Triumph), 18⅗s.; (3) P. Sherwood (499 Triumph), 19s.
Formula result for first three events combined:—(1) H. C. Mack; (2) G. Enoch; (3) R. D. Popplewell.

Solo (Experts).

250 c.c.—(1), G. H. Hanworth (247 Levis), 28⅘s.; (2) A. S. Bagshaw (247 Velocette), 29⅕s.
350 c.c.—(1) G. F. Clutton (349 A.J.S.), 20⅖s.; (2) R. A. Bryant (349 A.J.S.), 21s.; (3) H. C. Hanworth (349 Sheffield Henderson), 23⅕s.
500 c.c.—(1) T. B. Hensman (490 Norton), 18⅗s.; (2) K. S. Duncan (492 Sunbeam) and H. C. Mack (499 Triumph), 19s.; (3) B. A. Hatcher (499 Triumph) and P. Sherwood (499 Triumph), 19⅛s.
Formula result for last three events combined:—(1) T. B. Hensman; (2) H. C. Mack; (3) R. A. Bryant.

Sidecars (General).

600 c.c.—(1) H. C. Mack (499 Triumph sc.), 22⅗s.; (2) T. B. Hensman (490 Norton sc.), 23⅕s.

Sidecars (Experts).

600 c.c.—(1) R. S. Duncan (492 Sunbeam sc.), 21⅖s.; (2) S. A. Towlson (490 Norton sc.), 21⅘s.; (3) H. C. Mack (499 Triumph sc.), 22⅖s.
Awards on formula:—(1) S. A. Towlson; (2) H. C. Mack; (3) G. F. Clutton.

STRIPPED CLASSES.

Solo (General).

Unlimited.—(1) T. B. Hensman (490 Norton), 18⅛s.; (2) D. R. Popplewell (499 Triumph) and H. C. Mack (499 Triumph), 19s.; (3) J. L. Hendrie (490 Norton), 19⅘s.

Solo (General, Flying Start).

Unlimited.—(1) H. C. Mack (499 Triumph), 16⅘s.; (2) D. R. Popplewell (499 Triumph), 17s.; (3) P. Sherwood (499 Triumph) and J. L. Hendrie (490 Norton), 17⅕s.

(Solo (Experts).

Unlimited.—(1) P. Sherwood (499 Triumph), 17⅕s.; (2) R. A. Daniels (494 Douglas), 18s.; (3) E. H. Gowing (492 Sunbeam), 18⅕s.

Solo (Experts, Flying Start).

Unlimited.—(1) R. F. Feon (499 Triumph), 15⅗s.; (2) R. A. Daniels (494 Douglas) and K. S. Duncan (492 Sunbeam), 15⅘s.; (3) E. H. Gowing (492 Sunbeam), 16⅕s.

(Sidecars (General, Flying Start).

Unlimited.—(1) T. B. Hensman (490 Norton sc.), 20s.; (2) H. C. Mack (499 Triumph sc.), 20⅗s.

Sidecars (Expert, Flying Start).

(1) K. S. Duncan (492 Sunbeam sc.), 18⅘s.; (2) T. B. Hensman (490 Norton sc.), 19⅖s.; (3) H. C. Mack (499 Triumph sc.), 19⅘s.

Motor Cycling Club.

Members are reminded that entries for the one-day sporting trial must reach the trials secretary, Mr. F. T. Bidlake, 84, North End Rd., Golder's Green, London, N.W.11, by the morning of Saturday, September 23rd, at the very latest. The trial is a sporting non-stop event of a simple character, starting from Caterham at about 10 o'clock in the morning, lunch is served at the same place, and the first man finishes before 5 p.m.

West Kent M.C.C., Rochester M.C.C., &c.

Twenty-three competitors, representing six clubs, started in the combined Kent Clubs' half-day trial on the 10th inst. A railway bank having a gradient of 1 in 3 was included in the course. The following clubs and competitors were successful.

West Kent M.C.C.

— Jessop (346 Francis-Barnett).
W. Smith (600 Humber).
J. Fitzgerald (490 Norton).
H. Carter (678 Martinsyde sc.).

Rochester M.C.C.

— Potts (998 Harley-Davidson sc.).
— Chalklin (976 Matchless sc.).

Glasgow M.C.C.

Official results of the 100 miles non-stop reliability trial held on the 9th inst. are as follows:—

Gold Medals.

J. A. Struther (494 Douglas), A. J. Dickie (F.N.), H. E. Horwood (498 Ariel), J. W. Dickie (F.N.), E. A. Small (492 Sunbeam), R. N. Lochhead (498 Ariel), I. H. McGrouther (N.U.T.), R. D. Robertson (976 Matchless sc.), H. Goodwin (492 Sunbeam), I. A. J. Cheyne (779 A.J.S. sc.), A. D. Hadden (Reading Standard sc.), R. Watson, Jr. (738 Martinsyde sc.).

Special Novice Prize.

I. A. J. Cheyne (779 A.J.S. sc.).

Harrogate and District M.C.C.

Results of the Yorkshire Centre team trials are now to hand, and are as follows:

WINNING TEAM (Haggas Shield and Gold Medals).

ILKLEY M.C. AND L.C.C.—
W. Moore (532 Scott), lost no marks.
J. S. Duxbury (532 Scott), lost 10 marks (on time and failed Kilburn).
W. H. Clough (532 Scott sc.), lost no marks.

SECOND TEAM.

BRADFORD M.C. AND L.C.C. (No. 1 TEAM)—
W. R. Haggas (499 Triumph), lost no marks.
H. S. Moorhouse (499 Triumph), lost 10 marks (failed non-stop).
G. M. Townsend (555 P. and M. sc.), lost 3 marks (on time).

THIRD TEAM.

HARROGATE AND DISTRICT M.C.C. (No. 1 TEAM)—
D. Moore (499 Sunbeam), lost 5 marks (on time).
A. Hill (348 New Imperial), lost 20 marks (failed two non-stop sections).
C. W. Hill (532 Scott sc.), lost 5 marks (failed Boltby).

Ulster M.C.C.

Held under ideal conditions at Magilligan Strond on the 9th inst., the autumn speed trials passed off very successfully. Event 5, a 100-mile contest for the Championship of Ulster, was won by H. Langman, on a Scott-Squirrel. Results:—

Event 1.—Open Five Miles Scratch Race (350 c.c.).

1. H. Chambers (349 A.J.S.).
2. W. C. Hunter (348 Hunter).
3. O. Wade (349 o.h.v. A.J.S.).

Event 2.—Open Five Miles Scratch Race (Unlimited).

1. G. W. Walker (499 Norton).
2. J. F. Dinsmore (976 Zenith).
3. H. Langman (481 Scott).

Event 3.—Open Ten Miles Handicap Race (350 c.c.).

1. H. Chambers (349 A.J.S.), scratch.
2. O. Wade (349 A.J.S.), handicap 30s.
3. W. C. Hunter (348 Hunter), handicap 1m.

Event 4.—Open Ten Miles Handicap (Unlimited).

1. J. F. Dinsmore (976 Zenith), scratch.
2. T. Mallon (492 Sunbeam), handicap 30s.
3. H. Langman (481 Scott), scratch.

Events 5 and 6.—100 Miles Championship of Ulster for 600 c.c. Machines and Open 100 Miles Handicap Race for Machines of Unlimited Capacity:—

1. H. Langman (481 Scott), scratch.
2. R. H. Fitchie (998 Harley-Davidson), riding in handicap only, scratch.
3. N. P. Metcalfe (976 Brough-Superior), riding in handicap only, scratch.

Woolwich, Plumstead and District M.C.

The closing run for the present season will take place on October 1st, starting from Knockholt at 2 p.m., and finishing at the Bull Hotel, Wrotham, where tea will be provided.

Coventry and Warwickshire M.C.

The Redesdale Arms, Moreton-in-Marsh, will be the rendezvous of members invited to the annual tea by the president, Colonel J. A. Cole, O.B.E., on Saturday next. The surroundings and arrangements are ideal, and a most satisfactory gathering is looked forward to.

Matlock and West Derbyshire M. and M.C.C.

Several well-known Derbyshire hills were included in the club's half-day trial, held on the 10th inst. Fine weather did much to make the event a success. The possible number of marks was 210, and first place and a gold medal was taken by C. Spence (398 A.B.C.) with the loss of only one mark. Silver medal: F. Toplis (499 Wilkin), 206 marks. Bronze medals: F. Daniels (499 Rover), 200 marks; G. Davis (555 P. and M.), 197 marks; J. R. Greatorex (779 A.J.S. sc.), 191 marks.

Essex M.C.

Results of the London-Bala-Dunstable 24 hours trial held on the 8th and 9th inst., and referred to last week, are now to hand, and are as follows:—

Cups: E. A. Marks (349 A.J.S.), H. E. K. Sawtell (1,098 Morgan).

Gold Medal: H. W. Glendinning (976 Zenith sc.).

Silver Medals:—W. H. Norris (698 Raleigh), P. D. Walker (1,078 G.N.), S. W. Dame (1,098 Morgan).

Bronze Medal:—W. P. Browning (779 A.J.S. sc.).

Bristol M.C. and L.C.C.

Eighteen out of twenty-five starters completed the stiff 396 miles' course of the annual twenty-four hours trial held on the 8th and 9th inst. Several competitors lost their way, while one rider crashed through his lamp bracket breaking and plunging him into darkness. Medals were won by the following:—

Gold: K. J. Woods (499 Wilkin sc.), W. Le Brun (499 Rudge sc.), F. G. Mann (989 Harley-Davidson sc.), H. Jacobs (976 Zenith sc.), C. G. Scampton (499 Dunelt sc.), R. Gillard (499 Sunbeam sc.), E. Jellyman (998 Indian sc.), E. G. Ferg (1,078 G.N.), C. W. Ranking (1,078 G.N.), P. Bonnet (1,078 G.N.), F. Wiltshire (499 Rudge sc.).

Silver: A. Dowling (770 B.S.A. sc.).

Bronze: N. Moores (349 Verus).

St. Albans and District M.C.C.

Speed trials were held at Bedwell Park, Hatfield, over a half-mile course. Fastest time of the day was made by J. Hill (494 Douglas). Results:

275 c.c.:
A. A. Swan (249 New Imperial), 29⅖s.

350 c.c.:
T. C. Battersby (349 A.J.S.), 27⅗s.

500 c.c.:
(1) J. Hill (494 Douglas), 24s.
(2) A. C. Gurling (494 Douglas), 25s.
(3) C. Dunham (490 Norton), 25⅗s.

750 c.c.:
(1) A. C. Gurling (494 Douglas), 23⅘s.
(2) C. Dunham (490 Norton), 24s.

1,000 c.c.:
(1) J. Hill (494 Douglas), 22⅘s.
(2) C. Dunham (490 Norton), 23⅖s.

Cups will be presented at the club's social on the 30th inst. on the occasion of the visit of the N.L.C. and Beds. A.C. to St. Albans.

Ashford M.C. and L.C.C.

A successful hill-climb was held at Kingswood, Boughton Aluph, on the 3rd inst. Fastest time of the day was made by F. E. Newman (492 Sunbeam). The following results were recorded:—

GENERAL.

250 c.c.: R. Hamilton (249 Velocette).
350 c.c.: R. Hamilton (249 Velocette).
600 c.c. (single): E. Newman (492 Sunbeam) and B. Doughty (550 Triumph).
1,000 c.c.: F. E. Newman (492 Sunbeam).
600 c.c. Sidecars: G. Maund (398 A.B.C. sc.).
1,000 c.c. Sidecars: G. Maund (398 A.B.C. sc.).

EXPERTS BARRED.

250 c.c.: J. Guy (247 Levis).
350 c.c.: S. Whitehead (349 A.J.S.).
600 c.c. (single): G. Oakley (499 Rudge-Multi).
600 c.c. (twin): W. E. Clarke (498 Zenith-Bradshaw).
1,000 c.c.: W. E. Clarke (498 Zenith-Bradshaw).
600 c.c. Sidecars: G. Clements (499 Sunbeam).
1,000 c.c. Sidecars: C. H. Ledger (976 Monarch).

QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

HIGH CONSUMPTION.

(1) Can I improve on 45 m.p.g. with a 350 c.c. two-stroke sidecar; weight of passenger and driver 18 stone together? (2) With a 30 jet in the B. and B. carburetter the engine takes full air at once, but four strokes on attempting slow speed whether air is decreased or not. With a 26 jet it refused air altogether. (3) It is possible that after reassembling the machine is not correctly timed.—G.N.P.

(1) 45 m.p.g. is certainly rather low, but the majority of small two-stroke engines, especially when used with sidecar, have rather high petrol consumptions. (2) Why not try a jet between 26 and 30, say, No. 28, or fit a variable jet adaptor so that you can vary the opening according to conditions. (3) Time the ignition so that the spark occurs on top dead centre with the magneto control almost fully retarded.

PERMANENT LATE FIRING.

What is the cause for the present high consumption of petrol of my Villiers engined fixed gear machine? The most I am getting is 45 m.p.g. The engine was decarbonised six months ago, and afterwards I fitted a smaller jet (size 23) and reduced the petrol level, corrected lubrication to 30 drops per minute, and retarded the ignition as much as possible; I also paid strict attenton to any belt slip, but without avail. I may say that the machine runs well either on hills or level, and attains a high speed on half-throttle and full air, therefore I am at a loss.—C.B.

The petrol consumption of your machine is very poor and you should get at least 80 m.p.g. From your description everything appears to be in order, except the ignition. You say that you have retarded the ignition as much as possible, but this is quite wrong. The ignition should be advanced as far as possible to give good petrol consumption, and you cannot expect satisfactory results if you are running the engine with the spark timing permanently retarded. Set the ignition so that the contact breaker points are just open with the magneto control fully retarded when the piston is on top dead centre of the stroke. This timing, with all other adjustments in good order, should give you the best results.

Important Dates.

Sat., Sept. 30th. — M.C.C. Sporting Trial.

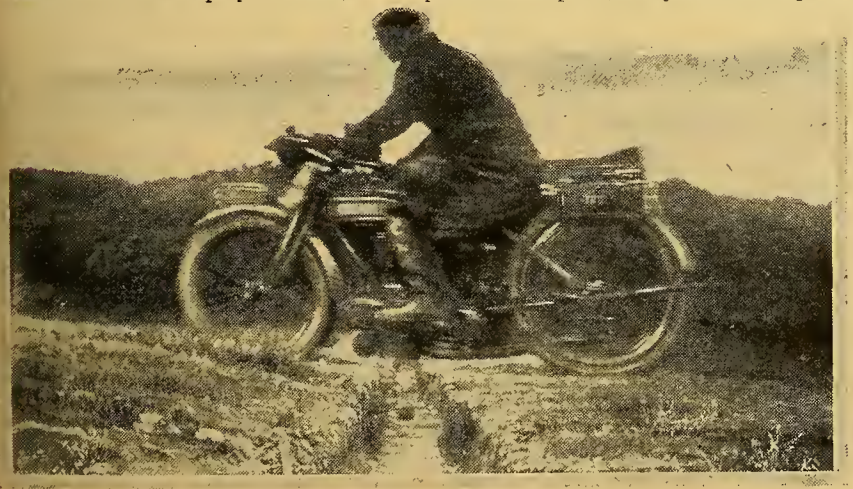
Wed., Oct. 4th, to Sun., Oct. 15.— Paris Salon.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th— Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd— Olympia Motor Cycle Show.

Thurs., Jan 13th to Mon., Jan 24th (1923) —The Belgian Salon.



Wheels, tyres, and frame receive a thorough testing when a machine has to cross gulleys such as this one, which was but a minor obstacle in a recent trial in the North.

RAISING THE GEAR RATIO.

On my Allon two-stroke it appears to me that the gears are much too low. Is it not possible to have a larger sprocket wheel on the flywheel and thus raise the ratios? There are 20 teeth on the flywheel sprocket, and 40 on the gear wheel sprocket, which gives me a ratio of 6 to 1. What number of teeth would I require to make it 4½ to 1? Do you think 4½ to 1 all right? If not, what would you advise?—W.P.W.

We do not recommend you to fit a gear as high as 4½ to 1; 5 to 1 would probably give better results. You do not state the diameter of the pulley and belt rim of your machine, but if your figure of 6 to 1 as the gear ratio is correct, with the present sprocket you will need a 24t. engine sprocket to give a 5 to 1 ratio.

RAISING COMPRESSION.

As I intend raising the compression of my engine for speed by having one-tenth of an inch taken off the flanges at the base of cylinders (bore and stroke 64 × 77), will you say if this can be done with safety, as the flange will then be reduced to about one-quarter of an inch in thickness? Personally I fail to see why they should not be strong enough, as the cylinder head and walls do not appear to be more than half this thickness. There appears to be no doubt as to the advantage of increasing the compression ratio, as with a thick layer of carbon deposit on cylinder head and piston the engine appeared to run better, particularly at speed, and it kept remarkably cool compared with the cylinder and piston being clean.—W.T.

It is not likely that the proposed reduction of the cylinder flanges will weaken them to any dangerous extent, but it would be better, if at all possible, to face down the crank case instead, or may be to take an equal amount from crank case and flange.

KNOCKING.

Knocking is generally attributed to loose big or little end bearings and to piston slap. Considering the former, theoretically it appears to be impossible, for it is easily seen that during the firing stroke at which knocking generally occurs the top of the gudgeon pin is in contact with the top of the bush throughout the compression and firing strokes, hence these two surfaces can never have the chance of impact even supposing the existence of slight play. An explanation can be put up as follows: at the top of the compression stroke the explosion, although started, has not had time to take effect on the piston, and the piston owing to its inertia "oversboots" the little end and hence begins its power stroke by being dragged down the firing stroke, and thus when the effect of the explosion is felt the piston is suddenly accelerated and strikes the little end (equally applicable to the big end). This, however, could be remedied by advancing the ignition, thus preventing the piston from overshooting, but actual practice says "No, retard ignition." Will you explain this?—C.C.I.

It is not correct to imagine that the top of the gudgeon pin is in contact with the top of the connecting rod bush throughout the whole of the compression stroke; the connecting rod slows down very appreciably as the piston nears the upward limit of its travel, but at the same time the inertia of the piston is so great that it is carried upwards to the limit of play allowed by the gudgeon pin bush. It is quite likely that even with the earliest possible ignition the contact between the top of the gudgeon pin and the top of the connecting rod small end bush has been severed. Another point to bear in mind is that at all times the pin and bush are separated by a film of oil unless the engine is overloaded or pre-igniting. In the latter case the pressure on the bearings rises so high as to break down the oil film and cause knocking, hence the practice of retarding the ignition when the engine labours.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"F.H.M." (Langley).—Ner-a-car for country hack work.

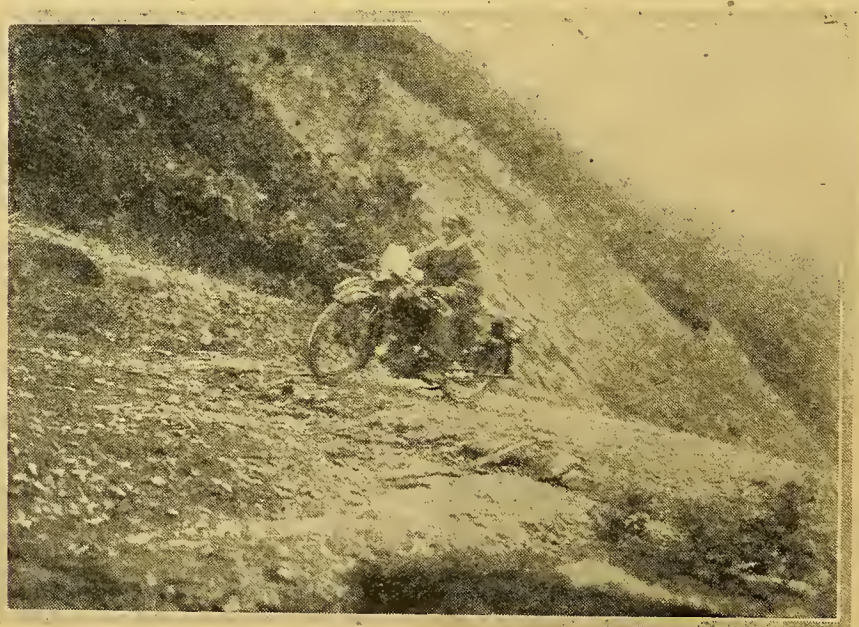
"J.F.G." (Durham).—499 c.c. Rudge-Multi with light sidecar: petrol consumption, speed, hill climbing, and whether tendency to belt-slip.

"W.E.L." (New Brighton).—398 c.c. A.B.C.: tuning for speed.

READER'S REPLY.

NEEDS OPEN EXHAUST.

Referring to "D.S.'s" query in the issue of the 7th, I have exactly the same trouble with my two-stroke (269 c.c. 1922 Chater-Lea). If I put my silencer and exhaust pipe on I lose 50 per cent. of the power. On removing them the engine runs beautifully. I also can observe a distinct pressure in the air intake of carburetter (B. and B.), which gets more pronounced on accelerating. I am certain that silencer, exhaust pipe, and ports are quite clean, and all other things, including timing, etc., are O.K. I have been in the trade ten years, but must confess that for the present I am completely baffled.—H. HALL.



Any sporting trial held in Yorkshire can safely be relied on to contain sections as bad as anything in the Colonies. This wild looking track, known as Turkey Nabs, near Ingleby Greenough, was included in the recent A.C.U. Yorkshire Centre team trial. W. Marriott (348 Coventry Eagle) making the ascent.

SPARKLETS

Found on the Road.

By Mr. F. Wilcocks, Junr., 428, Caledonian Road, Holloway, London, N.7—licence-holder from an Ivy machine.

"60 m.p.h. for 24 Hours."

A Binks carburetter was used by O'Donovan, Horsman, and Judd, the Norton riders, on their recent successful double-twelve record attempt described fully in last week's issue of *The Motor Cycle*.

Change of Ownership.

Riders of Reading-Standard motor cycles will be interested to know that the firm of Frederick and Co., of 89, Great Portland Street, London, W.1, has taken over the motor cycle business of Coppen-Allen and Co., purchasing the latter concern's complete stock of Reading-Standard machines, Plus-One and M.P. sidecars, and also the complete stock of W. E. Line. Reading-Standard spares will be available from the new address.

Successes in Northern Club Events.

In the Newcastle and District M.C. reliability trial on September 3rd, to Hawick and back, a good performance was made by J. E. Reed on a Wolf-Blackburne, who won outright the Triumph Cup for the best performance on a single cylinder machine. A further success by the same make of machine is that of R. Murphie, of Manchester, who, in the Prestwich and District M.C. trial, won the premier award, a silver cup.

A Kick-starter Invention.

One of the greatest elements in the simplification of the modern gear box is the growing practice of mounting the kick-starter on the lay-shaft and using the two low-gear wheels in place of the hitherto popular quadrant and pinion. The makers of the Jardine gear box own a master-patent on this feature, and we believe we are correct in saying that all gear boxes embodying such an arrangement do so under a licence from J. Jardine, Ltd.

An Old-time Motor Cyclist.

Prior to the war the name of S. W. Carty was often in our pages, for he took an active part in motor cycle politics, and for years acted as honorary secretary for the local motor cycle clubs in Newcastle-on-Tyne and Liverpool. In 1914 he was given a commission in the R.A.S.C., and in 1918 he was in Bagdad, eventually ranking as Lieutenant-Colonel. He was mentioned many times in despatches and was awarded the M.C. and O.B.E. Mr. Carty, who is an engineer by profession, being an M.I.A.E. and an A.M.I.E.E., has now gone to Ireland and has taken up the post of sole representative of the McKenzie motor cycle in the Irish Free State at 15-16, Crown Alley, Dublin.

The Kick Starter is

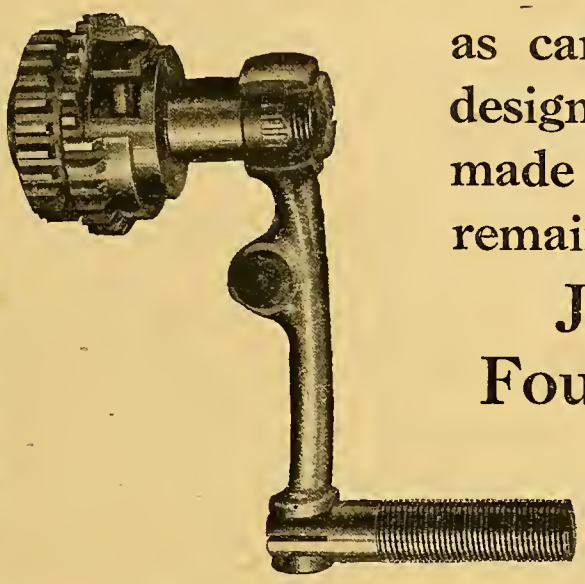
No extra gear wheels or sectors are needed. (This feature is a master patent, others are making it under a license from us.)

No cotter pin is used for fixing the crank.

There is no buffer spring to break or rattle.

A scientifically designed rubber buffer is used that does not chip in use.

The pedal pin folds up out of the way whilst riding.



as carefully designed and made as the remainder of the

Jardine Four Speed Gear Box.

Catalogues free from :—

John Jardine Ltd., Deering St., Nottingham. 'Phone: 3295 3296 Nottingham.

2 Gallons of Petrol—300 Miles

Leonard J. King, Esq., 3, *Linscott Road, Clapton, N.*

"I should like to bring before your notice the wonderful performance of my Connaught. My machine has not been kept in cotton wool—in fact it usually travels two up. I set out on Saturday morning for Diss (Norfolk). Fifty miles out of the hundred I did in pouring rain without the slightest difficulty. After a few days I pushed out again and rode through Thetford, King's Lynn, Sleaford to Newark. After a night's rest I rode straight through Doncaster, Leeds and Darlington to Newcastle.

During the whole of the fortnight I didn't use a spanner or pump on the machine, and made no adjustments whatever.

The petrol consumption was negligible, as I only used two gallons from Newcastle to my home—nearly 300 miles!"

Read the letter at the side which we have just received.

This is one of many similar eulogising the famous

CONNAUGHT
Two Stroke.

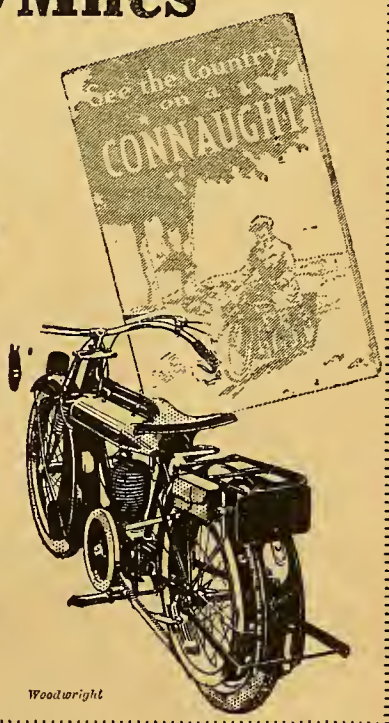
It again confirms our claim that the Connaught is the most fool-proof, trouble-free machine on the market, and will stand up to the most severe gruelling.

From what other machine can you get such service for the money.

Send for copy of our **Free Art Book**, and full particulars of **Our Payment out of Income** terms

THE BORDESLEY ENGINEERING Co., Ltd.
York Mills, Witton Lane, Aston, Birmingham
'Phone: East Birmingham 976.

LONDON SHOWROOM: 111, Gt. Portland Street, W.1.
'Phone: Langham 1968.



Woodwright

ASPINALL'S

CYCLE BLACK

(AIR DRYING)

Lieut. ——, R.N., writes:—

"A pint of your Cycle Black and a lick of Varnish has made my 1915 Studebaker look like a new car."

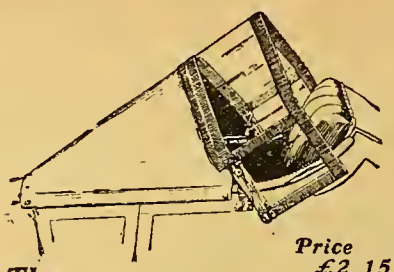
NOTE.—A small tin of Cycle Black will do the same for your motor cycle combination.

Stocked by ironmongers and accessory dealers everywhere.

ASPINALL'S ENAMEL Ltd.,

NEW CROSS, S.E.14.

Varnish Works, Mitcham. Telephone: New Cross, 42 & 206



Price £2 15 0 £3 18 0

The ***V*-shaped SANDUM Windscreen**

ITS scientific design, its common-sense 'V' shape, are not the only features that distinguish the Sandum Windscreen above all others. It excels, too, in its most attractive appearance, adding the happiest finishing touch to any outfit. It is unapproachable also in the range and simplicity of its adjustments, in its fine workmanship and material. Yet it is sold at a price that makes it the best value of any accessory on the market.

Write for full details of both models.

The Sandham Engineering Co., Ltd., 336, Gray's Inn Road, London, W.C. 1.

H.G.T.

236, HIGH HOLBORN

WEST CENTRAL AGENCY FOR

ARIELS

20% DOWN and 18 MONTHLY PAYMENTS

NO FINANCIAL AGENTS.

Depot for ARIEL SPARES AND PARAGON Patent

FOLDING SIDE CAR SAVES STORAGE

WHEN FOLDED COMBINATION WILL PASS THROUGH 30 INCH DOORWAY.

CALL & SEE IT DEMONSTRATED

GRADUAL PAYMENTS

arranged to suit customers' convenience

WINCYCLE COMPANY, LTD., 236, HIGH HOLBORN, LONDON, W.C.1. (A few doors from Holborn Tube Station.)

LEST YOU FORGET!

OUR ANNUAL CLEAR-OUT IS NOW PROCEEDING, AND THE GREATEST MOTOR-CYCLE VALUE IN THE WORLD IS NOW BEING OFFERED.

THE EXTRAORDINARY BARGAINS HAVE ALREADY ATTRACTED MANY BUYERS.

LET US SEND YOU OUR SALE LIST NOW!

ALEXANDER'S

113-115, LOTHIAN ROAD, EDINBURGH.
272-274, GT. WESTERN RD., GLASGOW.

Try

HEPWORTH'S

The Piston and Ring Specialists

for

Regrinding Motor Cycle Cylinders and Fitting New Pistons, Pins, and Rings

PRICES.

A.J.S., 4 and 6 h.p.; Arial 3½ h.p.; Bradbury 4 h.p.; B.S.A., 4½ h.p. and Dome head; Blackburne 2¾ and 4 h.p.; Indian 7-9 h.p. and Powerplus; Jap 2¾, 6, 8, and 10 h.p. Norton; Premier 3½ h.p.; Precision 8 h.p.; Rudge 3½ h.p.; Triumph 3½ h.p. (Dish head), 4 h.p. (Flat head), and 1914 Doma head; 35/- each.
Douglas 1914-20 2¾ h.p. 36/- pair.
Douglas 3½ & 4 h.p. 46/- pair.

First Class Material and workmanship and quick delivery.

Carriage F.O.R. Bradford.

Please Send Old Piston with Cylinder.

HEPWORTH RINGS conform to Air Board Chemical Analysis and Physical Test.

HEPWORTH PISTON RINGS were used on the Napier "Lion" engine in the D.H.9 Biplane, which broke the world's altitude record, and also on the same type of engine which was fitted to the machine winning the British Aerial Derby, 1921.

HEPWORTH & GRANDAGE, Ltd.
Wakefield Road, BRADFORD.

CLOTHING FOR MOTORING

TRENCH COATS

Check-Lined **42/-** and Oilskin Interlined with detachable Fleece Lining, **55/-**

IDEAL FOR MOTORING.

BLUE

TRENCH COATS

45/- Check-Lined. **52/6** Check-Lined and Interlined.

These Coats are double-breasted and have a belt all round, and are made of fine quality wool gabardine.

LEATHER MOTOR COATS

Fleece-lined **£5 15 0** and Belt all round.

These Coats are brand new, and are worth £10 10s.

ALL GOODS SENT ON SALE OR RETURN.

We hold an unequalled stock of new and second-hand Breeches, Raincoats, Dinner and Dress Suits, Lounge Suits, Leather Flying Coats, Trench Coats, Chauffeurs' Overcoats, Sports Coats, and Flannel Trousers at bargain prices. If you are in want of any Clothing pay us a visit, it will be well worth your while, or if unable to call, we will send goods on sale or return.

Illustrated Price List and Self-Measurement Form sent on application.

Clothing Bought, Sold, or taken in exchange. Buyers sent anywhere.

MOSS BROS., (Phone: Park 4817)
83-5, High St., Notting Hill Gate, W.11 and 224, High Road, Kilburn, N.W.6.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1922, 8pot, Lucas lamps, Cowey horn, carefully run in; 1,400 miles only, insured £95; genuine bargain, £65 cash.—8, Philip Rd., Peckham Rye, S.E.15. [2686

FOR THE GREATEST FALL IN PRICES

[Genuine End of Season Reductions]

SEE GODFREYS' LIST.

The following are in every case

BRAND NEW AND UNUSED MODELS

and carry the Makers' Full Guarantee.

Catalogue Price.		Shop-soiled Price.
£6	**ALLON,** 2¾ h.p., 2-sp., K.S.	**£52**
£140	**ARIEL,** 6-7 h.p. Combination	**£112**
£141	**ARIEL,** 4½ h.p. Combination	**£124**
£110	**B.S.A.,** 4¼ h.p., Model H2	**£88 10**
£80	**COVENTRY-EAGLE,** 3 h.p., super Sports	**£68**
£52 10	**HAWKER,** 2¾ h.p., Model A	**£46**
£112	**INDIAN SCOUT,** 4 h.p.	**£96**
£130	**INDIAN SCOUT,** 4 h.p., dynamo	**£113**
£175	**INDIAN,** 7 h.p. Standard Comb., dynamo	**£150**
£199	**INDIAN CHIEF** Comb., dynamo	**£163**
£48	**LEVIS,** 2½ h.p., Popular model	**£42**
£58	**LEVIS,** 2½ h.p., Model S	**£50**
£51	**LEVIS,** Model G1, 2½ h.p.	**£44**
£61	**LEVIS,** Model G2	**£53**
£170	**MATCHLESS,** 8 h.p. Comb., type H	**£150**
£140	**ENFIELD,** 8 h.p. Combination	**£123**
£145	**ENFIELD,** 8 h.p. Comb., 2-seater	**£128**
£94	**RUDGE,** 3½ h.p., 3-sp., all-chain	**£84**
£65	**TRIUMPH,** 2¼ h.p., lightweight	**£52**
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£110	**ZENITH,** 5 h.p., Sports	**£92**

For other Attractive Bargains in both New and Second-hand Machines write for GODFREYS' Complete List.

EASY PAYMENTS: EXCHANGES.

Either or both arranged if desired.

GODFREYS LTD.

208, Gt. Portland St., London, W.1.

'Phone - Langham 1300 (2 lines).

The Service House for B.S.A., Indian, Levis and Scott Spare Parts.

MOTOR CYCLES FOR SALE.

A.B.C.

1921 A.B.C. Sports model, dynamo lighting, speedometer, etc.; £176, exchanges.

1921 A.B.C. Sports model, as above, 3-seater; £185, exchanges.—Battletts, 93, Gt. Portland St. [3006

WAUCHOPE'S, 9, Shoe Lane, London.—A.B.C. light car, sports model; £295; immediate delivery. [3431

A.B.C. 1921, fully equipped, speedometer, spare, excellent condition; £65; tax paid.—159, Kimberley Rd., Leicester. [2444

54 Guineas.—1920 A.B.C., fully equipped, licensed, mechanically perfect; any trial, evenings.—4, Elm Gdns., Hammersmith. [2961

A.B.C. 3h.p., with kick-starter, dynamo lighting, speedometer, T.T. bars; £70.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3357

1921 A.B.C., new condition, done 1,000 only, speedometer, lamps, horn, tax paid, must dispose; £80.—391, King St., Hammersmith. [3257

A.B.C. 1920, electric horn and lights, Bonniksen, usual tools, etc., perfect condition, overhauled Sopwiths; owner broke; nearest £63.—Messenger, 7a, Western Rd., Havant. [2445

SUPER-SPORTS A.B.C., 45 m.p.h. on second gear guaranteed, special oversize cylinders and racing pistons, knee-grips, variable jet, speedometer, Cowey, horn, dynamo lighting, spare valves, piston, etc.; 68 guineas.—40, Aynhoe Rd., W.14. [2680

A.B.C. 3h.p., 4-speed, gate change, cush drive, hand clutch, enclosed flywheel, kick-starter, single lever Claudel-Hobson carburetter, C.A.V. magneto, Palmer tyres, full kit of tools, semi-T.T. or touring bars, £82; dynamo lighting model, £98.—The Sopwith Aviation and Engineering Co., Ltd. (In.Liqn.), Kingston-on-Thames. [3597

Abingdon.

£30.—Abingdon King 3½h.p. smart Coachbuilt Combination. Armstrong 3-speed, kick-starter, lamps, spares, etc.; privately owned; ride reasonable distance to purchaser.—Tower Garage, Hindhead, Surrey. 'Phone: 93. [3226

A.J.S.

1915-16 A.J.S. 2¾h.p., 3 speeds, etc., good order; £32.

1922 A.J.S. 2¾h.p., lamps, and tax paid, as new; £66.

A.J.S., model B1, from stock; £85.—Jones Motor Co., Mold. 'Phone: 42. [3388

1922 A.J.S. Combination, perfect, any trial; best over £160.—Hawkins, Horsehay, Salop. [2531

A.J.S. Motor Cycles on Easy Terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [3432

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175 in stock. Dorset trade supplied. [0817

A.J.S., 1922, fully equipped, licensed, three weeks old; £75.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3593

A.J.S. 2¾h.p.-7h.p. Commercial Vehicles.—Write Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [2704

F.O.C.H. again lead the way.—A.J.S.'s far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [2709

A.J.S. Combination, late 1919, spare wheel, screen, equipped, good condition; £80.—40, Replingham Rd., Southfields, S.W.18. [2838

1921 (September) A.J.S. 2¾h.p. Touring, excellent condition, Lucas lamp and horn; £60.—Roft, Hurcott Rd., Kidderminster. [3036

A.J.S. Combination 1914, 1915 engine, all on, taxed, condition good; £55; bought car; trial appointment.—L. Hack, Danehill, Sussex. [2955

A.J.S. 2¾h.p., 3-speed, all-chain drive, clutch and kick-start, new tyres; £39.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3358

1914 A.J.S. 6h.p. Combination, perfect condition, nearly all new parts, absolutely reliable; £60.—41, Therapia Rd., East Dulwich, S.E.22. [2987

1920 A.J.S. 6h.p. Combination, electric lamps, windscreen, hood, speedometer, spare wheel, perfect; trial; £120.—64, Bath St., Rugby. [2652

A.J.S. 7h.p. Combination, £175; 2¾h.p., 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [3314

A.J.S. Combination (late 1920), spare wheel, electric lighting, tip-top condition; any trial; £125, or nearest offer.—Savidge, Blockley, Worcester. [1620

FINAL Reduction to Clear.—Slightly showroom-soiled 1922 A.J.S. 7h.p. combination, spare wheel, windscreen; reduced to £155; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [3569

MOTOR CYCLES FOR SALE.

A.J.S

1922 A.J.S. Model B and B1 in stock; deferred payments; liberal allowance for old machines.—Premier Motor Co., Aston Rd., Birmingham. [3568

1920 A.J.S. 6h.p. Combination, full accessories, spare wheel, Lucas dynamo, new condition, any trial; £95.—G., 21, Market Place, Kingston, Surrey. [2603

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7b.p. combinations, get in touch with the N. Loodon agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

1922 A.J.S. Sports, condition as new, very fast, fully equipped, tax paid; £73; owner buying car. —Taylor, 125, Goldhurst Terrace, Hampstead, N.W.6. [2560

A.J.S. July, 1922, 2¾h.p., hardly used, electric light, speedometer, licensed, enormous bargain; £70.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2988

A.J.S. Combination 1920, dynamo lighting, spare wheel, absolutely like new and hardly used· 100 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2993

A.J.S. 1916 6h.p. Combination, lamps, horn, windscreen, etc., 3-speed, clutch and K.S., excellent condition, tyres almost new; £70.—Hubbard, 8a, Park St., Loughborough. [2869

2¾h.p. A.J.S., B1, 1922, accumulator lighting, Lucas lamps, and box, spare tyre, valve, chain linkings, liceace paid, first-class condition; £75.—Teage, Whitehouse, Kenilworth. [2055

115 GNS., Exchanges.—1921 A.J.S. Combination, lamps, screens, spare wheel, luxurious turnout, ony examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [5966

A.J.S. outfit; 1919-20; in excellent condition; spare wheel, speedometer, new chains, inner tubes, tyres good, 2 sets Lucas acetylene lamps, horn, spares.—Johnson, 32, Wellesley Rd., Harrow. [2789

A.J.S. 5-6h.p. Combination, dynamo lighting, tax paid, all accessories; any trial or examination; price £80.—H. W. Turner, 259, Warwick Rd., Kensington, London, W.14. 'Phone: Western 946. [2644

A.J.S. Combination 6h.p., 1917, interchangeable wheels, in excellent order, been little used, mechanically and coachwork; any trial and inspection; £80; buying car.—Green, Trescoe, Hollier's Hill, Bexhill-on-Sea. [2631

A.J.S. Combination, unscratched and as new, hood, screen, electric lamps, clock, speedometer, spare wheel, luggage grid, will guarantee for 6 months; £135.—Wells, Central Garage, Woodford Green. 'Phone: 14. [3039

A.J.S. late 1920, adjustable 2-seater sidecar, new windscreen, spare inner tubes, full tool kit and spares, maps, leggings, helmet, goggles, Tan-Sad, good condition, engine perfect, seen any time; £100.—Mays, 93, Chamberlayne Rd. N.W.10. [2609

GUARANTEE for three months with 1922 A.J.S. 2¾h.p., 3-speed, used few weeks only, 75 guineas; also with 2¾h.p. 2-speed A.J.S., clutch, kick-start, 39 guineas; exchanges; photographs free. —Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3411

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7662

Albion.

ALBION 2-speed clutch wheel, 26×2¼, ⅞ belt; £4. —Bainbridge, Witton, Gilbert. [2673

Alldays.

ALLDAYS Allon, 2-stroke, 2-speed gear box, tax paid; £28.—226, Wick Rd., E.9. [2504

ALLDAYS 3½h.p. and sidecar, good condition, all accessories; £50.—2, The Grove, Church End, Finchley. [2563

ALLDAYS Allon, speeds, clutch, kick-start, almost new; 48 guineas; automatic oiling.—92, High St., Wandsworth. [2755

14 Guineas.—Allon 2-stroke Countershaft, equipped, licensed, good order; after 5 p.m.—20, Treen Av., Heggers Corner, Barnes. [3220

ALLON 1917 2-stroke, 2-speed, well equipped, good condition; any examination; £25.—76, Neate St., Albany Rd., Camberwell. [3057

25 GNS., Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452 [4773

ALLDAYS ALLON 1922 2½h.p., 2-speed, clutch, kick-starter, legshields, and electric lighting, shop-soiled only, list price, £65; accept £55 cash; unrepeatable bargain.—The Layton Garages, 30, Holywell St., Oxford. [3538

American X.

1920 American X Sporting Combination, excellent order, fast, spares; £78.—Treasure, Kay St. Mill, Preston. [2482

GUARANTEE for three months with 1921 American X 7-9h.p. 3-speed Combination, magnificent turnout, electrically equipped; 89 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3412

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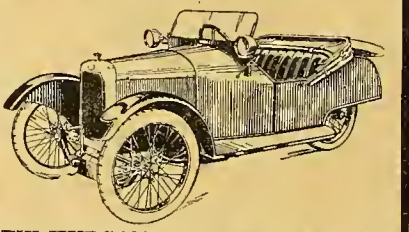
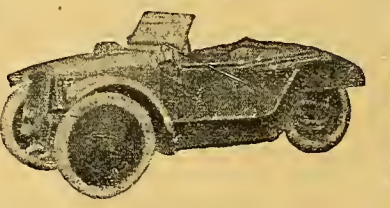
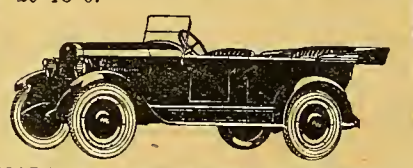


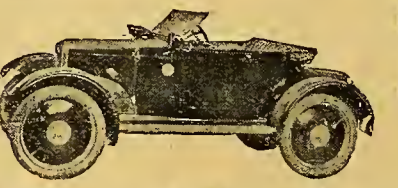
NEW HUDSON, £230 cash, or £59 16 0 down, and 12 payments of £14 19 0.



MORGAN "Popular" Model, £150 cash, or £39 0 0 down, and 12 payments of £9 15 0.



MAXWELL (New Series), £360 cash, or £93 12 0 down and 12 payments of £23 8 0.



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American X.

AMERICAN X, 1914, 2-speed, perfect; £15 and lightweight.—187, Snowdrop Rd., Lodge Lane, Welling. [3032

AMERICAN X Combination, 7-9h.p., splendid condition, selling through illness; £60, or best offer. —171, Hatfield Rd., St. Albans. [3487

ROBERTSONS Motors, Ltd.—1921 American X with Henderson Elite sidecar, accessories, tax paid, in beautiful condition; £95.—157b, Gt. Portland St., W.1. [2349

Antoine.

ANTOINE 5-6h.p. Twin Solo, good condition; £20, near offer.—"Kelane," 16, William St., Grays, Essex. [2699

Ariel.

1921 3½h.p. Ariel 3-speed Touring, equipped, unscratched.—Particulars Bundy, Wakefield House, Camberley. [2930

1921 Ariel Combination; like new; luxurious equipment; £66.—60, Parkfield Rd., South Harrow, N.W. [2772

ARIEL 3½h.p. 2-speed Countershaft, splendid condition; £25.—H. Smith, 86, Manor Park Rd., Harlesden, N.W. [3194

3½h.p. Sports Ariel, brand new, 3-speed and clutch. 60 m.p.h. guaranteed; £75.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2989

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

SOUTHPORT.—1920 Ariel 3½h.p. Combination, Easting, fully equipped, smart; 67 guineas; exchanges.—Kents, 417, Lord St., Southport. [3119

1922 Ariel Special Combination, 6-7h.p., cost £125, shop-soiled; £108 cash, or deferred payments. —Taylors, 52-53, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0921

1920 3½h.p. Ariel Combination, 3 speeds, kick-start, horn, speedometer, mileage 1,500, splendid condition, tax paid; £90.—Watts, 33, Norfolk Rd., East Ham. [2985

1920 3½h.p. Ariel Combination, Easting sprung grid, F.E.W. attachments, lamps, insured, condition exceptional, climbs Porlock easily; trial welcomed; £68. —Avon Works, Southbridge Rd., South Croydon. [2963

ARIEL Combination, 1919-20, 3-speed, clutch, kick-start, countershaft, Easting and accessories; tax paid; thoroughly reliable; £58; any trial.—Apply after 5 p.m., 16, Kelvedon Rd., Fulham Rd., S.W. [2774

GUARANTEE for three months with late 1920 Ariel 3½h.p. 3-speed Combination, 69 guineas; or solo, 58 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3413

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0804

Bat.

£15.—Bat-Jap, running order, 5h.p. 1912, modernised, new tyres.—Allen, Broad St., Holliogbourne. [2946

5-6h.p. Bat-Jap Combination, in good running order; cheap.—Mayhew, Pettaugh, Stowmarket, Suffolk. [2517

5-6h.p. Bat-Jap Combination, 3-speed, kick-start, windscreen, etc., any trial.—Gall, Bawdeswell, East Dereham, Norfolk. [2529

5-6h.p. Bat-Jap, 3-speed, C.B. Combination, with hood, in perfect condition; £35, a real bargain. —Marsh, 249, Rye Lane, Peckham. [2702

4h.p. B.A.T.-Jap, spring frame, 2-speed N.S.U. gear, whole machine just overhauled, tax paid; early sale wanted; £25.—Watts, Carvean, Newton Abbot. [3476

SOUTHPORT.—Red o.h.v. Sports Bat 8h.p., countershaft, 2-speed, kick-starter, equipped; gift, 32 guineas; exchanges.—Kents, 417, Lord St., Southport. [3117

BAT-J.A.P. 4b.p. Combination, 2-speed, complete, perfect running order, a real bargain; £18/10; first cheque secures.—Robini, 1, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [1612

1921 8h.p. Bat-Jap Combination, electric lighting, Cowey, detachable and spare wheels, Easting, tax paid; £105; would consider lighter machine part. —7, Norwood Rd., Herne Hill, S.E.24. [3112

Beardmore.

NEW 3½h.p. Beardmore-Precision, spring frame; £59/10.—3, Parker Lane, Burnley. [3167

BEARDMORE 3½h.p. sports, late 1921, S.A. 2-speed, wide ratio gear box, oversize tyres, extras and spares, mileage 5,000, gold in London-Edinburgh, condition as new; £55.—Chimney, Harpenden. [2562

Blackburne.

BLACKBURNE Combination, late 1920, spare wheel, lamps, screen, luggage grid, etc.; offers.—Huntley, 12, Elms Av., Muswell Hill, N.10. [3156

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Dene.

DENE 1920 8h.p. Combination, fully equipped, lamps, horn, speedometer, good order; £60.—The Layton Garages, 30, Holywell St., Oxford. [1146

Diamond.

GIBB, Gloucester, can give immediate delivery Diamonds from stock. [7544

1920 Diamond, 2¼h.p., hardly used, taxed; bargain, £28. Exchange. 59, Nelson Square, Blackfriars. [3501

DIAMOND-J.A.P. 1921 2¾h.p., 2-speed, K.S., mileage 800, accessories, licensed 1922, perfect condition; £47/10.—130, Inderwick Rd., Hornsey, N.8. [2635

ROBERTSON'S Motors, Ltd., are the London and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P. engines.—157b, Great Portland St., W.1. [5931

65 m.p.h. 1920 2½h.p. Sports Diamond-Jap, 2-speed, clutch, aluminium piston, speed tuned, just overhauled, recently re-enamelled; £42, or offer. —Olgin, 43, Cromwell Rd., Stretford, Manchester. [2809

Dot.

AT Edwards'.—1922 Super Sports Dot-Jap engine, speedometer, lamps, horn, mileage 300, indistinguishable from new; 90 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2220

Douglas.

DOUGLAS 4h.p., 3-speed, 1916, tax paid; £36.—Ross, 86, High Rd., Lee. [3228

DOUGLAS 2¾h.p., 2-speed, taxed, good order; £25. —Rutley, Merlewood, Caterham. [2916

DOUGLAS 1914 2¾h.p. model, tax paid; bargain, £25.—Ross, 86, High Rd., Lee. [3227

1916 2¾h.p. Douglas, very smart, fast and sporty; £25.—67, Fernlea Rd., Balham. [3520

1915 Douglas 2¾h.p.; good condition; 30 gns.—79, Muswell Rd., Muswell Hill, N.10. [2474

1916 4h.p. Douglas Combination, perfect throughout, cheap.—92, Stapleton Hall Rd., N.4. [2794

2¾h.p. Douglas, hardly used, licensed, engine 33542; £26.—27, Arragon Rd., Twickenham. [2956

1920 4h.p. Douglas Combination, splendid condition; offers.—Bell, Holmeden, Datchet, Bucks. [3037

£25.—1916 2¾h.p. Douglas, 2 speeds, good condition, fast.—King, Egrove Farm, Oxford. [3346

DOUGLAS 1918 4h.p. Combination, tax paid; £45. —Sheldrick, 4, Stratford Grove, Putney. [3078

1919 Douglas 2¾h.p., 2-speed, lamps, horn; £37.—11, Kilmartin Avenue, Norbury, S.W.16. [3147

DOUGLAS 2¾h.p., 2-speed, 1916, good condition; 25 guineas.—Holmes, Willis Rd., Stockport. [3098

DOUGLAS, 1921, all on, taxed, perfect; 46 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5851

DOUGLAS 4h.p. Countershaft Combination; £45.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3356

£60.—1919 Douglas 4h.p. Combination, perfect condition and appearance, equipped.—Mann, 159, Ebury St., S.W.1. [2918

DOUGLAS 2¾h.p. 1915, new bearings, pistons, etc., speedometer; £25.—Ellis, 244, Whitehorse Rd., Croydon. [2683

Douglas

£29.—1915 2¾h.p. Douglas, excellent condition, lamps, bargain.—35, Shepherds Bush Rd., Hammersmith. [2799

DOUGLAS Combination, 4h.p., 1917, splendid order; £45.—Hutton, Red Lion Hill, East Finchley, London, N.2. [3213

DOUGLAS 4h.p. Combination 1920, small mileage, excellent condition, lamps, etc.; £75.—202, Trinity Rd., S.W.17. [2607

DOUGLASES (2) 2¾h.p., 2-speed, taxed; £25 and £30.—Lawson, 8, Athenlay Rd., Ivydale Rd., Nunhead, S.E.15. [3276

DOUGLAS 1916 2¾h.p., fully equipped, including speedometer, excellent condition; £34.—Russ, 10, Sketty Rd., Enfield. [2676

4h.p. Douglas Combination, as new, fully equipped; £70. Also 2¾h.p. Douglas; £35.—56, Ormeley Rd., Balham, S.W.12. [2878

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NEW IMPERIAL, 8 h.p. combination	£148 0
NORTON BIG FOUR	£120 0
NORTON BIG FOUR, family s/car	£158 10
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RUDGE-MULTI, 1921, 3½ h.p., I.O.M.	£59 10
RUDGE-MULTI, 1920, 5-6 h.p., tax paid	£62 10
RUDGE-MULTI, 1920, 7-9 h.p.	£70 0
T.D.C., 1921, 2¾ h.p., 2-stroke, tax paid	£35 0
TRIUMPH, 1919, 4 h.p., 3-speed, tax paid	£87 10
TRIUMPH, 1916, 4 h.p., c/shaft	£52 10

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ARIEL, 1919, 3½ h.p., 3-speed comb.	£69 10
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RUDGE, 1920, 5-6, and sidecar, tax paid	£72 10
RUDGE, 7 h.p., 1920 comb.	£82 10
SCOTT, 3¾, 2-speed comb., tax paid	£55 0
SCOTT, 1820 comb., screen, etc., tax paid	£87 10
TRIUMPH, 3½, 2-speed comb., tax paid	£39 10
TRIUMPH, 1919, 4 h.p., Gloria s/car	£92 10

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£5 deposit and 12/6 weekly buys

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REX, 5/8 h.p., 2-speed combination	£29 10
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SINGER, 3½ h.p., clutch, tax paid	£25 0
BRADBURY, 3½ h.p., 3-spead, tax paid	£29 10
HUMBER, 3½ h.p., engine wants attention	£15 0

25, Horton Street, HALIFAX.
'Phone 1460 'Grams "Perfection"

MOTOR CYCLES FOR SALE.

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1921 Douglas, 3-speed, clutch, K.S., all on, excellent condition, as new; £58.—Taylor, 4a, Howard St., Reading. [2798

DOUGLAS 2¾h.p., in perfect condition, 1916, all on, tax paid; £32/10.—Cooke, 140, Livingstone Rd., Thornton Heath. [3094

F.O.C.H. again lead the way.—Douglases far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [2707

DOUGLAS 2¾h.p. machines, built of new parts throughout; 39 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5850

1922 Douglas 2¾h.p., equipped, footboards, perfect order; £52/10 for quick sale; seen 9-6 o'clock. —6, Princes St., Ipswich. [3096

3½h.p. Douglas o.h.v. Sports, May, 1922, fully equipped; must sell, accept £80.—Ireland, 6, Kensington Rd., Coventry. [3302

DOUGLAS 1920-21, 3-speed, clutch, kick-start, fully equipped, excellent condition; £55.—4, Station Rd., Merton Abbey, S.W.19. [2856

SPORTY 1915 Douglas; fast, perfect, speedometer, W.S.R., lamps, etc.; bargain; £25.—124, Southwark Park Rd., S.E.16. [2754

1921 Douglas, T.T. model, with sporting sidecar, fully equipped, perfect condition.—Particulars, Roodman, 31, Norfolk St., E.8. [2501

DOUGLAS 1921 2¾h.p., 2 speeds, fully equipped, licence, new condition; £49; exchanges, instalments.—63, Solon Rd., Brixton. [3602

1919 4h.p. Douglas Combination, nice turn-out, practically unscratched, must realise; 45 guineas.—67, Fernlea Rd., Balham. [3521

DOUGLAS 2¾h.p., 2-speed, fully equipped and perfect, late model; £22/10.—113, High St., Clapham. 'Phone: Latchmere 4290. [3268

£28.—1915 2¾h.p. Douglas, splendid condition, Binks, 100 m.p.g., lamps, long exhaust, fully licensed.—1a, Hearne Rd., Kew Bridge, Chiswick. [2853

1919 2¾h.p. Douglas, 2-speed, Watford speedometer, Tan-Sad, all accessories, tools, excellent order; £45.—Dredge, 44, Hurst Rd., Erith, Kent. [2515

ROBERTSONS Motors, Ltd.—1922 2¾h.p. 2-speed Douglas, accessories, tax paid, almost new condition; £58.—157b, Gt. Portland St., W.1. [2348

GIBB, Gloucester, has ridden Douglases for years past; prompt delivery of the various models from stock; trade supplied where not represented. [7542

DOUGLAS 1918-19, 2-speed, Lucas lamps, all accessories, excellent all-round condition; week-end only; £35.—72, Clock House Rd., Beckenham. [2509

DOUGLAS 2¾h.p. 1915, completely renovated 1921, good running order, with 10 months' insurance unexpired; £35.—123, Coleherne Court, S.W.5. [2889

1922 2¾h.p. Douglas all-on model, done 200 miles, guaranteed perfect; accept 50 guineas.—Stuart Lowe, Moreton Terrace, Mews, S.W.1. Vic. 7481. [2541

DOUGLAS 1921 2¾h.p., 3 speeds, clutch, kick-starter fully equipped, licence, new condition; £58; exchanges, instalments.—63, Solon Rd., Brixton. [3601

1921 Douglas Combination 4h.p., speedometer, lights, tax paid, perfect condition; £80, or best cash offer.—Watson, 11, Godolphin Rd., W.12. [2633

1922 Douglas 2¾h.p., 2 speeds, not done 300 miles, tax paid 1923, fully equipped, Tan-Sad; £65, or near offer; buying car.—Phelps, Carfax, Horsham. [2538

4h.p. Douglas Combination, 1916, new coachbuilt sidecar, just overhauled, screen, lamps, tools, spares, as new; £57/10.—24, Elswick Rd., Lewisham. [2466

DOUGLAS, 2¾h.p., 1916, good running order; £28, or offers.—Haverstock Hill Garage, 50, Haverstock Hill, N.W.3. 'Phone: Hampstead 6609. [3513

4h.p. Douglas Combination, maker's blue, looks just like new, grand order; absolute bargain, £75.—Marlborough (The Motor House), 20, Finchley Rd., N.W.8. [9578

DOUGLAS 1922 2¾h.p., an ideal solo mount, fully equipped, lamp, horn, etc., brand new; special showroom-soiled price, £62.—The Morris Garages, Oxford. [2554

DOUGLAS 2¾h.p., clutch, kick-start, fully equipped, spare tyre, tube, belt, chain, tools, tax paid; bargain, £45.—Sutcliffe, 333, Cheetham Hill Rd., Manchester. [3099

4h.p. Douglas, 1916, 2 speeds, tax paid, horn, lamps, generator, been carefully used, good going order; £38.—Nicholson, Bowden, St. Boswells, Roxburghshire. [2471

1920 Douglas 2¾h.p., 3-speed, new tyres, tool bags, footboards, lamps, etc., as new; £48.—Station Hotel, outside Latimer Rd. Station, Metropolitan. Park 3875. [2849

DOUGLAS 1922 4h.p. Combination, lamps, Bonniksen, Easting, legshields, spares, only done 4,000, engine just overhauled by makers, owner bought car; £120, offers.—Askwith, Robeston House, Bury St. Edmunds. [2847

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

1920 4h.p. Douglas Combination, in very good order, little used, running perfect, lamps, speedometer; £75 guineas; Petersfield district.—Box 3735, c/o *The Motor Cycle.* [2598

1921 Douglas, lamps, speedometer, insured to June, 1923, tax paid, very good condition; £45.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 825. [2745

AT Edwards'.—1918 Douglas 2¾h.p., fully equipped, excellent condition, new tyres and belt; 37 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2219

2¾h.p. Douglas, W.D., reconditioned machine, unused, nearly all new parts, tyres; belts, etc.; £38; all on; exchanges.—Edwards, 50, Harrington Rd., South Kensington. [5204

1922 Douglas 3½h.p. Sports Model, fully equipped, licensed year, indistinguishable from new; 90 gns.; exchanges and deferred.—Edwards, 50, Harrington Rd., South Kensington. [2284

WAUCHOPE'S, 9, Shoe Lane, Fleet Street, London, E.C.4.—Douglas, 2¾h.p., 1916, 2-speed, tax paid, all on, £35; 2¾h.p. 1921 2-speed Douglas, all on, £60; cash or easy terms. [3429

4h.p. Douglas Combination, 1920, all possible accessories except lamps, in excellent condition and perfect running order, tax paid; £75; any trial.—Marshall, Breinton Manor, nr. Hereford. [2691

DOUGLAS 2¾h.p., new in 1920, just been overhauled, nickel plated, and enamelled, tax paid, lamps, tools, etc., in perfect condition; bargain, £37/10.—179, Brixton Rd., London, S.W.9. [1645

1920 Douglas, 2¾h.p., 3-speed, clutch, kick start; £49 10s.; 1920 Douglas, 2¾h.p., 3-speed, £45; both brand-new condition, unscratched, equipped.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [351

55 Guineas.—1919 4h.p. Douglas combination, fully equipped, registered, aluminium sidecar, Easting, legshields, speedometer, guaranteed perfect condition; any trial; exchanges; evenings.—4, Elm Gardens, Hammersmith. [2962

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill [0786

1922 Douglas 2¾h.p., 2-speed, all on, new in May, fine condition, taxed to end of year, insured to May, 1923, delivery October 1st, owner leaving country after leave; £45.—Apply 8, Grosvenor Av., Wallington, Surrey. [2812

DOUGLAS 4h.p. 1918 Combination, £52 10s.; a really sound, reliable machine, enamel and plating like new, good tyres, fully equipped.—88, Gloucester Place Mews, Portman Square, W. Exchange lightweight. [3508

DOUGLAS 2¾h.p., 3-speed, clutch, kick-start model, fully equipped, splendid condition, fine engine, mileage 3,000, original tyres, tax and insurance paid December, 1922; £60.—Box 101, c/o United Advertising Service, Ltd., 27, Chancery Lane, London, W.C.2. [3469

DOUGLAS Combinations, 4h.p., in running order, complete with new coachbuilt body; £42/10 each. We have only a few left at this ridiculous price, all 3-speed and clutch models.—The Sulina Garage Co., New Park Rd., Brixton Hill, S.W.2. 'Phone: Streatham 40 and 2563. [2425

1915 2¾h.p. Douglas, unused until 1921, enamel and plating good, 1922 large tank, belt, chain, and tyres practically new, 50 m.p.h., large brass exhaust, drilled pistons, etc., just completely overhauled, spare belt, chain, tube, etc., equipped, licensed and insured till 1923; £38, offers; appointment.—71, Wyatt Park Rd., Streatham Hill, London, S.W.2. [2636

DOUGLAS New 2¾h.p. 1922 2-speed Models, fully equipped, £68; 2¾h.p. 3-speed clutch and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £115; 6h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. [3438

Spare Parts:

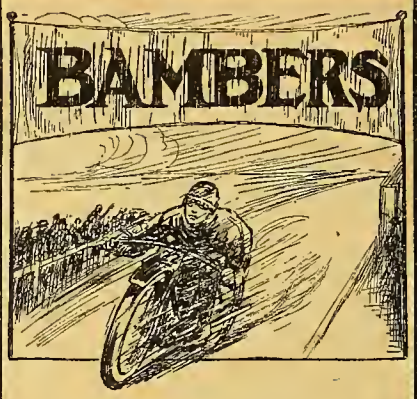
DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7665

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927



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MORE BARGAINS.

SHOP-SOILED.

1922	6 h.p. **B.S.A.** Comb., No. 3 sidecar...	**£138**
1922	4 h.p. **DOUGLAS** Comb., fully equipped	**£110**
1922	3½ h.p. **ARIEL** Comb., latest type...	**£105**
1922	3½ h.p. **ZENITH-BRADSHAW,** all chain	**£95**

SECONDHAND.

1922	8 h.p. **ENFIELD** Comb., 2-seater, magdyno, hood, screens, Binks, mileage 800	**£130**
1922	4 h.p. **TRIUMPH** Comb., all chain, Lucas accessories, as new.....	**£125**
1922	2½ h.p. **CONNAUGHT,** 2-sp., clutch and k.-s., Lucas accessories, as new	**£45**
1921	7-9 h.p. **AMERICAN EXCELSIOR,** only run very small mileage.....	**£70**
1921	2¾ h.p. **OMEGA-JAP,** 2-sp., clutch and k.-s., all accessories, a gift.....	**£45**
1921	4 h.p. **WOLF-JAP** Comb., all accessories, hood, very good condition...	**£65**
1920	6 h.p. **A.J.S.** Comb., lamps, horn, screen, spare wheel, etc., etc., excellent condition	**£120**
1920	7-9 h.p. **INDIAN** Comb., dynamo, screen, speedometer, leg-shields, excellent condition	**£90**
1920	8 h.p. **MATCHLESS** Comb., Model H, hood, screen, spare wheel, leg-shields, lamps, etc.....	**£85**
1919	4½ h.p. **B.S.A.** Comb., all chain, lamps, horn, etc.....	**£67**
1916	6 h.p. **A.J.S.** Comb., fully equipped, screen, etc., etc., exceptional condition	**£68**
1914	3½ h.p. **RUDGE,** k.-s., clutch, lamps and speedometer, etc., etc.....	**£28**

MANY MORE.

ALL MACHINES LICENSED.

May We Send You Full Particulars?

R. BAMBER & Co., Ltd.

2, EASTBANK ST., SOUTHPORT.

'Phone 607.

MOTOR CYCLES FOR SALE.

Dunelt.

DUNELT Combination, 2-stroke, absolutely new, shop-soiled, complete with 18 amp. lighting set costing £20, 4 detachable wheels and all fitted with oversize tyres, any trial given; sacrifice at £105.—Seen at Thackray's, Central Garage, Ilkley. [2611

Economic.

ECONOMIC, new May, not done 100; £28/10.—Waterloo House, North Cheam. [2689

£34.—2½h.p., the Economic "no trouble, 20 m.p.h. all day" machine, free trials and tuition given; see it climb Muswell Hill; catalogue free.—North London Agents, Janes Garage, Muswell Hill, N.10. [3548

£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Edmund.

EDMUND 2¾h.p. J.A.P. 1921, Olympia Show model, 2 speeds, clutch, equipped, new condition; £50; exchanges.—63, Solon Rd., Brixton. [3603

EDMUND 1922 2¾h.p. Blackburne, 3-speed, clutch, K3 spring frame, soiled only, list price, £90; accept £75.—The Layton Garages, 30, Holywell St., Oxford. [3542

Enfield.

ENFIELD 1918 Combination, as new; £80; 8h.p.—Ross, 86, High Rd., Lee. [3234

BARGAIN.—3h.p. Enfield, as new, all on; £32.—144, Clarence Rd., Wimbledon. [3333

1922 Enfield 8h.p. Combination, shop-soiled; £120, bargain.—Mitson's, Newmarket. [2970

ENFIELD Combination, Colonial model, nearly new; £92.—Marshall, 126a, High St., Slough. [2676

ENFIELD 1921 8h.p., 2-seater S.C., perfect; any trial; £115.—117, Englefield Rd., Canonbury. [1429

1922 Enfield 2¼h.p. 2-speed Lightweight, shop-soiled only; £49.—Gray's Garage, Watford. [3081

£16.—2¾h.p. Enfield, 2 speeds, clutch, splendid condition, smart.—King, Egrove Farm, Oxford. [3347

1921 Enfield Lightweight, unscratched, 2-speed, clutch; 28 guineas.—67, Fernlea Rd., Balham. [3523

ENFIELD Combination, very good order; £69.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3361

1921 (July) Enfield 2¼h.p., fully equipped, licensed; bargain, £42.—Wallis, Micklefield, Leeds. [2527

1922 Enfield, 2-stroke, K.S., unscratched, licensed, lamps, horn, mirror; £42.—10, Clovelly Rd., Hornsey. [2491

1922 Enfield 2¼h.p., kick-starter model, never been ridden; £45.—Heatb, 4, St. Stephen's Rd., Hounslow. [3280

3h.p. Twin Royal Enfield, late 1919, excellent condition, lamps, etc.; £50.—94, Ribblesdale Rd., Streatham. [3489

£57/10.—1919 6h.p. Royal Enfield combination, good condition; cheap.—Harrington, 21, Brent St., Hendon. [3061

ENFIELD Model 200, shop-soiled only, at special price of £49/10.—Ratcliffe Bros., 200, Gt. Portland St. W. [3129

ENFIELD 2-stroke, kick-start, only ridden 200 miles, tax paid; illness cause of selling; £47.—Boddington, Alcester. [2913

ENFIELD Combination, Model 190, shop-soiled only; £142.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [3132

5-6b.p. Royal Enfield Combination 1914, overhauled by makers, any trial; £50, or offer.—88, Park Rd., W. Dulwich. [3175

ROYAL ENFIELD 1917 3h.p. Twin, 2-speed, K.S., lamps, etc., just overhauled; £26.—4, The Plain, Wandsworth, S.W.18. [3077

1922 Enfield 8h.p. Combination, Magdyno, accessories, excellent condition; £125.—Quenby, Bromham Swan, Bedford. [2893

29 Guineas.—1920 Enfield 2-stroke, 2-speed, lamp, horn, tools, new tyres, licensed, perfect.—Jeweller, Dolfedw, Llanyhyther. [2512

ENFIELD 1921, 2-stroke, 2-speed, kick-start, tax paid, insurance till August, 1923, like new; £35.—201, King's Cross Rd., W.C.1. [2814

1920 Enfield Combination 8h.p., Magdyno lighting, tax paid, good condition; £75 cash.—18, St. George's Rd., Beckenham, Kent. [2570

ENFIELD, 1920, 2¼h.p., 2-speed, clutch just decarbonised, perfect order; £32.—25b, Lurline Gardens, Battersea Park (near station). [2782

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MOTOR CYCLES FOR SALE.

Indian.

INDIAN 7-9h.p. Powerplus Combination, late 1920, had but little use, splendidly equipped and perfect; £85; would exchange for solo and cash.—Hincke, 718, Alum Rock Rd., Birmingham. [3301

INDIAN 7-9h.p. Combination, new Feb., 1922, mileage 2,000, dynamo lighting, speedometer, special fittings, spares, cost £200, wonderful outfit, any trial; accept £130.—34, Sankey St., Warrington. [2576

1915-16 5-6h.p. Indian Combination, 3 speeds, K.S., lamps, windscreen, apron, good—condition, 2 spare covers, any trial, evenings; £63.—75, Cudworth Rd., South Willesborough, Ashford, Kent. [2583

INDIAN Combination 1918-19 7-9h.p., 3 speeds, clutch, special £40 touring sidecar, electric lighting, speedometer, windscreen, licence, new condition; £70; exchanges, instalments.—63, Solon Rd., Brixton. [3605

INDIAN 7-9h.p. Combination, 1920, complete, overhauled by Headees for £37, excellent condition, tax paid; must sell; owner abroad; nearest £85.—Lt.-Commander Stocker, 12, Shawfield Park, Bromley, Kent. [2490

7-9h.p. Indian Combination, Magdyno electric lighting, 3-speed, clutch, electric and hand Klaxon, lamps and spares, first-class order; £95, or cash adjustment with small car.—H. Carver, 9, South St., Havant. [2499

1921 (delivered 1922) 7-9h.p. Indian Combination, dynamo lighting, electric, Klaxon, Ampmeter, speedometer, Easting, licensed year, excellent condition and appearance; £90; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [3528

1922 (July) Indian Chief, 7-9h.p., Swan sports sidecar, electric and acetylene lighting, disc wheels, aluminium dash and Aero windscreen on sidecar, insured; £203; tax paid; reason for selling, owner returning West Africa; £170.—Jones, 10, St. Stephens Rd., Bournemouth. [2519

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7688

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Denais Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [6301

Ivy

£12.—Ivy 2¾h.p., Bosch, Dunlops, any examination, tax paid.—F. Rawson, Awkley, Doncaster. [2672

IVY 2-stroke, 2-speed, late 1921, scarcely soiled, perfect condition; £40.—Box 3717, c/o *The Motor Cycle*. [2546

1921 Ivy 2½h.p., 2-speed, clutch, K.S., with accessories; £40, or near offer.—Bing, Benson, Wallingford. [3336

IVY 2½h.p. 2-stroke, perfect running order, fully equipped, tax paid; £19 nearest.—163, Devizes Rd., Salisbury. [5091

1921 Ivy 2½h.p., 2-stroke, Sturmey-Archer 2-speed, clutch, kick-starter, tax paid; £39.—Bartletts, 93, Gt. Portland St. [2997

1917 6h.p. Ivy-Jap, Canoelet sidecar, box carrier, Binks, Easting, fully equipped, perfect; £50.—Bustin, Chilton, Thame. [2880

James.

JAMES 2-stroke, 2-speed, shop-soiled only; £54.—Ratcliffe Bros., 200, Gt. Portland St., W. [3131

JAMES 3½h.p. Sports, at special price of £94.—Ratcliffe Bros., 200, Gt. Portland St., W. [3130

JAMES 1920 Combination, 5-6h.p., de luxe, lavishly equipped, insured; £90.—281, Portland Rd., South Norwood. [3082

JAMES Combination No. 10, shop-soiled only, at special price of £144.—Ratcliffe Bros., 200, Gt. Portland St., W. [3135

JAMES 1922 (April) 7h.p. Combination, electric lighting, fully equipped, condition perfect; £128.—'phone: City 4944. No dealers. [2842

1922 3½h.p. Sports James, equipped, tax paid, indistinguishable from new; 79 guineas.—Edwards and Co., 101, Great Portland St., W.1. [3562

JAMES 2¼h.p., 2-speed, 1920, new tyres, rear puncture-proof, just overhauled and new bearings, all accessories; £36.—Fish, 240, High Rd., Tottenham. [3044

1920 James De Luxe 5-6h.p. Combination, Easting, luggage grid, speedometer, lamps, insurance, tax, new condition; £95.—Reid, 40, Forest Hill Rd., Dulwich. [3193

GET IT AT

TAYLORS

Sole London and District Distributing Agents for A.J.S., Excelsior, and Dunelt Motor Cycles.

SHOP-SOILED MACHINES at SECOND-HAND PRICES.

USED MACHINES at ROCK BOTTOM.

ALL FULLY GUARANTEED.

Available for Cash or on our liberal extended payment terms, which include a comprehensive Insurance Policy and Free Delivery within a radius of 150 miles.

Cash Price.	Description.	Deposit.	12 Monthly Instalments.
	SHOP SOILED.		
£99	**Zenith-Bradshaw,** 1922, all-chain drive.	£27 5 6	£7 0 0
£98	**Quadrant,** 1922, 4½ h.p., all-chain, Comb.	£26 15 0	£7 0 0
£130	**P. & M.,** 1922, 4 h.p. De Luxe, 4 speeds, Comb.	£38 16 6	£9 0 0
	SECOND-HAND SOLOS.		
£95	**Sunbeam,** 1921, 3½ h.p., semi-sports.	£27 2 6	£6 13 4
£99	**Sunbeam,** 1922, 3½ h.p., Sports Model, hardly used.	£27 5 6	£7 0 0
£60	**Triumph,** 1918, 4 h.p., just thoroughly overhauled.	£18 14 0	£4 6 8
£55	**Lea-Francis,** 1919, 3¾ h.p., equipped.	£15 10 0	£4 3 4
£50	**Ivy,** 1921, 2½ h.p., 2-stroke, 2-speed.	Cash only.	
	SECOND-HAND COMBS.		
£88	**A.J.S.,** 1922, 2¾ h.p., Comb., fully equipped, special demonstration outfit.	£24 15 0	£6 1 8
£85	**Douglas,** 1921, 4 h.p., screen, lamps, horn.	£24 14 0	£6 0 0
£121	**B.S.A.,** 1921, 6-7 h.p., detachable wheels, screen, lamp, horn etc.	£34 10 6	£8 11 8
£130	**Zenith,** 1921, 8 h.p., Clutch Model, fully equipped, Easting screen, tax paid, as new.	£36 18 0	£9 3 4
£170	**Henderson,** 1921, 11.6 h.p., De Luxe, C. & M. sidecar, dynamo ltg.	Cash only.	
£80	**Sunbeam,** 1916, 3½ h.p., and Henderson Sidecar, speedometer, etc., tax paid.	£26 15 0	£7 0 0
£70	**Rover,** 1919, 3½ h.p., and Special Sporting Sidecar, equipped, excellent condition.	£21 2 6	£5 0 0
£95	**A.J.S.,** 1919, 6 h.p., Comb., spare wheel, acetylene equipment, excellent order, tax paid.	£27 14 0	£6 16 8
£100	**A.J.S.,** 1920, 6 h.p., Comb., electric lighting, spare wheel, in very fine order.	£28 18 0	£7 3 4

Write for proposal form if unable to call, stating make of machine that interests you—and remember we can supply any make of New Machine and many excellent carefully used mounts at bargain prices.

H. TAYLOR & CO., LTD.

Showrooms: Motorcycles and Cars.
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Accessories, Spare Parts and Repairs.
21a, Store Street, Tottenham Court Road, W.C.1
Wholesale: 38, Alfred Place, W.C.1.
Garage—Tottenham Court Road, W.1.
Telephones: Accessories and Repairs, Museum 1240
Motorcycles and Cars, Kensington 7260
Telegrams: "Dynametro, Westcent, London."

MOTOR CYCLES FOR SALE.

James.

1922 James 7h.p. De Luxe Combination, dynamo lighting, spare wheel (unused), Brooks cantilever saddle, windscreen, under 2,000; £150.—23, Hamilton Rd., Reading. [2762

1920 James 4¼h.p. Combination (special engine), F.R.S., electric lighting, Easting, horn, speedometer, 28×3 wheels, privately owned; £83, seen any time, perfect condition.—7, The Vale, Acton, W.3. [3375

GUARANTEE for three months with 3½h.p. Twin James, Sports model, 3-speed, countershaft; 38 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3414

STOCKTAKING Clearance Sale.—New 1922 3½h.p. sports James, £90; 7h.p. De Luxe combination, windscreen, detachable wheels, £134; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [3572

SOUTHPORT.—1919-20 James, dynamo combination, 5-6h.p., luxuriously equipped, speedometer, Klaxon, scuttle, screen, legshields, etc., excellent condition; 90 guineas; exchanges.—Kents, 417, Lord St., Southport. [3118

STOCKTAKING Bargains.—A chance for the keen buyer to secure a famous James at a low price. 2¼h.p. 2-strokes, 3½h.p. sports, 4¼h.p. and 7h.p. combinations in stock. Free delivery to your door. Write for catalogue, or call for demonstration run. Remember the James is made throughout in a perfect factory, hence a perfect design.—Whitby's James Service Depot, 7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [3377

Spare Parts:

JAMES Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5079

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9771

J.E.S.

J.E.S. Lightweight, smart little machine; 8 guineas.—67, Fernlea Rd., Balham. [3517

J.E.S. Lightweights; place your order with the man on the spot.—Gibb, Gloucester. [7546

Kenneth.

KENNETH 2¾h.p. Albion, 2-speed gear, spares all new; £40.—91, Dugdale Rd., Radford, Coventry. [2752

Kingsbury.

KINGSBURY 1921 2¾h.p., 2-speed, all chain, good condition; 33 guineas.—Lewis, 46, Bellevue Rd., Salisbury. [1508

KINGSBURY 1920 2¾h.p., 2-stroke, 2-speed, all-chain, electric lighting, pillion, small mileage; 33 guineas.—M., 45, Nightingale Lane, Hornsey, N.8. [3223

Lea-Francis.

LEA-FRANCIS Combination, dynamo lighting, a bargain, Terry's spring saddle; £75.—Ross, 86, High Rd., Lee. [3235

£55.—Lea-Francis 1920 Combination, 3½h.p. M.A.G. engine, fully equipped, beautiful condition; bargain.—198, Great Portland St., W. [2679

£45.—1920 Lea-Francis, 3½h.p. twin M.A.G. engine, clutch, kick-start, perfect condition.—Premier Motor Co., Aston Rd., Birmingham. [3573

1919-20 Lea-Francis 3½h.p. twin J.A.P., 2-speed, clutch, and kick-starter, speedometer, etc., tax paid, in new condition; £45.—Bartletts, 93, Gt. Portland St. [2988

1920 Lea-Francis Combination, clutch, kick-starter, Easting windscreen, lamps, speedometer, Tan-Sad, perfect order; sacrifice, £60.—18, Hallswelle Rd., Golders Green. [3292

Levis.

PREMIER Motor Co. for 1922 Levis.

BARGAINS in Showroom-soiled 1922 Models.—2½h.p. Popular, single gear, £40; Model S, 2-speed, clutch, kick-start, £51; Model G2, 247 c.c., 2-speed, c. and k.s., £54; write for stocktaking clearance sale list; deferred payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [3574

LEVIS 1921, 2-speed, clutch; £38.—53, Killieser Av., Streatham Hill. [2864

GIBB, Gloucester, Sole District Agent for Levis; immediate delivery from stock. [7545

LEVIS, 1920 engine, fully equipped, tax paid; £18.—284, St. James Rd., Old Kent Rd., S.E.1. [3498

£24.—Exceptionally nice 2½h.p. Levis, 2 speeds, perfect condition.—King, Egrove Farm, Oxford. [3348

1920 Levis Popular, in splendid condition, insured till April, lamp, spare belt; £26.—27, Brecknock Rd., N.7. [2703

1919 Levis Popular, new belt, new tyre, perfect condition; £29, or near offer.—32, Binden Rd., Shepherds Bush. [3154

1918 Levis Popular, fully equipped; bargain, £20.—113, High St., Clapham. 'Phone: Latchmere 4290. [3266

MOTOR CYCLES FOR SALE.

Levis.

17 Guineas.—Levis, late model, fully equipped, good sound little 'bus; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [3219

2¾h.p. Levis (? 1920), fully equipped, excellent condition; £24 for immediate sale.—"Charlton," Cambridge Park, Wanstead. [2671

BRAND new 1922 Levis, 2-speed, clutch model, shop-soiled, unused, lamps, tools, etc.; £58.—Knights, 126, Upper Tooting Rd., S.W.17. [0778

LEVIS 1919, Model E, 2½h.p., 2-speed, all-chain, fast, excellent condition; offers.—5, Orchard Cottages, Bedonwell, Belvedere, Kent. [3086

LEVIS 1922 2¼h.p. model, 2-stroke, the popular favourite, brand new; special showroom-soiled price, £45.—The Morris Garages, Oxford. [2552

£38.—1922 Levis Popular, tax paid, Lucas horn, only done 50 miles, carriage paid to any address. —Premier Motor Co., Aston Rd., Birmingham. [3575

1922 Levis, 2 speeds, Sturmey, hand clutch, brand new, shop-soiled; accept 10% off list.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3454

£18.—Levis Popular, all on, tax paid, perfectly sound, a splendid little 'bus.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 322. [3397

LEVIS New 1922 Models.—2¼h.p. Popular, £48; 2¼h.p., 2-speed and clutch, £58; Levis sports model, £51; all models supplied on easy terms and exchange, one-fifth down.—Wauchope's, 9, Shoe Lane, London. [3440

LEVIS 1922 2¼h.p., Model G., winner of the lightweight class, 1921 and 1922 I.O.M. Tourist Trophy, the 1922 French Grand Prix, and the 1922 Belgian Grand Prix, brand new; special showroom-soiled price, £55.—The Morris Garages, Oxford. [2551

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

L.M.C.

L.M.C. Combination, all on, just done tour in North Devon, 200 miles a day; £65, or near.—21, Tyrrell Rd., East Dulwich, S.E. [3051

Martinsyde.

ROBERTSON'S Motors, Ltd., are the London Martinsyde Service Agents; trial runs arranged; spares stocked.—157b, Gt. Portland St., W.1. [5929

MARTINSYDE 1921 Combination, hood, screen, never ridden, perfect; must be sold, offers over £100; letters.—Thomas, 373, Kennington Rd., S.E. [2862

MARTINSYDE Combination, 1922, 6h.p., 3-speed gear, splendid hill-climber, brand new; special showroom-soiled price, £140.—The Morris Garages, Oxford. [2556

LET your Motto be: "A Martinsyde for me." Nothing better made, finest value for money; cash, exchange, or deferred payments.—In stock at the Service Depot, Marlborough Motor Works (The Motor House), 20, Finchley Rd., N.W.8. [9583

UNIQUE OFFER.—Special model, 1921 6h.p. Martinsyde and sidecar, equipped with hood, screen, and special storm apron, Lucas dynamo lighting and interior sidecar lamp, in perfect condition, plating and enamel as new, two spare tubes and other accessories; very little used; £135 or nearest offer.—Bennett, 1, Hunter St., W.C.2. [2761

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones' Garage, The Broadway, Muswell Hill, London N.10. [0918

Matchless.

MATCHLESS, all models; free delivery to any address.—Gibb, Northgate, Gloucester. [7548

1921 Matchless Spring Frame Combination, fully equipped, tax paid; £92/10.—Kays, 8, Bond St., Ealing. [2903

MATCHLESS Victory Combination, newly renovated, standard colours; £84.—7, Exhibition Rd., S.W.7. [3590

1919 Matchless Combination, fully equipped, Easting, insured, splendid throughout; £68.—136, Lambeth Walk, S.E. [3092

1921 Matchless Magdyno Combination, spare wheel, leg shields, speedometer, screen, hood; £100.—44, Longfield St., Wandsworth, S.W.18. [3151

MATCHLESS Combination, 1916, re-enamelled, plated, M.A.G. engine, any trial; £74, or offer. —281, Portland Rd., South Norwood. [3083

1922 Matchless, all models, immediate delivery; cash exchange or easy terms.—The Agent, Sam. E. Clapham. 'Phone: Greenwich 751. Also for

A.J.S., Beardmore Connaught, Chater-Lea, Douglas, Edmund, Economic, F.N., Harley, Hobart, Hazlewood, James, Levis, Monopole, McKenzie, P. and M., Royal Ruby, Rex-Acme, Rudge-Raleigh, etc. All makes light cars.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4933

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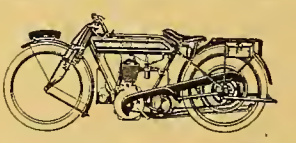

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1922 Matchless Combination, Model H, as new, Lucas accessories, lovely lot; £110.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3199

MATCHLESS 1922, Model H Combination, slightly shop-soiled, list price, £170; accept £150 cash.—The Layton Garages, 30, Holywell St., Oxford. [3541

MATCHLESS Combination 6h.p., coachbuilt, screen, engine guaranteed perfect; seen any time; £45.—Haverson, 3, Turtle Rd., Garratt Lane, S.W.17. [2455

£130 Buys the Latest Matchless Outfit, cash or payments; also we have 1921 and 1922 second-hand bargains.—Knight's, 126, Upper Tooting Rd., S.W.17. [0759

MATCHLESS 1920, Magdynamo model, not done 2,000 miles, hood, spare wheel, speedometer, £115; also similar model, £110.—Ross, 86, High Rd., Lee. [3237

MATCHLESS Touring Model J Combination at 1923 price (£130); exchanges, deferred; finest value on market.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [9167

TASSELL, 1a, Bloomfield Rd., Plumstead, for Matchless Combination; deferred payments; spares of all dates; trade supplied where agents not appointed. [2241

1922 Matchless H2, dynamo lighting, electric horn, front band brake, mechanical pump, spare wheel unused; £135; week-end London.—Box 3779, c/o *The Motor Cycle.* [3247

MATCHLESS Combination, July, 1922, spare wheel, speedometer, mileage 250, health reasons, guaranteed perfect; sacrifice £145.—White, Hayes St., Smallthorne, Stoke-on-Trent. [2588

£65.—Matchless combination, 7-9h.p. M.A.G. engine, 3 speeds, countershaft, double sidecar, beautiful order; exchanges; ride 50 miles to purchaser.—406, York Rd., Wandsworth. [2939

MATCHLESS.—The advanced 1923 Model J Combination, the World's Best, at £130, complete immediate delivery. Cash or easy terms.—Sam E. Clapham (Motors), Greenwich. [2278

MATCHLESS 1922 Combination, Magdyno, spare wheel, legshields, few spares, excellent condition, insurance to April, 1923; price £140.—West, Edington House, Sticklepath, near Okehampton. [2681

1921, registered March, 1922, Matchless H Combination, M.A.G., Magdyno, spare wheel, Royal Easting, legshields, step, new condition; £160.—Standish, 42, Highbury Grove, N.5. After 7. [2479

MATCHLESS Combination, 1921, H2, M.A.G., Lucas lamps, hood, screen, side screens, spare wheel, speedometer, legshields, car step, Tan-Sad, equal to new; £130.—125, Ancona Rd., Plumstead, S.E. [3282

MATCHLESS 2-seater Combination, August, 1921, mileage 3,000, hood, leg shields, sidecar step, condition warranted perfect; £125, or near offer; Portsmouth district.—Box 3789, c/o *The Motor Cycle.* [2797

MATCHLESS 1920, Model H, J.A.P. engine, Lucas lamps, horn, legshields, sidecar step, speedometer, spare wheel, good condition, mileage 7,000; £105.—Orton, Framlingham Lodge, Libertus Rd., Cheltenham. [2625

MATCHLESS Combination, 8B model, M.A.G. engine, electric lighting, child's seat, excellent mechanical order, any trial; £63; or exchange lightweight and cash.—Brown, 36, Amberley Rd., Palmers Green. [3174

1922 Matchless Sports Combination, fitted spare wheel, speedometer, Lucas lamps, taxed and insured, only 2 months old; cost £165, accept £120.—Hillier, 9, Wallingford Av., North Kensington (7 or 7a 'bus). [2952

MATCHLESS Combination, H2, late 1920, M.A.G., Lucas Magdyno, speedometer, hood, screen, curtains, spare wheel, 2 new tyres, licensed, beautiful condition; bargain, £115.—Milne and Russell, 1, Brighton Rd., Croydon. [2972

29 Guineas.—Matchless C.B. Combination 8h.p., twin, 2-speed, clutch, kick-starter, licensed, equipped, guaranteed mechanically perfect and thoroughly reliable; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [3217

BARGAIN.—Matchless Combination (February, 1921), 8h.p. M.A.G., spring frame, sprung-wheel sidecar, spare wheel, hood, screen; 78 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3415

1922 April Matchless, Magdyno, absolutely fully equipped, cost £220, just overhauled by makers, receipt shown; £165, or near offer; condition guaranteed perfect.—Apply J.B., 25-33, Well St., Hackney, E.9, or 'phone: Dalston 3710 [2813

1922 8h.p. Matchless Combination, Model H2, M.A.G. engine, fully equipped, Magdyno lighting, speedometer, horn, spare wheel and tyre, legshield, luggage grid, sidecar step, hood, hood cover, Tan-Sad, windscreen, etc., front brake, external compression type, tax and insurance paid, perfect condition; great bargain, cost £217, accept £165; seen by appointment.—Apply to H. Gardner, 92, Strone Rd., Forest Gate, E.7. [2457

MOTOR CYCLES FOR SALE.

Matchless.

£65.—Matchless Combination, 7-9h.p., M.A.G., 3-speed, countershaft, dynamo lighting, windscreen, etc., tax paid for year, just overhauled, perfect.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 322. [3396

MATCHLESS 8h.p. Combination, interchangeable detachable wheels, condition, appearance indistinguishable from new, low mileage, expert examination, any trial, guarantee given, fully equipped; photo; sacrifice, £58; no offers.—1, The Nooks, Dorset Rd., Elthan. [3173

LATE 1920 Model H Matchless, spare wheel, Lucas Magdyno lighting, fitted with Matchless patent front band brake, electric horn, legshields, Sanding windscreen, perfect in detail, used week-ends only; £90, or very near offer.—Chemist, 137, Woodlands Rd., Ilford. [1927

1921 Matchless, spring frame, M.A.G., mechanical oiling, 3 new tyres, accessories too numerous to mention, just overhauled by Matchless specialist and 1922 improvements added, Tan-Sad, licensed; £125; guaranteed.—Hardy, 63, Shepherd's Bush Rd., Hammersmith, W.6. [2534

NEW 8h.p. 1922 Matchless Combination, 2-seater model, spring frame, £187; 8h.p. standard model, £170; sports model, £160; easy payments, one-fifth down, remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [3441

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

Spare Parts:

MATCHLESS Spares. Immediate delivery.—Knys, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

McKENZIE, perfect running order; £25.—34, Tillman St., Commercial Rd., E. [2697

McKENZIE Lightweight, new, shop-soiled; £26.—Houchin, 188, High St., Peckham, S.E.15. [2944

McKENZIE, new May, licensed, accessories, perfect; £23.—17, Chatsworth Rd., West Norwood. [3150

McKENZIE, new, demonstration model; £25.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [2476

1922 McKenzie Lightweight, fitted with horn, carrier, and licence; what offers?—M. Austin (Miss), Ashtree House, Andlem, Ches. [2442

McKENZIE Lightweight 1¾h.p., only done 600 miles, perfect order, lamps, horn, carrier, tax paid; £23, no offers.—29, Ackroyd Rd., Honor Oak Park, S.E.23. [2694

Metro.

METRO-TYLER 2¾h.p., 100 miles trial.—Greatrex, Sedgley Rd. West, Tipton. [2521

1920 Metro-Tyler, 2¾h.p. Sports Model, perfect order, tax paid; £27/10.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3453

Minerva.

3½h.p. Minerva, dropped, 2-speed countershaft, taxed; £12.—Fisher, Springwell Rd., Heston, Hounslow. [2921

MINERVA 3½h.p. 2-speed, very powerful; exchange lightweight.—57, Kenbury St., Camberwell, London. [3206

MINERVA 3½h.p., mechanical, V Druids, low sporting, trial, accessories; £9.—Guinchard, 179, York Rd., Camden Rd. [3386

Moto-Reve.

MOTO-REVE 2¾h.p. twin magneto, lightweight; £-0.—158, London Rd., Kingston-on-Thames. [1701

Spare Parts:

MOTO-REVE Spares for all models, also repairs, overhauls, gears, new engines.—Motor Supply Co., Sole Concessionaires, 223a, High St., Lewisham, S.E. [8321

Ner-a-Car.

NER-A-CAR, November last, as new; £50, offers.—Waterloo House, North Cheam. [2688

NER-A-CAR, 1921, under 1,000 miles, splendid condition, faultless; £42/10.—S. G. Kimber, Highfield, Southampton. [2888

NER-A-CAR, new March, 1922, perfect condition, kick-starter, electric lamps, horn, 2¼h.p.; £50.—Nurse Hewlett, Keighley. [2473

NER-A-CARS.—The 1922 wonder, 2¼h.p., 2-stroke variable gear, electric and gas lighting, ready for road; £65; limited immediate deliveries.—South-Eastern Garage, Herne Hill, S.E.24. [3113

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OUR NEW AUTUMN ILLUSTRATED LIST, AND PATTERN BUNCH OF CLOTHS, TOGETHER WITH SELF-MEASUREMENT FORM, WILL BE SENT ON TO YOU POST FREE, AND WITHOUT ANY OBLIGATION, ON RECEIPT OF YOUR NAME AND ADDRESS.

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MOTOR CYCLE SUIT (Fig. 1)

With Plaited Leather Belt.

SPECIFICATION

MADE from hard wearing double texture material with an interlining of Rubber.

Double Breasted Jacket, with all-round plaited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves.

All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof.

Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the trousers to be pulled off in a moment.

SUIT COMPLETE 35/-

Jacket only 25/-

NO EXTRA CHARGE FOR CARRIAGE

Waterproof Trench Coat 25/-

(Fig. 2.) Fawn material, rubber lined, wind cuffs, guaranteed waterproof.

Fig 2.

SEAT-LESS Trousers Fawn double texture material, rubber interlined, wind gusset & clasp fasteners. All sizes. Guaranteed Waterproof.

18/- per pair.

WATERPROOF OVERALLS.

Double texture material, clasp fasteners, perfectly waterproof.

per **12/6** pair

THESE GARMENTS ARE NEWLY MADE FROM FRESHLY PROOFED MATERIAL BY EXPERIENCED WORKMEN AND NOT HALF-PERISHED CLEARANCE LINES OR W.D. SURPLUS

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1922 2¼h.p. New Hudson Model De Luxe, fully equipped pillion; £48, or nearest; private owner.—38, Lower Rd., Rotherhithe. [2986

5-6h.p. Twin New Hudson Combination, lamps, fully equipped, tax paid, chain-cum-belt, 3-speed, clutch and kick-start; bargain, £42/10.

1919-20 4h.p. New Hudson Combination, 3-speed, clutch and kick-start, mechanically as new, special child's seat attachment for sidecar, Easting, speedometer, lamps, tax paid; bargain, £68/10.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [2718

NEW HUDSON 3½h.p., 3-speed combination, very good condition; £28.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3360

6h.p. Hudson Combination, 1920, Easting, licensed, recently overhauled, excellent appearance; £65.—Dunham, 44, Chapel St., Luton. [3046

NEW HUDSON 1915 6h.p. Combination, hood, screen, fully equipped, bargain; £45; exchange.—Ross, 5, Hall Rd., East Ham. [2748

NEW HUDSON Combination, J.A.P. 6h.p., Bosch magneto, Grade pulley, 1922 K.S., Druids front forks; £45.—69, Elizabeth St., S.W. [2503

NEW HUDSON Motor Cycles.—London Depot, 45, Grays Inn Rd., London, W.C.2. All models in stock. Easy payments. Spares. Trade supplied. [0851

NEW HUDSON Combination, 6h.p., Sturmey countershaft, tax paid, lamps, Easting windscreen; exchange for good solo.—174, Avenue Rd., Acton, W.3. [3089

1922 2¼h.p. Hudson de Luxe, £63; one shop-soiled de luxe, £55; also Popular model, £50.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0911

1920 New Hudson 4h.p. Combination, new condition, speedometer, windscreen, lamps, etc., tax paid; £50; bargain.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3197

New Imperial.

WAUCHOPE'S, 9, Shoe Lane, London.—New Imperial-Jap, 1917, 2-speed gear; £35. [3443

1922 New Imperial, new, unregistered, 2¾h.p., 3-speed; £52/10 cash.—391, King St., Hammersmith. [3260

LATE New Imperial, 2¾ J.A.P., 2-speed, very smart, equipped; 25 guineas.—67, Fernlea Rd., Balham. [3519

NEW IMPERIAL-J.A.P. 2¾h.p., 2-speed, lamps, perfect.—Boaks, Crossways, Goatburst Common, Sevenoaks. [2537

1920 New Imperial Combination, all accessories, electric lighting; £90 or offer.—134, Wanstead Park Av., Wanstead. [3494

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

NEW IMPERIAL Combination, 8h.p., 1920, fully equipped, perfect; any trial; cheap.—40, Thomas St., Limehouse, E.14. [2764

£28.—1920 New Imperial, 2½h.p. J.A.P., 2-speed, horn, pump, and tools, tax paid.—Smith's, 86, Chalk Farm Rd., N.W.3. [3106

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. New Imperial-Jap, 1922, No. 3, £73; No. 2, £60; easy terms and exchange. [3444

1919 2¾h.p. New Imperial, 2-speed, clutch, kick-start, lamps, horn, little used; £28.—99, Cannon Hill Lane, Merton. [3056

NEW IMPERIAL 8h.p. Combination, 1919, perfect order, all on; exchange Triumph.—20, Woodsome Rd., Highgate, N.W.5. [3499

£35.—1920 New Imperial, 2½h.p. J.A.P., 2-speed, pump and tools, tax paid, as new.—Smith's, 86, Chalk Farm Rd., N.W.3. [3107

1920 New Imperial, 2-speed, clutch, kick start, fully equipped, tax paid, Binks carburetter; £35.—Edwards, 50, Harrington Rd., South Kensington. [9134

£29/10.—1916 2¾h.p. New Imperial-Jap, 2-speed, lamps, horn, etc., brand new tyres, perfect throughout, any trial; offers.—Barnes, 83c, Trinity Rd., Balham, S.W. [2637

NEW IMPERIAL 1914, 2¾h.p. J.A.P. engine, Bosch magneto, 2-speed gear, all parts of engine new, new tyres, Tan-Sad, very fast; £30.—T. Crooks, 26, Gresham Rd., Willesden. [3468

NEW IMPERIAL 2¾h.p., model No. 3, 3-speed, kick-start, all-chain drive; £73; immediate delivery; cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [3315

NEW IMPERIAL-J.A.P. 1920 2¾h.p., 2-speed, clutch and kick-starter, excellent condition, fully equipped and tax paid; 30 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2994

1922 3h.p. New Imperial, 3-speed, kick-start, dynamo lighting, Bonniksen speedometer, cost £100 March; sell £55; mileage 800.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [3054

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New Imperial.

1921 New Imperial Combination, 8h.p., fitted with electric lighting, Easting windscreen, fully equipped, tax paid, perfect condition; 85 guineas.—Edwards and Co., 101, Great Portland St., W.1. [3565

NEW IMPERIAL 8h.p. Combination, 1919-20, D.A. lighting, legshields, speedometer, Easting screen, tools, dickey seat, sidecar and Tan-Sad, splendid condition; £100.—Henden, 384, Garratt Lane, Earlsfield. [2459

AT Edwards'.—1922 3h.p. New Imperial, Model 3, all-chain drive, kick-starter and clutch, Maglita electric lighting equipment, horn, tax paid, as new throughout; 60 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2225

1922 New Imperial, excellent condition, special super sports, 8h.p., with Grindlay sports sidecar, made and tuned specially by J.A.P.'s for the 200 miles sidecar race, dynamo lighting, mileage 300, does 65 m.p.h.; cost £212; will accept £145 cash.—198, King St., Hammersmith. 'Phone: Hammersmith 2474. [3188

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [0855

Norton.

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

8h.p. Norton-Jap Combination; £45.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [3385

NORTON 1921 16H, O'Donovan tuned, 75 m.p.h.; bargain, 75 gns.—Clark, 7, Exhibition Rd., S.W.7. [9168

NORTON, 1917, exceptional order, Philipson, full accessories, tax paid; £50.—Belle Vue Garage, Bagshot. [2647

1921 Norton 4h.p. and Sidecar, all on, oversize tyres; offers over £80.—Burr, 49, Mildred Av., Watford. [3097

1922 Norton, new, perfect, lamp, horn, tax and insurance paid; £88, or near offer.—Jepson, Builder, Spalding. [3192

1920 Norton T.T. 3½h.p., Philipson pulley, speedometer, has exceeded 75 m.p.h.; £50.—Bartletts, 93, Gt. Portland St. [3001

NORTON 16H, 3-speed, K.S., 1921, as new, speedometer, lamps, taxed; £75.—5, Terrace Garage, Turnham Green Terrace, Chiswick. [2254

NORTON 16H, 1922, new, unregistered, oversize tyres, reasonable, for cash or exchange anything.—391, King St., Hammersmith. [3259

1920 3½h.p. Norton 16H, 3-speed, very fast, absolutely like new, perfect condition; sacrifice, £60.—Bates, 19, Albany Rd., Coventry. [3582

NORTON, 1920, Philipson, Cowey speedometer, lamps, horn, splendid condition; £50.—Write Pierce, 11, Milman Rd., Queen's Park, N.W. [2451

NORTON 1922 3½h.p. model, 16H, brand new, soiled only, list price, £115; accept £90 cash.—The Layton Garages, 30, Holywell St., Oxford. [3533

NORTON 1922 motor cycles; special liberal exchange quotations to reduce our stock; write us quickly.—Halifax Motor Exchange, Horton St., Halifax. [3404

DAN GUY, Weymouth.—Big Four Norton, sporting sidecar, delivered from works 3 weeks since, absolutely as new in every way, tax paid; £110. [0934

NORTON, 1921 model, 16H, 3-speed, clutch, kick-starter, electric lighting, very little used; bargain, £70.—The Layton Garages, 30, Holywell St., Oxford. [2245

1921 3½h.p. Norton 16H model, with sporting Montgomery sidecar or separately, the whole in first-class order; what offers?—B. Davies, Buckuell, Salop. [2667

75 M.P.H. 3½h.p. 3-speed Norton, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £75.—77, St. Mary's Rd., Sheffield. [3587

NORTON.—New all 1922 models supplied; Big Four and de Luxe sidecar, £153; also 3½h.p., 3-speed, all-chain drive, £115; exchanges and easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [3445

1922 guaranteed Big Four Norton Combination, Canoelet sporting sidecar, 3-speed, clutch, kick-start, lamps, horn, speedometer, taxed, etc., perfect; £104.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3030

1922 Norton 16H, specially tuned (equal B.S.), Ricardo, close range gears, lamps, horn, tools, many spares, low mileage, splendid condition inside and out; nearest 95 guineas.—Apply, Box 3715, c/o *The Motor Cycle*. (D) [2544

1922 16H Norton (Whitsun), close ratio gears, aluminium piston, Hassall tuned, but unused, in any competition, very economical, fast or docile, and in perfect condition, insurance, Klaxon and spare inner tube, but neither kick-starter nor lamps, owner must sell one of two machines; £80 for quick sale.—Wiltshire, Critchel, Highdown Avenue, Worthing. [2594

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UNDER ALL CONDITIONS.

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Norton.

STOCKTAKING Clearance Sale.—Some wonderful bargains in new slightly showroom-soiled 1922 Nortons; 16H 3½h.p., 3-speed, £95; No. 1 Big Four, 3-speed, £99; Montgomery Sporting sidecar, £20; De Luxe sidecar, £50; carry maker's full guarantee; easy payments 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [2274

FOR the Speed Merchant.—The actual 3½h.p. 3-speed Norton, used in 1922 T.T. race, internal expanding front brake, separate oil tank, etc., appearance as new, £80; also spare machine taken over for 1922 T.T. race, only slightly used, as new throughout, £85; cash offers only for these two exceptional bargains.—Premier Motor Co., Aston Rd., Birmingham. [3576

A LOVELY Combination in every way.—1921 3-speed Norton, 3½h.p. B.R.S. engine, Big-Four tank, Magdyno lighting set all round, C.A.V. electric horn, polished aluminium discs, Bonniksen speedometer, handle-bar watch, muffs, Best and Lloyd's mechanical lubrication, hand and foot clutch, semi-T.T. bars, etc., etc., Montgomery latest sporting sidecar, windscreen, all just as new, any trial; sacrifice, price £125; cost £245.—G. W. Green, Millgate, Thirsk, Yorkshire. [2908

N.S.U.

£11.—3½h.p. N.S.U., 2 speeds, clutch, C.A.V. magneto, m.o.v.—King, Egrove Farm, Oxford. [3349

N.U.T.

1922 N.U.T. (April) 3½h.p., chain-cum-belt, fully equipped, insurance, mileage 2,500, condition perfect; £90.—Carswell, 14, Tenters St., Bishop Auckland. [2573

O.K.

1919 O.K.-Jap, 2-speed,, pillion, accessories, tax; £35.—156, Henniker Rd., Stratford. [2626

O.K. 1920, excellent condition, fully equipped; £25, near offer.—5, Frederica Rd., Chingford. [3210

O.K.-VILLIERS 1921, 2-speed, clutch, kick-starter, taxed, splendid condition, trial; £30.—7, Cowdrey Rd., Wimbledon. [3149

O.K. 1920 2¾h.p. Cycle, only run 2,000 miles, excellent order; sacrifice, 20 guineas.—Edmunds, Kenilworth Court, Eastbourne. [2684

1921 O.K.-Villiers, 2-speed, clutch, kick-start, lamps, horn, licensed, guaranteed; £36.—Beesley, 40, Warley Rd., Blackpool. [3074

AT Edwards'.—1922 O.K., clutch, fully equipped, as new; 34 gns. Deferred payments and exchanges.—101, Great Portland St. W.1 [2224

O.K. 2-stroke, nearly new, ridden few miles only, fully equipped, tax paid; sacrifice £33; owner going abroad.—83, Penshurst Rd., Thornton Heath, S.E. [3190

1921 O.K. Motor Cycle, 3h.p. Combination, accessories, electric lighting set, splendid condition, perfect running, trial willingly, after 7; bargain, £55, or offer.—424, London Rd., Thornton Heath. [2624

Omega.

OMEGA 2¾h.p.; bargain, £18; push bike taken part; offers.—Bevis, 29, Queen's Rd., Basingstoke. [2661

1921 Omega-Villiers 2½h.p., 2-speed, lamps, speedometer, etc., as new; £35.—Bartletts, 93, Gt. Portland St. [3003

OMEGA Model No. 3, shop-soiled only, at special price £59/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [3128

OMEGA Model 2B, shop-soiled only, at special price of £58/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [3127

1922 Omega-Jap 2¾h.p., Sturmey 2-speed, clutch, kick-start, new, shop-soiled; £58.—Bartletts, 93, Gt. Portland St. [3004

OMEGA 350 c.c. J.A.P., late 1920, 2-speed, very fast, splendid condition, trial; £30.—7, Cowdrey Rd., Wimbledon. [3150

1922 Omega 3h.p., duplex frame, 3-speed, clutch, kick-start, new, shop-soiled; to clear £66.—Bartletts, 93, Gt. Portland St. [3005

OMEGA-J.A.P., late 1921, 2¾h.p., 4-stroke, 2-speed, clutch, kick-start, tyres as new, not done 1,000 miles; real bargain, £35.—Langford, Wells St., Scunthorpe. [2589

1921 2¾h.p. Omega-Jap, 2-speed Sturmey-Archer, clutch and kick-start, equipped, etc.; £42/10, bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [2717

P. and M.

P. and M. 1913 Combination, bargain; a trial given; £34.—Ross, 86, High Rd., Lee. [3239

P. and M. Combination, 1918, not used this year; £35.—76, Dalling Rd., Hammersmith. [3182

1919 P. and M., 2-speed, kick-start, tax paid, equipped; £38.—Kilmister, Welby, Grantham. [2453

1918 P. and M. Combination, good condition, must sell; £35.—25, Ravensbourne Rd., Catford. [3287

MOTOR CYCLES FOR SALE.

Triumph

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

1919 Triumph, Model H, expended £14 renovation; best offer over 42 guineas.—132, Darbishire Rd., Fleetwood. [2508

TRIUMPH 1918 Combination, Swan sporting, Easting, lamps, horn; £85.—11, Kilmartin Avenue, Norbury, S.W.16. [3148

1920 Model H Triumph, equipped, insured, excellent condition, any trial; £80.—Burrows, College Av., Maidenhead. [2436

TRIUMPH 4h.p., countershaft model; £36 for quick sale; perfect condition.—645, Garratt Lane, Earlsfield, S.W.18. [3179

BRAND new Triumph, ex Irish M.T. stores, not renovated, unregistered; £50.—120, Sutherland Rd., W. Croydon. [3251

1922 Triumph, £115 model, chain drive, quite new, never been ridden; £95.—Roberts, 195, Chippinghouse Rd., Sheffield. [2932

TRIUMPH, 1918 Combination, 3-speed Sturmey, all on, taxed, smart outfit; £58. Exchange.—13, Scoresby St., Blackfriars. [3500

TRIUMPH 4h.p. 3-speed Countershaft Combination, accessories; £60.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [3362

1919 Triumph Combination, fully equipped, excellent condition; £55.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [3391

TRIUMPH-GLORIA, 1921, perfect condition, speedometer, Easting, electric lighting; £95.—"Homewood," Loose, Maidstone. [2931

TRIUMPH, Middleton £30 sidecar, Easting, nearly new; £68; guaranteed.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [2770

TRIUMPH-GLORIA Combination, late model, tax paid, fully equipped; bargain, £75, cash or extended payments.—Below.

LATE 1919 Countershaft Triumph, splendid condition; £60, cash or extended payments.—Below.

COUNTERSHAFT Triumph, renovated as new; £55, cash or extended payments.—Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [3483

1921 Triumph, chain, belt, T.T. bars, Bonniksen, Lucas lamps, horn, fully licensed, splendid condition; £77.—Yeovil Motor Mart. [2890

TRIUMPH-GLORIA, 1920, speedometer, legshields, spring saddle, ditto footboards, electric; £80.—18, New Chesterfield St., W.1. [2796

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3589

1921 Triumph 2-stroke, 2-speed, Ace discs, lamps, horn, perfect condition; 38 gns.—55, Queen's Gate Mews, Gloucester Rd., S.W.7. [1929

1920 4h.p. Triumph 3-speed Combination, sports model sidecar, all absolutely like new; £100.—Heath, 4, Northern Rd., Aylesbury. [2557

SEVERAL second-hand Trimphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56 Termious Rd., Eastbourne. [1181

TRIUMPH Combination, countershaft, good condition, spares, Easting screen; £75, or near offer. 121, Maryland Rd., Wood Green. [2454

TRIUMPH 4h.p., 1919, 3-speed, clutch and kick-start, speedometer, fully equipped; £60.—Stanridge, "Pipsden," Hawkhurst, Kent. [2950

ROBERTSON'S Motors, Ltd.—1922 chain drive Triumph combination, tax paid, all accessories; 132.—157b, Gt. Portland St., W.1. [5933

TRIUMPH 4h.p., new last year, 3-speed, clutch, kick-starter, absolutely perfect condition; offers. Fisher, 15, Flamsted Av., Wembley. [2487

£55.—1918 Triumph, countershaft, Dunlops, one new, all accessories, tax paid, any trial, perfect. 1, Norwood Rd., Herne Hill, S.E.24. [3111

TRIUMPH 4h.p., 1921 model, not ridden 4,000 miles, perfect condition; sacrifice, £70; trial.—Burbridge, Weare, Axbridge, Somerset. [2448

1918 Triumph Combination, Montgomery Sports sidecar, new, nicely equipped and guaranteed; 4 guineas.—67, Fernlea Rd., Balham. [3522

TRIUMPH, 1912, clutch model, new tyres, practically new engine, all on; £27, bargain.—Butterworth's Garage, Mill Lane, Brixton Hill. [3330

£55.—Triumph Combination, 1916, new tyres, electric light, accessories, perfect condition, insurance paid 1923.—Dove, 5, Carter St., Walworth, S.E. [3477

TRIUMPH 4h.p. countershaft, very little used and unscratched, all accessories and fully insured; bargain, £90.—Smith, High Rd., Goodmayes. [2616

EXCEPTIONAL Offer.—We will accept 10% off list price on the following brand new shop-soiled machines: 1922 Triumph-Ricardo, list £120; also h.p. all-chain model, list price £115.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3456

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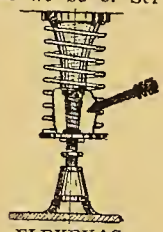

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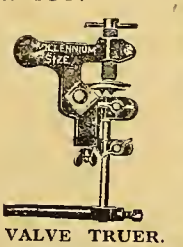

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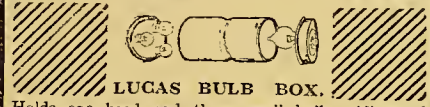

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Clip to fix to wood or metal work .. .. 1/- extra
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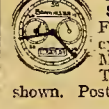

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Phone: HOLBORN 6430 'Grams: ADMITTEDLY LONDON.

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH, 1922, Model H, brand new, shop-soiled only, list price, £105; accept cash, £95.—The Layton Garages, 30, Holywell St., Oxford. [3532

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

1921 Triumph H, Montgomery Sports Sidecar, T.T. bars, copper exhaust; £90.—Thomas, Chipchase, Hadley Wood. 'Phone: Barnet 312. [2785

TRIUMPH model H 1920 countershaft, appearance and condition as new, specially tuned and very fast; £70.—26, Halstead St., Brixton, S.W.9. [2565

TRIUMPH 1922 3½h.p., o.h.v. Ricardo, used few miles only, list price, £120; accept £108 cash.—The Layton Garages, 30, Holywell St., Oxford. [3534

TRIUMPH 1914 4h.p. Combination, sports sidecar, fully equipped, splendid condition, any trial.—Covington, Weston Underwood, Olney, Bucks. [2802

1920 4h.p. Countershaft Triumph, in really good order, fully equipped, taxed to December; £57.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [3048

TRIUMPH-RICARDO, 1922, as new, all engine parts polished, very smart mount, fully equipped; what offers?—Osmond, Basing Rd., Basingstoke. [2523

TRIUMPH, late 1918, purchased brand new May, 1922 (not renovated), Lucas lamps, licence, accessories; £60; exchanges.—63, Solon Rd., Brixton. [3606

1918 Triumph Combination, splendid condition, licensed, equipped; £58; exchanges.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [3512

TRIUMPH 1922 4h.p. Model H, the old favourite, brand new, with or without sidecar; special showroom-soiled price, £95.—The Morris Garages, Oxford. [2553

£40.—Triumph, 1918, 3-speed, clutch, kick-starter, fully equipped, in perfect order, 5 to pick from.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [3157

ALL Triumph models always in stock; also full range of Triumph Spares. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1180

LATE 1918 Countershaft Triumph, fully equipped, speedometer, Tan-Sad, Showell pump; £52/10, or near; after 7.—7, Franche Court Rd., Tooting, S.W.17. [3221

1914 Triumph, clutch, pedal-start, renovated, new bearings, piston, rims, tyre, Tan-Sad, excellent condition; £30.—Chapman, 15, Edith Grove, Chelsea. [3337

TRIUMPH-GLORIA Combination, 1922, all chain, fully equipped, as new, handsome outfit; £100, or exchange.—5, Terrace Garage, Turnham Green Terrace, Chiswick. [2253

1918 4h.p. Triumph Combination, countershaft model, smart appearance and in perfect condition, any trial; 68 guineas.—14, Norton Folgate, Bishopsgate. [3486

LATE 1918 Triumph Combination, Mills-Fulford sidecar, lamps, horn, Easting, tax paid, in fine condition; £53.—164, Revelstoke Rd., Wimbledon Park, S.W.18. [3071

TRIUMPH.—We have a few shop-soiled models to clear at very tempting reductions; call early; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3530

1920 Countershaft Triumph 4h.p., perfect, smart (original, not renovated), complete accessories, licensed December; 55 guineas.—Fersfield, Westbury Rd., New Maldeo. [2937

TRIUMPH, 4h.p., 1922 Model H, 3 speeds, hand clutch, kick-starter, brand new, slightly shop-soiled; £95.—Eagles and Co., 275, High Street, Acton, London, W. [3422

T.T. Triumph 1913, reconditioned, absolutely perfect; 24 guineas; also a 3-speed combination, 30 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [2991

1920 Triumph Combination, 3-speed, perfect condition, Easting, spares, all accessories, tax paid, insurance; £79.—19, Stockwell Park Crescent, S.W.9. 'Phone: Avenue 2598. [2634

1918 Triumph, countershaft, 3-speed, clutch, kick-start, horn, lamps, licensed, just been thoroughly overhauled; £50; offers.—Howick, Keepers Corner, Burstow, Surrey. [3262

TRIUMPH.—Immediate delivery of all 1922 models; sidecars to suit from £20; write for catalogue and full particulars of easy payments.—P. J. Evans, John Bright St., Birmingham. [3313

1920 4h.p. Triumph Combination, special sidecar, complete lamps, tools, small mileage, genuine; £70; cash or deferred.—Marlborough (The Motor House), 20, Finchley Rd., N.W.8. [9577

£40.—Baby Triumph, late 1919, fully equipped, Clincher tyres, Dunlop belt new, appearance, condition very good, photo, getting Harley.—Weighell, Photographer, Ventnor, Isle of Wight. [2584

1922 Triumph Combination, Easting, luggage grid, speedometer, taxed, few miles only, absolutely unsoiled, genuine bargain; £100.—Ward and Co., 51, Upper Richmond Rd., East Putney. [3506

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MOTOR CYCLES FOR SALE.

Triumph.

LATE 1920 Triumph-Gloria Combination, engine No. 68544, Lucas lamps, horn, speedometer, Easting, practically new; £72.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [3055

TRIUMPH Combination, 4h.p., 1918 (delivered brand new 1920), Canoelet sidecar, Easting, speedometer, lamps, Cowey horn, hand and foot clutch; £70.—M., 5, Richmond Place, Fulham. [2960

84 Guineas, exchange.—1921 countershaft Triumph, smart and comfortable coach sidecar, electric lighting, new condition, any examination.—Seabridge, Hansler Rd., East Dulwich. (Sydenham 2452.) [3550

TRIUMPH Combination, 1918, perfect mechanical condition, lamps, etc.; £55; cash, exchange, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5543. [0066

TRIUMPH Combination sporting, renovated by Triumphs 1920, equipped regardless, electric acetylene, Easting, Watford, legshields, £15 new spares, buying Morgan; £76.—26b, Ingleton St., Brixton. [3496

AT Edwards'.—1922 4h.p. Triumph, Model H, fully equipped, lamps, horn, licensed, indistinguishable from new in every respect; 85 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2226

1922 Triumph, Model H, mileage under 500, equipped Lucas lamp and horn, perfect, £85; 1919 Triumph, Model H, mileage 6,000, equipped as above; perfect bargains.—Sellers, 29, Castle Rd., Keighley. [2840

TRIUMPH 1921 countershaft model, new extra H. Dunlops, new belt, guaranteed perfect mechanically, plating and enamel as new, all on, licence paid; first cheque for £70, or near offer, secures.—Monckton, Balmeny, Marlborough. [3176

1920 4h.p. Triumph Combination, Magdyno, electric horn, hood, windscreen, Best and Lloyd mechanical lubricator, every possible accessory and spares, condition perfect; £90, or offer.—C. A. Blay, 192, Heath Rd., Twickenham. [3372

TRIUMPH, 1921, all chain, complete with lamps, horn, licence, spring footboards, legshields, and very luxurious sidecar fitted with hood and screen and dickey seat, exceptionally fine condition; £105.—The Layton Garages, 30, Holywell St., Oxford. [1137

FULL tax paid, 1922 3½h.p. Triumph-Ricardo, with O.H.V. patent 3-speed gear, spring drive, and multiple plate clutch; left works July this year; done very little mileage, all lamps, speedometer, kneegrips, in absolutely new condition; price to clear £110.—Cordingley and Sons, Haslingden. Tel.: 102. [2614

4h.p. 1921 Triumph, 3-speed clutch and kick start, tax paid, all on, £85; 4h.p. 1919 Triumph Combination, £60; 4h.p. Triumph and sidecar, 1918 model, Sturmey-Archer countershaft 3-speed gear, etc., £65; also 4h.p. 1914 3-speed gear model, with clutch and kick start, £45; easy terms.—Wauchope's, 9, Shoe Lane, London. [3425

TRIUMPHS.—Buy from officially appointed agents. New 1922 4h.p. Combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D., all-chain, £115; Model H, chain-cum-belt, £105; Junior 2¼h.p., £65; second-hand machines taken in exchange, remainder on easy terms; value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Holborn 5777. [3426

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [7661

TRIUMPH Spares per return. Full discount to traders.—Shuker and Son, Authorised Service Agents, Shrewsbury. [8795

COMPLETE stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Parts.—I am the merchant for these. Parts for all models, second-hand and new. By return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [3019

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

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1921 Velocette, 2-speed, licensed, all on; bargain, 40 guineas.—E. G. Millett, 20, Avenue Rd., Frome. [2525

VELOCETTE, 1921, 2¼h.p., 2 speeds, lamps, horn, licence, new tyres; as new. £42/10.—The Layton Garages, 30, Holywell St., Oxford. [1138

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FURTHER Great Reductions in showroom soiled 1922 models. E2, 2-speed, £55; E3, 3-speed £60; EL2, lady's open frame, £58; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra; write for special clearance list.—Premier Motor Co., Aston Rd., Birmingham. [3577

VELOCETTE 1922 2¼h.p., Model E2, shop-soiled only, list price £65; accept £58 cash.—The Layton Garages, 30, Holywell St., Oxford. [3538

Verus.

VERUS-BLACKBURNE 4h.p. 1920 Combination entirely overhauled, reliable, tax paid, insured privately owned; £68.—202, Trinity Rd., S.W.17. [2600

1920-21 Verus-Blackburne, latest Cancelet sporting sidecar, electric lighting, disc wheels, clutch and kick-starter, tax, appearance and tyres almost a new; any trial; 54 guineas, must sell.—122, Lowe Mortlake Rd., Richmond. [9887

Williamson.

WILLIAMSON 10h.p. Combination, guaranteed £65.—Ross, 86, High Rd., Lee, S.E. [3240

WILLIAMSON Combination, 8h.p., Douglas water cooled, 2-speed, clutch; handle-starter, large sidecar, good family machine; £43.—38, Beech Rd. Bournville, Birmingham. [2843

WILLIAMSON, 1921, 8h.p. J.A.P. sports, 3-speed S.A., T.T. bars, long copper exhausts, all-chain drive, only ridden 190 miles, fine appearance, perfect order; £75.—203, Carlton Rd., Worksop. [2446

Wooler.

WOOLER 1920, fully equipped; £33.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [2973

WOOLER 2¾h.p., 1920, lamps, tools, thoroughly overhauled August, 1921, by well-known firm and guaranteed not since used, perfect; trial by appointment; 46 guineas.—Kingscott Studio, 5, New Court, Lincoln's Inn, W.C.2. [2516

Zenith.

'PHONE Regent 205 for your new Zenith.

ALLAN GRUZELIER, 168, Regent St., W.1 specialises in these machines.

WE have in Stock the following Machines:—

8h.p. Super Sports All-chain; £130.

1920 8h.p. Clutch Model Combination, all on; £75.

SPECIALLY Tuned 1922 Chain-driven Bradshaw, winner of numerous firsts, 80 m.p.h.; £120.

WE are Prepared to Undertake Complete Overhauls and Special Tuning for a Reasonable Figure. [3374

ZENITH 1920 Sports model 8h.p., as new; £65.—Ross, 86, High Rd., Lee. [3242

ZENITH 1922, Bradshaw chain, very special; £78.—Clark, 7, Exhibition Rd., S.W.7. [2306

ZENITH-GRADUA, 4h.p. single J.A.P., good condition; nearest £35.—83, Tremaine Rd., Anerley, S.E. [3145

1919 Zenith-A.B.C. Sports; quick sale, £29.—115, High St., Clapham. 'Phone: Latchmere 4290. [3265

ZENITH, 3½h.p. J.A.P. engine, very fast, suit sporting rider; £45.—Jeffery, 35, Derby Rd., Portsmouth. [2859

F.O.C.H. again lead the way.—Zeniths far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [2708

ROBERTSON'S Motors, Ltd. — 1922 shop-soiled Zenith-Bradshaw, Gradua gear; £98.—157b, Gt. Portland St., W.1. [5932

1920 6h.p. Zenith, very little used, perfect condition, fully equipped; £65.—Thomas Batcheller, Highfield, Maidstone. [2044

ZENITH 1918 Sports Combination, first-class condition, guaranteed; £60; no offers.—Fellows, Crescent Rd., Darlaston. [2831

£35.—Zenith 3½h.p., electric light, spare belt, discs, last, insured all to July, 1923.—Hunt, 8, Ebury Bridge Rd., Victoria. (P) [2958

1920 8h.p. Zenith, countershaft, equipped, tax paid, perfect order; 58 guineas.—Edwards and Co., 101, Great Portland St., W.1. [3564

ZENITH 1920 5-6h.p. Sports, fully equipped, taxed, as new; £55; exchange considered.—58, Shepherd's Bush Rd., Hammersmith. [3155

29 Guineas.—4h.p. Zenith-Gradua, countershaft, K.S. and clutch, tax, perfect, must be sold immediate.—33, London Rd., Blackpool. [2890

ZENITH 1920 Sports 8h.p., good condition, spares, discs, licensed, used solo only; £65, offer.—Darlington, Lawnhead, Eccleshall, Staffs. [3035

ZENITH-BRADSHAW, new unused 1922 model, Gradua gear; 75 guineas.—Eagles and Co., 275, High Street, Acton, London, W. [3419

MOTOR CYCLES FOR SALE.

Zenith

ZENITH-GRADUA, June 1921, 5-6h.p., J.A.P., splendidly equipped, 2,800 miles, tax, insurance £100) paid; £78.—28, Lewisham Park, S.E.13. [3595

ZENITH Combination, 8h.p., sporting, countershaft, accessories, new condition, fast; nearest £85.—Stewart, 44, Wellington St., Greenwich. [2465

ZENITH 5-6h.p., Gradua gear, clutch, fully equipped, splendid condition; £32.—Ward, South Western Garage, New Malden, Surrey. [2816

6h.p. Zenith Combination, Swan sidecar, lamps, spares, a sporty outfit in good condition.—Write Bird, 8, Harvard Court, West Hampstead. [1923

ZENITH Combination, Sept., 1921, 8h.p. countershaft, super-sports J.A.P., £85; 1920 ditto, standard J.A.P., £72.—Clark, 7, Exhibition Rd., S.W.7. [2304

ZENITH 8h.p. Sports Combination, 1919; £62 or offer; good order.—Haverstock Hill Garage, 50, Haverstock Hill, N.W.3. Hampstead 6609. [3515

1922 all-chain Super-Sports Zenith, excellent condition, well equipped, £105; combination, £125; might exchange cheap solo.—Marvin, Brooklands Track. [2655

A T Edwards'.—1922 5h.p. Sports Zenith, excellent condition, two months old; 68 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2218

ZENITH-BRADSHAW, 1922, 3½h.p., slightly shop-soiled; 75 guineas, listed £113; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3531

1920 5-6h.p. Sports Zenith, speedometer, Tan-Sad lamps, insurance, all accessories, perfect condition: £68, or near.—68, High Lane, Chorlton-cum-Hardy, Manchester. [2567

ZENITH 2¾h.p. 1921 flat twin Gradua, Ace discs, P. and H. lamps, tax paid, insured April, 1923, splendid condition; £58; after 7 p.m.—69, Culverly Rd., Catford, S.E. [2610

1921 8h.p. Zenith Cancelet Sports Combination, as new throughout, special finish, fully equipped; first £70 secures; great bargain.—53, Chetwynd Rd., Tufnell Park, N.W.5. [2776

1922 shop-soiled 5-6h.p. Countershaft Zenith, £85, to clear; 1922 shop-soiled 3½h.p. Zenith-Bradshaw, £80 to clear.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W.1. [3526

GUARANTEE for three months with 1922 Zenith-Bradshaw, slightly soiled; 79 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3407

1921 5-6h.p. Sports Zenith, fully equipped, many spares, taxed, discs, mileage negligible, as new; my trial; will ride reasonable distance; £75, or offers.—Blacknell, Duke St., Ruabon, N. Wales. [2929

1920 8h.p. Countershaft Zenith Combination, dynamo lighting, Sandum, Easting screen, very smart outfit, only wants seeing; £80; any trial.—98, King St., Hammersmith. 'Phone: 2474. [3183

4h.p. Zenith, Gradua-Jap, just overhauled, fast and powerful, copper exhaust, all accessories, taxed; must sell, cash urgently required, bargain, £30, or nearest offer.—Greymount Bungalow, Prestatyn, Flint. [2480

1921 Zenith 6h.p. Sporting Solo, Gradua, licensed, electric lighting, Klaxon, Bonniksen speedometer, mileage 5,500, new heavy Dunlops, copper lencer, fast; £55; quick sale; contemplating abroad.—Lush, 28, Sylvan Rd., Exeter. [2821

ZENITH Combination, 8h.p., very hot, attractive turnout, clutch, 1922 model, with wonderful radna gear, lamps, speedometer, Tan-Sad, Easting reen, small mileage, carefully driven, absolutely perct condition, cash wanted, all on; £130; write first.—reen, 22, Templars Av., Golders Green. [2458

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

Ladies' Motor Cycles.

LADY'S Hobart, 2¾h.p., 3-speed, clutch, splendid order; £15.—17, Heaton Rd., Mitcham. [2898

3½h.p. New 1922 New Comet, lady's machine, fitted with Comet sidecar; £65; easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [3442

FRANK WHITWORTH (Agent), 139, New St., Birmingham, emphatically recommends special lady's model of famous Ivy, daintiest of all ladies' machines; 62. complete; send for list. [5086

SHOWROOM-SOILED model E.L.2 lady's open frame Velocette, 2-speed, clutch, kick-start; reduced to 58; easy payments, 4% extra; write for stocktaking clearance sale list.—Premier Motor Co., Aston Rd., Birmingham. [3580

Miscellaneous.

WILLIERS 2½h.p. Lightweight, smart machine, new condition, carry 2 anywhere; £14/10.—101, Adelaide Rd., Chalk Farm Tube. [3309

J.A.P. 2¾h.p. Motor Cycle, in splendid condition throughout; accept £10 for quick sale; any trial.—H. Richardson, 2, Kelton Villas, Hawkes Rd., Kingston-on-Thames. [2867

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SPECIFICATION:—

Ends, Walls, &c. Framed 2 in. and 3 in. Swedish timber covered ½ in. tongued and grooved boards.

Roofing. Framed of principals and purlins covered matching and good quality felt.

Windows. As per illustration, glazed 21 oz. glass.

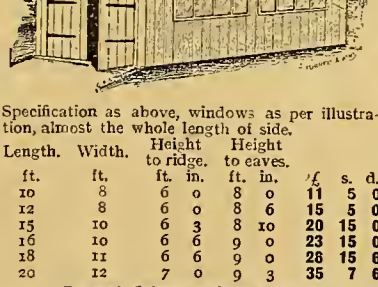
Doors. Double hung on strong garnets, fitted Lock and Tower bolts.

Floor. Strong joists and 1 in. Boards for covering.

General. Houses are sent out in sections, holes are bored and bolts supplied for easy erection on arrival.

Length. ft.	Width. ft.	Height to ridge. ft.	in.	Height to eaves. ft.	in.	£	s.	d.
8	6	7	6	5	3	6	17	6
9	7	8	0	5	6	9	15	0
10	8	8	4	5	9	11	0	0
12	8	8	4	6	0	15	0	0
14	8	8	7	6	3	17	15	0
15	8	8	7	6	3	20	15	0
16	9	8	9	6	4	22	10	0
18	9	8	9	6	4	27	0	0
20	10	9	0	6	6	32	0	0
20	12	9	4	6	9	35	0	0

No. 6 M. MOTOR HOUSE.



Specification as above, windows as per illustration, almost the whole length of side.

Length. ft.	Width. ft.	Height to ridge. ft.	in.	Height to eaves. ft.	in.	£	s.	d.
10	8	6	0	8	0	11	5	0
12	8	6	0	8	6	15	5	0
15	10	6	3	8	10	20	15	0
16	10	6	6	9	0	23	15	0
18	11	6	6	9	0	28	15	6
20	12	7	0	9	3	35	7	6

Do not delay, order at once.

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MATCHLESS Combination 1918 6h.p., M.A.G. engine, countershaft, 3-speed, kick-start, etc., all-chain enclosed; nice lot, £48.—Below.

ROVER Combination, 3-speed, etc., excellent order; £28; coachbuilt sidecar.—Below.

DOUGLAS 2¾h.p., 1916, very fast, excellent appearance; gift at £25.—Below.

TRIUMPH 4h.p. Countershaft, renovated, late 1919 engine, frame, forks, wheels, etc., brand new, electric lighting, splendid mount, indistinguishable from new machine; £55.—Below.

ENFIELD 2-stroke, excellent order and appearance, 2 speeds, fully equipped; £27.—Below.

REX 5-6h.p., 2 speeds, etc., nice coachbuilt sidecar, engine and gears overhauled; gift at £25.—Below.

SHOULD you wish to make an exchange with any of the above machines for your present mount, best terms will be arranged for cash.—Write or 'phone Wimbledon 2041. Address: Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W.18. [3600

JAMES 3½h.p. Twin Sports, fast, £39; P. and M. 3½h.p., £25.—229, Maryvale Rd., Bournville. [3274

WANDSWORTH Motor Exchange.—Finest selection motor cycles, combinations, in London; exchanges; easy terms.

WANDSWORTH.—Cheap machines is our motto. Cheap machines; nothing dear; all cheap.

WANDSWORTH.—Easy terms. Ride while you pay. The only firm to give immediate delivery first deposit; no waiting.

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WANDSWORTH.—Zenith, 3½-4h.p. J.A.P., Gradua gear, lamps, mechanical horn; 32 guineas; easy terms.

WANDSWORTH.—Triumph, sporting type, 3½h.p., dropped frame, runs splendidly; 25 guineas; easy terms.

WANDSWORTH.—O.K., modern lightweight, 2¼ h.p., 2 speeds, nice little machine; 26 guineas; terms.

WANDSWORTH.—1914 Motosacoche 2½h.p., variable gear, lamps, hooter, runs well; 19 guineas; terms.

WANDSWORTH.—F.N. 5-6h.p., 4 cylinders, dropped frame, shaft drive, fast; 19 guineas; easy terms.

WANDSWORTH.—Premier 3½h.p., good tyres, lamps, nice machine, smart; 25 guineas; easy terms.

WANDSWORTH.—Enfield 3h.p. twin, 2 speeds, lamp, chain drive; 29 guineas; easy terms.

WANDSWORTH.—1917 P and M. 3½h.p., 2 speeds, kick, new tyres, opportunity; 36 guineas: terms.

WANDSWORTH.—Henderson 8h.p., 4 cylinders, 2 speeds, lamps, very fast; 39 guineas; easy terms.

WANDSWORTH.—Premier coachbuilt combination, 3½h.p., Grado gear, kick, lamps; 36 guineas; easy terms.

WANDSWORTH.—B.S.A. coachbuilt combination, 4h.p., 3 speeds, kick, chain drive; 49 guineas; terms.

WANDSWORTH.—Rex, fine coachbuilt combination, 5-6h.p. twin J.A.P., 2 speeds; 39 guineas; terms.

WANDSWORTH.—Indian late 7-9h.p., 3 speeds, spring frame, newly enamelled; 49 guineas; terms.

WANDSWORTH.—Indian, 1915, T.T., 7-9h.p., clutch model, lamps, speedometer; 39 guineas; easy terms.

WANDSWORTH.—Indian 1915 7-9h.p., 3 speeds, kick, spring frame, lamps, speedometer; 43 guineas; easy terms.

WANDSWORTH.—Harley-Davidson coachbuilt combination, 7-9h.p., 3 speeds; first cheque 49 guineas; terms.

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WANDSWORTH.—Scott 3¾h.p. twin, 2 speeds, runs well, almost gift; 29 guineas; terms.

WANDSWORTH.—Chater-Lea-Jap, fine coachbuilt combination, 8h.p., 3 speeds; 38 guineas; easy terms.

WANDSWORTH.—Lists free.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town-Station). 'Phone: Latchmere 4686. [3103

F.O.C.H. for new and second-hand cycles, cars, etc.; bargains; cash or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube). [2711

3½h.p. Motor Cycle, low frame, enamelling and plating new, cheap; Motor Saddle 7s.; B. and B Carburetter, complete, 10s.—22, Hallilford St., Essex Rd., Islington. [2773

MOTOR CYCLES FOR SALE.
Miscellaneous.

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash; inspection cordially invited. 'Phone: Holborn 5777. [3428

BLACKPOOL Bargains.—Shop-soiled 1922 Rudges, Ariels, New Imperials, Royal Rubys, Bradburys, Martinsyde; reduced prices; exchanges.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone 1451.

BLACKPOOL Bargains.—3½h.p. Triumph, £16/10/6; Triumph, 3-speed, £19/10/6.—Booth's Motories.

BLACKPOOL Bargains.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Humber, £19/10/6; 3½h.p. Premier, £24/10/6; 5h.p. Rudge 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed O.K., £16/10/6; 3½h.p. Singer, 2-speed, £24/10/6; 2-speed P. & M., £19/19/6; another, £35/10/6; N.S.U. Lightweight, £11/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Rudge, I.O.M. model, £45/10/6; another, Dynamo Lighting, £57/10/6; 4h.p. Douglas, £55/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed Douglas, £19/10/6; 2-speed Scott, £19/19/6; 1920 Rudge, 3-speed, kick start, £52/10/6; 1921 Allon, £32/10/6; 2-speed Connaught, £25/10/6; 2-speed Calthorpe, £25/10/6.—Booth's Motories.

BLACKPOOL Bargains.—9h.p. Indian, £29/10/6; 7h.p Indian, 2-speed, £29/10/6; 3½h.p. New Hudson Combination, £35/10/6; 8h.p. Dot Combination, £65/10/6; 1920 Matchless Combination, £89/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Martinsyde Combination, £85/10/6; Acme Combination, new 1921, spare wheel, £89/10/6; 8h.p. Premier Combination, £47/10/6; Enfield Combination, £39/10/6; 1921 Enfield Lightweight, £39/10/6; 3h.p. Twin Enfield, £37/10/6; 1920 Sun 2-speed, kick start, £35/10/6.—Booth's Motories.

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ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite station, L.S.W. Railway). 'Phone: Latchmere 4388. Terms: No extra with good deposit; immediate delivery; no inquiries; satisfaction guaranteed.

ALLBER.—Douglas 1914 3½h.p., 2-speed, complete with all accessories, tax paid; £29.

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ALLBER.—New Imperial 2¾h.p., 2-speed, complete with all accessories, tax paid, runs splendidly; £26 10s.

ALLBER.—Clyno 1920, 2-stroke, 2 speeds, hand clutch, all accessories, tax paid, as new; £33.

ALLBER.—1916 B.S.A. combination, 4¼h.p., countershaft, Easting, all accessories, in good order, tax paid; £52.

ALLBER.—Chater-Lea-Jap combination, specially built 1921, 5-6h.p., S.-A. 3-speed, clutch, kick start, Ariel coach sidecar, all accessories, tax paid; £50.

ALLBER.—Humber combination, 1914, 3½h.p., 3-speed, clutch, kick start, all accessories, tax paid, good order; £29. [3423

SOUTHPORT.—1919 Invicta-J.A.P. 2¾h.p., 2-speed, 26 guineas; Semi-T.T. Triumph, 1911-12, 23 guineas; 3½h.p. Royal Ruby-Thrasher Combination, 3-speed, electric lighting, 27 guineas; 2¼h.p. F.N., 2-speed, brand new tyres, excellent solo, 22 guineas.—Kents, 417, Lord St., Southport. 'Phone: 1273. [3121

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1921 2¼ h.p. New Hudson, 2-speed	£35	0
1921 2¾ h.p. New Imperial, 2-speed	£43	0
1921 2¾ h.p. New Imperial, 3-speed	£48	0
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— 4-cyl. F.N.	£11	0

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1920 3½ h.p. Lea Francis ...	£90	0
1920 3½ h.p. P. & M.	£50	0
1919 5-6 h.p. Zenith	£55	0
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ARIEL 3½h.p. countershaft, £35; 2¾h.p. Douglas, £30; Wanderer countershift, £28; Popular 2-stroke, £17/10; P. and M., £25; O.K. Precision 3½h.p., £25; Humber 3½h.p., £15.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [2976

JONES' Garage, Broadway, Muswell Hill, N.10, this week offer a few special machines at prices to suit all. Big list free. Easy payments. On approval against cash. 1916 Douglas 2¾h.p., 2-speed, equipped, £25; 1913 Premier 3½h.p., 2-speed, equipped, £22/10; 1915 New Ryder-Villiers, 2-speed, equipped, £25; 1915 Lea-Francis 3½h.p. twin, 2-speed, equipped, £39; 1917 James 2¼h.p., 2-stroke, 2-speed, equipped, £30; 1921 New Hudson, 2-stroke, 2-speed, equipped, £45; 1922 Royal Enfield, 2-stroke, 2-speed, equipped, £50; 1918 Douglas 4h.p. combination, £55; 1914 B.A.T. 6h.p., combination, 3-speed box, £65; 1913 Matchless 8h.p. combination, £48; 1915 Harley 7-9 h.p. combination, £59/10. All tax paid; guaranteed, and in first-class order. You can see them tested on Muswell Hill, about the worst hill in London; that's a point to consider.—Jones Garage, Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [2431

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HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272. [1519

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

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GIBBONS Cycle Car, perfect mechanical condition, hood, screen; £45.—65, Marlborough Rd., Colliers-wood, Merton, S.W., after 7. [2629

MORGAN-DE-LUXE w.c., J.A.P. 1922 model in stock, colour maroon.—Hall, Morgan Specialist 91, St. Peter's St., St. Albans. [0935

1920 A.V. Monocar, 5h.p. J.A.P., electric lighting, speedometer, just repainted, perfect mechanical condition; £57/10.—Below.

TAMPLIN 1921 2-seater, 8h.p. J.A.P. engine, 3 speeds, full equipment, perfect condition, mileage 300-400, taxed; £72; cash, exchange, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

SEAL Cycle Car, 2-seater, 8h.p. J.A.P., electric lighting, lamps, hood, windscreen, excellent condition; £85.—178, Copsterhill Rd., Oldham. [2437

A.V. Monocar, late 1920, 8-9h.p. J.A.P. engine, just overhauled by manufacturers, disc wheels; £75.—A.V., North Stafford Garage, Stafford. [2468

PRACTICALLY brand new De Luxe G.N., dynamo lighting, spare wheel, only run few miles; £110.—24, Balliol Rd., North Kensington. [3327

8h.p. Premier, good condition, hood, screen, Stepney, lamps, good tyres; £40, or exchange combination.—161, Dalling Rd., Hammersmith. [2591

A.V., fully equipped, registered, condition excellent; sell £50 or exchange solo and cash; evenings.—4, Elm Gardens, Hammersmith. [2967

1915 Victor, fine 2-seater, 8h.p., water-cooled, Twin, 3 speeds, reverse, hood, screen, lamps; 49 guineas; exchange motor cycle; also easy terms.

1921 Carden, nice 2-seater, electric lighting, hood, screen, speedometer; gift, 59 guineas; exchanges, easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4086. [3104

1922 Coventry Premier, fully equipped and taxed; £150; exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3200

GRAND Prix Morgan, water-cooled J.A.P., 1917, discs, excellent running order; £80 for quick sale.—White, 437, West Green Rd., Tottenham. [2758

BELSIZE-BRADSHAW 1922 9h.p. 2-seater, fitted speedometer and licensed, only run 1,600 miles, practically new; £25.—The Morris Garages, Oxford. [2547

SMART Monocar, yellow and black, 5-6h.p. J.A.P., 2-speed, equipped; £40; exchange (cash if necessary) 2½h.p. to 3½h.p. solo.—8, Edmund Rd., Coventry. [2959

WAUCHOPE'S, 9, Shoe Lane, London.—G.N. car, 1921 model, fully equipped, in excellent condition, spare wheel and tyre; £130. 'Phone: Holborn 5777. [3427

HAMILTON Light Car, fully equipped, ready for service; early delivery; £175; write for booklet.—Smith and Co., Ltd., Compton Works, Wickford, Essex. [1517

55 GUINEAS.—Brand new Tamplin 8 h.p. J.A.P., Sturmey 3-speed, smartly equipped, hood; exchanges; evenings.—4, Elm Gardens, Hammersmith. [2968

SEAL 3 wheeler, J.A.P. engine, Sturmey-Archer gears, several improvements and accessories, very little used; £135.—James Garages, Ltd., Church Stretton. [2497

GRAND Prix Morgan, special 10h.p. engine, just repainted and overhauled, electric lighting; £100; apply before 7 p.m.; exchanges.—Snow, Laurel St., Dalston, E.8. [3492

G.N., 1921, dynamo lighting, perfect condition; £125; cash, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

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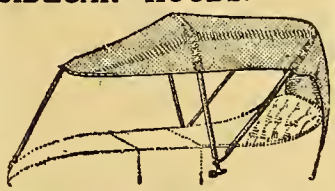

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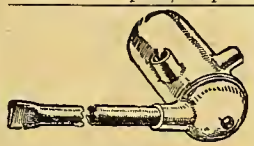

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26×2¼in. ...	12 G	Up to 4¼in.	19/1
26×2¼in. ...	12 G	Up to 6in.	22/1
26×2¼in. ...	12 G	Up to 4¼in.	19/2
26×2½in. ...	12 G	Up to 6in.	22/2
26×2½in. ...	12 G	Up to 6⅝in.	24/2
26×2¼in. ...	10 G	Up to 6in.	23/2
26×2¼in. ...	10 G	Up to 6⅝in.	25/2
28×3in.	12 G	Up to 6in.	23/4
28×3in.	12 G	Up to 6⅝in.	25/4
28×3in.	10 G	Up to 6in.	24/4
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650×65.....	12 G	Up to 6in.	22/11
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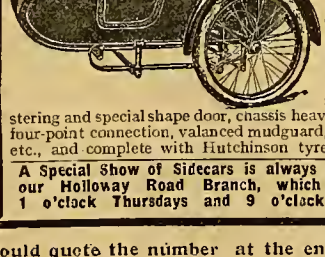

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3-WHEEL Cycle Car Chassis, less engine, £6; 2-seater Crouch 3-wheeler, twin, £15; 2-seater body, small, £3/10; letters only.—H. R. Hall, High Rd., Whetstone, London. [2494

HALIFAX.—10h.p. 4-cyl. Tiny 2-seater car, dynamo lighting, £120; Morgan Grand Prix, water-cooled, overhead valves, £95.—Halifax Motor Exchange, Horton St., Halifax. [3400

LIGHT tubular chassis, fitted with 3-speed and reverse, gear box and differential, 4 wheels and good tyres, only needs engine to complete; £12.—Elleman, Bartestree. [2836

A.B.C. 1921, Regent model, 2-seater, dickey, all accessories, tax paid, as new; exchange Morgan or combination and cash.—Allery, 30, Thornsett Rd., Earlsfield, London, S.W. [3424

3-WHEELER Coventry Premier, better than new, gift, dynamo, spare wheel, etc.; £130, or exchange combination and cash.—James, c/o Bradmores, 482 Harrow Rd., Paddington. [3201

BAYLISS-THOMAS 1922 10h.p. Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; 300 gns.; immediate delivery.—Godfrey's Ltd., 208, Gt. Portland St., London, W.1. [0736

1921 Coventry Premier, dynamo, spare wheel, electric horn, insurance and tax paid, mechanical condition perfect; £117/10, no offers.—Perrin's Motor Garages, Ltd., Southampton. [3181

1921 Rover 8h.p., dynamo, hood, screen, licensed, speedometer, beautiful condition, guaranteed, many accessories; £139; exchanges; tuition free.—89, East Hill, Wandsworth. [3070

WANT a Motor for £10?—Several 2 and 4-seaters and commercial vehicles requiring slight repairs offered at knock-out prices from £10 to £50.—Bunting's Motor Exchange, Wealdstone. [3102

MORGAN-M.A.G., A.C., Binks, disc, drop out back wheel, ball-bearing clutch, newly upholstered and painted in spring, new chains August (equal), tyres good, oversize; £90.—Knoles, Arcade, Lancaster. [2875

1921 Coventry Premier, dynamo lighting, spare wheel, all tyres equal to new, hood, screen, and dickey seat, smart outfit; £130; quick sale.—198, King St., Hammersmith. 'Phone 2474. [3186

A.V. 2-seater, runabout, 1922 8h.p. Blackburne, 3-speed and reverse, dynamo lighting, only run 500 miles; £160, or offer; lovely car, perfect; take modern sidecar part.—Eastwood, 32, Piccadilly Rd., Burnley. [3159

A.V. Monocars and Runabouts in stock, solos and combinations taken in exchange; write for particulars and prices; repairs, overhauls, spares. A.V. Specialist, 13a, Worple St., Mortlake, No. 9 'bus. [3063

49 Guineas, exchange.—1919 Carden 2-seater, ready for a tour, 8h.p. J.A.P., 3 speeds, kick-start, disc wheels, screen, hood, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [3549

COVENTRY PREMIER 4-wheel super-runabout, 8h.p., water cooled, spare wheel, dynamo, fully insured, etc.; £230; motor cycles, etc., taken in part exchange; instalments if desired.—Frank Whitworth, 170 New St., Birmingham. [5082

1922 Coventry Premier 4-wheeler, appearance and condition guaranteed as new, licensed and insured; wonderful bargain for cash buyer only at £155.—57, Great George St., Liverpool. 'Phone: 1092 Royal and Royal 4065. [2586

1922 Morgan de Luxe, fitted new water-cooled Aozani engine, aluminium dash, speedometer, standard equipment; £197; delivery from stock.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3460

1922 Morgan Grand Prix, 10h.p. w.c. Blackburne, standard equipment, aluminium dash, disc wheels fitted, in stock for immediate delivery; £183/10; easy payments accepted.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3461

PRACTICALLY New 1921 G.N., lavishly equipped with dynamo, spare wheel, electric horn, dash lamp, spot light, aluminium numbers and discs, speedometer, watch, etc.; cost £275, will accept £130; any trial.—Hillier, 9, Wallingford Av., North Kensington (7 or 7A 'bus). [2953

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Spare Parts:

MORGAN Spares from stock for all models.—Send your enquiry to Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [0936

MORGAN Spare Parts Depot.—Spares for all models from stock; list free.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

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TALBOT 15h.p. 2-seater, tax paid; £85.—J. Daniele, Jun., 8, Crowhurst Rd., S.W.9. [2979

1922 Rover 8h.p., shop-soiled; £195.—Premier Motor Co., Aston Rd., Birmingham. [3581

SCRIPPS-BOOTH 1916 model 2-seater; £85.—Miss May, 25, Jeffries Rd., Clapham, S.W. [2981

AUSTIN 6-cyl. racing car; £95, or exchange.—M. Eugene, 61, Acre Lane, Brixton, S.W. [2978

1921 Singer Coupe 10h.p., self-starter, just as new; £285, exchanges.—Bartletts, 93, Gt. Portland St. [3008

1921 Calthorpe 10h.p. De Luxe 4-seater, self-starter, etc.; £275, exchanges.—Bartletts, 93, Gt. Portland St. [3007

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ROVER 8h.p. 1922 (April), taxed, dickey, scarcely used; bargain, £168.—Clark, 7, Exhibition Rd., S.W.7. [1244

ROVER 8h.p., 1922, as brand new; £160; quick sale.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3202

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COVENTRY PREMIER, 1922, 4-wheel model; £230; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200 Gt. Portland St., W. [0730

ALLDAYS 12h.p. 4-seater, flush-top body, sound condition throughout; sell, or exchange 2-seater, motor cycle, or Morgan.—63, Solon Rd., Brixton. [3607

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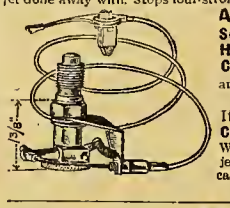

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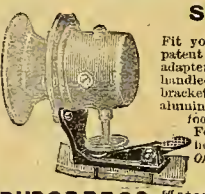

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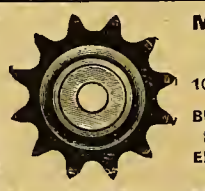

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1922 8h.p. Rover de Luxe, Saxe blue, fully insured, tax paid, very little used, guaranteed as new; accept £185, delivered.—113, Wellesley Rd., Clacton-on-Sea. [267

1922 Calthorpes and G.N.'s.—All models awaiting; any reasonable exchange, cars or motor cycles, or pay out of income.—Marlborough, 20, Finchley Rd., N.W.8. [958

£35 down and 12 monthly payments of £7/10 buy excellent running Waverley 2-seater, nice dickey, Warland rims; bargain.—Marlborough, 20, Finchley Rd., N.W.8. [958

189 Guineas, Exchange.—Really ultra-smart 1921 Sports Singer, 2-seater lighting, starter, spare wheel, lovely condition.—Seabridge, 35, Hansler Rd., East Dulwich. (Sydenham 2452.) [240

1922 10h.p. Buckingham, 3-seater cloverleaf body, painted grey, dynamo lighting, spare wheel, absolutely unscratched; £175.—D. and S. Autocar Co., 33, The Parade, Golders Green. [332

HALIFAX.—New Lagoudas, reduced prices, 4-seater or Coupe, 350 guineas; 2-seater, 280 guineas. Rover, Morgan, or combination taken in exchange. Halifax Motor Exchange, Horton St., Halifax. [340

1920 Bleriot Whippet 2-seater, handle starter, electric lamps, acetylene head lamp, spare wheel, tax paid December, painted grey, splendid order and condition; £75.—D. and S. Autocar Co., 33, The Parade, Golders Green. [332

TRUMBULL Smart Little 2-seater Car, 4-cyl., 12h.p. Bosch, 3 speeds and reverse, live axle, 1919 economical, fast, good tyres, simple, guaranteed perfect, tax paid, fully insured; bargain, £72.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney. 'Phone: East 4542. [293

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10-12h.p. Swift van, sound; £25.—30, Trinity Rd., Tooting; after 2. [297

PRACTICALLY new 1-ton Ford, pneumatics, English flat top body and cab; bargain, £140.—Rhind and Co., Stone Place, Rusholme, Manchester. [272

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ANY make of cycle or any combinatioo complete, equipped; licensed, insured on 12, 15, 18 months extended payments system.—Write for particulars Rideezi Sales, Ltd., 5, Victoria St., S.W.1. [083

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ENGINE.—Clements, 20h.p.; cheap.—226, Wi Rd., E.9 [25

WANTED, crankcase, N.S.U. 2½h.p., or engine if cheap.—Devey, 105, Greengate, Barrow. [25

P. and M. Engines, £4/10; overhauled and completed, £6/10; stamp.—7, Hereford Rd., Bayswater. [27

200 h.p. Clerget 8-cyl. engine, complete; £40, exchange.—Captain Jackson, c/o 77, Acre Lane, S.W.2. [29

1½ 10h.p. Humber car engine, £8.—Ellemau, Bitestree. [28

1920 4h.p. Blackburne engine, M.L. magneto, copper exhaust, carburetter, plates, etc.; £1 46, Hobart St., Sheffield. [28

BRAND new 6h.p. Clyno twin complete, magneto induction, sprocket; £18/10.—Fairbank, Walley Rd., Sutton Coldfield. [25

1921 2¾h.p. Orbit 2-stroke, complete unit, less magneto and carburetter, perfect order; reasonable offer not refused.—Jenkins, Draper, Griffithstown. [24

8h.p. J.A.P. twin engine, latest pattern, complete with magneto and Binks carburetter; £20 Hampstead Garage, 33, Flask Walk, Hampstead N.W.3. [33

8-10h.p. Douglas water-cooled engines, horizontal opposed, mechanical lubrication, suitable light car stationary power plant; stamp specification.—Derrington, Grafton Rd., New Malden. 'Phone: 256. [34

BRITNELL Bros. for Engines.—5h.p. Clyno, 4¼h.p. B.S.A., £15; P and M., £6/10; N Broler, carburetter and magneto, £15; Union, Baby Triumph, £4; Belginm, £3; 8h.p. J.A.P., £ Stamped envelope reply.—43-45, High St., Fulha Putney 1652. [28

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WHATEVER type of engine you require, we can supply.—Special bargains: Brand new Coventry Premier, pattern 1915, 4h.p., £12/10; 3½h.p. Rudge, 10/5; 3½h.p. Premier, £7; 3½h.p. Lincoln-Elk, with magneto and carburetter, £6.—Forfield Motors, Forfield Place, Leamington Spa. [3558

HEPPELTHWAITES.—8h.p. Mascot, m.o.v. single magneto and carburetter, clutch, etc., £8/10; ½h.p. Ariel, m.o.v., as new, £7/10; 5-6h.p. Peugeot, complete unit, £5/10; 3½h.p. L.M.C., almost new, £8/10; 2¾h.p. m.o.v. Douglas engine, less 1 cylinder and timing cover, £3/15; 6h.p. J.A.P. m.o.v., £14; another £12; also sets of 8h.p. J.A.P. parts, £10/10. Almost complete to build up. We hold the biggest stock of J.A.P. parts in London, 4h.p., 5h.p., 6h.p., and 8h.p.; send for list.—17-19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [3554

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950 MOTOR Cycle Magnetos to be cleared.—See below.

PLEASE note our stock consists of genuine Motor Cycle Magnetos, all variable ignition, and guaranteed not converted or reconstructed aeroplane starter magnetos.

WE guarantee we can supply you a magneto cheaper than anyone.

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SINGLE-Cyl. Clock.—C.A.V., 38/-; Dixie, 30/-; Berling, 30/-.—Below.

180° Anti-Clock.—C.A.V., 38/-; Splitdorf, 35/-; Dixie, 30/-.—Below.

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THOMSON-BENNETT singles and twins, brand new any degree, enclosed waterproof, variable; 55/-.

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WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

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YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

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650×65.—Emanuel's extra heavy rubber studded, 26/-; Hutchinson 3-ribbed, 32/-; Palmer cord 3-ribbed, 31/10; Burnett grooved, 30/-; Dunlop 3-ribbed, 40/-; new tubes, 6/6.

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26×2⅜.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Beldam all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6.—Below.

28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 8/-.—Below.

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BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, London, W.C.2 (next door to Aldridge's). 'Phone: Gerrard 1347. [0869

26×2½ for 650×65 rim Palmer cord 2-ply, only 20/- each; Macintosh, 20/-; other makes same price; 700×80 Clincher tubes in boxes, perfect condition, 6/- each.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [2373

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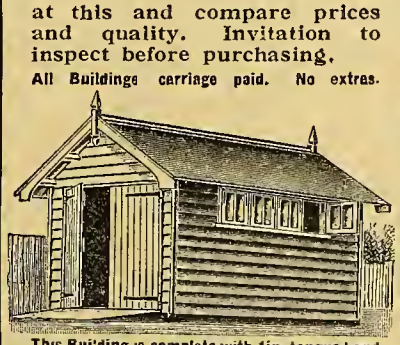

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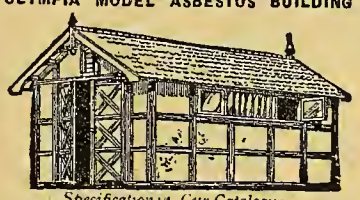
8× 6	£8 0 0		16×10	£27 0 0	
10× 8	£13 0 0		18×12	£33 0 0	
12× 8	£17 10 0		20×10	£37 10 0	
14×10	£23 0 0		20×12	£40 0 0	

OLYMPIA MODEL ASBESTOS BUILDING



Specification in Our Catalogue.

12× 8	£23 10 0		18×10	£42 10 0	
14×10	£32 15 0		20×12	£46 15 0	
16×10	£37 15 0				

Delivered with iron roof complete. Fire-proof and sound-proof.

Our unsolicited testimonials should create confidence.

Sheen Park Lawn Tennis Club,
May 22nd, 1922.

Dear Sir,
I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.

Yours faithfully,
JOHN O. GAFFIFTS.

122, Shortlands Road,
Sittingbourne, Kent.
August 17, 1922.

Mr. Brodrick,
The South-Western Appliance Co.
Dear Sir,
The St. Helier Building arrived on Saturday, two days before promise of delivery, and we are more than satisfied with it.
We erected it on Wednesday and it went together like clockwork. I am very pleased we left the order with you, as all who have seen it think the value is remarkable and admire the artistic appearance. Trusting and believing it will get you further orders from this district.

Yours faithfully,
THOS R. KENNETT.

Illustrated Catalogue Free.

SOUTH-WESTERN APPLIANCE Co.,
High Street, Fulham, London, S.W.
Telephone: PUTNEY 2771.

TYRES.

ECONOMIC Tyres.—We have the following blemished and clearance covers and tubes in stock. We send on 7 days' approval against remittance, carriage paid, passenger train.

ECONOMIC.—24×2, Clipper Ideal, 15/-; tubes, 5/-; 24×2¼ (also for 2in. rims) Clincher Junior de Luxe, heavy, 20/-.

ECONOMIC.—26×2 Clipper Rubberstud, 17/6; 26×2¼ Palmer heavy cord, 37/6; Firestone non-skid, 28/8; tubes, 5/6.

ECONOMIC.—26×2½×2¼ Goodyear All-weather, 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redfern heavy rubberatud, 27/6; Clipper Ideal, extra heavy, 35/-; tubes, 7/-.

ECONOMIC.—28×3 Goodyear All-weather, 49/6; Goodrich Safety, 47/6; Firestone non-skid, 45/-; Portage non-skid, 41/-; tubes, 6/6.

ECONOMIC.—650×65 Stepney Roadgrip, 39/6; Goodrich Safety, 39/6; Clipper, extra heavy, 32/6; tubes, 6/6.

ECONOMIC.—700×80 Beldam V-grooved, 50/-; Economic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warranted; 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26×2¼, 25/9.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14 (near Town Hall). 'Phone: New Cross 1393. [2238

LONG-DISTANCE Retreads, three-ribbed pattern, returned like new, 26in. tyres, 20/-; 28in. tyres, 25/-; burst tyres made perfect, chafed beads remoulded, tube vulcanising, butt ends fitted; best work in the country.—Melton Rubber Works, Melton Mowbray.

INCREASE the purchasing power you spend on tyres by having them retreaded at the Melton Rubber Works; there is no query, better far than clearance tyres, with their defects; send for list. [0347

TANKS.

TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2617

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2618

TANKS for Humber, 1921 pattern, to fit 1910-19; 35/-.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2619

TANKS Re-enamelled, makers' colours with transfers; 15/6.—Bright and Hayles, 78, Church St., Camberwell, London. [2132

DOUGLAS pattern tanks, new, enamelled and fitted with B. and L. pump; 55/- complete.—Day, 85, Cheapside, Birmingham. [7734

COVENTRY Tankers, Ltd., makers to the principal manufacturers, petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [2620

TANKS Re-enamelled to Pattern; high-class work only.—D. Jenkins and Sons, 6, Richard St., Atkinson St., Deansgate, Manchester. Established 25 years. [2245

TANKS Made or Repaired, re-enamelled, lined, transferred; handle-bars, etc., plated. Established 30 years.—Attwood's, 86, Rosebery Av., London, E.C.1. [7073

TANKS.—We undertake partition leakage, fastenings, and every repair with re-enamelling as new in six days. Tanks in stock for all makes from 35/-.—Park Tank Works, 1A, Paradise Rd., Highbury, N.5. [9647

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry. 'Phone: 1774. [0896

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

TANKS.—All kinds made to order, 32/6 each, including 2 plated fillers, 2 taps. Delivery 14 days, carriage paid. Satisfaction guaranteed or money returned. Enamelling, one colour, 10/6; two colours, 17/6.—Order forms from H. Peel, The Liverpool Tank Hospital, 5, Smithdown Lane, Paddington, Liverpool. [9194

BELTS.

6FT. 6in.×⅝in., 5/-; 7ft.×⅝in., 5/3; 7ft. 6in.×⅝in., 5/6; 8ft.×⅝in., 5/9; Dunlop clearance belts; carriage paid; approval.—Davies, Union St., Wednesbury. [4452

200 BRAND new surplus ¾×7ft. Wood-Milne belts, condition guaranteed, 5/9 each; 300 brand new surplus ¾×6ft. 6in. belts, made by Palmer, 5/9 each; postage on above 9d.—Below.

MARBLE Arch Motor Exchange, 135, Edgware Rd. 'Phone: Padd. 789. [2372

BELTS.—Clincher clearance, not W.D., ⅝in., 6ft. 6in., 8/2; 7ft. 6in., 8/5; ⅞in., 7ft. 6in., 9/5; 8ft., 10/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1⅛in., 8ft., 16/-; Bates' short lengths, ¾in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

BELTS.

DUNLOP Round Top, ¾ 1/10, ⅞ 2/2, 1in. 2/8, 1⅛ 3/2 per foot. John Bull, ¾ 1/11, ⅞ 2/3, 1in. 2/8, 1⅛ 3/2 per foot. Buffalo hide and chrome, ⅞ 1/9, 1in. 2/-, 1⅛ 2/3 per foot.—Bastones, 228, Pentonville Rd., King's Cross, London, N.I. [3611

CARBIDE.

CARBIDE, highest grade only, 18/6 cwt., immediate delivery.—Kemp's Garage, Importers, Louth. [2668

CARBIDE, finest quality, 19/6 cwt., F.O.R., nearest depot; coated, 24/-, ex Bristol only, C.W.O.—Hodge and Co., Warwick Rd., Bristol. [3152

CARBIDE, highest grade only, no seconds, all meshes; 19/- cwt. drum; ex 22 depots; immediate delivery.—Elloc Cycle Works, Gedney Drove End, Wisbech. [2851

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 21/6, ½-cwt. 12/6, 28 lb. 7/6, drums free. (Depots in all parts.)—Young, Importers, Misterton, Somerset. [1316

CARBIDE.—Immediate delivery of all sizes in 1lb., 2 lb., 4 lb., and 7 lb. lever lid tins, also 1 or 2 cwt. drums, labelled or plain, quality guaranteed. The cheapest firm in the trade.—The Premier Lamp and Engineering Co., Ltd., Armley, Leeds. [5088

CARBIDE, finest quality obtainable; 20/- per cwt., drums free, cash with order, free on rail, Aberdeen, Bristol, Belfast, Cardiff, Dublin, Edinburgh, Glasgow, Gloucester, Grimsby, Hull, Leeds, London, Lowestoft, Liverpool, Lincoln, Manchester, Newcastle, Preston, Port Talbot, Runcorn, Sharpness, Swansea, Yarmouth.—International Products, 77, Victoria St., Bristol. [3271

PATENT AGENTS.

J. E. S. LOOKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [8403

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672. [7917

H. N. and W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E., Associate I.E.E., etc.; W. S. Skerrett, A.I.E.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate 3d. per word, minimum 3/-.

INSURANCE.

£3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Holborn 328. [0005

ECONOMY with Security.—Comprehensive policies from £3/10; Morgans, £6; sound companies.—A. R. Broadhurst, Buchanan Bldgs., 24, Holborn, E.C.I. [2778

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

TUITION.

7/-.—Private Driving Lesson (car); late instructor R.A.S.C., W.R.E.N.'s, Women's Legion.—Vernon Nash, 16a, Allsop Place, Baker St. Station. 2969 Langham. [3152

SITUATIONS VACANT.

LOCAL Representative wanted, with or without experience.—Tynesider Pillion Seat Works, Union St., North Shields. [0907

SITUATIONS WANTED.

YOUNG man (23) seeks situation, motor mechanic, chauffeur, electrician's mate, keen, go abroad.—Box 3739, c/o *The Motor Cycle*. [2602

YOUNG Motor Engineer, age 22, prem. apprenticeship, thorough knowledge motor cycles, all makes, repairs, etc., good knowledge machine drawing, sales, etc., good appearance, not afraid of work, desires position, progressive post, where above would be appreciated.—Box 3684, c/o *The Motor Cycle*. [2495

FINANCIAL.—PARTNERSHIPS.

GENTLEMAN making periodic visit to Belgium will demonstrate or undertake commissions for manufacturers of motor cycles and accessories.—Box 3770, c/o *The Motor Cycle*. [2725

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

MOTOR Cycle and Light Car Business, main road, S.W. district (London), extensive plant, big turnover, assured income, genuine; about £500, including plant, stock at valuation optional.—Box 3790, c/o *The Motor Cycle*. [3507

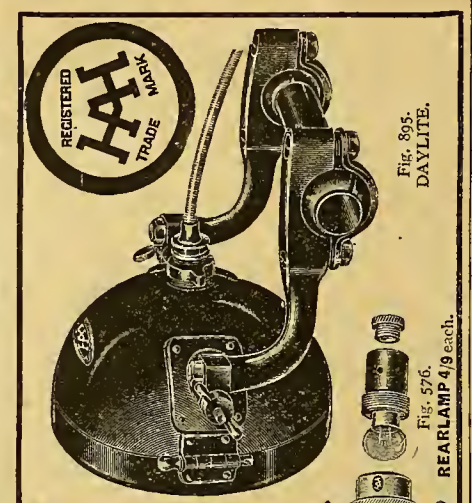
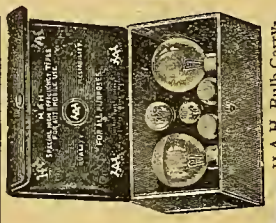


Fig. 895. DAYLITE.

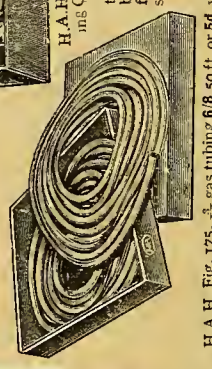
Fig. 576. REARLAMP 4/9 each.

H.A.H. Bulb Carrying Cases 6/- ea. All types of bulbs from stock.



A. H. HUNT LTD. Manufacturers of MOTOR ACCESSORIES. H.A.H. WORKS, TUNSTALL RD., CROYDON, SURREY.

Complete Card of Switches, 13/-



H.A.H. Fig. 175. ⅜ gas tubing 6/8 50 ft. or 5d. yd.

CLUTCH TAPE 1/- in tins. 6d. 7¼d.

H.A.H. MOTOR CYCLE HEADLAMP.

Fig. 895. Code word "DAYLITE," as illustrated. Nickel 60/- each, Black 65/- each. Complete set with above 123/6 each.

STOLEN.

£15 REWARD.—Stolen, about 9 p.m. 7th inst., from Hampstead Heath, Triumph (1920) Motor Cycle and Sidecar, latter painted red, index No. M.C. 3129, engine No. 563, frame No. 64,464,914. The above reward will be paid by Messrs. John W. Bell & Co., assessors, 17, Queen Victoria St., E.C.4, to the first person giving information to them as will lead to the arrest and conviction of the thief or thieves and recovery of the above intact. [2781

GENERAL TRADE.

FOR frame and spring fork lugs try Autocap, Ltd., Belvedere. List stamp. [2803

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms, 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods station, Falcon Lane, L. & N.W.R.; Wimbledon, L. & S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [2732

WANTED.

N.S.U. Gear for Rover, and 2¾h.p. J.A.P. engine.—Particulars Harford, Wye, Kent. [3153

WANTED, Clyno sidecar for 6 h.p. 1918 machine.—Box 3737, c/o *The Motor Cycle*. [2800

WANTED, front forks for 2¼h.p. Precision Junior.—Simpson, Birmingham Rd., Bromsgrove. [2829

WANTED, Sturmey gear box, K.S., complete or incomplete.—Tom Purser, Law St., Leicester. [2438

DAYTON Lightweight wheel, tyre, tube, front forks, complete.—Wakelins, Norwich Rd., Ipswich. [2696

WANTED, Sporting Sidecar, Swan similar, suit Harley or A.J.S. chassis.—Heap, Barton, Sowerby Bridge. [2486

WANTED, A.V. Monocars and Tamplins, any condition; cheap for cash.—Write, A.V., 13a, Worple St., Mortlake. [3065

PREMIER parts or complete Premier motor cycles, in or out of repair.—Jack Ward, 11, Radford Rd., Leamington Spa. [2949

OLD Man Hep will buy anything motorish in any quantity.—19, Wilcox Rd., South Lambeth, London. 'Phone: 1958 Brixton. [2281

WANTED, ex-W.D. lamps, brackets, and spares for lamps.—Write full particulars to Advertiser, 59, Aytown Rd., Brixton, S.W.9. [3076

WANTED, Sidecar for 3¾h.p. Scott, good condition, all fittings for frame, etc.—7, Birkbeck Mansions, Birkbeck Rd., Hornsey, N.8. [2749

SCOTT coachbuilt sidecar, good condition and tyre essential, complete, appearance unimportant.—Jackson, Hillshoro, Westfield, Harpenden. (D) [2605

WANTED, water-cooled Morgan Sports; level exchange for Harley Combination, value £115; worth seeing, as new.—Harmer, 2, Church St., Kingston. [3295

WANTED, for countershaft Triumph, pair flywheels, driving side of crank case, and incomplete S.A. 3-speed gear box.—Hole, 129, Park Lane, Wallington. [3059

WANTED to purchase Outright for Cash, bankrupt stocks, W.D. spares, miscellaneous spares, motor cycles, any make.—Send full particulars McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [7183

EXCHANGE.

DE DION, 2-seater, 8h.p., for combination.—226, Wick Rd., E.9. [2505

4-SEATER 12h.p. Alldays (see Car column).—63, Solon Rd., Brixton. [3608

8h.p. J.A.P. Cycle Car, good condition, exchange combination.—Knox House, Tonbridge. [2643

OIL engine for solo or combination; cash either way.—Shore, Aldbury, Tring, Herts. [2569

CHAPUIS-DORNIER 2-seater Car for combination; sell £80.—17, Upton Rd., Hounslow. [2463

EXCHANGES.—See Ariel, Bat, Hobart, Invicta, James, Scott and Miscellaneous columns. [3122

CHARRON 10h.p. Van, Bosch, Schebler, for solo or 3-wheeler.—1, South Ealing Rd., W.5. [3338

4h.p. Sports Zenith, posh, perfect; exchange lightweight.—26, Cornwall Rd., Brixton Hill. [3085

EXCHANGE 1915 7-9h.p. Indian, clutch, for lightweight and cash.—King, Egrove, Oxford. [3353

EXCHANGE shares for B.S.A. twin combination.—B. E., 5a, Victoria Rd., West Hartlepool. [3100

FRANCIS-BARNETT and Edmund (advertised); exchanges invited.—63, Solon Rd., Brixton. [3609

B.R.S. 3-speed Norton 1921, little used, fast; exchange or sell.—Williams, Pilton, Somerset. [3108

4h.p. Douglas Combination for Scott Squirrel or A.B.C. —46, Chesterfield Gardens, Harringay, N.4. [2642

EXCHANGE 1919 Powerplus Indian for A.B.C.; particulars.—35, Upper Tooting Rd., S.W.17. [2543

EXCHANGE 8h.p. J.A.P. for New-Imperial 2¾h.p.; sell £22.—72, Beechfield Rd., Finsbury Park. [3254

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

The Motor Cycle for the Masses.

QUITE a number of motor cyclists consider that the greatest future for the mechanically propelled two-wheeler lies along lines which differ considerably from existing designs. Whether or not this is the case only the future can decide, but it is an undoubted fact that there is an ever-growing demand for an ultra-light machine selling at a very moderate price.

A little thought will show that this demand is not merely the result of a momentary whim, but is the expression of a real want. There are thousands of potential motor cyclists who require to travel five or ten miles each way to business with an occasional trip to the golf course or a pleasure run into the country. At present this large section of the community is restricted to travel by tram, 'bus, tube, or pedal cycle, but would welcome a cheap and reliable form of motor transport.

Engines of 100 to 150 c.c.

The demand already exists, and it is a large and ever-increasing market. How, then, can we sum up the requirements of this class of rider? Briefly, the machine must be cleanly, reliable, economical in upkeep, easy to start and to handle in the thickest traffic, and, above all, it must sell at a very modest figure. As regards performance, speeds of above twenty miles per hour are not desired, and there will be no need of freak hill-climbing capabilities. A good two-stroke engine of 100 to 150 c.c. should be ample for all requirements, but a first-class clutch is essential, and possibly a two-speed gear will be demanded by many.

Already we have many examples of these machines in this country which have gone more than half-way towards the ideal specification, and the addition of a miniature engine bearing the name of a well-known proprietary house will do much to further the development of the type.

There are at present two schools of thought as regards the lines on which these tiny vehicles may develop: some favour the motorised pedal cycle and some the miniature motor cycle.

Miniature Motor Cycle or Motorised Bicycle?

While we incline to the latter type and feel convinced that therein lies the ultimate development, there is much to be said for the former, since it is capable of excellent propaganda amongst the large body of existing pedal cyclists and amongst the not inconsiderable number of people who would not care to ride anything which looks like a motor cycle. It is useless to deny that such a prejudice exists, and it can only be overcome by gradual education.

On the Continent the motor-assisted cycle has already arrived, and both in France and Germany a number of firms of the highest repute are engaged in turning out quantities, while special competitions for the type have already been organised and have taken place.

New Official Class Wanted.

In this connection the Auto Cycle Union might do well to encourage the engine of under 150 c.c. by the creation of a new class and the organisation of competitive tests. Our support of the ultra-lightweight needs no reiteration: at a time when the governing body was endeavouring to foster the now defunct scooter, *The Motor Cycle* urged the development of the miniature motor cycle, and, to encourage design, our proprietors presented the trophies for the first two events catering for machines of under 250 c.c. in the Tourist Trophy races. The Auto Cycle Union has now instituted a Trophy race for this class of machine.

An index to the advertisements in this issue will be found on the page facing the back cover.

The Non-Skid Machine.

AS I watched our leading experts slithering about in miry lanes during the recent Six Days, I wondered whether we devote sufficient study to designing a non-skidding machine. Personally, I am a clumsy rider on grease. I can hold most machines up anywhere, so long as I don't think about it; but if I once get wind up, it is usually only a matter of time till I fall off, and I fancy most hard riders would say the same if they could put their pride in their pockets, as pseudonymity enables me to do. On the other hand, I recall a certain Six Days in which the roads and weather were of the vilest. All the cracks kept falling off, and one or two actually retired because they were worn out and frightened, though these were not the reasons which they rendered officially. I started on that ride quite out of practice, in just the condition likely to provoke excessive "wind up." But I didn't skid, and I flared merrily over the terrible going without fear and without spills. For one thing, I was riding rather a woolly twin engine, which never yanked at its transmission. For another, the machine was extraordinarily well balanced, and had a pair of smooth brakes. For a third, the transmission was so gentle that it might be described as fluid. For a fourth, the wheels were shod with "combination" covers, in which steel studs alternated with very pronounced rubber corrugations. One does not hear of such tyres nowadays, because they are comparatively expensive and shortlived. But this year, as I have slithered and watched others slither, I muse whether we pay enough attention to a bogey which unquestionably

(i.) Deters many people from becoming motor cyclists.

(ii.) Keeps many motor cyclists at home when they would otherwise wish to take the road.

(iii.) Quite spoils a proportion of our mileages.

Bad Brakes.

ONE of the most fascinating items in the much-lamented A.B.C. motor bicycle was its braking. I only ran my sample about 3,000 miles—probably an insufficient distance to verify all the ins and outs of the layout. But during that period its brakes impressed me enormously. It is useless to possess smashing acceleration unless the deceleration is equally sound; and the A.B.C. would work up to sixty and down again to ten as rapidly and smoothly as anybody could desire, even the front brake doing its full share of the latter job without fuss or peril. To-day I own a still more modern machine of even greater speed proclivities. Its rear brake occasions a certain nervousness, for it has to be adjusted whenever I touch the rear chain, and the only lock on the adjustment is of a frictional character; this lock may slip and sometimes does slip, whereupon the brake still acts, but very feebly. The front brake is never much use, unless one has recently devoted much attention to it. It is always rough and noisy.. It is fond of shedding its small parts on to the road, a habit which will sooner or later despoke much of my front wheel. After a muddy ride it is usually seized in the permanently off position, and demands to be freed with a hammer and an oilcan. So I may be pardoned if I occasionally shed a silent tear when I reflect upon my departed A.B.C., for I have never since owned such a pair of brakes. But what has been, may be; and perhaps at the 1922 Olympia . . .?

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

A Ventilated Coat.

AN all-weather rider complains that there is still a gap in motor cycling tailoring. Whether the alleged waterproof coats will or will not keep out all the worst wet which falls between September and March is, he contends, beside the point. For if you have a genuinely drencherproof coat, it is probably ventilated by a few wretched little eyelets under the armpits; in which case the condensed moisture arising from your person completely outflanks the garment, and makes your underclothing moist when the outside atmosphere is possibly frozen dry. So his panacea is a really heavy but well-ventilated coat of a non-waterproof character, over which the invincible oilies may be donned when a cloud bursts. There is much sense in his contention. Last night I slept in a genuinely waterproof tent of green Willesden canvas. Outside, it froze. This morning there were tiny pools of moisture on the groundsheet all round the inside of the tent. My breath—evaporated, condensed, and finally drained down the tent walls. No, sir. *Not* beer. I scorn your insinuations. Besides, I had Ovaltine to drink with my supper. But to continue. There is no heavy, non-waterproof coat that I know of, created specially for motor cyclists. There are British warms, *toujours*. Burberry may have an approximately suitable garment—anyway, his waterproofs are better ventilated than most.

Service.

THE organisation of a service depot is always a thankless job. You have to carry thousands of pounds' worth of stuff, which may never be sold. You have to charge prices for them which nobody wants to pay. You have to deal almost exclusively with "rush" orders, which arrive at every conceivable hour of every conceivable day (*e.g.*, just as the depot is closing for Bank Holiday). Lots of these orders emanate from strangers and are unaccompanied by cash. One or two stupid clerks can earn you a bad name in

Occasional Comments.—

twenty towns during their first week on the pay list, and undo the effects of much work previously accomplished. So I am never in a hurry to criticise "service." But a Surrey rider has certainly had a roughish time. And all with London depots, too. His sidecar single broke an engine part, and the London depot mislaid the order. Meanwhile he took out his wife's baby two-stroke, which promptly broke a con-rod. Being a man, he pushed it home ten miles, and as the family possessed no spare transport and his daily work was urgent, he sent a man to the second firm's London depot, which had no con-rods in stock. They 'phoned their Midland factory, which was still mute five days later. In despair Surreyite borrowed his brother-in-law's baby two-stroke for one day, but tyre troubles prevented him from completing his round. Next day cycle, 'bus and train took seven hours to cover his 50-mile round. The following day no public transport was available for a very awkward round, and Surreyite stopped at home. The utility motor cycle, employed for business purposes, *must* be backed up by supreme service. *N'est-ce pas?*

Starting on a Small One.

I HAVE latterly been introducing a schoolboy to the sport, with the result that he has something to dream about, while I have something to pay for and something to write about. On one of his early trips he fell off twice, though he is an excellent cyclist. On both occasions he was alone on a decent road. The causes were manifold. Item, a 'bus which weighs nearer 3 cwt. than 2 cwt. Item, a clutch control destitute of leverage. Item, a gear lever which demands hard pushing from notch to notch. So I register mental notes that my next small pupil shall make his maiden adventures on a baby two-stroke with a feather-weight clutch lever and a snicky gear stick. Furthermore, the cash effects of his tumbles are noteworthy. The footrests, of course. Well, footrests are cheap; but frames are not. In this case the footrest spindle, instead of being pivoted *à la* Norton on a single tube round which it can swing when it hits the 'ard 'igh road at speed, is neatly threaded through prolongations of a duplex frame member. Result—these very gentle spills have thrown the entire frame right out of truth. To continue. Nothing looks nicer than a combined front-numberplate-cum-licence-holder. It also saves the new client from having to purchase a stick-on holder. Incidentally, as per spare part list, it costs 15s. to replace, and is of a contour which prevents it from being squashed true between two sides of a soap box inserted between vice jaws, when a tumble has likened it to the keelplates of a torpedoed liner. No. I am not spending 15s. on a posh new article. I am spending 2s. on a cheap licence holder, hacksawing the numberplate portion off the old original, and flattening it out true in the vice. These being hard times.

TWO WHEELS BETTER THAN NONE. There is a greater fascination in ploughing through moorland bogs on a motor cycle than the uninitiated may imagine; and furthermore, the motor cycle of to-day so lends itself to the task that such journeys may be completed much more quickly than by the only rival methods excepting flying—on foot or on horseback. J. C. Thomson, a Martinsyde rider, in the notorious Scott Trial.

"OVER THE ROOF OF SCOTLAND."

The Second Day's Run and the Results of the Scottish Two Days Trial.

THE first day of the Scottish Two Days Trial was fully described last week. Sunday was spent in Inverness, and the return journey, *viâ* Inverfarigaig and Kenmore, was made on the following day. Only Inverfarigaig caused any real trouble.

Saturday's gale had died down on Monday morning as the competitors left Inverness in the pale sunshine of 7 a.m. Thence the route by the south shore of the Caledonian Canal afforded all that could be desired in the way of moorland and forest scenery; but Inverfarigaig was looming near, and everyone had dark forebodings as to the existence of stunt checks. The first check was at the foot of the hill, the idea being, evidently, to avoid congestion, and though at any time a most difficult climb, the hill was really no worse, as regards surface, than in the six days event earlier in the year.

Inverfarigaig Casualties.

Of the solo riders, W. B. Anderson (A.J.S.), of the Cumberland team, was the first to fail. J. W. Morton (494 Douglas), got into the loose stuff on the second bend, and was unable to get away. S. L. Taylor (348 Invicta) also failed, while S. C. Hubbard (481 Scott Squirrel) skidded badly on one of the bends and stopped. The only Rudge-Multi competing was ridden by A. McGillivray, who found the appalling surface too much for him. Other failures among the solo riders were J. A. Porter (348 New Gerrard), A. B. Steven (349 A.J.S.), H. E. Horwood (498 Ariel), C. J. Blackadder (348 Verus), J. McEwen (349 Massey), and J. Donaldson (349 Royal Scot).

Good Ascent by Double-seated Sidecar.

The hill presented a much more difficult task for the sidecar drivers than for the solo men, since it was necessary to take the right-hand corners at full lock on a surface of ploughed up gravel and sand. The result was that the machines refused to answer to their helms, and as each contributed to the mangled condition of the road the climb became more and more difficult. H. Mortimer Batten (555 P. & M. sc.) just managed to get round the first corner by scraping the rocks, but got away safely. A. F. Sidford, whose 993 c.c. Matchless was fitted with a huge double-seated sidecar, made a good ascent. Considering the weight of his outfit, he rode with great consistency throughout the trial.

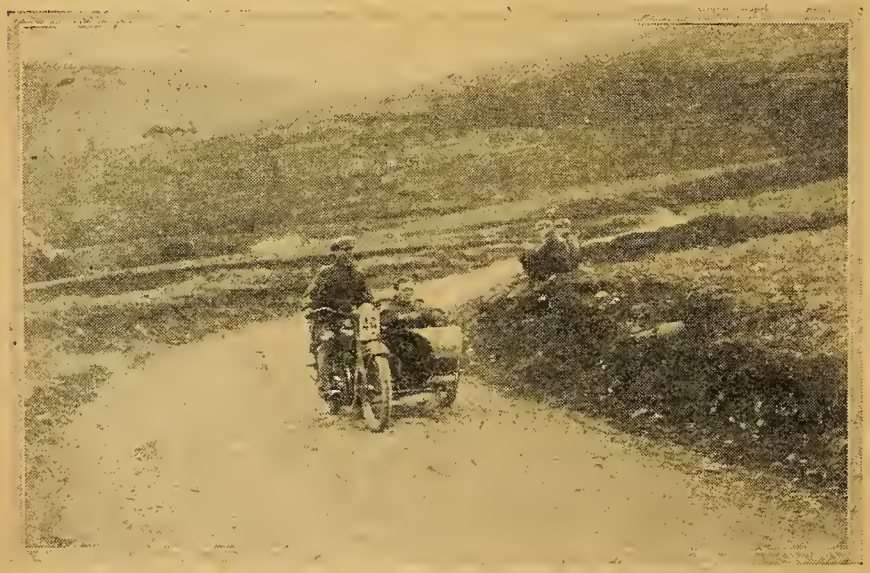
A. Shepherd (293 O.K.) dry skidding on Inverfarigaig, which accounted for most of the failures in the trial.

Tom Gillies (499 Sunbeam sc.), failed from lack of power. G. C. Procter (598 Beardmore-Precision sc.) went up well, as did the other members of the Precision team, thus attaining the distinction which was ultimately theirs—the manufacturer's team prize. James Alexander (976 Sunbeam sc.) made a very steady ascent, but J. G. Anderson (796 Ariel sc.) stopped at least once.

The Scott Sociable, driven by D. Rhodes, made on the whole a very good climb, but was unable to get round one of the corners owing to an insufficient right-hand lock. He was compelled to run back, and was recorded as a failure. W. Hiscock's Morgan was not equal to the climb. J. R. Alexander (733 Douglas sc.) also failed.

An Extra Six Miles.

The most difficult check of the trial succeeded this hill. The scenery over the deer forests to Kyllachy was grand beyond description, and wild deer were seen by several of the competitors. The check was six miles longer than the route card indicated, with the result that there was much hard driving over the final portion of the lumber-shattered moorland road. Many were late, but an allowance on time was given. The morning was one of short checks, and again none but the fastest machines had time to play with.



G. Grinton (998 Harley-Davidson sidecar) touring comfortably up Bridge of Avon.

Two Coventry Eagles, ridden by W. B. T. Sanderson and W. R. Bruce, going well on an observed hill in Saturday's run.

Lunch was at Kenmore, and immediately succeeding it came Kenmore Hill, the last observed hill of the trial. Consequently those who were still in for gold medals did not enjoy lunch as they might have done, for the hill was reported to be in very bad condition. Failures on Inverfarigaig were of no consequence except to the teams, as the climb was considered too freakish to figure in a capacity other than as a special award bit. As a matter of fact Kenmore was in reasonably good condition, and there were comparatively few failures. J. Donaldson (349 Royal Scot) lost the entire contents of his carburetter—lid, float, and needle—which had jolted out, and he left Kenmore regulating his petrol supply by manipulation of the tap. The task ahead of him was not an enviable one, and he did well finally to qualify for a silver medal. He was the first to fail on Kenmore. Among the sidecars Tom Gillies (499 Sunbeam sc.), and J. R. Alexander (733 Douglas sc.) were the only two unfortunate ones. On this hill the competitors again encountered a following wind, and many of the engines were pinking badly as the summit was neared.

The remainder of the route lay by Crieff, Sheriffmuir, and thence through Stirling and Linlithgow back to Edinburgh. The descents of Amulree and Sheriffmuir were rendered somewhat perilous by the greasy and treacherous road surfaces, and a strong smell of burning brakes and singed rubber pervaded the atmosphere. The course was liberally punctuated with stretches of rough, frame-breaking, colonial paths, and on one section of five miles several of the sidecars became literally bogged. By the time Edinburgh was reached, indeed, both riders and machines were plastered with mud, and presented a much weather-beaten appearance.

The Trial Summarised.

Thus, what might have been a test of endurance almost to the point of destruction, had the weather conditions followed Highland reputation for the time of the year, proved remarkable for its high percentage of premier awards. Saturday's gale was really the only weather condition which hampered the riders, and then only those of low-powered machines. All the observed hills were in good condition, but, nevertheless, the results are a high tribute to present-day machines. It was, however, noticeable at the final check at Edinburgh that numbers of the sidecar machines were out of track, and there was scarcely a machine which bore no scars of the gruelling through which it had passed.

The Beardmore-Precision was the only team to finish without loss of marks. The riders are to be congratulated on their steady and consistent performance. The team consisted of two B. & S. sports models and one 598 c.c. sidecar outfit.

Hugh Gibson (349 Raleigh), was perhaps the outstanding performer of the event.

The Scott Sociable proved speedy and consistent, and Sidford's two-seated Matchless put up a marvellously steady performance.

George Grinton's Harley-Davidson sidecar was far and away the fastest of its class. Would that all riders of fast machines were as considerate of other competitors as Grinton!

Results :—

MANUFACTURER'S TEAM PRIZE.

Beardmore-Precision (A. L. Clark, E. M. Wright, and G. C. Proctor).

CLUB TEAM PRIZE.

Edinburgh and District M.C.—George Grinton (998 Harley-Davidson sc.), Andrew Downie (A.J.S. sc.), and Major Johnstone (Jowett light car).

PREMIER AWARDS.

J. W. Burton (348 Coventry Eagle), *W. B. Anderson (A.J.S.), J. Hendrie (499 Sunbeam), G. Hope Wilson (349 B. and S. Edmund), *J. W. Morton (494 Douglas), G. Denley (211 Velocette), A. L. Clark (349 B. and S. Precision), E. M. Wright (349 B and S Precision), W. J. Knight (499 Triumph), Jas. Bacon (490 Norton), W. Westwood (499 Triumph), George Cheyne (499 Sunbeam), W. Cheyne (499 Sunbeam), J. G. R. Edmondson (248 Massey-Arran), L. Edmondson (248 Massey-Arran), W. B. T. Sanderson (348 Coventry Eagle), A. T. Ure (499 Sunbeam), W. T. Tiffen (211 Velocette), Hugh Gibson (349 Raleigh), J. Morgan Philipps (499 Sunbeam), *J. A. Porter (499 New Gerrard), N. W. Downie (498 Ariel), A. L. Downie (349 A.J.S.), H. E. Horwood (498 Ariel), A. Shepherd (269 O.K.), R. L. Galloway (348 New Scale), *J. McEwen (348 Massey).

Sidecars.

H. Mortimer Batten (598 P. and M. sc.), A. F. Sidford (993 Matchless sc.), K. W. B. Sanderson (799 A.J.S. sc.), George Grinton (998 Harley-Davidson sc.), W. G. Donaldson (654 Rover sc.), Jas. Martin (633 Norton sc.), G. C. Proctor (598 Beardmore-Precision sc.), James Alexander (976 Sunbeam sc.), J. Shepherd (976 Chater-Lea sc.), A. F. Dowoie (A.J.S. sc.), *D. Rhodes (Scott Sociable), Henry Alexander (733 Douglas sc.), J. Cocker (925 Clyno sc.), J. R. Alexander (733 Douglas sc.), K. W. B. Anderson (799 A.J.S. sc.).

*Failed on Inverfarigaig.

SILVER MEDALS.

S. C. Hubbard (491 Scott Squirrel), J. C. Porter (New Gerrard), C. G. Blackadder (349 Verus), D. Ralston (James), J. Donaldson (349 Royal Scot), W. S. C. Walker (993 Ariel), J. G. Anderson (796 Ariel sc.), J. D. Anderson (796 Ariel sc.), W. S. C. Walker (993 Ariel sc.).

BRONZE MEDALS.

W. Hisscock (Morgan), T. Gillies (499 Sunbeam sc), A. McGillivray (499 Rudge-Multi).

Bridge of Avon was hardly worthy of observation, nobody having any real difficulty with the climb. A. L. Downie (349 A. J. S.) on the upper and less steep portion.

IGNITION TIMING.

Notes for the Novice with Special Reference to the Timing of Two-stroke Engines.

IT has frequently been noticed by the writer that the method of ignition timing usually suggested does not always give the desired results, particularly in the case of the two-stroke engine.

The following notes are written in the hope that users of this type of motor cycle who are obtaining indifferent running will be enabled to improve speed, power, and economy considerably.

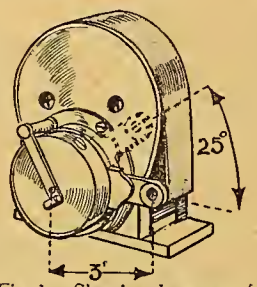


Fig. 1. Showing the range of control on a standard magneto.

Full Advance as a Basis.

Usually, regard is given to the range of control provided on the magneto, which varies with different makes, but 25° to 30° angular motion can be taken as a good average. In any case, the retard position is the wrong end to start with, and correct timing should consider only the full advance, leaving the other to occur where it will.

At this point we might refer to the common idea that an earlier timing is necessary for two-stroke engines than for four-strokes. Why this should be necessary is never explained, but the misconception is probably due to the error of assuming that an equal amount of advance on the handle-bar control produces identical results on the point of ignition in both types, whereas, owing to the different gear ratios in the magneto drive, the spark receives twice the amount of advance in the four-stroke as compared with the other, which is handicapped accordingly, and thereby creates the impression that earlier timing is necessary.

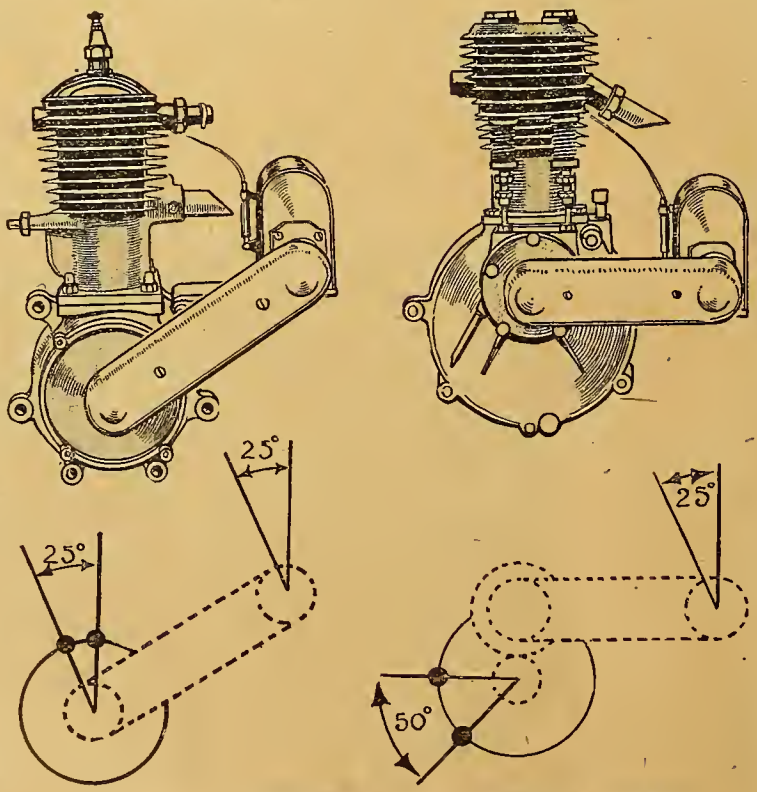
Turbulence.

Correct timing in any type of engine is influenced by several factors, including shape of combustion chamber, velocity of gases, quality of mixture, and degree of turbulence—the latter being probably the most important. Thus it will be seen that it is quite possible for some four-strokes to require an earlier timing than two-strokes.

Considering now the differing gear ratios in the magneto drive and their effect on piston travel in relation to the spark position, the great majority of four-stroke engines drive the magneto *via* the camshaft, which, of course, runs at half engine speed, whereas in two-stroke engines not possessing a camshaft the drive is necessarily from the crank direct.

For the purpose of illustration, we will assume the length of magneto control to be 3in. (Fig. 1), and the diameter of crank pin path to be also 3in. (the exact diameter does not matter, as angular motion will be considered). If the lever be moved through 25° from full retard to full advance, the crank pin of a two-stroke will also move through an angle of 25° in order that the contacts shall break at both these two extreme positions, as both the crank and magneto armature run at the same speed. In the case of the four-stroke, however, the crank pin will have to travel through twice the distance, owing to the fact that the magneto is geared down two to one (Figs. 2 and 3). The net result will be that when the handle-bar control is moved to full advance the spark will occur much earlier in the compression stroke in the latter case, and it therefore follows that many two-strokes are handicapped by late ignition timing unless steps are taken to rectify the matter.

From Fig. 4 it will be noted that 25° before top dead centre on 75 mm. stroke, say 3in., is equivalent to $\frac{3}{16}$in. piston travel, which is insufficient, while 33⅓° gives $\frac{5}{16}$in piston travel, which is approximately correct for both types of engine for ordinary touring speeds.



Figs. 2 and 3. Two-stroke and four-stroke magneto drives compared.

As before mentioned, the only logical and correct method of timing is to consider the piston travel before top dead centre in its relation to the full advance position of spark, which, of course, controls the efficient running of the machine on the road, and again obviates the possibility of error due to the differing range of control provided on various makes of magnetos. The retard is of small importance in comparison, and is usually

Ignition Timing.—
only required for very slow running, and, in some cases, for starting up purposes.

The writer recently re-timed his two-stroke on these lines, and transformed the running altogether, the result being increased speed, more power on hills, and a smaller jet could be used without "popping" back through the carburetter.

Timing Marks Wanted.

It would be a great improvement if makers of engines with outside flywheels would mark the correct timing on the flywheel in the same way that is done on car and lorry engines. (Most motor cycle engines with outside flywheels are not fitted with keys in the shafts, hence this suggestion is only capable of limited application. —Ed.) It would cost practically

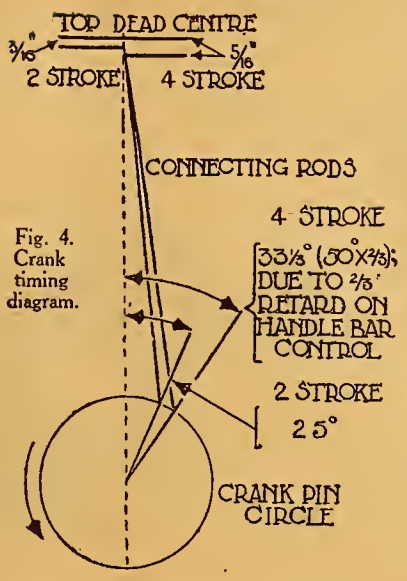


Fig. 4. Crank timing diagram.

nothing, and would enable the user to tell at a glance whether his engine had been re-assembled correctly after overhaul, and save much time and trouble in the cases where the magneto sprocket has slipped, which latter mishap is rarely detected by the amateur rider.

Incidentally it may be stated that slight movement of the magneto driving sprocket upon its shaft is by no means uncommon, and it should be suspected in all cases where a two-stroke suddenly develops an otherwise incurable fit of misfiring.

Experiment as True Guide.

To conclude, it must be understood that the measurements given are approximate and would vary for differing sizes of engines and speeds desired, the best results being obtained from experiment. J. McI.

FRANCE AND THE MOTOR CYCLE.

Reasons why France is not in the Forefront of the Motor Cycle Industry.

IS it not strange that the vigorous and versatile mentality that has produced cars second to none in the world, in the moderate-powered class, should apparently be incapable of manufacturing practical motor cycles in competitive quantities?

A tour on the roads of France or a stroll down the Avenue des Champs Elysées, the Avenue de la Grande Armée, and the Boulevard Péreire in Paris, both reveal the same thing, namely, a large number of British and American machines and the increasing popularity of the pastime. The technical journals devoted more or less to motor cycle interests also show the same thing, and the dealers themselves all admit sadly that La France marches far behind England in motor cycle construction. But they do assert that she marches, and the inference is that, with characteristic optimism, they assume that she will eventually surpass rival nations.

They admit that British medium- and heavy-weight single-cylinder machines are the best in the world, partly because the logic of facts will not allow them to deny it; but in their view the lines along which we have developed these machines are wrong.

French Logic.

Large single-cylinder machines, with their comparatively harsh and uneven propulsive effect, are far from ideal, and satisfy few motor cyclists' deepest desires. Is it not more logical, the French argue, to make up one's mind as to what is wanted and then to aim straight at it, without going off after a type that is likely to be a compromise falling far short of one's ideals? Are not all such lines of development certain to lead only into a blind alley?

Thus a machine such as the Scott generally excites more enthusiasm in the breast of the average Frenchman than the best of single-cylinder four-stroke mounts built on conventional lines. Yet if he is a buyer, he will not allow his choice to be swayed by this feeling of enthusiasm alone, but rather by results.

It is said that one cannot have too much of a good thing, but logic can be carried too far, and may lead to failure instead of success, especially when there is a slight kink in it; thus there is one tenet of the French faith on which most of their reasoning is based, namely, "we are the cleverest people in the world."

Aiming at the Ideal.

Now the fact that the French have not yet been able to excel in motor cycle construction appears to contradict this proposition, and the only answer that they can make now is, "our competitors are really on a side track: we shall be first in the field with something that will come near to the ideal.

Therefore, one looks for originality from France. Will the forthcoming Paris Salon reveal much of it? At present it is doubtful. French conservatism is very strong and a powerful factor militating against development on unorthodox lines, as has been very evident in the car world, and attempts at producing something on ideal lines have hitherto been unsuccessful. However, where demand exists supply must follow, it is argued; and the demand for motor cycles in France is at present being filled from other countries, in spite of tariffs and adverse rates of exchange. Therefore, it is practically certain that something will be done in the near future, and that our Allies across the Channel will produce machines that will be better than any that they have made hitherto; and, if the present conditions of exchange and tariff continue, they should be able to compete in the British market.

There is one factor in the case which is of great importance—that is the fact that those who interest themselves in motor cycle manufacture do not ride the machines they make.

ADVANCE DETAILS OF 1923 DESIGNS.

REVIVAL OF AN ORIGINAL TWO-STROKE.

Cedos Machines for 1923. Detachable Head on a Two-Stroke Engine.

THE Cedos two-stroke was obviously too good to go under when the company went into liquidation. Production has now commenced again—in new hands, excepting the designer, Mr. Ernest Smith—and improved 1923 models will be exhibited at the Paris Salon and the Olympia Show.

The engine has been considerably altered, and now represents very advanced practice in two-stroke design. That it has a detachable head alone places it in a class by itself. It is claimed that for this reason distortion is less likely to occur, the cylinder casting being of uniform thickness around the firing chamber. Sparking plug and release valve are carried in the head, which is copiously finned with particular regard to guiding air currents on to the plug. A very cool-running engine has resulted.

The cylinder dimensions are 67 × 70 mm. (247 c.c.).

In order to make replacements easier the crankshaft is in two pieces, bridged by a hollow crank pin, carrying Hoffman roller bearings, the big end, like the crank pin, being hardened and grounnd. The main shafts run in double row journal ball bearings and long phosphor-bronze compression retaining bushes. Spring clips in grooves retain the floating gudgeon pin in the light piston.

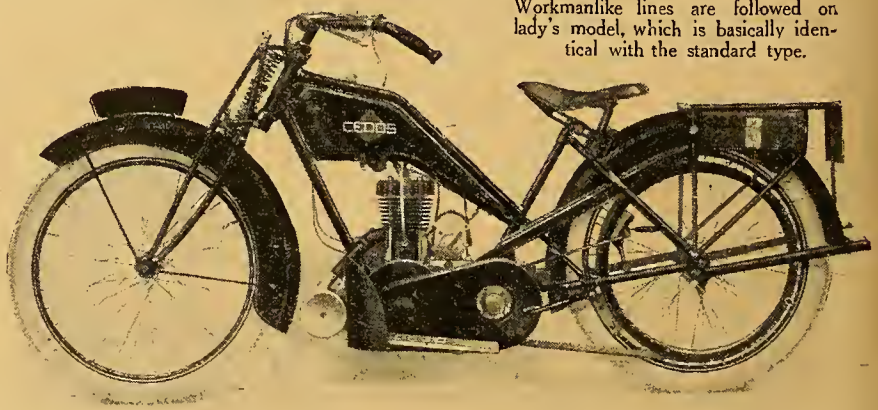
Crankshaft Machined All Over

Every reciprocating and rotating part of the engine is machined all over so exactly that it is unnecessary to balance each engine individually. In the same way no rough surfaces are left to collect carbon in the cylinder or the ports.

A specially-designed carburetter is used which goes a long way to eliminating four-stroking.

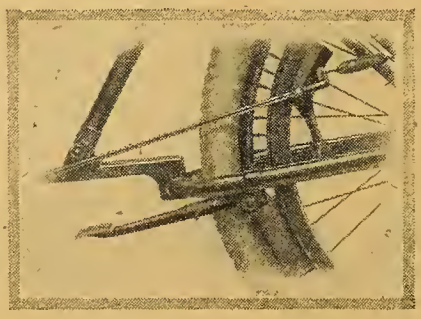
Since the aluminium expansion chamber is eleven times the piston displacement of the engine, noise has been reduced to a minimum.

Lubrication is of the suction drip-feed type direct to the cylinder, special attention being paid to the internal distribution of the oil.



Workmanlike lines are followed on lady's model, which is basically identical with the standard type.

Frame, tank, and cycle parts generally are of workmanlike design; everything on the machine except the magneto and gear box (a Sturmey or Moss three-speed) is made in the company's own works, which ensures homogeneity of design The spring fork has been improved and a neat and comfortable type of semi-T.T. handlebar evolved, as an alternative to the touring type. Naturally, the distinctive Cedos under shield is fitted, although the shape has been modified.



Both brakes act on the belt rim.

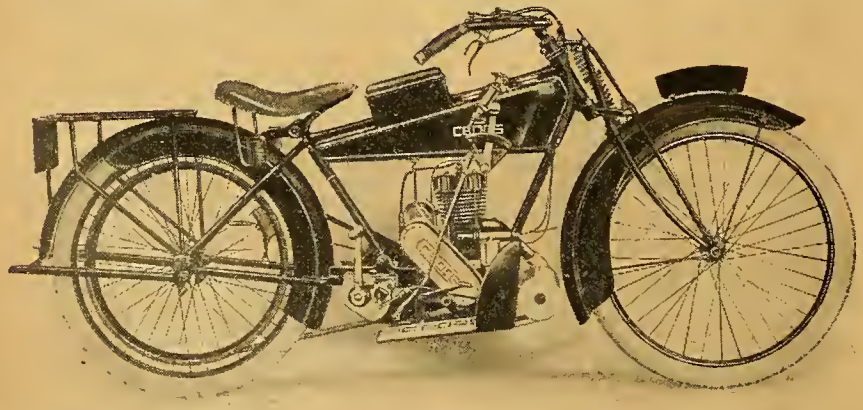
Detail Improvements.

Other 1923 improvements include a cam adjustment on the gear box bracket for the primary chain, an internal and an external brake, both on the rear wheel belt rim, and an enamelled-steel chain and flywheel cover.

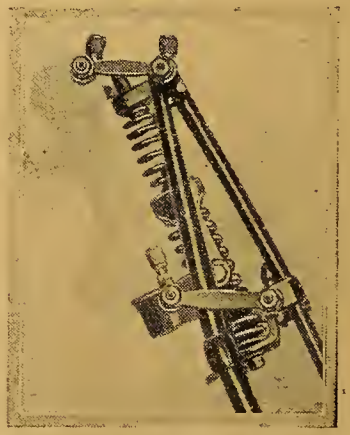
A lady's model is also marketed. In this case the top tube is dropped, necessitating an alteration in the shape of the tank, and 24-in. wheels are fitted instead of 26-in. The over-all weight is only 2 lb. more than the standard machine, which turns the scale at the remarkably low figure of 148 lb.

The finish is now all black, thus ensuring complete weatherproofness. The prices are £60 for the open-frame machine and £2 less for the other.

The makers are the Cedos Engineering Co., Ltd., Northampton.



By reason of the detachable head the Cedos two-stroke rather resembles, at a first glance, a four-stroke.



Re-designed front forks which damp out shock and rebound.

Advance Details of 1923 Designs.—

TO CONVERT THE PEDAL CYCLIST.

Strongly-built 116 c.c. Miniature Produced by Bowden Wire, Ltd. Novel Friction Transmission.

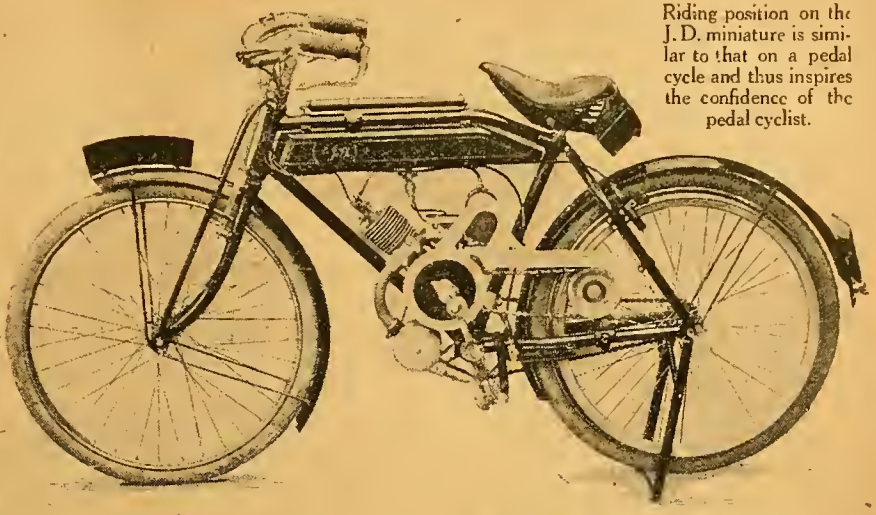
AT a first glance at the J.D. motor cycle (a new product of Bowden Wire, Ltd.), one is inclined to say, "Ah, another motorised bicycle!" But one very soon alters that opinion; and the more the design is studied the more it is admired.

An attempt has been made to do something that has never been done before, *i.e.*, to evolve a self-propelled vehicle that will, by reason of its similarity to an ordinary bicycle and its simplicity, attract the pedal cyclist, but to design and build it with the same care and thoroughness as are bestowed on the most expensive machines of to-day. For this reason it is not cheap, in any sense of the word. It has not been built down to a price; "everything of the best" was the producer's motto, and it was then estimated that the cost would be £40.

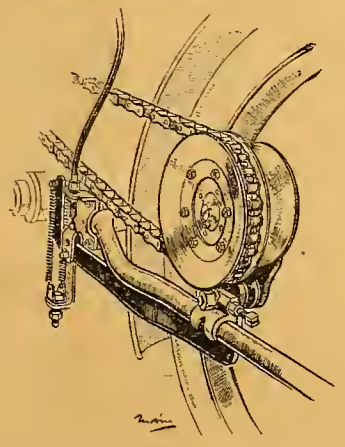
Only Superficially like a Pedal Cycle.

The resemblance to a motor-assisted pedal cycle is merely superficial. The frame, which has a sloping top tube, is amply strong enough for the roughest use in the hands of the novice; double-butted tubes are used where possible. After considerable experiment spring forks were discarded as unnecessary, a rigid girder type being fitted.

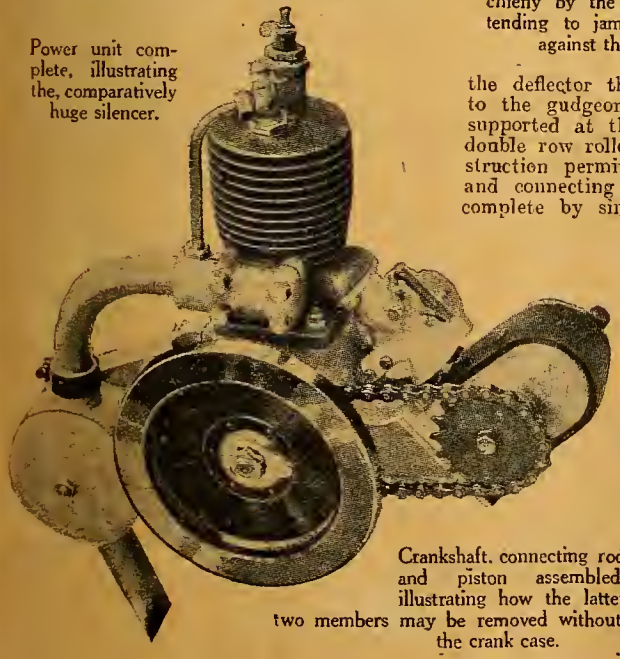
Orthodox three-port design is followed in the 116 c.c. (51 × 57 mm.) two-stroke engine, which, however, is notable for the excellence of its finish and the fine limits to which its component parts are made. Instead of being in front, the transfer port is at the side of the cylinder,



Riding position on the J.D. miniature is similar to that on a pedal cycle and thus inspires the confidence of the pedal cyclist.

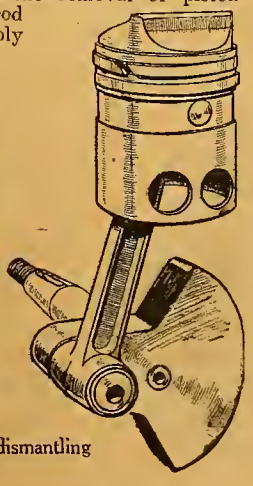


Friction transmission is used which by the Bowden mechanism shown provides a clutch and free engine. Contact pressure is gained chiefly by the pull of the driving chain tending to jamb the small friction disc against the flange on the wheel.



Power unit complete, illustrating the, comparatively huge silencer.

the deflector thus being at right angles to the gudgeon pin. The crankshaft is supported at the flywheel side only—on double row roller bearings—and this construction permits the removal of piston and connecting rod complete by simply sliding them off at the big end, of course after the cylinder and crank case cover plate have been removed—the latter to allow sufficient clearance. Accessibility is a feature generally.



Crankshaft, connecting rod and piston assembled, illustrating how the latter two members may be removed without dismantling the crank case.

A very large silencer is fitted, this, like the other aluminium portions of the machine, being a die casting.

Magneto and transmission sprockets, together, are bolted on to a spigot on the inner side of the outside flywheel, which itself is keyed on to a taper on the main shaft.

Simple and Effective Friction Drive.

Friction transmission is employed. Carried on a bracket pivoted on the rear stays is a sprocket, driven by the engine, and a U-shaped disc of a special friction material, which makes contact with the inside of a U section flange bolted to the rear wheel. To de-clutch, the driving disc is simply swung clear by a Bowden lever on the handle-bar acting against two fairly light coil springs. Sufficient pressure to gain a non-slip contact in all weathers is gained chiefly from the tendency of the driving member, helped by the pull of the driving chain, to jamb forwards. In practice this works admirably. The gear ratio is between 9 and 10 to 1. The system has the additional advantage that in free engine (held out by the usual handle-bar ratchet clip) no friction is caused by any transmission members revolving; coasting is thus as free as on a pedal cycle. The detail design, and workmanship, as in the power unit, are very fine.

Endless chains are used for the magneto and transmission, adjustment being gained by sliding the whole engine unit up the front tube. To accommodate this movement the rear engine lug embodies a swinging link.

Pedalling gear is fitted, the chain adjustment in this case being in the eccentric bottom bracket, thus leaving the transmission centres undisturbed.

Equipment and Controls.

An aluminium guard protects the driving and magneto chains, and fairly wide and amply strong mudguards with number-plates are standard. The equipment throughout is of the first quality,

Advance Details of 1923 Designs.—down to a Lucas Girder spanner in the tool kit.

There are only five control levers—front and rear brake (the latter of neat but most effective design working in the transmission rim), throttle of single lever carburetter, "clutch" (or free engine), and decompressor. "Petroil" lubrication and fixed ignition all tend towards simplicity.

The tank holds six pints of fuel, sufficient for 100 miles or so. All on, the machine weighs about 80 lbs., but the designers wish it to be made clear that no attempt has been made to obtain a low figure here. Rather, the weight figure simply "happened."

Extended road tests for three years have failed to find any weak spots, and the road performance without pedal assistance is remarkably good.

It will be most interesting to see how the public receives this miniature, for it will readily be admitted that the policy which inspired it is a most courageous one, in these days of price reduction.

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750 c.c. TWIN TWO-STROKE.

A Vertical Twin Sidecar with Three Speeds and Reverse to be at Olympia

BLERIOT FRERES, the well-known manufacturers of aeroplanes, motor car head lamps, dynamos, etc., have for some time been testing an entirely new model twin-cylinder two-stroke machine designed primarily for sidecar work. Although the engine is but of 750 c.c. capacity it is rated, in France at any rate, at the rather high figure of 8-10 h.p., the bore and stroke being 70 mm. × 96 mm.

This new model resembles the smaller Bleriot twin-cylinder four-stroke machine which has now been in commercial production for nearly three years, but possesses several novel and distinctive features. The clutch, of the disc type in which eleven discs are used, is contained within the flywheel, which is located centrally between the two cylinders, and these, as will be seen from the illustration, are spaced apart somewhat more widely than is usual in the case of vertical twin-cylinder machines. For the purpose of induction the two compression tight compartments of the crank case are located one on each side of the engine, and furthermore the casting is ribbed to assist cooling.

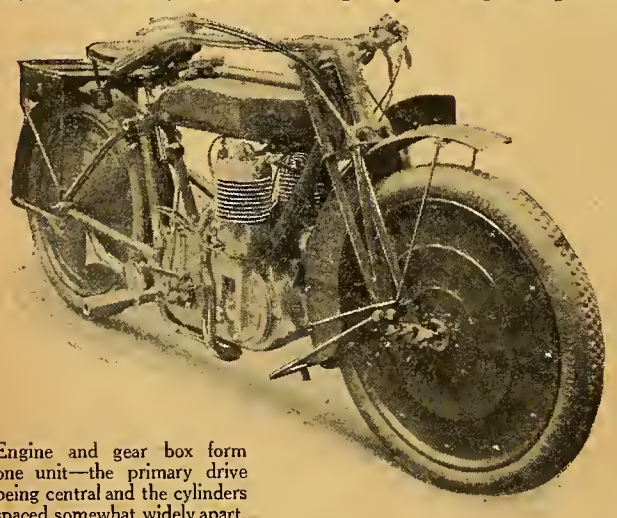
Unit Construction.

The three-speed gear box forms a unit with the engine, and an unusual feature is the provision of a reverse gear in addition to the three forward speeds. The change speed is effected in a novel and ingenious manner, the lever having only two positions on the quadrant, but also a vertical movement. In its normal position it operates first speed and reverse, a catch being provided which must be released before the lever can be made to bring the reverse into operation. For second and third speeds the lever must be pressed vertically downwards about three inches; it is then in position for bringing these two gears into action. All the rods controlling this gear are made adjustable, and the whole arrangement is actually less complicated than might be supposed from a brief description.

An advance 1923 model Bleriot. It will be seen that it is quite a compact machine. Observe the very small reduction in ratio of the driving and driven sprockets.

The petroil system of lubrication is used for the engine, grease, or a mixture of grease and oil, being used in the gear box. Dual clutch control is provided, and a kick-starter operates on the primary shaft of the gear box. Although final belt drive is shown in one illustration it is understood this machine will also be made with chain transmission.

The front forks and the frame generally are of substantial construction, the former being well provided with lubricators. A semi-cantilever type spring seat pillar is used and a front stand is fitted, though this latter looks somewhat fragile judged by British standards. An improvement in the arrangement of the exhaust pipes will be incorporated in later models in which a V-shaped union leads away to a centrally placed pipe passing between the double down tubes of the frame to the silencer underneath, which gives a neater and more symmetrical appearance to the machine. We understand that this machine will make its appearance in London at the November Show.



Engine and gear box form one unit—the primary drive being central and the cylinders spaced somewhat widely apart.

A very interesting "sports" type modification of the standard twin-cylinder four-stroke machine is also being produced for the coming season, and will be shown at the Olympia Show.

As in the case of the standard model the two cylinders, 60 × 88 mm. bore and stroke, work on the same crank, but in the sports model the heads are detachable and of true hemispherical form, with overhead valves operated by push rods and rocking levers, the former being placed side by side centrally in between the two cylinders, those for the exhaust in front and those for inlet at the back. This valve gear has been particularly neatly carried out, and the engine presents a thoroughly workmanlike job. As in the case of the standard model three speeds are provided, the camshaft which operates the inlet valves being arranged to serve also as the primary shaft of the gear box. The gears are always in mesh, changes being effected by means of selective dog clutches.

Not for Racing.

It should be added that this machine is intended simply as a "sports" model for use by the general public, and not specially for the most strenuous racing events, in which it is realised that a constant mesh gear box would probably be unsuitable. The new engine, we are informed, has done well over 4,000 revolutions and performs very satisfactorily on the road.

The standard touring model is now being marketed at a very interesting price, 3,975 francs in France, or £68 10s. at the present rate of exchange.

Advance Details of 1923 Designs.—

THREE SIZES OF VILLIERS ENGINES.

147 c.c., 250 c.c. and 343 c.c. Models with Flywheel Magnetos. A Miniature Engine which is by no means a Toy.

IN the world of two-stroke engines no proprietary manufacturers are more celebrated than the Villiers Engineering Co., Ltd. Its latest productions are always eagerly watched by two-stroke enthusiasts, and the range which it is proposed to market for 1923 is of peculiar interest, in that a tiny 147 c.c. model is to be included.

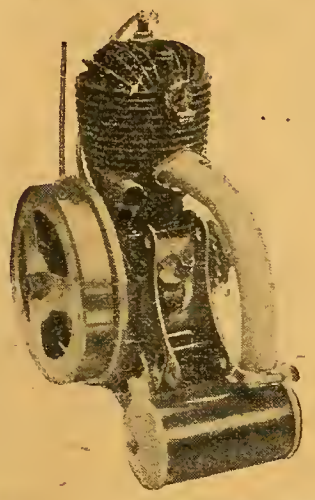
Three types will be manufactured, the capacities being approximately 150, 250, and 350 c.c. These three models have many features in common, including, of course, the Villiers flywheel magneto, which can, in addition, be used as a lighting set, if required.

Externally, the most obvious change is the position of the induction pipe, which is now cast integrally with the cylinder barrel and lies in a convenient position on the flywheel side with the carburetter facing forward; also the arrangement of the cylinder head cooling in which the inclined longitudinal ribs each spring from the cylinder head itself, so that the maximum possible cooling surface for the given type of cylinder head is obtained.

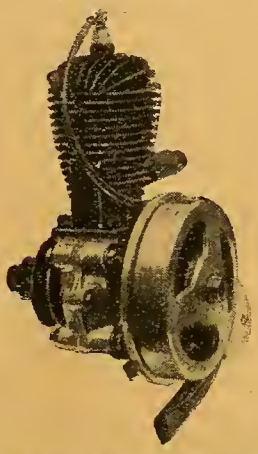
Cylinder Alterations.

Cooling has received particular attention, and, in addition to the excellent rib design, the cylinders have been thickened up to sensible proportions, with the result that the manufacturers assure us that any possibility of drying up, except owing to faulty plugs, has been eliminated. All ports which are of large dimensions are bridged to prevent damage to piston rings, and the exhaust pipe is led away at an angle so as to avoid fouling frame tubes; in addition, the silencer has been somewhat enlarged. The improvements which have been incorporated are such that the new 250 c.c. engine develops 25 per cent. more horse-power than the previous engine of larger capacity.

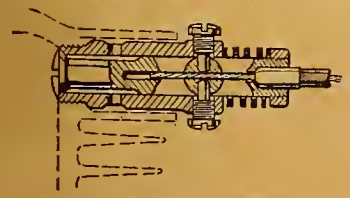
To go into details, one feels inclined to deal first with the miniature model, which has a bore and stroke of only 55 × 62 mm. (147 c.c.). It may well be found that this tiny power unit, with its self-contained flywheel magneto, may become a forerunner of the lightweight of the future, or what is more popularly termed "the motor cycle for the million." One is apt to consider such a tiny engine as a toy, but we can give a personal assurance that it is nothing of the kind; it is a pleasingly constructed miniature which produces wonderful power for its size. We rode a motor cycle, of normal size and construction, fitted with a two-speed gear box, and the new 147 c.c. Villiers engine. The power and speed of this outfit were quite remarkable, and the top gear ratio of approximately 6⅝ to 1 is by no means so low as to feel ineffective. The little engine is capable of propelling a rider of normal size and weight at quite 25 miles an hour, and of ascending normal hills on the same gear ratio, while its tiny proportions and excellent balance render it to all intents and purposes vibrationless. It will be no surprise to us to find that in the near future a large number of miniature motor cycles are fitted with this engine, and a suitable two-speed gear, since such a combination would be ideal for the average person who requires to travel short distances regularly, while it is particularly suitable for ladies' use.



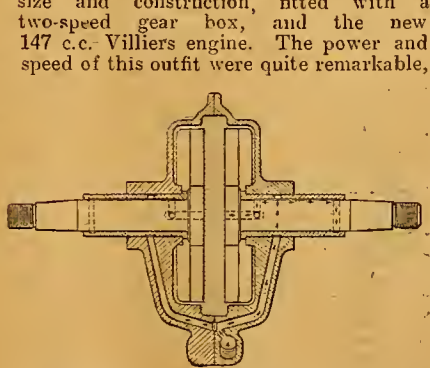
The new 343 c.c. Villiers engine has a notably large silencer.



The miniature 147 c.c. unit, an idea of the size of which may be gained from the (standard) sparking plug.



Leverless release valve on the 147 c.c. Villiers. The cable is anchored to a stop and the casing lifts the valve.



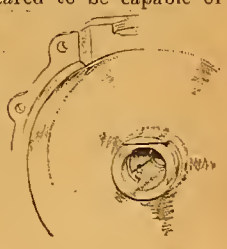
Diagrammatic section of the Villiers suction lubrication scheme.

Petroil Lubrication on Miniature.

The 147 c.c. Villiers is lubricated on the petroil system, but the larger models are supplied with oil in a most ingenious manner. The system may be easily followed by reference to the attached illustrations, which show diagrammatically the path of the oil. Oil is fed through a hole in the back of the crank case casting, whence special leads conduct it to the long plain crankshaft bearings. The longitudinal groove distributes the oil throughout almost the entire length of these bushes, a retaining groove being formed at the outer end, while a groove extending for approximately half of the circumference of the bush is formed at the inner end. On the upstroke of the piston, when there is a partial vacuum in the crank case, this semi-circular groove registers with a radial hole in the crankshaft, which is in connection with the crank case by a hole concentric with the shaft; thus, during the suction stroke, oil is induced into the crank case, but just before any positive pressure is present the radial hole in the camshaft leaves the semi-circular groove and cuts off the oil-flow, preventing blow back through the passages. To prevent any possibility of the bushes turning and thus interfering with the timing of the lubrication system the bush flanges are cut away so as to register with the projecting tongue on the crank case bosses.

For Light Sidecar Work.

As regards the largest of the three models rated by the manufacturers as 3½ h.p. and having a bore and stroke of 79 × 70 mm., we took the opportunity of a short road test of this machine with a light but fully equipped sidecar attached. It is sufficient to say that with a two-speed gear it appeared to be capable of



Arrangement of oil grooves in the main bearings. and the bush positioning tongue.

Advance Details of 1923 Designs.—taking its rider and passenger anywhere that a reasonable motor cyclist would expect to go, and to be entirely free from any symptoms of drying up even under prolonged hard driving. It was possible to open the throttle almost fully on open roads, and to leave it in this position for a considerable length of time without any noticeable falling off in power output. It must not be imagined, however, that the machine is slow, for we are informed that with a sidecar it is capable of over 40 miles an hour, and we should judge that this statement is within the fact.

NOTTINGHAM ACTIVITIES

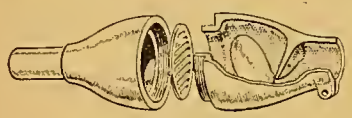
A SHORT tour of inspection of Nottingham is particularly interesting at the present time since, as a result, one is able to forecast in some small measure the probable developments from this city for the year 1923. The general public do not realise how important a centre from the motor cyclist's point of view is Nottingham, yet there are quite a number of manufacturers who influence the state of the industry to no small degree.

The 80 m.p.h. Brough Superior.

Mr. George Brough is busy with his new S.S.80 model, the prototype of which was seen in the recent A.C.U. Six Days Trials. Very few modifications have been found to be necessary, and the machine is already available in 1923 state. It will be remembered that by employing a curved rear frame lug the saddle position has been brought 2in. further forward and lowered by the same amount, so that in effect the latest Brough Superior carries a big twin engine in a frame but little larger than that of the normal machine with 350 c.c. engine.

In spite of the fact that the S.S.80 is in effect a fast sports mount, and carries a guarantee of 80 miles an hour, it is a thoroughly practical fast-touring machine, and all essential fittings are present in highly specialised forms. For instance, the tool bag behind the saddle tube is sufficient to carry all necessary tools and spares, while the very large pannier bags are of ample size to carry necessities for a night's stay.

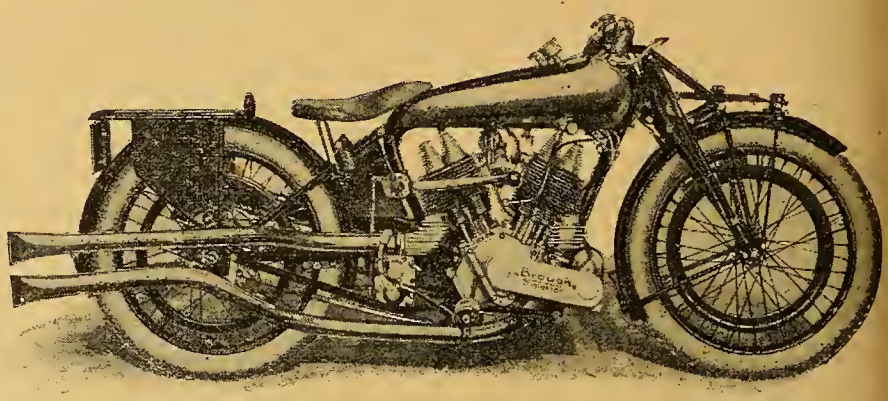
An ingenious detail is noticeable on the front end of the carrier, where a small



Expansion chamber of the Brough Superior which can be taken apart for cleaning purposes.

loop is formed which may be used for lifting the machine on to the stand, and also serves to prevent packages attached to the carrier from working forward into the rider's back. The latest J.A.P. engine has proved particularly satisfactory, and the cast aluminium exhaust elbows give a very distinctive appearance to the whole machine. Perhaps one of the most important features of the new Brough is the employment of tie rods between the lower part of the crank case and the rear spindle. This idea is by no means new, but Mr. Brough informs us that it has had a wonderful effect on the steadiness and controllability of his machine.

Lubrication has been somewhat modified, there being a gravity feed to the back of the front cylinder, while the existing handle-bar control pump is connected to the engine *via* the camshaft. This feature has been included owing to the fact that the double concentric springs on each valve impose considerable loading on the cam gear, which, however, is satisfactorily silent. Further modifications include a stiffened tank, larger rear brake-shoe, and an internal expanding front brake.



Imposing lines are followed in the "S.S.80" Brough Superior, which, minus its silencers, looks most businesslike.

Campion Frame Improvements.

Though the specification of Campion models which will be manufactured in a wide range remain much as before, there will be detail changes which will affect the appearance of the machine to a considerable degree, the frame being altered in such a way as to provide a very neat and compact appearance. On the occasion of our visit we were able to inspect a very handsome sidecar taxi which is being supplied to Luton. The outfit is propelled by a 976 c.c. J.A.P. engine, with Sturmey-Archer gear and quick detachable wheels, the cab body being excellently finished and perhaps the most roomy and comfortable which we have ever seen.

Sturmey-Archer Gears.

The latest models of Sturmey-Archer gear have already been described in the pages of *The Motor Cycle*, and it is sufficient to state that the extremely neat new gear box is beginning to make its appearance in quantity. Its appearance has been improved and its weight reduced by the incorporation of a kick-starter without the use of additional wheels, while the box itself is more compact and the new shock absorber in the clutch has proved most satisfactory. This point we have been able to check from personal observation since a short run on a machine so equipped proved that the semi-pneumatic rubber absorbers take the snatch out of the drive in a most satisfactory manner even at quite low speeds. With a single-cylinder engine the snatch, which is usually apparent, is softened to a wonderful degree.

Jardine 4-Speed Gear.

The Jardine 4-speed gear box has undergone small but important modifications in the control gear which renders the process of changing speed more positive. This well-known gear has done much to popularise the 4-speed box, and one of its important features is its silence in action.

A New 500 c.c. Brough.

Mr. Brough, sen., will have a new line on exhibition at Olympia, which will consist of a 500 c.c. flat-twin sidecar outfit with side-by-side valve gear. It will probably be sold at the unusually modest price of 100 guineas complete. In effect this engine embodies the crank case, camshaft, etc., of the present sports model, but will be fitted with cylinders similar to those of the well-known 692 c.c. Brough, though somewhat shorter, the bore and stroke being 70×64½ mm. This machine, for a flat twin, will have a short wheelbase, and will be thoroughly well equipped with three-speed Sturmey-Archer gear and comfortable sidecar. The sports model of the same bore and stroke will, of course, be shown. It has undergone slight modifications only, the chief of which lies in the substitution of roller bearing big ends for plain big ends. In addition to this, the valve ports, which have previously been detachable, will be cast in one with the cylinder head. This sports model will be fitted with close ratio Sturmey-Archer gears, clutch, but no kick-starter, and it is probable that it will carry a guarantee stating that it is capable of 75 to 80 miles an hour (the exact figure has not yet been definitely fixed). Both models have chain drive throughout.

ENTHUSIASTS ON HOLIDAY!

(See page 452.)

Words are inadequate in describing the difficulties of the Scott Trial, but these pictures certainly help! (1) Although the Scar was probably the least easy test of the event it appears child's play compared with what follows. (2) G. Clapham (532 Scott) ploughing through a deep and dirty bog. (3) C. S. Burney (349 Beardmore-Precision) in a very minor water-splash. (4) In a major water-splash—the River Nidd. J. M. Davies (481 Scott Squirrel) plunging through amid clouds of steam while a less fortunate Sunbeam rider wades out.

Road Tests of New Models

The 595 c c. New Hudson Sidecar Outfit.

SPECIFICATION.

ENGINE: Single cylinder (87 × 100 mm. (595 c.c.).
TYRES: 700 × 80 mm.
GEAR BOX: Sturmey Archer three-speed box with special gate change.
TRANSMISSION: Chain, with shock absorber on engine shaft.
PRICE: £125 with sidecar, £100 solo.

LAST Olympia motor cycle exhibition marked the return of the New Hudson as a big single and sidecar, and the new model has been most successful in recent trials.

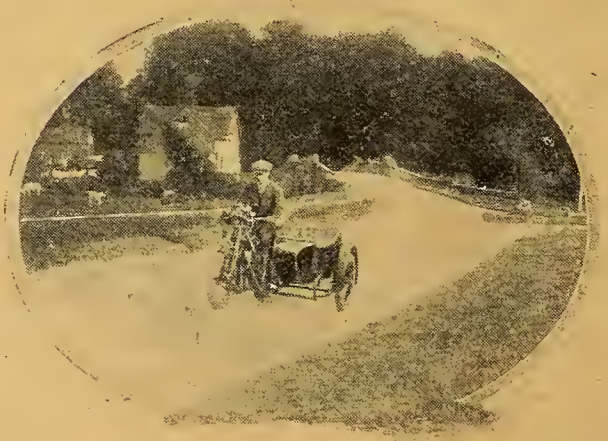
Not only did the firm produce an article up to its own high standards, but made a point of placing it on the market at a competitive price; the very complete and up-to-date specification of the 595 c.c. New Hudson, with its comfortable and luxurious sidecar, is a very marked feature for so moderately priced a machine. Included in this specification are such features as a decompressor to ensure easy starting, an excellent cush drive on the engine shaft, and sensibly proportioned internal expanding brakes in both wheels. In addition, such details as chain cases have not been scamped, and although these, of very neat aluminium castings, take the form of guards rather than full covers, the foremost protects the whole of the outer side of the primary chain. Aluminium footboards of sensible length and width, useful leg-shields, licence holder, and, in fact, every essential detail, are included. Further, the wide flat-section mudguards are thoroughly practical in every way.

Well Run-in Engine.

Bearing these many excellent qualities in mind, we took over a standard New Hudson outfit on a recent occasion for a test of its road capabilities. The machine was by no means a new one and had seen much hard service, particularly the engine, which had acquired that comfortable rather than sloppy feeling that is only obtainable in a well-worn engine of first-rate manufacture.

Throughout our test the New Hudson behaved admirably; it started with great ease, showed wonderful "slogging" capabilities; proved to have maximum speed of well over 40 miles an hour; and was able to maintain a speed of 30 to 35 miles an hour with full load, apparently indefinitely.

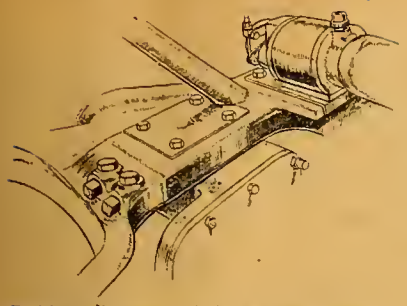
In covering our usual Midlands test route we were particularly impressed with the sound pulling capabilities of the engine with a passenger in the sidecar. Usually a second-gear climb for a single-cylinder sidecar. Frizz Hill, between Wellesbourne and Kineton, was ascended on top gear. Edge Hill, a little further on, called for middle gear on the first bend, but the summit of the hill was passed at a speed of 20 miles an hour on the Bonniksen indicator, the performance approximating to that of the average twin outfit.



Despite its large tyres and heavy build the outfit is quite pleasing to the eye.

Satisfactory Brakes.

Down Sunrising the brakes were thoroughly tested, and it was found that there was no need for such precautions as engaging a low gear, for either brake separately kept the machine under full control, and application of both together caused an instant



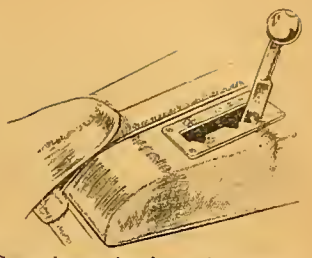
Positive adjustment of the primary chain is provided by two studs on the gear box bracket.

stop on the steepest down-grade.

Owing to the S-bend near the steepest part of Tysoe Hill, the maximum speed over the summit was a little over 15 miles on middle gear, but there were no signs of labouring under these circumstances. On the return journey Sunrising was ascended comfortably on middle gear, and even after hard driving the engine showed no signs of distress through overheating. Mechanically the unit was somewhat noisy, owing, chiefly, to the fact previously mentioned that it had much hard work before passing into our hands. As regards exhaust noise, the very large silencer now fitted below the footboard is quite efficient, and even under full throttle the engine is not unduly noisy. Tested through a normal watersplash, the mudguards, leg-shields and footboards protected the rider very well, and no special leggings were required under these circumstances. On the other hand, as is often the case, the leg-shields render the heat of the engine noticeable on the right leg, and also accentuate mechanical noises.

Convenient Gear-changing.

Gear-changing is particularly simple, for, combined with the well-known Sturmey-Archer box, is a lever projecting through a slot in the tank, and so placed that it comes very conveniently to the driver's hand.



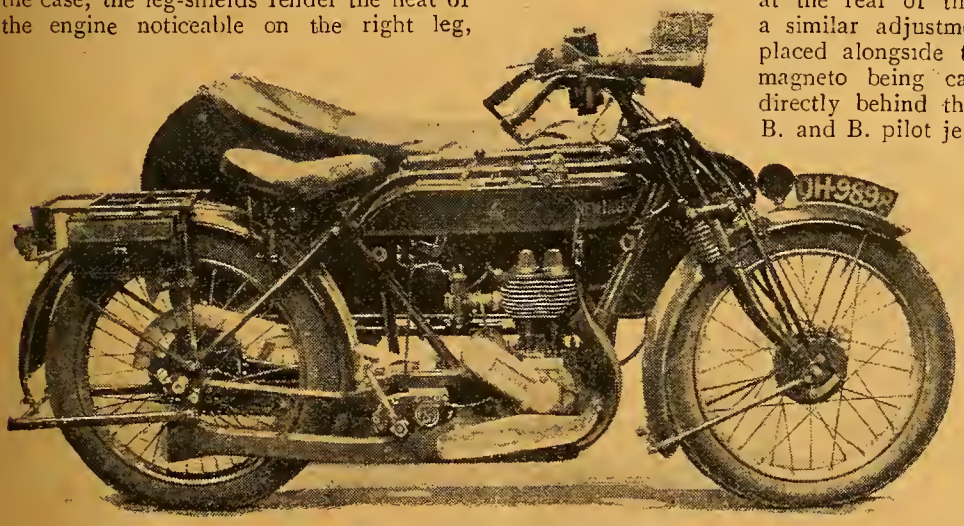
Gate change in the tank connected to the Sturmey gear box.

The Druid-type forks worked smoothly and satisfactorily, and, in combination with the 700 × 80 mm. Dunlop Magnum tyres, provided extreme comfort for the rider.

The sidecar is well sprung, well upholstered, and roomy, and possessed of a sensible locker in its bulbous back. Sidecar attachments are not always too satisfactory, but we have no grumbles with regard to those on the New Hudson outfit; they appear to be rigid and satisfactory in every way, and though the steering was slightly heavy, owing probably to the very large section tyres, this was only noticeable at very low speeds.

Detail work throughout is excellent, and, in addition to a positive adjustment of the gear box placed at the rear of the bottom bracket, there is a similar adjustment for the magneto chain placed alongside the gear box adjuster, the magneto being carried well clear of mud directly behind the cylinder. The standard B. and B. pilot jet carburetter functioned admirably throughout.

The New Hudson engine is well designed, having large valves and excellent cooling arrangements. It differs from many modern engines in employing plain bearings throughout the crank assembly. These, however, have proved fully satisfactory, and our impression of the 1922 New Hudson outfit is that it is a thoroughly satisfactory machine.



Sturdy symmetry may be said to be the keynote of the 595 c.c. New Hudson outfit.

NATIONAL CENSUS OF ROAD TRAFFIC.

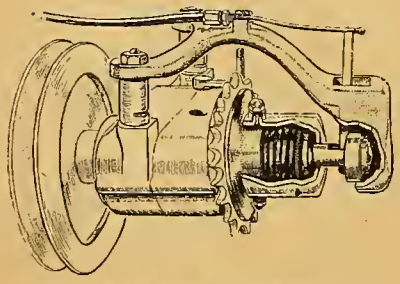
THE ultimate value of the road traffic census, just completed by the Ministry of Transport (says *The Autocar*), should be considerable. The enumerators—men specially selected for the task—made careful note of every vehicle which passed their observation posts, and when the records have been collected and analysed they should provide data most useful in helping the Roads Department of the Ministry to determine such at present debatable points as the actual gross tonnage which certain roads have to carry, the volume of traffic at specified points, the proportion of "through" to local traffic, the need for widening certain roads, the advisability of "classifying" a road on the ground that it has a heavy burden to bear, and the class of surface required on individual sections to suit the variety of vehicle most in evidence upon them. Incidentally, the census should enable the Minister of Transport to ascertain where good value is being obtained for the money spent on highway upkeep, having regard to the traffic stresses imposed.

AMONG THE ACCESSORIES

Handsome Mechanical Horn.

Ease of operation and graduation in tone are features of the Lion mechanical horn, made possible by the powerful leverage of the handle; adjustment is provided to take up wear. 37s. 6d. (The Britannic Electrical Co., Ltd., Warstock, near Birmingham.)

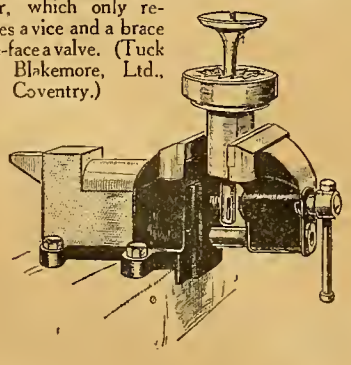
Clutches for ex-W.D. Douglases.



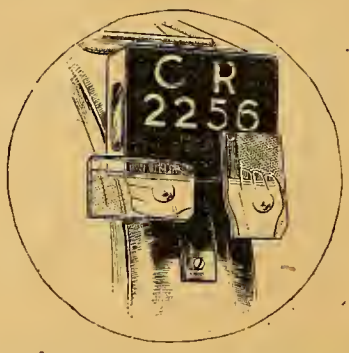
Plain two-speed ex-W.D. Douglases may be converted to clutch models by the Long cork insert clutch. (The Motor Cycle Accessories Co., 43a, New Cross Road, London, S.E.)

Valve-Facing Without a Lathe.

Motor cyclists who do not possess a lathe will be interested in the Tuckmore valve truer, which only requires a vice and a brace to re-face a valve. (Tuck and Blakemore, Ltd., Coventry.)

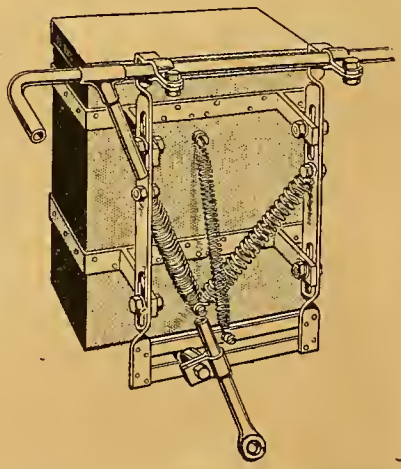


Auxiliary Traffic Signals for Motor Cycles.



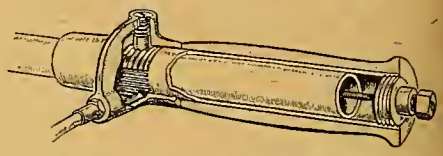
After the style of the devices occasionally seen on large cars, a hand-signalling device has been designed by S. W. Edwards, 19, Sydney Street, Shirley, Southampton, for motor cycles. Each pair of lever-operated hands—there is one in front—is transparent and therefore is illuminated at night by the existing lamps.

Spring Suspended Luggage Case.



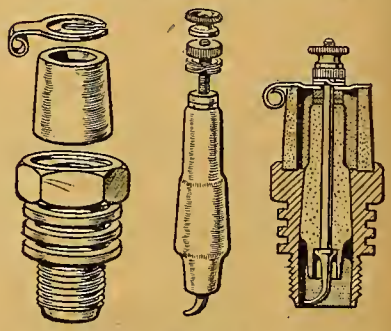
Suspended on coil springs from an auxiliary frame work attached to the carrier proper where the tool bags usually are fitted, the Playfoot spring luggage case solves the problem of carrying fragile items awheel. If two cases are used it is easy to connect them across and form a third platform, say, for a pillion seat. (R. Playfoot, 31a, Portswood Road, Southampton.)

Ingenious Twist Grips.



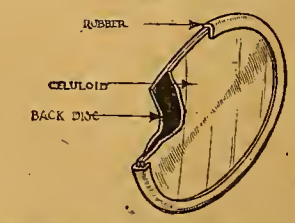
Operating two controls simultaneously and independently, Alexander's twist grip uses a rack and pinion for the throttle and a straight outward pull for the air. The spring behind the plunger in the thumb stop is just sufficiently strong to locate the air control. Straight pulls on both wires and positive adjustment are other advantages of the device. (E. C. Alexander, The Elms, Upton.)

Simple Detachable Plug.



In the Collins plug design, the central electrode and main insulator are a taper fit in the plug body, cylinder pressure and a capped tube of some suitable non-conducting material holding the assembly together. (Capt. S. L. Collins, Fairholme, Sunbury Common, Middlesex.)

Weather-proofing the Licence Card.



Cheap licence holders are seldom thoroughly waterproof; to overcome this the "Weather-proof" protector has been designed. It seals the card inside the ordinary holder. (S. J. Addison, 74, Derby Road, Northampton.)

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

40,000 MILES WITHOUT DECARBONISATION.

Sir,—My Triumph still does 40 m.p.h., with sidecar, ticks over like a clock, and starts after two kicks without priming, and has been running five years without ever being decarbonised either by cylinder removal or any patent process. (Approx. mileage, 40,000.)

This is in all weathers and conditions of riding, over fields and through lanes necessitating low-gear work for half an hour at a time. An exhaust valve broke a couple of years ago on the road; this I replaced with the spare carried, without grinding in, and carried on as good as ever.

The machine is open for inspection, and the people on my round of farms will verify my statements. I am not a mechanic nor a wizard. So here's to

Hambrook. TRUSTY TRIUMPH.

FUEL CONSUMPTION OF TWO-STROKES.

Sir,—In reply to "Old Bill's" query *re* the petrol consumption on my Allon two-stroke, the 132 m.p.g. is in no way exaggerated, the mileage being recorded by a Watford speedometer and a Veeder cyclometer.

My carburetter is a B. & B., but I do not know the size jet, as I have never touched it; the only alteration I have made is to take the air cap off and put a piece of gauze over the air intake. My speed is usually 20 to 25 m.p.h.

"Old Bill's" figure of 70 m.p.g. is far from satisfactory, and I think he will trace the cause to a leak in the crank case; I have found that a slight leak will reduce the mileage by as much as 20 miles. The faces of the two halves of the crank case should be absolutely clean, and each bolt tightened down evenly by a turn at a time. NOLLA SYADLLA.

Norwich.

WIRELESS FOR MOTOR CYCLISTS.

Sir,—"Senex," in a recent article in *The Motor Cycle*, bewails the fact that it is impossible for the passenger in a sidecar to talk to the driver, and he probably voices the opinion of many.

An ideal silencing system, however, may not come for some time, and till then a miniature radio set will, I think, solve the problem. A dynamo, similar to those now used for lighting purposes, would supply the current; the commonly-worn helmet would hold and hide the head-band. The machine would not need a range of more than five or six miles, and so need not be unwieldy.

Even when the ideal silencing system comes, and passenger and driver can converse freely, the radio set will have a wide sphere of usefulness. For instance, on a recent tour with a friend, on several occasions it happened that the one who had been riding ahead returned two miles or so to find that the other had been delayed by quite a minor adjustment. Eventually we got separated at a fork after dark; in circumstances such as these some means of communication would have been invaluable.

The rider in a hurry, too, when unwillingly compelled to pass a break-down on the road, would infinitely prefer the definitely spoken regrets, as possible by radio, to the unintelligible shout he is compelled to use at present.

Till the motor cycle becomes a practically silent machine there will be great scope for radio as a means of communication between passenger and driver, or two or more riders in company, which is on most machines impossible at present.

Altogether it is a fascinating subject, and I am convinced that a reliable radio set will, in the near future, be as much a standard fitting on motor cycles, or for that matter motor cars, as electric lighting will be, developing, as most things appertaining to motor cycles do, from the "extra gadget" stage to an indispensability. A.J. 2¼.

Darlington.

VANQUISHED AGAIN. Screw Hill, discovered by *The Motor Cycle* and regarded as the country's worst hill, continues to attract would-be mountaineers. G. White (976 Brough Superior sidecar) making a good climb during a recent impromptu attempt. The picture is not faked in any way

FUEL CONSUMPTION ON A BIG SINGLE.

Sir,—How Mr. A. D. Harper manages to obtain 127 miles to the gallon on his 550 c.c. Triumph I don't know, and in my opinion it is quite impossible with a Triumph carburetter. I have ridden a 550 c.c. Triumph practically as long as your correspondent, and my petrol consumption is between 60 and 70 m.p.g. In my opinion the 550 c.c. Triumph is the finest solo machine on the road, but I do not believe in attaching a sidecar to it if speed and power are required. The finest sports sidecar outfit on the road is the 678 c.c. Martinsyde.

Batley. TRIUMPH.

THE FINEST PROSPECT.

Sir,—Try these:

Edgehill and Sunrising Hill, between Banbury and Stratford.

On road from Clipston to Market Harborough, with Market Harborough just below.

Newnham Hill, near Daventry; also at the other end of the hill on road from Newnham on to London Road.

Hill on the road in a field above Priors Marston, Warwickshire.

From Winwick to Cold Ashby. (The road is on the map, but cannot be easily seen in the fields.)

Rugby. F. M.

SILENCE.

Sir,—Your leading article on "Unwarranted Activity Against Noise" is indeed very timely and welcome. The action of the police in respect to silencing cannot be too strongly condemned, and it is high time that someone made a move to counteract it. The methods some of them adopt are, to say the least, reprehensible.

For instance, a friend riding my machine, a 348 c.c. Douglas fitted with silencer, was pulled up in the following manner: After passing two policemen (in plain clothes), a third some distance away (also in plain clothes) pulled him up, suggesting that someone wished to speak to him—they did, all three of them; fined £1.

As far as silence goes the machine is inaudible at fifty yards. A. G. B.

Stone.

Sir,—I am not a believer in the straight-through pipe; neither am I a believer in the ultra-silent machine. I think that it is always noticeable when riding a fairly noisy machine that the people who apparently spend their leisure time obstructing the roadway manage to take notice of one's approach and to give one the minimum amount of room to get through.

On the other hand, on a really quiet machine the driver is reduced to a—usually—fruitless sounding of his horn, which seldom produces a better result than of obtaining the request that he will proceed to ———, his (possible) destination. Is not, therefore, a slightly noisy machine safer to ride than a really quiet one? We must always remember safety first. OBJECTOR.

Derby.

Sir,—There is rapidly-growing police activity just now in all parts of the kingdom, with the laudable object of punishing motor cyclists who are too thoughtless or too selfish to see that their machines are reasonably silent.

I am certainly no bigot, so far as motor cycles are concerned: as you know, I commanded a motor M.G. battery early in the war, am a pre-war competition rider, and hold the Aero Club's pilot's certificate. This, I think, will absolve me from being considered a cotton-wool merchant. But it is beyond a joke, and unless the undoubted nuisance ceases there will be harsh provisions inserted in the early-expected new Motor Act.

I represent the A.A. in the police courts in a Midland district, too, and as a solicitor can assure your readers that there is *no* defence if the evidence proves that a machine was noisy at the time of the offence. The Order (1904) states that the exhaust gas must first pass "through a silencer, expansion chamber, or other contrivance, suitable *and sufficient* for reducing as far as may reasonably be practicable the noise that would otherwise be caused by the exhaust gases." I enclose my card and remain,

Salop. ONE OF THE AUDIENCE.

DANGEROUS IMPROVISED BRAKES.

Sir,—May I be permitted to draw attention to a dangerous practice which is becoming very prevalent in many districts? I refer to the number of boulders and bricks which are left on the public highway after being used for the purpose of "scotching" vehicles on hills.

A question relating to this was recently asked in the House of Commons by Mr. Rhys-Davies, M.P., and, in reply, Sir John Baird, for the Home Department, promised to have inquiry made if particulars were provided.

T. LAWRY.

GOGGLES AND HEARING.

Sir,—I would very much like to know if anybody besides myself finds that one sort of "goggle-deafness" takes the form of hearing sounds from the wrong direction.

For instance, I was riding over some bad bumps a few days ago when I heard a jarring "clank-clank," apparently proceeding from the front forks. I stopped and dismounted, and in so doing discovered that the sole cause was that the stand had been jolted off its clip!

I would also like to express my sincere agreement with Mr. Danks on the subject of issuing silence-certificates with every new machine. O.K. JUNIOR.

Newcastle-on-Tyne.

DEAF MOTOR CYCLISTS.

Sir,—I notice in "Current Chat" of the 14th that a penalty inflicted on Mr. T. O. Mullings, of Shrewsbury, by the local Bench has been made doubly heavy, presumably on account of his having driven a motor cycle whilst suffering from deafness.

A very interesting question is thus raised. We may assume that this unfortunate gentleman is, at the most, only *moderately* deaf, and speaking as a moderately deaf rider may I say that such an affliction is in no way a handicap to a motor cyclist. My experience is that with the engine running I can hear overtaking traffic exceedingly well, and it is invariably the case, when my pillion passenger gives a warning shout of the approach of a faster vehicle that I have already been aware of it for some time. I can also, when coming unexpectedly upon an outsize in "pot-holes," hear quite plainly his muttered and often not very polite ejaculations.

A large proportion of railway engine drivers are somewhat deaf, chiefly in the ear constantly exposed to wind, and I have been told by such drivers that they can hear mechanical defects and outside noises remarkably well—much better than their firemen, whose hearing may be perfect.

London, E.C. ARDOFEARIN.

SPORTSMEN EVER. Surprising as it may seem, Ireland is not so distressful that she cannot boast considerable activity among her motor cycle clubs. A general view of Magilligan Strand during the recent Ulster M.C.C. meeting

PUNCTURE PREVENTIVES IN PATCHED TUBES.

Sir,—With reference to the letter headed "Satisfactory Puncture Preventive," my experience of Jackson's "Impervo" is as follows:—

Before starting on a long run recently, I put the proper quantity into the front tube on my lightweight. I did not remember that the tube had a patch on it, but in less than fifty miles the patch was loose and the tube went down. It may be quite satisfactory in a new tube, but from my experience it is not so in a patched one. I may mention that this one patch had been on the tube for over a year, and was not leaky before using the "Impervo."

C. T. WILLIAMS.

"GAS!"

Sir,—The idea to which you give publicity in "Current Chat" (page 384) is certainly splendid.

One presumes that "Norton Rider" is a humanitarian and fears the "Annoying Cyclist" risks heart failure and/or lung bursts through his furious pedalling. It certainly is annoying as one travels along on one's sports 'bus, admired by all on the Surbiton parade, and leaving behind a gentle smell akin to that of decomposing fish, that trailing in the rear should be a mere push bikist. By all means fumigate him!

But it is a pity to stop there. A sudden application of the brakes on a straight open road will sometimes take the cyclist unawares, and his resultant spill is really ludicrous and will reduce the crowding on the road by one at least.

Still, it is as an instructor in road manners that "Norton Rider" chiefly appeals to me, and I should be so glad to learn more from this gentleman. For instance, I myself find that the shouting of some suitable and abusive remark helps the dilatory pedestrian to remember, and continue to remember, that he annoys the motor cyclist; but "Norton Rider," I feel sure, will have some more cunning, subtle, humorous way of helping the motoring movement, and the movement of the pedestrian. Please let us know, "Norton Rider," that we, the chosen people, may teach the public the manners of the open road.

But oh, to own Chitty-bang-bang for one hour, that I might drive continually just in front of "Norton Rider."

A. C. GODFREY.

Sir,—Motor cyclists in general are acclaimed to be of a generous and reasonable nature, and it is beyond my comprehension why the immediate presence of a cyclist annoys them. Does it offend their dignity? It certainly is not the fear of a crash—with the odds greatly against the cyclist.

Rational minds must admit that, to keep up with an average motor cycle, it requires a cyclist of excellent stamina, and therefore experience. Such a man has, no doubt, had more than one tight corner, and is quite able to use his brains and brakes quickly and efficiently. This ability removes the alleged danger.

WATER SPLASHES FASHIONABLE. T. Meakin (Velocette) splashing through Gaddesby ford, included in a recent Leicester trial, and——

Incidentally, excluding pseudo speedmen and small boys, fast travelling does not mean "furious pedalling" any more than fast motor cycling, within reason, means furious driving.

Perhaps motorists will ask, "Why *do* cyclists tuck in?" The answer is easy. Like the motorist, the cyclist wishes to cover the distance with the minimum of exertion, and tucking in is such a help!

Motor cyclists once pushed the humble cycle, and it would be a pity if the acquisition of an engine makes a man snobbish.

Accordingly, I feel I must appeal to motorists not to deny a small help, so easily given, by "choking him off," but to foster a good inter-class feeling on the road.

JAMES R. THORPE.

[Our original correspondent's suggestion was not given our support,—in fact, we were mildly surprised that any Norton rider should have been troubled in this way—but we cannot agree that the practice of hanging-on by cyclists is not dangerous.—ED.]

——H. Greaves (Beardmore), left, and B. L. Bird (B.S.A. sidecar) providing amusement for many schoolboys by crossing a considerably deeper one discovered by the Redditch Club.

MARKING IN THE SIX DAYS TRIALS.

Sir,—May I ask for a little of your space to comment on the judges' report of the Six Days Trials? The report begins with a statement that the Trials were conducted in the manner prescribed by the regulations previously made public. A *careful* examination of the published weights shows that in several instances the regulations were not enforced; and those unfortunates who relied on the wheel-spin clause found that it was for ornament and not for use.

Stress is laid on the importance of the final examination, which makes one regret that it was such a cursory affair compared with the timekeeping, etc.; for example, a competitor unlucky enough to be 15½ min. early at a secret check forfeited his gold medal, yet in two cases known to the writer—there were probably many other similar ones—a vital part of the transmission was only made usable by straps and wire, which were removed prior to the examination, and missed by the examiner, one mark being deducted for a loose spoke, actually caused by wiring the loose sprocket to it!

The remarks as to the inclusion of "very difficult hills" are much to the point, but since climbing them is almost entirely a matter of driving skill, which is not a primary object of test in the Six Days Trials, full marks should not be deducted if a driver succeeds in getting to the top without outside assistance; *i.e.*, if he falls off, let him start again without penalty on freaks like Rosedale.

As regards the results, it appears that some manufacturers suffered unduly from the system of marking. The order of merit depended almost entirely on the bonus marks gained in the speed test, and while this is fair enough among the lightweights, which are all designed for one purpose, it discriminates most unfairly between the heavier machines. Some are expressly designed as fast solos and others as double-purpose knockabouts. For example, take two machines of similar capacity: one designed for a maximum of, say, 70 m.p.h. averages 58, getting a bonus of 16; the other, designed for a maximum of 50, averages 48, bonus 6. Which is the more meritorious performance? Obviously the second, yet the first is generally regarded as better. It is difficult to see how a fair mean can be struck, but the system of bonus marks for speed is not ideal.

One word more. I believe over fifty hills were observed during the week; it seems a great pity that the number was not greatly reduced and the observing more completely done. The very fact that so many decisions, *e.g.*, on Rosedale, were reversed is an admission of incompetent observing; again, later in the week three experienced spectators (whose names are well known to all motor cyclists) informed me that three riders had failed—by falling off or charging the bank; *not* by being baulked—on a certain observed hill, yet two of those three riders appear with +5 marks for hill-climbing. It was, in fact, clear to all competitors that the observing was very badly done, and to this I will hold against any official assurance to the contrary. J. M. PHILPOTT.

PRIVATE OWNERS IN BIG TRIALS.

Sir,—"Matchy" thinks that it would be a better guide for the public in trials like the Six Days event to restrict entries to manufacturers, as a private owner might spoil success through bad driving. Surely it is noticed very often that private owners drive far better in big trials than trade riders. Then why exclude them, especially as they enter for the sport of the event? I quite agree that expense stops more private owners from entering. XB. 1532.

London.

"COLD FEET."

Sir,—I am rather amused at "Bun-Doola's" suggestion. Might I suggest a gallon tin of 30 O.P. Scotch, strapped to the carrier, and a length of rubber tubing, from which a nip could be taken during the colder spells?

If "Bun-Doola" buys a pair of airman's hip boots, wool lined to the soles, he could trek through Siberia in winter and never have cold feet. These can be bought, ex. W.D., for a nominal sum. WAGG-J.A.P.

Glasgow.

SUGGESTIONS TO BRIGHTEN THE EXETER RUN.

Sir,—With reference to your correspondent's suggestion of including a hill-climb in the London-Exeter run by way of stiffening up the trial, with classes for machines of every known capacity, might I suggest that to add further interest to the proceedings, classes be included for sports models, super-sports models, and stripped racing models, also that the start from Staines be used as a speed test by commencing with a flying kilometre trial?

This would be useful to prove or disprove the oft made statement that machines travel faster at night, as a similar start might be made from Exeter on the return journey. Other interesting tests might also make a gold more worth while, such as a timed plug-changing on Salisbury Plain and a bun-eating competition at Honiton. QUIXIX.

Bayswater, W.2.

DEPOSITS ON VALVE STEMS.

Sir,—"Interested" complains of a rubber-like deposit on his o.h. valves; I have had the same trouble with my side-by-side valve Triumph, but only when using Castrol R oil.

Once when I mixed a few tablespoonsful of "R" with my petrol the deposit was so thick that I wonder any gas got into the cylinder at all.

At the last show at Olympia I went and saw Messrs. Wakefield, who said they had had similar complaints before, and advised me not to use Castrol R in a touring machine. I still use "R," but take the inlet valve out every 500 miles and clean off the deposit.

London, S.W. SIDEVALVE.

THE LARGEST AIR-COOLED ENGINE.

Sir,—I should like to point out that the Armstrong-Siddeley "Jaguar" does not represnt the highest powered air-cooled engine.

A static radial aircraft engine was produced after the war by the Cosmos Engineering Co., of Bristol (a firm that will be remembered in connection with the radial engined car bearing their name), with a nominal h.p. of 1,000, about which the following particulars may be of interest:—

Number of cylinders.—18 (two rows on two-throw crank).
Bore and stroke.—158.75 × 190.5 mm.
Piston speed (normal).—2,387.5ft. per min.
R.p.m. (normal).—1,750.
H.p. (nominal).—1,000.
Weight (dry).—1,400 lb.
Weight per h.p.—1.4 lb. E. A. R. LEECE.

SUMMARY OF CORRESPONDENCE.

Further communications have been received from Messrs. F. A. Simpson and Rex. Foweraker in reply to Mr. J. A. Newman's letter on the subject of "Bristol's Freak Hills." The controversy has now become a question of whether or not Burledge is a freak hill, and, since there is no hard and fast definition of what is a freak hill, we are compelled to close the correspondence.

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QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

MAGNETO FOR FLAT TWIN.

I am building a four-stroke flat-twin engine, and have a Simms-Bosch D.A.V. type 45 degree magneto. Could I run the magneto at engine speed, removing one cam from the contact breaker and fixing a distributor on the half-time shaft without doing any harm to it. Alternatively would you advise me to run the magneto at half speed and alter the cams in the contact breaker?—W.L.W.

The 45 degree magneto is quite unsuitable for use with a four-stroke horizontal twin engine. Your best plan would be to sell the 45 degree magneto and obtain one with firing angle of 180 degrees; this should run at half engine speed.

A RARE MACHINE.

My machine is a 1919-20 499 c.c. Bianchi (single cylinder), with three-speed gear, clutch, and kick starter, Amac carburetter, and C.A.V. magneto. It is ridden solo. (1) What is the best valve setting? (2) What is the best magneto setting, for economy, with reasonable speed? I am given to understand the machine is of Italian origin, and not generally well-known in this country. The engine and gears are integral, the gears being on near side of crank case, whilst timing gears are on off side. The two valve lifter cams and half-time wheel are in one and appear to be machined out of solid. The magneto is driven from this, having a gear wheel interposed with the same number of teeth.—C.H.F.

(1) Time the valves so that the exhaust is just closing and the inlet just commencing to open as the piston passes top dead centre of the stroke. As both cams are attached to the same timing wheel, however, the setting of the inlet valve will be correct if you merely make certain that the exhaust is just closing as above stated. (2) Time the magneto so that the spark occurs on top dead centre of compression stroke with the ignition control two-thirds retarded. The Bianchi, as you have been informed, is an Italian production, and only one or two privately-owned samples have been introduced into this country.

Important Dates.

Sat., Sept. 30th.—M.C.C. Sporting Trial.

Wed., Oct. 4th, to Sun., Oct. 15.—Paris Salon.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Thurs., Jan. 13th to Mon., Jan. 24th (1923).—The Belgian Salon.

POWER LOSS AFTER DISMANTLING.

I am riding an O.K. Villiers two-stroke machine, and since having it decarbonised I find it has not the same compression. I have done 1,200 miles before decarbonising and about 100 since, so I think I have run it in enough, and if there is to be a return of the old power, which was exceptional, I ought to find it now. I have spoken to several friends, but all they could say was it is usual with two-strokes to exhibit a falling off in power. Surely that is not right; there must be some way to fix things up again. As I am only an amateur I got a mechanic to put me right, but he says there would be no loss of power if there was a leak in the joints and that the rings are all right.—B.S.

Providing all the joints have been properly remade, and providing that the original timing of the magneto has not been disturbed, there should not be an appreciable loss of power after decarbonising the engine. It is essential, however, that the joints between the cylinder and crank case should have been carefully remade, using brown paper and seccotine as jointing material. We assume, of course, that the piston rings are correctly fitted in their grooves, and that you have not by any chance fixed the piston in the wrong way round, *i.e.*, with the deflector towards the exhaust ports, and we suppose also that you have made provision for the transfer port in the new cylinder base washer.

SEEN ON THE ROAD in the Midlands recently, this unconventional-looking vehicle is less unattractive in contour than the average two-seated sidecar. It has been built to accommodate driver and passenger in equal comfort, and is driven by a single-cylinder Blackburne engine.

GOING TO AUSTRALIA.

In December I am sailing for Brisbane, Australia. Can you give me any idea as to motor cycle conditions there? My mount is a colonial model 490 c.c. Norton, purchased in 1921. If you advise me to take the machine with me, I should be grateful for any hints re packing.—F.C.H.

Conditions for motor cycling in Australia are only good in the immediate neighbourhood of the large towns. Outside the city areas the roads are usually extremely bad. There would be no special difficulty in taking a machine with you, although it would be advisable to have it partly dismantled, taking out the wheels, forks, and handle-bars, and enclosing the whole in a strong case. Your best plan is to consult one of the shipping agencies, which would handle the whole matter without further trouble on your part.

CYCLE CAR TRANSMISSION.

I have a cycle car with dual belt drive (both rear wheels) from a cross shaft just behind the engine; the drive is very long, necessitating a 12ft. belt. I wish to shorten this, but it would mean lengthening the primary chain drive to 4 or 5ft. I am anxious to know whether a chain would work satisfactorily at this distance, or would there be too much whip? I use rubber belts; would leather link belting be less liable to slip, and is the wear on pulleys greater than with rubber? Is any belt made to drive an 8cwt. cycle car without slip in wet weather?—G.E.D.

One of the advantages of the form of transmission which you describe is the possibility of using long belt centres, thus permitting a slack belt to be used with consequent smoothness of transmission. There should be no slip whatever if the front pulleys are of reasonable size, say 7in. or 8in. diameter. A chain running at 4ft. 6in. centres would be very unsatisfactory, and the slipping of the belt at the consequent short centres would be much intensified. Speaking generally, rubber belts of 1in. or 1½in. section are practically immune from slipping if kept reasonably dry, and assuming, of course, that the pulleys are of fair size. We suggest that you retain the forward position of the countershaft and that you get as great a reduction of gear as possible on the short chain drive. You will then be able to fit larger driving pulleys.

NO COMPRESSION.

Recently I bought a 348 c.c. Douglas motor cycle (1914 model) and was surprised to find that the machine possessed very little compression, and yet it runs fairly well. Although the engine can be turned over by just rotating the flywheel with the hand, there is no appreciable loss of power on the road. How is this accounted for?—A.J.

The 1914 type 348 c.c. Douglas had a fairly low compression engine intended to run at a high speed; consequently it is not so seriously affected by poor compression as would be a slower running engine with a high compression ratio. If the power is good, there is no need to trouble about the fact that the flywheel may be turned round easily by hand.

ACCIDENT DUE TO BREAKDOWN.

On a main road, A and B approaching each other, each on his proper side, a short distance apart. A's steering gear breaks, causing a dive across the road to the right-hand side. A and B collide there, A's machine being a total wreck, B's badly damaged. Both are driving at ordinary touring speeds and neither are insured. A contends that B made no attempt to avoid collision, such as easing up or swerving from the left. B proposes suing to recover his damage, on the grounds that A was driving on the wrong side of the road and at an excessive speed. Is A liable for damage directly caused by this mechanical breakage?—J.A.P.

A driver is not liable for damage directly caused by a mechanical breakage over which he has no control. If, however, he is driving at an excessive speed at the time, then he could be held liable. From the facts stated A should resist any claim made by B, but if such claim is persisted in then he should consult a solicitor, who would be able to go more fully into the facts of the case.

FITTING A BIGGER ENGINE.

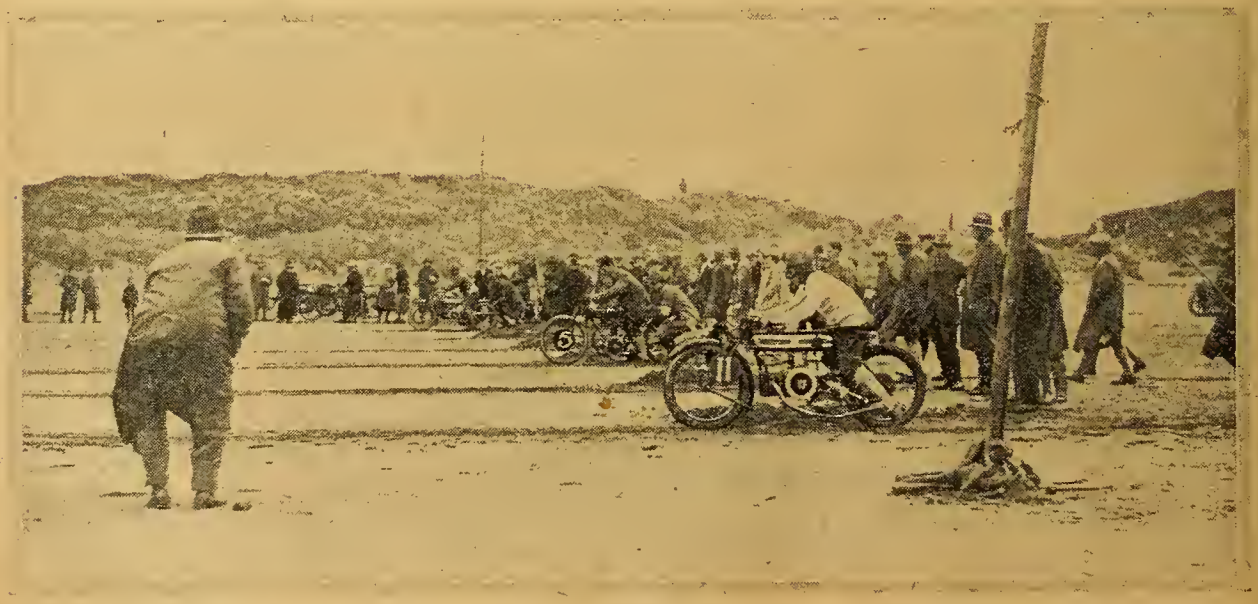
Is it safe and will it be satisfactory to substitute a higher-powered unit than that already housed in my 269 c.c. two-stroke machine? A greater turn of speed is desired, as well as better passenger carrying performances, and I contemplate obtaining, say, a 500 c.c. or 550 c.c. engine (four-stroke) and fitting it.—G.E.

It would certainly not be advisable to fit a 500 c.c. or 550 c.c. four-stroke engine in a frame built for a 269 c.c. two-stroke.

WORN BIG-END.

When travelling on full throttle (which does not amount to much on my small two-stroke!) the engine makes a fearful clatter. This does not happen until the machine exceeds a certain speed, nor does it occur when climbing a hill with throttle wide open. Altering the timing does not appear to alter this noise. What is the cause?—G.E.

In all probability the noise is the result of a worn big-end bearing, since the trouble only makes itself objectionably apparent when running light as you describe.



RACING WITHOUT TIME-KEEPERS. Race meetings on the sands become more popular week by week, and if, as was done at the Weston-super-Mare event illustrated, the classes are run as races in heats, they should continue to attract much interest.

SHOCK ABSORBING AT THE BASE.

(1) What are the advantages (if any) and disadvantages of a properly designed spring connecting rod, especially for use with a high compression single cylinder engine? (2) Would it increase efficiency? (3) Are any engines so fitted.—A.H.P.

(1) Spring connecting rods have never been used with satisfaction, indeed it seems most unlikely that such a device is worth experimenting with, although occasionally it has been suggested. (2) Possibly, if the ideal design could be attained. (3) No.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"S.H.E." (Sussex).—Carburetter suitable for Cedos, other than that made and fitted by makers.

"C.E.S." (Lincoln).—293 c.c. New Imperial; 348 c.c. Raleigh; and 349 c.c. Barr and Stroud engine: petrol consumption, reliability, and general suitability for touring.

"C.M." (Falkenham).—Harper Runabout: starting, steering, reliability.

"H.E.A." (Weymouth).—349 c.c. A.J.S.: reliability, speed, hill-climbing, fuel consumption.

"C.G.N." (Yarmouth). — McKenzie lightweight.

"R.W.A." (Bromsgrove).—Johnson's Carbon Remover; seizure of C.A.V. contact-breaker.

SIDECARS FOR POSTAL COLLECTION. After an exhaustive test, the General Post Office has placed a large order for Royal Enfield delivery vans.

SPARKLETS.

£150 Four-Wheelers.

A.V. runabouts have now been reduced in price to £150 by the makers, Ward and Avey, Ltd., 1-11, Park Road, Teddington, Middlesex.

An Amendment.

V. F. G. Fowke won a silver medal in the Sopwith Cup Trial on a Beardmore-Barr and Stroud, the machine being omitted on the official list of starters.

"EVERY COPPER HELPS" the Birmingham hospitals, and the appropriate disguise of W. H. Egginton's sidecar outfit at a gymkhana in aid of these institutions no doubt attracted valuable public attention.

The Lyons Fair.

The P.L.M. Railway, 179, Piccadilly, W.1, announces that, on the occasion of the Lyons Fair, to be held from the 1st to the 15th October next, special tickets will be issued from any station in France to Lyons, both to exhibitors and to visitors.

Good Performance after 11,000 Miles.

An outstanding performance in the recent Sopwith Cup Trials was made by C. E. Taylor, riding a Vasco two-stroke machine. In addition to winning a gold medal he was awarded the Dale Cup (for the best motor cycle performance). The achievement was all the more remarkable in view of the fact that the machine had already had eleven thousand miles' service to its credit.

Found.

A tool-roll on Porlock Hill.—Ref. No. 101.

A mackintosh on Chigwell Road. Ref. No. 103.

A Tan-Sad near Charing, Kent. Ref. No. 104.

Overall motor coat at Nottingham.—Ref. No. 105.

Motorist's clothing near Tewkesbury.—Ref. No. 107.

Lost.

6v. accumulator, near Pitsea, Essex.—Ref. No. 106.

Haversack containing Rudge spares and tools, near Littlehampton. Ref. No. 102.

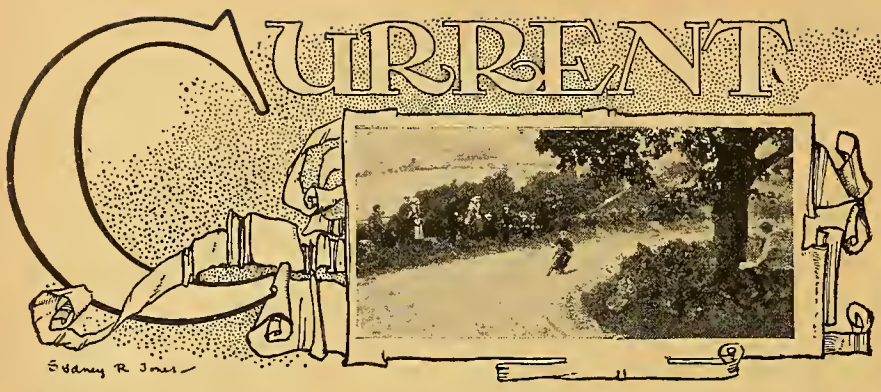
Catalogues Received.

The Tryus Cycle Co., Johnstone Street, Birchfields, Birmingham.—The Silver Prince featherweight (£26 5s.). A single gear, open frame, two-stroke, suitable for riders of both sexes.

The Burlington Motor Cycle Co., Ltd., 7, South Side, Clapham Common, London, S.W.4.—A catalogue of sidecars, describing no less than nine different models.

Desmo, Ltd., Desmo House, 264-265, Broad Street, Birmingham.—Motor cycle horns, mirrors, electric and acetylene lamps, etc.

CURRENT CHAT



No Escape!

"For allowing exhaust gases to escape from a motor cycle" in Freeman Street, Hull, two motor cyclists were fined.

Lack of Justice in Midlands Courts.

Bitter complaints continue to reach us regarding the unfairness of the police campaign against noise in the Midlands, particularly Birmingham. Apparently, the unfortunate defendants, in silencing prosecutions, are not permitted to call any evidence in their favour, however authoritative it may be.

Freak Hill Climbing Popular.

Helped almost solely by the publicity of a short paragraph in *The Motor Cycle*, the Oxford M.C. freak hill climb on Alms attracted nearly a thousand people. As announced in "Club News," a similar climb will be held at Cadsden, near the top of Kop (Princes Risborough) on October 1st.

Not Cause and Effect.

While appreciating our readers' interest in the matter, we really are tired of receiving newspaper cuttings referring to the Stratford motor cyclist who, it is alleged, has not had a bath since Armistice Day. On behalf of the whole motor cycle movement, we take this opportunity of repudiating all responsibility.

Our Erudite Police.

Summoned for the fashionable offence of the moment—noisiness—a Burton-on-Trent reader had his case dismissed after examination by the police of his silencer—an Argus. It was then explained he had nearly infringed the law in the first case by being on low gear. His machine is direct belt driven.

Touring in the 15th Century.

"With groaning wheels, the heavy machine advanced by fits and starts, now descending into rotten hollows, now sticking altogether in the deep mire, now in peril of capsizing over some uneven surface, or splashing through some low-lying part of the road flooded by a neighbouring stream." A correspondent thinks this extract from an account of the social life in England during the fifteenth century particularly applicable to present-day road conditions. We consider it more likely to be an account of the first Scott Trial.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Times to Light Lamps.

Sept.	28th	.. ..	7.16 p.m.
..	30th	.. ..	7.11 „
Oct.	2nd	.. ..	7.6 „
..	4th	.. ..	7.2 „

International Road Congress in Spain.

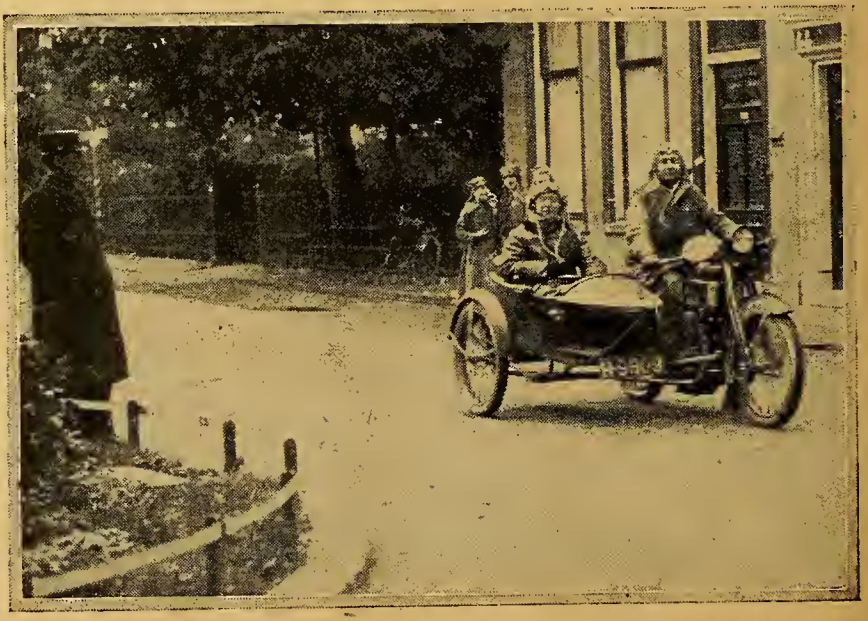
In May next year the Fourth International Road Congress will be held at Seville, by invitation of the Spanish Government. A number of British road engineers will be present. We will keep a close watch on our pet pot-hole during May.

Italians as Track Builders.

It seems that the Italians are destined to be the great track builders of the world, as, in addition to the Monza Motodrome, the Italian Sporting Club at Lima, Peru, has built a stadium and a cemented track on which motor cycle races are frequently held. Incidentally, a recent 10 kilometre race was won by a 499 c.c. Rudge-Multi, competing against high-powered twin-cylinder machines.

Coming of Age of the M.C.C.

To celebrate the founding of the Motor Cycling Club 21 years ago—to be exact, on November 19th, 1901—there will be held, as near to the date as possible this year, a week-end run to a venue which will be published in due course. Mr. W. H. Wells, Captain of the Club, is in charge of the arrangements, and any member, present or past, but especially those who helped the Club in its early days, anxious to take part should communicate with him at 366, Euston Road, London, N.W.1.



WHERE HEAVYWEIGHTS ARE POPULAR. Dutch motor cyclists favour big twin motor cycles, perhaps on account of the weighty clothing which they invariably wear! A scene in the club championship of Holland (described on page 459).

98 Entries for M.C.C. Trial.

98 entries have been received for the M.C.C. sporting trial for solo machines, which starts at Caterham on Saturday next.

A Silent Motor Cycle.

An interesting motor cycle is being produced in Coventry by Packman and Poppe, in which the main feature will be its silence. It will have a duplex frame, a Barr and Stroud engine, and both chains entirely enclosed in cast aluminium cases.

Further Price Reductions.

For 1923 the standard air-cooled Morgan cycle car, with J.A.P. or Blackburne engine, will be £135. The De Luxe and family air-cooled types will be £155 and £165 respectively. Water-cooled Grand Prix, De Luxe, and family models are £160, £165, and £170 respectively.

Pullin for Gaillon Hill Climb.

Gaillon Hill climb will take place on October 1st, the Sunday preceding the Paris Show. Already a good many entries have been received, and among them that of Cyril Pullin, who will ride a Douglas in the 750 c.c. class, in which he will be pitted against Péan, the crack Peugeot rider.

Next Saturday at Brooklands.

Saturday next will be a red-letter day for car enthusiasts who frequent Brooklands, for on that day will be held the Essex M.C. Speed Championships. Judging by the number of well-known names which appear in the programme, speed and excitement will not be lacking. A commendable innovation is the reduction of the admission fee to three shillings.

Belgian Record Attempts.

Having no equal to Brooklands, Belgian motor cycle enthusiasts are following the example of the French and have set apart October 1st for a series of record attempts, which will take place on the road from Oostmalle to Turnhout between the 28th and 29th kilometre stones. The event will be run under the F.I.C.M. and the Belgian Motor Cycle Federation rules.

New Cure for Knocking.

"Place the device on the plug of the cylinder that is knocking and keep it on for half a minute. This will 'stop' the noise, because you take away the firing compression. The device 'cures' knocking cylinders and dry pistons in the same way, and detects weak compression"—an unedited extract from a leaflet about a new spark tester. In the same way, a burst rear tyre may be cured by lifting the whole machine into the ditch, and proceeding on foot.

Paris Speed Trials Postponed.

Last Saturday morning was fixed for attempts on world's records over the flying kilometre in the Bois de Boulogne, Paris. By a special concession the Paris Municipality granted the use of the Avenue des Acacias. A thick coating of tar was laid only a few days before the event should have been held, but as it refused to dry the event has had to be postponed. Several English competitors journeyed to Paris to attack existing records.

Kop Climb Postponed.

After considerable discussion, the South Midland Centre hill-climb, to have been held on Kop Hill on Saturday, was, wisely, we think, postponed until October 7th. The surface was in an extremely rough and churned-up condition, and to get up at all was quite a feat.

Doncaster Speed Trials.

The Motor Cycle Challenge Cup will be competed for in the best supported class at the Doncaster M.C.C. speed trials next Saturday. The event, which starts a 1 p.m., will be held on the Sandall Beat Road, adjoining the Doncaster race course, and the various classes are open to members of clubs affiliated to the Yorkshire Centre of the A.C.U. H. Le Vack is the present holder of *The Motor Cycle* Cup, which is put up for yearly competition at this "Petrol St. Leger."

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The Vogue of the 350 c.c. Solo Machine.

Yet another well-known firm to announce a 350 c.c. solo machine for 1923 is the Martinsyde.

Motor Cycle Beats 98 h.p. Car.

On Saturday the R.S.A.C. held a hill-climb on Cairn-o'-Mount, mainly for cars. Fastest time of the day, however, was made by J. W. Adamson (490 Norton) in 2min. 50.8sec., beating cars up to 98 h.p. Full results of the car classes are given in to-morrow's *Autocar*.

Well-known Competition Rider Disengaged.

One of the best known and most successful competition riders of to-day—and yesterday—Harry Bashall, is now disengaged. Past T.T. winner, successful in trials and on the track, Bashall is very well qualified to take charge of the competition department of any firm.

499 Knowles.

In the Judges' report on the Six Days Trials, just issued, there is given a list of machines that retired day by day. Along with a "499 Rudge," a "555 P. & M." and a "494 Douglas" is a "499 Knowles"—an unintentional, but nevertheless remarkable, tribute to the popularity of the Norton amateur rider of that name.

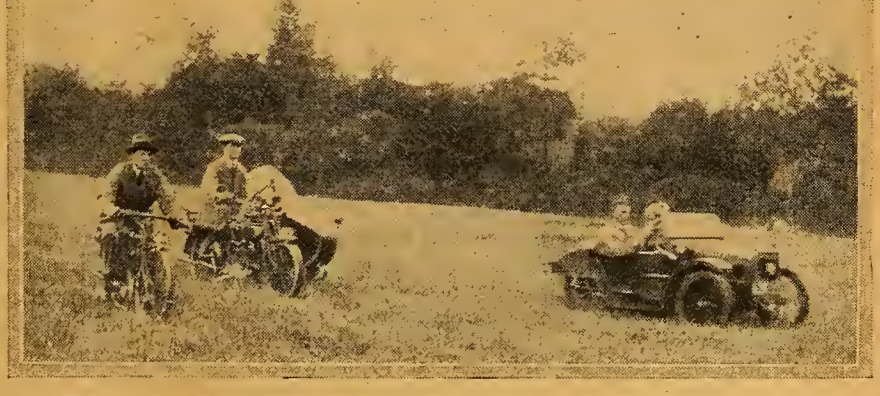
Records by Flat-twin Sidecar.

On Brooklands on Thursday last J. L. Emerson (494 Douglas sc.) was successful in gaining several records in the 600 c.c. sidecar class:—

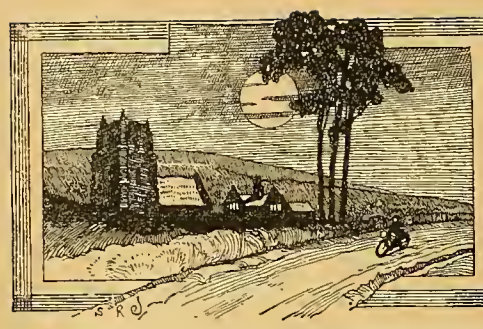
Distance.	*Time.*
50 miles ...	46m. 46.52s. (64.13 m.p.h.).
100 miles ...	1h. 37m. 30.18s. (61.53 m.p.h.)
Time.	*Distance.*
1 hour ...	63 miles, 1,586 yards (63.90 m.p.h.).
2 hours ...	120 miles, 1,297 yards (60.37 m.p.h.).

Excursions to the Paris Show.

To enable visitors to the Paris Show to travel cheaply, the S.E. and C.R. is running excursions to Paris (Nord), available for 15 days, on Friday and Saturday, October 6th and 7th. These tickets are available *via* every service except the 11 o'clock from Victoria and the midday service from Paris (Nord). Return fares: 1st, £5 5s. 3d.; 2nd, £3 15s. 3d.; 3rd (passengers travel by slower trains on the French side), £2 9s. 9d.



COMPETITORS AT THE DISABLED DRIVERS' RALLY at Blindley Heath, in the slow race. This event was won by C. Annett (749 A.J.S. sidecar), who had perfect control of his outfit although handicapped by the loss of a leg.



EIGHTY MILES OF TROUBLE.

The Scott Trial Reviewed by "The Motor Cycle" Representative, who accompanied the Competitors

HOW is it that the organisers of the Scott trial can induce over fifty motor cyclists to enter for their annual steeplechase?

True there are always a few who do not understand the troubles in store for them, yet the majority are hardened riders who have competed on previous occasions and have sufficiently recovered the use of their limbs to have another try.

As an instance of the blissful innocence with which a novice may enter, a certain Midland competitor was heard to remark that the course could not be worse than the —— trial (a Midland event which was the cause of much discussion). Yet at the finish this optimist arrived, nearly an hour late, minus several important parts of his machine, wet, muddy from several falls, but with *a broad grin on his countenance*. Realising that here was another convert to the true spirit and that his name would figure in next year's entry list I carefully refrained from saying "I told you so."

The aforementioned grin is infectious and is worn by spectators and competitors alike. It is a curious fact that in the Scott trial and in the Scott trial alone a competitor can strike a boulder in the midst of the "fairway" (?) or fall off in the midst of fourteen inches of chilly moorland stream, yet, in spite of the discomfort to man and machine, can—laugh.

A Motor Cyclists' Grand National.

This year one competitor finished with no brakes, foot rests pointing skyward, a damaged knee and breeches split for inches; he estimated his falls in the afternoon section at 30 and finished by rolling down a steep bank, yet like everyone else he had enjoyed himself and was thoroughly cheerful.

There must be some forty miles of the eighty-three mile course which would cause protests loud and prolonged if they occurred in any other event; yet not a murmur is heard amongst joyful but bedraggled survivors or disgruntled and weary unfortunates.

Secure in the knowledge that if he "has a dash" at the obstacles the sporting observer will spare him a bonus mark or so, even should he crash, the competitor will ride to win in the true sporting spirit.

Originated as a map-reading contest for members of the Scott staff and works, the trial is now the premier sporting event of the year, and by reason of the available country and the spirit of the organisers it is secure from serious competition. Underlying all is the knowledge that the proceeds are devoted to a worthy object. Would that the patients of St Dunstan's could enjoy the spectacle of all these good sportsmen cheerfully floundering through rivers or clinging like limpets to bucking and skidding machines on such a hill as the Scar. Such an outing amongst such companions would do much to cheer their plucky hearts.

Were I a manufacturer producing a new machine I would enter a team for every Scott trial with the object of finding out weak spots; but I should be sure that there were no bad sportsmen amongst my riders. And though the experiment would almost certainly be costly I should *learn*, for there is no better test of doubtful fittings. There are a few who withhold their entries because the Scott team stands the best chance. Well and good: they have missed the spirit of the trial, a first-class day's sport and companionship of the best.

The Scott trial is not a "trade" event, because the premier award carries no great weight except with the few who realise the conditions: it is not a trial in which the "win, tie or wrangle" spirit is likely to find supporters, may it never be so; but it is a supreme test of man and machine, and it includes just that element of luck and danger which is necessary to add a spice to any form of true sport.

At the conclusion any man who can average his set speed or even obtain an award may congratulate himself upon the fact that he is a real rider and has a real machine, for though many first-class men and machines may fall by the wayside no second-class article has a chance amongst the hard-riding crowd that gathers annually at Otley on a grey September morning.

Herein lies the answer to the question which starts this effusion. It is just the chance of making a passable show in such good company which attracts the sporting owner; while a few—a very few—manufacturers encourage a representative or two to compete with a view to obtaining valuable data.

Medium Weight and Power Score.

One rather curious fact has emerged, for in spite of the drifts and fearful surfaces (very much worse than any so-called Colonial trial in this country), big twins, whatever their country of origin, have not as a rule distinguished themselves. Perhaps the conditions hardly correspond to overseas surfaces, or perhaps the British machine of smaller capacity is not quite so unsuitable for overseas conditions as we are sometimes told?

It must be granted that there is no sand on the Scott course: it is probably the only form of obstacle which is omitted; but of this we may be sure, if there *was* sand in the neighbourhood it would be included—*lots of it*.

SPECTATOR.

[On pages 429 and 439 there appear illustrations of this year's Scott-Trial, which was described fully last week.—ED.]

CLOSE FINISHES AT PORTHCAWL RACES.

Overhead Valve Engines Score Heavily in Neath and District M.C. Speed Trials.

ON Saturday last very successful speed trials were held at Rest Bay, Porthcawl, by the Neath and District Motor Club. The event had originally been organised to take place in Margam Park, when the Evans-Bevan Challenge Cup at present held by C. Sgonina would have been up for competition, but owing to the unfortunate illness of Mrs. Lipscombe, the owner of the park, it was impossible to carry out the original programme.

In the fourteen events run at Porthcawl there were really magnificent finishes. Harris (248 New Imperial), who, by the way, is gradually piling up a nice record, proved an easy winner in the 250 c.c. class. H. Church (Velocette), who might have worried him, retired with plug trouble.

O.H.V. Engines Do Well.

Sgonina's self-converted o.h.v. A.J.S. was the winner of the 350 c.c. class, running clean away from the whole field.

O.h.v. engines were certainly the star performers in the 600 c.c. class, the fastest side-by-side valve machine being I. Parker's long-stroke Sunbeam.

Start of the 600 c.c. class. The sands were very wet but not dangerously soft. I. Parker (Sunbeam) and V. Anstice (Douglas) are nearest the camera.

Only three events were won by side-by-side valve engines.

Big Twin *versus* Flat Twin.

Great things were expected of Handel Davies on his Brough Superior. However, he was only able to pull off one event, and this by inches only from Anstice's Douglas, which was really in great form.

Graham Walker won both the expert sidecar classes, but with little to spare, V. Anstice's Douglas running remarkably well.

Results:

275 c.c. (GENERAL).—1, —. Harris (248 New Imperial); 2, —. Husbands (249 o.h.v. Coventry-Eagle).

350 c.c. (GENERAL).—1, C. Sgonina (349 Sgonina-A.J.S.); 2, T. A. Jones (349 Ivy); 3, —. Harris (248 New Imperial).

350 c.c. (EXPERT).—1, C. Sgonina (349 Sgonina-A.J.S.); 2, J. Board (349 Wetherall); 3, T. A. Jones (349 Ivy).

600 c.c. (NOVICE).—1, R. Protheroe (492 Sunbeam); 2, —. Parker (494 Douglas).

600 c.c. (GENERAL).—1, E. W. Spencer (494 Douglas); 2, I. Parker (492 Sunbeam); 3, R. Protheroe (492 Sunbeam).

600 c.c. (EXPERT).—1, C. Sgonina (Sgonina-Special); 2, Graham Walker (499 Norton); 3, Vic. Anstice (494 Douglas).

750 c.c. (GENERAL).—1, C. Sgonina (Sgonina-Special); 2, Vic. Anstice (494 Douglas); 3, I. Parker (492 Sunbeam).

750 c.c. (EXPERT).—1, Vic. Anstice (494 Douglas); 2, C. Sgonina (Sgonina-Special); 3, Graham Walker (499 Norton).

UNLIMITED (GENERAL). — 1, C. Sgonina (Sgonina-Special); 2, Vic. Anstice (494 Douglas); 3, H. Davies (976 Brough Superior).

UNLIMITED (EXPERT).—1, Vic. Anstice (494 Douglas); 2, C. Sgonina (Sgonina-Special); 3, Graham Walker (499 Norton).

600 c.c. SIDECARS (GENERAL).—1, Vic. Anstice (494 Douglas sc.); 2, C. Sgonina (Sgonina-Special sc.).

600 c.c. SIDECARS (EXPERT).—1, Graham Walker (499 Norton sc.); 2, Vic. Anstice (494 Douglas sc.); 3, C. Sgonina (Sgonina-Special sc.).

UNLIMITED SIDECARS (GENERAL).—1, Handel Davies (976 Brough Superior sc.); 2, Vic. Anstice (494 Douglas sc.); 3, C. Sgonina (Sgonina-Special sc.).

UNLIMITED SIDECARS (EXPERT).—1, Graham Walker (499 Norton sc.); 2, Vic. Anstice (494 Douglas sc.); 3, C. Sgonina (Sgonina-Special sc.).

V. Anstice (494 Douglas) and C. Sgonina (Sgonina-Special), two competitors in the trials, who between them carried off many of the chief honours.

PRESENTATION TO T. T. RIDER.

OVER fifty members of the Coventry and Warwickshire M.C. attended the President's run to Morton-in-Marsh last Saturday, arriving by motor bicycle, sidecar, and car. Col. J. A. Cole, O.B.E., is retiring from the Presidency after two years of office, and during tea in the old Town Hall welcomed the participants in the run, recalling some interesting reminiscences of his early motoring days.

Subsequently, on behalf of the club, he made a presentation amidst enthusiasm to W. W. Brandish, jun., for his magnificent ride in the Isle of Man Tourist Trophy Races this year, when he finished second on a Triumph, averaging over 56 m.p.h.

CARNIVAL OF SPEED AT SCARBOROUGH

131 Individual Entries at Scarborough M.C. Speed Trials. Big Twin Beats the Best Singles.

SATURDAY'S speed trials at Scarborough, organised by the local club, well illustrated the farce of attempting to distinguish the relative importance of open and closed events.

The Scarborough trials were open only to members of the club, yet they attracted a greater and more talented entry than any open competition of a similar nature this year. There were 131 actual competitors; nobody tried to count the entries by the more popular method, but they must have very nearly beaten the so-called records of certain Southern clubs—and there was not much duplication.

Another illuminating feature of the meeting was the manner in which the big twin came back into its own. In the unlimited solo class there were many fast 500 c.c. machines, but only George Dance on his o.h.v. Sunbeam gained a place, and he had to be content to share a second with G. Brough (Brough-Superior), F. W. Dixon (Harley-Davidson) being first.

Each competitor was allowed two runs, his faster time counting in every class in which he had entered.

Results follow :—

250 c.c. SOLO MACHINES (AMATEURS).—1, F. Staniforth (249 Spa), 33s.; 2, L. Lancaster (249 Velocette), 37s.; 3, P. Baglee (247 Velocette), 39⅘s.

250 c.c. SOLO MACHINES (GENERAL).—1, G. Totty (249 New Imperial), 31⅘s.; 2, P. Robinson (250 Trump-Jap), 32⅕s.; 3, A. Hill (249 New Imperial), 32⅖s.

300 c.c. SOLO MACHINES (2-STROKE ONLY).—1, J. T. Jobhorn (249 Velocette), 36⅘s.; 2, L. Lancaster (249 Velocette), 37s.; 3, P. Baglee 247 Velocette), 39⅘s.

300 c.c. SOLO MACHINES (2-STROKE ONLY) (GENERAL).—1, A. B. Dodds (247 Levis), 32⅗s.; 2, L. Lancaster (249 Velocette), 37s.; 3, F. W. Dosser (249 Velocette), 37⅘s.

UP TO 350 SOLO MACHINES (AMATEURS).—1, S. Ford (349 Massey-Arran), 27s. 2, J. G. Bayne (349 Weatherell), 27⅕s.; 3, W. Walker (349 New Scale), 28s.

350 c.c. SOLO MACHINES (GENERAL).—1, G. Dance (349 Sunbeam), 25⅕s.; 2, Handley (349 O.K. Junior), 26⅖s.; 3, J. G. Bayne (349 Weatherell), 27⅕s.

560 c.c. SOLO MACHINES (AMATEURS).—1, G. Bower (490 o.h.v. Norton), 27s.; S. Ford (349 Massey-Arran), 27s.; 2, J. G. Bayne (349 Weatherell), 27⅕s., and A. Benson (499 Triumph), 27⅕s.; 4, R. Turner (494 Douglas), 27⅖s.

560 c.c. SOLO MACHINES (GENERAL).—1, G. Dance (499 Sunbeam), 22⅘s.; 2, R. T. Cawthorne (490 Norton), 23⅕s.; 3, E. Searle (500 Sheffield-Henderson), 25⅖s.

750 c.c. SOLO MACHINES (AMATEURS).—1, G. Bower (490 o.h.v. Norton), 27s.; S. Ford (349 Massey-Arran), 27s.; 2, J. G. Bayne (349 Weatherell), 27⅕s., and A. Benson (499 Triumph), 27⅕s.; 4, R. Turner (494 Douglas), 27⅖s.

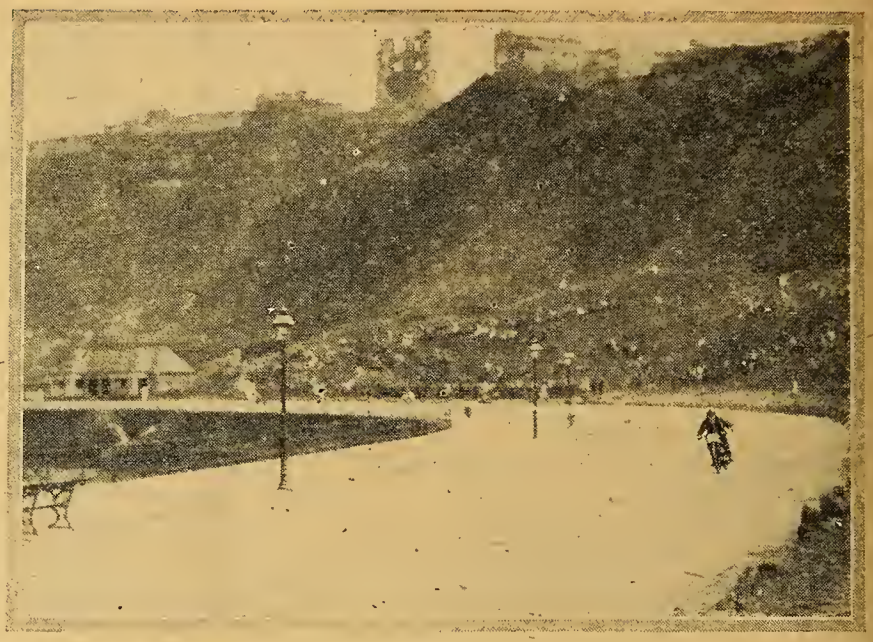
750 c.c. SOLO MACHINES (GENERAL).—1, G. Dance (499 Sunbeam), 22⅕s.; 2, R. T. Cawthorne (490 Norton), 23⅕s.; 3, E. Searle (500 Sheffield-Henderson), 25⅖s.

UNLIMITED SOLO MACHINES (AMATEURS).—1, W. H. Rhodes (998 Indian), 26s.; 2, G. Bower (490 o.h.v. Norton), 27s.; 3, J. G. Bayne (349 Weatherell), 27⅕s.

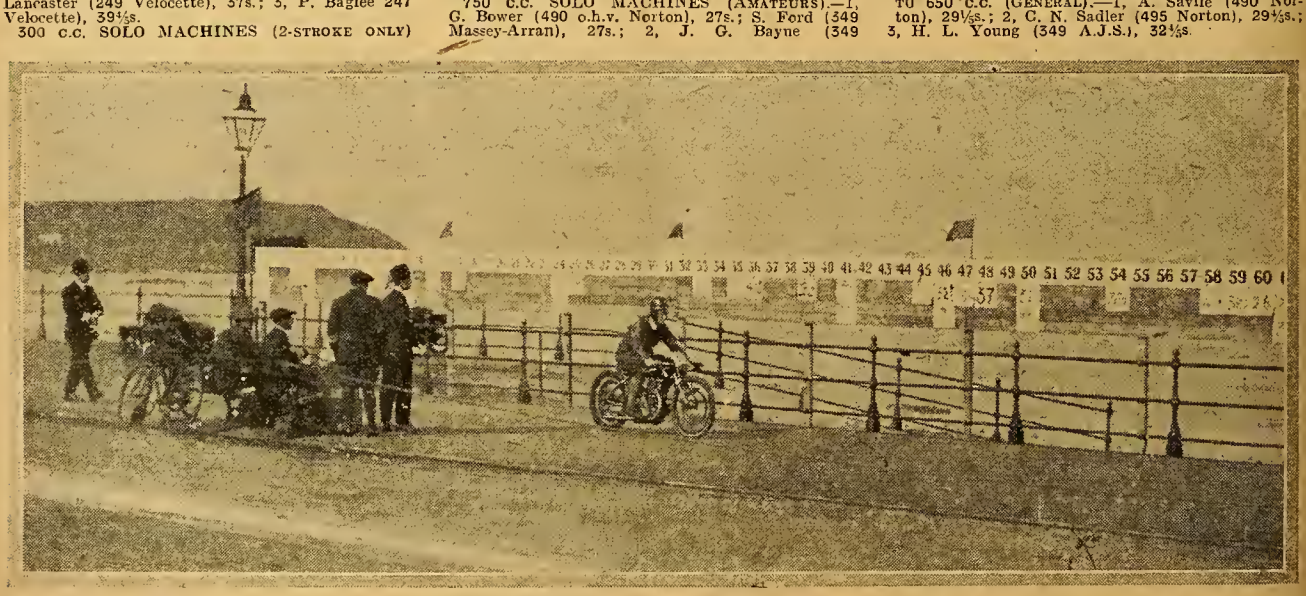
UNLIMITED SOLO MACHINES (GENERAL).—1, F. Dixon (998 Harley-Davidson), 22⅖s.; 2, G. Brough (976 Brough Superior), 22⅘s., and G. Dance (499 Sunbeam), 22⅘s.; 4, R. T. Cawthorne (490 Norton), 23⅕s.

650 c.c. STANDARD TOURING SOLO MACHINES (AMATEURS).—1, S. Ford (349 Massey-Arran), 27s.; 2, A. T. Lewis (490 Norton), 28s.; 3, T. H. Dickinson (496 Duzmo), 29s.

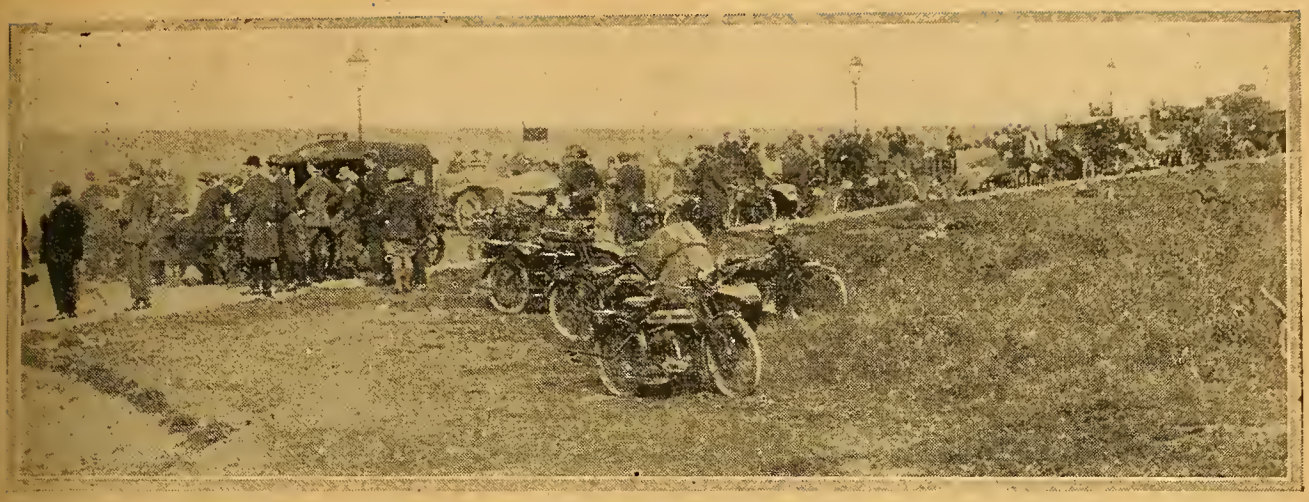
STANDARD TOURING SOLO MACHINES UP TO 650 c.c. (GENERAL).—1, A. Savile (490 Norton), 29⅕s.; 2, C. N. Sadler (495 Norton), 29⅘s.; 3, H. L. Young (349 A.J.S.), 32⅕s.



An idea of the course is conveyed by the photograph showing C. J. P. Dobson (492 Sunbeam) after rounding the bend. Spectators had a good view of the competitors from the bank below the old ruined castle.



All the competitors' times were promptly posted up as shown, and spectators in possession of a programme were able to follow the progress of the event without difficulty.



Another scene at Scarborough showing the numerous vehicles parked by visitors interested in the trials.

600 c.c. SIDECARS (AMATEURS).—1, C. Waterhouse (492 Sunbeam sc.), 33s.; 2, W. Clarke (348 Brevet sc.), 34⅗s.

600 c.c. SIDECARS (GENERAL).—1, R. T. Cawthorne (490 Norton sc.), 27⅖s.; 2, G. Dance (499 Sunbeam sc.), 27⅘s.; 3, E. Searle (500 Sheffield-Henderson sc.), 29⅗s.

750 c.c. SIDECARS (AMATEURS).—1, C. Waterhouse (492 Sunbeam sc.), 33s.; 2, W. Clarke (348 Brevet sc.), 34⅗s.; 3, W. S. Buchanan (678 Martinsyde sc.), 36⅗s.

750 c.c. SIDECARS (GENERAL).—1, R. T. Cawthorne (490 Norton sc.), 27⅖s.; 2, G. Dance (499 Sunbeam sc.), 27⅘s.; 3, E. Searle (500 Sheffield-Henderson sc.), 29⅗s.

UNLIMITED SIDECARS (AMATEURS).—1, W. S. Buchanan (678 Martinsyde sc.), 36⅗s.; 2, A. B. Smith (770 B.S.A. sc.), 39⅗s.; 3, C. F. Naylor (Harley-Davidson sc.), 39⅗s.

UNLIMITED SIDECARS (GENERAL).—1, F. Dixon (998 Harley-Davidson), 26⅖s.; 2, R. T. Cawthorne (490 Norton sc.), 27⅖s.; 3, G. Dance (499 Sunbeam sc.), 27⅘s.

1,100 c.c. CYCLE CARS (AMATEURS).—1, E. Wilkinson (1,098 Morgan), 31⅕s.; 2, C. A. Parry (1,090 Morgan-Anzani), 35s.; 3, R. E. H. Hutton (1,057 G.N.), 35⅖s.

1,100 c.c. CYCLE CARS.—1, Trubie-Moore (1,087 G.N.), 31s.; 2, E. Wilkinson (1,098 Morgan), 31⅘s.; 3, C. N. Parry (1,090 Morgan-Anzani), 35s.

INTER-TEAM TRIAL IN THE COTSWOLDS.

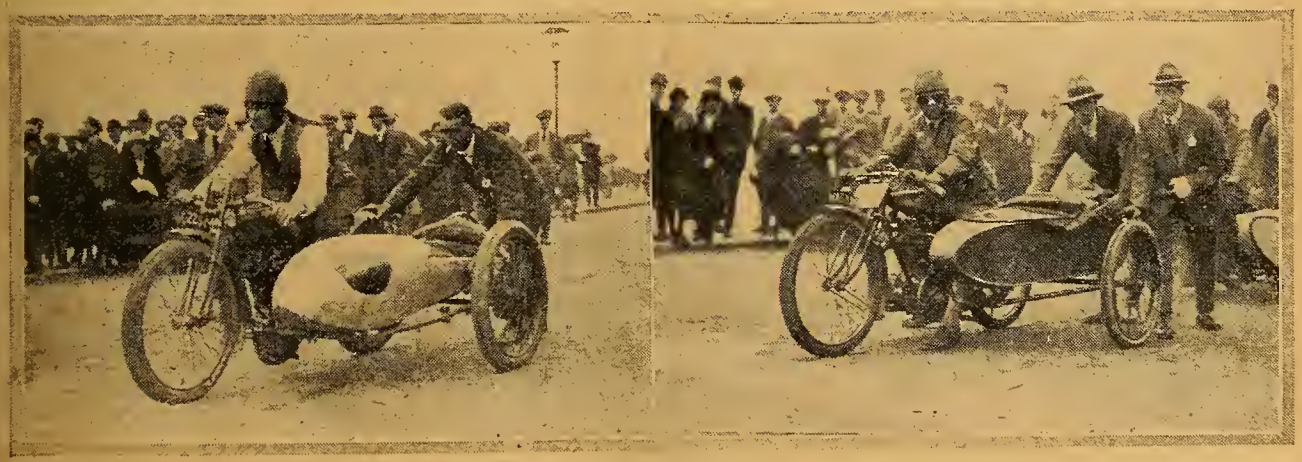
Miniature Motor Cycle Climbs Seven of the Worst Hills in the Stroud Valley.

IT was proved on Saturday, during the Western Centre Inter-team Trial, that the Stroud hills, so formidable in winter and the spring, do not unduly tax the average club man when conditions are favourable.

The annual event for the challenge cup, now held by the Stroud Club, winners of the two previous events, was the third since its inception. It was run off on Saturday last and, fortunately for the competitors, the course was dry; chains were much in evidence on the passenger vehicles and special tyres on the solo mounts; hence successful climbing depended, in the absence of wheel-slip, on power and keeping a balance.

Yet the idea that power is an absolute necessity was belied by the fact that amongst many creditable performances the outstanding ride was by Purnell, on that marvellous infant the 169 c.c. J.E.S. It was the same mount as was used in the A.C.U. Six Days Trials—an overhaul had shown no wear of importance—and with slightly lower gears it trickled steadily up seven of the worst hills in the Stroud valley, twice over, in a straight away run of 2½ hours, keeping well to time, with only one failure—on Mutton Hill, through colliding with the bank. It is difficult to over-estimate such a performance—14 difficult observed climbs in 34 miles with one accidental stop.

The circuit of 17 miles, to be covered twice, started and finished on the hill-top above Stroud; it was an orgy of vicious descents and ascents, with hardly a mile of good level road in it—Giddynap, Quarhouse, Bismore, Bussage, Mutton, Ham Hill Lane, and Mount Vernon, all well-known hills bordering on the genus "freak" when wet, but on this occasion they were dry.



SPEED TRIALS ON SCARBOROUGH PROMENADE.

E. Searle (499 Sheffield-Henderson) awaiting the starter's signal. F. W. Dixon (998 Harley-Davidson sidecar) on the starting line.

Inter-team Trial in the Cotswolds.—Of the 26 starters, 20 composed teams of four from the Gloucester, Stroud, Cheltenham, Worcester and District, and Worcestershire clubs. Twenty-two finished the course, and as far as could be ascertained from a general observation, quite a large proportion of these stand well for the premier medal awards.

On Giddynap, the first hill, there were three failures, one being, to the surprise of the onlookers, such an old hand as Reg. Brown (Sunbeam sc.); he seemed very much out of luck for, after making a star climb of Mutton Hill, a much stiffer hill than Giddynap, a broken frame tube caused his retirement on the second round; his humorous attempt to "check in" at the finish, on foot, with the casual remark that he would bring his machine along presently, caused much amusement.

Mutton Hill was considered the tit-bit of the course, and on the first circuit, as far as could be seen from one point, good clean climbs were scored by N. Smith (349 James), A. Baugham on a long, narrow four-wheel cycle car of his own make, W. Brooke, and C. Ramstedt, both on Cottons, Reg. Brown (Sunbeam sc.), and R. E. Purnell (J.E.S.), who footed, for balance only, at one or two points. J. A. Newman (494 Douglas) also footed occasionally. F. Hanman, another Douglas rider, charged the step at the bottom of the hill, and stopped dead, and found some difficulty in restarting. Early failures on the first round at this hill were C. Beavis (349 A.J.S.), and F. Morgan and K. G. Hay (Cottons).

Ham Hill Lane was reserved for solo riders only, and, although at first glance it appeared the most difficult hill, yet the fact remains that there was only one failure on the first round, and none on the second; J. A. Newman was the unlucky one, a tappet rod jumped out, when he was half up the hill, and it was some time before the fault was noticed, plugs and carburetter being suspected first; this delay very nearly put him outside the limit of 75 minutes for the circuit.

Mount Vernon was another climb for solos only, being very narrow at one point; though stiff and difficult, there was no failure on either circuit. W. B. Gibb (Douglas sc.) ran through quite successfully with the exception of a stop through a front wheel skid on Bussage. Those who finished the course were:—

C. Beavis (A.J.S.), N. Smith (James), A. Baugham (Baugham cycle car), H. S. Peters (Sunbeam), W. B. Gibb (Douglas sc.), F. Morgan, W. Brookes, J. Boakes, C. Ramstedt, and K. G. Hay (all on Cotton machines), C. A. Locke and H. Locke (Sunbeams), W. Paynter and G. Stanmore (490 Norton), J. A. Newman (494 Douglas), W. Carr (Morgan), G. Goodall (Morgan), J. Chadwick (Velocette), Rex Mundy (Ansaldo car), H. Stretton Ward (499 Triumph), Capt. A. Brittan (B.S.A. car). The four retirements were: Reg. Brown, as before mentioned, G. A. Marandez (Marseal light car), F. Hanham (494 Douglas), and W. H. Drew (Norton).

WON BY SIXTEENTHS.

Keen Riding for Fastest Time at Scottish Western Open Speed Trials.

THAT go-ahead organisation, the Scottish Western Motor Club, on Saturday last, held very successful open speed trials at Inchinan, near the old Clyde-side town of Renfrew.

The distance for all events was a half-mile of roadway of excellent surface, with ample room for a safe pull-up after the finishing line had been crossed.

Fastest time of the day was secured by J. A. Porter on 696 c.c. New Gerrard with 24⅛s. This rider also showed up well on a 348 c.c. New Gerrard in the 600 c.c. solo class, his figure being 25⅛s. Next in order of hustle towards the finishing strip were J. S. D. Price (738 Martinsyde), 26¾s., John Lloyd (492 Sunbeam), 26⅜s., R. Watson (738 Martinsyde) and J. A. Porter (348 New Gerrard), 26⅞s., R. M. Wilson (349 A.J.S.), 26⅝s. and J. B Longmuir (492 Sunbeam) with a similar figure. E. A. Small (492 Sunbeam) was the only other rider to get near the 37s. mark, this being his time in class 14. In the 249 c.c. classes A. Best (New Imperial) recorded the very creditable figure of 30½s.

The weather was almost ideal, a bright sun tempering the breeze, which had that crispness associated with the Scottish autumn. The winners in the various classes are appended. The formula used was

$$\frac{W}{C \times T^2}.$$

275 c.c. Open Solo (on formula).
1. A. Best (249 Imperial) figure of merit, 1235. 2. J. G. Porter (249 New Gerrard), figure of merit, 1126. 3. W. Kennedy (249 Imperial), figure of merit, 1080.

275 c.c. Open Solo (on time).
1. A. Best (249 Imperial), 31⅝ sec. 2. J. G. Porter (249 New Gerrard), 31⅞ sec. 3. W. Kennedy (249 Imperial), 31⅞ sec.

350 c.c. Expert Barred, Solo (on formula).
1. G. K. Ferres (349 Massey-Arran), Figure of merit, 1050. 2. J. W. Burton (349 Coventry-Eagle), Figure of Merit, 710. 3. W. T. Wilson (348 Excelsior), Figure of Merit, 590.

350 c.c. Open Solo (on formula).
1. J. A. Porter (348 New Gerrard), Figure of Merit, 1350. 2. A. Best (249 Imperial), Figure of Merit, 1250. 3. R. M. Wilson (349 A.J.S.), Figure of Merit, 1230.

350 c.c. Expert Barred, Solo (on time).
1. J. L. Lawcock (348 Sheffield-Henderson), 29⅞ sec. 2. J. W. Burton (349 Coventry-Eagle), 29⅞ sec. 3. W. T. Wilson (348 Excelsior), 29⅞ sec.

350 c.c. Open, Solo (on time).
1. R. M. Wilson (349 A.J.S.), 27⅛ sec. 2. J. A. Porter (348 New Gerrard), 27⅛ sec. 3. G. K. Ferres (348 Massey-Arran), 27⅛ sec.

600 c.c. Expert Barred, Solo (on formula).
1. J. Bonar King (490 Norton), Figure of Merit, 1170. 2. G. K. Ferres (348 Massey-Arran), Figure of Merit, 1150. 3. R. Mather (490 Norton), Figure of Merit, 985.

600 c.c. Open, Solo (on formula).
1. A. Best (249 New Imperial), Figure of Merit, 1250. 2. R. M. Wilson (349 A.J.S.), Figure of Merit, 1240. 3. J. G. Porter (249 New Gerrard), Figure of Merit, 1215.

600 c.c. Expert Barred, Solo (on time).
1. A. Smith (398 A.B.C.), 27⅞ sec. 2. R. M. Wishart (490 Norton), 27⅞ sec. 3. J. Bonar King (490 Norton), 27⅞ sec.

600 c.c. Open, Solo (on time).
1. J. A. Porter (348 New Gerrard), 26⅛ sec. 2. J. B. Longmuir (492 Sunbeam), 26⅛ sec. 3. L. B. C. Cunningham (499 Sunbeam), 26⅛ sec; R. M. Wilson (492 Sunbeam), 26⅛ sec.

Unlimited, Expert Barred, Solo (on formula).
1. G. K. Ferres (348 Massey-Arran), Figure of Merit, 1190. 2. J. Bonar-King (490 Norton), Figure of Merit, 1120. 3. J. D. Barbour (494 Douglas), Figure of Merit, 890.

Unlimited, Open, Solo (on formula).
1. J. A. Porter (348 New Gerrard), Figure of Merit, 1360. 2. R. M. Wilson (349 A.J.S.), Figure of Merit, 1250. 3. A. Best (249 Imperial), Figure of Merit, 1230.

Unlimited, Expert Barred, Solo (on time).
1. J. Lloyd (492 Sunbeam), 26⅛ sec. 2. J. Bonar King (490 Norton), 27⅛ sec. 3. R. M. Wishart (490 Norton), 28⅞ sec.

Unlimited, Open, Solo (on time).
1. J. A. Porter (696 New Gerrard), 24⅛ sec. 2. J. S. D. Price (738 Martinsyde), 26¾ sec. 3. R. Watson (738 Martinsyde), 27⅞ sec.

Unlimited, Open Sidecar (on formula).
1. R. M. Wilson (349 A.J.S. sc.), Figure of Merit, 1370. 2. G. A. Small (492 Sunbeam sc.), Figure of Merit, 1290. 3. R. Watson (738 Martinsyde sc.) Figure of Merit, 887.

Unlimited Open Sidecars (on time).
1. R. Watson (738 Martinsyde sc.), 31⅛ sec. 2. E. A. Small (492 Sunbeam sc.), 32⅛ sec. 3. R. M. Wilson (349 A.J.S. sc.), 33⅝ sec.

The foregoing results are provisional.

DEATH OF MR. ALEC ROSS.

NUMEROUS readers will learn of the death of Mr. Alec Ross with sincere regret. His end was tragically sudden. Last Saturday week he attended the dinner at the Midland Hotel, Birmingham, to welcome Mr. George Stevens on his return from his overseas visit and occupied the chair. The following Tuesday he was taken ill with pneumonia and passed away at nine o'clock on Friday evening last.

Mr. Alec Ross was an old cyclist, and, like many who were enthusiasts of pedal-cycling, he never became a really active motor cyclist, but his love of sport made him a keen follower of the pastime, and nothing gave him greater pleasure than to officiate at a motor cycle event.

THE LATE MR. ALEC ROSS.

Since in business he occupied the post of Midland representative to Messrs. Bowden Wire, Ltd., he was better known in those districts than near London, but he nevertheless was a frequent visitor to B.M.C.R.C. race meetings at Brooklands, and at other important metropolitan functions. The parent body of the sport and industry was his especial care, and he undoubtedly did good missionary work among provincial clubs, in inspiring them with loyalty to the Auto-Cycle Union and keeping them in close co-operation with headquarters.

We extend our heartfelt sympathy to his widow in her loss.

72·4 M.P.H. ON GRADIENT OF 1 IN 7.

Amazing Speeds at Basingstoke M.C. Hill Climb.

EXCELLENT weather favoured the Basingstoke M.C. hill-climb, held at Farleigh Hill on Thursday. The speeds recorded were extremely good, taking into consideration the fact that the hill has a gradient of 1 in 7 at its steepest point, and in addition curves considerably. Fastest time of the day by a club member was made by B. Fleming (492 Sunbeam), who covered the course in 25⅘s., equal to a speed of 66.66 m.p.h. Fastest time in the open events was made by H. Hands (496 Norton), whose speed was 72.4 m.p.h. Results:

SOLO.

B.M.C.C. MEMBERS (250 c.c.).—1, W. Julian (Levis), 35s.; 2, R. Budd (New Imperial), 36⅖s.
275 c.c.—1, W. Julian (Levis), 33⅖s.; 2, R. Budd (New Imperial), 37⅕s.
350 c.c.—1, A. Osmond (Edmund), 29s.; 2, W. Julian (Levis), 33⅕s.
550 c.c.—1, A. Osmond (Edmund), 28s.; 2, C. Hedges (Triumph), 29⅘s.
750 c.c.—1, A. Osmond (Edmund), 28⅖s.; 2, C. Hedges (Triumph), 28⅘s.
1,000 c.c.—1, A. Osmond (Edmund), 28⅖s.; 2, B. Fleming (Sunbeam), 28⅕s.; 3, C. Hedges (Triumph), 29s.
UNLIMITED.—1, B. Fleming (Sunbeam), 29⅖s.; 2, A. Osmond (Edmund), 31⅕s.
OPEN CLASSES (250 c.c.).—1, W. Julian (Levis), 35s.; 2, R. Budd (New Imperial), 36⅖s.
275 c.c.—1, W. Julian (Levis), 33⅕s.; 2, R. Budd (New Imperial), 39⅕s.
350 c.c.—1, B. Fleming (Edmund), 28⅘s.; 2, A. Osmond (Edmund), 29⅕s.
550 c.c.—1, H. Hands (Norton), 25⅖s.; 2, E. Spencer (Douglas), 26s.

A speed impression at the Basingstoke hill-climb. C. Bowens (976 Brough Superior) taking Farleigh hill in good style.

750 c.c.—1, H. Hands (Norton), 24⅖s.; 2, E. Spencer (Douglas), 25⅗s.
1,000 c.c.—1, H. Hands (Norton), 25s.; 2, E. Spencer (Douglas), 25⅕s.
UNLIMITED.—1, H. Hands (Norton), 25s.; 2, E. Spencer (Douglas), 25⅖s.

TEAM RACE.

1, R. Budd (New Imperial), 36⅘s., W. Julian (Levis), 34⅗s., and Hedges (Triumph), 28⅘s., total 100⅕s.; 2, B. Fleming (Velocette), 42⅗s., A. Osmond (Edmund), 32⅖s., and B. Fleming (Sunbeam), 27⅕s., total 102⅘s.

SIDECARS.

B.M.C.C. MEMBERS (550 c.c.).—1, B. Fleming (Sunbeam), 37⅕s.; 2, W. Julian (Norton), 44⅘s.
UNLIMITED.—1, B. Fleming (Sunbeam), 37⅗s.; 2, S. Neale (Indian), 41⅘s.
OPEN CLASSES (550 c.c.).—1, H. Hands (Norton), 32s.; 2, E Spencer (Douglas), 35s.
750 c.c.—1, H. Hands (Norton), 32⅕s.; 2, E. Spence (Douglas), 33s.
1,000 c.c.—1, H. Hands (Zenith), 30⅕s.; 2, H. Hands (Norton), 31⅗s.
UNLIMITED.—1, H. Hands (Zenith), 30⅖s.; 2, Spencer (Douglas), 32⅕s.

750 c.c. FLAT TWIN BEATS 500 c.c. SINGLES.

Fastest Time at Sutton Coldfield and N. Birmingham hill-climb made by 733 c.c. Douglas.

THE Sutton Coldfield and N. Birmingham A.C. hill-climb at Angel Bank on Saturday attracted 45 entrants and about fifteen hundred spectators.

The success of the event was very much due to the fact that no time was wasted.

Each entrant was allowed only two runs up the hill, his better time counting throughout. This certainly saved a great deal of monotonous running up and down, which is generally the drawback at a hill-climb.

Angel Bank is situated near Cleobury Mortimer, is a few yards under the half-mile, and has a reputed gradient of 1 in 10.

Telephone timing was used, and *The Motor Cycle* formula: $\frac{C \times T^2}{W}$.

The usual band of expert riders was present, and some excellent performances were witnessed.

The c.c. solo classes attracted the majority of entrants, and accounted for some high speeds, F. T. Hatton on his 733 c.c. Colmore-Douglas making the fastest time of the day, 25 3-5sec. The Brough Superior ridden by E. Arthur also did well, recording the fastest time of the day in the novices' class.

RESULTS.

SIDECARS UP TO 350 C.C.
1. G. S. Boston (349 A.J.S.), 36s.

SIDECARS UP TO 600 C.C.
1. R. E. Eveson (490 Norton sc.), 35s.
2. T. C. Greenwood (398 Sunbeam sc.), 35⅖s.

SIDECARS (UNLIMITED).
1. F. T. Hatton (733 Colmore-Douglas sc.), 32⅗s.
2. R. E. Eveson (490 Norton sc.), 35s.

CYCLECARS UP TO 1,100 C.C. (ON FORMULA).
1. N. Norris (Morgan) (and special award for fastest time). 2. Spouse (T.B.).

250 C.C. SOLO.
1. N. Hall (249 O.K. Junior), 38s.
2. D. B. Calder (248 New Imperial), 41s.

350 C.C. SOLO.
1. G. S. Boston (349 A.J.S.), 29⅗s.
2. T. C. Greenwood (348 Sunbeam), 29⅘s.
1st Novice. N. Anderson (350 Ivy), 45⅕s.

500 C.C. SOLO.
1. H. Hassall (499 Norton), 26⅕s.
2. F. T. Hatton (494 Colmore-Douglas), 27⅕s.
1st Novice. H. R. Clarkson (490 Norton), 35⅕s.

750 C.C. SOLO.
1. F. T. Hatton (733 Colmore-Douglas), 25⅗s.
2. H. Hassall (499 Norton), 26⅕s.
1st Novice. H. R. Clarkson (490 Norton), 35⅕s.

UNLIMITED SOLO.
1. F. T. Hatton (733 Colmore-Douglas), 25⅗s.
2. H. Hassall (499 Norton), 26⅕s.
1st Novice. E. Arthur (976 Brough-Superior), 30⅕s.

MILLIONS TO BE SPENT ON ROAD IMPROVEMENTS.

TO give work to the unemployed the Ministry of Transport is sanctioning many important schemes in road improvement and road construction, which will not only directly help the unemployed in the areas concerned, but will indirectly stimulate industry in quarries and steel works.

The Ministry of Transport has under consideration works involving the expenditure of seven million pounds, including such work as ring, bye-pass or approach roads at Sunderland, West Hartlepool, Newport, Leeds, Stanford-le-Hope, Portsmouth, Dundee, etc.; new roads between Newcastle and Tynemouth, Headingley and Moortown, Middlesbrough and Redcar, etc.; widening of important roads, e.g., Cowbridge Road, Cardiff; Penzance to Land's End; Chester to Birkenhead; Beverley Road, Hull; Barrow to Ulverstone; Cardiff Road, Merthyr Tydfil; Greenford Road, Middlesex; Tavistock Road, Plymouth, etc.

CLUB NEWS

At the start of the recent trial of the Connaught Motor Cycle Club (Birmingham).

Cumberland County M.C.C.

A programme of highly interesting lectures has been prepared for the winter season. Among those who will lecture are Mr. Campbell McGregor, Mr. T. W. Loughborough, Mr. J. N. Longfield, Mr. J. E. Greenwood, and Professor A. M. Low. In addition, *The Motor Cycle* film has been provisionally booked by the club. The various lectures and concerts will be held in the Crown and Mitre Hotel, Carlisle, at 8 p.m. on the following dates: October 20th, November 3rd, 10th, 17th, and 24th, December 8th, 15th, and 29th, January 5th, 12th, 19th, and 26th, February 2nd, 9th, and 16th.

Slough and District M.C. and L.C.C.

Alms Hill, Heuley, was the scene of a hill-climb held on the 9th inst. Some very good times were recorded for the 500 yards course. Results:—

350 c.c.

1. H. S. Tweedy (348 Watney-Blackburne), 32⅘s.
2. E. A. Cullum (348 Douglas), 48⅘s.

500 c.c.

1. H. Glover (490 Norton), 32s.
2. H. S. Tweedy (348 Watney-Blackburne), 32⅘s.
3. J. E. Hathaway (398 A.B.C.), 35⅖s.

750 c.c.

1. H. Glover (490 Norton), 30⅕s.
2. M. J. Anderson-Coates (490 Norton), 33⅖s.
3. J. E. Hathaway (398 A.B.C.), 37s.

1,000 c.c

1. E. Finch (348 Watney-Blackburne), 28⅗s.

UNLIMITED.

1. E. Finch (348 Watney-Blackburne), 28⅗s.
2. M. J. Anderson-Coates (490 Norton), 30⅖s.
3. H. Glover (490 Norton), 31s.

Surrey M.C. and L.C.C.

Results in the motor cycle classes of the members' speed trial, held on the 16th inst., subject to confirmation by the committee, are as follows:

350 c.c.—1, L. F. Peaty (350 Hawker), 21.98s.; 2, T. G. Meeten (346 Francis-Barnett), 25.73s.; 3, H. C. Mansell (349 A.J.S.), 28.58s.

550 c.c.—1, P. M. Walters (496 Duzmo), 22.77s.; 2, L. F. Peaty (548 Hawker), 22.55s.; 3, W. H. Sheraton (490 Norton), 23.90s.

1,500 c.c.—1, L. F. Peaty (350 Hawker), 22.48s.; 2, T. G. Meeten (346 Francis-Barnett), 24.76s.; 3, P. M. Walters (496 Duzmo), 22.50s.

UNLIMITED.—1, P. W. S. Bulman (976 Zenith), 23.50s.; 2, A. W. Goswell (698 Raleigh), 25.99s.; 3, T. G. Meeten (596 Indian), 26.66s.

THREE-WHEELERS.—1, P. W. S. Bulman (976 Zenith sc.), 28.73s.; 2, L. C. Willson (976 Morgan), 34.25s.; 3, F. R. Seymour Hunt (678 Martinsyde sc.), 38.20s.

VETERAN MACHINES.—1, W. J. Collis (499 Rudge), 25s.; 2, S. Manners-Smith (500 Triumph), 27.08s.; 3, M. H. Medcalf (Bugatti), 26.85s.

AWARDS ON TIME IN 1,500 c.c. CLASS.—1, L. F. Peaty (350 Hawker); 2, P. M. Walters (496 Duzmo).

FASTEST TIME OF DAY.—L. F. Peaty (350 Hawker), 21.98s.

Worcester and District M.C.C.

Angel Bank is the location of the third annual hill climb, to be held on Saturday. Motor cycles, sidecars, and cars are eligible to compete, and a number of handsome awards are offered.

Week-End Club Events.

Sept. 28th.—Northampton M.C.C.—Hill Climb at East Haddon.
Sept. 30th.—Plymouth and District M.C., and L.C.C.—Dartmoor Trial
Sept. 30th.—Southport M.C.—Race Meeting.
Sept. 30th.—Atherton and District M.C.C.—Run to Holmes Chapel.
Sept. 30th.—Levis Athletic Club. Single-gear Trial.
Sept. 30th.—Worcester and District M.C. and M.C.C.—Hill Climb.
Sept. 30th.—Liverpool M.C.—Reliability Trial.
Sept. 30th.—Coatbridge, Airdrie and District M.C.G.C.—Social Run.
Sept. 30th.—Coventry and Warwickshire M.C.—Gymkhana.
Sept. 30th.—Mid Bucks M.C.C.—Final Social Run.
Sept. 30th.—Dumfries and District M.C. and C.C.—Knock-out Hill Climb.
Sept. 30th.—Bulwell M.C.—Run to Southwell and Hazelford.
Sept. 30th.—Wallington and District M.C.C.—Hill Climb.
Sept. 30th.—Cardiff M.C.C.—Speed Trials.
Sept. 30th.—Doncaster and District M.C.C.—Yorkshire Centre Speed Trials.
Sept. 30th.—Coventry Triangle Club. Vice-Chairman's Run.
Sept. 30th.—Middlesbrough and District M.C.—Fuel Consumption Trial.
Sept. 30th.—Glasgow M.C.C.—Open Hill Climb at Sora.
Oct. 1st.—Bridgnorth and District M.C.C.—Social Run.
Oct. 1st.—Epsom and District M.C.C.—Reliability Trial.
Oct. 1st.—Barrow and District M.C.C.—Reliability Trial.
Oct. 1st.—Halifax and District M.C. and L.C.C.—President's Run.
Oct. 1st.—Woolwich and District M.C.C.—Run to Knockholt.
Oct. 1st.—Coventry Triangle Club. Run to Moreton-in-the-Marsh.
Oct. 1st.—Leeds Motor Union.—Run to Brimham Rocks.
Oct. 1st.—Sheffield M.C.C.—Run to Peak Forest.
Oct. 1st.—Matlock and West Derbyshire M. and M.C.C.—Paperchase.
Oct. 5th.—Bulwell M.C.—Speed-judging Competition.

Chester and District M.C. & L.C.C.

Unavoidably postponed from the 28th of August, the club's hill climb at Penn-y-Ball, Holywell, North Wales, will now be held on the 7th of October. The entry list is open to members of the Cheshire Centre, A.C.U., and entries should be sent to Mr. H. Hill, Hill's Garage, The Newgate, Chester.

Stourbridge and District M.C.C.

Competitors in the club's annual sporting half-day trial for the Wallace Cup, to take place on the 7th prox., will cover the usual circuitous course, embracing Hagley Wood, New Walton, Shut Mill, and Beacon Hills. Entries close on Thursday, October 5th. Forms and particulars are obtainable from the hon. secretary, 111, High Street, Stourbridge.

North Derbyshire M.C.C.

No freak hills or secret checks will be included in the club's reliability trial to be held on October 1st, over a course of about 52 miles. Two valuable trophies, the Haslam Trophy and the Cavendish Cup, are offered for the best performance recorded by an amateur and trade rider respectively. Particulars and entry forms are obtainable from the trials secretary, Mr. R. B. Green, 1, Holywell Street, Chesterfield.

Ipswich and District M.C.C.

Owing to a heavy downpour which commenced soon after the lunch stop, making parts of the route well-nigh impassable, only four non-stop runs were claimed among the seventeen finishers in the club's 200 miles trial for the Beardmore Cup, held on the 10th inst. Results:

350 c.c.

1. H. Green (350 Beardmore-Precision), lost 22 marks.
2. B. C. Woodward (350 Diamond), lost 26 marks.
3. W. J. Coe (249 Velocette), lost 47 marks.

500 c.c.

1. A. V. Adams (496 Martinsyde), lost 13 marks.
2. B. A. Hatcher (499 Triumph), lost 18 marks.
3. C. E. Claxton (490 Norton), lost 42 marks.

600 c.c. (Winner of Challenge Cup and First Prize in Class).

1. C. O. Rose (598 Beardmore-Precision), lost 10 marks.
2. R. Thurlow (550 Triumph), lost 26 marks.

600 c.c. SIDECARS.

1. Mrs. Keer (550 Triumph sc.), lost 18 marks.
2. J. F. Rose (598 Beardmore-Precision sc.), lost 30 marks.

UNLIMITED SIDECARS.

1. F. K. Portway (633 Norton sc.), lost 17 marks.
2. H. O. Goldsmith (692 Brough sc.), lost 21 marks.
3. A. H. G. Howe (678 Martinsyde sc.), lost 27 marks.

TEAM CLASSES.

1. No. 2 Beardmore-Precision Team, total marks lost, 62
2. No. 1 Egerton's Team, total marks lost, 72.
3. No. 2 Egerton's Team, total marks lost, 85.

Clitheroe and District M.C.C.

In spite of unfavourable weather, there was a very fair attendance at the annual supper run held on the 13th inst. Supper was partaken of at Cam Ark, where an excellent evening's entertainment was provided.

Essex County and Southend-on-Sea M.C.

Members of the club spent an enjoyable afternoon's sport at the gymkhana held at Solbys, Hadleigh, while spectators watched with interest the large number of amusing events which featured in the programme.

Warrington M.C.

A reliability trial was held on the 9th inst. The route included the formidable Holsby Hill, which caused a number of failures, especially among the passenger machines. Results:—
Solo: G. Thomasson (398 A.B.C.).
Sidecar: H. Leach (976 Brough Superior).

Millhill and District M.C.C.

After the inaugural run to Essenden, Herts, where lunch was taken, members participated in an impromptu hill-climb. Competitors were timed over a half-mile course, being allowed a flying start of fifteen yards. Results:

SOLO.
1. G. A. Jeapes (348 Omega), 49s.
2. E. Barnes (293 Calthorpe), 61s.
3. A. Abel (Kingsbury), 64s.
4. E. L. Forge (293 New Imperial), 72s.

SIDECARS.
1. J. H. Woods (976 Royal Enfield sc.), 54s.
2. R. K. Gibson (976 Royal Enfield sc.), 60s.
3. A. Borkett (799 A.J.S. sc.), 65s.

Fastest sidecar and fastest solo: G. A. Jeapes (348 Omega).
Fastest time of day: G. A. Jeapes (348 Omega).

South-West London M.C.C.

A most successful social evening was held at the club headquarters, the Brockwell Park Hotel, Herne Hill, on the 14th inst. It is hoped to hold these socials monthly throughout the winter.

Alnwick and District M.C.

In splendid weather the annual speed trials were held on the 10th inst. on the sands at Newton-by-the-Sea. Competitors were timed over a flying half-mile, when the following results were recorded:

250 c.c.
1. J. Jeynson (346 Francis-Barnett), 32⅕s
2. G. Watson (249 Velocette), 35⅖s.

350 c.c.
1. Davison Hall (348 New Scale), 25s.
2. J. P. Bell (349 Massey-Arran), 26⅗s.

500 c.c.
1. J. Guthrie (490 Norton), 24⅘s.
2. Davison Hall (348 New Scale), 25⅖s.

750 c.c.
1. J. Guthrie (490 Norton), 24s.
2. Davison Hall (348 New Scale), 25s.
3. A. Reid (348 H.B.), 25⅗s.

UNLIMITED.
1. J. Illingworth (998 Trump-Anzani), 22⅗s.
2. J. Guthrie (490 Norton), 25s.
3. A. Reid (348 H.B.), 25s.

500 c.c. SIDECARS.
1. Davison Hall (348 New Scale sc.), 32⅘s.
2. A. Elliott (490 Norton sc.), 36⅕s.
3. J. P. Bell (349 Massey-Arran sc.), 36⅘s.

UNLIMITED SIDECARS.
1. Davison Hall (348 New Scale sc.), 32⅘s.
2. J. P. Bell (349 Massey-Arran sc.), 34⅗s.
3. A. Elliott (490 Norton sc.), 38⅘s.

FIVE-MILE SPRINT.
1. J. Guthrie (490 Norton).
2. W. B. Richardson (500 N.U.T.).

Fastest time of day: J. Illingworth (998 Trump-Anzani), 22⅗s.

Barrow and District M.C.

The results of the trial for the Firth challenge cup, held on the 10th inst., are as follows:—
(1) J. C. Dearden (349 Massey-Arran), (2) H. Helme (499 Rover sc.) and W. A. Singleton (678 Martinsyde sc.), (3) W. D. Mackenzie (499 Rover).

Oxford M.C.

Nearly one thousand people were drawn to Alms Hill, Henley, to witness or take part in the informal climb staged thereon by the club. As this event seemed generally appreciated, another climb has been arranged to take place on the 1st prox. at Cadsden Hill, near Princes Risborough, to which all enthusiasts are cordially invited. Car drivers, however, are not recommended to attempt the climb.

Cannock, Hednesford and District M.C.C.

Incessant rain and poor visibility greatly handicapped competitors in the recent inter-team trial, and made the ascents of such well-known Derbyshire hills as Solomon's Hollow, Axe Edge, and Cat and Fiddle doubly difficult. Two clubs, viz., the Cannock and Walsall clubs, competed. The former won the shield by obtaining six places in the first nine. Results:
1. H. Hough (976 Royal Ruby sc.), Walsall, lost 2 marks.
2. A. Spencer (557 B.S.A. sc.), Cannock, lost 6 marks.
3. B. Pedley (986 T.B.), Walsall, lost 20 marks.
4. D. Rudge (370 Connaught sc.), Cannock, lost 55 marks.
5. E. Harvey (976 Matchless sc.), Cannock, lost 55 marks.
6. M. Bailey (349 A.J.S.), Cannock, lost 89 marks.
7. J. Stone (498 Ariel sc.), Cannock, lost 130 marks.
8. T. Stena (499 Dunelt sc.), Cannock, lost 154 marks.
9. J. Paige (499 Sunbeam), Walsall, lost 164 marks.

CLUB CHAMPIONSHIP TRIAL IN HOLLAND.

Two-Day Event in the Rain. 66 Competitors. 6 Clubs Represented.

THERE are no keener motor cyclists than those of Holland. British riders have had ample evidence of this during past Anglo-Dutch trials—an event that everyone regrets was not held this year. The geographical characteristics of Holland, however, do not permit of events which include hill climbing such as forms a feature of trials held in this country, but what the tests lack in this direction they make up for in secret checks.

On the 16th and 17th of the current month the club championship of the K.N.M.V was decided by means of a two-day trial in which sixty-six competitors, representing six clubs, were entered.

Amid typical Dutch scenery. Competitors on the banks of one of the many canals in Drenthe.

The champion proved to be J. A. F. Bolland (Harley-Davidson), who lost three points and won the silver cup, offered by the K.N.M.V. The second silver cup for amateurs was won by C. W. de Rochefort (B.S.A.), whose loss was four points only, a gold medal being won by D. Hoogeveen (Harley-Davidson) with a loss of four points. Seven riders lost five points each, and five six points each.

The Club Championship was won by the Motorclub "Arnhem en Omstreken" (19 points loss), and the trade team prize by the Harley-Davidson team (37 points loss).

All competitors completed the course on the first day, but on the second day five riders gave up.

Strict Time Schedule.

The first day's route traversed the finest parts of Overysel, Drente and Friesland; 162 miles had to be covered with an average of 19 m.p.h. The start was at 7.30 a.m. and the finish at 6 p.m. No time allowance was given at the checks or at the secret checks, of which five were included.

On the second day the route was through Gelderland, Utrecht and South Holland, and the finish was at The Hague, where, at an official dinner, the results were announced.

Both days were very rainy, necessitating careful riding on the part of the soloists.

Though competitors and all other riders had a very interesting time, it is believed in Holland that trials of this character will not be held again, owing to the fact that the test was practically a reliability trial for the watches.

JUDGES' REPORT ON THE SIX DAYS TRIALS.

Improvements in Motor Cycle Design, but Several Details Requiring Further Attention.

UNUSUALLY soon after the Six Days Trials the judge's report of that event has now been issued; it is commendably brief—perhaps a case of cause and effect.

In effect they repeat what *The Motor Cycle* has already said in its report and analysis of the Trials. Extracts of the A.C.U. document (which is priced at 1s.) follow:—

"The course was in general decidedly severe, and provided a test fairly representing some thousands of miles ordinary use in the hands of a driver who has no special facilities for upkeep. The 1922 course was particularly interesting in that it included portions of routes used in previous Trials, and it was therefore possible to note the improvements made in motor cycles.

"On the whole the weather was favourable. Rain fell during two or three of the runs, and wet roads were encountered on several others. The conditions were sufficiently severe to test mudguarding, etc., but not bad enough to make the test hills unduly difficult.

"With the possible exception of Rosedale, no very exceptional hills were encountered. The ease with which most machines climbed Alms Hill, of which a short portion has a gradient of approximately 1 in 3, demonstrates that under good surface conditions the modern machine is capable of ascending any hill likely to be encountered, no matter what the gradient may be.

"The smaller classes were very satisfactory in this respect, but on long inclines such as Bwlch-y-groes, there appeared to be a tendency in some of the larger capacity engines to overheat. A great improvement has, however, taken place in this respect during the last few years.

"Very difficult hills should not be ruled out of trials, as they serve a useful purpose in demonstrating the strength of cycle parts, such as frames, rims, spokes, and wheel bearings, and they ensure that cooling and clutch surfaces are adequate. Without some strenuous tests of this kind, it is hardly possible to load the machines in an equivalent manner to that which they will experience in the hands of the public.

"The ease with which the three wheelers surmounted bad surfaced hills suggests that they benefit by the directness of driving thrust.

"There was, fortunately, enough bad weather to indicate that many machines should be better guarded. In view of the fact that they are usually travelling fast, protection from dirt carried by wind currents is of great importance in securing cleanliness for rider and machine. Oily dirt is very objectionable and ranks worse than road dirt, which is easily washed away, provided that water-excluding bearings are fitted or that proper shielding of transmission is adopted. The Sunbeam, A.J.S., Matchless, and Dunelt machines were excellent in this respect. The discharge of oil from the transmission or exhaust on to tyres was rather too common and is particularly objectionable. Actual mudguards show improvement.

"Particular attention is drawn to the fact that it is primarily the very inexpensive lightweight to which we must look to popularise motor cycling, and it is therefore very important that the small machines should be adequately mudguarded, well silenced and clean. The crude means adopted for lubrication of the transmission in many machines prevents them from being even reasonably clean.

"In some of the lighter machines where it is impracticable to carry the engine in a relatively heavy cradle, a great deal of engine vibration takes place. Much more attention should be given to the balancing of lightweight engines in some of the cheaper machines.

"Valve breakages were too frequent; the ordinary rider regards such a failure as quite a serious breakdown. Valve guides and springs should be enclosed, as is done on several engines, when in consequence they can be slightly lubricated. Overhead valve gears should never be left exposed. It is regrettable that the lubrication of such parts should be left to the smearing on of lumps of grease or constant applications of the oil can. It is difficult to keep the lubricant in its place owing to the comparatively high temperature at which the parts have to work.

"Two-stroke performances were very excellent.

"A very notable improvement has taken place in general silence, but there is still room for an all-round reduction of noise. No really objectionably noisy machines were entered, but on the other hand no entry reached the desirable degree of silence. Transmission systems in particular were frequently objectionably noisy. Much of this mechanical noise is produced by the absence of proper lubrication. Mechanical clatter is inexcusable.

"Brakes have improved enormously, more particularly front wheel brakes. Special brake drums are now the rule rather than the exception. Improvement in some of the front wheel brakes is still needed, however. Two points requiring attention are: (*a*) Sidecar brakes and the fitting of ratchet brakes to sidecar outfits to enable them to hold on a gradient. (*b*) Hand-operated adjustment should be provided, as it is not pleasant to require tools every time either brake has to be taken up.

"The general aspect of most machines from the point of view of multiplicity of small parts is better. Accessibility on lightweights is important, as is more standardisation of nuts. Gear boxes or their equivalent in chain transmission are still offenders on the score of being too light, with clutch parts and gear wheels of rather small dimensions. An undue proportion of retirements was due to gear box failure.

"Steering heads still need strengthening and larger races should be used.

"Wheel bearings in many cases show looseness and the rear wheels of several of the lightweights had suffered considerably. Rims were very good.

"To lift a relatively heavy machine on to a stand is not easy, and the fitting of prop stands in addition to the rear stand would be convenient for short stops.

"Sidecar connections were sound throughout, and this despite the fact that the sidecars themselves were mostly heavy.

"Many machines had clutch controls operated with difficulty from badly placed handles.

"Judging by the frequency of stops for re-filling, it would appear certain machines are not economical.

"As regards the finishing machines, it was very notable that general mechanical design and construction had been very much improved. Only three machines which completed the course lost the maximum award on account of deduction of marks at the final examination. This is a vast improvement over any previous Six Days Trials result, and is a matter for congratulation to manufacturers. Now that engine power is ample there is no tendency to cut weight in important parts with the result that from a mechanical point of view construction is much sounder. On the other hand, the percentage of retirements, namely 30.3 of starters, is the highest of any trial since the war."

A. M. LOW,
A. E. DAVIDSON, LIEUT.-COL.,
Judges,
T. W. LOUGHBOROUGH,
Clerk of the Course,

A MOTOR BALLOT.

Novel Scheme to Swell the Funds of a Hospital. Motor Cycles and a Light Car among the prizes. Motorists asked to Name Most Popular Cars.

OBSERVANT motor cyclists will be much interested in a competition now being run in aid of the Coventry and Warwickshire Hospital.

For the sum of one shilling the entrant is given a list of forty motor cars on the British market, and is required to place fifteen in order of popularity. The sender of the list most nearly tallying with the general voting wins.

All the proceeds go to the hospital, the prizes being presented by various motor and motor cycle manufacturers. These include a 1922 Crouch light car, a Coventry Mascot sidecar outfit, and Triumph and McKenzie lightweights.

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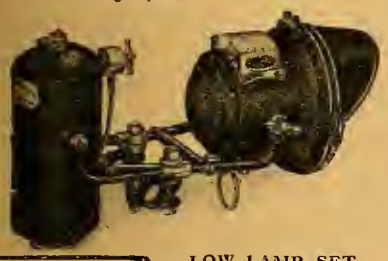

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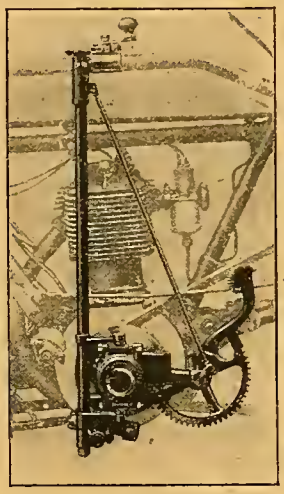

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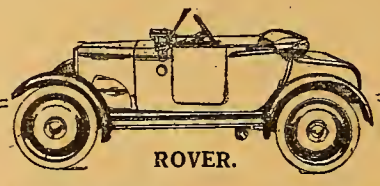

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Bradbury.

1922 Bradbury 4h.p., 3-speed, clutch, kick-start, licensed year, fully equipped, indistinguishable from new; 70 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

Brough.

3½h.p. Brough, 3-speed S.A. countershaft, dual clutch, fast, perfect condition, for sale; lightweight part.—27, Wandle Rd., Wandsworth Common, S.W.17. [4491

BROUGH 1920 5-6h.p., 3-speed, kick-start, clutch, all-chain, special 2-seater sidecar by Derwent, small mileage, perfect order, and open expert examination; £95, near offer.—Spriggs, Widmerpool, Notts. (D) [4184

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BROUGH SUPERIOR Sports Sidecar, complete as new; £15.—Malvern Rd. Garage, Thornton Heath. [4591

SMALL Deposit will secure you latest models Brough Superior.—Saymour Hotel Garage, Gloucester. [4089

1922 Brough Superior Mark II. Combination, special aluminium dash and screen, outfit perfect; £120.—51, Upper Richmond Rd., East Putney. [4558

MANCHESTER, Oldham, Bury, Stockport, Stalybridge, Rochdale, Huddersfield, etc. etc.—We are sole agents for Brough Superior.—Brough Superior Northern Services, 198, Manchester Rd., Oldham.

BROUGH SUPERIOR Northern Services.—As our name implies, we are Brough Superior specialists. All models in stock. Mark I., 90×77½ mm., o.h.v., £160; Mark I. side valve, £150; Mark I. sporting combination, with screen, step mat, and apron, £180; Mark II., 6.5h.p. M.A.G. engine, £125; Mark II. sporting combination, £150. Demonstration runs by appointment. Catalogues post free on request. We are the Brough Superior representatives for whole of Lancashire and Yorkshire (exception Leeds and Sheffield), and greater part of Cheshire and North Stafford. Showrooms, 198, Manchester Rd., Oldham.

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1922 Brough Superior Combination, super J.A.P., dynamo lighting, speedometer, Tan-Sad, tax paid; £135, near offer, or exchange lower power and cash; after 7 p.m.—7, Lucien Rd., Tooting, S.W.17. Day time, Hop 1526. [4282

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0836

Brown.

£22.—Brown 3½h.p., low, fast, powerful; take pedal cycle part.—57, Kenbury St., Camberwell, London. [4301

B.S.A.

ABNORMAL Bargains in shop-soiled models.—The B.S.A. Specialists.

COUNTY Cycle and Motor Co., Ltd., Broad St., Birmingham. [7010

B.S.A. 4¼h.p., June, 1922, chain-belt; £85.—Williams, Brightview, Hadley Rd., New Barnet. [3939

4h.p. B.S.A. Combination, kick-start, fully equipped; £25.—Fisher, Springwell Rd., Heston, Hounslow. [4227

B.S.A., 1922, shop-soiled; £100; Model H2.—Shepherd, Enfield Highway. Tel.: Waltham X 31. [0940

B.S.A. Model M.2, shop-soiled only, at special price of £96.—Ratcliffe Bros., 200, Great Portland St., W. [4661

B.S.A. Model H.2, shop soiled only, at special price of £99.—Ratcliffe Bros., 200, Great Portland St., W. [4662

LATE B.S.A. Combination, excellent condition, bargain, 3-speed; 43 guineas.—67, Fernlea Rd., Balham. [4550

B.S.A. 1922 4¼h.p., chain drive, shop-soiled; only £90.—Walker, 1098, Warwick Rd., Acocks Green, Birmingham. [3638

1920 B.S.A. 4¼h.p. Combination, 3-speed, clutch, kick-start, splendid outfit; £80.—39, Ashford Rd., Swindon. [4014

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£20	**A.J.S.** 1922 2¾ h.p., Model B1, equipped, taxed, as new	£4 18 7	£75
£25	**INDIAN.** 1920 7/9 h.p., electrically equipped, speedometer, excellent condition	£4 0 8	£70
£45	**MATCHLESS.** 1922 H2 Comb. mag. engine, dynamo lighting, Easting, spare wheel and tyre, taxed, soilled only	£11 12 11	£175
£12	**OMEGA.** 1921 2¾ h.p., 2 speed, K.S. clutch, horn, new condition	£1 15 10	£32
—	**PRECISION.** 3½ h.p., Comb., 3 speed, equipped, taxed	—	£26
£15	**LEVIS.** 2¾ h.p., 2 speed, equipped, taxed	£1 6 11	£30
£20	**RUDGE.** 3½ h.p. 1920 I.O.M., equipped	£3 2 9	£55
£15	**HOBART.** 4 h.p. twin Combination, equipped, Easting	£1 12 3	£33
£15	**ALLDAYS-ALLON.** 1920 2 speed, clutch, K.S., taxed	£2 4 10	£40
£15	**ENFIELD.** 2¾ h.p. 1920, equipped, taxed	£2 1 3	£38
£15	**RUDGE.** 1919 multi, equipped, taxed	£2 4 10	£40
£25	**RUDGE.** 1922 I.O.M., equipped as new, taxed	£3 19 8	£69
£35	**HARLEY-DAVIDSON.** 1920 Electrical Comb., fully equipped, screen	£7 3 4	£115
£45	**MORGAN.** 1922 Family Model, water cooled, equipped, taxed, as new	£10 15 0	£165
£35	**MORGAN.** 1919 W. C. de Luxe, equipped, tax paid	£7 12 4	£120
£15	**DOUGLAS.** 1920 2¾ h.p., 3 speed, clutch and K.S., equipped	£2 13 9	£45
£15	**DOUGLAS.** 1915 2¾ h.p., 3 speed, clutch & K.S., equipped, tax paid	£1 15 10	£35

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B.S.A.

B.S.A. 4¼h.p., late 1920, mileage 4,000, in perfect condition, Cowey speedometer; £60.—Chirrey's Garage, Harpenden. [4073

B.S.A. 1919 4¼h.p., 3-speed, clutch and K.S., really fine condition, any trial; £46.—Stubbs' Garages, Ltd., Loughborough. [3780

1919 B.S.A. 4¼h.p. Combination, with lamps and accessories, well kept; £65, no offers.—S. S., 43, Fonnereau Rd., Ipswich. [1541

1919 B.S.A. Combination, in nice condition, fully equipped; £55, bargain.—Maynard, 181, Bowes Rd., Bowes Park, N.11. [4157

B.S.A. 1921 7h.p. Combination, perfect condition, spare wheel, fully equipped; 100 guineas.—7, Cowdrey Rd., Wimbledon. [4195

B.S.A. 1919 4¼h.p. Combination, 3 speeds, kick-starter, chain-cum-belt, all lamps, horn; £55. Maudes', Paris St., Exeter. [4396

£42.—B.S.A. 1918 coachbuilt Combination, countershaft, 3-speed, splendid outfit.—Speechley, 86, Churchfield Rd., Acton, W.3. [4268

£25.—1915 T.T. B.S.A., excellent condition throughout, new tyres and belt.—Merifield, 144, Canbury Park Rd., Kingston-on-Thames. [4090

4¼h.p. 1919-20 B.S.A. Combination, all-chain drive, 3-speed, free engine and kick-start; £75.—Wauchope's, 9, Shoe Lane, London [4500

B.S.A. (August, 1921) 4¼h.p., little used; £69, or exchange 2-stroke and cash; also sidecar.—70, Station Rd., Harborne, Birmingham. [3823

1921 B.S.A. with 1922 sidecar, Tan-Sad, engineer owned; £87 cash, part exchange solo entertained.—17, Clyfford Crescent, Newport, Mon. [4107

B.S.A. 1920 4¼h.p. K.S. Combination, with coachbuilt sidecar, screen, lamps, tools, tax paid; £65.—Kondo, 24, Gloucester St., Victoria. [3945

B.S.A. 1918 Combination 4¼h.p., all accessories, overhauled, new tyres, taxed; quick sale, £43.—8, Crouch Rd., Stonebridge Park, London. [2861

B.S.A. 1922 Combination, 4¼h.p., 3-speed, hand clutch, aluminium disc wheels, Lucas lamp and horn; £100.—Birch's Garage, Wolverhampton. [4633

1921 B.S.A. 6-8h.p. Twin, B.S.A. car, dynamo lighting, speedometer, spare wheel; £110.—M. Hillier, 216, Portobello Rd., North Kensington. [4009

B.S.A. 4¼h.p., 1922, K2, 3 speeds, hand clutch, kick-starter, brand new, slightly soiled; £90.—Eagles and Co., 275, High St., Acton, London, W. [4146

1922 B.S.A. 4½h.p., chain-cum-belt, and tradesmans carrier, shop soiled only; at special price of £121.—Ratcliffe Bros., 200, Great Portland St., W. [4671

1922 6h.p. B.S.A. Combination, No. 3 sidecar, shop-soiled, a gift; £135; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4415

1919 4¼h.p. B.S.A. Combination, all chain, perfect condition, lamps, horn, speedometer, new tyres; £70.—Wall, Kingsley House, Drayton Green, West Ealing. [3889

B.S.A., June, 1922, Model K2, combination, Easting screen, legshields, Showell oil pump, good as new; £120.—Lincoln Bannister, Newtown, Cradley Heath. [4064

4¼h.p. 1919-20 B.S.A. Combination, 3-speed, K.S., fully equipped, hood, screen, spare tube and belt, beautiful condition; £70.—45, Egham Rd., Plaistow, E.13. [3803

B.S.A. 6-7h.p. Combination, new May, 1922, Cowey trip, watch, Easting, mirror, Lucas lamps, insurance paid; bargain, £160, or near.—Box 3914, c/o *The Motor Cycle.* [4363

B.S.A. 1921 Combination, 4¼h.p., all chain, Magdyno, tax paid, Cameo screen, legshields, spare valve, cover, and tube, perfect throughout.—33, Bristol Rd., Birmingham. [3813

SNIP!—Brand new 1922 4¼h.p. B.S.A., Model K, 3 speeds, unused, £85; also brand new 6h.p. twin B.S.A. Light 6, £110.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [4371

1922 B.S.A. Light 6-7h.p. and No. 4 sidecar, shop-soiled demonstration model, maker's guarantee; 126 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5454

B.S.A. 1919 4¼h.p. Combination, windscreen, 3 speeds, kick-starter, speedometer, patent spring saddle, accumulator lighting, tools and spares; £80, or near offer.—G.P., 109, Hither Green Lane, Lewisham. [4635

B.S.A., 1922, absolutely brand new, unregistered, 4¼h.p., all-chain drive, 3-speed, clutch, kick-starter, tools, etc.; list price £105; first cheque £72/10 secures; cash wanted.—391 King St., Hammersmith. [4613

1922 8h.p. B.S.A., No. 1 sidecar, electric lighting, Binks, Cowey speedometer and horn, Easting windscreen, Challenger tubes, spare wheel, luggage carrier, condition perfect, licensed end year; £140.—"Willow Bank," London Rd., Bromley, Kent. 'Phone: 1041. [4250

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue b23
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. (August, 1921) 6-7h.p. Combination, lamps, F.R.S. head, 3 generators, horn, Lucas mirror, spring saddle, and footboards, unused spare wheel, spare tube, Tan-Sad, luggage grid, Easting Royal, automatic oil pump, good condition throughout, very small mileage; any examination; £125, or near.—Write, 82, Finchley Park, N.12. [4219

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7663

B.S.A. Spares can be had by return, post free, from Jones Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [0805

THE B.S.A. Specialists.—On the spot. Give our unrivalled Spares Service a trial; catalogue free.—County Cycle and Motor Co., Ltd., Broad St., Birmingham. [7011

GODFREY'S, Ltd., 208, Great Portland St. London, W.1.—Complete stock of all B.S.A. spare parts always in stock Write for free spare part list, stating year of manufactnre. [0750

Calthorpe.

CALTHORPE-J.A.P. 1915 2¾h.p., Enfield 2-speed, lamps, etc.; £18.—9, Gipsy Hill, Upper Norwood. [4172

CALTHORPE-J.A.P. 2¾h.p., 1915, 2-speed, nice condition; £27.—Parkes, 46, Camberwell Green, S.E.5. [4258

£25.—Calthorpe-Jap 2¾h.p., 2 speeds, countershaft, late model, splendid condition.—406, York Rd., Wandsworth. [4235

2¾h.p. Calthorpe-Jap, Enfield 2-speed, re-enamelled and plated, in sound order; £26.—1, Chnreh Lane, Windsor. [4041

CALTHORPE 1921 2¾h.p., J.A.P. engine, Dunlop tyres, 2 speeds, all lamps, many spares, tax paid; £35.—Maudes', Walsall Garage, Walsall. [4400

CALTHORPE-J.A.P. 2¾h.p., 1920, 4-stroke, 2-speed, Tan-Sad, lamps, tax paid, good condition; £32.—Vee, "Bexley," Dawley Rd., Harlington, Middlesex. [3619

AT Edwards.—1922 2½h.p. Calthorpe 2-stroke, 2-speed, kick-starter and clutch, equipped, lamps, horn, speedometer, and pillion seat, perfect order; 37 guineas.—101, Great Portland St., W.1. [4530

2½h.p. Calthorpe motor cycles. New 1922 models, £36, or £7 down and 12 monthly payments of £2/9/6; balance paid in eighteen months if required.—Wauchope's, 9, Shoe Lane, London, E.C.4. [4501

CALTHORPE-J.A.P., 1916, 2¾h.p., 2 speeds, clutch, countershaft, tyres very good, tax paid, latest Amac carburetter, in exceptional condition throughout, any trial; £18, a real bargain.—R. Watson, Victoria Rd., Aldehurgh, Suffolk. [4515

Campion.

8h.p. Campion-Jap, 2-speed, clutch, Bonniksen, licensed, lamps, new chains, tyre, fine solo or sidecar machine; £45.—Malvern Garage, Malvern Rd., Thornton Heath. [3890

Cedos

£28.—1920 2½h.p. Cedos, 2-speed, clntch, kick-start, overhauled, guaranteed perfect condition, accessories, licence paid.—Premier Motor Co., Aston Rd., Birmingham. [4597

Chater-Lea.

CHATER-LEA Combination, 8h.p., 3-speed, kick-start; £65.—63, Trinity St., Borough, S.E.1. [3709

CHATER-LEA Combination 4h.p., variable, K.S., equipped, taxed; £18.—17, Heaton Rd., Mitcham. [3980

Chater-Lea-Villiers.

CHATER-LEA-VILLIERS 2¾h.p., 2-speed, 1919 (late), good condition, tax, lamps, horn, tools, new tyres; £35.—7, Ranmoor Crescent, Sheffield, (D) [4283

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1.—1919 2½h.p. Chater-Lea-Villiers, 2-speed gear, head lamp and generator, horn, tax paid to Dec. 31st, in running order; £22. [3905

Cleveland.

£12 Secures Cleveland 1921 3h.p., 2-stroke, absolutely new, mileage under 100, fully equipped; balance 12 monthly payments 55/-.—Martin, 10, Herbrand St., Russell Sq., W.C.1. [3888

Clyno.

£24.—1920 2½h.p. Clyno 2-stroke, 2 speeds, hand clutch, perfect condition.—King, Egrove Farm, Oxford. [4204

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Clyno 1920 2½h.p., 2-stroke, 2-speed, and F.E.; £25. [4502

£37/10.—Clyno Combination, 3-speed, kick-start, good order.—W.J.C. Motor Exchange, 5, Addison Av., W.11. Park 2071. [4567

CLYNO 5-6h.p. Combination, large C.B., 3-speed, K.S., recently overhauled and painted; £55.—211, Bravington Rd., W.9. [3684

1919 2½h.p. Clyno, 2-stroke, 2-speed, clutch, lamp, Klaxon, discs, etc.; £33, or exchange.—Tolley, 3, The Rise, St. George's Rd., Aldershot. [3745

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The following excellent selection of

NEW 1922 MODELS

which are shop-soiled only, are reduced to the lowest possible prices to effect quick sales. They are offered subject to being unsold upon receipt of order, which should be accompanied by a deposit.

Make.	Description.	Maker's List Price.	Reduced Price.
ALLON.	2¾ h.p., 2 speeds, cl. and K.S.	£60 0 0	£52
B.S.A.	4¼ h.p., Model K, 3 speeds, cl. and K.S.	£107 0 0	£87
HAWKER.	Model C, 4½ h.p., Blackburne engine, 3 speeds, cl. and K.S., all-chain drive.	£89 5 0	£80
MATCHLESS.	8 h.p. comb., H2, dyno. ltg., windscreen.	£191 1 6	£170
NEW IMPERIAL.	2¾ h.p., 3 speeds, cl. and K.S., all-chain drive.	£73 0 0	£65
ROYAL ENFIELD.	8 h.p. comb.,dyno. lighting.	£158 0 0	£140
ROYAL ENFIELD.	2¼ h.p., 2 speeds. cl., all-chain drive.	£55 9 0	£50
ROVER.	4 h.p., 3 speeds, cl. and K.S., all-chain drive.	£100 0 0	£90
RUDGE-MULTI.	3½ h.p., T.O.M. model.	£77 0 0	£70
RALEIGH.	2¾ h.p., Sports model, 2 speeds, cl. and K.S.	£68 0 0	£63
TRIUMPH.	Type H, 3 speeds, cl. and K.S.	£105 0 0	£93
TRIUMPH.	Type S.D., 3 spds., cl. and K.S., all-chain drive.	£115 0 0	£100
ZENITH.	3½ h.p., Bradshaw engine, Gradua gear.	£113 0 0	£78

We can send you a list of GUARANTEED SECONDHAND MACHINES of all types for purchase by cash or deferred payments.

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418, ROMFORD ROAD, FOREST GATE, E. 7.

Phone: East Ham 490. 'Grams: "Egaraco, London."

MOTOR CYCLES FOR SALE.

Clyno.

CLYNO J.A.P. 8h.p. Combination, dynamo lightin spare wheel, hood, screen, speedometer, licenc fine conditinn; £80.—Seen 2, Hogarth Rd., Ear Court. [37(

CLYNO 8h.p. 1922 Model de Luxe, Magdyno, lul equipped, insurance paid to May, 1923; £15(owner buying car; seen by appointment after 6. Innes, 60, Muirkirk Rd., Catford. [39(

SHOWROOM-SOILED.—New 1922 8h.p. Clyno Combination, spring frame, detachable wheels, wlu screen; reduced to £125; easy payments 4% extra; fr delivery to any address.—Premier Motor Co., Asto Rd., Birmingham. [227

Spare Parts:

CLYNO Spares.—Immedinte delivery.—Kays, 8, Bor St., Ealing. [766

Connaught.

1922 Connaught, 2-speed, and cash for highe power.—198, King St., Hammersmith. [429

1919 Connaught, 2-speed gear, engine almost new £15.—Heygate, Milford-on-Sea, Hants. [382

WAUCHOPE'S, 9, Shoe Lane, London.—Connaugh 1921, 2-speed, hand-cnntrolled, clutch, and kicl start; £47/10. Easy terms. [448

1922 Connaughts, 10% reduction off list. 2 speed clutch and kick-starter mndel, also single-speed brand new but shop-soiled.—Homac's, 243, Lower Clay ton Rd., N.E. Dalston 2408. [442

AT Edwards'.—1922 3½h.p. Connaught Combina tion, all-chain drive, 3-speed gear, kick-starte and clutch, fully equipped, lamps, horn, tax paid, ne condition; 73 gns. Deferred payments and exchange 101, Great Portland St., W.1. [223

Coulson.

1921 4h.p. Coulson B, fully equipped, excellent con dition, owner going abroad; £60; with sidecar £70.—White, Hazelwood House, Old Southgate, N. [393

4h.p. Coulson-Blackburne, bought March, 192 spring frame, gears, C. and K.S., licence, insu ance, new spares, belt, chain, valves, tools, horn, etc £70.—40, Wellington Rd. St. John's Wood, N.W.8. [402

£55.—Special Competition Model 2¾h.p. Coulso Jap, 1921, unridden until Feh., 1922, very fas sporting machine, spring frame, Sturmey-Archer 3 speed and clutch, front tyre brand new Hutchinso trip speedometer, Miller lamps, Lucas horn, specia long plated exhaust, looks brand new, carefully ridde by private owner, tax and insurance paid.—G. I Chappell, 62, Sotheby Rd., Highbury, Loudon. [416

Coventry Eagle.

COVENTRY EAGLE 2½h.p., 2-stroke, last year model, perfect; £37/10.—Daniels, Station Rd Wealdstone. [389

Dalm.

3h.p. Dalm 2-stroke engine, run 50 miles, perfec condition, magneto, carburetter pipes and con trols; £15; exchange for 6 or 8h.p. twin J.A.P.-Clark, 58, Mayes Rd., Wood Green, N.22. [369

De Luxe.

2-SPEED De Luxe 2½h.p. 2-stroke, tax paid, sui boy or lady; £21.—Cross, Effingham Sq., Rother ham. [445

2¾h.p. 1920 De Luxe, 2-speed, K.S., excellent valoe £29.—Kinsey and Co., Ltd., 350, Lower Addis combe Rd., Croydon. [433

20 Pounds is Worth Saving on a motor cycle. Sen at onee for a large art illustration of th famous super Model D De Luxe Barr and Stroud engine motor cycle, does 140 miles per gallon an will take a sidecar almost anywhere. Free demon strations given. Send 2d. stamp.—De Luxe Motors 174, Corperation St., Birmingham. [445

Diamond.

GIBB, Gloucester, can give immediate delivery Dia monds from stock. [754

DIAMOND 2¾h.p. 2-stroke, single-speed (Villiers) brand new; £30.—Birch's Garage, Wolverhamp ton. [463

DIAMOND 1921 2¾h.p. J.A.P., 2 speeds, clutch fully equipped, licence, new condition; £38.—63 Solon Rd., Brixton. [469

DIAMOND, 2¾h.p. J.A.P., 1921 model, Sturmey Archer 2-speed and kick-starter, lamps, horn tools, tax paid, nice condition; £39.—391, King St. Hammersmith. [461

ROBERTSON'S Motors, Ltd., are the London and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P engines.—157b, Great Portland St., W.1. [593

Dot.

AT Edwards'.—1922 Super Sports Dot-Jap engine speedometer, lamps, horn, mileage 300, indistingnishable from new; 90 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [222

Douglas

2¾h.p. Douglas, 1916, good condition; £35.—8 Charsley Rd., Catford. [382

MOTOR CYCLES FOR SALE.

Enfield.

1921 8h.p. Enfield Combination, Lucas Magdyno, Vickers engine, tyres all in excellent condition; bought car; sacrifice, £100.—Maynard, 52, Alexandra Rd., Swansea. [3804

ENFIELD 1922, Sports model, 2¼h.p., electric lighting set, Lucas horn, Pedley handle grips, dice grips, very little used, as new; £52/10.—The Morris Garages, Oxford. [3738

1922 Enfield 2-speed, kick-start, fully equipped, indistinguishable from new, licensed year; 42 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4534

1921 Enfield Combination, 8h.p., Magdyno, speedometer, hood, screen, side curtains, absolutely as new, guaranteed; £110.—Homac's, 243, Lower Clapton Rd. N.E. Dalston 2408. [4426

AT Edwards'.—1920 Enfield 2¼h.p., 2-stroke, fully equipped with lamps, horn, and speedometer, excellent condition; 35 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2222

1921 Enfield Combination, perfect condition, Easting, Magdyno, spare wheel, etc.; £95 cash, exchange, extended terms.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548 [0065

WAUCHOPE'S, 9, Shoe Lane, London.—8h.p. 1918 Royal Enfield Combination, all accessories, speedometer; £85. 8h.p. 1916 Royal Enfield Combination, all accessories, tax paid; £75. Easy terms arranged. [4489

1922 Enfield, double sidecar, Sandum screen, spring handle-bars, mileage 1,800, as new, unscratched, all spares, any trial, 60 m.p.g., absolutely faultless; first offer £125 secures.—Capt. Spear, 80, East Sheen Av., S.W.14. [3913

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7666

Excelsior.

4½h.p. Excelsior Combination, late 1920, fully equipped, excellent condition; owner going abroad; offers.—Mackridge, Park St., Wombwell. [3711

Fafnir.

3h.p. Fafnir, excellent order, new Palmer, Grade gear; snip, £12/10.—Clark, 47, Harders Rd., S.E.15. [4271

F.N.

F.N. 1922 8h.p., shaft drive, latest model, overhead valves; £125.—London Agents, Bartletts, 93, Gt. Portland St. [4647

4-CYL. F.N., everything in order, Bosch, splendid spark, new tyres, shaft drive, Amac, wants using up; £8, snip.—14, Estcourt St., Devizes. [4247

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Laughord's, 37, Cricklewood Broadway, London, N.W.2. [1353

Grandex.

£15 or Nearest.—Grandex-Precision 4¼h.p., good running order, tax paid.—Young, Hampnett, Northleach, Glos. [3750

Harley-Davidson.

HARLEY De Luxe Combination, cost £240, 1921; sell cheap, offers.—187, Westbury Av., Wood Green. [4546

7-9h.p. Harley-Davidson Combination, 1920, fully equipped; £105.—Ratcliffe Bros., 200, Great Portland St., W.1. [4679

HARLEY 1919 Combination, Eastiag, etc., good condition; 50 guineas.—51, Upper Richmond Rd., East Putney. [4557

1921 Harley-Davidson 7-9h.p., with Brauson sidecar, in splendid condition, fully licensed; £98.—Lambert, Horsmonden, Kent. [3657

FLAT Twin Harley, Swan sporting sidecar, speedometer, lighting, original tyres, unscratched; £90.—10, Forest Hill Rd., East Dulwich. [3984

HARLEY-DAVIDSON 1919-20 Combination, 7-9h.p., fully equipped; £75; take lightweight part.—93, Sheldon Rd., Chippenham. [4222

1919 7-9h.p. Harley Combination, perfect condition, owner going away, tax paid and fully insured; £65, or offer.—142, Bishop's Rd., Bethnal Green, E.2. (P) [3749

HARLEY 1920 7-9h.p. Combination, dynamo lighting, fully equipped, almost new; £89, any trial.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 598. [3970

1920 Harley Combination, 7-9h.p., Bosch, magneto, hand and foot clutch, electric lighting, Henderson, 45 guineas sidecar, tax paid, perfect; sell for 38 guineas; lightweight part exchange.—W. Walden, Hairdresser, Wisbech Rd., King's Lynn. [4469

HARLEY-DAVIDSON, 1920, delivered 1921, 7-9h.p., coachbuilt combination; highest offer over £100 accepted. Condition paintwork fair, but mechanically perfect and guaranteed absolutely sound by Macrae Bros., Harley Agents, 31, Cockburn St., Edinburgh. [3652

THE HALIFAX MOTOR EXCHANGE

1922 BRAND NEW MODELS.

LAGONDA Coupe, reduced price	350 gns.
LAGONDA, 2-seater, reduced price	280 gns.
DOUGLAS, 2¾ h.p., 2-speed, all on	£68 0
ENFIELD, 2¼ h.p., 2-speed, all chain	£55 0
LEVIS, 2½ h.p., 2-speed	£58 0
MARTINSYDE, 6 h.p. combination	£140 0
NEW IMPERIAL, 8 h.p. combination	£145 0
NORTON BIG FOUR	£120 0
NORTON BIG FOUR, family s/car	£158 10
REX ACME, 2½ h.p., 2-speed	£50 0
TRIUMPH, 4 h.p., all chain	£115 0

We are quoting very special exchange allowance against the above to clear.

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Deferred payments, one-fourth deposit, 5 per cent. on balance, and 12 monthly payments.

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FEATHERWEIGHT, 1½ h.p., spring forks	£9 15
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RUDGE, 3½, clutch model, wants attention	£19 10
RUDGE-MULTI, 1921, 3½ h.p., I.O.M.	£59 10
RUDGE-MULTI, 1920, 5-6 h.p., tax paid	£62 10
RUDGE-MULTI, 1920, 7-9 h.p.	£70 0
T.D.C., 1921, 2¼ h.p., 2-stroke, tax paid	£35 0
TRIUMPH, 1919, 4 h.p., 3-speed, tax paid	£67 10
TRIUMPH, 1916, 4 h.p., c/shaft	£52 10

PASSENGER MACHINES.

ARIEL, 1919, 3½ h.p., 3-speed comb.	£69 10
COVENTRY VICTOR, 1921, 5-6 comb.	£89 10
CHATER LEA, 8 h.p., 3-speed comb.	£59 10
HARLEY, 1918, 7-9, 1920 Grindlay sc.	£87 10
HARLEY, 1919, electric comb.	£97 10
INDIAN, 7-9 h.p., 2-speed comb, tax paid	£57 10
MATCHLESS, 8 h.p. comb., belt drive	£45 0
MARTINSYDE, 1920, 8 h.p. comb.	£85 0
NEW IMPERIAL, 8 h.p., 3-speed comb.	£79 10
NORTON, 1922, 4 h.p. comb., 250 miles	£127 10
RUDGE, 1920, 5-6, and sidecar, tax paid	£72 10
RUDGE, 7 h.p., 1920 comb.	£82 10
SCOTT, 3¾, 2-speed comb., tax paid	£55 0
SCOTT, 1920 comb., screen, etc., tax paid	£87 10
TRIUMPH, 3½, 2-speed comb., tax paid	£39 10
TRIUMPH, 1919, 4 h.p., Gloria s/car	£92 10

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BLUMFIELD, 7 h.p. 3-wheeler, hood, screen, Chater Lea 3 speeds, tax paid	£59 10
H.F.G., 1920, 8-10 h.p., 2-seater, dynamo	£97 10
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RICHARDSON, 1920, 2 seater, dickey seat	£95 0
TINY, 10 h.p. 4-cyl., 2 seater, dynamo lighting, screen, new hood	£120 0

SPECIAL OFFERS.

£5 deposit and 12/6 weekly buys

BUCHET, 3½ h.p., 2-speed, tax paid	£19 10
F.N., 4-cylinder, spring forks, Bosch mag	£19 10
STEVENS, 4½, single gear, spring forks	£17 10
HUMBER, 3½ h.p., 2-speed	£27 10
RUDGE, 3½ h.p., clutch, wants attention	£19 10
REX, 5/6 h.p., 2-speed combination	£29 10
PREMIER, 3½ h.p., 2-speed	£29 10
SINGER, 3½ h.p., clutch, tax paid	£25 0
BRADBURY, 3½ h.p., 3-speed, tax paid	£29 10
HUMBER, 3½ h.p., engine wants attention	£15 0

25, Horton Street, HALIFAX.
'Phone 1400 Grams: "Perfection"

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY-DAVIDSON Combination, bought October, 1921, as new, only driven 2,000 miles; will accept half original cost.—Windridge, 67, Bridge St., Walsall. [3664

PERFECT Running Order and Condition.—1920 21 Harley electric combination, speedometer, Tan-Sad, tax paid; £130.—Shepperton Motor Works, Shepperton-on-Thames. [2452

HARLEY-DAVIDSON 1916 7-9h.p. Combination, thoroughly overhauled, complete with new sidecar, all lamps, horn, etc.; £75.—Maudes', The Walsall Garage, Walsall. [4402

1921 Harley-Davidson (November) Combination, electric, new Coupette sidecar, excellent, guaranteed; £115; exchanges.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [4332

HARLEY-DAVIDSON.—Gentleman unable to take delivery of brand new 1922 model F will accept £125 for same, and send carriage paid any address Great Britain.—Box 3810, c/o *The Motor Cycle*. [3653

7-9h.p. Harley-Davidson (1920) Combination, as new, electric lighting and horn, tools, Canoelet De Luxe sidecar with screen, perfect running order; £120, or nearest offer.—Treadwell, "Windermere," Warwick Rd., Olton, Birmingham. [4017

HARLEY-DAVIDSON Combination, delivered May, Watsonian R34 sidecar, windscreen, dash, step, Lucas lighting, speedometer, etc., specially tuned engine by makers; £120.—Colonial Motors, 104A, Finchley Rd. Hampstead 7822. [4610

1922 Harley-Davidson 7-9h.p., electric model, ammeter, spotlight, speedometer, discs, horn, handle-bar muffs, tyres and chain nearly new, perfect condition throughout, smartest solo on road, 115 guineas; also 1919 7-9h.p. combination, Swan sidecar, with special 7½ gallon pressure fed petrol tank, electric accumulator and gas lighting, Tan-Sad, speedometer, etc., good condition throughout; 69 guineas, bargain.—22a, Belsize Square, Hampstead. [3770

1920 Harley-Davidson Combination, undoubtedly the most posh machine of its class, late property of a famous rider, plated tank, long plated exhaust pipe, patent chain oiler, sidecar fitted with screen and special dash with motor aneroid, voltmeter, ammeter, dash lamp, mirror and clock; on machine speedometer, 2 gradient meters, clock, spotlight, electric and bulb horns; outfit insured and taxed; first £100 secures.—W. T. Dunn, Ltd., 326, Euston Rd., N.W.1. 'Phone: Museum 5391. [4369

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [7667

HARLEY-DAVIDSON.—We have a large stock of second-hand parts.—Maudes', 100, Great Portland St., W.1. [4379

Hawker.

AT Edwards.—1922 4¼h.p. Hawker, Blackburne engine, 3-speed Burman gear box, kick-starter and clutch, all-chain drive, lamps, horn, tax paid, indistinguishable from new, 2 weeks old; 65 guineas.—101, Great Portland St., W.1. [4531

AT Edwards.—1922 4¼h.p. Hawker Combination, Blackburne engine, 3-speed, Burman gear box, kick starter and clutch, all-chain drive, lamps, horn, tax paid, indistinguishable from new, 2 weeks old; 72 guineas.—101, Great Portland St., W.1. [4526

WAUCHOPE'S, 9, Shoe Lane, London.—Latest model Hawker, 4¼h.p., Blackburne engine; £75; (shop-soiled only); 3 speeds, hand-controlled clutch and kick-start, all-chain drive, internal expanding brakes both wheels; had on easy terms and exchange. 'Phone: Holborn 5777. [4490

Hazlewood

HAZLEWOOD Combination, 1917, perfect, any trial; £65, or near.—268, Portobello Rd., W.10. [3901

Henderson.

HENDERSON Lightweight; £10; good condition and appearance, screen.—12, Faversham Rd., Catford. [3612

HENDERSON Combination, just been overhauled at cost £31, as new; what offers?; exchange for lightweight.—670, Holloway Rd., N. [3842

ROBERTSONS Motors, Ltd.—1922 de luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [2350

HENDERSON 4-cyl. 10h.p., gears, 30-guinea sidecar, complete hood, screen, electric light, fine appearance and condition, overhauled; £70; owner buying car.—Letters, Ellis, 20, Minet Av., Harlesden, N.W.10. [3907

ROBERTSON'S Motors, Ltd., the original Henderson importers, offer the following: 1920 Standard combination, all accessories, tax paid, £115; 1915 Standard, with luxurious sidecar, speedometer, and accessories, £65.—157b, Gt. Portland St., W.1. [5937

HENDERSON 1920, 2-seater sidecar, windscreen, hood, side curtains, trip speedometer, lamps and generators, petrol carrier, luggage carrier, new spare cover and tube, low mileage.—Andrews, 80, Shakespeare Crescent, E.12. [3774

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Henderson

1920 4-cyl. 10h.p. Henderson Combination, thoroughly overhauled, nickel-plated exhaust pipe, disc wheels, separate dynamo, special 6 volt accumulator, electric horn, rear drive speedometer, Elite sidecar, tax paid till end of year.—George England (1922), Ltd., 12, Curzon St., Mayfair, W.1. 'Phone: Grosvenor 2191. [3872

Hobart.

1921 Hobart-Villiers, brand new, shop-soiled; £39/10.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0923

HOBART-VILLIERS, 1919, 2-speed, all on; nearest £25; must sell immediately.—Maynard, 159, Bowes Rd., New Southgate. [3961

1921 Hobart-Villiers, 2 speeds, footboards, tax paid, absolutely as new; £35.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [4427

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1.—1919 2½h.p. Hobart-Villiers, 2-speed gear, head lamp and generator, horn, tax paid to Dec. 31st, in running order; £25. [3904

SOUTHPORT.—1921 Sports Hobart-Jap, 350 c.c. long stroke, 3-speed Sturmey Archer, all on, guaranteed special, property well-known competition rider; 60 guineas; exchanges.—Kents, 417, Lord St., Southport. [4278

Humber.

£25.—1914 Humber 3½h.p., 3-speed, kick, black and gold, tuned by expert, equipped.—9, Cairn Av., Ealing. [3990

1922 Sports Model Humber, damaged in accident, tax paid, lamp, horn, etc.; best offer over £36.—Cross, Agent, Rotherham. [4451

HUMBER 3½h.p., 2-speed, free, good condition; £14/10; tax paid, exchange 2-stroke machine.—Robins, 97, Latchmere Rd., Battersea. [3831

HUMBER Combination, 3-speed, 3½h.p., splendid outfit, any trial; £48; take lightweight part.—57, Kenbury St., Camberwell, London. [4300

HUMBER 4½h.p., fitted with coachbuilt sidecar, new machine, shop-soiled only; list £140; bargain, £100.—P. J. Evans, John Bright St., Birmingham. [4443

HUMBER Combination, good going order, and new pianoforte, will be given in exchange for high-power combination in perfect condition.—Box 3906, c/o *The Motor Cycle*. [4125

21 Guineas, bargain, exchanges.—Humber 1913 3½h.p., 2 speeds, starter, dropped back frame, Druid forks, coach sidecar, lamps, good appearance, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [4686

Indian.

INDIAN 5-6h.p. Road Racer, 2-speed, perfect, taxed; £22.—17, Heaton Rd., Mitcham. [3979

INDIAN 6h.p.; £28; good running order; exchange.—441, Seven Sisters Rd., Tottenham. [4590

INDIAN, 1922, Scout, like new, taxed; £75.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

INDIAN 5-6h.p. Road Racer, just overhauled, fast; £39/10.—Egremont, Station Rd., Sidcup, Kent. [3943

7-9h.p. Indian, clutch model, first-class condition, electric lamps; £42.—80A, High St., Bexley. [3918

£30.—Indian 7-9h.p., 2-speed, clutch, perfect condition; bargain.—10, Knatchbull Rd., Camberwell. [4202

£50.—1919 Powerplus Indian Combination, fully equipped, licence; gift.—63, Solon Rd., Brixton. [4691

7-9h.p. Indian, clutch, perfect; exchange lower power, Douglas preferred.—Jones, Stallard St., Trowbridge. [3676

INDIAN Combination 7-9h.p., clutch, 1915, splendid condition; bargain, £40.—Birchall, 35, Gower Place, W.C. [3994

INDIAN 1922 (genuine) Combination, electric model, Ace discs, windscreen, 2,500; £125.—23, Hamilton Rd., Reading. [3906

7-9h.p. Indian, grand condition, all accessories, tax paid, trial by appointment; £50.—A. F. 235, Essex Rd., N.1. [3641

£42.—7-9h.p. Indian coachbuilt Combination, 3-speed, splendid outfit.—Speechley, 86, Churchfield Rd., Acton, London, W.3. [4266

INDIAN Powerplus Combination, 1919, electric light, hood, windscreen, splendid condition; £95.—27, Park Av., Wood Green, N.22. [3936

1919 Indian Powerplus Combination, excellent condition, new sidecar, licensed, fully equipped; £75.—11, Ardleigh Rd., Dalston, N.1. [4161

1913 Indian 5-6h.p., recently overhauled, now in perfect running order; £30.—Charles Cooper, 57, The Ridgeway, Sutton, Surrey. [3697

INDIAN Scout 1921 (April), electric model, engine No. 508090, dynamo, speedometer, ammeter, electric horn, Easting racing handle-bar screen, full tool kit, spares and extras, absolutely perfect condition throughout, licensed for year; cost £180 new, sacrifice £79; no offers; ride 100 miles to purchaser.—Amwell Cottage, Hoddesdon, Herts. [3772

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SHOP-SOILED.

1922	6 h.p. **B.S.A.** Comb., No. 3 sidecar...	£138
1922	4 h.p. **DOUGLAS** Comb., fully equipped	£110
1922	3½ h.p. **ARIEL** Comb., latest type...	£105
1922	3½ h.p. **ZENITH-BRADSHAW,** all chain	£95

SECONDHAND.

1922	8 h.p. **ENFIELD** Comb., 2-seater, magdyno, hood, screens, Binks, mileage 800.	£130
1922	4 h.p. **TRIUMPH** Comb., all chain, Lucas accessories, as new.....	£125
1922	2½ h.p. **CONNAUGHT,** 2-sp., clutch and k.-s., Lucas accessories, as new	£45
1922	2½ h.p. **ENFIELD,** 2-sp., clutch and k.s., lamps, horn, etc.	£43
1921	4½ h.p. **ARIEL** Comb., lamps, horn, leg-shields, genuine bargain.....	£75
1921	7-9 h.p. **AMERICAN EXCELSIOR,** only run very small mileage.....	£70
1921	2¾ h.p. **OMEGA-JAP,** 2-sp., clutch and k.-s., all accessories, a gift.....	£45
1920	6 h.p. **A.J.S.** Comb., lamps, horn, screen, spare wheel, etc., etc., excellent condition	£120
1920	7-9 h.p. **INDIAN** Comb., dynamo, screen, speedometer, leg-shields, excellent condition	£90
1920	8 h.p. **MATCHLESS** Comb., Model H, hood, screen, spare wheel, leg-shields, lamps, etc.....	£85
1919	2½ h.p. **METRO TYLER,** lamps, horn, pillion seat, etc.	£23
1919	7-9 h.p. **INDIAN-POWER-PLUS,** spring frame, lamps, horn, etc.	£48
1914	3½ h.p. **RUDGE,** k.-s., clutch, lamps and speedometer, etc., etc.....	£28

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ALL NEW MODELS OF FIRST CLASS MAKES FROM STOCK.

R. BAMBER & Co., Ltd.

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'Phone 607

MOTOR CYCLES FOR SALE.

Indian.

INDIAN 7-9h.p., 3-speed, Millford Empress sidec Easting, horn, speedometer, lamps, excellent c dition; £40.—26, Highbridge St., Waltham Abbey. [40

1921 Indian Scout, dynamo lighting, speedomet discs, etc., perfect, tax paid; £80; exchanges Homac's, 243, Lower Clapton Rd., N.E. Dalston 24([44

AT Edwards.—1921 7h.p. Indian Combination, namo lighting, speedometer, fully equipped, spl did order; 75 guineas.—101, Great Portland St., W [45

1920 Indian Powerplus, aluminium sports sidec only done 7,000, 3 months' guarantee; guineas; easy payments arranged.—21, Marlboro Cres., Chiswick. [36

£58, bargain.—Indian 7-9h.p. Powerplus combin tion, new 1920, dynamo lighting, electric hor speedometer, taxed, sound condition.—143, Rave bury Rd., Earlsfield, S.W. [44

1919-20 Indian Combination, 7-9h.p., Eastin child's seat, luggage grid, lamps, perfect con tion throughout, privately owned; best offer.—1 Strauss Rd., Bedford Park, W.4. [39

1921 Indian Scout, dynamo lighting, 4h.p., comple lamps, electric horn, tax, etc., beautiful con tion mechanically and appearance; first cheque £6 cost £160.—Maudes' Motor Mart, 160, Paris S Exeter. [44

1920 Indian Combination, perfect condition, thc oughly overhauled, dynamo lighting, alumi ium discs; cost £204, will take £90. No use f same; got car.—Barker, Swiss Cottage, Cromfor Matlock. [37

1921 (delivered 1922) 7-9h.p. Indian Combinatio dynamo lighting, electric, Klaxon, Ampmet speedometer, Easting, licensed year, excellent conditi and appearance; 84 guineas; deferred payment or e changes.—Edwards, 50, Harrington Rd., South Kensin ton. [35

INDIAN 1915 7-9h.p., spring frame, T.T. mod 3-speed, K.S. and clutch, foot and hand contr practically new tyres, Amac carburetter, Bosch ma neto, rear wheel rebuilt with 8 gauge spokes, a brakes Ferodo lined last week, tyre, chains, and oth spares, engine in beautiful condition; will ride 1 miles to purchaser; £35.—Jack Lucas, 110, Willo Rd., Cannon Hill, Birmingham. [44

Spare Parts:

INDIAN Spares.—Immediate delivery.—Keys, 8, Bor St., Ealing. [76

GODFREYS', Ltd., 208, Great Portland St., Londo W.1.—Complete stock of all Indian spare par always in stock. Write for free spare part list, stati year of manufacture. [07

INDIAN Spares.—New and second-hand for models; all second-hand spares sent on approva write, call, or 'phone; we can save you money.- Langford's, 37, Cricklewood Broadway, N.W.2. Ham stead 8616. [13

INDIAN Spares, 1909-1922, new, also second-han from stock; send list requirements for our prices.- Dennis Accessories Stores, 89, Brixton Rd., Londo 'Phone: Brixton 3129. The firm with a reputatio for promptness and satisfaction. [37

Ivy.

IVY 2½h.p., 2-stroke, good condition; £22, or nea —Hughes, 30, Park Lane, Teddington. [41

3½h.p. Twin Ivy-Jap De Luxe, fast, sporting bik £35, or nearest.—E. F. Chandler, Charne Wantage. [37

1921 Ivy 2½h.p., 2-stroke, Sturmey-Archer 2-spee clutch, kick-starter, tax paid; £37/10.—Bar letts, 93, Gt. Portland St. [46

Spare Parts:

IVY.—Spare Parts from stock; trade supplied.- Maudes', 100, Great Portland St., W.7. [43

Ixion.

1920 Ixion, brand new, shop-soiled; £40.—Saunder 32, High St., Hampstead. [36

1921 Ixion solo, lamps, speedometer, brand new £40.—Saunders, 32, High St., Hampstead 'Phone: 8220. [36

James.

JAMES, late 1921, 2¼h.p., 2-speed, all on, tax paid £35.—52a, Valetta Rd., Acton, W. [36

JAMES 3½h.p. Sports at special price of £94.— Ratcliffe Bros., 200, Great Portland St., W. [46

1919 James Combination 6h.p., speedometer, trial £72.—144, Estcourt Rd., Fulham, S.W.6. [41

JAMES, 2-stroke, 2-speed, shop-soiled only; £54 —Ratcliffe Bros., 200, Great Portland St., W. [46

£35.—4¼h.p. James coachbuilt combination, 3-spee countershaft gears, clutch, K.S.—King, Egrove Oxford. [42

GUARANTEE for three months with 3½h.p. Twi James, Sports model, 3-speed, countershaft 38 guineas; photograph; exchanges.—Peter Gordon Ltd., 110, Upper Richmond Rd., East Sheen. [D [34

MOTOR CYCLES FOR SALE.

Norton.

PREMIER Motor Co. for Norton Bargains.

SLIGHTLY Showroom Soiled 1922 Nortons at enormous reductions; write for stocktaking clearance list. Model No. 9, 3½h.p., single gear, £68; 16H 3½h.p., 3-speed, £95; No. 1 Big 4, 3-speed, £99; deferred payments 4% extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4601

1922 Nortons, all models; free delivery to any address.—Gibb, Gloucester. [7547

NORTON 1921 16H model 3½h.p., 3-speed, Lucas lamps, tax; £60.—H. Rock, Cradley, Staffs. [4178

1922 3½h.p. Norton, model 16H, brand new; £90. —J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [4458

1920 Norton, T.T., 3½h.p., Philipson, speedometer, has exceeded 75m.p.h.; £50.—Bartletts, 93, Gt. Portland St. [4649

NORTON 16H, 1922, as new, fully equipped; £82/10 cash.—Ratcliffe Bros., 200, Great Portland St., W. [4681

16H Norton, bought June, 1921, winner hill-climb, lamp, horn, specially tuned; 72 guineas.—86, Florence Rd., N.4. [4290

NORTON 1921 4h.p., Dunlop tyres, Montgomery sports sidecar, all lamps, horn, tax paid, excellent condition; £110.—Maudes' (below).

NORTON 1922 3½h.p., all lamps, horn, indistinguishable from new; £85.—Maudes' (below).

NORTON 1920 3½h.p., Phillipson pulley, single-speed, lamps, horn, knee grips, small mileage, tax paid; £45.—Maudes', 100, Great Portland St., London. [4392

NORTON 1922 motor cycles; special liberal exchange quotations to reduce our stock; write us quickly. —Halifax Motor Exchange, Horton St., Halifax. [3404

DAN GUY, Weymouth.—Big Four Norton, sporting sidecar, delivered from works 3 weeks since, absolutely as new in every way, tax paid; £110. [0934

1921 Big Four Norton and De Luxe sidecar, perfect condition, all accessories, absolute bargain, must sell; £97/11, offer.—J. C. Harris, Easton, Winchester. [3773

75 M.P.H. 3½h.p. 3-speed Norton, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £75.—77, St. Mary's Rd., Sheffield. [3587

1921 3½h.p. Norton Sports Combination, Ricardo, close ratio, guaranteed perfect and to exceed 60m.p.h.; best offer.—Williams, Springfield Rd., Alrincham. [4641

1922 Norton 16H model, mileage about 500, lamps, Klaxon, knee-grips, etc., fast and reliable, will ride 100 miles; £90 cash or exchange.—Pritchard, Larkhill, Salisbury. [3835

NORTON 1921 3½h.p. Sports Model, with Philipson pulley, lamps, horn and tax, very good condition; £55.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4324

1921 16H Norton, over 70 m.p.h., aluminium and cast iron pistons, spare sprockets, etc., done under 5,000 miles, in perfect order throughout; £70. —James, 26, Home Park Rd., Wimbledon Park. [4193

1922 guaranteed Big Four Norton Combination, Canoelet sporting sidecar, 3-speed, clutch, kick-start, lamps, horn, speedometer, taxed, etc., perfect; £104.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3030

£55.—1921 3½h.p. Norton, Model No. 9. Philipson pulley, Dunlop tyres, mechanical horn, spare tube and belt, carefully used, small mileage, tax paid, guaranteed perfect.—Premier Motor Co., Aston Rd., Birmingham. [4602

1921 Big 4 Norton Combination, De Luxe, sidecar, Easting windscreen, F.R.S. lamp, etc., Klaxon, tax paid, new condition, and guaranteed perfect, any trial; £95, no offers.—Harvey, 47, South Lambeth Rd., S.W.8. [4696

VERY Fast Genuine 1919 B.R.S. Norton, hand-controlled Philipson pulley, Lucas horn, lamps, tyres and enamel absolutely perfect, B. and B. or Zenith Atmos, specially tuned, 70 m.p.h. guaranteed, tools, many spares, etc.; £55; exchange late 2¾h.p. J.S. considered.—Bloomfield, 99, Ashleigh Rd., Mortlake. [4473

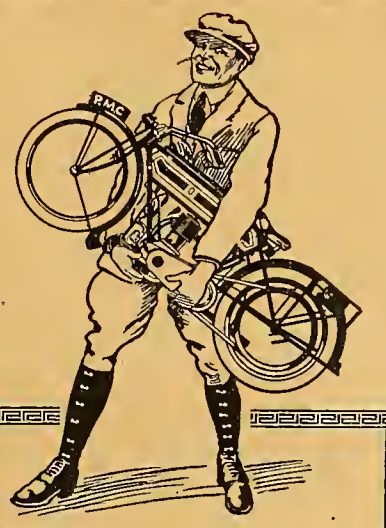
N.U.T.

N.U.T.—Brand new shop-soiled 1922 model, all-chain drive, 3 speeds; list £110; reduced price £90.—Maudes' (below).

N.U.T.—A few latest, shop-soiled, fully guaranteed 1922 sports models, 3½h.p., twin, 3 speeds, chain-drum-belt, £85; all-chain, £90; list prices £115 and £125.—Maudes', 100 Great Portland St., London; Paris St., Exeter; The Norwich Garage, Norwich; and the Walsall Garage, Walsall. [4404

N.U.T. 3½h.p. Twin, new 1922 model, slightly shop-soiled; list price £100; genuine bargain; £80.—J. Evans, John Bright St., Birmingham. [4442

1921 N.U.T. 3½h.p. twin, fast, powerful, accessories, Tan-Sad, insured, new condition; bought combination, cash needed; 77 guineas.—1, Southsea Rd., Croydon. [3944



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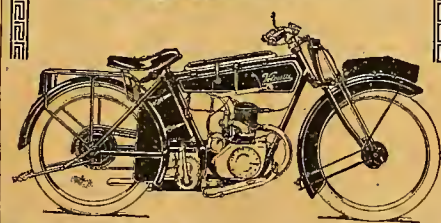

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N.U.T.

N.U.T. 3½h.p. Roadster, ex-works March, 1922, Lucas electric lighting, speedometer, small mileage, owner called abroad; best offer over £90 secures.—Smith, Heron Court Hotel, Richmond. 'Phone: 329. [3631

N.U.T.-J.A.P. 3½h.p., overhead valves, long exhaust pipes, tyres new, perfect mechanical order, very fast; £45; would consider exchange.—The Warsaw Motor Engineering Co., Wellingborough Rd., Rushden, Northants. [3648

1922 N.U.T., new April, 5h.p. J.A.P. special engine, 3-speed, kick-start, Cowey speedometer, Lucas lamps and horn, Terry's spring saddle, unscratched, exactly as new throughout, licence paid; £85.—Premier Motor Co., Aston Rd., Birmingham. [4603

O.K.

£18.—2¾h.p. O.K. 2-stroke, 2 speeds, splendid running order.—King, Egrove Farm, Oxford. [4210

1921 O.K.-Villiers, 2-speed, clutch, kick-start, lamps, horn, guaranteed; £36.—Beesley, 40, Warley Rd., Blackpool. [3826

1922 O.K. Combination, C.K.S., fine condition, all on; £55; will separate; evenings.—85, Paulet Rd., Camberwell. [4479

O.K.-VILLIERS, 1921, lamps, horn, splendid condition; £26.—Acton Motor Exchange, 55, Churchfield Rd., Acton, W.3. [4410

O.K. Junior 2½h.p., 2-stroke, about 1913, guaranteed in perfect running order and condition, take 2 anywhere, lamps, horn, tax paid; £15/15, first cheque secures.—Dawson Bros., 34, Ampthill Rd., Bedford. [4186

Omega.

1922 Omega 3h.p., fixed gear, shop-soiled, to clear; £36/10.—Bartletts, 93, Gt. Portland St. [4654

OMEGA Model 2B, shop-soiled only, at special price of £58/10.—Ratcliffe Bros., 200, Great Portland St., W. [4664

OMEGA Model 3, shop-soiled only, at special price of £59/10.—Ratcliffe Bros., 200, Great Portland St., W. [4665

1921 Omega 2½h.p. Villiers, 2 speeds, lamp, speedometer, etc., as new; £35.—Bartletts, 93, Gt. Portland St. [4651

1922 Omega 5-6h.p. J.A.P., 3-speed, chain drive, 3in. tyres, etc., shop-soiled only; to clear £98. Bartletts, 93, Gt. Portland St. [4653

1920 Omega-Jap, 2-speed, lamps, horn, taxed, splendid condition; £30.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [4033

1922 Omega 3h.p., Duplex frame, 3-speed, clutch, kick-starter, shop-soiled only: list £73/10; clear £66.—Bartletts, 93, Gt. Portland St. [4652

1922 Omega 3h.p., 2-stroke, 2-speed, new last June, Amac, Fellows, Lycett's, Clinchers, licensed; £37/10.—313, St. Anns Rd., Harringay, London, N.15. [3830

£12 or Offer.—Omega-Jap 2¾h.p., B. and B. variable jet, C.A.V., 2-speed gear, clutch, incomplete; bargain.—Christchurch Vicarage, Cannon Place, Hampstead. [3759

P. and M.

P. and M. (solo), 2-speed, clutch; £25.—A. W. Platts, 602, King's Rd., Fulham, S.W.6. [4091

1922 P. and M., equipped and insured; 84 guineas, or nearest.—63, Hamilton St., Grimsby. [3950

P. and M., late R.A.F., 2-speed, K.S., fine order; £25. 1, Springfield Park Crescent, Catford, S.E.6. [3975

P. and M. 1920 and sidecar 1921, perfect condition; 50 guineas.—93, St. Stephen's Avenue, Shepherd's Bush. [4072

1918 P. and M. Combination, equipped, taxed; £52/10, or near.—42, Stradbroke Rd., Southwold, Suffolk. [3766

P. and M. 1918 3½h.p. Combination, lamps, horn, etc.; £50.—202, Trinity Rd., Wandsworth Common, S.W.17. [3855

1918 P. and M. Combination, tax paid, seen after 6 p.m.; £65.—10, Isabella Rd., High St., Homerton, E.9. [3850

1918 P. and M., in splendid condition, fully equipped, taxed December; £34.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [4158

1919 P. and M. Combination, accessories, mechanically perfect; nearest £55.—56, Shaftesbury Rd., Hammersmith. [4039

1922 4½h.p. P. and M., 4-speed, Model A, £115; Model B, £102; immediate delivery from the authorised agents.—Below.

1921 P. and M. Sporting Combination, Swan sidecar, re-enamelled, plated and overhauled, guaranteed 6 months; £75; exchanges.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [3559

1921 4h.p. P. and M. Combination, all accessories, very little used; £75.—Roberts, Edgemond, Prestatyn. 'Phone: 43. (P) [3753

1921 P. and M., legshields (aluminium), just overhauled; £85, or nearest.—Parkinson, Old Bank House, Southam, near Rugby. [1973

MOTOR CYCLES FOR SALE.

P. and M.

AT Edwards.—1919 3½h.p. P. and M. Combination, equipped, tax paid, perfect order; 46 guineas.—101, Great Portland St., W.1. [4522

P. and M., latest 1922 4½h.p. 4-speed model, very slightly shop-soiled; £10. under list.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [4327

P. and M. 1920 3½h.p., Binks carburetter, electric lamps, tax paid, excellent condition; £55.—Maudes', 100, Great Portland St., London. [4395

1918 P. and M. Coachbuilt Combination, beautiful condition; snip at £42/10; offers, exchanges.—115, Holland Park Avenue. 'Phone: Park 518. [4004

1920 P. and M. Combination, fully equipped with lamps and tax paid, perfect mechanical condition; real bargain, £52/10.—Keys, 8, Bond St., Ealing. [2902

1918 P. and M., engine No. 7476, and 18-guinea new bulbous sidecar, electric horn, Lucas lamps, whole as new; £30.—56, St. James's Rd., Bermondsey. [4575

BARGAIN.—P. and M., 3½h.p., 2 speeds, perfect order, modern machine; 29 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Road, East Sheen. [3417

1918 P. and M. Combination, good condition, guaranteed, £37/10; another renovated as new, excellent, £42/10.—Goad, 122, Maida Vale, W.9. Phone: Hampstead 1353. [4333

1922 4½h.p. 4-speed P. and M. Combination, special sidecar, insured, taxed, equipped, mileage negligible; £110.—Kenneth Kemp, 66, Belsize Park, London. Hampstead 3917. [4536

1922 P. and M. de Luxe Combination, 4h.p., 4 speeds, all on, cost £150, shop-soiled; £130 cash, or deferred payments.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0919

INCOMPLETE P. and M.'s for renovation, £17/10; 6 only left; renovated P. and M.'s guaranteed 3 months, 40 guineas.—Inman and Co., Durham Rd., Seaforth, Liverpool. 'Phones: Waterloo 296, Bootle 894. [3650

Spare Parts:

P. and M.—We have a large stock of second-hand parts.—Maudes', 100, Great Portland St., W.1. [4378

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P. and M. Spares Specialists. Prices defy competition. Stamp brings list.—Inman and Co., Durham Rd., Seaforth, Liverpool. 'Phones: Waterloo 296, Bootle 894. [3651

ALL Spares in Stock: please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

Paragon.

3h.p. Paragon, 2-stroke, spring frame, 2 speeds; £20. —Fisher, Springwell Rd., Heston, Hounslow. [3927

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3½h.p. Premier, fitted with clutch, in good going order; £12; no offers; a bargain.—Lewin, 25, Athelstan Rd., Kettering. [3625

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Priory.

PRIORY-J.A.P., brand new; £50.—Clark, 7, Exhibition Rd., S.W.7. [2305

PRIORY, end of season, 2¾h.p. J.A.P., 2-speed, clutch, and kick-start, listed at 52 guineas; our price, £50; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4632

P.V.

P.V. special spring frame Villiers 2¾h.p., 2-stroke, 2 speeds, perfect condition, Tan-Sad; £35.—85, Moring Rd., Tooting, S.W.17. [4038

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QUADRANT Combination 1920 4½h.p., splendid condition; £45.—Aylott, Kingston Rd., New Malden. [4059

£80.—1922 Quadrant All-chain Combination, electric lighting, windscreen, speedometer, mechanical horn, overhauled.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [2288

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£130	**P. & M.,** 1922, 4 h.p. De Luxe, 4 speeds, Comb.	£38 16 6	£9 0 0
	SECOND-HAND SOLOS.		
£95	**Sunbeam,** 1921, 3½ h.p., semi-sports.	£27 2 6	£6 13 4
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£88	**A.J.S.,** 1922, 2¾ h.p., Comb., fully equipped, special demonstration outfit.	£24 15 0	£6 1 8
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£130	**Zenith,** 1921, 8 h.p., Clutch Model, fully equipped, Easting screen, tax paid, as new.	£36 18 0	£9 3 4
£80	**Sunbeam,** 1916, 3½ h.p., and Henderson Sidecar, speedometer, etc., tax paid.	£21 4 0	£5 8 4
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1922 Quadrant Combination, all-chain drive, shop soiled only; £97, or deferred payments.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [094

BARGAIN.—1922 Quadrant Combination, all-chain fully equipped, screen, speedometer, lamps, spares, etc.; £85, no offers.—255, Beckton Rd., Plaistow, E. [390

QUADRANT 1922 4½h.p. all-chain Combination, 4 speed, Easting, Watford speedometer, lamps, dip mirror, etc.; £85; insured April, tax December.—30 Albert Rd., Hounslow. [401

1921 Quadrant Combination, all chain, mileage 2,600 speedometer, Easting, Tan-Sad, lamps, new Dunlops; £60; expert examination invited.—22, Cambridge Rd., Teddington. [411

Spare Parts:

CLIFFORD WILSON Mfg. Company, Quadrant Works Representatives and Sole Wholesale Distributors for London, Southern and Eastern Counties; official repairers and spare part stockists; deferred payments; exchanges; all models in stock. Special insurance facilities applicable to Quadrants only.—177, Westminster Bridge Rd., London, S.E.1, opposite Waterloo Station Approach. Telephone: Hop 210. [992

Raglan

£18.—1914 3½h.p. Raglan, 3-speed, Sturmey gear, clutch, good order.—King, Egrove, Oxford. [421

Raleigh.

RALEIGH—All models in stock.—Premier Motor Co., Birmingham. [227

RALEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £62.—7, Exhibition Rd., S.W.7. [358

RALEIGH, brand new, 2¾h.p., 3-speed; £68; tax paid.—Dean, Elliott St., Tyldesley, Lancs. [408

1922 Raleigh 2¾h.p., as brand new, Lucas horn, licence paid; £59/19.—Shutter, Bath St., Bath. [418

RALEIGH 5-6h.p. shop-soiled only, at special price £115.—Ratcliffe Bros., 200, Great Portland St., W. [466

2¾h.p. Raleigh, 3-speed model, all accessories, taxed; used demonstration only; £65.—Sheldon, Wheatley, Oxon. [395

RALEIGH 1922 3h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £70/4.—Stubbs' Garages Ltd., Loughborough. [377

RALEIGH 1922 2¾h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £65/14.—Stubbs' Garages Ltd., Loughborough. [377

RALEIGH Machines, all models in stock; from £68 cash or payment out of income.—Ratcliffe Bros., 200, Great Portland St., W. [467

JUNE, 1922, 2¾h.p. Raleigh, 3-speed, C.S. K.S., fully equipped, licensed, mileage 25; sacrifice £65 cash.—Halstead and Almond, Wigan Rd. Garage, Leyland, Lancs. [363

RALEIGH 2¾h.p. 3-speed all-chain drive model for immediate delivery; £75; price guaranteed.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [432

RALEIGH, brand new 2¾h.p. Lightweight, very slightly shop-soiled 2-speed model; £59; 3-speed £64.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4326

1922 Raleigh Combination 5-6h.p., completely equipped with Lucas lamps, detachable wheels, horn, speedometer, tools, etc., tax paid; £100, a real bargain.—H. Bagott, The Vicarage, Moseley, Manchester. 'Phone: 97 Moseley. [385

GUARANTEE for Three Months.—Raleigh 5-6h.p. Combination, late 1921, spring frame, sprung wheel sidecar (Grindlay), as new; 118 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3414

SHOWROOM Soiled Only.—New 1922 5-6h.p. Raleigh spring frame, 3-speed, detachable wheels, fitted with Montgomery Sporting sidecar, specially finished to match; list price £155; reduced to £130; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [4604

EXCEPTIONAL Bargain.—Raleigh 5-6h.p. flat twin combination, 1922, used once, bought car, Cowey speedometer 238, spring frame, Tan-Sad, Easting screen, Lucas head lamp and generator, sidecar lamp, Lucas horn, legshields, luggage grid, tax paid, cover to sidecar; £139/15; cost over £190; absolutely like new; inspection invited.—Wilkins, Simpson, opposite Olympia, London. [4611

Reading-Standard.

10h.p. Reading-Standard Combination, lamps, horns, accessories, good condition, smart, cheap; £60, offers.—Smith, c/o Grays, Hatfield, Herts. [3848

Regent.

1921 Regent Combination, 5.7h.p. Coventry Victor, just overhauled, splendid condition; £90.—55a, Porchester Terrace, W.2. 'Phone: Paddington. 7097. [3694

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MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM Sports, 1921, splendid condition, electric light, tax paid; £90.—Cope, 15, Upper Hagley d. Birmingham. [4067

SUNBEAM 1921 3½h.p., Bonniksen trip speedometer, horn, knee-grips, F.R.S. lighting, tax paid, new; £95.—4, St. George's Rd., Bedford. [3640

1921 Sports Sunbeam, fully equipped, Bonniksen electric and acetylene lighting, only done 2,000; £85.—107A, Ilgh St., Newton-le-Willows, Lancs. [4517

1922 4¼h.p. Sunbeam and Sidecar, Magdyno lighting set, tax paid, complete, done 3,000 miles; 155; cost £208.—Cross, Effingham Sq., Rotherham. [4450

SUNBEAM Combination 1919, 3½h.p., Sandum screen, lamps, etc., splendid condition; £75; fers considered.—7, Sainfoin Rd., Balham, S.W.17. [3930

SUNBEAM Combination 8h.p., J.A.P. engine, licensed to December, lamps, horn, legshields, in autiful condition; £140.—The Morris Garages, Oxford. [3734

1919 Sunbeam 3½h.p. Combination, lamps, horn, speedometer, perfect condition; trial invited; £85, or near offer.—Williams, 69, Wiltshire Rd., Brixton. [4630

SUNBEAM 1921 8h.p. Combination, little used, in new condition, cost over £300; a great bargain, ice £160; seen London.—Box 3920, c/o *The Motor Cycle*. [4629

1920 3½h.p. Sunbeam Combination, electric lighting set, accessories, insurance, mileage 2,000; accept £.—Kinsey and Co., Ltd., 350, Lower Addiscombe l., Croydon. [4337

1919 8h.p. Sunbeam Combination, Lucas lamps and horn, screen, spare wheel, speedometer, engine t overhauled; accept £79.—86, Church Rd., Upper orwood, S.E.19. [3985

OUTHPORT.—I.O.M. Sunbeam, absolute special, big tank, foot oiler, double foot brakes, low frame, ideal sports 'bus; 62 guineas; exchanges.—Kents, 7, Lord St., Southport. [4280

1919 Sunbeam 3½h.p., black and gold, French military model, fully equipped, guaranteed altless, tax paid; £60.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [4431

PECIAL Sports Sunbeam 1921, specially tuned, electric light, speedometer, Cowey horn, magnificent dition, tax paid; 85 guineas.—Longman Bros., 17, nd St., Ealing. 'Phone: Ealing 689. [2990

1920 Sunbeam 3½h.p., engine No. 14510294, Cowey horn and speedometer, Lucas lamps with D.A. inder, 5,000 miles, perfect condition; offers.—Sundgale Motors, Ltd., Sunningdale, Berks. [9179

h.p. Sunbeam Combination, smartest on road, practically unused, dynamo, hood, screen, spare wheel used), electric horn, watch, numerous extras, taxed; 0, or near.—James, c/o Bradmores, 482, Harrow Paddington. [4343

1922 3½h.p. light solo, Sunbeam engine No. 163/14500, all best Lucas accessories, knee-grips, llent appearance and mechanical order; open to examination, licensed to December; £112.—Evans, ouse, Corwen. [4284

1919 Sunbeam 8h.p. Combination, fully equipped, leg guards, new semi-sports body to match, ks cantilever saddle, Binks, guaranteed perfect; ; exchanges.—Homac's, 243, Lower Clapton Rd., . Dalston 2408. [4432

1920 3½h.p. Sunbeam, 3-speed, and brand new Sandum Sunbeam sidecar and screen, interageable wheels, lamps, Cowey horn, tools, taxed, utiful condition, original tyres; cash wanted; £90. 1, King St., Hammersmith. [4615

NBEAM 8h.p. Combination, 1920-21 model, low mileage, complete with lamps, legshields, spare l, Tan-Sad, speedometer, Lucas horn, windscreen, n, hood, luggage carrier, new condition; £150.—Tewkesbury St., Cathays, Cardiff. [4183

NBEAM Combination, 6h.p., oversize tyres, Liversidge dissolvent lighting just fitted at a cost £10, speedometer, Klaxon, spares, tubes, excellent dition; any trial up to 100 miles; price £95.—11, ncellor Rd., West Dulwich, S.E.21. [3922

CEPTIONAL Bargain.—Sunbeam 1922 4¼h.p. and Watsonian sidecar, Dunlops, Easting screen, son, tax paid, only done about 300 miles, absoly like new; £129/15; just cost £172; inspection ted.—Wilkins, Simpson, opposite Olympia, London. [4612

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T.D.C.

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TORAGO 2¾h.p. 4-stroke, excellent running condition, believed 1915; £12.—720, Coventry Rd., Small Heath, Birmingham. [3622

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TRIUMPH, type H, shop soiled only; at special price, £94/10.—Ratcliffe Bros., 200, Great Portland St. [4672

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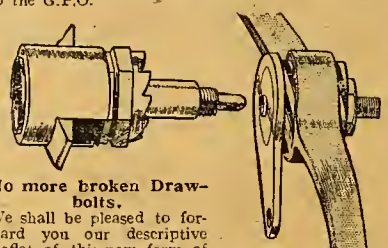

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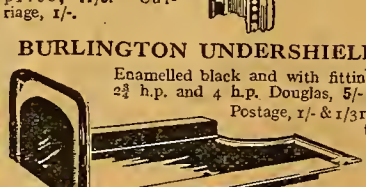

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£55.—Triumph Countershaft 1916, sporting com bination, discs, all accessories, splendid conditio throughout.—35b, The Promenade, Palmers Green, [39

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TRIUMPH Countershaft, late 1919, engine N 69313, top gear change, equipped, perfect co dition, any trial, 2 up; £55.—37, Clonmel Rd., Fu ham, S.W.6. [42

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1921 Triumph-Gloria all-chain combination, Luc lamps, speedometer, windscreen, Tan-Sad, excelle condition, cost over £200 June, 1921; £110.—Hook North Holm, Kennerley Rd., Stockport. [37

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1918 Countershaft Triumph and Sidecar, exce tional engine, original enamel and plate, ne bulbous body, lamps, horn, licensed, standard throug out; £58.—65, Clifton Av., Wembley Hill, Middlese [44

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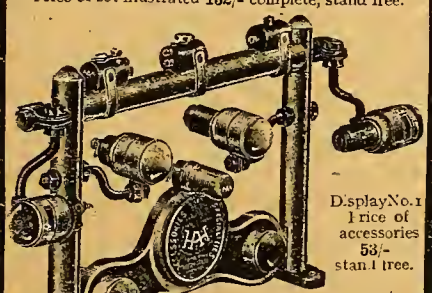

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1922 Wolf-Jap 2¾h.p., 2-speed, K.S., hand clutch, horn, tools, etc., tax paid, under 50 miles, cost £65, must sell, no reasonable offer refused.—48, Ditton Rd., Surbiton. [3856

Wooler.

1921 Wooler, 2¾h.p. Flat Twin, spring frame, variable gear, little used, original tyres, enamel as new; £45, or offers.—41, Aubrey Rd., Small Heath. [3661

Zenith.

THE Zenith Specialists.

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W. 'Phone: Regent 205. [4616

ZENITH 1922, Bradshaw chain, very special; £78.—Clark, 7, Exhibition Rd., S.W.7. [2306

ZENITH 1915 8h.p., o.h.v., Gradua gear, very fast; £65.—The Morris Garages, Oxford. [3737

1922 3½h.p. special Zenith-Bradshaw, 3-speed, all chain, licensed; £85.—Ford, High St., Sidmouth. [3851

ZENITH 1920 8h.p. Countershaft Combination, perfect; £68.—Clark, 7, Exhibition Rd., S.W.7. [4607

1920 5h.p. Zenith, taxed, insurance, excellent condition; £50.—Maynard, Woolhampton, Reading. [3751

1922 Zenith-Bradshaw, Gradua gear, shop-soiled; 75 guineas.—Light Motors, 28, Tavistock Rd., Plymouth. [3682

1921 5h.p. Sports Zenith, excellent condition, privately owned; £70, or nearest.—Reeves, High St., Purley. [3672

ZENITH Combination, 1920, in perfect order, not ridden this year; first £65 secures.—1, Park Lane, Waltham Cross. [4130

ROBERTSON'S Motors, Ltd. — 1922 shop-soiled Zenith-Bradshaw, Gradua gear; £98.—157b, Gt. Portland St., W.1. [5932

1922 Zenith-Bradshaw, all-chain drive, shop-soiled only; £98.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0943

8h.p. Zenith Sports 1920, mileage 2,000, condition perfect, stored since September, 1921; £55.—Chattan House, Harrogate. [4088

SPORTS Zenith 6h.p., lamps, horn, pump, two belts, good tyres, fast, reliable; £45.—24, Page St., Westminster. Victoria 1977. [4199

ZENITH-BRADSHAW, new, unused, 1922 model, Gradua gear; 75 guineas.—Eagles and Co., 275, High St., Acton, London, W. [4145

AT Edwards.—1920 8h.p. Zenith countershaft, equipped, tax paid, perfect order; 58 guineas.—101, Great Portland St., W.1. [4523

ZENITH 5h.p. Model D Countershaft, K.S., with C.B. sidecar, hood, screen, lamps, tools, etc.; £60.—47, Essex Rd., Watford. [4023

ZENITH 8h.p., discs, pillion, good condition, licensed, sporting mount; nearest £40; exchange lower power.—Bower, Cinderford, Glos. [3632

6h.p. Zenith Sports and Sidecar, all accessories, licensed, condition as new; £85; would exchange.—Carpenter, High St., Baldock. [3629

ZENITH 5-6h.p., 1922, mileage 800, all accessories, magnificent condition; no reasonable offer refused.—Woodridings, Cumnor Rd., Sutton, Surrey. [4637

1922 3½h.p. Zenith-Bradshaw, all-chain drive, shop-soiled, a gift; £80; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4414

AT Edwards'.—1922 5h.p. Sports Zenith, excellent condition, two months old; 68 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2218

GUARANTEE for three months with 1922 Zenith-Bradshaw, slightly soiled; 79 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. (D) [3407

ZENITH Combination 3½h.p., J.A.P., aluminium sidecar, excellent condition, spare new cover, belts, lamps, mechanical horn; nearest £40; write, making appointment.—Levisse, 139, Topsham Rd., Tooting. [4169

MOTOR CYCLES FOR SALE.

Zenith.

F.O.C.H. Iovite Inspection. Zeniths and other makes far below any anticipated price reduction. —5, Heath St., Hampstead (near Tube). [3861

90-Bore Zenith (July, 1921), copper silencer and pipes, lamps, good Hutchinsons, photo; £80.—Fernihough, 5, Stourwood Avenue, Bournemouth. [3690

ZENITH-BRADSHAW, 1922, 3½h.p., slightly shop-soiled; 75 guineas, listed £113; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3531

ZENITH 6h.p. Combination, 1921, delivered March, 1922, Easting and full equipment; £80; write time convenient.—Cowley, 259, Warwick Rd., Kensington. [3659

1922 shop-soiled 5-6h.p. countershaft, Zenith. £75 to clear; 1922 shop-soiled 3½h.p. Zenith-Bradshaw, £70.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W.1. [3870

1920 5-6h.p. Sports Zenith, speedometer, Tan-Sad, lamps, insurance, all accessories, perfect condition; £68, or near.—68, High Lane, Chorlton-cum-Hardy, Manchester. [2567

ZENITH 1921 sidecar 6h.p., kick-starter, countershaft, clutch, beautiful running, lamps, horn; £85, or nearest offer.—Mowat, Peak House, Cole Henley, Whitchurch, Hants. (D) [3819

1920 late Zenith 5-6h.p. Combination, countershaft, clutch, dynamo lighting, screen, speedometer, as new; real bargain, £60; or exchange.—51, Upper Richmond Rd., East Putney. [4555

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

Ladies' Motor Cycles.

IVY.—1921 2½h.p., 2 speeds, kick-starter, and clutch, tax paid, Cowey horn, small mileage; £37. —Maudes', Below.

VELOCETTE.—1919 open frame, 2 speeds, chain drive, excellent condition; £26.—Maudes', 100, Great Portland St., London. [4384

2¾h.p. new 1922 New Comet; lady's machine, fitted with Comet sidecar; £65; easy terms arranged. —Wauchope's, 9, Shoe Lane, London. [4505

SHOWROOM Soiled 1922 Lady's Open Frame Velocette, 2-speed, clutch, kick-start; list price £68, reduced to £58; easy payments 4% extra; write for special clearance list.—Premier Motor Co., Aston Rd., Birmingham. [4606

Miscellaneous.

ROOTES, Ltd., Maidstone, have for sale:

3h.p. Twin Enfield, complete with all accessories, about 1916, licence to end of year; £25.

4h.p. Blackburne, good condition, licence to end of year, 1920 model; £60.

4h.p. Blackburne, good condition, complete with all accessories, licence to end of year, 1916; £50.

ENFIELD Combination 1915, first-class condition, with all accessories; £80.

1920 Powerplus Indian Combination, dynamo lighting set, screen, all accessories, licence to end of year; £85.—Rootes, Ltd., Maidstone, 8-9, Long Acre, and Dorking. Tel.: Maidstone 460, Regent 6026, Dorking 214. [3647

REX 2¾h.p., Bosch, B.B., accessories, £7; also Ariel 2¾h.p., all on, £7.—Guinchard, 179, York Rd., Camden Rd. [4026

£26.—1919 Sporting Villiers, 2-speed, discs, long exhaust, licence, Dunlops; offer, exchange.—3, Grosvenor Rd., Twickenham. (P) [4019

NAYLOR and Kirk have the following: 2¾h.p. Douglas, 1913, 2-speed, aluminium footboards, good condition; bargain, £20.—Below.

NAYLOR and Kirk.—6h.p. Matchless combination, thoroughly renovated, re-enamelled throughout and plated, Swan sidecar, finished Matchless colour, 3-speed countershaft, clutch and kick-start, all-chain enclosed, approximate date 1916; perfect gift at £48. —Below.

NAYLOR and Kirk.—3-speed Rover combination, fully equipped, good appearance, mechanically perfect; don't miss this one at £25.—Below.

NAYLOR and Kirk.—Two 2¾h.p. Douglases, 2-speed, fully equipped; £25 each.—Below.

NAYLOR and Kirk.—1922 Model H Matchless combination, shop-soiled, fully equipped, Lucas lighting (acetylene); what offers?—Below.

NAYLOR and Kirk.—Exchanges of sorts arranged on best terms. We stock ex-Government Douglas and Triumph spares.

NAYLOR and Kirk.—Armoured tool cases, brand new, suitable for Douglas, Triumph, etc.; 4/- each.—Below.

NAYLOR and Kirk, 406, Garratt Lane, Earlsfield, S.W.18. 'Phone: Wimbledon 2041. [4074

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KEEN Buyers will not miss our Autumn Clearance Prices. Prices quoted are cash, but

EXTENDED PAYMENTS

may be arranged at a ridiculously small extra charge by paying a fifth down and the Balance in 12, 15, 18 months.

The following are slightly shop-soiled but otherwise Brand New unridden 1922 machines.

2¾ h.p. **ALLON**, 2-speed gear, clutch and kick-starter	£53
2½ h.p. **CALTHORPE**, single speed	£33
4½ h.p. **B.S.A.**, Model H, 3-speed, all-chain drive	£95
4½ h.p. **B.S.A.** with B.S.A. No. 3 sidecar	£122
6 h.p. **B.S.A.**, light twin combination	£145
2¾ h.p. **O.K. JUNIOR**, with 2-speed gear, footboards, Webb front brake	£50
2¾ h.p. **O.K.**, 3-speed sporting model, clutch and kick-starter	£60
2¾ h.p. **O.K.**, Blackburne, 3-speed, all-chain	£68
3½ h.p. **ZENITH-BRADSHAW**, oil-cooled, 3-speed gear, all-chain drive	£105
3½ h.p. **MARTINSYDE**, twin sports model, 3-speed	£88
4½ h.p. **HUMBER**, H.O. twin 3-speed sports	£90

SECOND-HAND MOTOR CYCLES.

1919 4½ h.p. **B.S.A.** and Sidecar	£65
1921 2½ h.p. **CEDOS**, 2-speed, kick-starter, electric lamps. Tax paid	£45
1922 1¾ h.p. **MACKENZIE**, good order. Tax paid	£24
1921 3½ h.p. **RUDGE-MULTI**, T.O.M. T.T. Tax paid	£57 10
1922 2 h.p. **KEMPTON**, 2-speed, horn, electric lamps, mirror. Tax paid	£35
1922 4½ h.p. **HUMBER**, 3-speed, sports model, lamps, speedometer. Tax paid	£85
1918 4 h.p. **TRIUMPH**, 1922 frame, crank, forks, etc., lamps, horn, like new. Tax paid	£70
1920 2½ h.p. **LEVIS** Popular. Tax paid	£30
1922 4½ h.p. **ARIEL**, fine condition, all-chain, 28in. wheels	£85
1920 4 h.p. **TRIUMPH**, Model H, discs, etc. Tax paid	£65

SECOND-HAND COMBINATIONS.

1921 8 h.p. **MATCHLESS** Comb., spring frame model, sporting body, Lucas magdyno lighting, horn, speedo., screen; spare wheel	£135
1918 8 h.p. **NEW IMPERIAL**, J.A.P. engine, 3-speed, all-chain (Burman), overhauled, as new, with sidecar	£85
1917-18 6 h.p. **CLYNO**, 3-speed, clutch, kick-starter, overhauled, renovated maker's colours, with new sidecar body	£80
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1920 5-6 h.p. **ROVER JAP** Comb., 3-speed, clutch, kick-starter, lamps, etc.	£87 10
1921 4 h.p. **NORTON DE LUXE** comb., Lucas electric lighting, speedo., screen. Tax paid	£110
1919 3½ h.p. **P. & M.** Comb., new tyres, speedo., good order. Tax paid	£75
1915 10 h.p. **HENDERSON**, 4-cyl., 2-speed, chain drive, coachbuilt sidecar, in going order, but requires overhauling	£40
1921 2¾ h.p. **ALLON** and sidecar, 2-speed, clutch, kick-starter, lamps, accessories. Tax paid. Very good	£63
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Miscellaneous.

WANDSWORTH Motor Exchange.—Finest select and choice motor cycles, combinations, in London. Exchanges, easy terms.

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WANDSWORTH.—Easy terms. Ride while you pay. Immediate delivery given any motor cycle first deposit. No waiting.

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WANDSWORTH.—Minerva 4½h.p. twin, magneto good hill climber; only 19 guineas. Easy terms.

WANDSWORTH.—F.N. 5-6h.p., 4-cyl., shaft drive, low built, very fast; 19 guineas. Terms.

WANDSWORTH. — Motosacoche Lightweight 2½h.p., variable gear, lamps, runs beautiful 19 guineas. Easy terms.

WANDSWORTH.—F.N. 4½h.p., 4-cyl., 2 speed shaft drive, wants attention; 17 guineas. Terms.

WANDSWORTH.—Lincoln-Elk 3½h.p., 2 speed dropped frame, newly enamelled; 22 guineas. Easy terms.

WANDSWORTH.—Triumph, sporting type, 3½h. good tyres, very fast; 25 guineas. Easy terms.

WANDSWORTH.—F.N. Lightweight 2¾h.p., speeds dropped frame, lamps; 25 guineas. Easy terms.

WANDSWORTH.—Enfield 3h.p. twin, 2 speed chain drive, lamps; 29 guineas. Easy terms.

WANDSWORTH.—Matchless-Jap, twin, 3 speed clutch, runs splendidly; 29 guineas. Easy terms.

WANDSWORTH.—Humber 3½h.p., 2 speed handle starting, lamps, hooter; 23 guineas. Easy terms.

WANDSWORTH.—P. and M. 1918 3½h.p., speeds, kick, newly enamelled; 35 guineas. Easy terms.

WANDSWORTH.—1920 Wooler, 2¾h.p., 2 speed lamps, first cheque; 36 guineas. Easy terms.

WANDSWORTH.—Rex, fine Coachbuilt Combination, 5-6h.p. twin J.A.P., 2 speeds; 39 guineas. Terms.

WANDSWORTH.—1915 Indian T.T., clutch model 7-9h.p., very fast; 39 guineas. Easy terms.

WANDSWORTH.—A.J.S. Coachbuilt Combination 6h.p. twin, 3 speeds; sacrifice, 49 guineas. Easy terms.

WANDSWORTH.—1919 Douglas, dynamo lighting 4h.p., 3 speeds, kick; 55 guineas. Easy terms.

WANDSWORTH.—Zenith 3½-4h.p. J.A.P., Gradegear, lamps, mechanical horn; 32 guineas. Easy terms.

WANDSWORTH.—1919-20 Triumph Coachbuilt Combination, 4h.p., 3 speeds, lamps; 59 guineas. Easy terms.

WANDSWORTH.—1920 Rudge-Multi, 5-6h.p., coachbuilt Combination, lamps, screen; 59 guineas. Easy terms.

WANDSWORTH. — Exchanges. — Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [44

F.O.C.H. for New and Second-hand Cycles, cars, etc. bargains: cash or easy payments; exchange arranged.—5, Heath St., Hampstead (near Tube). [38

WALDRON Motor Mart have the following machines in stock at bargain prices for sale or exchange.—645, Garratt Lane, Earlsfield, S.W.18

WALDRON.—A.J.S. 1922 7h.p. combination, brand new 7 days ago, only run 80 miles, spare wheel, complete with accessories, tax paid; cost over £195, accept £155.

WALDRON.—A.J.S. 1921 combination, 7h.p., Lucas dynamo lighting and electric horn, spare wheel, speedometer, tax paid, practically unscratched £125.

WALDRON.—Lea-Francis, 1920, 3½h.p. twin M.A.C. engine, countershaft gear, all-chain drive, looks almost new, all accessories; £48.

WALDRON.—Douglas 2¾h.p., 1916, 2-speed, all accessories, tax paid, excellent condition; £2

WALDRON Motor Mart, 645, Garratt Lane, Earlsfield, S.W.18. [40

WAUCHOPE'S, 9, Shoe Lane, London, have some new 1922 shop-soiled machines of various makes at bargain prices for cash; inspection cordially invited. —'Phone: Holborn 5777. [45

SOUTHPORT.—1919 Iovicta-Jap 2¾h.p., 2-speed, 26 guineas; semi-T.T. Triumph, 1911-12, guineas; 3½h.p. Royal Ruby-Thrasher Combination 3-speed, electric lighting, 27 guineas; 2¼h.p. F.N., speed, brand new tyres, excellent solo, 22 guineas o.h.v. Red Bat 8h.p., 2-speed, countershaft, kick starter, 32 guineas.—Keats, 417, Lord St., Southport. 'Phone: 1273. [42

MOTOR CYCLES FOR SALE.
Miscellaneous.

LACKPOOL Bargains.—Shop-soiled 1922 Rudges, Ariels, New Imperials, Royal Rubys, Bradhurys, tinsyde; reduced prices; exchanges.—Booth's ories, 294, Waterloo Rd., Blackpool. 'Phone 1451.

LACKPOOL Bargains.—3½h.p. Triumph, £16/10/6; Triumph, 3-speed, £19/10/6.—Booth's Motories.

LACKPOOL Bargains.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Humber, £19/10/6; .p. Premier, £24/10/6; 5h.p. Rudge 2-speed, 10/6; 5h.p. Rudge, 3-speed, £27/10/6.—Booth's ories.

LACKPOOL Bargains.—2-speed O.K., £16/10/6; 3½h.p. Singer, 2-speed, £24/10/6; 2-speed M., £19/19/6; another, £35/10/6; N.S.U. Lightht, £11/10/6.—Booth's Motories.

LACKPOOL Bargains.—1920 Rudge, I.O.M. model, £45/10/6; another, Dynamo Lighting, £57/10/6; Douglas, £55/10/6.—Booth's Motories.

LACKPOOL Bargains.—2-speed Douglas, £19/10/6; 2-speed Scott, £19/19/6; 1920 Douglas, 3-speed, start, £52/10/6; 1921 Allon, £32/10/6; 2-speed aught, £25/10/6; 2-speed Calthorpe, £25/10/6.—h's Motories.

LACKPOOL Bargains.—9h.p. Indian, £29/10/6; h.p Indian, 2-speed, £29/10/6; 3½h.p. New Hud- Combination, £35/10/6; 8h.p. Dot Combination, 10/6; 1920 Matchless Combination, £89/10/6.—h's Motories.

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LACKPOOL Bargains.—8h.p. Carden Cyclecar, £32/10/6; 1920 Tamplin Cyclecar, £49/10/6; 1921 e light car, 4-cylinder, W.C., 4 speeds, electric lightand starting, spare wheel, fully equipped, £175/10; al others cheap; push cycles taken in exchange.—h's Motories, 294, Waterloo Rd., Blackpool. ne: 1451. [3473

TER GORDON, Ltd., 110, Upper Richmond Rd., East Sheen.—Ariel 3½h.p., 3-speed, 26 guineas; sh Excelsior 6h.p. combination, countershaft, uineas; Douglas 2¾h.p., 2-speed, renovated, 27 eas; Hobart 2¼h.p., 2-speed, 2-stroke, 25 eas; Indian 7-9h.p. 2-speed combination, 45 eas; Levis Popular, re-enamelled, 26 guineas; Imperial, 2-speed, 26 guineas; P. and M. 3½h.p., ed, 29 guineas; Precision 2¾h.p., 13 guineas; l Ruby 8h.p. 3-speed combination, countershaft, guineas; Sparkbrook-Jap 6h.p. combination, tershaft, 49 guineas; Triumph 3½h.p., 3-speed, guineas; ditto, combination, 34 guineas; Zenith ua 3½h.p. J.A.P., 18 guineas; Zenith-Gradua p., clutch, kick-start combination, 35 guineas; ographs free. All the above machines sold under ree months' guarantee. Open week-ends. Exges. Tel.: Putney 2865. (D) [3405

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BERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is based, full amount of hire up to one week is ed.—157b, Gt. Portland St., W.1. [5936

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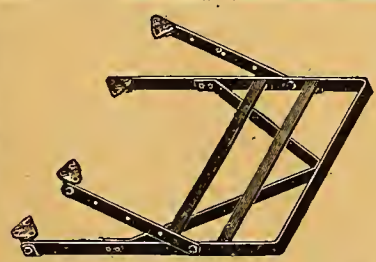

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PALMER'S Garage, Tooting.—Catalogue free. 'Phone: 208, Streatham. 'Grams: Palmer's Garage, Tooting. [4313

GOOD Motor Cycle, 2-stroke preferred; cheap, cash. —Write, E.P., 2, Dundas Rd., Peckham. [3800

WANTED, cheap old motor bike, running order, about £5.—Box 3907, c/o *The Motor Cycle*. [4216

WANTED, Solo or Combination, Big 4 Norton or Triumph preferred.—256, Mitcham Rd., Tooting. [4192

WANTED, 1922 Velocette; state full particulars and bottom price.—Box 3865, c/o *The Motor Cycle*. [3725

LATE, fast, reliable, solo wanted; state bottom price, full particulars.—Box 3865, c/o *The Motor Cycle*. [3724

WANTED, Combination or Solo Triumph or Sunbeam preferred.—W., c/o 30, Canterbury Rd., Kilburn, N.W.6. [2768

WANTED, Motor Cycle, in exchange for chassis; see Exchange column.—Kennard, 78, Yerbury Rd., London, N.19. [3704

WANTED, Heavy Twin Combination and slight cash adjustment for 2-seater Studebaker, perfect.—2, Boyne Rd., Lewisham, S.E.13. [3794

WANTED, Douglas or Levis and £38 for 4-seater car, fully equipped, sound running order; photo sent.—Box 3864, c/o *The Motor Cycle*. [3722

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709. —Edwards, 50, Harrington Rd., South Kensington. [0604

WANTED, A.J.S. 2¾h.p., or 16H Norton, 1922, immediate, evenings after 5, or 'phone Richmond 2667.—Goldsmith, 17, Cumberland Rd., Kew. [3673

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G.N., 1921, dynamo lighting, 5 detachable wheels, well equipped; 100 guineas; exchange entertained.—5, Victoria Av., Surbiton. [4031

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TWO Lovely G.N.'s, little used, privately owned, dynamo; open to any reasonable offer of exchange; to be sold cheap.—Marlborough, 20, Finchley Rd., N.W.8. [9579

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BELSIZE-BRADSHAW 1922, 9h.p., 2-seater, fitted speedometer and licensed, only run 1,600 miles, practically new; £225. Sale or exchange.—The Morris Garages, Oxford. [3730

BAYLISS-THOMAS 1922 10h.p. Model, 4-cylinder water-cooled engine, 3 speeds, Magdyno; 300 gns.; immediate delivery.—Godfrey's Ltd., 208, Gt. Portland St., London, W.1. [0736

SNIP!—1922 8h.p. Grand Prix Morgan, w.c. J.A.P., electric lights, fully equipped, in perfect order and appearance; £138.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [4374

A.V.—Several specially tuned A.V. Monocars with dickey seats, tax paid, electric lamps, discs; from £42; after 5 p.m.; exchanges entertained.—20, Treen Avenue, Hoggers Corner, Barnes. [4154

A.C. Sociable, in first-rate running order, side entrance, front arched; will ride 100 miles to purchaser; tyres excellent; £35.—Victor Trewent, Bungalow, Lamphey, Pembrokeshire. [3706

MORGAN, G.P., 1920, 8h.p. J.A.P., W.C., electric lights, head, side, and tail, just been overhauled throughout, perfect order, photo; £110.—Watson, Dentist, Maryport, Cumberland. (D) [3671

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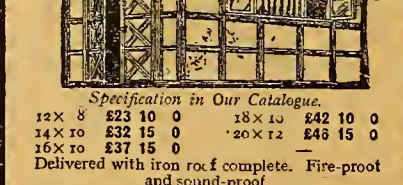

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1921 (November) G.N., De Luxe model, dyn lighting, 5 detachable wheels, exceptionally condition throughout; 110 guineas.—Longman B 17, Bond St., Ealing. 'Phone: Ealing 689. [4

1922 Morgan De Luxe, May, 500 miles, 8h.p., tax year, Bonniksen trip, Zenith, J etc., £25 extras; price £160; delivered 50 miles; dealers.—W.B., 5, Ickburgh Rd., Clapton, E.5. [2

A.B.C. 1922 Sports, new July, small mile £192/10; Rover 8, April, 1922, dickey, perf £157/10; take motor cycle or combination pa R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4

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£65.—1921 Tamplin Cycle Car, 2-seater twin J.A engine, Sturmey-Archer gear box, only done miles, fully equipped; splendid bargain.—Speech 86, Churchfield Rd., Acton, W.3. 'Phone: Chis 1902. [4

G.N., 1921, De Luxe, dynamo lighting, sp wheel, electric horn, dash lamp, spot ligh aluminium discs, speedometer, clock, etc.; £12 Hillier, 9, Wallingford Av., North Kensington (7 7A 'bus). [4

1922 Morgans, in stock for immediate delive G.P. model, 10h.p. Blackburne, w.c., stand equipment, discs, £183/10; also latest De Luxe mo w.c. J.A.P., dynamo lighting, £199/10; deferred 4 Homac's (below).

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1922 Coventry Premier 4-wheeler, appearance a condition guaranteed as new, licensed and sured; wonderful bargain for cash buyer only £155.—57, Great George St., Liverpool. 'Phon 1092 Royal and Royal 4065. [2

3-WHEELED Coventry Premier, 1921, dickey mod dynamo lighting, speedometer, numerous extr only used 5 weeks, unscratched, year's tax; exchan Enfield combination or Triumph solo and cash Wood, 338, Hornsey Rd., N. [4

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BUCKINGHAM 10h.p. (July) Cloverleaf 3-seat speedometer, painted grey, aluminium bonn dynamo lighting, spare wheel, full equipment, tax pa mileage 500: cost £230 in July, accept £175.—T Lancaster Motor Co., 158, Norwood Rd., West N wood, S.E.27. 'Phone: Streatham 2541. [4

8h.p. Rover Cars, 1921.—Prices standard mod £180; 4-seater model, £190; De Luxe mod £200; self-starter, £15 extra. Exchange your co bination for one of these wonderful light cars. ferred payments. Immediate delivery from stock. Sole agents and distributors, R. Bamber and C Ltd., 2, Easthank St., Southport. 'Phone: 607. [3

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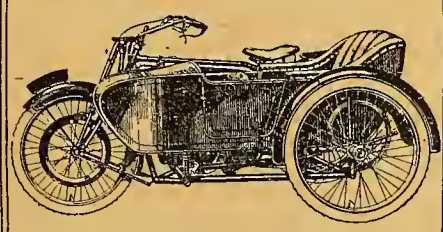

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1915 10h.p. 4-cyl. Alldays 2-seater, 5 detachable wheels, tax paid, all in excellent condition; £120, bargain; just been thoroughly overhauled.—Whisstock and Lingley, Woodbridge, Suffolk. [4119

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ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

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J.A.P. 8-10h.p., a.c., 1920, complete magneto, carburetter, perfect; £20.—Acton Motor Exchange, 55, Churchfield Rd., Acton, W.3. [4411

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THOMSON-BENNETT, single or twin, enclosed, waterproof, variable ignition, all degrees; £2/ each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed, waterproof, variable ignition; £2/15 each.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle suitable for Rudge.

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required. Please state make of engine when ordering.

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed. Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade. Write for list.

COUNTY of London Engineering Works, Ltd., 2 Stockwell Rd., London, S.W. (1 min. from Stockwell Underground Station). T.A.: Ignitionac, Clapham road, London. Tel.: Brixton 2841. [27

M.L. singles, 30/-; C.A.V., 37/6; variable ignition guaranteed.—84, Greenside Rd., Croydon. [39

MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton St., Camberwell. [15

SMITH'S Magdyno Lighting Set, complete, as new, suit Triumph; £20, or offer.—Box 3964, c/o The *Motor Cycle*. [39

37/6.—C.A.V. magnetos, singles and 180° twins, variable, guaranteed new and perfect; approval against cash.—Below.

£3/15.—ZE1 Bosch pattern, new, singles only, exceptional value; please state rotation; approval against cash.—Langford's, 37, Cricklewood Broadway, London, N.W.2 [135

SPARKING Plugs, new, not war stock; 3-point, 2/- each, post paid. Satisfaction or cash returned.—King, Buckingham House, Laindon, Essex. [36

SURPLUS Magnetos, with written guarantee one year, M-L single, 35/-; B.L.I.O. ditto, 42/-; Bosch ditto, 45/-; C.A.V. single or twin, 50/-; Thomson-Bennett ditto, 60/-. We specialise in repairs and spares for all makes. Lists, 2d. stamp. Deal with experts and avoid certain disappointment.—Whitdon Magneto Service, Cherry Orchard, Croydon. 'Phone: Croydon 1625. [64

IGNITION, LIGHTING, ETC.

MAGDYNAMO Engineering Co., Ltd., for magnetos, spares, and repairs.

MOTOR Cyclists fit reliable high quality magnetos now and avoid certain failure of inferior magnetos.

BOSCH Enclosed Waterproof Type D.A.L. Magnetos, Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each, postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine. Start one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

ZENITH Owner writes: "Since fitting magneto have completed a run of 250 miles; highly satisfied; will certainly recommend these magnetos."

INDIAN Machine Owners.—Your high-class machine deserves a high-class magneto. We want 1,000 Bosch 42 magnetos; send your magneto and £4 to us, and we will immediately despatch you a Bosch D.A.L.

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, supplied by Magdynamo, beat all other Magnetos.

MAGDYNAMO will take your old Magneto in part payment.

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you not want a reliable magneto with 12 months' guarantee and service that will give you starting without worry, smoother running, and more powerful engine and better results from your Douglas? Then send for a Best enclosed waterproof type Bosch XA2 magneto to-day, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P. and M.'s, with 12 months' guaranteed service, price £7/10, carriage 1/6.

THOMSON-BENNETT Magnetos, latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting pounds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparking plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs.. Before you scrap that magneto, whatever its condition, let us see it, we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we will lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a very low cost. Send us your defective magneto now.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row, E.C.2. 'Phone: London Wall 4570. (One route from Brown Bros.) [3303

MOTOR Cycle Magnetos, C.A.V., twin or single, fully enclosed, variable; 40/- each; guaranteed.—Luxhall Mfg. Co., 28, Albert Embankment, London, S.E.11. [3924

ANY Motor Cycle Magneto repaired, no matter what what condition, provided complete, for 30/-; 24 hours service.—Kays, Electrical Dept., 8, Bond St., Dudley, W. [5077

CASH Switchboards, 4-way, with ammeter, 20/-; 6-way with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept. H.I), 9, Colonial Av., Minories, E.I. [0760

DIXIE Magneto, for 2¾h.p. Douglas, 12/6; C.A.V. for same, 30/-; Thomson-Bennett, 40/-; C.A.V. converters, complete, new, 21/-; carriage extra.—Dowell, Guildford, Surrey. [3876

10/- Buys Douglas 2¾h.p. magnetos, weatherproof, variable ignition; not starters converted. Dixie manufacture. Fifty only.—Griffin, 97, Bagnell Rd., Brixton, S.W.9. [3988

£6—10s. *for* 36/6

MAGNETOS

GENUINE unused Aero-Starters, which were originally made by C.A.V. and passed by the Government. They have been reconstructed with first-class parts (not C.A.V. make) by skilled men for motor-cycle use.

Single or Twin (180°) Clock or Anti-Clock, at the astounding price of

36/6 CASH WITH ORDER

Post Paid any address U.K.

SPECIAL QUOTATIONS FOR QUANTITIES

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IMMEDIATE DELIVERY.

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Morland Works

Morland Road :: Croydon

'Phone: Croydon 2329

IGNITION, LIGHTING, ETC.

RELIANCE Magneto Repairing Co. (the largest London Repair Depot), for repairs and magnetos.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a 12 months' written guarantee against all defects.

RELIANCE test every magneto after repair, under all running conditions, and as we contract for many of the largest concerns, you need have no hesitation in placing your orders with us.

RELIANCE stock spares for all makes. Special line, genuine platinum screws for all types, 12/- per pair. Magneto work of every description is carried out solely on our premises. We are, therefore, enabled to give you quicker and more efficient service at the right price.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co. for new and second-hand magnetos. See following list.

THOMSON-BENNETT singles and twins, brand new, any degree, enclosed, waterproof, variable; 55/-.

THOMSON-BENNETT, large type single or twin, enclosed, waterproof, variable, suit Harley, Indian, etc.; £3/10.

C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

E.I.C. enclosed, waterproof, variable, suitable for Triumph, B.S.A., or any Lightweight; £3.

BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern, ideal for Douglas, 2¾h.p. and 4h.p.; £4.

BOSCH D.A.L. twins, enclosed, waterproof, any degree, suitable for Indian, Harley, etc.; £4/10.

FELLOWS new magnetos always in stock, any degree for any engine; also a large selection of second-hand magnetos, all makes.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute. —Reliance Magneto Repairing Co. (1914), 283, St. John St., London, E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco, Smith, London. [9816

LUCAS Magdyno single anti (new), £10; Lucas E3 dynamo, £4; headlamp (new), £2; side, tail, accumulators, switchbox, cables, all cheap to clear.—Dalby, Baker St., Sparkhill, Birmingham. [2623

THE Central Ignition Works, 9 and 14, Loughborough Rd., Brixton, London, for all motor cycle magnetos (surplus)—Thomson-Bennett, single and twin, £2/5; M.L., singles, £3; Bosch, singles and twins, Z.E., Z.A., £3/10; E.I.C., singles, £3/5; G.A., £2/10; carriage on magnetos, 1/6; all magnetos guaranteed 1 year.—The Central Ignition Works, 9 and 14, Loughborough Rd., Brixton, London. [3887

MAGNETOS.—M-L single-cyl., clock, complete, off Rotary engines; 20/-, postage 1/3; the above, less contact breakers, 12/-, postage 1/3; 4-cyl. Dixie, complete, 25/-; new B.T.H. 6-cyl., complete, £1/10; B.T.H. 8-cyl., complete, 25/-; C.A.V. starting magnetos, complete, 18/6, postage 1/3. Carriage extra. Cash with order. Send 1½d. for list of Aero parts.—Coley, Ordnance Works, Queen Elizabeth Rd., Kingston-on-Thames. 'Phone: Kingston 365. [3380

EUSTON Ignition Co., sole representative for the Splitdorf Electrical Co.—Repairs, spares service to Splitdorf magnetos, dynamos, Dixie magnetos, etc. We have the factory, plant and experience. Official Indian electrical service station. Thomson-Bennett repairs and spares; spares and repairs to all makes of magnetos; all repairs are tested on an approved A.I.D. test bench before dispatch, and carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London. Twins, all degrees, charged accumulators, all voltages always ready. We stock everything electrical for the motorist. We give you real live service always. —Enston Ignition Co., 329, Euston Rd., N.W.1. 'Phone: Museum 5034. T.A.: Magdymo, Eusroad, London. [0263

TYRES.

BARGAIN, New Tyres.

DUNLOP extra heavy, 26×2⅝, 25/-; Dunlop heavy, 26×2½, 26×2¼, 20/-. Palmer cord heavy, Clincher De Luxe, Bates special heavy, Hutchinson passenger, Beldam, 26×2¼, 18/-. Guaranteed not perished. Free with every order, ½ dozen valve patches.—Duponchel, 133, Bd. Gambetta, Calais, France. [3655

TYRES.

A EXCEPTIONAL Offer.

BRAND New Covers.—Reflex Clipper Ideal (made by Dunlops), heavy 3-ribbed, each cover guaranteed perfect, 26×2¼, 25/-; 26×3, 27/6; 26×2½ to fit 2¼, extra heavy 4-ply, 32/6; 28×3, extra heavy 4-ply, 40/-; tubes, 26×2½, to fit 2¼ rims, 5/9; 28×3, 6/6 (made by Dunlops); postage on all above extra.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [2374

A CLEARANCE Covers, all guaranteed by us, carriage paid.—24×2¼ Hutchinson T.T., 21/-; 26×2 Hutchinson Brooklands, 17/6; 26×2 Hutchinson T.T., 23/-; 26×2¼ Avon Durolith, 25/-; 26×2¼ T.T., 3-rib, 22/6; 26×2¾ Hutchinson T.T., 23/6; 26×2½ to fit 2¼ Belgrave cable cord, 23/6; 26×2½ to fit 2¼ Hutchinson passenger, 33/-; 26×2½ Hutchinson passenger R.N.S., 30/-; 26×3 Hutchinson T.T., 27/6; 28×3 Goodyear, 47/6; 700×75 to fit 650×65 Hutchinson 3-rib, 28/-; 700×80 Burnett 3-rib, 50/-; 700×80 Stepney road grip, B. type, 60/-; tubes, strong red rubber, 24 to 28×3, 5/6; 700×80, 6/6.—Maudes', 100, Great Portland St., W.1. [4382

EMANUELS for Tyre Bargains, from manufacturers' bankrupt and surplus stocks.—Below.

24×2 Hutchinson Rubber-studded, 22/3; new tubes, 5/-.

24×2¼ Clincher De Luxe Heavy Rubber-studded, 22/3; Continental extra heavy rubber non-skid, 24/-; new tubes, 5/-.

26×2.—Continental ribbed or standard, 16/6; new tubes, 5/6.

26×2¼.—Avon and Rom Combination, 30/-; Hutchinson Brooklands R/S, 19/6; Macintosh chain tread, 28/-; Palmer cord heavy 3-ribbed, 34/9; Dunlop Magnum (pattern), 35/-; new tubes, 6/6.

26×2⅜ to fit 2¼ rim.—Dunlop retreaded, grooved, 20/6; Clincher de Luxe, extra heavy, 24/3; Hutchinson passenger, 26/-; Palmer cord heavy, 34/9; new tubes, 6/6.

26×2½.—Dunlop Magnum heavy (pattern), 35/9; Dunlop Magnum E.H. (pattern), 41/-; new tubes, 6/6.

26×2½ to fit 2¼ rim.—Emanuel's extra heavy R/S, 28/6; Continental rubber studded, 32/-; new tubes, 6/6.

26×2½.—Rom Combination, 30/-; Palmer cord 3-ribbed, 31/10; Hutchinson rubber studded or ribbed, 27/-; Macintosh chain tread, 28/-; Clincher de Luxe, E.H. rubber stud, 27/6; new tubes, 6/6.

650×65.—Emanuel's extra heavy rubber studded, 26/-; Hutchinson 3-ribbed, 32/-; Palmer cord 3-ribbed, 31/10; Burnett grooved, 30/-; Dunlop 3-ribbed, 40/-; new tubes, 6/6.

700×80 to fit 650×65 rim.—Emanuel's anti-rubber non-skids, 41/9; new tubes, 6/6.

28×2½.—Continental rubber stud, extra heavy, 30/-; new tubes, 6/6.

28×3 to fit American Rims.—Macintosh chain tread, 27/6; Bates special heavy 3-ribbed, 40/-; John Bull extra heavy rib stud, 40/-; Fisk rubber, non-skid, 40/-; Firestone rubber, non-skid, 40/-; Goodyear all-weather tread, 45/-; new tubes, 7/-.

29×3½ to fit 28×3.—Bates special heavy rubber N/S (clearance), 53/3; new tubes, 7/-.

REAL good reliable second-hand covers of well-known makes in all sizes at 10/- each, plus 1/- carriage.

PREPARED Patches, assorted, M/C sizes, 1/6 dozen. Belts, all makes, any lengths; prices on application.

H. EMANUEL and Co., Tyre Factors; Stores, 37A, Ball's Pond Rd., Dalston, N.1; Office: 27, Belgrade Rd., Stoke Newington, N.16. Tel.: Dalston 3161. [0832

CENTRAL Garage, the House for Fair Dealing, make the following special offers:—

PALMER Cord Covers, brand new, fully guaranteed, 26×2½×2¼, 35/-; 26×2½, 35/-.

GOODRICH Safety Tread Covers, fully guaranteed, 26×2¼, 27/-; 26×2½, 34/-; 650×65, 36/6; 28×3, 44/-.

AVON Covers, fully guaranteed, 26×2½ and 2⅜, 26/6; 26×2½×2¼, 28/6; 650×65, 37/-; 700×80, 42/-.

TUBES.—Small sizes, 5/6; others, 7/-.

CENTRAL Garage welcome enquiries for any of your requirements, and any cover will be sent on seven days' approval against cash, plus 1/6 postage, and with every tyre we will send, free, a portable vulcaniser.—302, London Rd., Thornton Heath. [3316

RUBBER (Scrap) Inner Tubes wanted; best price given; cash sent per return.—Tombs, 10, Penylan Rd., Cardiff. [2481

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [9293

STANLEY BELTS AND FASTENERS.

MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

A BOX OF STANLEY SPARES is a complete belt equipment outfit—the best and cheapest Insurance you can effect against belt trouble on the road. It contains

1/2 *each*

The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins

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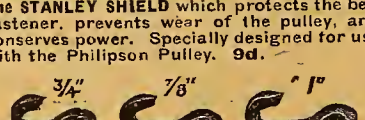
The STANLEY SPARE LINK which is the best belt length adjuster yet invented. Saves time, trouble & money. Saves the cost of a new belt

The STANLEY SHIELD which protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. **9d.**



STANLEY ADJUSTING HOOKS for adjusting the length of your belt in one second. Set of 3. 6d.
"Never be without a box of Stanley Spares."
Price 3/6 post free. Send size of belt when ordering.
The LION FASTENER, guaranteed for 5,000 miles—11d.

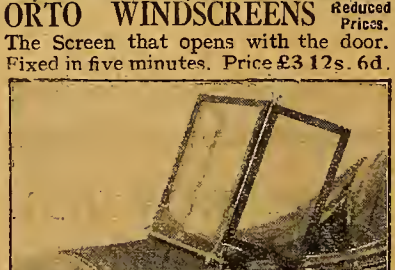
Our goods are World-renowned for their Reliability. A STANLEY FASTENER free with each belt.

BeltPunches 1/6 Adjustable Punches 2/-	Per ft.
⅝"	1 2
¾"	1/5
⅞"	1/9
1"	2/-
1¼"	2 6

Stanley Motor Belts & Fasteners
BRITISH THROUGHOUT
(STANLEY WEBB, inventor of the original Hook Belt Fastener and other Practical Belt Aids.)
32, London Road.
BROMLEY, KENT. 'Phone, Bromley 846.

ORTO WINDSCREENS Reduced Prices.

The Screen that opens with the door. Fixed in five minutes. Price £3 12s. 6d.



Ide Wings for Matchless Cycles. £2/6 each.

ATKINSON'S, 306, Uxoridge Road. Shepherd's Bush, W.
'Phone Hammersmith 140.

TYRES.

MOTOR Cycle Tyres on Easy Terms, standard makes list post free.—J. G. Graves, Ltd., Sheffield. [05

ECONOMIC Tyres.—We have the following blemish and clearance covers and tubes in stock. We ser on 7 days' approval against remittance, carriage pai passenger train.

ECONOMIC.—24×2, Clipper Ideal, 15/-; tubes, 5/ 24×2¼ (also for 2in. rims) Clincher Junior Luxe, heavy, 20/-.

ECONOMIC.—26×2 Clipper Rubberstud, 17/6; 26 2¼ Palmer heavy cord, 37/6; Firestone non-ski 28/6; tubes, 5/6.

ECONOMIC.—26×2½×2¼ Goodyear All-weathe 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redfern heavy rubberstu 27/6; Clipper Ideal, extra heavy, 35/-; tubes, 7/

ECONOMIC.—28×3 Goodyear All-weather, 47/ Goodrich Safety, 45/-; Firestone non-skid, 45/ Portage non-skid, 41/-; tubes, 6/6.

ECONOMIC.—650×65 Stepney Roadgrip, 39/6; Goo rich Safety, 38/6; Clipper, extra heavy, 32/ tubes, 6/6.

ECONOMIC.—700×80 Beldam V-grooved, 50/ Economic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warrantec 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26×2¼ 25/9.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E. (near Town Hall). 'Phone: New Cross 1393. [22

BULL'S have your size in bargain covers and tub A call on us will convince you, or 'phone, Ge rard 1347.—See Below.

26×2¼.—Palmer cord, 32/6; Beldam all-rubbe 25/-; Wood-Milne 3-ply, 22/6; Clincher Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

26×2½.—Avon Stonehenge, 27/6; Tricar, 30 Clincher rubber non-skid sidecar, 27/6; Goo year cord 5-ribbed, 40/-; tubes, 5/9.—Below.

26×2½×2¼.—Palmer cord, 36/-; Beldam 3-pl 30/-; 4-ply, 35/-; Wood-Milne 4-ply, 25/ Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

26×2⅜.—Palmer cord, 34/3; Wood-Milne key-gr 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubb 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Belda all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6. Below.

28×3.—Clincher rubber-studded sidecar, 30/ Clincher de Luxe extra heavy, 45/-; Belda 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 6/- Below.

650×65.—Palmer cord heavy, 42/6; Wood-Mil 4-ply, 37/6; 3-ply, 30/-; Goodyear cord ribbed, 42/6; tubes, 8/-.—Below.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin Lane, London, W.C.2 (next door to Aldridge's) 'Phone: Gerrard 1347. [086

TWO 28×3 Extra Heavy Dunlop Covers and Tube brand new, ordered in error; 50/- each.—40 York Rd., Wandsworth. [423

500 New Beldam Covers to clear, all sizes, 15 each, postage 1/6 extra.—Homerton Rubb Works, Brooksby's Walk, Homerton, E.9. [03

SCOTTISH readers will find it advantageous to pu chase their tyres from McArthur, Hill and C 436, Argyle St., Glasgow. Lists post free. [52

GIGANTIC purchase of Royal Dutch covers, heavie tyre in the world; 6-ply, ⅞in. thick, 650×65, 35/ 700×80, 45/-; 28×3, 38/-; all clearance goods. Durant, Bourne, Farnham. [41

TYRE Repair Specialists.—H.F. process throughou including retreading burst covers. Every kind repair to tyres and tubes in 24 hours, retreads in days.—The Motor Tyre Co., 66, High St., West Bro wich. [39

SPECIAL Bargains.—New 650×65 Dunlop hea rubber non-skid covers, 30/-; 26in.×3in. for 2½ Dunlop combinations, 40/-; 26in.×2½in. Avon Su stones, 30/-.—Murrays, 37a, Charles St., Hatton Garde Holborn. [37

26×2½ for 650×65 rim Palmer cord 2-ply, on 20/- each; Macintosh, 20/-; other makes sam price; 700×80 Clincher tubes in boxes, perfect conditio 6/- each.—Marble Arch Motor Exchange, 135, Edgwa Rd., W.2. [23

HEPPELTHWAITE'S.—700×80, 650×65, 26×2 oversize, 28/- each: 26×2⅜ and 2¼, 25/-; tub at 4/6, all well-known makes and guaranteed as usual sold and advertised at 45/—19, Wilcox Rd., Sou Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [45

MASONS.—Following guaranteed best make know not clearance in any form:—26×2½ sidec 18/6; 26×2¼ heavy fluted, 19/6; 26×2¼ 3-ply rubb non-skid, 23/6; 26×2¾ ditto, 25/-; 26×2½×2¼ 4-p ditto, 31/6; 26×2½ 4-ply ditto, 32/6; 650×65 4-p ditto, 32/-; every tyre guaranteed.—Below.

MASONS.—700×80 Palmer cord, 43/-; 28×3 Goo year A.W.T., 47/6; 26×2½×2¼ Belgrave cor 28/6; following Wood-Milne Key Grip: 28×3 hea 30/-; 700×80 heavy, 35/-; 24×2¼ heavy, 18/ 26×2¼ extra heavy, 23/6; 28×2½ (Americas) extr heavy, 30/-; approval against remittance, satisfactio guaranteed, carriage paid.—Masons, The Tyre Hous Ipswich. [09

TYRES.

LONG-DISTANCE Retreads, three-ribbed pattern, returned like new, 26in. tyres, 20/-; 28in. tyres, 25/-; burst tyres made perfect, chafed beads renoulded, tube vulcanising, butt ends fitted; best work in the country.—Melton Rubber Works, Melton Mowbray.

INCREASE the purchasing power you spend on tyres by having them retreaded at the Melton Rubber Works; there is no query, better far than clearance tyres, with their defects; send for list. [0347

700×80 Covers and Tubes. Special purchase. Compare these prices. Covers, Clincher ribbed, De Luxe, Rom, grooved light car Burnett, Grimston, Macintosh, ribbed Avon, Spencer-Moulton, Macintosh, all 40/- each. Steel-studded Macintosh, Beldam, Wood-Milne, Avon, 38/- each. Tubes: Clincher, 6/-; extra heavy Beldam, 6/6; carriage extra on all covers and tubes. Cut prices quoted for any car, lorry, or char-a-banc tyres.—Harris, 51, Upton Lane, Forest Gate, E.7. [3977

TANKS.

TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2617

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2618

TANKS for Humber, 1921 pattern, to fit 1910-19; 35/-.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [2619

TANKS Re-enamelled, makers' colours with transfers; 15/6.—Bright and Hayles, 78, Church St., Camberwell, London. [2132

TANKS renovated maker's colours from 11/-; frame forks 9/-.—De la Cour, Enamelling Works, 298, Kennington Rd., S.E. [4478

DOUGLAS pattern tanks, new, enamelled and fitted with B. and L. pump; 55/- complete.—Day, 85, Cheapside, Birmingham. [7734

COVENTRY Tankers, Ltd., makers to the principal manufacturers, petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [2620

TANKS Made or Repaired, re-enamelled, lined, transferred; handle-bars, etc., plated. Established 30 years.—Attwood's, 86, Rosebery Av., London, E.C.1. [7073

TANKS.—We undertake partition leakage, fastenings, and re-enamelling makers' colours, designs, transfers, guaranteed, six-day service.—Park Tank Works, 9a, Paradise Rd., Highbury, N.5. [4142

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry. 'Phone: 1774. [0896

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford. Manchester. Tel.: 2191 Central. [0256

TANKS.—All kinds made to order, 32/6 each, including 2 plated fillers, 2 taps. Delivery 14 days, carriage paid. Satisfaction guaranteed or money returned. Enamelling, one colour, 10/6; two colours, 17/6.—Order forms from H. Peel, The Liverpool Tank Hospital, 57 Smithdown Lane, Paddington, Liverpool. [9194

BELTS.

FT. 6in.×⅝in., 5/-; 7ft.×⅝in., 5/3; 7ft. 6in.×⅝in., 5/6; 8ft.×⅝in., 5/9; Dunlop clearance belts; carriage paid; approval.—Davies, Union St., Wednesbury. [4452

300 BRAND new surplus ¾×7ft. Wood-Milne belts, condition guaranteed, 5/9 each; 300 brand new surplus ¾×6ft. 6in. belts, made by Palmer, 5/9 each; carriage on above 9d.—Below.

MARBLE Arch Motor Exchange, 135, Edgware Rd. 'Phone: Padd. 789. [2372

ALL brand new and guaranteed Dunlop.—Round top ¾in., 1/10 ft.; ⅞in., 2/2 ft.; 1in., 2/8 ft.; 1¼in., 3/2 ft.; John Bull ¾in., 1/11 ft.; ⅞in., 2/3 ft.; 1in., 2/8 ft.; 1¼in., 3/2 ft.; any length cut. Clearance belts, 6ft. 6in.×⅞in., and ¾in., 7/6 each. Herbert Robinson, Ltd., Green St., Cambridge. [4518

BELTS.—Clincher clearance, not W.D., ¾in., 6ft. 6in., 8/2; 7ft. 6in., 8/5; ⅞in., 7ft. 6in., 9/5; 8ft., 9/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1⅛in., 8ft., 16/-; Bates' short lengths, 1in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, 1in., at 1/6 per ft.; Belt lasteners, 9d. and 1/-. Post 2d.—The Bencrottian Co., 64 and 78, Bishopsgate, E.C. [0933

CARBIDE.

CARBIDE, finest quality, 19/6 cwt., F.O.R., nearest depot; coated, 24/-, ex Bristol only, C.W.O.—Lodge and Co., Warwick Rd., Bristol. [3152

CARBIDE, highest grade only, no seconds, all ¼ meshes; 19/- cwt. drum; ex 22 depots; immediate delivery.—Elloc Cycle Works, Gedney Drove End, Wisbech. [2851

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 21/6, ½-cwt. 12/6, 28 lb. 5s, drums free. (Depots in all parts.)—Young, Importers, Misterton, Somerset. [1316

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26×1¾	**Clincher,** Rubber non-Skid	15/-
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	Ditto, ex-Heavy	21/-
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	Spencer Moulton, Sq. ribbed	18/6
	Spencer Moulton, St. Stud, ex-Heavy	24/-
	Clincher de Luxe, Heavy	23/-
	Goodrich, Safety Tread, ex-Heavy	27/-
	Michelin, Semelle Steel Stud	20/-
26×2¾	**Hutchinson,** T.T., Rubber Stud	23/-
	Clincher de Luxe, Heavy	23/-
	Palmer, Cord, Heavy	29/-
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	Clincher Dreadnought, ex-Heavy	36/-
	Hutchinson, Passenger, Rubber Stud	36/-
	Dominion, UscoRubber, non-skid, Heavy	25/6
26×2¼	**Dominion,** Corrugated, Heavy	28/6
	Hutchinson, T.T., Rubber Stud	27/6
	Hutchinson, Super Stud, ex-Strong	55/3
26×2½	**Goodrich,** Safety Tread	35/-
	Hutchinson, T.T., Rubber Stud	25/-
	Spencer Moulton, 3-ribbed, ex-Heavy	22/6
	Michelin, Fine Ribbed	19/-
	Spencer Moulton, Steel Stud	25/-
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650×65	**Goodrich,** Safety Tread, ex-Heavy	38/6
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700×80	**Clincher,** 3-ribbed, ex-Heavy	47/-
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CARBIDE, finest quality obtainable; 20/- per cwt., drums free, cash with order, free on rail, Aberdeen, Bristol, Belfast, Cardiff, Dublin, Edinburgh, Glasgow, Gloucester, Grimsby, Hull, Leeds, London, Lowestoft, Liverpool, Lincoln, Manchester, Newcastle, Preston, Port Talbot, Runcorn, Sharpness, Swansea, Yarmouth.—International Products, 77, Victoria St., Bristol. [3271

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [8403

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672. [7917

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate 3d. per word, minimum 3/-.

INSURANCE.

£3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Holborn 328. [0005

ECONOMY with Security.—Comprehensive policies from £3/10; Morgans, £6; sound companies.—A. R. Broadhurst, Buchanan Bldgs., 24, Holborn, E.C.1. [3921

A BROKER'S Business is to Quote Lowest Rates.—10h.p. Hendersons (in approved cases), £6/15. Full comprehensive policy. Others at minimum premiums.—Noble and Wilkins, Insurance Brokers, Bank Chambers, High Holborn, W.C. 'Phone: Holborn 601. Est. 50 years. [1062

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

TUITION.

HOUSE and Estate Agency, Auctioneering, etc.—Train by post for this paying profession. Start a business of your own. Prospectus free.—Agricultural Correspondence College (Dept. T), Ripon. [0389

SITUATIONS VACANT.

LOCAL Representative wanted, with or without experience.—Tynesider Pillion Seat Works, Union St., North Shields. [0907

ESTABLISHED Company manufacturing well-known Motor Cycle, requires gentleman as Assistant Managing Director. Some knowledge of the trade required. Salary. Investment, £1,000. Several months' orders in hand. Interview London.—Write Lloyd, 23, College Hill, E.C.4. [3656

SITUATIONS WANTED.

SALESMAN, with over 20 years' experience, will attend the Olympia Motor Cycle Show for one week to represent a high-class motor cycle manufacturer.—Apply, Box 3866, c/o *The Motor Cycle.* [3726

POSITION Salesman-Demonstrator or Trade Rider, age 23, Public School, University (Metallurgy), fluent French, 8 years' motorist, keen rider, ex-service, excellent references.—Ashbury, Whitecross Rd., Tideswell. [3797

AN Automobile Engineer with over 20 years' experience desires a post of part time employment in assessing for an insurance company, thoroughly conversant with the work.—Apply, Box 3867, c/o *The Motor Cycle.* [3727

FINANCIAL.—PARTNERSHIPS.

OPENING: Third Partner, Motor Garage, Cheshire; run and practical man, £200, required.—Letters, Box 3910, c/o *The Motor Cycle.* [4367

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

HOUSE to let, 7 rooms, bathroom, garage, car and furniture; £350; near Birmingham.—Box 3916, c/o *The Motor Cycle.* [4365

MOTOR Cycle and Light Car Business, main road, S.W district (London), extensive plant, big turnover, assured income, genuine; about £500, including plant, stock at valuation optional.—Box 3790, c/o *The Motor Cycle.* [3507

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole Address, Palmer's Garage, Tooting, London. [4318

WANTED.

INDIAN Front Wheel and Forks, 1914, 7-9h.p.—Sun Lane Works, Blackheath. [4642

WANTED, Ruby back wheel, heavy size and lowest.—29, Russell Rd., Tottenham. [3816

WANTED, a tricycle attachment for auto-wheel.—Cripps, 40, Bridge St., Maidenhead. [3791

WANTED, I.O.M. Rudge frame, complete; cheap.—Hill, Oak Farm, Waverton, Chester. [3760

A.C. Sociable or similar 3-wheeler; full particulars.—Palmer, Pengwithel, Llangarron, Ross. [3769

A.B.C. Sidecar, touring model, good condition; moderate price.—28, Thurlow Rd., Hampstead. [3692

WANTED, for 1922 Scott, front forks or two main members.—Harper, 605, Lord St., Southport. [3636

ROVER frame centre and tank for 3½h.p. engine.—Boyes, 36, Hillcourt Rd., East Dulwich, London. [4248

CYLINDER, complete, 90-bore, J.A.P., side valve; cheap, approval.—Shaw, 75, Cornbill, London. [3854

1915 2-stroke Calthorpe Frame, gear box pattern, sound.—Lawrence, 86, Hargwyne St., Stockwell. [3956

LIGHTWEIGHT Frame, complete, Humber preferred, also 2-speed gear box.—Taylor, Smallfield, Horley. [3693

HEAVY chain for A.C. Sociable, also driving wheel and sprocket for same.—Johnson, High St., Selsey, Sussex. [4357

DOUGLAS Sidecar, late model, good condition; cash, or exchange heavy canoelet.—Banghan, Wyre St., Colchester. [3996

2¾h.p. Douglas, 1911, pistons, crankshaft, connecting rods, complete.—Tester, 102, Palmerston Rd., Wimbledon. [3848

PREMIER parts or complete Premier motor cycles in or out of repair.—Jack Ward, 11, Radford Rd., Leamington Spa. [4255

CASH waiting; bankrupt stocks W.D. spares; send particulars.—Easterhouse Engineering Co., Bellahouston, Glasgow. [3807

OUT of order Triumph or similar make, not earlier 1911, parts missing immaterial if cheap.—Harrison, Roscraddoc, Liskeard. [3748

WANTED, Motor Cycle, less unit, suitable for gear box and Villiers engine.—G. A. Haresign, Gosberton, Risegate, Spalding. [3666

WANTED, for countershaft Triumph, pair flywheels, driving side of crank case, and incomplete S.A. 3-speed gear box.—Hole, 129, Park Lane, Wallington. [3059

OLD Man Hep will purchase gear boxes, engines, spring forks, carburetters, magnetos, and dynamos, also other parts; please state price.—19, Wilcox Rd., South Lambeth, London, S.W.8. [4537

WANTED to purchase Outright for Cash, bankrupt stocks, W.D. spares, miscellaneous spares, motor cycles, any make.—Send full particulars McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [7185

EXCHANGE.

WARD and Co. for exchanges.—Below.

ROVER and A.B.C. Light Cars at new reduced prices. £180 and £255, completely equipped, in exchange for your solo or combination and cash.—Below.

HAVE you realised how little cash may be necessary with your outfit? Deferred payments if required. Distance no object. Send full particulars of your machine, we do the rest.—Below.

WARD and Co., 51, Upper Richmond Rd., East Putney. 'Phone: Putney 2754. [4561

4-SEATER 12h.p. Alldays (see Car Column).—63, Solon Rd., Brixton. [4694

EXCHANGE Indian 5-6h.p., or sell £36/10.—83, Balham Park Rd., S.W. [3895

EXCHANGE Saxon 2-seater for motor cycle, or sell.—Elcock, Penywern, Neath. [4188

8h.p. Campion (see advt.) for good 3½h.p. solo machine.—Malvern Garage. [3891

EXCHANGE James Combination for lightweight or furniture.—See James column. [4174

4h.p. Ivy-Precision for Douglas, or sell £35.—Arthur, 28, Kent Rd., Blackpool. [4075

EXCHANGE 1922 Rover, 2-seater, for Lightweight and cash.—1, Othello St., Liverpool. [3649

1921 Blackburne 4h.p., equipped, unscratched, Norton similar.—27, Flaxton Rd., Plumstead. [4286

EXCHANGE 3½h.p. 3-speed New Hudson and cash for Scott.—170, Channing St., Sheffield. [3892

TRIUMPH Clutch Wheel for plain wheel and cash.—Glebe Farm, Streat, Plumpton, Sussex. [3658

P. and M. Combination for Ner-a-Car and £10; Finchley.—Box 3913, c/o *The Motor Cycle*. [4362

SPORTS Ariel, purchased April; exchange or cash offer wanted.—82, Caledonian Rd., London. [3957

2¾ DOUGLAS CLUTCHES

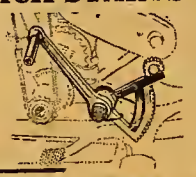
£2 - 5 - 0

Suitable for 2¾ h.p. W.D. machines prior to 1920. H.B. Control. Easily fitted in place of gear chain sprocket.

Fitted free of charge at our Works while waiting.

IMPROVED KICK-STARTS

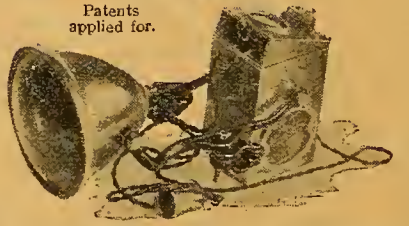
P. & M. 32/6 complete. Fitted without alteration.



Electric Lighting Sets

£2 - 12 - 0

Patents applied for.



6in. Head Lamp, 4-volt. Accumulator, Tail Lamp, Watch and Licence Holder. Polished Aluminium finish.

Motor Cycle Accessories Co.,
43a, NEW CROSS ROAD, S.E.

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WE CARRY A LARGE STOCK AND CAN GIVE IMMEDIATE DELIVERY

WINCYCLE COMPANY LTD.,
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A few doors from Holborn Tube Station.

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FOR INJECTING GREASE AND OIL INTO GEAR BOXES, CRANK CASES, &c.
MADE BY
ARTHUR R. PRICE (Aston Manor) Ltd.,
VEVO WORKS, PARK LANE, ASTON, B'HAM.

EXCHANGE.

8h.p. Campion-Jap (see advert.) and cash, for Mo gan.—Malvern Rd. Garage, Thornton Heath. [41

EXCHANGE your present machine for a new o or motor cycle at Kays, 8, Bond St., Ealing. [507

FORD Van 1917, overhauled, guaranteed, for cor bination; sell.—106, Chatham St., Walworth S.E. [457

ENFIELD Combination (see Enfield); exchange wit cash for light car.—2, Barfield Rd., Leytonstone E.11. [420

EXCHANGE good twin J.A.P. coachbuilt combina tion for 5-seater car.—Box 3917, c/o *The Motor Cycle*. [436

EXCHANGE 16-20h.p. 4-cyl. Wolseley-Siddele chassis for 3½h.p. Triumph.—254, Earlsfield Rd S.W.18. [375

EXCHANGE 15-cwt. Fiat motor van for combinatio or quick sale £65; good order.—186, Queen's Rd Wimbledon. [362

1914 Trump-Jap Combination, 3-speed hub; cash i 1920 4h.p. Triumph similar.—131, Bonchur Rd., Brighton. [422

1921 8h.p. Royal Enfield Combination, fully equippe for good 2-seater, cash adjustment.—Coffin, Ho well, Sherborne. [425

1921 7-9h.p. Indian Combination, discs, fast, smart exchange lower power.—181, Newton Rd Burton-on-Trent. [410

10h.p. Buckingham, new 3-seater, for hot solo o combination, with cash.—Moss, 20, Regent St Leamington Spa. [406

ROVER Combination 3½h.p., countershaft; e change 2¾h.p. Douglas or similar.—187, King Cross Rd., London. [401

EXCHANGE Grand Prix Morgan 10h.p. for lat Triumph and sidecar.—Salmon, The Terrace Wokingham, Berks. [424

EXCHANGE Morgan De Luxe, value £85, f Clyno, A.J.S., Matchless combination.—125, Mos ley Rd., Darlaston. [411

3½h.p. Motor Cycle, mechanically perfect, for cycl and cash; or sell £18.—9, Riversley Rd., Nun eaton, Warwickshire. [435

3h.p. Fafnir (advertised) for good underslung sidecar or dynamo lighting for Triumph.—Clark, 4 Harders Rd., S.E.15. [427

JAMES 3½h.p., clutch, interchangeable wheels, fo 5-6h.p. F.N. with gears.—22, Clapham Rd., Ken nington Gate, S.W.9. [401

NEARLY new 3½in. Drummond treadle lathe, com plete, for lightweight, Douglas preferred.—10 Malvern Rd., N.W.6. [432

1914 4h.p. Triumph, 3-speed, excellent condition cash, for 1917-18 Triumph; sell £35.—Round ing, Lowthorpe, Yorks. [387

EXCHANGE 1918 Royal Enfield Combination, fin order, for light car.—1, Springfield Par Crescent, Catford, S.E.6. [361

F.O.C.H., the exchange specialists; best price allowed; easy payments arranged.—5, Heath St Hampstead (near Tube). [386

GIVE £40 and 1915 3-speed Douglas, fine con dition, for good 8h.p. combination.—Walton Dawson Square, Burnley. [371

EXCHANGE 18h.p. Humber Lorry, tipping, fo modern combination or powerful solo.—Dimbleb Ashover, nr. Chesterfield. [371

HARLEY Combination, 50 guineas; sidecar, enamel and plate unsoiled. £85; lower power part.—12 Sutherland Rd., Croydon. [440

1918 Douglas Combination 4h.p., fully equipped any trial; £55; or lightweight, cash.—46, Ve non Gardens, Seven Kings. [400

2-SEATER 8.6h.p., water-cooled, 4-cyl. engine, goo condition, for twin sidecar combination.—4 Clovelly Rd., Hornsey, N.8. [456

EXCHANGES.—See Ariel, Hobart, James, Scot and miscellaneous columns.—Kents, 417, Lord St Southport. 'Phone: 1273. [427

MORGAN Wanted for A.J.S. Combination, full equipped, excellent condition, tax paid; £85.— 73, Sunny Gardens, Hendon. [391

1920 4h.p. Harley, 3 speeds, clutch, kick-start, fo lightweight and cash; sell £65.—198, King St Hammersmith. 'Phone: 2474. [429

NORTON Big 4 1920 Combination, exchange for stroke lightweight, cash adjustment, photograp free.—Fred Spalding, Chelmsford. [428

1921 Royal Ruby Combination for solo Triumph Norton, Sunbeam, or similar. See Royal Ruby —Elm Cottage, Goring-on-Thames. [394

1¾h.p. Engine, dry battery coil and carburette what offers in exchange, or sell £4; suit pus bike.—Redding, New Ground, Tring. [376

2-SEATER Unic, 12h.p., convertible body, perfec exchange motor cycle, value £50.—Broadhurs 887, Lea Bridge Rd., Walthamstow. [39

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
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BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Cheaper Petrol.

ALTHOUGH the reduction in the price of petrol has been made at the end of the summer, during which period, naturally, more motor cycling is done than in the other seasons of the year, it is none the less welcome. A reduction of sixpence per gallon may not appear a great deal to the owner of the most economical type of motor vehicle—the motor cycle—but had the change in price been a rise instead of a fall there would have been a great outcry.

When one obtains 100 m.p.g., fuel costs, even at two shillings and sixpence per gallon, are extremely low, and for this reason, perhaps, there are many motor cyclists who are apathetic concerning the amount saved. The reduction, after all, only means the saving of a shilling on a hundred-mile outing on a big twin outfit. Nevertheless, if the owner of such a machine covers 5,000 miles in a year the saving is approximately the price of a new outer cover or free petrol for 1,000 miles on the basis of the old price. The lightweight owner who obtains 100 m.p.g. saves 25s. over a mileage of 5,000. Thus he also would gain the equivalent of free fuel for 1,000 miles. That is what the 20% price reduction means. A further drop in price by the same amount would bring the cost of fuel back to the pre-war figure. Considering the increased cost of every commodity since 1914, two shillings per gallon may be regarded as a very fair price at the present time.

Whether fuel prices will eventually fall to the 1914 level or below it is a moot point. Increase in the use and production of any commodity usually has the effect of reducing price, but, as in all other cases, price depends upon supply and demand. At the present time, it is obvious, supply exceeds demand, and this position confounds the prophets who told us that the wells were running dry and that it was inevitable that prices would rise instead of fall.

This reduction in the price of petrol must affect every motorist, whether he uses a powerful car or a miniature motor cycle. The saving is proportionate to the size of the engine and the number of miles run, which brings to mind the fact that the present system of taxation is far from ideal, since the owner of the smallest lightweight who runs it for 1,000 miles per annum contributes the same as his contemporary who runs a machine which may have an engine three times larger and which may cover 10,000 miles in the year. A tax on petrol instead of a fixed sum per machine would be equitable to owners of all types of vehicles.

The Judges on the Six Days Trials.

THE judges' report on the Six Days Trials is in many ways a most useful document, but somehow it fails to help the would-be buyers of a motor cycle as much as it might.

Naturally, since the Trials were, and are, intended to improve design, the report must largely be addressed to the manufacturer. But surely it is also the intention of the A.C.U. to help the man-in-the-street in the choice of his machine? If so, a little more outspoken comment on the performances, good, bad, or indifferent, of various makes in the event would be much more valuable than assertions that motor cycles in general have improved or need improvement. Even a close study of the tabulated results does not give this information.

In other words, instead of listing the days of the week on which the retirements occurred, why not give the causes thereof? And instead of the totals of marks lost under the condition heading, why not the exact reasons?

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

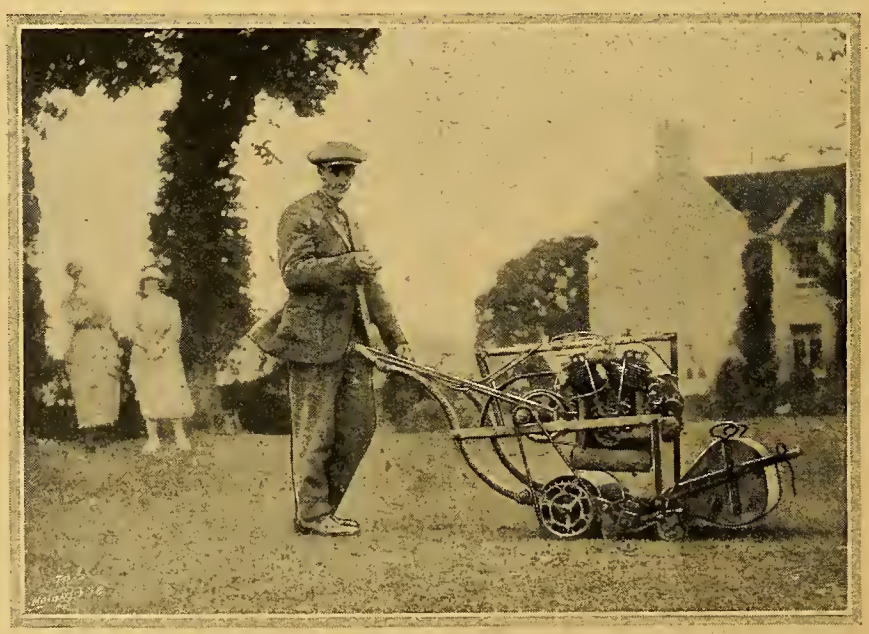
BY "IXION"

A Kindly Thought.

OF the making of gadgets there is no end. Out of a letter in this morning's mail dropped a neat little wrist strap of dove-coloured leather, complete with transparent pocket. A Leicester reader is marketing it to prevent our getting pinched for not having driving licences with us when we change out of our navy blue office suits to the loud checks in which we dazzle maidens of an evening. His kindly thought has quite missed fire, so far as I am concerned. *Inprimis*, in these poverty-stricken days I only run to one suit, which is worn to destruction, so the emergency which he envisages never arises. Secondly, my local authority imposes a licence card the size of a paving stone, which I couldn't possibly wear on my wrist.

Cone or Ring?

I HAVE just been reading a treatise on valve grinding by an expert, and notice that he insists on two principal points. The first is that it is a mistake to rest content with a mere "ring" contact, as shown by a bright line all round the valve head; the grinder should aim at a "cone contact," the entire facial area of the valve being a gastight fit with the seating. The second point is that it is a blunder to smear a second dose of abrasive on the valve until by frequent oscillations and liftings the whole of the first dose has been ground out, and the valve has become so dry that it will even squeak. The aforesaid expert considers that most amateurs apply abrasive far too freely, and that the abrasive gets squeezed up towards the top of the valve and seating, with the result that at the end of the job the face of the valve is no longer a straight line, as viewed in cross section. Oddly enough, he lays no stress on a crime which many owners commit every time they touch a valve—that of leaving a lot of abrasive powder in the valve chest. What a lucky thing it is that *inlet* valves so seldom need grinding!



THUS HAVE THE MIGHTY FALLEN! Those of our readers who recall the "Blue Devil" racer ridden in competitions some years ago by Mrs. Lord, nee Miss Muriel Hind, will be interested in this photograph showing the latest duties of the famous Rex engine. Mr. R. Lord, also an old Rex rider, is at the tiller of the home-built lawn-mower.

The Jaguar.

ON September 14th we described the fourteen-cylinder radial air-cooled engine, designed by Armstrong Siddeley for the Air Ministry. Five years have elapsed since I saw the original edition of this engine in its rough stage, and goodness only knows how much experimental work had already been expended on it. Contrast this meticulous care and patient research with the happy-go-lucky methods of some lesser engineers, who think of an engine in August and market it in November. Of course, a 360 h.p. air-cooled engine is not merely a modification of an existing unit, and demands much more care than any new motor cycle engine. I believe this engine started with a single-cylinder unit, and that part of its development consisted in taking the temperatures of almost every item in the engine. Accessibility is always a difficulty with

Occasional Comments.—

power units of this type, and one form of mounting it in a fuselage consists of a hinged bulkhead, which opens forwards like a cupboard door, bringing the engine with it, so that the rear is as get-at-able as the front.

Driving for Silence.

I HAVE never seen any public emphasis laid on the fact that a motor cycle is far more silent in the hands of a good driver than the same machine would be when handled either by a clumsy duffer or by a demonstrative knut. At present I am chiefly riding a B. and S. Beardmore and a four-valve Triumph. The former is a very quiet machine, but it would strike my neighbours as very noisy if I let the engine run too fast in neutral, if I used the lower gears unnecessarily near houses, revved it hard on first or second gear, or opened its rather spitty release valve when shutting the throttle. Any average driver should be able to prevent this machine from being a nuisance to anybody. By contrast, the four-valve Triumph is capable of a full-throated roar when opened out, and asks for quite delicate lever manipulation if it is to be kept on top gear in traffic or round sharp bends. A thoughtless fool would display no self-restraint with this engine in streets and villages. If forced to come off top gear at any momentary emergency, he would smash the throttle wide open on second, yank up the road with a thunderous bellow, snick in top gear again, and repeat the performance at the next tram or the ensuing twist in the lane, as the case might be. He would get pinched sooner or later, and the usual correspondence in the Press would begin. The A.C.U. and the famous audiometer would probably be called in, and the machine might get acquitted of noisiness after a demonstration during which it would be properly handled. But a mannerly rider can easily take it through any town or village without causing the most sour-faced policeman to bristle. If the present campaign for more silent motor cycles induces the thoughtless type of driver to keep his exhaust as mellow as possible near houses it will do good.

Manners Maketh Man.

A HARDY youngster without a nerve in his make-up can easily fail to realise how trying quite a moderate noise may be to others. For example, near Benzole Villa there is a narrow neck in a village street. On either side of the 14ft. road cottage doors open direct into the street. High walls on either flank convert the bottle neck into a regular soundbox, and there is a cellar beneath the road. Every time a knut with overlap valve timing, stovepipe exhaust, and Chubb brand of compression passes by, the row really asks for gunwads; it reminds one of being in a battleship turret when a pair of 16in. guns are loosing off on full charge. In the daytime the uproar may not irritate the cottagers on either side very particularly. But when the knut is going home towards midnight, and paterfamilias, who may be a cowman due at work by 5 a.m., is trying to sleep!

A gentleman always keeps his engine noise down to the absolute minimum when he is passing a bit of road calculated to magnify his exhaust, for he never knows what unfortunate suffering he may cause. We motor cyclists are a healthy crowd, but we ought to realise that there are physical conditions which make real noise hurt as much as a blow. My own idea on the vexed silence question is that I don't mind how much noise a motor cycle can make on occasions, but the public have a right to insist that every machine should be capable of quiet running, and should be handled with courtesy and common sense.

IN THE SOLITUDE OF THE SCOTTISH HILLS. A Scottish tour in autumn has a charm of its own to the lover of the open. On account of the wind-swept nature of the roads an under-powered machine is inadvisable, for gales may sometimes be as difficult as gradients. Mr. H. Mortimer Batten, the well-known writer of nature stories, gathering local colour on his Beardmore near Dufftown.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

TENDENCIES OF DESIGN IN FRANCE.

Accidental Conditions and Apathy of Capital Checking Development. Concentration upon Miniature Machines and Motorised Bicycles.

FRANCE is quite as progressive as any other nation so far as many things are concerned, but visitors to the seventeenth annual Automobile Salon in Paris, which opened its doors yesterday, are likely to come away with the impression that the motor cycle industry lags behind. At the same time, there is no lack of originality in details of construction and assembly.

Those, however, who penetrate as far as the annexe at Les Invalides, in which all the motor cycle exhibits are being housed this year, will see that French constructors have allowed themselves to be outclassed this year by all the other principal nations in the things that matter.

England has led the world now for some time in motor cycle manufacture, and the French are the first to admit it; but now also Italy shows more enterprise and promise in this field, with the Bianchi and Garelli machines, and high-powered American machines are very popular in France.

Ultra-Lightweights.

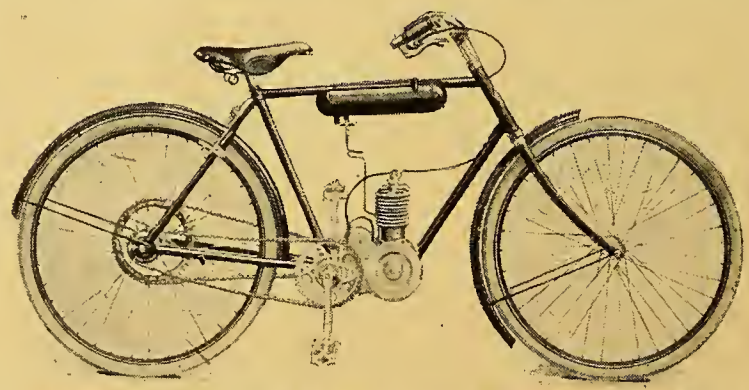
Before examining the causes of the present state of affairs, it will be well to review briefly the present tendencies in French design. Almost all the energy, the ingenuity, and capital available are directed towards the production of lightweight and ultra-lightweight machines and motor attachments for pedal bicycles. Indeed, the dividing line between the ultra-lightweight and the motor-assisted bicycle is hard to lay down definitely.

The year 1923 will probably see a considerable increase in the numbers of machines which are styled "Bicyclettes a moteur," which weigh about 70lb. and cost something under £30. They are fitted with diminutive single-cylinder two-stroke engines, chain drive to countershaft, and final transmission either by belt or chain. Other features common to most representatives of this class are arrangements for detaching the tank quickly and easily, and the provision of a spring fork generally on the same principle as the original Triumph design. The frame, saddle, handle-bars, mudguarding, brake work, and so forth, are all in the push-bicycle class, as are also the tyres. The object of making the petrol tank easily detachable is to enable the machine to travel by rail as passenger's luggage, since apparently the French railways will only accept it in this way if it is thus obviously innocent of petrol; also the limit of weight imposed by the railways in this category is 30 kilogrammes (66lb.).

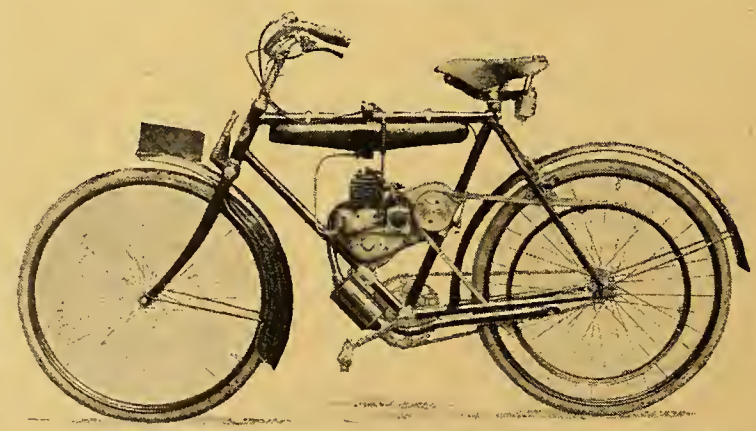
Alcyon, Griffon, and Clement are amongst the best-known representatives of this class which conform to the particulars given above, and these firms are understood to be laying themselves out for a considerable production next year.

An Intermediate Class.

Next in order of importance in the French industry comes the medium lightweight machine generally fitted with a single-cylinder two-stroke engine approximating to the British 250 c.c. and 350 c.c. types. They have two-speed gear and chain-cum-belt or all-chain transmission. Two-stroke machines of this type have certainly gained in popularity in the last year or so. The example has been set by England, and several of them are more or less faithful copies of British designs. The Terrot, the Magnat-Debon, and the Soyer are representative examples of this class, the first-named being, however, a machine which shows considerable originality in its general layout, and which has proved particularly successful in the hands of the general public during the past season.



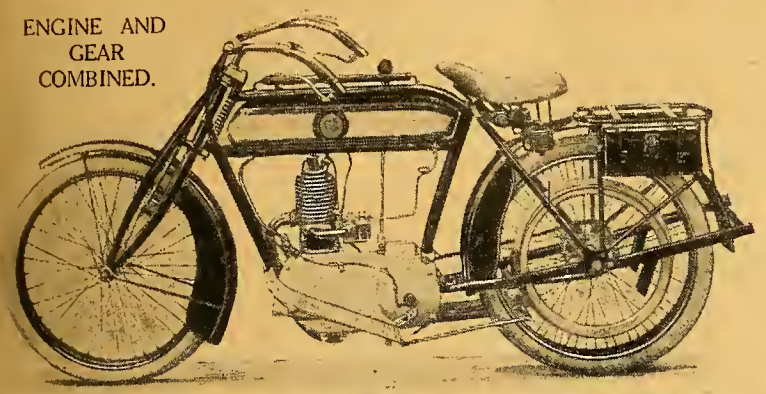
Standard motor cycle practice in engine location and transmission is followed in the Alcyon lightweight.



Another effort from the same works—a belt-driven two-stroke called the Labor.

The 65 mm. × 80 mm. two-stroke Alcyon with Ballot engine-gear unit and two-speed gear box is a somewhat larger and more substantial solo mount than those mentioned above, but, broadly speaking, this class represents the French trade's reply to the demand for a touring solo mount. The intermediate type of machine, the single or twin of

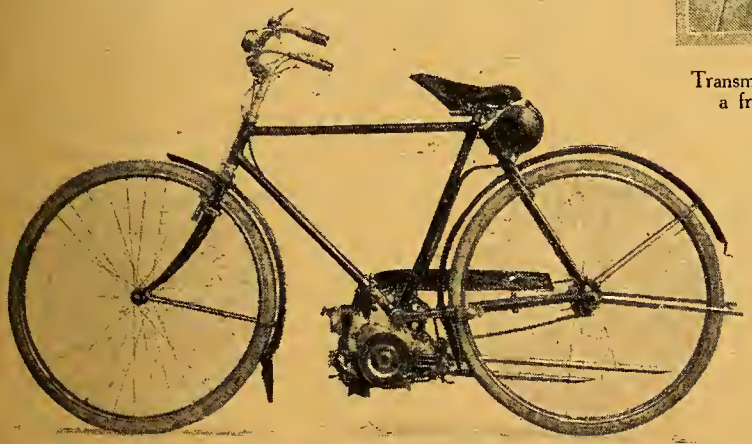
ENGINE AND GEAR COMBINED.



Unit construction of engine and three-speed gear box is a feature of the E.B. two-stroke lightweight.

500/600 c.c. capacity, has been sadly neglected by French manufacturers, although there is one newcomer in this class, the 500 c.c. single-cylinder Gnome le Rhone. The high-powered class also has not received as much serious attention as might have been expected, considering its continued popularity in England and America, and considering also the nature of French roads, which are such as to render long-distance touring on ultra-lightweight machines far from ideal.

The René Gillet, the Orial with M.A.G. engine, and the Bleriot are representative of this class, though the last-named firm, unfortunately, has decided at the last moment not to show at the Salon, owing to excessive pressure of aeronautical work which one fears may be due to the somewhat troubled political situation with



On the Moachon-Edmond a tiny flat twin four-stroke engine is slung under the bottom bracket of what appears to be an ordinary pedal cycle.

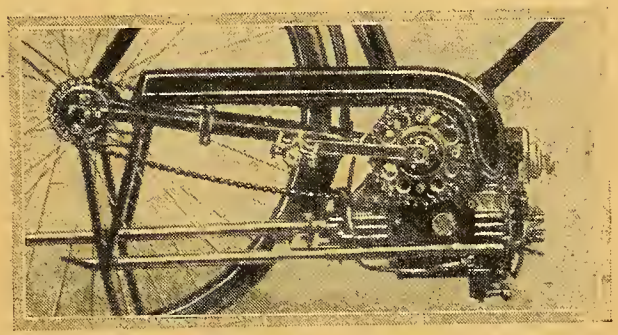
its wars and rumours of wars. Its absence will be specially regretted on account of the fact that the 750 c.c. big twin side-by-side two-stroke sidecar machine described last week was to have been introduced. The side-by-side twin four-stroke Bleriot has been improved in detail, and a sports model with overhead valves has been designed and built by the firm.

A Diminutive Flat-Twin.

Numerous motor attachments for fitting to ordinary pedal bicycles are made in France at prices ranging from 400 to 800 francs. Those which are attached over the front wheel strike the observer as being somewhat unpractical both as regards their effect on balance and steering, and on the structural strength of the bicycle. A very ingenious example was, however, recently brought to our notice hailing from a small workshop at Aix-les-Bains, in which a Lilliputian flat twin is clipped to the bottom bracket and drives by means of a gear wheel bolted to and concentric with the ordinary pedalling chain wheel. In this case the weight and centre of gravity are well disposed.

Capital Not Interested in Motor Cycles.

What, then, are the factors which have placed the French motor bicycle trade in its present inferior position and have led it to concentrate on lightweight and ultra-lightweight machines? A considerable experience of France and the French leads one to reply that they are lack of interest on the part

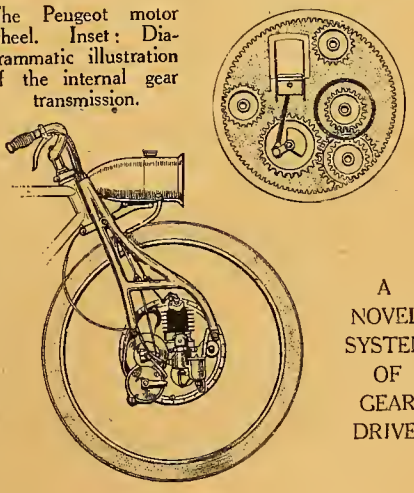


Transmission in the M.E. is through the ordinary pedalling chain, a free-wheel being fitted in the bottom bracket sprocket.

of business men with large capital at their disposal, and the fact that the Frenchmen who could undertake serious motor cycle manufacture are not and never can be practical motor cyclists themselves; moreover, the average Frenchman who wishes to take a companion with him on his excursions does not appreciate the sidecar outfit at its proper value. He prefers any sort of contrivance on four wheels which, with the aid of a fertile imagination, he can call a car.

On the other hand, there is no

The Peugeot motor wheel. Inset: Diagrammatic illustration of the internal gear transmission.



A NOVEL SYSTEM OF GEAR DRIVE.

Tendencies of Design in France.—
lack of keenness amongst young Frenchmen, and there is no lack of designing talent, but designers and inventors, in France as elsewhere, are unable to realise their ideals commercially without the support of capital. It is certain that there is a rich reward awaiting the company which first tackles the problem of motor cycle construction on serious and sound lines in France and with large capital. One manufacturer stated to our representative that he supposed that labour was cheaper in England than in France, since, in spite of the rate of exchange and the import duty, a certain well-known British engine manufacturer could put small engines into France at least as cheaply as they themselves could make them.

Where Britain Scores.

The cost of living, and therefore also that of labour, are quite as high in England as they are across the Channel, and the statement in question redounded entirely to the credit of the British manufacturer, whose methods and organisation were superior.

Taxation is comparatively very much in favour of the French manufacturer, being at the rate of only 20 francs per annum for an ordinary motor bicycle, and 10 francs for an ultra-lightweight; and, finally, road conditions are an important factor in the case. The roads are worse than in England, but not nearly so much worse as is generally supposed. They are, by their straight, well-graded nature, suited to sustained high speed with high-powered, efficiently sprung machines, and yet the French trade does not tend towards the construction of these types. The development of very light machines which, though quite unsuitable for serious long-distance touring on French roads, can be taken about by rail and kept conveniently upstairs in flats in which so many French town-dwellers live, appears to be a side issue or backwater in relation to the main problem; and, after studying the question, one is left with the impression that the French will wake up presently and take the place in the motor cycle world which should be theirs by reason of their early pioneer work and their mechanical genius.

KNOCKING.

Detonation of Un-ignited Gases which sets up Vibrations in the Cylinder Wall.

THE puzzling phenomenon popularly termed knocking has lately been the subject of careful research, and several conclusions are now generally accepted as proved.

In the first place, the particular type of knocking which is most difficult to explain has nothing to do with loose bearings or mechanical defects. Experiments go to show that the sound is produced by vibrations of the cylinder wall, which are set up in the following manner:

The burning part of the charge expands and drives before it the as yet un-ignited portion, thus compressing it and rendering it liable to detonation. When the unburned portion is in this state, it is suddenly ignited either by auto-ignition or by the burning portion, and does not explode at a comparatively slow rate of burning, but detonates instantaneously, thus giving the containing vessel—the cylinder head and piston top—a violent blow instead of a push. It is easy to understand that this sets up rapid pressure oscillations, as the force of the detonation evens out through the still burning portion of the charge which was first ignited. This in turn causes the vibration of the cylinder wall which produces the characteristic knocking noise. These pressure oscillations are clearly shown on the indicator diagram of a knocking engine, and seem to be in the neighbourhood of 800-900 vibrations per second—which is approximately in the middle of the audible range.

Actual indicator diagram of a badly knocking engine running at 1,080 r.p.m. In this case the compression ratio was 4·5 to 1 and the spark advance 30°.

Apparently the very high compression of the unburnt portion of the charge and its consequent detonation is the predominating factor in knocking.

There appear to be three ways of preventing it:—

(1) Avoid compressing the unburned part of the charge to the point of auto-ignition. It is well known that the lower the compression ratio the less liable an engine is to knock, other things being equal.

(2) Retard the ignition. In this case, the detonation will not take place until the piston is travelling downward, and thus rapidly increasing the volume of the combustion space. If the ignition is timed late enough, detonation will not take place, as the increase in volume will be early enough to prevent the pressure rising to detonation level. Loss of power will, of course, result.

(3) Use multiple spark plugs. In this case the effect seems to be that the combustion waves impinge upon each other. By this means the auto-ignition of the remaining unburnt charge is by no means avoided, but the force of the detonation is cushioned by the body of gas between the exploding core and the cylinder wall. The explosion wave, when it hits the wall, is both damped and distributed so as not to give rise to local deflections and vibrations.

Indestructible Oil Film.

It is practically certain that knocking has nothing to do with metallic contact between gudgeon pin and bush, *i.e.*, destruction of the oil film. It has been shown that a film only two or three molecules thick, or, say, about $\frac{1}{40000000}$ of an inch, is capable of acting as a lubricant, and lubrication should, therefore, be perfect with a film $\frac{1}{80000}$ in. thick. The corresponding hydraulic pressure developed would then be some 90 tons to the square inch—which pressure is, needless to say, never attained in a motor cycle engine. A good lubricating oil seems to weld itself to a metallic surface, and no attainable degree of pressure is capable of destroying it.

G. T. C.

SILENCE FIRST.

New Poppe and Packman Machine called "The Silent Three." A serious attempt to Eliminate Noise and to Provide Protection.

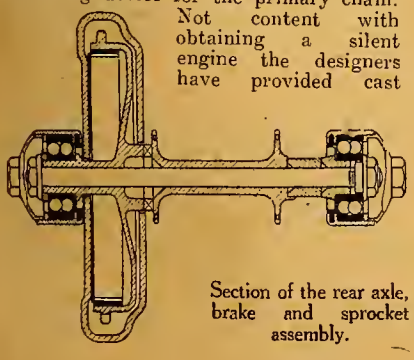
IF the noise which undoubtedly is produced by a number of existing motor cycles could be reduced, and a really silent machine manufactured and sold to the public at a reasonable price, there is no doubt whatever that there would be a considerable addition to the ranks of motor cyclists. With this object in view Messrs. Packman and Poppe have produced their new machine, which is to be known as "The Silent Three."

A 350 c.c. Barr and Stroud engine is employed as the power unit, and as is well known, the absence of poppet valves renders it particularly free from mechanical noise, while its power and reliability have already been proved.. In addition, special precautions have been taken to render the exhaust as quiet as possible, and we may state from experience with the preliminary experimental machine, that the designers have already met with considerable success, though the latest model, which will be exhibited at Olympia, will have further improvements in the silencing arrangements. First of all, the exhaust is led to a large aluminium expansion box, thence to a second sheet-metal chamber which has an internal division, and carefully designed inlets and exits.

To the engine is attached, through special plates, a three-speed Sturmey-Archer gear box with clutch, kick starter, and shock absorber, the whole forming a unit which is suitably mounted in the duplex main frame.

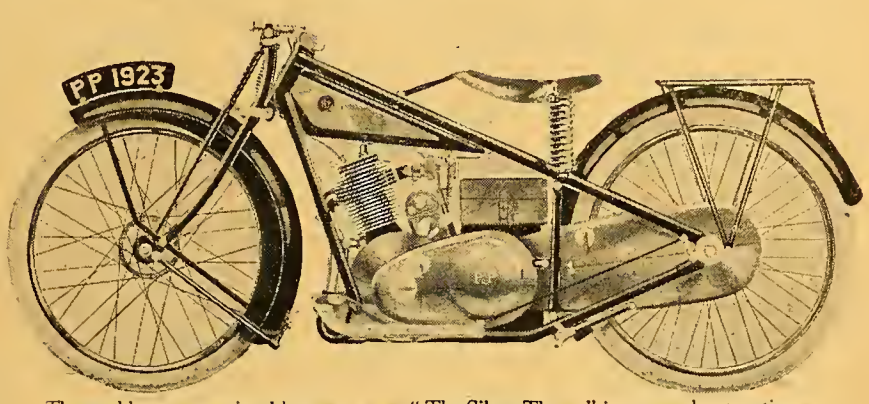
A Revolving Rear Axle.

The rear spindle is carried in double row self-aligning ball bearings, permanently housed in the rear frame lugs, with an expanding band brake fitted in the rear sprocket, the rear wheel being quickly detachable by removing the spindle and a short distance piece. To enable the wheel to be more simply erected the distance piece is located by a semi-circular boss, allowing the knock-out spindle to be pushed through with the greatest of ease. Rear chain adjustment is gained by sliding the engine and gear unit bodily forwards, incidentally obviating the necessity for adjusting the rear brake. In addition, the distance between the gear box and engine is also capable of extension so as to provide a tensioning device for the primary chain.



Section of the rear axle, brake and sprocket assembly.

Not content with obtaining a silent engine the designers have provided cast aluminium chain cases which entirely enclose both chains, so that the transmission by running in oil shall be sweet and silent in action. The outside flywheel is also encased in an aluminium cover.



Thoroughly unconventional in many ways, "The Silent Three" is extremely attractive in appearance. A complete cover for the engine will be fitted.

Mechanical Lubrication.

Above the gear box lies an oil tank of considerable capacity, from which oil is fed to the engine by a Best mechanical pump; no sight feed is fitted, since the pump has been found to be perfectly reliable. On the top of the oil tank is a tool box, in the base of which are two nuts, which must be slackened to adjust the primary chain. Since, however, the tool box must necessarily be opened for this process, the unorthodox position imposes no hardship on the owner. Both gear box suspension bolts pass through special tubes in the oil tank, and the whole unit is thus rigidly clipped together. (Provision is, of course, made for the prevention of "pinching" the tank.)

The whole machine bristles with novel points. For instance, the steering head is mounted in special cup and cone races, designed to take radial loading as well as thrust. The handle-bars are mounted in the head lug and fork pivot, which fit on a splined head tube, the outer diameter of the splines being screwed. Thus a single large blind-ended nut is sufficient for the adjustment, and this in turn is locked by a spring ring, the end of which passes through a hole to the inside of the nut, and drops into one of the spline grooves.

Duplex Frame Construction.

From the head the duplex frame tubes pass direct to the rear spindle; further duplex tubes drop behind the mudguard and form a cradle for the engine and gear, thence joining the rear spindle supporting lug. Two additional tubes corresponding to the normal seat tube join the members already mentioned

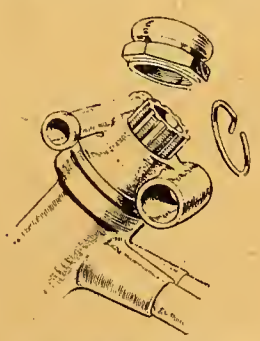
Brampton Biflex forks are employed, and the saddle, which is pivoted well forward of the peak, is suspended on particularly long coil springs at the rear, an important feature being that it is well in front of the rear wheel, and thus provides additional comfort. $26 \times 2\frac{1}{2} \times 2\frac{1}{4}$in. tyres are fitted, and the mudguards, which are 6in. wide at the rear, and $4\frac{3}{4}$in. in front, have a full $1\frac{1}{2}$in. clearance from the tyres. Further, an internal expanding front wheel brake is employed.

The engine and gear unit are enclosed by quickly detachable side shields which drop from the tank to the large aluminium footplates. These footplates are rubber covered, and are specially formed at the front end so as to fit the leg shields, which, in addition, form air scoops for deflecting the draught over the slightly inclined engine.

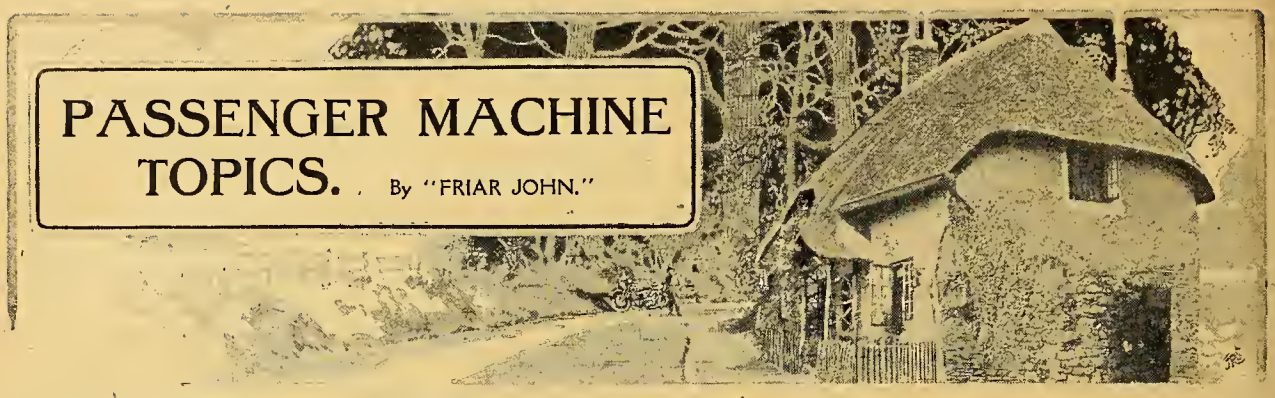
The gear-striking lever is mounted on the box in such a manner that adjustment of the chain does not upset the striking arrangements.

A front wheel stand is fitted, and the rear stand is of the spring up type, being carried under the chain stays. It should be added that there are no clip joints employed throughout this machine, even the lamp bracket lugs being brazed in position.

The manufacturers, whose address is The Brenda Works, Earlsdon, Coventry, have made a very serious effort to produce a type of vehicle which is greatly needed.



Splined steering column with nut and locking ring.



PASSENGER MACHINE TOPICS.

By "FRIAR JOHN."

Low-Powered Sidecar Outfits. The Sidecar Motor Coach. Further Protection for Passengers.

A FEATURE of the forthcoming exhibition at Olympia will, I think, be the number and diversity of the lightweight outfits offered at low prices. By this I do not mean machines capable only of taking a loaded outfit along trunk roads, but 350 c.c. sidecars that will carry luggage and passenger across the Welsh or Scottish hills with ease. We know well by now what these little fellows of 350 c.c. or so can do—what they have done in speed and reliability trials. We shall hear still more next year of the 350 and 400 c.c. engine, and more than ever the year after. Low cost and economical upkeep will demand for the low-powered outfit increasing attention, both from the public and manufacturer.

A KEEN sidecarist in Accra, British West Africa, wrote some time ago for advice regarding the purchase of an outfit suitable for himself and wife and five children. My correspondent, whose sense of humour is sound, says that a friend suggests something in the style of a small char-à-bancs as being most suitable. That may be so, he says, but he wants a sidecar, preferring it to a char-à-bancs. But what struck me most in the letter was a statement saying that an eminent British firm had refused to vary their specification to suit my correspondent's requirements. Mind you, the order would not be for much less than £220. Such is enterprise. Dunhill's, Ltd., however, are solving the problem of sidecar accommodation for him. So far so good; but he finishes up with the following staggering poser: "What do you think would be the most suitable power for this sidecar (seven up, remember), taking into consideration pulling power, reliability, strength, and economy? I give below engines or machines from which I want to choose: J.A.P., M.A.G., Anzani, Blackburne, Clyno, Royal Ruby, Harley-Davidson, Indian, Henderson." A poser certainly!

REVERTING to the policy of firms adhering hard and fast to a particular specification. I wonder if it is sheer inertia that dictates such arbitrary dealings, can it be that firms are too busy to depart from the catalogue, or does it so upset the mass production methods in vogue? Of course, a deviation from standard necessitating alterations to the general design of the machine would be ridiculous, but in this case it was the sidecar which the makers declined to modify to suit a prospective customer's desire.

ACCORDING to various correspondents, the finest prospect in Great Britain is to be found: in the Lincolnshire Wolds; from the shoulders of the mountain opposite Lock Katrine; in several places in Wales, many places in Scotland, or anywhere in the Lake District, in Dorset, and in Sussex. No two selections are alike. We are individualists indeed, and evidently there is no panorama standing head and shoulders above another for beauty and interest. One facetious reader says the finest prospect for him would be the windward side of a bullock being roasted whole and himself the baster and carver. I am not quite sure whether I am genuinely sorry for him or not; for him this observation infers either tragedy or else comic imagining—I am not sure which.

THE problem of weather protection is still taxing the skill of the designers, judging by the many types of hoods and screens now on the market. The latest attempted solution is embodied in the Quickover sidecar hood, manufactured by the firm of A. F. Camp, 95, Shaftesbury Road, Hammersmith.

In construction and design it is simplicity itself, yet is completely efficient. Out of action it resembles an ordinary sidecar hood, but when opened, the covering stretches in front of the sidecar dashboard, and with the side valances, which are made in one piece with the upper covering, completely encloses the passenger.

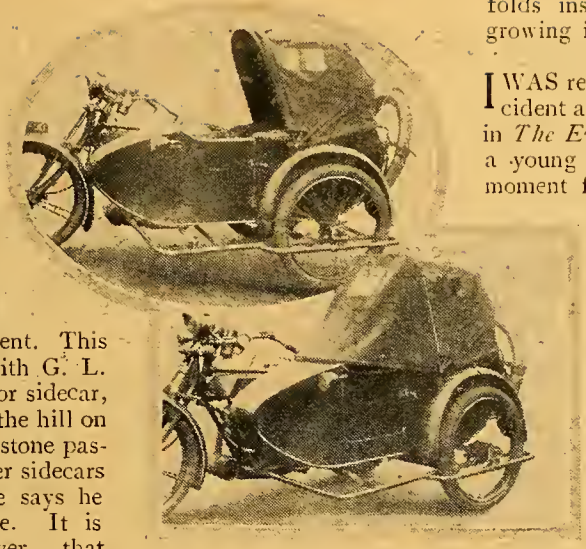
The contrivance may be raised or lowered from the driving seat of the outfit whilst on the move, one of the securing straps being fixed to the outside of the hood on the driver's side, and the other inside at the passenger's hand.

It may be fitted to practically any make of sidecar, because the width is adaptable, by the "springiness" of the frame, by at least six inches either way without interfering with the setting of the hood. In the "down" position it is supported by two strong nickel-plated brass brackets, and as there are two rear straps always in position, there is no danger of it lifting from the back.

The complete hood, though strongly made, is remarkably light, weighing only 12 lb., including the necessary brackets and other fixtures.

Passenger Machine Topics.—

DURING May last year a description appeared of a new Welsh hill which had been discovered by a member of *The Motor Cycle* staff. This road, named the Screw Hill, was the venue of an exploring party which set out to conquer it, and a formidable task it proved. Of all the sidecars only F. W. Giles on an A.J.S. succeeded in making a clean ascent. This honour must now be shared with G. L. White who, on a Brough-Superior sidecar, recently made a clean climb of the hill on a stock machine carrying a ten stone passenger. Not more than two other sidecars have ever got up. Mr. White says he had plenty of power to spare. It is not lack of power, however, that usually causes failures on such freak hills, but lack of wheel grip. But it requires more than ordinary riding ability to negotiate Screw Hill. A picture of the Brough-Superior on the hill was in last week's issue.

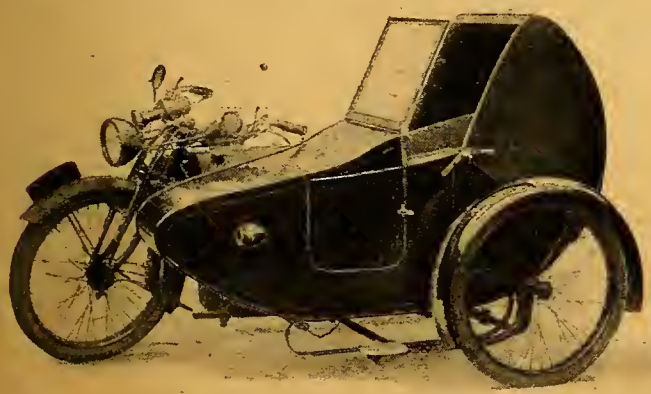


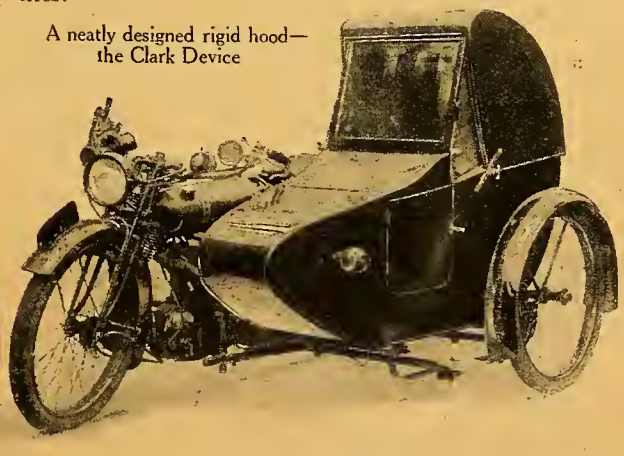
The "Quickover" combined hood and screen.

ANOTHER rigid hood is shortly to be placed on the market. This design, shown below, is patented by Mr. F. A. Clark, Handsworth Wood, Birmingham, and follows in principle several others which have been described in these pages. There is this difference, however. In the Clark design the frame of the rear portion of the body is let in half an inch, permitting the whole body to be of an even surface when the hood is down. Probably this method gives slightly more room in the locker than when the hood folds inside. There appears to be a growing interest in this type of hood.

I WAS reminded yesterday of a recent incident at Sotheby's related by "Quex" in *The Evening News*. He said he liked a young man he saw "who spared a moment from reading *The Motor Cycle* to pay £100 for David Garrick's copy of Ben Jonson." "Quex" might have spoken of the young man as sparing a moment to read *The Motor Cycle* whilst spending his £100. But that would have altered the subtle meaning. This incident was recalled by another young man whom I recently saw purchase for £20 a blue scale Worcester vase about nine inches high. He examined it lovingly, paid the dealer by cheque, then took it to the lady in the sidecar outside the dealer's shop. I asked if the young man was another dealer on his travels, but he was not. The shopkeeper said he was a keen private collector of old china, whom he knew quite well, and who must own a collection worth at least £500. Now the curious part follows. Besides being a keen china collector, the young man was a keen competitor in hill-climbs held by the club of a North Midland town. He could have owned a car, but drove a sidecar instead. Diverse pastimes—both excellent, however! But I have yet to meet the air pilot who collects butterflies.

A neatly designed rigid hood—the Clark Device





LOST—A SIDECAR WHEEL.

DURING a recent week-end some members of the Bristol M.C.C. were returning from Gloucester to Bristol, and a Zenith with a lightweight sidecar and a light passenger was going along at a good pace, when the sidecar wheel spindle broke. Fortunately, the road surface was smooth, the chassis slid without digging in, and no accident occurred.

The remarkable point is that the wheel has not been found. Quite a band of helpers searched the road and adjoining fields for half a mile on either side of the spot where it was presumed the wheel dropped off, and the owner, with some friends, returned next morning and searched in vain for two hours.

It is suggested that, in view of the speed and the light weight of the sidecar and passenger, the wheel was gone some time before its loss was realised, the heavy machine carrying the whole weight a considerable distance. The wheel is still missing.

About in Holland

A Land of Quaint Architecture, Quaint People and Quainter Costumes. Attractions for the Tourist.

By CHARLES G. HARPER.

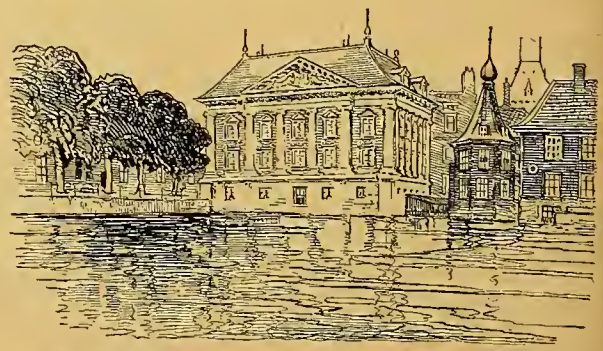
HOLLAND is but a little country : not much more than three hundred miles in a straight line will see you through the greatest length of it, from south to north; but it is a land of extreme interest. Not, it is true, the interest of picturesque scenery, for that scarcely exists, but the charm of a complete strangeness which is not so readily to be found to-day in most foreign countries.

In Holland you may easily be amused—in the French sense of that word—every day, for many days. For it is an old-world country, of many strange survivals.

Oddly enough, the Dutch people of the great towns, such as Amsterdam and Rotterdam, appear rather to resent this view of their land; and they have a strange disposition to deny that Dutch folk wear the quaint and curious costumes which undoubtedly they do wear. If it were not for the extraordinarily fantastic and beautiful architecture and the weird trousers and breeches of Volendam and Marken, and the singular clothes and outlandish headdresses of the women, for what, think you, would the tourist travel into the Netherlands? Not to see busy Rotterdam, another Liverpool. Not to visit the crowded streets—and unbelievably crowded they are—of Amsterdam, with their conventionally-clad citizens, in most respects like Londoners.

No, the Dutch idea that they are never quaint or odd, except as a stunt to please tourists, will not do at all. Have I not seen the women of Axel, whose ambition, and not a frustrated one either, is to be somewhat broader than they are long. Nature does not permit that, but it is achieved by the artifice of costume. Do not I know the women and girls of Friesland, with their real gold helmets? I have seen them on the Friesland roads, the sun glinting on their polished gold casques so that at a little distance you think you see a troop of dismounted Household cavalry.

Then there are the girls of Zeeland, who wear coifs with great white linen wings, like Sisters of Mercy, and under them have a golden blinker to each eye, like horses. And the women of Staphorst, who resemble unicorns. No, Sirs—I mean "Mijnheeren"—it won't do to say there are no strange costumes; nor, alternatively, to declare that, if any, they are worn to please and attract tourists.

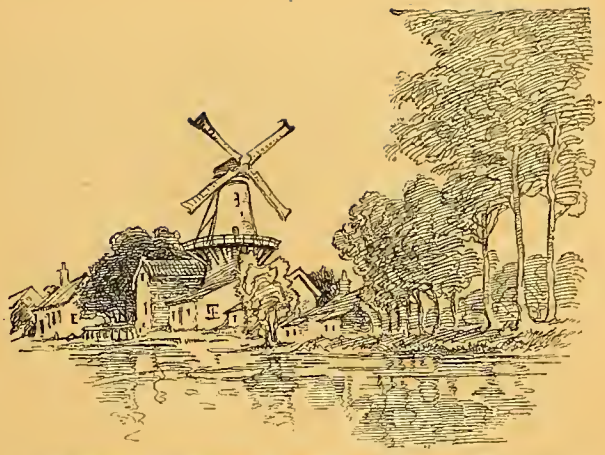


A famous and historical building, the Mauritishuis, The Hague.

Typical Dutch brick-paved road, with cyclists' path and canal.

The roads of Holland are good, bad, and indifferent. At their best they are very good indeed : the best being the brick roads. Providing you have a good foundation, a brick road, the bricks being set up on edge, cannot be bettered; but in a largely waterlogged country, such as this is, the road-bed is often uneven, and in places even foundrous. Of tarred or asphalte roads there are but few stretches; and those are round about that Court and Society capital of Holland, The Hague, which is a very polite and charming city, with,

One of the show places of Holland, the Street, Volendam.

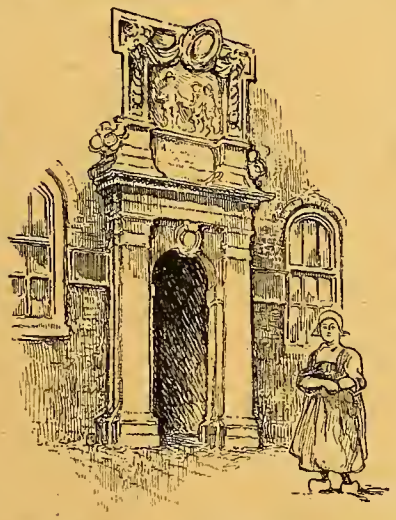


The subject of Rembrandt's masterpiece, "The Mill," Leyden.

on its northern side, the lovely English-looking woodlands of "the Bosche." The Hague has among its beautiful scenes that still lake in the middle of the city called "The Vyver," with the walls of the Mauritishuis rising sheer from the water.

The ten miles of road between Haarlem and Amsterdam are good, as to surface, but it is one of the most traffic-infested routes in the country.

Of macadam—the Dutch use the same word—there is a good deal, mostly bad. I have in mind a vile stretch of it, from Amsterdam almost into Monnickendam, beside the North Sea Canal; the stones of it all loose. A typical Dutch brick-paved road is like that pictured on the previous page. There are hundreds of spots like it; with a canal running parallel, wayside trees, a cyclists' path, "Rijwielpad," and the notice "Strijk," which is a command to sailing barges to strike their sails lest they frighten horses.

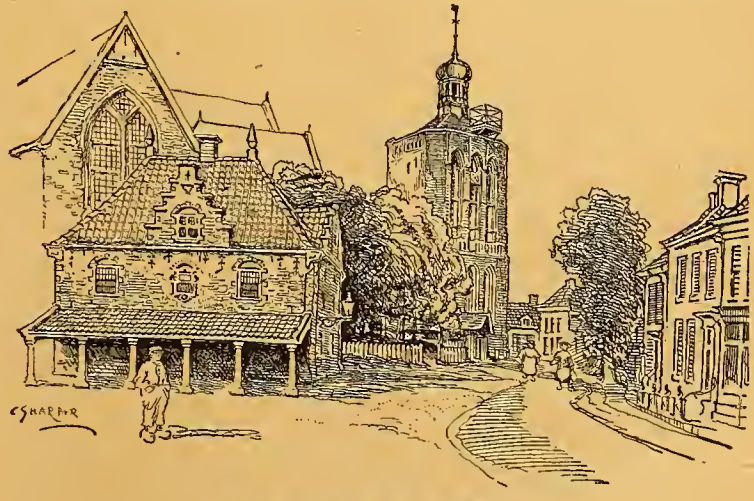


The Prinzenhof, Delft, where William the Silent was assassinated.

There is always a spire in a Dutch view, and generally a weird one. It is as though the Dutch, in that level, toast-and-water land of theirs, where the scenery is so tame, had, long centuries ago, made up their minds effectually to correct it by rearing up those rollicking fantasies. And if by some strange chance there is no tower or spire, there is inevitably a windmill. I counted up to two hundred windmills in one glance at Zaandam. I will swear to that, if necessary, but I hope you will take my word for it.

Between Rotterdam and Dordrecht is the very worst road I know of, as a main route, in Holland. Brick, it is true, but mostly foundered, and plentifully sand-strewn. The main traffic without exception goes by water, and it is not to be wondered at. Pas-

A gem of early architecture, the "House of the Grain-Porters," Franeker.



A town of "dignified repose," Workum.

About in Holland.—

sengers voyage, I believe, either by trekschuit or "paviljoen-pom." I should like to go by a "paviljoen-pom" once in a way. It sounds like the Pavilion at Brighton set to a double-bass obligato, but then things never turn out to be quite so good as you expect.

There is a mill outside Leyden traditionally said to be the birthplace of Rembrandt. Leyden is, of course, a University town. Incidentally, it is also the only place I know where apartments are offered to let in Latin: thus "*Cubicula Locanda.*" In the Nieuwe Keile at Delft lies the greatest man in the history of the Netherlands, "William the Silent," the father of his country, and liberator of it from the Spaniards. It was at the Prinzenhof he was assassinated by a Spanish agent.

Of course, one visits Volendam, on the Zuider Zee. That place and the island of Marken, close by, are the prime spots for odd costumes. The men of Marken wear breeches like balloons, while those of Volendam affect trousers like divided skirts. There was once an unfortunate traveller in trouser-stretchers who was advised by some wag that Volendam was the place for him to do good business in his specialities; but when he saw those sacks he committed suicide. They have no use for trouser-stretchers at Volendam.

Finally, I will add the advice: Go north to Friesland. There you find the most cleanly, charming towns, and the best and least-travelled roads. In such old, delightful places as Franeker and Workum, full of colour and of a dignified repose, that region is rich indeed.

THE MODERN GIRL AND THE MOTOR CYCLE.

A Defence of the Motor Cycling Sporting Girl.

By MAB. LOCKWOOD-TATHAM.

THE other day I saw a pretty girl with bobbed hair and the daintiest pair of breeched limbs standing beside her baby two-stroke in animated conversation with a group of admiring males, also with motor cycles of various descriptions.

At the moment she was the subject of conversation between several people near me, and I overheard the finishing remark, made in tones of scornful finality, "Oh, she's one of those girls who *would* ride a motor bike." This from a member of her own sex and obviously accepted by the man to whom she spoke.

I looked more closely at the girl, and saw a pair of merry blue eyes, tanned complexion, and capable, sensitive hands, and in spite of her workmanlike attire, femininity was written all over her.

An Unpleasant Characteristic.

There are thousands of people who would thoughtlessly or otherwise make a similar observation and think no more about it. It seems that the fact of a girl being the rider of a motor cycle immediately labels her as being "mannish"—admittedly an unpleasant characteristic—uninterested in frocks and frills, careless of home life, and devoid of any desire for woman friends. She is in the eyes of her adverse critics a sort of unsexed cumberer of the roads, whose speed appears excessive because of her female origin, and who possesses a desire for notoriety which overcomes any "natural" fear for her personal safety. I have even heard the old saying that "the female of the species is more deadly than the male" applied with great sincerity.

It occurs to me that the justice of this impression should be severely questioned.

The Hand that Wields the Spanner.

It is generally admitted that "the hand that rocks the cradle rules the world." Then why should not "the hand that rocks the cradle wield a spanner"?

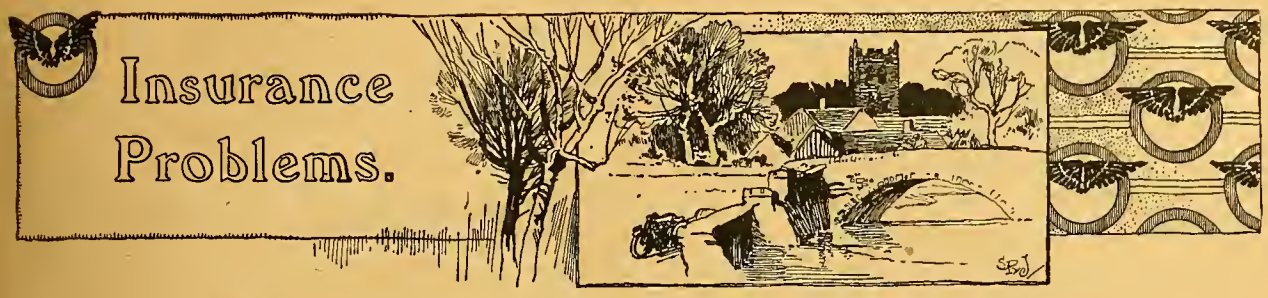
It takes an intelligent mind and clever fingers to minister to the wants of a motor cycle, and surely these are admirable feminine traits. It takes a strong and healthy young body to emulate Mrs. Janson or even tour about for pleasure over miles of sunny, picturesque country; it takes a cool head and steady nerves to negotiate traffic and deal with the emergencies of the highway. All of these are the qualities we want in our daughters, who are eventually to be wives and mothers.

It has never been considered masculine for a girl to ride a horse, yet in many ways it is much more dangerous and requires greater skill than driving a motor cycle—because over the former it is impossible to be certain of complete control. It has nerves and a mind of its own, and however well trained there is always the odd chance of panic or temper. When riding the latter only one mind and set of nerves is in evidence, which halves the risk in a tight corner.

Nobody thinks of it being unseemly for a woman to struggle with a refractory kitchen range or tinker with a broken mangle—yet how unnatural she is supposed to be if she knows the difference between a magneto and a carburetter or does her own tyre changing. Probably the mangle is much harder work in the end.

An Interesting Occupation.

The modern girl has a great deal of freedom and spare time which she can use at her own discretion. Walking is not exciting enough for her as an outdoor exercise, and it is not always possible to play tennis or golf in these days of overcrowded clubs and high fees, particularly in the suburbs of large towns. True, there is the ordinary bicycle, but it entails much energy and at the best a very restricted field. The net result of all this is very often packed cinemas and hotel lounges decorated with physically perfect young women smoking cigarettes and drinking the ubiquitous cocktail. Compare these tired-eyed and pale-faced damsels with what they might be under the influence of sun and fresh air and an interesting occupation, to say nothing of the benefit of having something to experiment on besides face creams and the opposite sex.



A Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Mysterious Damage.

Mr. A. Brascowe, Thorpe-on-the-Hill, writes: "A week ago, whilst riding in the country, I accidentally collided with a telegraph post, which prevented the machine starting. The wheel was not buckled nor was the damage apparent, but the engine would not start after the impact. I paid £1 to a farmer to tow me to the nearest town. There I found that the collision had done something to the magneto, which the mechanic put right for 2s. 6d. I have only motor cycled for about a month, and am sixty years old, so you can forgive my ignorance. The company, however, refuses to pay the £1 I paid for towing in the machine. Yet I am fully covered against accidental damage. Is it justified in refusing payment?"

Without knowing what repair was effected by the mechanic, it would appear in this case that the insurance company's opinion was that your magneto only needed some small adjustment, which was probably not actually necessitated by the slight collision with the telegraph post, but might have happened at any time even without the collision.

* * * *

Insurance of Miniatures.

H. F. Winters writes: "I am informed that a McKenzie lightweight has to be covered as a motor cycle at a premium of £4 10s. per annum. I have been told that there is a special rate for 'mechanically assisted pedal cycles,' and thought this machine would be classed as such, but the firm in question states that as the engine is fixed in the frame, and not an 'attachment,' this special rate does not apply to the McKenzie. It seems hardly fair that such a machine, costing only 26 guineas, should be charged the same premium as a 350 c.c. motor cycle up to £100 value, and I shall be glad if you can advise me whether this ruling is correct, or whether it is possible to obtain an insurance as a 'mechanically assisted pedal cycle,' for which I believe the premium is only £2 5s."

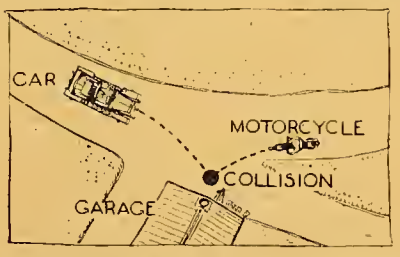
Upon making inquiries, it appears that all the principal insurance offices charge motor cycle premiums for the insurance of these lightweight machines. There is certainly a considerable difference between the premium for a mechanically assisted pedal cycle and that charged for a lightweight machine, but this is no doubt due to the difference in the cost of claims experienced by the companies. It certainly is not fair, and no doubt a revision in the rate will be made as this type of machine becomes more popular.

* * * *

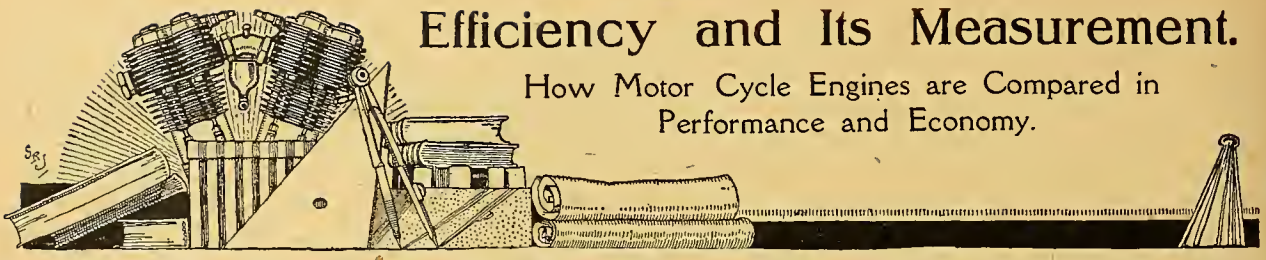
An Uninsured Motor Cyclist.

A reader in Retford says: "Having unfortunately been in a collision which resulted in my motor cycle being very much damaged, I have been notified that I shall be held responsible for damage to the other vehicle, a car.

Unfortunately I am not insured, whilst the car owner is, and the notice has come from his insurance company. I should, therefore, be pleased to have your opinion as to who was to blame in the following circumstances. I was travelling on the main road and gave audible warning to an approaching car, and signalled my intention to turn to the left. I turned quickly, but the car came on to me and collided eight feet from the wall on my left. The car is damaged but able to drive away. The car occupants say they signalled their intention of leaving the main road to take a secondary road, but I did not see it. After the motor cycle reached the ground it was pushed six feet and finished up four feet from the wall. There was no other traffic about at the time, and I was pulling up to have some minor repair done to my machine within four yards of the accident."



The circumstances of this accident make it somewhat difficult to give definite information as to who is responsible; but it certainly appears that the car driver was at fault in cutting on to his wrong side. From your diagram it is evident you had the right of way, and were quite in order to cross as you did to the garage.



Efficiency and Its Measurement.

How Motor Cycle Engines are Compared in Performance and Economy.

SEVERAL points of view may be considered in relation to the efficiency of a motor cycle engine, and the term "efficiency" unqualified by any further description may consequently have several meanings.

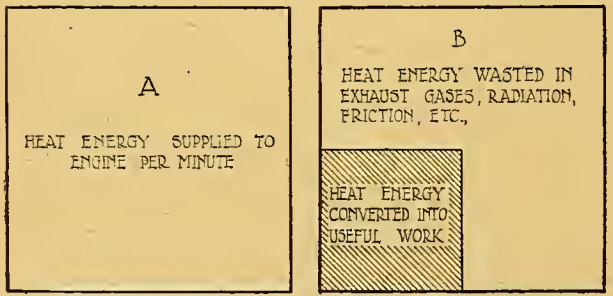
For instance, a comparison may be made between the total available power put into the engine in the form of fuel, and the useful power which the engine develops at its crankshaft. Before their respective magnitudes can be compared both the input and output must be reduced to some commonsense measure, and, as will be seen later, both these quantities can be measured in units of heat, and in consequence their ratio is termed the thermal efficiency.

Or again, the relation between the power developed in the engine cylinder and the power actually available at the crankshaft may be considered, in which case it is the mechanical efficiency with which we are dealing.

A third efficiency is termed the volumetric, and is measured by the ratio between the volume of explosive mixture which is actually available for conversion into work in the engine cylinder and the maximum theoretical volume which *should* be available under ideally perfect conditions.

Measure of Thermal Efficiency.

The "Thermal Efficiency," as already stated, is the ratio between two quantities of heat, and the unit of measurement usually adopted in this country is the

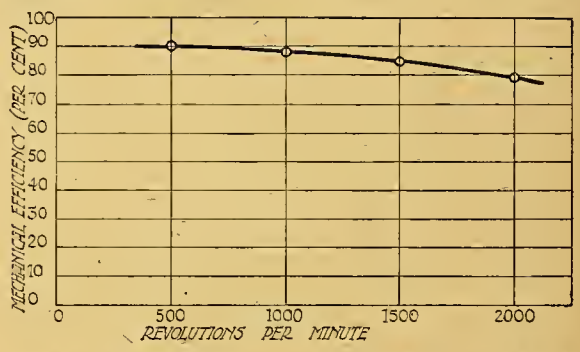

A
HEAT ENERGY SUPPLIED TO ENGINE PER MINUTE
B
HEAT ENERGY WASTED IN EXHAUST GASES, RADIATION, FRICTION, ETC.,
HEAT ENERGY CONVERTED INTO USEFUL WORK

Thermal efficiency diagram for a four-stroke engine.

"British Thermal Unit" (B.Th.U.), which is defined as being the quantity of heat required to raise the temperature of one pound of water from 60 to 61 degrees on the Fahrenheit scale. A can of petrol, a lump of coal, a match or any combustible substance, contains a certain number of these heat units stored up ready for use, or, in scientific language, they all possess certain definite calorific values. In the case of petrol, an average figure per pound of spirit is 18,700 B.Th.U., or, in other words, a pound of petrol (roughly one-eighth of a gallon) when burnt under suitable conditions would raise the temperature of 18,700 pounds of water (or nearly 2,000 gallons) from 60 to 61 degrees Fahrenheit.

If the quantity of petrol supplied to an engine during a bench test is carefully measured, it is possible, therefore, to form an accurate idea of the number of heat units supplied during the run.

In addition the power output of the engine is capable of measurement by absorbing it with a specially constructed "brake." In a simple form of brake a



Curve showing relation between mechanical efficiency and R.P.M.

known weight is applied to the outside flywheel or pulley, on the engine crankshaft, by means of an encircling band or rope, and the revolutions per minute are obtained by an ordinary counter or a revolution-indicator.

Relationship of Work and Heat.

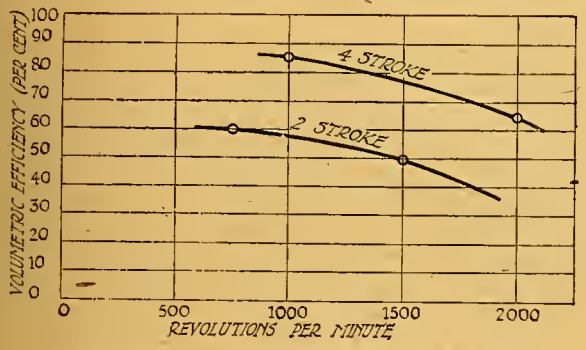
This provides the necessary data for calculating the brake horse-power (b.h.p.) developed by the engine.

Now it is a well-known principle of science that heat and work are mutually interchangeable, and, in fact, this interchange occurs in every piece of moving machinery. Heat is put into a motor cycle engine in the form of petrol, or other fuel, and becomes converted into work, which is given out at the engine crankshaft, but work, on the other hand, is reconvertible back to heat. A simple example of this occurs whenever work is expended in overcoming friction, a portion of the work becomes changed into heat and the frictional surfaces get hot. Furthermore, any definite quantity of work is equivalent to a definite number of heat units, and it has been found experimentally that one horse-power acting for one minute is equivalent to 42.4 B.Th.U., or, if one horse-power could be applied to 42.4 pounds of water in such a way that it was entirely converted into heat energy, the temperature of the water would be raised from 60 to 61 degrees in one minute.

Efficiency and its Measurement—

It will thus be seen that both the input and the output of the engine can be represented in units of heat, and can therefore be compared on a common basis.

From a large number of experimental results it has been found that the thermal efficiency of a standard type four-stroke engine, under the best possible conditions, will rarely exceed 25 per cent., while the average value for a two-stroke engine is rather lower.



Relation between volumetric efficiency and r.p.m.

This implies that of the total heat energy which is put into the engine, at the best only about one quarter is given out again in the form of useful work at the crankshaft. The remaining three-quarters are partly lost in the exhaust-gases, partly transferred to the cylinder, and thence radiated into the atmosphere, and partly employed in overcoming the friction of the working parts of the engine, etc.

Internal Losses.

In the four-stroke engine, in addition to overcoming the friction between piston-rings and cylinder, work is used up in lifting the valves and driving the valve-gear, and a two-stroke engine has a point of advantage in that no work is wasted in operating valve mechanism, but this is more than counteracted by the fact that in the usual crank-case-compression type work has to be expended in pumping the charge through the transfer ports and passages.

Owing to the frictional losses, the b.h.p. is always less than the power actually produced in the combustion-space of the engine cylinder. The latter is termed the "Indicated Horse Power" (I.H.P.), and is capable of accurate measurement by means of an instrument known as an indicator, while the ratio of b.h.p. to I.H.P. gives the value of the mechanical efficiency of the engine.

In a well-designed four-stroke engine, this efficiency may reach as high a figure as 90 per cent., so that of the total power developed only one-tenth is absorbed in overcoming the friction of the power-unit itself. The mechanical efficiency of a two-stroke engine is usually less, owing to the work used up in pumping the charge from the crank case to the combustion space, and may even drop to a figure as low as 70 per cent.

In both types the resistance to motion increases as the engine revolutions increase and the mechanical efficiencies decrease to a corresponding extent.

Volumetric (or Pumping) Efficiency.

A further source of loss in a motor cycle engine arises from the fact that it is impossible to charge the cylinder with its maximum theoretical quantity of explosive mixture. There is a loss due to friction between the moving gases and the interior surface of the induction pipe, and any acute bends in the latter will hinder the flow still further, while there is another loss at the valve pockets in a four-stroke engine, and at the various ports in a two-stroke.

Experiments show that in a four-stroke engine it is possible to obtain a volumetric efficiency as high as 85 per cent., or, in other words, the quantity of mixture which actually reaches the cylinder is 85 per cent. of the maximum theoretical quantity. This efficiency also falls off as the engine speed increases, frequently dropping to 65 per cent. A two-stroke engine shows up badly by comparison, as far as volumetric efficiency is concerned, about the highest average value at slow engine speeds being 60 per cent., which may decrease to 50 per cent. as the engine revolutions increase.

The efficiency of the modern motor cycle engine, whether considered from the thermal, mechanical, or volumetric point of view, compares very favourably with that of other sources of motive power, and although a thermal efficiency of 25 per cent. appears very low, it should be remembered that the percentage of heat which can be converted into work by any engine, either of the four-stroke or two-stroke type, is limited by rigid scientific facts which no perfection of design or workmanship can overcome, and in the best engines of both types it has been found that the thermal efficiencies obtained in practice fall very little short of the maximum possible efficiencies which an ideally perfect engine would yield when working under ideally perfect conditions.

B. G. MANTON (B.Sc., A.M.I.C.E.).

SOLDERING FOR AMATEURS.

THE making of a perfect joint between a coned petrol or oil union and a copper pipe is quite a tricky piece of soldering, as the nipple is usually a very close fit on the pipe, so that there is very little room to run the solder down; and yet the joint will soon come adrift under vibration unless its full area is soldered. The raw beginner must beware of covering his brass nipple with waste solder; a paste of whiting and water will prevent solder from sticking to any part where it is not wanted. A blowpipe is of great assistance in this sort of job. The end of the pipe abuts against a shoulder inside the union. Grip the union in the vice so that the pipe is entered from the top. Run a very little solder in at the top of the joint in the ordinary way.

Then use the blowpipe to heat the whole joint, applying more flux, and the solder will run down to the shoulder inside the union. More solder can then be applied at the top of the nipple and run down in the same way until the entire joint is fully soldered.

ROAD RIDER.

SPEEDING-UP SPEED TRIALS.

Comments on an Efficiently Organised Speed Meeting. Its Appeal to the General Public.

Outlining every path and the edge of the cliff, less than half of the spectators at the recent Scarborough speed trials are included in this picture. Such a crowd shows that motor cycle events have a public appeal which only needs fostering by proper facilities and organisation.

MORE than once we have criticised the average motor cycle speed trials for their dullness and long drawn out boredom which affects all but the actual competitors.

It had become a paradoxical truism to say that speed trials were the slowest events it was possible to witness.

When, therefore, speed trials are carried out so efficiently as to earn the general praise of thousands of spectators, and when every phase of the organisation works efficiently and well, it is only becoming that praise should be bestowed as it is deserved.

A Model Example.

It is more than pleasant, therefore, to accord such praise to the organisers of the recent Scarborough speed trials, which were reported in our last issue; there was no excuse there for that frequent grumble of boredom from the spectators which so often arises where the same riders appear in a multiplicity of classes and monotonously run down the course in each.

The Scarborough club avoided this by allowing each competitor two runs only, no matter in how many classes he was entered, and thus the large entry was efficiently handled in a short time. In each case the better time of the two runs was counted.

The course was roughly semi-circular, with a moderately sharp bend near the start, and at about the half distance there was quite an appreciable hill with a corresponding descent. Apart from a rather bad bump at the summit of the rise the tar-macadam roadway had an excellent surface, and a broad white line up the centre provided a guide to the riders.

Separate Return Route.

Roped off from the roadway, the wide footpath provided an excellent return route for the competitors. Electrical timing, operated by stretched tapes at start and finish, was used, and the whole entry of 131 (including cars) was disposed of in about four and a quarter hours.

By so running the event the interest of the vast assembly of 10,000 spectators who viewed the sport from roped enclosures and cliff pathways (thus having an uninterrupted and uninterrupting view), was maintained throughout.

It must be recollected that the value of an event such as this lies largely in the appeal it makes to the general public, members of which attend as curious sightseers and go away with a better knowledge of the safety and controllability of the motor cycle at even the highest speeds. To draw out the proceedings to an undue length leaves nothing but a recollection of boredom in the mind of the lay spectator. This phase of the matter is the best answer to those competitors who grumbled at only having two runs, while, curiously enough, the majority only equalled, or did not even attain, their previous speed on the second attempt.

SPEED TRIALS RESULTS.

The special cups and awards in the Scarborough and district speed trials are now announced and are as follows:—

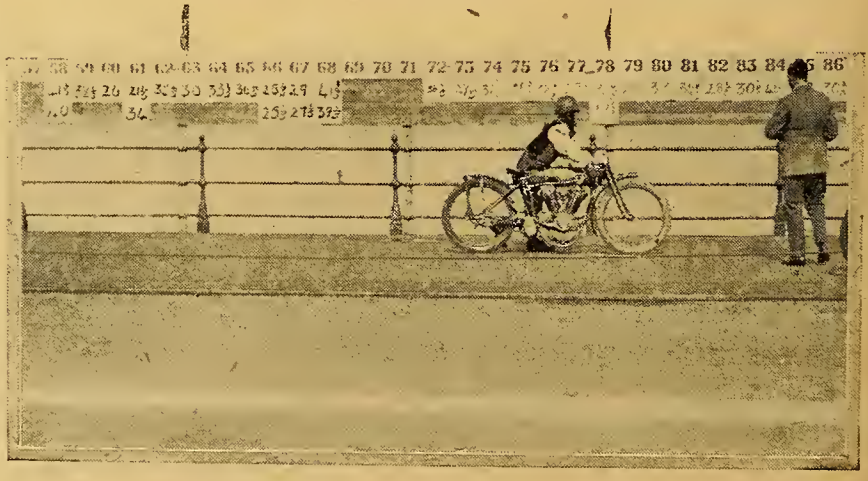
Craig Cup (fastest time by a Yorkshire amateur).
W. H. Rhodes (998 Indian), 26s.

Webster Challenge Trophy (fastest 350 c.c. machine).
G. Dance (349 Sunbeam), 25⅕s.

Carnival Cup (fastest time of the day).
F. W. Dixon (989 Harley-Davidson), 22⅖s.

Vice-President's Cup (fastest sidecar).
F. W. Dixon (989 Harley-Davidson sc.), 26⅖s.

Ladies' Prize.
Miss S. Taylor (492 Sunbeam), 30⅕s.



The effective scoreboard at Scarborough. Each time was posted immediately; while returning competitors passed back along the footway to the start without impeding those still running. Incidentally the rider shown is F. W. Dixon, the well-known Northern speed wizard.

MEASURING NOISE.

Low Audiometer used by A.C.U. in defence of Bromley prosecution. Sidelights on the Police attitude.

IN view of the present unsatisfactory state of the law as affecting the silencing of motor cycles, considerable interest attached to a case heard at Bromley (Kent) Petty Sessions on Monday of last week. Stanley Pounds Vine, a member of the A.C.U., was summoned under the Motor Cars Act (1903) for riding a 293 c.c. Connaught motor cycle with an inefficient silencer, and the Union undertook the defence, Mr. W. G. Weller, solicitor, acting on its behalf.

The outstanding feature was the production for the defence of photographic records made by Prof. A. M. Low's Audiometer. This instrument actually photographs sound, and enables reliable comparisons to be made between different noises. In this instance Audiometer records of the exhaust sound of the defendant's motor cycle were put in, together with those of another normal motor cycle and of a motor cycle with an unsilenced exhaust.

Explaining Police Activity.

Mr. Horace Fenton, prosecuting for the Commission of Police, said that the police authorities considered that the time had now arrived to give more effect to the Silencing Order made under the Motor Cars Act and extended to motor cycles in 1912. By this means it was proposed to deal with the intolerable noise which the public had to endure from certain motor cycles.

P.C. Hales 659P gave evidence that on July 8th he was on special duty on the Croydon road, Keston, in association with P.C. Ovenden 232P. He had particular instructions to deal with motor cyclists whose machines were making an offensive noise. On a signal from P.C. Ovenden he stopped the defendant.

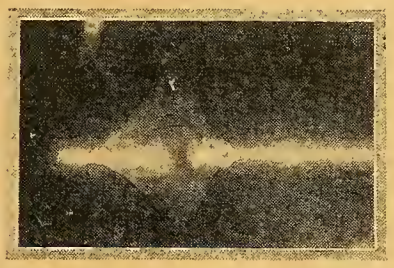
In answer to Mr. Weller, Hales said he would have stopped the defendant in any event even had he not received a signal from the other constable, as Mr. Vine's machine was making a loud noise similar to that of a Lewis gun.

The witness admitted that he did not know much about the mechanical features of a motor cycle and had no particular knowledge of the Connaught machine. He had, however, in common with other officers who were put on this particular duty, received a course of instruction regarding silencers at Scotland Yard.

Grass as a Testing Medium.

Questioned by Mr. Weller, witness said he could not dispute that the silencer and exhaust pipes on the defendant's motor cycle allowed an expansion of approximately five times the engine capacity. He had been instructed that expansion and cooling of the exhaust gases were necessary in order to avoid undue noise, and he agreed that if the Connaught exhaust system allowed an expansion of approximately five times the engine volume it should be efficient. Witness had read reports of trials conducted by the A.C.U., and he was aware that the Union considered that an expansion chamber of sufficient capacity could be an effective silencer without containing baffle plates. He agreed that he pushed a piece of grass into the silencer of defendant's machine to ascertain if it contained baffle plates. He admitted that this would not be an effective way of ascertaining this. Witness proceeded to say that he also used a piece of wire for this purpose.

Mr. Fenton interposed that officers on this duty had instruments for this purpose, and produced a bundle of wire rods.



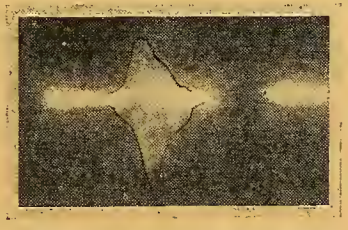
Sound wave of a 490 c.c. motor cycle fitted with a straight through 4-foot exhaust pipe.

Mr. Weller (to witness): "Are you served out with these wires or do you provide them yourselves?"

Witness: "We provide them."

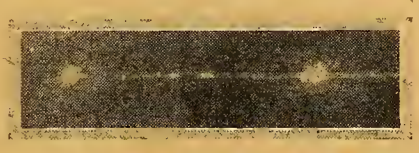
Mr. Weller: "In your zeal to find baffle plates, I suppose?"

Witness: "Yes, sir." (Laughter.)



Sound wave of the same machine as above, but with a fish-tail end on the pipe. This was given by the defence as an example of reasonable silence.

Witness continued that if he had found that the silencer had contained baffle plates he would still have prosecuted the defendant. He admitted that there was nothing in the Order under which defendant was summoned about baffle plates. Witness agreed with Mr. Weller that the fitting of which he complained was the standard silencer as fitted to Connaught machines.



Similar reading of the Connaught lightweight that was alleged to be unduly noisy.

P.C. Ovenden supported this evidence.

Joseph Elliott, Sub-Divisional Inspector, Scotland Yard, in charge of the Carriage Inspection Department, corroborated that P.C. Hales and other officers had received a course of instruction on their duties regarding silencers from himself and other Scotland Yard officers. Witness considered the silencer on defendant's motor cycle ineffective because the expansion chamber, set transversely to the engine, was pierced at each end with a number of holes through which, he suggested, the exhaust gases passed instead of going through the extension pipe.

Cyril John Cuffe, A.C.U. engineer, stated that on this prosecution being reported special arrangements were made in conjunction with Prof. Low to test the noise made by defendant's motor cycle. He was present when test runs were made in St. James's Square for the purpose of taking Audiometer records.

Details of Offending Silencer.

He had examined the silencer, and had found that it allowed ample expansion and cooling of the exhaust to ensure reasonable quietness. The volume of the expansion box was 984.23 c.c., of the exhaust pipe 281.21 c.c., and of the outlet pipe 180.78 c.c. This constituted a total volume of the exhaust system of 1446.22 c.c., or practically five times the volume swept out by the engine, which was 293 c.c. On defendant's machine the exhaust gases were led from the cylinder by a pipe to the expansion box, which had 40 $\frac{1}{8}$ in. holes at one end, and 37 similar holes at the other end. There was also a tail pipe from the expansion chamber which was flattened at the outlet end to an opening five-eighths of an inch wide.

The witness disagreed with Inspector Elliott and other witnesses for the prosecution that the holes in the expansion chamber were the cause of excessive noise; in fact, these holes assisted the cooling of the gas, and on this particular machine could be considered an advantage. He had tested many motor cycles, and he was emphatically of opinion that the exhaust noise of the Connaught was in no way excessive.

How the Audiometer Works.

Dudley Russell Cook, representing the Low Engineering Co., said that he had tested the noise with Professor Low's Audiometer. On the invitation of the Magistrates, witness carried the machine into Court and erected it on the witness box, proceeding to explain its working. Sound entering the funnel of the instrument, he said, strikes against a sensitive diaphragm to which is attached a small mirror. Light from an electric lamp is focussed on the mirror and is reflected back to a moving photographic film wound through the closed end of the camera. The diaphragm vibrates to all sounds, and the vibrations move the

Measuring Noise.—
mirror, as the mirror moves, the light it reflects oscillates, and oscillations are recorded by the film. Thus the greater the sound the greater the movement of the mirror, and the greater the movement of the light on the film. The film when developed gives a perfectly clear photograph in a line of light of the sound variations.

Such photographs of the noises made by defendant's motor cycle were handed to the Bench with the noise photographs of another normal motor cycle and of an unsilenced machine, for comparative purposes. Mr. Cook said that he certainly considered the Audiometer readings much more reliable evidence of sound for definite comparative purposes than could be the impressions of the human ear. It had been demonstrated, he said, that the hearing of different people varied very considerably, and also that the hearing of one person varied under different conditions.

Oscar Ernest Seyd, motoring journalist, gave evidence that he was present at the tests of the defendant's motor cycle.

The A.C.U. Object.

Questioned by Mr. Fenton, witness stated that he considered the design of the exhaust system on the defendant's machine silenced the discharging gases as far as was reasonably practicable. He had to agree that an exhaust system could be evolved for this engine which would make it more silent. He did not think, however, such a system would be practicable on account of its size if the engine were to be used as the power unit of a motor cycle.

At the conclusion of the evidence Mr. Weller addressed the Bench on the reasons which inspired the A.C.U. to defend the case. It would have been much easier to have advised the defendant to send the Bench a 10s. note with a polite request to them to return any change. The Union, however, took a more serious view of this matter and, in common with many magistrates and police authorities throughout the country, realised how unsatisfactory was the present state of the law as relating to silencing. The A.C.U. had done everything possible to discourage excessive noise.

A Mistaken View.

When, however, the Union felt that its members were not fairly dealt with in this respect it naturally arose in their defence, and it was the general opinion that the time had now arrived when a more satisfactory definition of silencing requirements should be evolved. Whichever way the present case went he would respectfully inform the Bench that much more would be heard of this matter, and he was confident that when Parliament reassembled the chief Legislature of the country would be asked to give attention to this vital subject. He submitted that a mistaken view of the present silencing regulations was often taken by police authorities. The A.C.U. realised the difficulty of magistrates who were confronted with the evidence of police officers that a motor cycle was excessively noisy when no evidence was put before them to the contrary. On this occasion, however, he had been able to submit a mass of evidence which, he ventured to think, was overwhelmingly strong as against the personal opinion of the two police officers concerned. He felt sure that the Bench would realise that such a scientific method of determining noise and enabling comparisons between various noises to be made must be standardised in the near future. At present there was no standard as to what was a normal exhaust sound and what was an excessive noise. Once that was established such evidence as that of the Audiometer would surely be definite and incontestable.

He would remind the Bench that the constables concerned were out to catch as many motor cycles as possible. That was the particular duty on which they were engaged, and one could well imagine them in their zeal sometimes developing a very acute sense of hearing. As against this he asked the Bench to give due weight to the mechanical evidence which had been produced.

It was well known that the police were now modifying their views regarding the employment of baffle plates, and although the police officers in this case resorted to the primitive course of pushing things into the silencer, they did not base their case upon the erroneous idea that baffle plates were required by law, or were scientifically essential.

The Bench retired to consider the case and were absent from Court some twenty-five minutes.

Bench Interested.

On their return, the Chairman said that very interesting evidence had been produced by the defence, and every point submitted had been carefully considered by the Bench. The helpfulness of the evidence for the defence was much reduced, however, by the fact of the absence of a standard of noise, as against which they had the police evidence that the defendant's motor cycle was excessively noisy. In respect of the Audiometer readings, the defence had been unfortunate in comparing the defendant's machine with a motor cycle which the Bench considered a generally noisy one*. They therefore found that the exhaust noises of the defendant's motor cycle had not been reduced so far as was reasonably practicable, and they imposed a fine of 10s.

Mr. Fenton applied for costs on behalf of the police, but this the Bench declined to grant.

* The other test machine was a four-stroke single with a fish-tailed long exhaust pipe.

VARIABLE PULLEY COUNTERSHAFT GEARING.

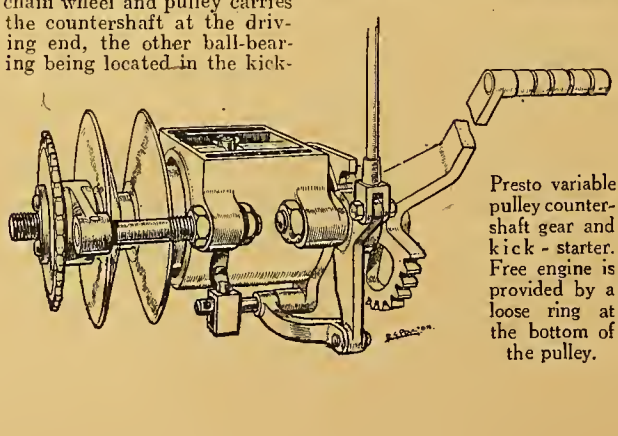
An Infinitely Variable Gear with Free-Engine and Kick-starter for Low- and Medium-Powered Machines.

WITH the object of providing an easily adapted variable gear transmission, especially for single-geared lightweights, the Presto Co., of 26, Cross Street, Hatton Garden, London, E.C.1, has introduced the Presto Multi-Gear Box.

Working on the expanding pulley principle the gear consists of a few parts and has nothing of a flimsy nature in its construction. It consists of a box, which is clamped to the bottom bracket of the frame, and in the box are cam slots wherein engage two pegs on a cylindrical thrust block. Through the centre of the box passes a shaft, driven by chain from the engine, and carrying fixed and sliding pulley flanges. The inner flange is the sliding one, and its movement is controlled by the thrust block operating through a thrust race. In its extreme position the moving flange opens so as to allow the belt to fall on to a loose ring at the bottom of the pulley.

Control is effected by a long lever fixed on the saddle tube, its location in any position being maintained by a friction device on the thrust block rocking mechanism on the box.

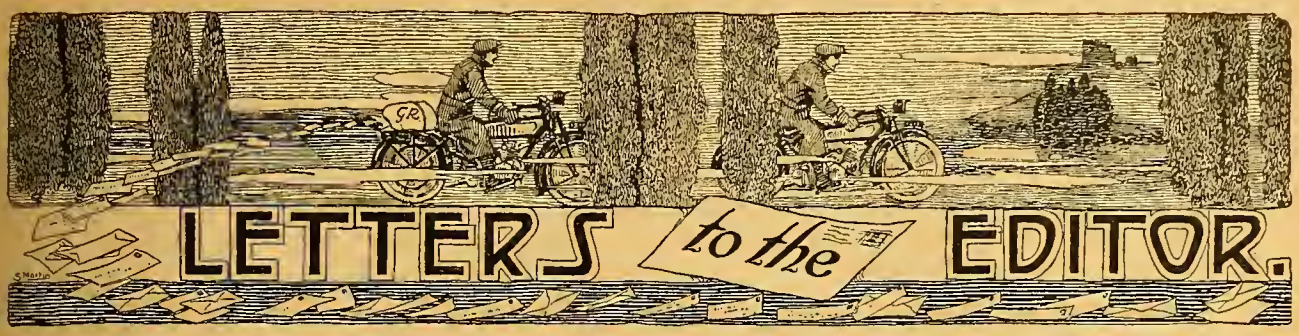
An "outrigger" bearing between the chain wheel and pulley carries the countershaft at the driving end, the other ball-bearing being located in the kick-starter end of the box. The starter is of the quadrant and ratchet-pinion type.



Presto variable pulley countershaft gear and kick-starter. Free engine is provided by a loose ring at the bottom of the pulley.

In actual use on a two-stroke machine we found the gear to be very effective and easily controlled, and although there is no provision made for taking up the slack of the belt on the low ratios, the absence of slip was remarkable; even on hills it was always possible to stop the engine by powerful braking without a trace of transmission slip.

The present price of the Presto gear, with flywheel sprocket, chain and adapter for any type of bottom bracket, is £7 7s. Belt and chain lines are widely adjustable.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

DISPARITIES IN FUEL CONSUMPTION.

Sir,—I was interested in Mr. A. D. Harper's remarks about his 1920 Triumph, which has completed 19,500 miles and won a first prize in a petrol consumption test at 127 miles per gallon.

Having bought a chain-driven Triumph, I went on a 400-mile tour last week; I thought I was doing very well by getting 70 miles per gallon. A. T. GEORGE.

CANCELLATION OF CLUB EVENTS.

Sir,—Your correspondent, "Fed Up," is obviously very unhappy at the lack of support given by his club members in trials. Like him, I have spent many precious hours nailing up Dunlop arrows (not to mention taking them down after dark!) and sprinkling blue powder on roads, buoyed up with hopes of fine weather and a good entry. These hopes, particularly the latter, have not always been realised, but instead of saying to myself, "We ought to have cancelled it," my probing mind inquires why the entry was so small. The course may have been too long or too short, too easy or too difficult, or the organisation of the previous trial may have left a bad impression. The cause of a small entry in a recent trial of my club was found to be due to a slight increase in the entry fee, and on a previous occasion it was ascertained that the starting and finishing points were too far from the district in which most of the competitors resided.

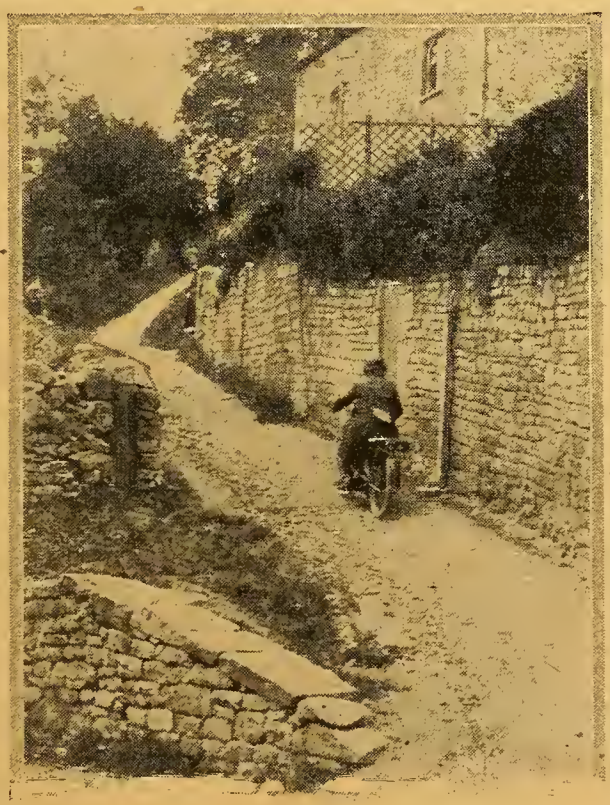
I would therefore advise "Fed Up" to take heart, and to devote a little time to finding out why only seven of his members competed. If a trial or any other event is run at the right time, and on the lines best suited to the club in question, the necessity of cancellation should never arise.

His remarks anent consideration of club members for their officials are, in the main, unfortunately correct. Perchance he will find consolation in the fact that he is not the only one entitled to indulge in a little grousing on that score.

Finally, "Fed Up" apparently slightly misunderstands Mr. E. C. Gordon, to whose letter his wail was a reply. I happen to know Mr. Gordon for a reasoning sportsman and a busy man, and believe that the eleventh-hour cancellation of the South Midland Centre Gymkhana was his chief bone of contention. My club, blameless and helpless in the matter, failed to secure at least two new members owing to this cancellation; had it been a club affair we should probably have lost some present members in addition.

Cheer up, "Fed Up," and never think of cancelling an event if you have the future welfare of your club at heart.

ALAN W. DAY.



NON-SKIDDING LIGHTWEIGHTS. Bussage Hill, in the Cotswolds, is one of the type that none can be sure of ascending non-stop; it is slippery, uneven and steep. It was included in the Western Centre Team Trial, described last week, when the Cotton rider shown, and indeed all three riders of that make, proved that the low centre of gravity of the Cotton's triangulated frame was a most useful asset.

GOGGLES FOR THE SPECTACLED RIDER.

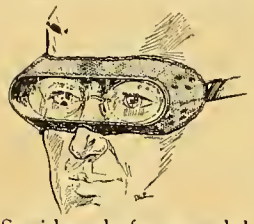
Sir,—I would like to point out to "Awakawakawoo" that the correct manner in which to obtain the necessary glasses or goggles is to consult one of the many properly qualified sight-testing opticians in the country holding the Diploma of the British Optical Association; then he will be assured of being given glasses which are suitable for his needs. A working optician should only work from a prescription, in the same manner that a chemist dispenses a medical prescription.

I would like, also, to point out, not only as a qualified optician but also as a rider for over fifteen years, that the trouble caused by goggles to riders with normal vision is not only due to cheap and faulty lenses but, where the glasses have been ground perfectly plain, a sense of altered perspective may cause distress, which I attribute to the glasses being too small, and with flat surfaces. In the writer's experience, even when lenses have been made most carefully there has still been a sense of altered height, and also distance, which is probably due to some nerve affection from normal, due to the refractive index of the glass used.

Thus the writer is always very chary in advising the use of goggles, but if they have to be used then they should be made from a proper prescription, with large lenses, and preferably a large curve on the inside; the most useful glass is Crookes A.

FREEMAN LEE, D.B.O.A.

Sir,—I enclose a rough sketch of a suggested form of goggle which might prove extremely useful to those of us who have to wear spectacles when motoring. I have tried most makes of goggle on the market, and have found that some, although giving reasonable protection to the eyes, are prevented from fitting flush with the face by reason of the fact that the spectacles project a matter of one inch or so from the face, with the result that particles of dust, etc., can penetrate inside the goggle, flies being particularly objectionable in view of the fact that they get between the eyes and the spectacles and are unable to find any way out.



Special goggle for spectacled riders, suggested by Mr. F. A. Ellis.

It seems to me that the suggested goggle could be quite easily made with a one-piece glass and wire distance pieces with the usual type of woolly frame mounted on a pliable wire, so that it could be moulded to the shape of the nose, etc.

A fairly wide strap should be used, because the usual narrow elastic band has a tendency to cut the top of the ear.

F. A. ELLIS.

ANOMALIES IN DISEMBARKATION CHARGES.

Sir,—I brought back from West Africa with me last November two B.S.A. motor cycles and sidecars for overhaul. I have since received a bill from the Mersey Docks and Harbour Board for dues amounting to £1 for discharging these at the landing stage and placing them in the Customs examination shed (I had to pay the porterage). I have contested this charge, as I consider it unreasonable and exorbitant, and I now find that passengers arriving from abroad are discriminated against, as is shown by the following tariff :—

Motor cycles and sidecars landed or loaded at Liverpool (whether at the docks or stages) are liable to dock rates and town dues, foreign or coastwise, as under :

Inwards (foreign)	10s. each outfit	
Outwards (foreign)	5s.	,,
Inwards (coastwise)	2s. 6d.	,,
Outwards (coastwise)... ...	2s. 6d.	,,

The service rendered is practically the same in each case.

In the interests of the scores of passengers who must be arriving annually at Liverpool from overseas with British motor cycles, I think this is a matter that should be taken up with the Mersey Docks and Harbour Board.

W. M. GRUNDY.

ENCOURAGEMENT FOR OWNERS OF OLD CROCKS.

Sir,—I was very pleased to see, in your number for August 10th, a paragraph under "Current Chat" on giving old machines a chance. Being one of the impecunious ones who can run to nothing better than a crock of from eight to ten years old, I have always been loth to join any motor cycling organisation in which the other members have modern machines.

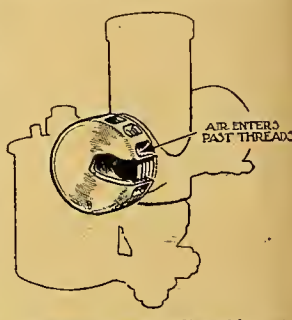
JAMES B. CAMPBELL.

Transvaal.

FUEL CONSUMPTION OF TWO-STROKES.

Sir,—As I have ridden an Allon since early in 1920, my experiences may prove of interest to "Old Bill" and to other Allon riders.

For some time after the machine was delivered, my consumption could not be improved over about 45 to 50 m.p.g., and inquiries to the carburetter manufacturers obtained answers which led me to believe this to be the average. However, I was not satisfied, and contrary to their advice, made and fitted a variable jet having a fine tapering needle. This jet, incidentally, is not varied during running unless extremely slow running is required, and is used more to correct for atmospheric variations.



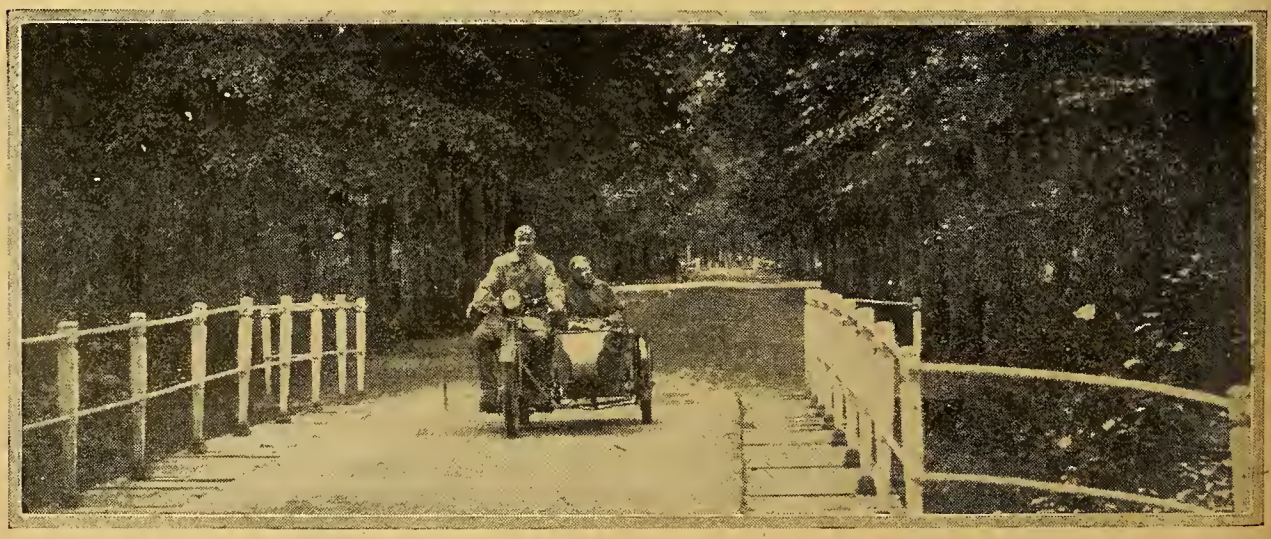
Elongated and adjustable air-holes in the cap of Mr. H. Lomas's B. and B. carburetter.

The petrol level was lowered considerably, and the cap over the main air intake had the holes enlarged and filed out, as shown in the sketch. The screw-thread was given a liberal coating of ordinary soft solder, which holds the cap in any desired position. By screwing this cap either further on or off, a variable air opening is formed at will.

The range of advance and retard of the magneto contact-breaker was more than doubled, so that a little more advance could be given, and very much more retard.

The results were astonishing. After making sure that everything ran free, I found the engine would fire quite evenly at 4 m.p.h. on top gear, and the petrol consumption dropped to 120 m.p.g. at an even speed of 20 m.p.h. At any speed up to 28 m.p.h. or so, and not driving in any way out of the ordinary, I regularly do about 95 m.p.g.

H. LOMAS.



IN A DUTCH TRIAL. Although flat, the scenery in Holland is not uninteresting. A Rudge sidecar at picturesque Orangewoud during the club championship event described last week.

SCHOOL-GIRL MOTOR CYCLISTS.

Sirs,—In my opinion, motor cycling either for a boy or a girl is the most healthy, invigorating sport possible. It cultivates self-confidence and presence of mind, and encourages the care of one's property.

Moreover, I see no reason why only boys should be granted the privilege of a motor cycle. Why should not their sisters have an equal privilege? There are many girls of 15 and 16 who are on a level, and even above, the boys regarding presence of mind and confidence, and most girls of to-day possess the spirit of sportsmanship to a great degree.

London, S.W.19. ELDER BROTHER.

SIDE-SLIP ON SPRING FRAME MACHINES.

Sir,—I should value any hints and remarks from owners of spring frame machines as regards side-slip in wet, or, rather, "greasy" weather.

I ride a Coulson-B., and find it impossible to avoid side-slip when riding in London on tarmac roads, and especially on tram lines.

During a sixteen-mile ride recently in the rain, from N.W. London to here, I came off twice, although riding very carefully at 12-16 m.p.h.

I am otherwise thoroughly satisfied with the Coulson.

Dunlop heavy 26 in. × 2½ in. × 2¼ in. tyres are fitted to the machine in question. XA5291.

Croydon.

IMPROVEMENTS TO THE LONDON-EXETER RUN.

Sir,—So far the suggestions to brighten the London-Exeter run that have appeared in your correspondence columns have, if one excepts "Quixix's" bun eating stunt, dealt only with the riding part of the job. I should like to suggest improved arrangements at the Exeter breakfast stop.

Last year competitors arrived at Exeter mostly wet to the skin, had to wait about in the cold for a 'bus to the hotel, and then found what can only be called an inferior breakfast awaiting them in a fireless dining hall.

Cannot an hotel be found in Exeter with a garage attached, and cannot the M.C.C. make it their business to see that the breakfast is one more suited to satisfy the wants of competitors who have been riding all night in pouring rain. HUNGRY HERBERT.

Isleworth.

DEPOSITS ON INLET VALVE ITEMS.

Sir,—Replying to "Interested," whose letter deals with deposit on the underside of inlet valves, this undoubtedly arises from road dust caught on surfaces made sticky by a layer of the unvaporised portion of the fuel. A similar deposit will often be found on the lower edge and rim of the inlet valve seating, but of course not in any part of the combustion chamber or on top of the valves. I have materially reduced the tendency for deposit to form by improving the vaporisation of the fuel at the carburetter. The underside of the valve is now less like the sticky surface of a fly-paper.

It is impracticable adequately to filter the incoming air, but it might be possible to move the air inlet by means of a flexible pipe to a less dusty position.

J. W. G. BROOKER.

Sir,—I have seen the letter from "Sidevalve" on the subject of deposit on valve stems. It is very extraordinary why some castor oils should cause this rubber-like deposit to form on the carburetter side of the inlet valves. I find the same deposit on my valves, but if "Sidevalve" will try Speedwell White Ideal oil—made by the British Oil and Turpentine Corporation, Ltd., of 55-56, Chancery Lane—he will find that this deposit does not form.

I do not think, however, that it is a good scheme to mix castor oil with petrol. As a matter of fact, I have found they will not mix. Before doing this it would be best for "Sidevalve" to communicate with the manufacturers, who can give him the best advice on the subject, but if he tries White Ideal he will find almost complete absence of carbon—anyway, that is my experience.

OSBORNE DE LISSA, Managing Director,
THE M.A.G. ENGINE COMPANY, LTD.

THE ETHICS OF "HANGING-ON."

Sir,—I am surprised to see that any of your readers should encourage the practice of "hanging on" by cyclists. I was an ardent cyclist myself before graduating to motor cycling in 1910, but my sympathies are all with "Norton Rider." Would Messrs. Godfrey and Thorpe consider it good manners to thrust their company on a couple out for a walk, and to insist on accompanying them wherever they went? Then why on earth should it be considered reasonable to do so when the same couple take to a sidecar outfit?

I myself strongly object to having a stranger's nose thrust down the neck of my wife while we are sidecarring, and the worst of it is that these people merely grow abusive when politely asked to desist: stronger measures are hardly possible to a motor cyclist in the company of the fair sex. Only last week, I jammed on my brake to avoid a cat that dashed across the road, and I heard a crash behind and a shower of abuse from a prone cyclist for not holding up my hand to indicate that I was going to slow down! I may say that the crash was the first intimation that I had that there was anyone behind in such close proximity: in any case, there is no time for such warnings in such circumstances. "Norton Rider's" remedy is barred to me, for the simple reason that my engine cannot be induced to smoke. I have seriously thought of carrying a small quantity of "tear" gas, however. I do not agree with Mr. Thorpe that only a cyclist of stamina and experience can keep up with the average motor cyclist: any cyclist worthy of the name can do 30 m.p.h. and more when deprived of practically the only force which normally retards him, viz., wind resistance: the other forces are negligible in comparison.

Every road-user has his rights, cyclists included, but intruding on the privacy of others is not one of them.

High Wycombe. BENEDICT.

SUMMARY OF CORRESPONDENCE.

"B.B.5042" (Newcastle) desires to thank the Morgan driver and his passenger who at 11.30 p.m. towed him on the Stratford-Birmingham Road, when held up with a broken belt too short to be repaired.

According to a Canadian correspondent, Mr. C. A. M. Lellen, the fact that Bosch magnetos are fitted to the latest consignments of four-valve Triumphs to arrive in Toronto has caused considerable surprise.

The sporting aid of a British garage proprietor in France, Mr. A. Burgess, of Caudebec-en-Cuax, is praised by Mr. F. W. Chapman, who was helped by him during an awkward fuel stop when on tour.

Referring to the letter last week from Mr. C. T. Williams regarding his unsatisfactory experiences with Jackson's Impervo in a patched tube, the makers of the latter commodity point out that their filling instructions clearly state that small patches should be removed before using the Impervo, which would then automatically seal the hole.

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QUESTIONS & REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

GEAR RATIOS.

I wish to drop my gear from 4¾ to 1 top to about 6 to 1 top. The numbers of teeth are: engine sprocket, 22; gear box, 40; diameter of belt wheel 18 inches. What number of teeth shall I want on engine sprocket to get the desired ratio? J.L.C.B.

Before being able to calculate the size you require definitely, we need to know the diameter of the belt pulley on the gear box; this you have omitted to state. If, however, it is about 6½ in., which we assume it to be from the figures you give, you will need an engine sprocket with 18t to give the required top gear ratio.

CANCELLED SALE.

I arranged with a firm to buy a new motor cycle, the firm allowing me so much for my old machine. I had nearly completed the bargain by giving the dealer 30s. to get the licence, etc., but I had not paid for the machine. The following morning I rang up the firm and cancelled the order. When I asked for the return of my 30s. it was refused on the grounds that I was legally wrong in not accepting the new machine and the 30s. was kept on account of trouble. Is this legal?—J.H.

It is not clear from your letter whether a definite contract to purchase was undertaken, but by making a payment of 30s. on account of the new licence, etc., it would appear you agreed definitely to accept the machine. This being the case, the dealer is in a position to enforce the completion of the sale and you have no claim on the deposit which you made. If you do not wish to have the machine your best plan is to allow the dealer to retain the deposit if he is willing to release you from your obligations to complete the transaction.

LIGHT GEAR BOX ON BIG SINGLE.

Having an Albion two-speed gear box with 32 teeth on the sprocket and a 6in. pulley and a back wheel belt rim 18in., how many teeth should I want on the engine shaft sprocket for average speed riding, with a 599 c.c. Bradbury with occasional pillion rider?—G.H.C.

You would need 20t. on the engine shaft sprocket to give a top gear of 4¾ to 1. The 6in. pulley, however, is very small for the countershaft of your machine, as it is very likely that there will be a considerable amount of belt slip in wet weather; an 8in. pulley would be more satisfactory, in which case, however, a smaller number of teeth would be necessary on the engine shaft sprocket. The gear box is unduly light for your engine, and it is doubtful if the makers would recommend its use on a single-cylinder machine above 350 c.c. capacity.

FITTING TRIUMPH PRIMARY CHAIN.

The chain connecting the gear to the engine on the chain driven Triumph can only be taken off with great difficulty, but no man I know could put it on again even after dividing it and putting in a spring link instead of solid riveted one. Do you know of any plan for refitting this chain?—J. O'N.

The refitting of the primary driving chain on the Triumph machine is quite simple without dividing it; the sprocket on the engine shaft is of the self-withdrawing variety, and it should be unscrewed from the shaft and the chain passed over; it should then be easily refitted merely by tightening up the engine shaft nut.

Important Dates.

Wed., Oct. 4th, to Sun., Oct. 15.—Paris Salon.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th and Wed., Dec. 27th.—M.C.C. London-Exeter Run.

Sat., Jan. 13th to Wed., Jan 24th (1923).—The Belgian Salon.

Fri., Jan. 26th to Sat., Feb. 3rd (1923).—Scottish Motor Show.

TYPICAL OF 1922. Surely this year holds the record for the number of events postponed on account of unfavourable weather conditions. Although it was an unridable surface that prevented the Kop hill-climb on September 23rd, rain was the root cause. Competitors and spectators awaiting the decision to hold the event on Saturday next (October 7th).

POWER FALLS OFF.

My machine developed good power for perhaps 2,000 to 3,000 miles, and then began to fail on bad hills, which it has hitherto climbed successfully. There just appears to be a general weakness and softness in its running; it has become more difficult to start, but is actually easier to kick over. Curiously enough it runs much more sweetly on the level, but its maximum speed is not quite as high, while the exhaust is considerably quieter than before, as it had a decided "bark" when new.—H.E.P.

The symptoms you describe are those ordinarily associated with the gradual falling away of power experienced when an engine has run a sufficient distance to require some adjustment and overhaul. Loss of compression is the cause of the weak running, and this is most probably due to leakage at the exhaust valves, which on inspection will be found to be burnt or pitted. If the valves are ground in (the valve seatings being trued if necessary) the original vitality of the engine should be restored.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"Connaught" (Harlesden).—Dynalite or Voltalite motor cycle electric lighting set on 350 c.c. machine, solo and sidecar: efficiency, wear of tyre or rim, burning-out bulbs and general behaviour at 10-30 m.p.h.

"J.K.D.C." (Nairn).—1,301 c.c. Henderson: suitability for solo use, speed, ease of control, reliability, brakes, stability on grease and at speed.

"L.E.B." (Steventon).—398 c.c. A.B.C.: general reliability, dependability of latest automatic lubrication, maintenance of tune with slight attention from an amateur.

"C.C.U." (Scarborough).—398 c.c. A.B.C., Barr and Stroud engined machines, 348 c.c. duplex frame Omega, 499 c.c. Rudge-Multi: comfort and average speed on long journeys, running costs, weather protection and reliability.

"J.E.C.R." (Chatham).—499 c.c. Triumph; hill-climbing, acceleration, valve clatter and general information.

"K.L.C." (Brighton). — 500 c.c. N.U.T.; 596 c.c. Indian Scout: reliability and speed.

"E.McC." (Liverpool). — 698 c.c. Raleigh; 499 c.c. Triumph: comfort and high average speed, stability on grease, mudguarding particularly, reliability and general information.

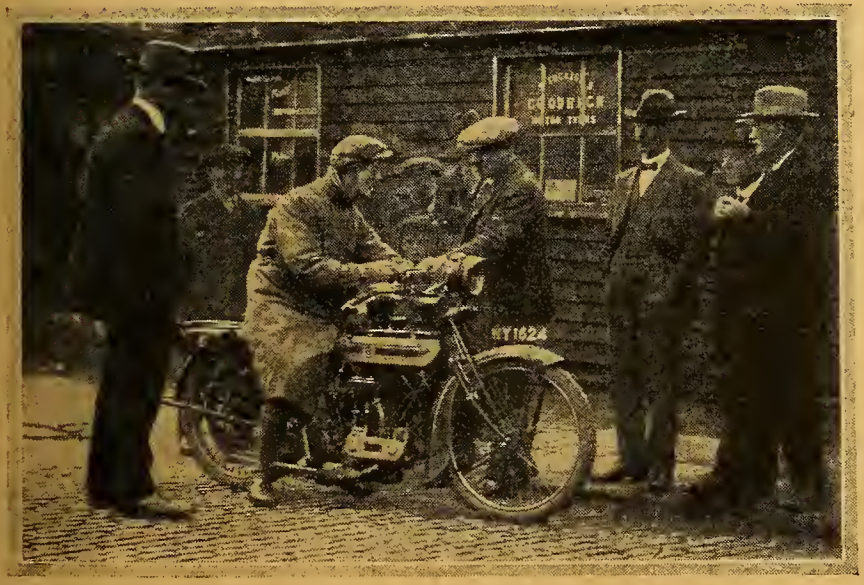
"L.L." (Brondesbury).—Maglita lighting and ignition on twin; Amac two-lever carburetter on twin.

"S.S." (Lowestoft).—Old 350 c.c. Royal Enfield and sidecar: fuel consumption.

"C.H.P." (Acton).—486 c.c. Scott Squirrel: Adjustment of gear chains, durability, retention of tune.

"F.E.F." (Southport). — 499 c.c. Rover, with sidecar: speed, petrol consumption, information as to general running.

"W.S." (France).—499 c.c. Dunelt sidecar outfit: reliability, running expenses, hill-climbing capacity, and particularly suitability for poor road surfaces.



"FIND THIS PLACE." J. Chadwick (550 Triumph) in the Keighley Dispatch Riders Trial receiving the name of an obscure farm which was one of the points to be discovered in the combined map reading and reliability test.

Found.

Near Hindhead, a small Gladstone type bag.—Ref. No. 108.

Changed Mount.

In the Western Centre Team Trial, J. H. Boakes rode a 349 c.c. Hobart, not a Cotton as reported. He secured a gold medal.

Small Single, Not Flat Twin.

J. M. Heath, who gained a second place in the East Mid-Centre Mansfield speed trials, rode a Coventry Eagle, not a Coventry Victor.

Change of Address.

The makers of the Rideezi sidecar have moved into larger premises. Their new address is Coleford Motors, Ltd., Rideezi Works, Western Road, Merton.

A Speedy Two-Stroke.

When he made fastest time in the two-stroke class at the recent Eastbourne speed trials, R. Green (249 Velocette) averaged over 50 m.p.h. for the up-hill half-mile.

A Doughty Miniature.

The J.E.S. ultra-lightweight which actually gained a gold medal in the recent Western Centre Inter-club Trial was unfortunately omitted from the list of machines surviving the course.

A Very Belated Award.

A gold medal has now been awarded to F. H. Brown, who rode a 550 c.c. Rex Acme sidecar outfit in the Midland Cycling and Athletic Club's 24-hour trial held on July 8th last.

Some Outstanding Successes.

B. Watts, riding a standard 342 c.c. Dot-Jap in the recent Stalybridge and District M.C. speed trial, gained several firsts and seconds in competition with much larger sports models in the 550, 750, and 1,000 c.c. classes.

Success of New Carburetter.

The Ekon carburetter, the design of which impressed us most favourably at its inception, is beginning to score successes in speed events. K. Rolfe's Humber, which, at 72 m.p.h., made fastest member's time at the Eastbourne speed trials, was fitted with this instrument, as also were P. Cameron's, 60 m.p.h., Zenith sidecar, which was the fastest passenger vehicle, and several other award-winning machines.

Catalogues Received.

Ransome and Marles Bearing Co., Ltd., Newark-on-Trent: Loose-leaf catalogue dealing fully with R. and M. ball and roller bearings.

Saxonia Electrical Wire Co., Ltd., Roan Works, Greenwich, S.E.10: Saxonia flexible wires, cables, and cords.

"Just," 7, The Mall, London, W.8: A trade list of French-made sparking plugs, terminals, washers, cables, etc.

CURRENT HAT

Times to Light Lamps.

Oct.	5th	.. ..	7. 0 p.m.
„	7th	.. ..	6.54 „
„	9th	.. ..	5.49 „
„	11th	.. ..	5.45 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Compulsory Insurance.

That all motorists should be legally compelled to insure is a suggestion that was recently quite seriously discussed by the leading motoring organisations in South Africa

London's Motor Cycle Police.

About a year ago the Scotland Yard Flying Squad was instituted, and it is now being reorganised under one of London's best detectives. It consists of trained men from each division who have fast sidecar outfits, and are ready to go out at once.

New Road between Liverpool and Manchester.

The Ministry of Transport has given approval to road reconstruction schemes estimated to cost approximately £1,500,000, and other claims are also being examined, one of the most important of which is a new road between Manchester and Liverpool to cost about three million pounds. The construction of this road, the Minister of Transport informs us, will solve a great traffic problem.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

Hinged Forks for French Roads.

Motor cycle dealers in Paris, whilst admitting that British machines are the best, nearly all complain that the springs of their forks are too light for French roads. The most popular type of spring fork amongst French manufacturers is the same in principle as the Triumph type, *i.e.*, hinged.

This Week's Silencer Story.

On being stopped by the police for using an inefficient silencer, a reader explained the make of his machine and stated that the silencer was as fitted by the makers. The police sergeant at once said "Oh! If your silencer is a Triumph it's all right," and apologised for stopping him.

Sidelight on Conditions in U.S.A.

"Every town of 2,500 people or more ought to have at least one motor cycle dealer. How many of them have one? Not ten per cent. of all the towns of this size in the country."—An extract from an American trade paper that vividly illustrates how far behind Great Britain is the popularity of the motor cycle in the U.S.A.

Bogey Scores in Reliability Trials.

The substitution of a "bogey" time limit on test hills instead of the observations which have formerly been carried out in reliability trials is the interesting suggestion emanating from Ilkley, to remove the cause of many complaints which have arisen in the past. Details are given under the heading of "Club News" (Ilkley and District M.C. and L.C.C.).

The Most Popular Machines.

Taking a census of motor cycle traffic is quite a popular pastime with our readers. Here are the figures for an hour and a half on West Hill, Putney: Triumph, 14; Douglas, 13, A.J.S., 9; Matchless, 7; New Imperial, 6; Levis, 6; Royal Enfield, 6; New Hudson, 5; Rudge, 4; Harley-Davidson, 3; Indian, 3; Dunelt, 3; Raleigh, 2; Rover, 2; Ariel, 2; P. and M., 2; Norton, 2; B.S.A., 2; McKenzie, 2; N.U.T., 1; Royal Ruby, 1; Scott, 1; Wooler, 1; A.B.C., 1; unknown makes, 13. Has anybody done the same thing in Glasgow or Manchester or Bristol?

Scottish Motor Show in Glasgow.

As this year, the Scottish Motor Show will be held in the Kelvin Hall, Glasgow, opening on Friday, January 26th, and closing on Saturday, February 3rd (1923).

Presentation to Sir Alfred Mays-Smith.

Sir Alfred Mays-Smith, president of the Society of Motor Manufacturers and Traders in 1920-21 and 1921-22, was given a luncheon and presentation at the Royal Automobile Club recently.

Fine Profits.

The Indian organisation in America is largely advertising that New York's motor cycle police made a net profit of $481,662 in nine months, after deducting all operating expenses, including drivers' salaries. Obviously, to enjoy motor cycling in full in the States one must be a policeman

Cruelty to Tyres.

Why is it that some motor cyclists persist in riding their machines at an angle approaching 45° to the sidecar? Quite apart from the discomfort and slovenly appearance such a practice creates, the wear on all three tyres is seriously increased.

When the Cat's Away——

Along with a letter to the Editor received last week were two large rusty nails, which, a correspondent alleges, were found embedded business-end up in the tarred road through the village of Blythe Bridge. Before he had restarted after removing them, four more were stuck in the same place; he hied to the local police office, only to find the whole police force was away for his annual holiday.

A LILLIPUTIAN SADDLE. This model of the Terry spring saddle is a complete replica in every way, the sizes of the springs being exactly proportionate. The detail in the fine radiating coil springs is of course, lost in the reproduction.

SUCCESSFUL SCOTTISH MAKE. Quite a number of honours in Scottish speed events fall to the New Gerrard, which itself is built north of the Tweed. F. G. Porter on one of these machines ready to start in the 250 c.c. class, which he won, at last Saturday's Edinburgh open hill-climb at Bowhouse Brae.

250 c.c. Records Again Broken.

Further records fell at Brooklands during the last fortnight. On September 25th, H. Le Vack (249 New Imperial-Jap) accomplished the flying five miles and standing ten miles in 3m. 55.49s. and 8m. 10.17s. respectively—76.43 m.p.h. and 73.44 m.p.h. Five days earlier H. H. Beach (788 Norton sc.) broke the following records in the 600 c.c. sidecar class :—

			m.p.h.	k.p.h.
4h.	221m.	1,082yds.	= 55.40	= 89.15
12h.	631m.	1,396yds.	= 52.65	= 84.73.

			m.p.h.	k.p.h.
500 miles	9h.	31m.	48.37s. = 52.46	= 84.42.
600 miles	11h.	23m.	38.86s. = 52.65	= 84.73.

These also apply in the 1,000 c.c. class.

New A.C.U. Centre.

Formal permission of the A.C.U. has been granted for the formation of a new centre in the Bristol and Bath district. A combined general meeting of all the clubs interested, is called for Thursday, October 12th, at 7.30 p.m., at the Old Red House, New Bond Street, Bath.

NEXT WEEK

THE MOTOR CYCLE

will include an

Illustrated Review

of the Motor Cycle Exhibits

at the

Paris Salon.

THURSDAY. OCTOBER 12th.

Important Price Reductions.

New Imperial prices have been reduced as follows :—

293 c.c. Light Tourist ...	... £65
248 c.c. Super Sports ...	... £73
348 c.c. Super Sports ...	... £78
976 c.c. Sidecar Outfit ...	... £125

In addition a 293 c.c. lightweight sidecar outfit will be marketed at about £90.

Informal Hill-Climbs.

Informal hill-climbs, held recently by the Oxford Motor Club, have in each case been a great success, and another, therefore, will be held on the 7th inst. on Alms Hill, Henley, at 3 p.m.

Another Open Trial.

The Cheshire Centre A.C.U. open reliability trial, postponed some weeks ago, will be held on the 21st inst. The entry list has been reopened, and entries will be received by Capt. W. G. Hill, Hill's Garage, The Newgate, Chester.

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FOR SINGLE GEARS ONLY. The "colonial" section in the Levis trial for single geared machines accounted for several failures, but B. Francis (169 Atlas) proceeded carefully and negotiated the rough going without loss of marks

"THE PETROL ST. LEGER."

Record for the Course Lowered at the Doncaster Speed Trials. "The Motor Cycle" Cup Changes Hands.

ONE does not naturally associate horse-racing with motor cycles, yet close beside the historic Doncaster Race-course, the scene of so many classic struggles, lies a stretch of fine speedway known as Sandall Beat Road.

Here, on Saturday last, gathered a goodly number of keen sportsmen and a fair crowd of spectators to witness the Yorkshire Centre speed trials organised by the Doncaster and District Motor Cycle Club.

This type of event seems to be popular in the North Country, for following close on the heels of the Scarborough speed trials the Doncaster event attracted no less than two hundred and thirty-five entries, amongst which were to be found the names of many famous riders. Unfortunately, however, H. Le Vack, who last year carried off *The Motor Cycle* Challenge Cup on an Indian was unable to be present to defend his title.

Favoured by the Weather.

Fine weather graced the proceedings, and though a few drops of rain fell during the last classes the sun shone for most of the time.

As for the course, the rather short flying start was desirable rather than otherwise, since a fairly sharp left-hand bend followed shortly after the starting-point This bend was taken wide by almost every competitor, and there followed a straight of almost half a mile in length with a slight curve in the long "pulling-up" stretch.

The start was timed for one o'clock, but actually the first man was dispatched at approximately 1.20. Yet the ambitious intention of the organisers—to complete the trials in five hours—was very nearly realised.

A Favourite's Mishap.

G. Dance (Sunbeam) led off with a good performance, but unfortunately his top gear slipped out and he finished in third place, being beaten by R. Cawthorne (Norton) and E. Searle (Sheffield Henderson). Results :—

CLASS 2A.—SIDECARS UP TO 550 C.C.
EXPERTS.

		m.p.h.
1.	R. T. Cawthorne (490 Norton sc.)	27s. = 66.67
2.	E. Searle (499 Sheffield-Henderson sc.)	29s. = 62.07
3.	G. Dance (499 Sunbeam sc.) ...	31s. = 58.06

Where entries permitted, each class was sub-divided into : A, experts; B, experts barred; C, novices; in the three first classes, however, there were no novices' events.

In Class 2B (up to 550 c.c., experts barred), W. H. Gillott (490 Norton Special with an o.h.v. engine, the head of which was designed by O. Padley), had bad luck, and for some mysterious reason his engine cut out half way down the course, F. Sisson, mounted on a standard o.h.v. Norton, carrying off the honours. Results :—

		m.p.h.
1.	F. Sisson (490 Norton sc.) ...	28s. = 64.29
2.	C. Waterhouse (492 Sunbeam sc.)	32⅘s. = 55.56
3.	H. Hollowell (490 Norton sc.)	33⅕s. = 53.25

750 c.c. Entries.

In Class 3 the class 2 entries were practically repeated since the only entry of over 500 c.c. was that of L. Askham, whose 633 c.c. Norton sidecar toured in misfiring badly. Results.

EXPERTS.

		m.p.h.
1.	R. T. Cawthorne (490 Norton sc.)	27⅗s. = 65.22
2.	E. Searle (500 Sheffield-Henderson sc.)	30s. = 60
3.	J. Hollowell (490 Norton sc.)	33⅕s. = 54.22

Dance toured in with a broken throttle wire.

In Section B Gillott's Norton Special never got going properly, Askham's Norton toured in, obviously in trouble, and Hollowell's Norton was still misfiring slightly, though it was fast enough to secure third place.

		m.p.h.
1.	F. Sisson (490 Norton sc.) ...	27⅗s. = 65.69
2.	C. Waterhouse (492 Sunbeam sc.)	32⅘s. = 55.58
3.	J. Hollowell (490 Norton sc.)	37s. = 48.65

The unlimited class brought forth four fresh entries, F. W. Dixon, a popular favourite, mounted on an eight-valve Harley-Davidson, G. Brough (976 Brough-Superior sc.), H. Hoffman on a similar mount, and P. C. Hall (976 Sunbeam sc.).

British Big Twin Success.

Once again George Dance's luck was out, and the fact that his inlet tappet unscrewed lost him a place.

EXPERTS.

		m.p.h.
1.	G. Brough (976 Brough Superior sc.)	26s. = 69.33
2.	F. W. Dixon (998 Harley-Davidson sc.)	26⅘s. = 68.18
3.	R. T. Cawthorne (490 Norton sc.)	26⅘s. = 67.16

It will be noted that ⅘s. covered the first three men in this class, and the running was so close that it was impossible to judge the winner until the results were given out. Cawthorne saved much time by steering a perfect course.

EXPERTS BARRED.

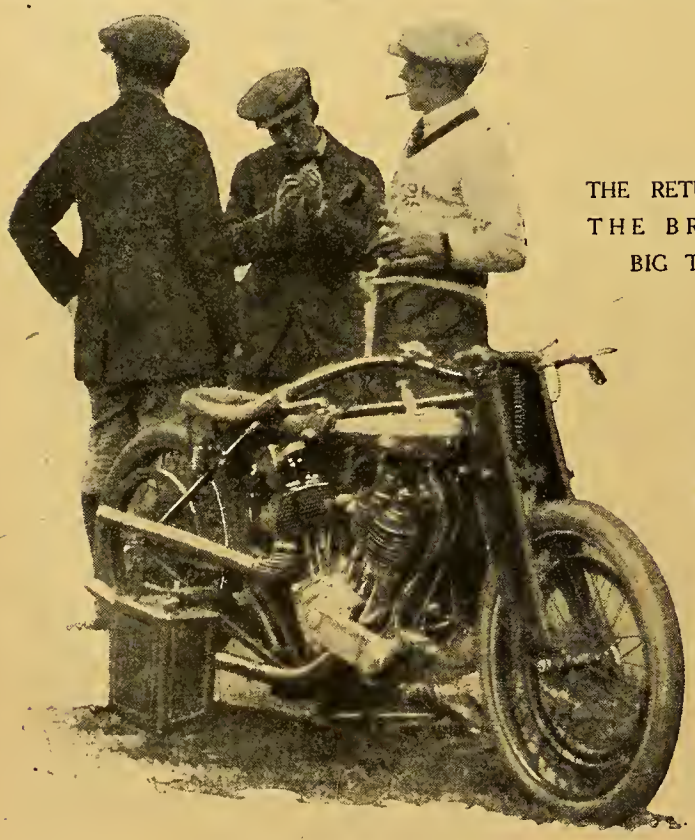
		m.p.h.
1.	F. Sisson (490 Norton sc.) ...	27⅗s. = 65.69
2.	H. L. Askham (490 Norton sc.)	33⅕s. = 53.25
3.	P. C. Hall (986 Sunbeam sc.)	37⅗s. = 48.13

Hoffman's Brough Superior was slow; he took the first curve wide and was not in good form.

While the big machines were having their sidecars removed preparatory to the big solo events, the smaller classes were run off, the first being for two-strokes only up to 250 c.c. The experts class resulted in a tie for first place.

		m.p.h.
1.	A. B. Dodds (247 Levis) }	
1.	G. Povey (249 Velocette) } ...	31⅘s. = 56.6
3.	L. Lancaster (249 Velocette) ...	37⅗s. = 48.13

When the tie was run off Dodds had the misfortune to stop just over the line



THE RETURN OF THE BRITISH BIG TWIN.

Geo. Brough (in white jersey), who made fastest time of the day on his 976 c.c. Brough Superior.

"The Petrol St. Leger."—

though the ultimate winner, G. Povey, exceeded his previous time by one second.

Section B produced eight entries and was won as follows :

	m.p.h.
1. H. C. Dodds (247 Levis) ...	34²⁄₅s.=52.33
2. L. Lancaster (249 Velocette) ...	36³⁄₅s.=49.18
3. F. W. Dosser (249 Velocette) ...	37⁴⁄₅s.=48.13

In addition, A. B. Dodds carried off the *Doncaster Chronicle* Cup for the fastest time by a local member in the 250 c.c. class, his brother, H. C. Dodds, being ineligible owing to the fact that he did not own the machine which he rode. Nevertheless, he made up for his loss in the novice class as below :

	m.p.h.
1. H. C. Dodds (247 Levis) ...	38²⁄₅s.=46.88
2. R. H. Dosser (249 Velocette) ...	38⁴⁄₅s.=46.39
3. E. W. Knibbs (225 Enfield) ...	40²⁄₅s.

A mistake with regard to the size of B. Kershaw's engine led to considerable confusion in Class 6A for solo machines up to 300 c.c., for he was first awarded premier position, then disqualified and finally reinstated. Results :

EXPERTS.

	m.p.h.
1. B. Kershaw (249 New Imperial)	28⁵⁄₅s.=62.94
2. R. Wood (250 Massey-Arran) ...	30⁴⁄₅s.=58.44
3. D. Prentice (250 Massey-Arran)	32²⁄₅s.=55.56

The experts-barred division of the same class produced a well deserved win by R. Wood, who rode well but did not get down low enough on his machine.

	m.p.h.
1. R. Wood (249 Massey-Arran) ...	30²⁄₅s.=59.21
2. R. B. Robinson (249 Trump) ...	31⁴⁄₅s.=56.62
3. H. C. Dodds (247 Levis) ...	32¹⁄₅s.=55.9

Novice Lightweight Riders.

H. C. Dodds' Levis seemed to be steadily improving, and produced a lovely clean hum, succeeding in carrying off the premier award in the novices' class.

NOVICES.

	m.p.h.
1. H. C. Dodds (247 Levis) ...	32s. =56.25
2. A. Hill (249 New Imperial) ...	32¹⁄₅s.=55.9
3. W. Wiltshire (249 Omega-Jap)	33²⁄₅s.=53.89

George Dance showed his true form for the first time in the 350 c.c. class, where, riding his Sunbeam, he lay right down to it and won at 72 m.p.h. ; he was, however, hard pressed by Handley (O.K. Junior), who rode remarkably well throughout the meeting and gained awards in classes well above his engine capacity.

	m.p.h.
1. G. Dance (349 Sunbeam) ...	25s. =72
2. W. L. Handley (349 O.K. Junior)	25²⁄₅s.=70.87
3. E. Searle (349 Sheffield-Henderson)	25³⁄₅s.=70.31

The experts-barred section produced no great excitement, except that K. J. Shuttleworth stopped about half-way down the course and pushed in. He was not communicative regarding his troubles, and appeared no more.

	m.p.h.
1. W. L. Handley (349 O.K. Junior)	25⁴⁄₅s.=69.77
2. S. Ford (350 Massey-Arran) ...	27s. =66.67
3. R. Gray (349 New Scale) ...	27¹⁄₅s.=66.18

Division C for novices was chiefly remarkable for the fact that riders would not get down on their tanks, and that there was a tie for third place between D. Brown (349 Royal Ruby) and G. Houghton (349 Sheffield-Henderson), which resulted in a victory for the former.

	m.p.h.
1. J. G. Bayne (349 Weatherell)	28³⁄₅s.=62.94
2. A. Hill (249 New Imperial) ...	31³⁄₅s.=56.96
3. D. Brown (349 Royal Ruby) ...	32¹⁄₅s.=54.88

Next came the class for machines up to 550 c.c., the best supported of the meeting, and consequently that for which *The Motor Cycle* challenge cup was awarded.

A Much-Coveted Trophy.

In the expert section the speeds were terrific and the riding superb. When Dance led off with a speed of 78.26 m.p.h. there were few who thought that he would be beaten. Yet R. T. Cawthorne, on an o.h.v. Norton, succeeded in lowering his time by ⅘ sec. and consequently carried off the coveted trophy. Dance made his last appearance in this class for his run of bad luck culminated in a broken valve rocker, which spoiled his final chance for an attempt at "fastest time."

	m.p.h.
1. R. T. Cawthorne (490 Norton)	22⁴⁄₅s.=78.97
2. G. Dance (499 Sunbeam) ...	23s. =78.26
3. H. W. Hassall (490 Norton) ...	23⁵⁄₅s.=76.27

Nortons again carried off the honours in the experts-barred section, though Handley on a 350 c.c. machine captured third place.

	m.p.h.
1. G. Bower (490 Norton) ...	24⁵⁄₅s.=73.17
2. F. Sisson (490 Norton) ...	24¹⁄₅s.=72.58
3. W. L. Handley (349 O.K. Junior)	25s. =72

As regards the novices class, one can only say that it was something of a farce, for out of twelve entrants only the three who were placed succeeded in beating a mile-a-minute gait. These were :

	m.p.h.
1. A. S. Pearce (490 Norton) ...	26⁴⁄₅s.=67.16
2. R. Turner (494 Douglas)	28¹⁄₅s.=63.83
3. F. Catterick (494 Douglas) ...	29s. =62.07

Since there is a shortage of 750 c.c. machines in this country, the next classes might well have been eliminated, for they produced practically the same entry as the 550 c.c. class, though the results were slightly varied.

EXPERTS.

	m.p.h.
1. R. T. Cawthorne (490 Norton)	23s. =78.26
2. H. W. Hassall (490 Norton) ...	23²⁄₅s.=76.92
3. J. W. Hollowell (490 Norton)	24³⁄₅s.=73.17

EXPERTS BARRED.

	m.p.h.
1. G. Bower (490 Norton) ...	24⁵⁄₅s.=73.17
2. F. Sisson (490 Norton) ...	24¹⁄₅s.=72.58
3. W. L. Handley (349 O.K. Junior)	26s. =69.33

In this event Sisson began to wobble after crossing the finishing line and hit the rails on the subsequent curve. Though carried to the infirmary with a damaged hand and ankle, he is expected to make an early recovery.

This was indeed an unfortunate climax to a consistently good series of performances, and we offer our sympathies to a first-class and plucky rider.

NOVICES.

	m.p.h.
1. A. S. Pearce (492 Sunbeam) ..	26⁵⁄₅s.=67.67
2. F. Catterick (494 Douglas) ..	28⁵⁄₅s.=62.94
3. R. Turner (494 Douglas)	28⁴⁄₅s.=62.5

82½ Miles an Hour.

Everyone had been looking forward to the unlimited solo class, which was expected to develop into a duel between F. Dixon and George Brough, and since the latter had carried off the honours in the sidecar class there was much speculation, for Dixon's reputation stands high in the North.

Hassall led off in the experts class with a speed of 76.92. Good, but not good enough! Dixon followed with a half-mile at 81.08. Next came Cawthorne at 77.59, and, finally, George Brough at 82.57, whose comparative silence was deceptive, for he not only won his class but also lowered the record for the course. Results :

	m.p.h.
1. G. Brough (988 Brough Superior)	21⁴⁄₅s.=82.57
2. F. W. Dixon (988 Harley-Davidson)	22¹⁄₅s.=81.08
3. R. T. Cawthorne (490 Norton) ..	23¹⁄₅s.=77.59

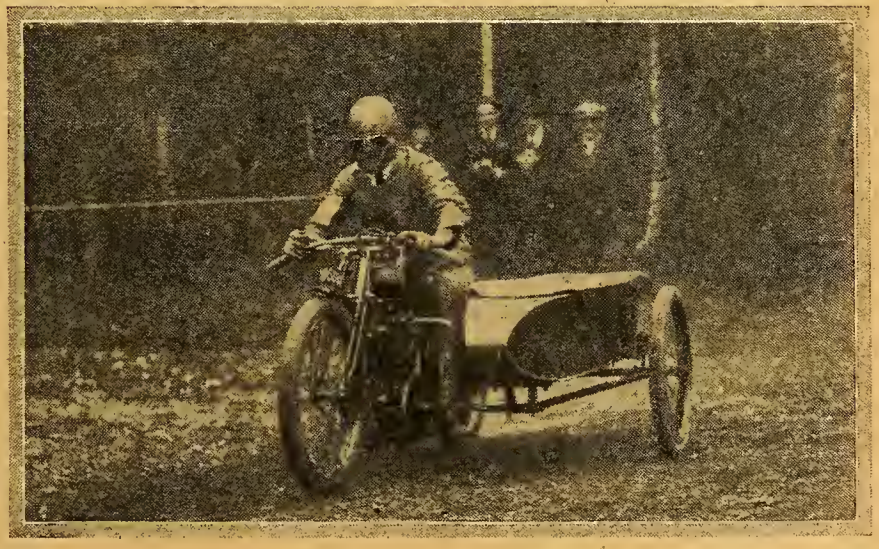
EXPERTS BARRED.

	m.p.h.
1. G. Bower (490 Norton)	24⁵⁄₅s.=73.17
2. W. L. Handley (349 O.K. Junior)	25²⁄₅s.=70.87
3. W. H. Rhodes (998 Indian) ..	25⁵⁄₅s.=70.31

NOVICES.

	m.p.h.
1. R. Turner (494 Douglas)	28²⁄₅s.=63.38
2. F. Catterick (494 Douglas)	30¹⁄₅s.=59.8
3. F. C. Hirst (490 Sunbeam)	31s.=58.06

Undoubtedly the meeting was a thorough success from the moment of the start until the last prize was given away by Councillor W. R. Leach.



E. Searle (499 Sheffield Henderson sidecar) at the start of the unlimited class for sidecars.

M.C.C. ONE-DAY SPORTI

THAT only 32 out of an entry of 98 claimed non-stop runs unmistakably indicates that last Saturday's M.C.C. sporting trial was not misnamed. But it might well have been curtailed to two circuits of a five-mile course, instead of two of fifty-eight miles each. The result would have been almost the same.

One hill—Rook—caused all the trouble; the other eight or so were too easy in themselves and too well interspersed with main roads to make the course in any way difficult. Had it rained, of course, there might have been a different story to tell.

Start, lunch-stop, and finish were at Caterham, and the route went up Succombs, High Lane, and Polesteeple hills, Sunningvale Avenue, and Cudham hill in the first thirteen miles. All are possible on second gear on a good 350 c.c. machine—only solo mounts were eligible for the trial—but the majority of the competitors took the safety measure of employing low.

Succombs failed a Wooler rider owing to his chain jumping off in the first circuit, and C. Walden (350 Beardmore-Precision) in the second; and Sunningvale was reported to have been too much for L. N. Stannah (499 Rover).

Two Treacherous Sections.

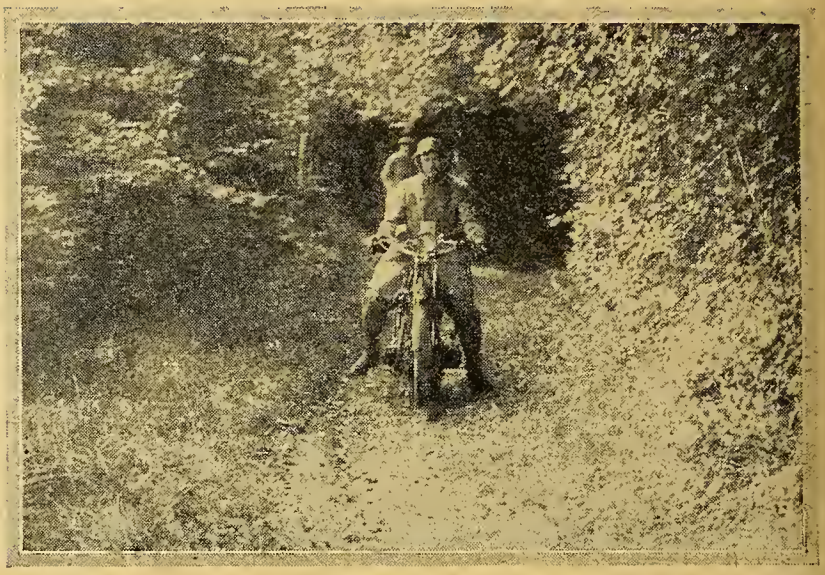
Rook is a narrow, winding path up a hillside, first through bushes, then through woods. It was wet under the shade of the trees, and two sections were distinctly treacherous. The upper one seemed worse, so we observed all the competitors there on the first circuit.

Unfortunately, there was no penalty for footing, and the main bulk of the O.K.-ed ascents were not at all imposing. There was a good deal of rank had driving, or, what in our eyes was no less heinous, paddling up without attempting to ride the machines at all.

Only seven competitors *deserved* full marks at this point: A. S. Guthrie (349 Diamond-B. and S.); R. L. T. Wasey (349 A.J.S.)—bounced all over the road, but never moved his feet; R. B. Clark (596 Sunbeam)—a magnificent climb, helped by a steel-studded rear tyre, but mainly owing to good driving; F. F. Salter (498 Zenith-Bradshaw); R. S. Newnham (349 Raleigh); F. A. Longman (498 Ariel); and Gus Kuhn (595 Douglas)—on a machine fitted with very up-swept touring handlebars.

Next in order of merit came W. D. Pugh (989 Harley-Davidson), F. T. Sibley (499 Rudge), H. G. Bell (748 F.N.), and R. W. Crauford (500 P.V.).

There were bright moments in the ascents of the following; all, however, were not quite so steady as they might have been:—A. C. Rhodes (499 Triumph), B. S. Allen (976 Brough-Superior), P. Cunningham (555 P. and M.), R. V. Saltmarsh (584 Harley-Davidson), F. W. Neill (976 Matchless), E. H. Gifford (498 Martinsyde), A. A. F. Symes (678 Martinsyde)—very fast and steady until he hit a boulder and nearly failed, E. J. Walter (498 Zenith-Bradshaw)—repeated Syme's



On its lower reaches Rook Hill is no more than a rough footpath. H. G. Bell (748 F.N.) manœuvring his lengthy and heavy machine up in a style that augers well for its stability.

At times pandemonium reigned on Rook Hill and although the competitors were running at one minute intervals baulking was common. A typical scene during the forenoon circuit.

Cudham Hill was not at all difficult on Sat (499

IAL FOR SOLO RIDERS.

W. A. Sweet (989 Harley-Davidson) a few moments before he joined the long list of failures on Rook Hill.

performance, W. Julian (247 Levis)—"hard lines" from the onlookers when he footed, R. Charlesworth (349 Zenith), and A. H. S. Love (490 Norton), who was taking no chances.

Absolute failures were—S. F. Farley (Henderson), K. Campbell-Cullen (349 A.J.S.), G. Richardson (247 Velocette)—after pushing for a space, T. E. Ranger (269 P.V.)—whom clouds of smoke made impossible to see, but he was heard to stop; C. Bourlet (498 Ariel)—complaining of a baulk lower down, W. A. Sweet (989 Harley-Davidson), Alan Hill (Francis-Barnett), and S. J. Marks (499 Triumph)—after a spectacular and nearly successful try at climbing a vertical bank.

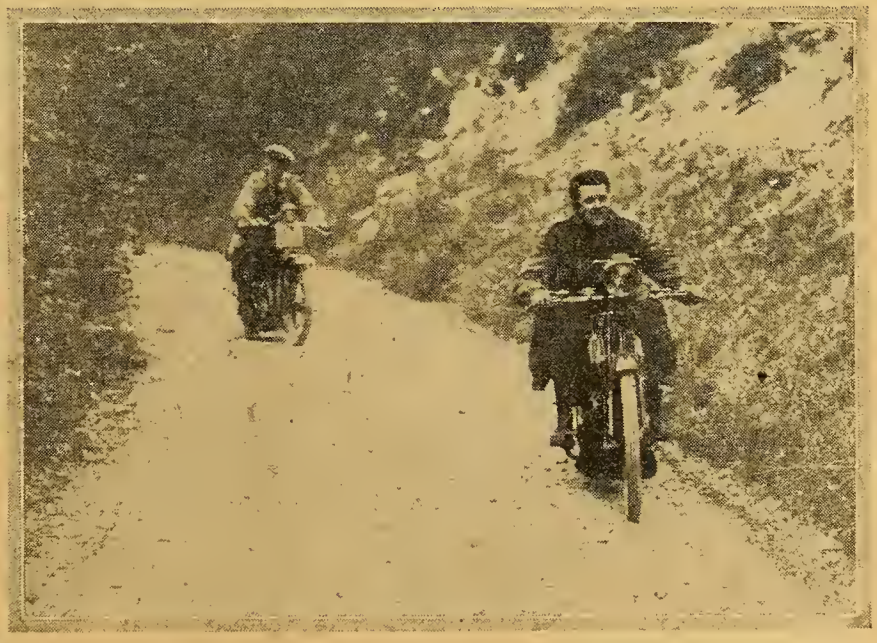
A hundred yards or so down the hill another twenty-four had met failure in a variety of forms, usually by skidding into a rut and falling off. The unfortunates were:—S. F. Farley (Henderson), F. J. Youngs (O.K.), C. J. Wheeler (Beardmore), P. Cunningham (P. and M.), J. McBirnie (998 Indian), R. N. Thomas (349 Hagg), S. M. Greening (348 Francis-Barnett), A. G. Wall (Connaught), C. H. Mocatta (248 Grindley), B. F. G. Fowkes (349 Beardmore), T. W. Buckle (748 F.N.), W. A. Sweet (989 Harley-Davidson), E. C. Barton (584 Harley-Davidson), E. H. Gifford (498 Martinsyde), J. E. Starnes (678 Martinsyde), E. J. Walter (498 Zenith-Bradshaw), J. W. Grose (398 A.B.C.), B. H. Brayne (499 Blackburne), C. C. Labin (678 Martinsyde), H. W. Harrington (596 Indian Scout), M. Pearson (550 Triumph), L. Heller (595 Douglas), W. C. Henry (349 A.J.S.), and S. C. Tait (349 James). One or two of these deserved a better fate, baulking being common, and Mocatta's stop was due to his goggles falling at an unpropitious moment.

Steady Ascents.

Particularly excellent crossings of this danger spot were made by:—B. Alan Hill (348 Francis-Barnett), who cleverly wormed his way through a melee of failures only to meet the unhappy fate, already recorded, higher up; H. G. Bell (F.N.), S. J. Marks (Triumph), another like Hill; A. H. S. Love (Norton), C. W. Lewis (Beardmore), R. B. Clark (596 Sunbeam), and H. B. Browning (349 A.J.S.), hampered by a flat rear tyre. Yorkshill, Paddledock, and Chalk Pit were all of no account, and the 42 survivors who set out, after lunch, on their second circuit worried only about Rook.

The lower section was the obvious point of interest this time. Only three men kept their feet on the rests—Guthrie

...lls (989 Harley-Davidson) and B. H. Brayne ri... up.



A. A. Attwood (548 Hawker) on the last hill of the circuit, Chalk Pit, followed by G. Pidgeon who most convincingly demonstrated that the new 490 c.c. Quadrant has lots of power

M.C.C. Sporting Trial.—(Diamond), and Clark (Sunbeam), who had already shown that they could ride, and A. H. S. Love (Norton). Sparks flew up from Clark's rear tyre, and there was quite a court of inquiry into his wheel tracks after he had passed.

Several more failed, including A. A. Attwood (550 Hawker), who gave G. Pidgeon (490 Quadrant) an opportunity of accomplishing some wonderful riding in avoiding a baulk; R. L. T. Wasey (349 A.J.S.), who came up at a do-or-die pace, determined to keep the "revs" up; H. G. Bell (748 F.N.), E. H. Gifford (498 Martinsyde), B. H. Brayne (499 Blackburne), and H. H. Robinson (349 Wooler), and A. Stanger (Stanger), both higher up after doing quite well where others had found the greatest difficulty. R. S. Newnham (349 Raleigh) skidded in a rut, and for a moment appeared to stop as his footrest crashed against a rock; his engine and rear wheel kept going, and he was given the benefit of the doubt.

One or two footed so cautiously and efficiently that they could hardly have fallen off had they tried; "Pa" Applebee (Levis) and E. J. Kehoe (Rudge) were typical of this class.

All the following were quite good: T. S. Sharratt (349 A.J.S.), B. S. Allen (976 Brough Superior), W. D. Pugh (989 Harley-Davidson), R. V. Crauford (499 P.V.), T. W. Buckle (F.N.), A. A. F. Symes (Martinsyde), C. F. Hollyoak (348 Federation), W. Julian (247 Levis), V. Belfield (499 Triumph), F. A. Longman (498 Ariel), R. Charlesworth (349 Zenith), and G. Kuhn (595 Douglas)—best of this batch.

Thirty-two claimed non-stops at the finish as follows:

A. S. Guthrie (Diamond), T. S. Sharratt (A.J.S), G. Pidgeon (Quadrant), C. L. Sprosen (Connaught), A. C. Rhodes (Triumph), B. S. Allen (Brough Superior), R. V. Saltmarsh (Harley-Davidson), W. D. Pugh (Harley-Davidson), H. A. Reyre (Ariel), J. Stanger (Stanger), F. W. Neill (Matchless), F. W. Applebee (Levis), W. N. Worthington (Wooler), F. T. Sibley (Rudge), J. A. Peacock (A.B.C.), T. L. Daniels (A.B.C.), R. B. Clark (Sunbeam), T. W. Buckle (F.N.), F. E. Salter (Zenith-Bradshaw), S. C. Pearce (Coventry Eagle), R. S. Newnham (Raleigh), S. Dunford (Verus), A. A. F. Symes (Martinsyde), P. L. B. Wills (Harley-Davidson), B. H. Brayne (Blackburne), C. F. Hollyoak (Federation), A. H. S. Love (Norton), W. Julian (Levis), F. A. Longman (Ariel), R. Charlesworth (Zenith), C. W. Lewis (Beardmore-Precision), G. Kuhn (Douglas).

A 490 c.c. QUADRANT.

Detachable Head and Side-by-Side Valves.

OLD-TIME riders will remember the days when the Quadrant single, distinguished by its aluminium silencer close up to the cylinder port, was one of the most popular machines of its day. Latterly the firm has specialised rather on big singles and has made a wonderful reputation during the past year with its hundred-guinea sidecar outfit.

Quite a novelty has now appeared which made its debut in Saturday's M.C.C. trial. It takes the form of a single cylinder engine of 79×100 mm. bore and stroke (490 c.c.).

Change in Valve Arrangement.

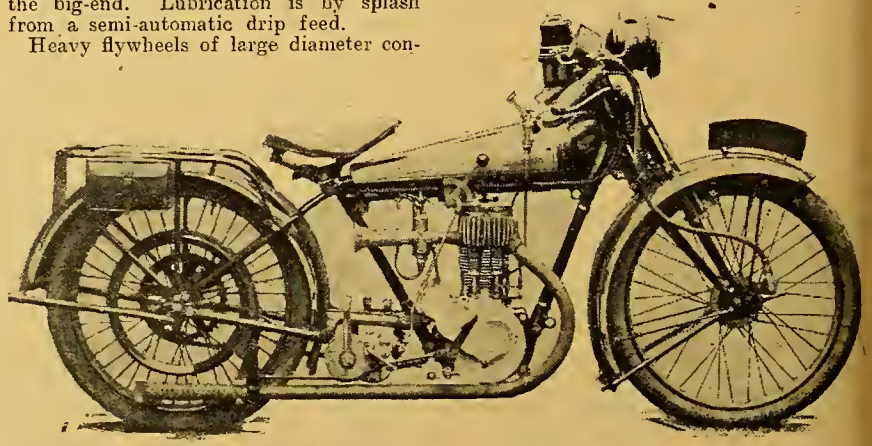
Instead of the normal Quadrant valve arrangements wherein the exhaust valve lies at the side of the engine and the inlet behind, the usual side by side valve lay-out is employed. These valves are carried in a detachable head amply ribbed with radial fins, and both head and cylinder are held to the crank case by two long bolts and a bridge apiece.

The piston has a recessed waist for the greater part of its length, and there are six radial ribs in the head; the gudgeon pin is locked to the piston boss by a grub screw, and there are two rings.

A separate cam is employed for each valve, the operation being through rockers, and the magneto, which lies behind the cylinder, is driven by a train of gears.

Plain bronze bushes carry the crankshaft, but a roller bearing is fitted in the big-end. Lubrication is by splash from a semi-automatic drip feed.

Heavy flywheels of large diameter contribute to the flexibility of the engine. The rest of the machine follows standard Quadrant lines, but is lighter in appearance and on more sporting lines. Either a two- or three-speed gear may be obtained, but in either case the transmission is by chain throughout.



A departure from accepted Quadrant practice, the new 490 c.c. model will appeal to solo riders. Side-by-side valves are carried in the detachable cylinder head, instead of the side exhaust and rear inlet so long associated with this make.

ALEC ROSS—AN APPRECIATION.

IT is with more than usual sorrow that one hears of the passing of Mr. Alec Ross. He was one of the real old brigade. You modern motor cyclists with your clutches and gears are denied the pleasure of delving into those past times when many present-day things were not.

In the days before the A.C.U., Alec Ross was there. When it was the Stanley Show—not Olympia—Alec Ross was a moving spirit. There was a time before V-belts and stands and carriers; when all controls were worked by levers on the tank; when our ignition was by accumulator and a mass of flimsy, short-circuiting wires; when we had to dismount to oil the engine.

Alec Ross is an integral part of the recollection of those days. The writer remembers well—oh! a horribly long time ago—complaining to Alec about the difficulty of retarding the spark on a hairpin corner when both hands were needed for steering. That led to a crude and unsightly but efficient handle-bar control being fitted to his magneto—the progenitor of a now invariable fitment.

Alec Ross, George Reynolds, Billy Pratt, "Vindec" Wells, Fred Straight—how the old faces come back with the names! Many we still have with us. Some, alas! have passed on. All are memorable links with the childhood of motor cycling. Now Alec Ross has dropped out. How he will be missed! Who will now be starter at all our big events? Right back to the times of the Quarterly Trials and beyond, one sees him marshalling the riders up to "Ebbie" or "Biddy" or "George." Only last month he was there as usual at the start every morning of the A.C.U. Six Days event, cheering the men, chaffing the ladies, affable but inflexible.

Now he has joined the majority. Another link with the past is gone. But one feels that Alec in his lifetime, by his enthusiasm, his energy, his sincerity, has forged many of those links by which the sport and industry of motor cycling hold together to-day and will continue so to do.

He has lived, and he has not lived in vain. We mourn his passing, but rejoice in ever having known him. A good fellow and a good friend. *Requiescat in pace.*

P.W.B.

THE TRUTH ABOUT TUNING.

Hints on How to Get the Best out of a Machine in Speed Events. No Short Cuts to Success.

WHAT is the difference between a sports model Blank motor cycle as sold to the public, and a machine bearing the same name—apparently similar in every respect—that, in the hands of the manufacturer's rider shines on Brooklands, and in the T.T., and wins innumerable "fastest times" at hill climbs?

It is a question over which the owner of a modern sporting motor cycle often ponders. His machine is invincible on the open road, in his local club events he does rather well, but one day in an open hill climb a trade rider will turn up on an identical machine, and forthwith proceed to make the previous record for the hill look like the result of a race for ancient cab horses.

No Short Cuts.

One cannot say to the owner of a long stroke Sunbeam: "Do this, and you will ascend gradients with a velocity hitherto only associated with Dance"; nor to a Douglas enthusiast, "Do that, and you will traverse a kilometre of Brooklands track in the same space of time as that occupied by Pullin." No, the speed shown by these trade machines—freaks excepted—is the result of weeks of hard work, and in addition the knowledge of where the work is needed.

However, the following notes may assist the ambitious amateur rider to reap a few more "fastest times," a few more "firsts," and, perhaps, some day to bring his time for a hill down to a figure more approaching that of Dance.

We will assume that the cycle to be livened up is a 500 c.c. sports model single cylinder—the most popular type of this class. Gear, clutch, and all-chain drive are essential, belt drive being obsolete so far as speed work is concerned.

First, before they are forgotten, the cycle parts and the transmission must receive attention. If the reader does not know how to do this, he may as well skip the rest of this article.

Hard Work, But Worth It.

Then take the engine out of the frame, and dismantle. Examine the cylinder walls for any sign of scores. No matter how slight they must be ground away. Clean all traces of carbon from the cylinder head and ports, rubbing with emery cloth wrapped round a stick until a fine polish results. (Hard work this, but well worth it.) Examine the valve seatings for pit marks. Polish the valves in the same way as the cylinder head, and grind in slightly with crocus powder and oil before replacing. Change the valve springs often, and—this is important—get them direct from the manufacturer, asking him for those of a strength suitable for speed work.

Polish the piston head. Remove the rings and clear out every trace of carbon, not forgetting the inside of the piston. Examine the rings and piston skirt for bright patches, which show where unnecessary friction is taking place. Take these bright marks down with emery *paper*, No. 00 for preference. After this the piston may, with advantage, be lapped into the cylinder with crocus powder and oil, but this should not be overdone. A few minutes' careful "in and out" work will ensure you a compression like a brick. Take the most particular care to remove all traces of abrasive from the cylinder, piston, and rings before assembling.

Clear all carbon deposit from the exhaust pipe, and, of course, the silencer, if fitted. Tangles of copper turnings—intended, my landlady informs me, for cleaning greasy dishes—may be obtained from any ironmonger, and these, if tied to a length of string and used as a "pull-through," will do the work most efficiently.

Attention to Bearings.

Any plain bearings in the engine must be examined for bright spots in the same way as the piston, and treated accordingly. Roller and ball bearings should be thoroughly swilled out with paraffin, and oiled again before assembling.

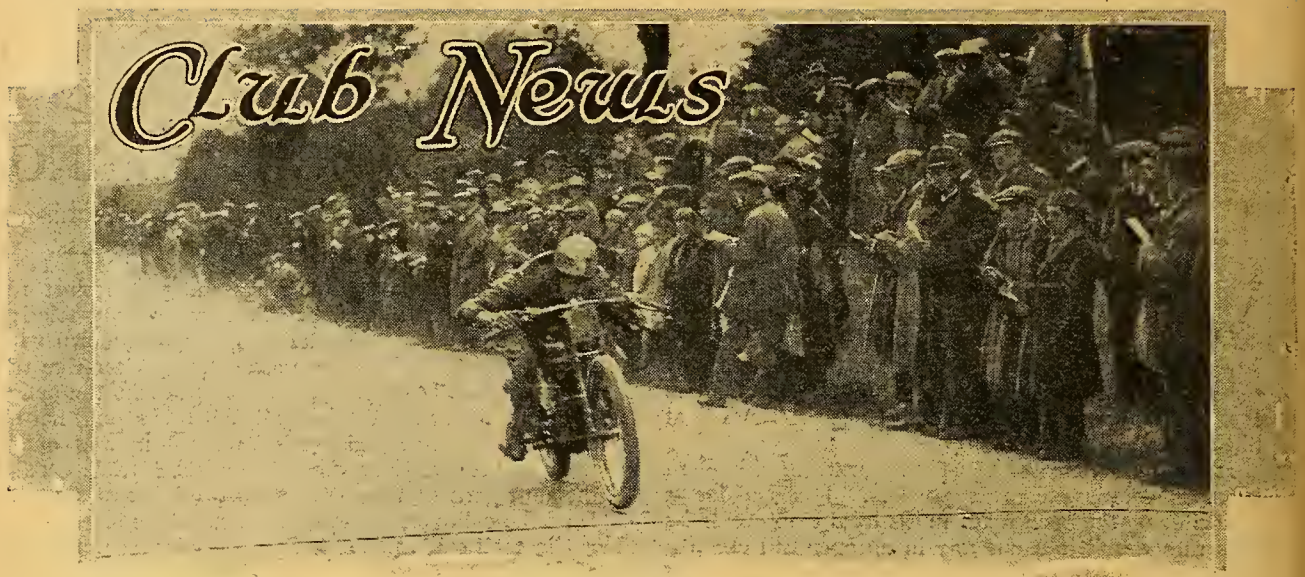
Clean out the carburetter, including petrol pipe and tap. See that the air vent in the tank filler cap is clear. The petrol level must be high enough to form a bead of petrol at the jet, without overflowing. With both controls fully opened, there should be a perfectly clear passage through into the induction pipe. The jet size should be such that the engine when all out will just, and only just, take full air.

Keep the contact breaker scrupulously clean. A stronger spring can often be fitted here with advantage. Experiment on the road with a further advance of the ignition timing; ascertain the setting that gives the maximum speed at full throttle, then set this as full advance, and check that with the control; in this position the points break when the armature is at its stickiest point of rotation, thus ensuring the hottest spark.

As regards oil, petrol, tyres and other equipment, one cannot do better than adopt the brands the manufacturers of the machine use in competition work.

It will be noticed that in the foregoing I have not made a single suggestion that could be termed in any way startling. I have not recommended any alteration in valve timing, or compression ratio, etc., for the reason that most manufacturers send out their sports models with the best timing and compression for the job. The programme I have detailed constitutes a long spell of hard and not particularly interesting work, but it must be realised that to get the results expected the minutest care must be taken over every operation. In addition, it will be found that to continue bringing home "firsts" on a Saturday evening, this programme must needs be repeated pretty frequently.

P. S.



F. T. Hatton (733 Douglas) making fastest time of the day at the recent Sutton Coldfield A.C. hill-climb at Angel Bank.

Redhill and Reigate M.C.C.

Speed trials will be held over a quarter-mile course within five miles of Redbill, commencing at 2.30 p.m. on the 11th inst. Club members only are eligible.

Richmond, Twickenham and District M.C.C.

An inaugural general meeting was held on the 30th ult., when several matters, including a comprehensive social programme for the winter months, were discussed. Intending members should communicate with the hon. secretary, Mr. J. A. Elfick, 64, Castle Road, Isleworth.

Rotherham M.C.

The third annual reliability trial for the Pickford Trophy was run off on the 23rd ult. Seven competitors finished the course. Results:

1, H. Beeden (Sunbeam), lost no marks, winner of trophy; 2, B. Glen (550 Triumph sc.), lost 2 marks, gold medal; 3, E. Bishop (998 Indian), lost 3 marks, silver medal.

West Kent M.C.

Starting from The Mill, Keston, on the 15th inst., competitors in the Lister-Wilson Silver Challenge Cup Trial will be required to cover two non-stop circuits of 25 miles each. In addition to the premier award, silver and bronze medals will be awarded. Entries must be received by Mr. A. E. Jessop, 91, Park End, Bromley, not later than October 12th.

Surbiton M.C.

A half-day sporting trial for the Ballard's Challenge Cup will be held on Saturday next, starting from "The Angel Hotel," Thames Ditton, at 3 p.m. No watches, speedometers, or measuring instruments of any description will be allowed, so that the trial will thoroughly test the competitors' ability to ride to a 20 m.p.h. schedule without guidance of any description.

Liverpool M.C.

—No less than four challenge cups are offered by the Liverpool Motor Club in the Reliance Trial, to be held on the 14th inst. The very mixed course over 120 miles of North Wales road has always appealed to the sporting rider, and many well-known teams and drivers figure in the entries. Particulars are obtainable from Mr. H. R. Caldwell, 14, Wood Street, Liverpool.

Bristol M.C. and L.C.C.

Owing to unavoidable circumstances, the completion of the season's competition programme has been revised as follows:

The Walters Cup Trial, to be run over a sporting and hilly course, is fixed for the 7th inst. A formula hill-climb for the Committee Cup will be held on the 14th inst. The six-hour trial (held in place of the postponed twelve-hour trial) clashed with the Western Centre Team Trial on the 23rd ult., so a second postponement is made necessary, viz., until the 21st inst. The Captain's Run will take place on the 28th inst. November 18th is the date fixed for the club's annual dinner, to be held at headquarters.

Birmingham M.C.C.

Official results in the Llangollen Trial held on the 9th ult. are now to hand, and are as follow:—

Special award for the best performance, H. J. Stretton-Ward (499 Triumph).

Special award in:—

Class A. (experts), C. F. Hollyoak (249 Federation).

Class A. (novices), A. H. Stubbs (269 Matloe).

Class B. (experts), B. Bourke (595 New Hudson sc.).

Class B. (novices), H. J. Sime (633 Norton sc.).

SILVER MEDALS.—R. W. Duke (499 Triumph), S. A. Francis (292 Sirrah), H. C. Jennens (500 James), A. Adcock (348 Raleigh), H. F. Brinkworth (348 Omega), F. Hayes (211 New Hudson), A. B. Jarret (490 Norton), R.C. Bennet (249 Federation).

A sporting half-day trial open to all clubs in the Midland centre will take place on the 23rd inst.

Week-End Club Events.

Oct. 5th.—Ealing and District M.C.C.—Evening Novelty Trial.
Oct. 7th.—Essex County and Southend A.C.—Closed Speed Trials.
Oct. 7th.—Bristol M.C. and L.C.C.—Walter's Cup Trial.
Oct. 7th.—North Liverpool M.C.C.—Speed Trials.
Oct. 7th.—Coatbridge, Airdrie and District M.C.C. —Non-stop Trial.
Oct. 7th.—Coventry Triangle Club.—Run to Meriden Shaft Wood.
Oct. 7th.—Coventry and Warwickshire M.C.—Manville Trophy Trial.
Oct. 7th.—Doncaster and District M.C.C.—Nottingham Goose Fair.
Oct. 7th.—South Midland Centre A.C.U.—Hill Climb at Kop.
Oct. 8th.—Newcastle and Northern M.C.—Picnic Run.
Oct. 8th.—Matlock and West Derbyshire M. and M.C.C.—"Stop and Out of It" Trial.
Oct. 8th.—Manchester M.C.—Special Event.
Oct. 8th.—Coventry Triangle M.C.—Run to Chipping Campden.
Oct. 8th.—Prestwich and District M.C.—Social Run.
Oct. 8th.—Barrow and District M.C.—Open Event.
Oct. 8th.—Eastbourne and District M.C.C.—Competition.
Oct. 8th.—Halifax and District M.C. and L.C.C.—Run to Boston Spa.
Oct. 8th.—Atherton and District M.C.C.—Surprise Run.
Oct. 8th.—Leeds M.U.—Run to Baildon Moors and Ilkley Moors.
Oct. 8th.—Sheffield M.C.C.—Run to Buxton.
Oct. 8th.—Bradford M.C. and L.C.C.—Hill Climb.
Oct. 11th.—Scarborough and District M.C.—Autumn Reliability Trial.
Oct. 12th.—Matlock and West Derbyshire M. and M.C.C.—Night Point-to-Point Reliability Trial.

East Midland Centre A.C.U.

The team trial which was arranged to take place on the 30th ult. has now been postponed until next Saturday, the 8th inst.

Yorkshire Centre A.C.U.

The next meeting of the Centre Board will take place at 7 p.m. on Monday, the 9th inst., at the Guildford Hotel, Leeds, when several matters of interest will be discussed.

Ferryhill and District M.C.

Seventeen riders competed in the consistency hill-climb held at Red Brier Hill on the 24th ult. First place was taken by T. Oliver (B.S.A.), who covered the course twice, recording exactly the same time for each climb. H. Reed (989 Harley-Davidson) and H. Hodgson (989 Harley-Davidson) took second and third place.

Ealing and District M.C.C.

Novel features will be introduced into the club's evening trial, to take place to-night (Thursday). Competitors will start from Kew Green at 5 p.m., and supper, followed by a dance, will be taken at the Vaudeville River Club, Thames Ditton. The club invites entries from members of the Surbiton M.C.

Preston (Brighton) M.C.C.

On the 24th ult. a very successful reliability trial over a 110 miles course was run off, in which the Brighton and Hove Club and Lewes Club also participated. There was a good attendance, despite threatening weather. Results:

(1) W. Williams (348 Douglas), lost 2 marks.
(2) A. H. Cox (499 Triumph), lost 3 marks.
(3) W. Kettle (398 A.B.C.), lost 6¼ marks.

The club is arranging a programme of social events for the winter, and a permanent club room is being sought.

Tavistock M.C.C.

There was a large crowd present at Culver Hill, Lamerton, to witness the first hill-climb organised by the club. The number of entries was gratifying, the hill being ascended forty-two times. Fastest time of the day was made G. D. Shellabear (976 Zenith), who covered the 1,000 yards course in 42s. Results:

300 c.c.—1, C. Ham (247 Levis), 66s.; 2, J. Grigg (250 Federal), 70⅕s.; 3, C. Marton (225 Enfield), 73⅕s.

350 c.c.—1, R. Carr (349 A.J.S.), 48⅕s.; 2, F. Downs (293 Coventry Eagle), 51s.; 3, F. Cowling (349 A.J.S.), 52⅕s.

500 c.c.—1, H. J. Piper (492 Sunbeam), 42⅖s.; 2, F. Cowling (349 A.J.S.), 46⅕s.; 3, B. A. Blackborrow (499 Rover), 48⅖s.

650 c.c.—1, R. G. Hawkings (557 B.S.A.), 50s.; 2, E. H. Kitchen (595 New Hudson), 54⅗s.

UNLIMITED.—1, G. D. Shellabear (976 Zenith), 42s.; 2, H. J. Piper (492 Sunbeam), 42⅕s.; 3, J. Pearn (492 Sunbeam), 46s.

850 c.c. SIDECARS.—1, E. H. Kitchen (595 New Hudson sc.), 69⅗s.; 2, R. Carr (654 Quadrant sc.), 84s.

UNLIMITED SIDECARS.—1, E. G. Sargent (678 Martinsyde sc.), 75⅘s.; 2, C. Ham (976 Royal Enfield sc.), 79⅖s.

Glasgow M.C.C.

An open hill climb will be held at Dalgair Brae, near Sorn, on the 30th inst. Sixteen classes, for general, expert, and novice riders are included in the programme.

North London M.C.C.

Results of the Beaurain Trophy Trial, held on the 9th ult., are now to hand, and are as follows:—

BEAURAIN TROPHY AND GOLD MEDAL.—S. M. Greening (348 Francis-Barnett sc.).

GOLD MEDAL.—R. H. Baxter (247 Radco).

BRONZE MEDALS.—F. J. Youngs (292 O.K. Junior), B. Staley (550 Triumph), R. H. May (567 B.S.A.), H. V. Bateman (1301 Henderson sc.).

Gravesend and District M.C.C.

Results of the Penlerick Cup trials held on the 17th ult., show that W. Pinn (976 Matchless sc.) wins the cup for the present year. R. Baxter, riding a 247 c.c. Radco took second place. At the conclusion of the trial a hill climb was staged on the test hill at Trosley, when the following times were recorded:—

Lightweight Class.—J. Payne (350 Beardmore Precision), 53s.

Heavyweight Class.—V. Deacock (481 Scott), 54s.

Sidecar Class.—J. Milton (976 Matchless sc.), 58s.

Senny Bridge and District M.C.C.

Only recently formed, the club held a successful hill climb on the 9th ult. Results:—

CLOSED CLASSES.

250 c.c.—D. Rogers (248 New Imperial).
350 c.c.—R. Davies (348 Cotton).
600 c.c.—C. Wild (499 Triumph).

NOVICE CLASSES.

250 c.c.—D. J. Thomas (248 Cotton).
350 c.c.—R. Davies (348 Cotton).
600 c.c.—C. Wild (499 Triumph).
Unlimited.—C. Wild (499 Triumph).

OPEN GENERAL CLASSES.

250 c.c.—Luther Davies (250 Diamond).
350 c.c.—R. Davies (348 Cotton).
600 c.c.—Handel Davies (348 Cotton).
Unlimited.—Handel Davies (348 Cotton).

OPEN SIDECAR CLASS.

Unlimited.—T. Lomax (481 Scott sc.).

Coventry and Warwickshire M.C.

Saturday next is the date fixed for the Manville Cup trial. The premier award offered is presented by Mr. E. Manville, M.P.

Central Cornwall M.C.C.

Now confirmed by the committee, the results of the hill-climb already referred to in *The Motor Cycle* give fastest time of the day to G. Symonds (492 Sunbeam).

Lichfield and District M.C.C.

Results of the open speed trials held in Ingestre Park, Rugeley, on August 19th are now to hand, and are as follows:—

300 c.c.—(1) C. Jones (249 Diamond), 21²⁄₅s.
380 c.c.—(1) W. S. Aston (348 Diamond), 17⅘s.
600 c.c.—(1) D. A. Stamps (490 Norton), 17s.
(2) B. Fidgeon (490 Norton), 18s.
Unlimited.—(1) B. Fidgeon (490 Norton), 16⅗s.
(2) D. A. Stamps (490 Norton), 17²⁄₅s.

Unlimited (on formula).—C. Jones (249 Diamond), 22⅘s.

Fastest time of the day was made by D. A. Stamps, who covered the course in 16²⁄₅s.

The second round for the Hoskison Cup was run off last week end, but the result is not yet available.

Sutton Coldfield and North Birmingham A.C.

Particulars of special awards made at the Angel Bank hill-climb held on September 23rd and described in last week's issue of *The Motor Cycle* are now to hand. The awards given by the club take the form of tankards, and were allotted as follows: Fastest time in 250 c.c. class: N. Hall (249 O.K. Junior); time, 38s. Fastest time in 250-500 c.c. class: H. Hassall (490 Norton) 26½s. Fastest time by machine over 500 c.c.: F. T. Hatton (733 Colmore-Douglas); 25⅗s. Best performance by car or cycle car: N. Norris (976 Morgan); 37²⁄₅s.; 1,346 points on formula. Fastest time in car class: N. Norris (976 Morgan); 37²⁄₅s. Fastest time by novice: E. Arthur (976 Brough-Superior); 31½s. The club's next fixture is a half-day trial for the Sutton and Shell Cups, Hooper Rose Bowl, etc., to be held on the 14th inst.

Lune Valley M.C.C.

Speed trials were held on Hest Bank Sands on the 17th ult., over a half-mile course; the following riders were successful:—

350 c.c.

(1) J. N. Yates, jnr. (349 Sheffield-Henderson).
(2) B. A. Pemberton (350 Matador-Bradshaw).
(3) G. Hardman (349 Coulson B.).

600 c.c.

(1) H. Baxter (490 Norton).
(2) J. N. Yates, jnr. (349 Sheffield-Henderson).
(3) B. A. Pemberton (350 Matador-Bradshaw).

UNLIMITED HANDICAP.

(1) R. Topping (481 Scott).
(2) J. Brown (532 Scott).
(3) B. A. Pemberton (350 Matador-Bradsbaw).

UNLIMITED SIDECARS.

(1) E. B. Parkinson (978 Brough-Superior sc.).
(2) A. Jepson (498 Zenith-Bradshaw sc.).
(3) L. Haige (532 Scott sc.).

UNLIMITED SIDECAR HANDICAP.

(1) A. Jepson (498 Zenith-Bradshaw sc.).
(2) L. Haige (532 Scott sc.).
(3) R. Thomson (986 Morgan).

Ilkley and District M.C. and L.C.C.

In place of observed hills in the Yorkshire Centre trial on the 28th there will be a series of timed stretches. A circuit of 50 miles to be ridden once in the morning and once in the afternoon, through Wharfedale, Washburndale and Nidderdale, will contain, it is proposed, three of these stretches. One will be at Jack Hill, near Fewston, one at Middle Tongue, near Pateley Bridge, and one in Upper Washburndale to include Whinney Hill (familiarly known as "The Staircase"), and a couple of water splashes. Over each of these stretches a special time limit will be arranged. It is practically the equivalent of "bogey" on a golf course, but this "bogey" will vary with each class of motor cycle competing. For every half-minute or part of a half-minute by which the competitor exceeds the time limit he will be penalised to the extent of two marks, whilst in the event of a tie the riders whose times are most consistent over these "bogey" sections will be declared the winner. The "bogey" times for the respective classes of machine will be stated on the route cards.

RECORDS IN THE BOIS DE BOULOGNE.

C. G. Pullin Repeats Brooklands Form, attaining 98 m.p.h. Mean Speed on a 733 c.c. Douglas.

FOURTEEN records were broken or established over the flying kilometre, in the Bois de Boulogne, Paris, on the morning of September 26th. The fastest run of the day was made by C. G. Pullin (733 Douglas), whose average time for the kilometre covered in two directions, in accordance with the international rules, was 22.88sec. (98.039 m.p.h.). By this performance he beat the 750 c.c. record held by Judd (Norton), which stood at 24.87sec.

In the 350 c.c. class, Pullin on his 349 c.c. machine broke another record by covering the kilometre in 24.4sec., or 91.72 m.p.h. This beats Le Vack's (New Imperial) time of 26.97sec. In the equivalent sidecar class he put up 31.59sec., or 70.804 m.p.h., again beating the old record held by Le Vack. Finally, in the 1,000 c.c. sidecar class he attained an average of 83.76 miles an hour, his average time for the two runs being 26.72sec.

Under Municipal Auspices.

The Bois de Boulogne records were held in the famous Avenue des Acacias, the use of which had been granted by the Paris Municipal Council. The event should have been held several days earlier, but owing to a misunderstanding the road had been tarred too late and had not dried sufficiently to make the runs safe. When finally held, ideal weather conditions prevailed, the road was perfectly dry, and there was an entire absence of wind. Although the trials were held very early in the morning—the first machine was sent away about 7 o'clock—a large number of spectators attended. The following are the best times in each class:—

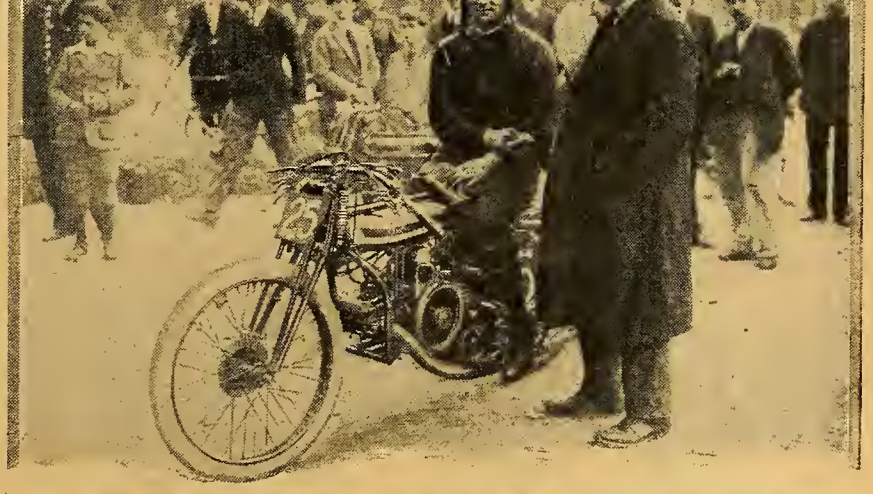
250 c.c. SOLO.—Marchand (D.F.R.), 31.17s. = record average speed 71.95 m.p.h.; former record 71.42 m.p.h.

350 c.c. SOLO.—C. G. Pullin (Douglas), 24.4s. = record average speed 91.72 m.p.h.; former record 83.07 m.p.h.

750 c.c. SOLO.—C. G. Pullin (Douglas), 22.88s. = record average speed 98.039 m.p.h.; former record 89.91 m.p.h.

350 c.c. SIDECARS.—C. G. Pullin (Douglas), 31.59s. = record average speed 70.804 m.p.h.; former record 64.1 m.p.h.

1,000 c.c. SIDECARS.—C. G. Pullin (Douglas), 26.72s. = record average speed 83.76 m.p.h.; former record 77.12 m.p.h.



Congratulations—and worthy of them. C. G. Pullin and his o.h.v. Douglas posing for the inevitable photographer after his sweeping victory in Paris.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

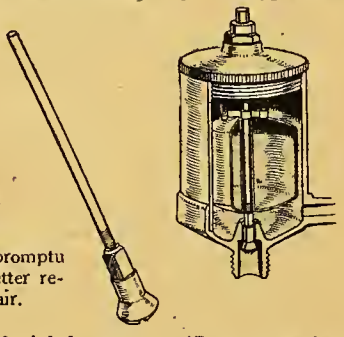
Compression Ratios.

COMPRESSION ratio has a marked effect on the smooth running and power of the engine, and it is largely a matter of trial to obtain the correct pressure. If a domed piston is fitted, or the base of the cylinder ground down, the pressure is increased, but if the cylinder is raised by means of thick packing it is diminished. The raised compression may be needed for speed events, but with an old-type harsh-running engine the latter tip may be adopted to transform its running to a reasonable degree of smoothness.

D.J.H.

Makeshift Needle Valve.

HAVING lost the needle valve of an Amac carburetter during a roadside adjustment, a rider was helped out of the difficulty by T. C. of Pottersbury in the following way: A nipple was



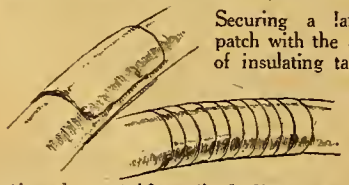
An impromptu carburetter repair.

screwed tightly on to a 17 gauge spoke, which was then cut off to the proper length. A groove for the float clip was cut with a small file, and the carburetter float chamber was quickly in working order again.

Repairing a Burst Tube.

HAVING suffered a badly burst inner tube, which required a repair patch almost encircling it, A. C., of Swanwick, found that the patch was difficult to apply, and that it persisted in lifting at the edges, permitting a leak.

Sticking the patch down as well as possible, the tube was blown up slightly and



Securing a large patch with the aid of insulating tape.

solutioned outside (including patch) about one inch beyond each end of the repair, and insulation tape was wrapped round and round the tube, each layer slightly overlapping, in puttee fashion. A final coat of solution was then rubbed in, and the tube inflated a little harder and left to set.

Refitting Chains.

TWO S-shaped meathooks, made from wire of small enough diameter to pass between the rollers, and with one end of each shortened, can be used effectively to join up chains which need a little stretching to bring the ends close enough together for the insertion of the joining link. The hooks are engaged in each end of the chain, pulled together, and held with the opened jaws of an adjustable spanner; by screwing up the latter the ends of the chain are drawn closely together.

Scott Sociable Hints.

USE Oildag for the gear box.

Run the tyres just so hard that they do not bump the rims, and no harder.

Switch off on down grades. This permits a fresh supply of oil to reach the top piston ring, which reduces any tendency in the direction of gumming in.

To obtain an easy start, avoid a rich mixture, especially when engine is hot. If the engine does not start immediately, open the compression taps and pump it empty, then try again.

Use *thin* grease for the grease cups, and give them a turn or two regularly.

Pump the hubs full of vaseline, and you can then leave them alone for months.

The radiator very seldom requires water, but this fact should not cause one to forget all about it.

To make the brakes fiercer, open the shoes slightly. This can be done by applying the pressure of the hands; to make them less fierce, close slightly. Do not use engine oil for the hubs, as it is apt to get on to the brake drums and prevent their gripping. For the same reason, do not over-oil rear bevel.

Acquire the habit of using the hand brake.

Clean the two-pole plugs every thousand miles or so. They are easily taken adrift.

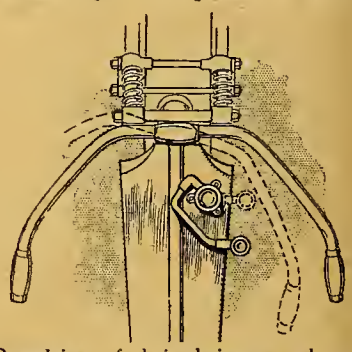
Do not use more engine oil than the makers recommend. It may seem absurdly little, but nothing is gained by using more.—H.M.B.

"HINTS AND TIPS FOR MOTOR CYCLISTS"—gives hundreds of useful "wrinkles." Price 2s. 3d. post free from "The Motor Cycle" Offices, Dorset House, Tudor Street, London, E.C. 4.

Facilitating Cornering.

NO new principle in the dynamics of steering is foreshadowed in the above heading; this paragraph merely refers to a little correction of the maker's design carried out by C.R., of Rugeley, on a machine that shall be nameless.

As originally fitted by the makers, the drip feed of C.R.'s machine was too far forward on the tank, and in consequence the handle-bar could not be turned very far to the right before colliding with the top of the drip. This continual collision bent the drip valve pin, and finally tore the pump out of the chimney in the tank. The pump was refixed one-third of a turn to the left, bringing the outlet facing forward, and a piece of brass pipe bent suitably in two places was screwed



Remedying a fault in design not unknown on modern machines.

into the pump delivery orifice and the drip feed screwed to the end, bringing it to the side of the tank but nearer the saddle. As the top tube of the frame is flush with the tank, the brass pipe lies snugly in place, and is reasonably unobtrusive, while the drip feed is still visible.

Belt Enthusiasts Please Note.

NO doubt cynical by long experience, S. T., of Somercotes, has equipped the top edge of his front number plate with a short hack-saw blade, fixed with two small screws through its end holes; it saves playing about with an inadequate penknife, cut fingers, and the

A novel use for a hack-saw blade.

cost of the oft-times inefficient but expensive belt guillotines, once so popular. When out of use, the blade is carried with its business edge downwards—which is something to be thankful for, at any rate.

GREATER VALUE than ever given before

A limited quantity of this wonderful boot for disposal to the readers of "The Motor Cycle" at

30% Less than any previously quoted prices

Every boot is brand new, Absolutely Waterproof, and easy to slip on and off. Far more serviceable than similar articles of vastly inferior materials sold elsewhere at equal prices.

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All sizes. Guaranteed to be made of the finest Government Leather. Sizes from 4 to 12 Smaller sizes suitable for ladies. These boots reach to the knee, and have full length tongues and side buckles, which effectively prevent any water penetrating through the lace holes or over the tops of the boots. The uppers are strong and stout, and yet extremely soft and pliable. **The SMARTEST and MOST COMFORTABLE Trench Boot procurable.**

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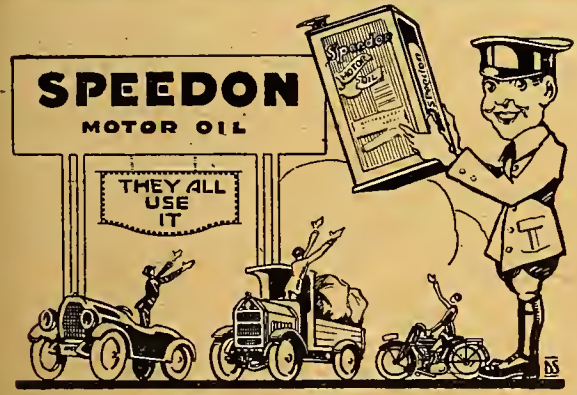

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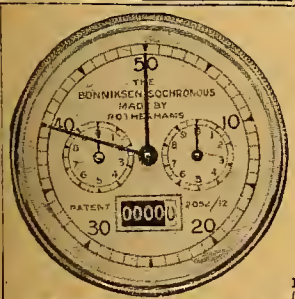

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THE BONNIKSEN ISOCHRONOUS has long convinced the Scientific Rider of its unrivalled properties, viz.:—

It tells the truth at all speeds. Its hands are not confined to one turn on the dial; at 60 m.p.h. the hand will show 10 i.e. 50 plus 10.

Accurate because its "controlling mechanism" is same as in a watch.

No hand oscillation because the indicating hand is locked while reading.

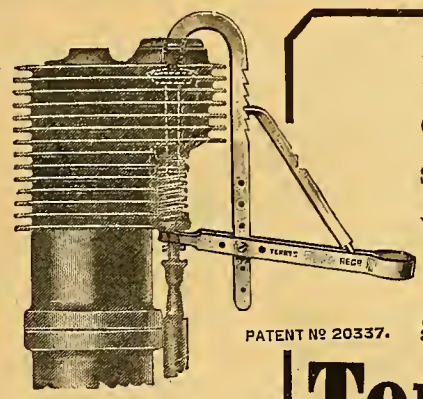
Motor Cycle Type.		Car & Cycle Car Type.	
Trip.	Non-trip.	Trip.	Non trip.
£5 5 0	£4 15 0	£7 0 0	£6 10 0

Instrumeots are *returnable* at any time against cash less 10/- per month.

Apply to **J. E. BONNIKSEN,** 165 Tachbrook Rd., Leamington, England (Son of Inventor), practical worker upon this instrument since 1912, except for Service in the R.A.F. as Mechanic, Pilot and Squadron Commander.

REPAIRS, CONVERSIONS, Etc., promptly and carefully attended to. DASH BOARD FITTINGS, CLOCKS, WATCHES, HUB DISTANCE RECORDERS. Customers' further wants attended to on agreed commission.

Bankers: London Joint City and Midland Bank, Ltd., Leamington Spa.



PATENT Nº 20337.

For easy speedy valve work get one of

Terry's

Patent Valve Spring Lifters

IT fits any engine, and enables a valve to be taken down whilst hot.

At one operation it holds valve down, and lifts spring clear of pin, and holds it in any position—leaving both hands free.

It is high-grade quality and will give good service.

1/6 each with ratchet back
1/3 „ without „ „

From your agent.

Terry's Spring Seat Saddle makes all roads feel smooth.

Booklet post free.

Herbert Terry & Sons, Ltd.
Manufacturers,
Redditch,
Eng.

Est. 1855.

5 11/22

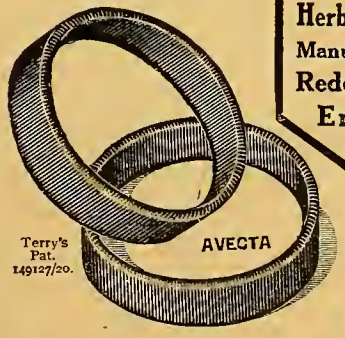
No. 1020.

Contact file for cleaning Sparking Plugs, Coils, and Magnetos.

About 6in. long.

1/- each from your agents.

Ask for Terry's—remember "Terry" quality.



Terry's Pat. 149127/20.

Now the cold weather is coming, a pair of "AVECTA" armbands will be welcome to wear outside the sleeves, to keep arms and hands warm. Has no soldering, but is joined by patent invisible clip, and has inner tape to stop over-stretch. Ask for the "AVECTA"—see name on box. It is British.

Nickel-plated - 9d. pair.
Gilt or silvered - 10d. „

Get them from your men's outfitter, a draper, or fancy goods stores. If you have difficulty, order from us, giving your agents' name and address.

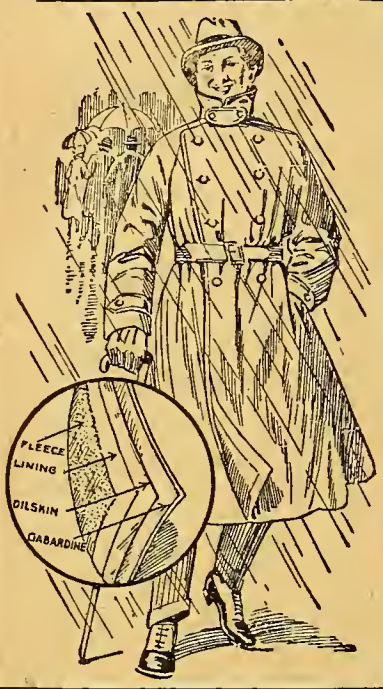
When you require one—insist on a "TERRY" Kick-starter Spring. We make for all machines.

No. 603. Terry's high-grade Magneto Spanner.

Blued 4½d. each.
Plated 7½d. each.

From your agent, please.

OFFICERS' ARMY TRENCH COATS



THE GENUINE "WESTO" TYPE 55/- Post Free in Great Britain and the Irish Free State.

With All-Wool Detachable Fleece Lining **70/-** each.

Brand New, Tripleproof Gabardine, check lining, **oilskin *inter*-lining,** and with detachable **All-wool** fleece lining. **Four Coats in One.**

These coats are impervious to weather. Worn with the fleece lining, they combine the warmth and comfort of an ulster with the rain-resisting qualities of a stout mackintosh. With this lining detached they are a light, elegant raincoat.

This is the only coat made THROUGHOUT with surplus Government materials which we control.

We now stock this coat for ladies as well as gentlemen. Same materials, same price. Same High Quality. State Height and Bust measurement.

"MONEYBACK" PRINCIPLE (Our Guarantee). **Our method of doing business is simplicity itself. If you do not like the goods send them back, and we refund your money. It is a condition that they must be returned within seven days of purchase.**

Chest sizes, 34, 36, 38, 40, 42, 44 ins. Gentlemen, when ordering state height and chest measurement over waistcoat. Ladies as above.

SEND YOUR ORDER TO-DAY—IT WILL BE EXECUTED TO-MORROW.

Cheques, Money Orders and Postal Orders should be crossed Barclays Bank, Limited. Treasury Notes should be registered.

GEORGE WESTON & CO., (Dept. M.C.), **Clothing Contractors, "Moneyback" Merchants,** Westo House, Inverness Road, Hounslow, Middlesex.

Motor Cycling Suits for Winter Wear.

We have no hesitation in claiming that our "Draperstyle" Motor Cycling Suits have no rival at the price. Satisfaction guaranteed or money refunded in full.

C 80.—Motor Cycling Suit, comprising Man's full-cut double-breasted coat, double texture material storm collar, stormproof tab cuffs to tighten up when driving, thoroughly proof, rubber-proofed insulated edges. Seams sewn and taped. Detachable belt with slide buckles. Leggings of same double texture material, spat front shaped—understrap for instep—tab fan shaped gusset outside, patent clip fasteners at side. The gusset prevents either wind or rain from penetrating. Light in weight, thoroughly wind- and weather-proof, tailor-made, nothing on the market to equal it.

THE PROOFING IS GUARANTEED.

Price **32/6.** Sizes below.

Suit complete, **32/6.** If required with seatless trousers, 3/6 extra. (Jacket only, **21/6.** Leggings, **12/6.** Seatless Trousers, **16/3.**)

C 6a.—Double texture, stout twill, motor cycling suit, double breasted jacket, all seams well solutioned and strongly sewn. Special storm collar with flap, inside elastic storm cuffs, guaranteed absolutely waterproof and windproof. Fitted with a special triple storm fly front which gives full protection against the most driving rain and winds. Double texture stout twill leggings, made with separate legs, with special gusseted sides, and leather straps which can be adjusted to fasten under boot, guaranteed absolutely waterproof. Stocked in sizes 28 in., 30 in. and 32 in. inside leg.

Sizes for either quality. Chest 36 38 40 42 44 ins. Length 36 38 38 40 40 ins. Suit Complete **54/6**

If required with Seatless Trousers, 6/- extra. (Jacket only 36/6. Leggings, 17/6. Seatless Trousers, 23/6).

C 81.—Helmet, double texture, material guaranteed windproof and waterproof. Superior to leather helmets at three times the price, specially fitted with extensions at back to cover neck and come well down over the collar. Warm fleecy lining, adjustable strap under chin, special ear protectors to wear open or closed, peak at front, only 5/6 each.

Illustrated Booklet Free.

ERNEST DRAPER & CO., LTD.
54 "All British Works," NORTHAMPTON.

IF WINTER COMES
MAKE YOUR OWN DAYLIGHT

THE LAMP WITH THE GREATEST BEAM POWER SINCE 1919

THE famous F.R.S. Motor Cycle Gas Lamp Set complete with generator, as illustrated, the most powerful and only STREAMLINE lamp on the market. In best ebonised finish, rustless and life lasting. Makes night riding as safe as day. All lamps are fitted with the well-known F.R.S. Lens. 2,000 Sets at the specially reduced prices as under.

THE JUNIOR.
Set Complete.
5 in. front, **37/6**
Carriage Paid.

THE BIG.
Set Complete.
6½ in. front, **57/6**
Carriage Paid.

THE MAJOR.
Set Complete.
7⅝ in. front, **80/-**
Carriage Paid.

Remember each lamp is plated under the black.

500 ONLY MOTOR HORNS.

The straight pattern F.R.S. Horn is famous for its distinctive tone and handsome appearance. It has a special bulb of selected rubber and is complete with patent strengthened neck. The cleanest design and the best value on the market. 13 ins. long, **10/6** post free; 15 ins. long **16/9** post free.

DOMESTIC SUPPLY CO.
46, HOLLOWAY HEAD, BIRMINGHAM.
L.P.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable & Co. to ILIFFE & SONS Ltd., and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. Combination, dynamo, Cowey horn, speedometer, 6,000 (sidecar 3,000), just overhauled, sidecar repainted, carefully used, almost as new; £85.—8, Oakhill Av., Hampstead. [5637

THE SIGN OF GOOD SERVICE

Few Machines
But have one good point.
Many Machines
Have some good points.

THE ONE MACHINE WITH ALL GOOD POINTS— IS THE

Indian

GODFREYS, Ltd., have been Sole London Agents for the Indian Motor Cycle since 1910. They have always a Representative Stock of these Famous Models in their Show Rooms, and are at all times willing to give any prospective customer a trial run.

:: MAY WE SEND YOU :: ILLUSTRATED CATALOGUE?

Just now—at the end of the season, it is possible to obtain a brand new 1922 Model at a greatly reduced price, as Godfreys can offer some "Shop Soiled" Machines which have never been used and carry the maker's full guarantee.

1922, 4 h.p. **INDIAN SCOUT** £96
With full Electric Equipment and Speedometer..... £113
Plus Milford Junior Sidecar..... £22

1922, 7 h.p. **INDIAN STANDARD,** Spring Frame Combination with full Electric Equipment and Speedometer..... £150

1922, 8 h.p. **INDIAN CHIEF,** with Indian Princess Sidecar, full Electric Equipment, Speedometer, etc..... £163

These Bargains are being rapidly snapped up, so don't delay your order if you are interested.

GODFREYS LTD.

208, Gt. Portland St., London, W.1.

'Phone - Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., dynamo lighting, little used, kick-start, in first-class condition throughout; £65.—Garage, Bath Parade, Cheltenham. [4930

A.B.C. 1922, Lucas Magdyno, speedometer, Lucas electric horn, mileage negligible; £75.—Ratcliffe Bros., 200, Gt. Portland St., W. [5494

A.B.C. 1921, Lucas dynamo lighting, lamps, horn, mirror, etc., tax paid, like new; £68.—Maudes', 100, Great Portland St., London. [5467

A.B.C. 1919 500 c.c. Combination, 4-speed, spring frame, Easting, Bonniksen, lamps, tools, spares, tax paid, splendid condition; owner late member A.B.C. Staff; £75, offers.—90, St. Andrews Rd., Bridport, Dorset. [4872

Abingdon.

£10.—Abingdon 3½h.p., Bosch, B.B., taxed, all on.—Guinchard, 179, York Rd., Camden Rd. [5186

6-7h.p. Abingdon King Dick Combination, 3-speed, clutch and kick-starter, perfect condition; 38 guineas, or offer; after 6.—97, Elsenham St., Southfields, S.W.18. [5046

A.J.S.

1922 A.J.S. 2¾h.p., mileage negligible; £70.—Ratcliffe Bros., 200, Gt. Portland St., W. [5495

A.J.S. Motor Cycles on easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168. [5518

1922 B1 2¾h.p. A.J.S., £85; liberal exchanges.—Premier Motor Co., Aston Rd., Birmingham. [4596

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £1[illegible] in stock. Dorset trade supplied. [0817

2¾h.p. A.J.S., 1916, 3 speeds, clutch, fully equipped; £38; after 7.—4, Landcroft Rd., East Dulwich. [5675

WAUCHOPE'S, 9, Shoe Lane, London.—1913 6h.p. A.J.S. combination, 3 speeds, kick-start and clutch; £45. [5519

A.J.S. 2¾h.p.-7h.p. Commercial Vehicles.—Write Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [2704

A.J.S. Combination, perfect condition, fully equipped; any trial after 7.—Compton, West Lodge, Botanic Gardens, Glasgow. [4765

LATE 1921 A.J.S. Combination, beautifully equipped, as brand new; £105.—24, Balliol Rd., North Kensington. [5152

1922 2¾h.p. B1 A.J.S., lamps, speedometer, not ridden 400 miles; what offers?—Pickering, 49, Mardol, Shrewsbury. [5169

A.J.S. 7h.p. 1920 Combination, screen, electric lamps, spare wheel, tax paid; 85 guineas.—Batchelor, Clarence St., Kingston. [5097

1922 brand new A.J.S., B1 model, just uncrated; bargain, £75.—Storer and Tait, 20, Bourdon St., Bond St., W.1. Mayfair 625. [5591

F.O.C.H. Invite Inspection. A.J.S.'s and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3862

A.J.S. 7h.p. Combination, £175; 2¾h.p., 3-speed, £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [5551

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

A.J.S. 1922 2¾h.p., standard model, dynamo lighting, electric horn, tax paid, not done 500 miles, like new; £80.—Maudes', The Norwich Garage, Norwich. [5455

1919 A.J.S. 6h.p. Combination, 3-speed, lamps, hood, screen, spare wheel, Tan-Sad, tools, in very good order and condition; £95.—97, Chesnut Rd., Plumstead. [4787

1922 2¾h.p. A.J.S., Models B and B1, from stock; official agents; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4419

1919 A.J.S. 6h.p. Combination, spare wheel, screen, Lucas lamps, lovely outfit; £80; exchanges.—Hillier, 9, Wallingford Av., North Kensington. (7 or 7a 'bus.) [5309

1916 A.J.S. Combination, completely re-enamelled and upholstered, bought car, best offer secures.—"Merlebank," Rotherfield Rd., Carshalton. 'Phone: Brixton 2677. [5295

A.J.S. 1916 6h.p. Combination, lamps, horn, windscreen, etc., 3-speed, clutch and K.S., excellent condition, tyres almost new; £65.—Hubbard, 8a, Park St., Loughborough. [5112

1921 A.J.S. Combination, excellent condition, discs, long exhaust, electric lighting; £125 or near offer; modern 2-seater entertained; cash adjustment.—Burns, Tailor, Newbury. [5283

A.J.S. 1920 Combination, spare wheel, hood, front and side screens, speedometer, as new, tax paid, also insurance to Aug., 1923; £115.—Owen, 87, Alexandra Rd., Manchester. [5345

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Combination, 1920, dynamo model, hood, screen, spare wheel, hardly used and absolutely as new; 100 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [5581

1920 A.J.S. 5-6h.p. Combination, Easting, tax paid, lamps, horn, etc., excellent condition; £80.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

A.J.S. 7h.p. Combination 1921, fitted with Lucas accumulator lighting, speedometer, spare wheel and tyre, mileage 2,000, guaranteed as new; £125.—Ratcliffe Bros., 200, Gt. Portland St., W. [5493

1921 7h.p. A.J.S. and sidecar, fitted with several extras, speedometer, hood and screen, Lucas lamps, spare wheel, Tan-Sad, etc., splendid condition: £120.—H. H. Timberlake, Ltd., Wigan. [4793

109 Guineas, Great Bargain, Exchanges.—1921 A.J.S. Combination, lamps, screens, spare wheel, luxurious turnout, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [6966

A.J.S. 7h.p. Combination 1921, electric light, hood, 2 screens, speedometer, spare wheel, unpuncturable tyre, Tan-Sad, small mileage, insured June, 1923, perfect condition; £130.—Lee, 9, Heathfield Rd., Birkenhead. [4989

30 Guineas.—2¾h.p. A.J.S., 2-speed, clutch engine recently overhauled by makers, new Renolds chains, sprockets, tyres, tubes and lamps, guaranteed 90 m.p.g.; exchanges.—Swans, Nest Garage, Stratford-on-Avon. [5261

1920 A.J.S. 6h.p. Combination, first run 1921, dynamo lighting, Binks carburetter, Triplex screen, speedometer, 2 horns, Tan-Sad, hood, spare wheel, spare petrol carrier, specially built toolbox, one tyre brand new, taxed, insured; £120, or near offer.—'Phone: Hampstead 7725. [4771

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays

ALLON 1921, fully equipped; £37.—Ratcliffe Bros., 200, Gt. Portland St., W. [5504

ALLDAYS 2-stroke, 3 speeds, clutch, kick-start; bargain, £20.—Fisher, Springwell Rd., Heston, Hounslow. [5280

1921 Allon 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £38.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [5006

1922 Alldays Allon 2¾h.p., 3 speeds, clutch, kick-starter, lamps, horn, licensed, absolutely new condition, unscratched; £55 cash.—29, Fairholt Rd., N.16. [4901

23 Guineas, Urgent Sale, Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [4773

ALLDAYS-MATCHLESS (1914) Combination, 4h.p., windscreen, etc., all chain, 3-speed gear box, clutch, kick start, Bosch mag., Senspray carburetter, accessories, in splendid condition; £47/10 (Grantham district).—Box 4016, c/o *The Motor Cycle*. [5331

1917 Allon 2¾h.p. 2-stroke, tax paid, 2-speed countershaft gear and clutch, Senspray carburetter, E.I.C. magneto, footboards, tyres are equal to new, enamel and plating in very good condition, and machine is guaranteed mechanically perfect; any trial or inspection welcomed; £20.—Allen, Station House, Aldeburgh, Suffolk. [5683

American X.

ROBERTSONS Motors, Ltd.—1921 American X with Henderson Elite sidecar, accessories, tax paid, in beautiful condition; £95.—157b, Gt. Portland St., W.1. [2349

PHOTOGRAPH Free.—American X 1921 Combination, new condition, 7-9h.p., electric; 89 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [5627

Ariel.

1920 3½h.p. Ariel and coachbuilt sidecar; £55.—Beechworth Lodge, Hales Rd., Cheltenham. [4832

1915 5-6h.p. Ariel Combination, perfect condition, tax paid.—Saul, Estate Works, Lytham. [4828

£50.—1920 3½h.p. Ariel, splendid machine, thoroughly reliable, all on.—Ramsden, Parkstone, Lytham. [5086

1919 6-7h.p. Ariel Combination, fully equipped, screen, luggage grid, guaranteed; £55.—51, Upper Richmond Rd., East Putney. [5643

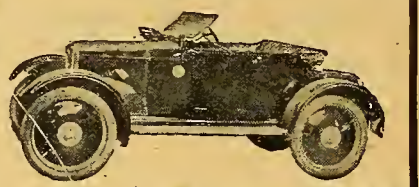
ARIEL 3½h.p. Sports Model, brand new, guaranteed 60 m.p.h.; £65.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [5583

1921 Ariel Combination, Easting, Tan-Sad, all on; £55.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [5585

1922 Ariel, brand new, unregistered, 6-7h.p. combination; list price £125, accept £103; makers' guarantee.—391, King St., Hammersmith. [5420

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

EXCHANGE YOUR MOTOR CYCLE FOR

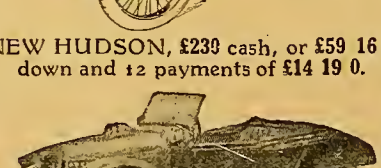


ROVER "8," £180 cash, or £46 16 0 down, and 12 payments of £11 14 0. De Luxe model £20 extra.

MAXWELL (New Series), £360 cash, or £93 12 0 down and 12 payments of £23 8 0.

OVERLAND, £263 cash, or £69 13 7 down and 12 payments of £17 8 5.

NEW HUDSON, £239 cash, or £59 16 0 down and 12 payments of £14 19 0.



MORGAN "Popular" Model, £150 cash, or £39 0 0 down and 12 payments of £9 15 0.

Deferred payments with option of discount.

LAMB'S Ltd

WOOD GREEN, LONDON, N., 50, High Road. 'Phone: Hornsey 1956.

WALTHAMSTOW, LONDON, N.E., 151, High Street. Phone: Walthamstow 169.

GT. PORTLAND STREET, LONDON, N.W. (Opposite Station.) 'Phone: Museum 4978.

MOTOR CYCLES FOR SALE.

Ariel.

1922 3½h.p. Ariel Combination, shop-soiled, a gift; £105; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4416

SOUTHPORT.—Clearance sale. 1922 Ariel combination, almost unused, full insurance, 65 guineas; another 1920, 59 guineas; exchanges.—Kents, 417, Lord St., Southport. [5056

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0804

Bat.

BAT-J.A.P. 6h.p. twin, clutch, kick-start, splendid condition, tax paid; £25.—22, Clifton Avenue, Peterborough. [4742

1921 8h.p. Bat-Jap Combination, 4 detachable wheels, electric lighting, Cowey, Easting, tax paid; £105; would consider another machine part.—7, Norwood Rd., Herne Hill, S.E.24. [4935

Beardmore.

3½h.p. Beardmore 1921, 2-speed, kick-start, double sprung, all accessories; nearest £45.—132, Walm Lane, Willesden. [5013

BEARDMORE 3½h.p., spring frame, touring, new October, 1921, little used, splendid condition; £48 Hare, White Hart, Reigate. [4844

BEARDMORE-PRECISION 1922 3½h.p., De Luxe model, dynamo lighting, in excellent condition £60.—Bunting's Motor Exchange, Wealdstone. [5376

1922 Beardmore-Precision 4¼h.p., spring frame complete with Lucas lamps, horn, full licensed, perfect, not done 600 miles; £90; owner buy car.—Roberts, Brynrodyn, Towyn, Mer. [5234

Blackburne.

1920 4h.p. Blackburne, equipped, as new; exchange for higher power combination.—142 Ravensbury Rd., Earlsfield, S.W. [5555

BLACKBURNE 4h.p., 1921, dropped bars, all chain, perfect condition, tax paid; £75.—Wa National Provincial Bank, Swanage. [5105

1920 4h.p. Blackburne Combination, Montgomer Sports sidecar, new engine fitted month ago, a accessories, perfect; £60, bargain.—Bates, 19, Alban Rd., Coventry. [5484

1922 Special O.V.H. 2¾h.p. Blackburne-Weatherel ordered and entered for the giant 100 mile ra but delivered too late. This machine is identical wi the one that won the race, and has only been used Brooklands for tuning, and never been on the roa fully licensed Dec. 31, 1922, fitted with mudguar chainguard, carrier, 3-speed gear box, kick-starte handle clutch, lamps, tools; cost 85 guineas and £5 ext for racing cams and piston, £2 for B.L. mechanic oil pump; bargain, £75, or exchange combination. 2, Ramillies Rd., Chiswick. [471

Spare Parts:

ALL Blackburne Engine Spares from stock; list application; trade supplied.—Maudes', 100, Gre Portland St., W.1. [544

Bradbury.

4h.p. Bradbury, Bosch, clutch, licensed, ride awa £18.—68, Gordon Rd., Ealing. [519

BRADBURY 1914 4h.p. Combination, 2-speed, exce lent condition; £25.—7, Exhibition Rd., S.W.7. [230

BRADBURY 2¾h.p., 1922, tax paid, 2-spee clutch, and kick-starter; £55.—Wauchope's, Shoe Lane, London. [557

SOUTHPORT.—Clearance sale. 1921 Bradbury com bination, all-chain, 3-speed, K.S.; 50 guineas; e changes.—Kents, 417, Lord St., Southport. [505

1922 Bradbury 4h.p., 3-speed, clutch, kick-star licensed year, fully equipped, indistinguishab from new; 70 gns.; exchanges or deferred.—Edward 50, Harrington Rd., South Kensington. [228

1919 4h.p. Bradbury, N.S.U. 2-speed, fully equippe tyres and belt nearly new, engine overhaul recently, will take two anywhere; £32 for quick sal owner buying car.—Hares, Millenheath, nr. Prees, Wh church, Salop. [485

Brough.

1921 5-6h.p. Brough Combination, all accessorie including speedometer, in new condition; a trial; £76.—F. Winwood, 36, Lowesmoor, Worcester [508

STOCKTAKING Clearance Bargain.—New 19 Brough Flat Twin 3½h.p., overhead valv 3-speed, chain drive, Sports model, list price £11 reduced to £80; easy payments 4 per cent. extr —Premier Motor Co., Aston Rd., Birmingham. [557

Brough Superior.

BROUGH SUPERIOR Combination, latest ty o.h.v. Magdyno, Cowey trip and illuminat speedometer, spark amplifiers, grip oiling, 26×3 Du lops, guaranteed 80 m.p.h., unscratched, as ne £145, or offer.—Myrtle House, Downend Rd., Fis ponds, Bristol. [519

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 1919 2¾h.p., 2 speeds, lamps, horn, tax paid, small mileage; £38.—Maudes' (below).

DOUGLAS 1921 2¾h.p. 3-speed Model, clutch and kick-starter, Cowey speedometer, head lamp, etc.; £55.—Maudes' (below).

DOUGLAS 1922 3½h.p. Overhead Valve Sports Model, 3 speeds, all accessories, guaranteed as new; £90.—Maudes (below).

DOUGLAS 1922 6h.p. Combination, all accessories, very small mileage, carefully used, tax paid; £120.—Maudes', 100, Great Portland St., London. [5469

3h.p. Douglas, good order, fully equipped; £15.—R. Soloman, 114, Waterloo St., Burton-on-Trent. [4879

DOUGLAS 2¾h.p., excellent condition, any trial; £36, offers.—18, Claremont Hill, Shrewsbury. [5238

DOUGLAS 4h.p. 1918, excellent condition, any trial; £46/10.—Particulars, Brookes, Saddler, Ledbury. [4926

DOUGLAS, 1921, all on, taxed, perfect; 46 gns.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5851

1916 Douglas 2¾h.p., perfect condition, lamps; £28.—35, Shepherd's Bush Rd., Hammersmith. [5063

DOUGLAS 2¾h.p. 2-speed, Bosch, good condition; £26.—76, Babnernie Grove, Wandsworth, S.W. [5272

DOUGLAS 2¾h.p. 1915, good condition, 2-speed; sacrifice £23.—Hearn Bros., 94, Brixton Hill, W.2. [4700

25.—1915 2¾h.p. Douglas, equipped, Binks, fast, long exhaust, licensed.—1a, Hearne Rd., Kew idge. [5177

1922 Douglas 3½h.p. Sports model, fully equipped, licensed year, indistinguishable from new; £90. Below.

3h.p. 2-speed, unused, made of nearly all new W.D. parts, new tyres and belt; £38; all on; exchanges or deferred.—Edwards, 50, Harrington Rd., uth Kensington. [5609

1916 Douglas 2¾h.p., perfect order, fully equipped, taxed; £30.—C.S.M. Comber, Drill Hall, Camber-, Surrey. [4827

DOUGLAS 2¾h.p. 2-speed 1917, exceptionally good condition; for quick sale, £30.—New College hool, Oxford. [5340

DOUGLAS 1916 2¾h.p., 2 speeds, standard specification, small mileage; £35.—Maudes', The Norwich rage, Norwich. [5454

3h.p. Douglas, 1921, 3 speeds, clutch, kick-starter, fully equipped, licence, new condition; £50.—63, on Rd., Brixton. [5408

DOUGLAS 2¾h.p. machines, built of new parts throughout; 39 gns.—R. B. Clark and Co., 7, hibition Rd., S.W.7. [5850

1922 Douglas 2¾h.p., 2-speed, all lamps, horn, tax paid, as new; £50.—Rey, 173, Gt. Portland St. one: Langham 1257. [5513

16.—Douglas 2¾h.p., 1916, tax, accessories, new tyres, absolutely sound.—88, Gloucester Place ws, Portman Sq., W. [5312

1920 Douglas 2¾h.p., 3-speed, new tyres, tax paid, fully equipped; nearest £48.—Station Hotel, 41, mley Rd., Notting Hill. [5114

h.p. Douglas and Sidecar, complete with lamps, licence, etc; bargain, £40.—Saint, Regent St., Cambridge. 'Phone: 724. [5372

1922 Douglas 2¾h.p., 2-speed, all lamps and horn, shop-soiled only; £62.—Rey, 173, Gt. Portland S 'Phone: Langham 1257. [5516

1919 Douglas 2¾h.p., copper exhaust, 1920 tank, all on, any trial; £35.—Ward, South Western Garage, New Malden, Surrey. [5679

DOUGLAS 1914, 2 speeds, adjustable pulley, large nickel exhaust, fully equipped; £23.—51, Upper Richmond Rd., East Putney. [5638

h.p. Douglas, 2-speed, all on, expanding pulley, speedy, excellent condition; £46; week-end.—2 The Ridings, Golders Green. [5073

DOUGLAS Combination, semi-T.T., disc, speedometer, overhauled, as new.—Saunders, Abbot, Riway Garage, Beckenham, Kent. [4966

1920 Douglas 2¾h.p., 3-speed, full equipment, brand new condition, unscratched; £45.—37, Canterbury R, Balls Pond Rd., Dalston, N.1. [4698

1920 Douglas Combination, countershaft, fully equipped, taxed; £68.—William, 769, Romford R, Manor Park, London, E.12. [5007

VAUCHOPE'S, 9, Shoe Lane, London.—Dougla's 2¾h.p. 1915, 2 speeds, £27/10; 1921 2¾h.p. Douglas, £55; easy payments taken. [5524

1919 Douglas 2¾h.p. 2-speed, mechanically perfect, tax paid, bargain; £35; lamp, horn, etc.; see after 6 o'clock weekdays.—103, Winstanley Rd., Battersea. [4838

CLEARANCE

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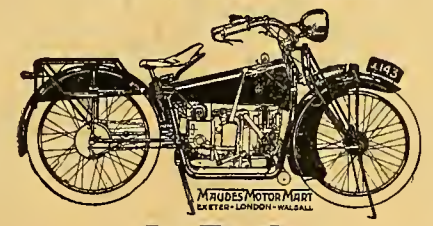

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Brief Specification.

3 h.p. FLAT TWIN, 69×54, with latest type gudgeon pin fixing, four-speed gear box, incorporating clutch and kick-starter, all-chain drive, automatic lubrication, Claudel single lever carburetter, spring frame and forks, touring or semi-T.T. bars, carrier, toolbag, tools, **MAKERS' FULL GUARANTEE.**

OUR REDUCED PRICE.

£74-0-0 STANDARD MODEL

New Imperial

1923 MODELS.

REDUCED PRICES.

No. 3	2¼ h.p. Jap Standard	£65
No. 5	250 c.c. Super sports	£73
No. 6	350 c.c. Super sports	£78
No. 7	8 h.p. Jap Combination	£125

Deliveries now being effected at these reduced prices.

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We have a few latest

1922 SPORTS

Models to clear at reduced prices

3½ h.p. SPORTS twin, 64.5×76 (498 c.c.) aluminium pistons, roller big end, aluminium radiators to valve caps, Amac T.T. carburetter, 3-speed Sturmey-Archer gear, tyres 26"×2½", T.T. bars. Completely equipped. **MAKERS' FULL GUARANTEE.**

£90-0-0 ALL CHAIN DRIVE

Usual list price £125.

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108, PRINCE OF WALES Rd NORWICH

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CASH, EXCHANGES OR DEFERRED PAYMENTS.

MOTOR CYCLES FOR SALE.

Douglas.

F.O.C.H. Invite Inspection. Douglases and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3860

ROBERTSONS Motors, Ltd.—1922 2¾h.p. 2-speed Douglas, accessories, tax paid, almost new condition; £58.—157b, Gt. Portland St., W.1. [2348

DOUGLAS Combination, 1918, all on, Tan-Sad. spares, excellent condition; genuine bargain, £52.—2, Hatherley Rd., Hoe St., Walthamstow. [5678

DOUGLAS 1920 4h.p. Combination, completely equipped, first-class condition; bargain, £75.—The Layton Garages, 30, Holywell St., Oxford. [5475

1919 4h.p. Douglas Combination, speedometer, dash, Triplex screen, runs splendidly; £70.—Bryant, 98a, Merton Rd., Wandsworth, S.W.18. [5143

DOUCLAS 2¾h.p. 1916, fully equipped, tax paid, guaranteed a most reliable mount; £25.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. [5134

1922 3½h.p. Sports Douglas, Bonniksen trip, 600 miles, perfect; £100, best offer; exchange Sunbeam, Norton, Triumph.—15, Wilfred St., Derby. [5335

1922 4h.p. Douglas Combination, shop-soiled, a gift; £110; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4418

1922 3½h.p. Douglas Sports, shop-soiled; bargain, at £95; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4417

DOUGLAS 1922 2¾h.p.—An ideal solo mount, fully equipped, lamp, horn, etc., brand new, shop-soiled, 2-speed, £62; 3-speed, £75.—The Morris Garages, Oxford. [5216

4h.p. Douglas Combination 1919, with 1920 clutch, perfect running order, windscreen, hood and spares, fully equipped; £70.—Graham, 57, Chipstead St., Fulham, S.W. [4717

1922 2¾h.p. Douglas, 3 speeds, clutch, kick-start, fully equipped, speedometer, watch, tax paid, mileage negligible; £60.—42, Tranmere Rd., Earlsfield, S.W. [5167

£50.—Douglas 4h.p. 1918 Combination, plate clutch, exceptionally smart and guaranteed sound, lamps, Klaxon, tax paid.—88, Gloucester Place Mews, Portman Sq., W. [5310

DOUGLAS 4h.p. Combination, completely equipped, new 1922 model, slightly shop-soiled only; list price £135; bargain, £110.—P. J. Evans, John Bright St., Birmingham. [5546

DOUGLAS 2¾h.p., condition, appearance as new, all on, tax, insurance paid, owner going overseas; offers invited. After six.—20, Adamson Rd., Swiss Cottage, N.W. (P) [5297

DOUGLAS Combination 4h.p., late 1920, with new 1922 Douglas sidecar, new tyres, complete lamps, horn and licensed, guaranteed in perfect condition; £80.—Gaylard, Princes St., Yeovil. [4938

AT Edwards.—1918 2¾h.p. Douglas 2-speed model, fully equipped, excellent condition, new tyres and belt; 37 guineas; deferred payments and exchange.—101, Great Portland St., W.1. [5622

DOUGLAS, 1913, single gear, good condition, tapered tank, Binks, Bosch, Bates, Klaxon, all the best, tax paid, all on; willing engine; £25; after 7.—"Allendale," Colefield Rd., Blackley, Manchester. [4759

1919 4h.p. Douglas Combination, 3 speeds, clutch, K.S., Easting, lamps, horn, etc., perfect condition; £52/10.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

1922 6h.p. O.H.V. Douglas Combination, lamps, Cowey trip, legshields, Triplex, full insurance, licence, spare valve, chains, etc., interchangeable wheels; £130, or near.—Purkis, 2, Cam Hall Rd., Leytonstone, E.11. [4864

1920 2¾h.p. Douglas, excellent condition, mechanically perfect, fully equipped, lamps, mechanical horn, and numerous spares, tools, etc.; sacrifice, £40, or near offer.—Clarke, 156, Stockwell Rd., Brixton, S.W.9. [5438

1918 Douglas 4h.p. Combination, Easting, lamps, etc., in excellent order, any trial; also lightweight coachbuilt sidecar, good condition, all fittings; exchange Morgan; or sell.—Marsden, 19, Potter St., Worksop. [5102

DOUGLAS 4h.p. Combination, late 1920, hardly used, as new, mechanically perfect, Ace discs, etc., all on, very smart 'bus; take any fair offer.—Brealy, 86, Gladstone Park Gardens, N.W.2. 'Phone: Willesden 2172. [4971

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill [0788

DOUGLAS new 2¾h.p. 1922, 2-speed models, fully equipped, £68; 2¾h.p., 3-speed, clutch, and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £116; 6h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. [5525

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue b27

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

4h.p. Douglas and Sidecar, new October, 1921, P. and H. dynamo, electric lighting, Lucas electric horn, oversize tyres, spare tubes and belt, etc.; £105. Apply after 7 p.m.—10, Foxgrove Rd., Beckenham, Kent, or 'phone Bromley 917. [4753

1922 perfectly new but shop-soiled Douglas; (2) 2¾h.p., 2-speed, £59; (1) 3-speed, £72; (1) 4h.p. combination, £115; complete lamps, horn, tax paid, delivery free; (2) 1922 3½h.p. sports, demonstration models, £75.—City Motor Depot, 37, Lowerhead Row, Leeds. Tel.: 23449. [5228

DOUGLAS 4h.p. 1920 Combination, adjustable Triplex windscreen, new Bosch magneto, hood, speedometer, electric lighting, complete set tools, tax paid, just overhauled, in perfect condition, winner of reliability trials; £65.—N. Gibbs, 4, Weigall Rd., Lee, S.E.12. [5350

DOUGLAS 3½h.p. Sports, o.h.v. competition model, last, December, 1921, very small mileage, excellent condition, Bonniksen speedometer, lamps, all accessories, light sports sidecar (if needed), tax paid, fully insured; cost £150, bargain, £100; owner buying car.—J. Hennessy, Broom Hill, Sunningdale, Berks. [3817

1919 4h.p. Douglas Combination, 3-speed, clutch and kick-start, tax paid, T.B. magneto, Amac carburetter, P. and H. lamps, all tyres are in good condition, machine and sidecar are excellent throughout and guaranteed mechanically perfect; £52, bargain; any trial welcomed.—Allen, Station House, Aldeburgh, Suffolk. [5682

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927

Economic.

£34.—Economic 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents: Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Enfield.

ENFIELD Combination, 1922, as new; £110.—Dyer, 46, Clapton Common. [4584

6h.p. Enfield Combination, recently overhauled; bargain, £60.—24, Stanway Rd., Coventry. [5048

1921 2¼h.p. Enfield, 2-stroke, 2-speed, unscratched; 28 guineas.—67, Fernlea Rd., Balham. [5659

1921 8h.p. Enfield, dynamo lighting, beautiful condition; £95.—Cryer, Lowerhead Row, Leeds. [5229

£25.—Royal Enfield 2¼h.p., 2-speed, splendid condition.—Furzefield, Eastwood Rd., Leigh-on-Sea. [5092

1921 Enfield, 2-stroke, as new, fully equipped; quick sale, £35.—Owner, 51, Greening St., Abbey Wood, S.E.2. [5019

ROYAL ENFIELD Combination, 1918, fine order; £50.—1, Springfield Park Crescent, Catford, S.E.6. [5284

ENFIELD Combination, 6h.p., in sound condition; seen Saturday; £48.—Chiverton, 12, Tavistock Sq., W.C.1. [4978

ROYAL ENFIELD Combination, 5-6h.p., perfect outfit; £48.—Norfolk, Dorset Mews, Dorset Rd., Clapham, S.W. [5655

ROYAL ENFIELD 2¼h.p., 2-stroke, only done 200 miles, all on, licensed; £48.—Marshall, 86, Albert Rd., Morecambe. [4883

ROYAL ENFIELD 2¼h.p., 2-stroke, perfect condition, little ridden; £35.—Firth, 24, Ferme Park Rd., Stroud Green, N. [4908

1921 Dynamo Enfield Combination, run few miles only, every possible accessory; £97.—24, Balliol Rd., North Kensington. [5153

6h.p. 1916 Enfield Combination, hood, screen, lamps; bargain, £60; 2-stroke taken part.—Baker, 47, Burnell Av., Welling, Kent. [5404

ENFIELD 8h.p., 2-seater sidecar, dynamo lighting, 1921 engine; £75.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [5060

1921 8h.p. Enfield Combination, specially upholstered, Vickers, acetylene, Stewart speedometer, guaranteed sound running order, all on; £98; seen Finchley.—Box 4013, c/o *The Motor Cycle.* [4959

The HALIFAX MOTOR EXCHANGE

25, HORTON STREET, HALIFAX.

'Phone: 1400. 'Grams: Perfection.

1922 BRAND NEW MODELS.

LAGONDA Coupe, reduced price	350 gns.
LAGONDA, 2-seater, reduced price	280 gns.
DOUGLAS, 2¾ h.p., 2-speed, all on	£68 0
ENFIELD, 2¾ h.p., 2-speed, all chain	£55 0
MARTINSYDE, 6 h.p. combination	£140 0
NEW IMPERIAL, 8 h.p. combination	£145 0
NORTON BIG FOUR	£120 0
REX ACME, 2½ h.p., 2-speed	£50 0
TRIUMPH, 4 h.p., all chain	£115 0

We are quoting very special exchange allowance against the above to clear.

SECOND-HAND BARGAINS.

Deferred payments, one-fourth deposit, 5 per cent. on balance, and 12 monthly payments.

SOLOS.

FEATHERWEIGHT, 1½ h.p., spring forks	£9 15
DOUGLAS, 1920, 2¾, 3-speeds, tax paid	£49 10
LEVIS, 1922, G.1, 67×70 engine	£39 10
NORTON, 1922, Big Four, 300 miles	£99 10
RUDGE, 3½, clutch model, wants attention	£19 10
RUDGE-MULTI, 1920, 5-6 h.p., tax paid	£59 10
RUDGE-MULTI, 1920, 7-9 h.p.	£65 0
TRIUMPH, 1916, 4 h.p., c/shaft	£52 10

PASSENGER MACHINES.

B.S.A., 1913, 4½, all-chain comb.	£79 10
B.S.A. 1921, 6 h.p., all-chain comb.	£129 10
HARLEY, 1918, 7-9, 1920 Grindlay sc.	£87 10
HARLEY, 1919, electric comb.	£97 10
INDIAN, 7-9 h.p., 2-speed comb, tax paid	£47 10
MATCHLESS, 8 h.p. comb., belt drive	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£85 0
NEW IMPERIAL, 8 h.p., 3-speed com.	£79 10
REX, 1913, 6 h.p., coach comb.	£42 10
ROVER, 3½, 3-sp. hub, coach sidecar	£37 10
SCOTT, 3¾, 2-speed comb., tax paid	£49 10
SCOTT, 1920 comb., screen, etc., tax paid	£87 10
TRIUMPH, 3½, 2-speed comb., tax paid	£39 10
TRIUMPH, 1916, crankshaft, new sidecar	£69 10

RUNABOUTS.

BLUMFIELD, 7 h.p. 3-wheeler, hood, screen, Chater Lea 3 speeds, tax paid	£59 10
BRIT-PRECISION, 8 h.p., 2-seater	£47 10
FORD, 4-seater, wants attention	£39 10
H.F.G., 1920, 8-10 h.p., 2-seater, dynamo	£97 10
MORGAN, Grand Prix, O.H.V.	£87 10
RICHARDSON, 1920, 2 seater, dickey seat.	£95 0
TINY, 10 h.p. 4-cyl., 2 seater, dynamo lighting, screen, new hood	£120 0

THE EASY WAY.

£5 deposit and 15/- weekly buys

BUCHET, 3½ h.p., 2-speed, tax paid	£19 10
DOUGLAS, 2¾, single speed	£17 10
STEVENS, 4¼, single gear, spring forks	£17 10
HUMBER, 3½ h.p., 2-speed	£27 10
RUDGE, 3½ h.p., clutch, wants attention	£19 10
REX, 5/6 h.p., 2-speed combination	£29 10
PREMIER, 3½ h.p., 2-speed	£29 10
BRADBURY, 3½ h.p., 2-speed, tax paid	£29 10
HUMBER, 3½ h.p., engine wants attention	£15 0

SPECIAL CASH BARGAINS.

COVENTRY VICTOR, 1921, 5-7 comb.	£79 10
F.N., 4-cylinder, single speed, wants attention	£12 10
F.N., 4-cyl., 2 speeds, wants attention	£21 0
HUMBER, 3½, re-enamelled, wants attention	£11 10
INDIAN, 7-9, 2-speed, sidecar	£39 10
RUDGE-MULTI, 1920, 5-6, comb.	£69 10
RUDGE-MULTI, 1920, 7-9, comb.	£75 0

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD 1920 2¼h.p., 2-speed, clutch, just carbonised, perfect order; £29.—25b, Lurl Gardens, Battersea Park (nr. Station). [4

CROYDON and District.—Sole official appoin agent for Royal Enfields.—A. F. Pulling, 17 London Rd., Croydon. 'Phone: 1619. [5

ENFIELD 1921 2¼h.p., splendid order and app ance, only used week-ends, fully equipped; guineas.—Seen 82, Battersea Rise, S.W. [5

ROYAL ENFIELD 7-8h.p. Combination, he screen, fully equipped, good condition, tax pa £60.—Rickards, 525, Caledonian Rd., N.1. [4

ENFIELD Sports 1922 2¼h.p., 2-stroke, smart li machine, fast and economical, brand new, soiled; £50.—The Morris Garages, Oxford. [5

3h.p. Enfield, twin M.A.G., 2-speed, 1916, just o hauled and re-enamelled, new tyres, fully equip very fast; £35.—38, Lordship Lane, S.E.22. [4

ENFIELD.—Complete range of 1922 models for mediate delivery; cash, exchanges, easy payme —P. J. Evans, John Bright St., Birmingham. [5

1919, late, Enfield Combination, 8h.p. J.A Tan-Sad, speedometer, windscreen, all on, condition; £80.—9, Clifton Rd., Finchley, N.3. [4

1922 8h.p. Enfield Combination, shop-soiled, a g £115; exchanges and deferred payment Bambers, Eastbank St., Southport. 'Phone: 60 [4

1922 Enfield Combination, delivered June, all ac sories, lamps, spare tyre, tax, insurance p owner going abroad; £115.—31, Woodside, Wimbledo [4

£90.—1921 Enfield combination, Vickers 8, Magd electric horn, speedometer, Tan-Sad, Easting, ta insured.—James, Commander-in-Chief's Office, Chathe [4

ENFIELD 1922 Sports Model 2¼h.p., electric ligh set, Lucas horn, Pedley handle grips, knee g very little used, as new; £47/10.—The Morris Gara Oxford. [5

ENFIELD Combination 1921 (July), 8h.p. Vick lamps, mirror, Cowey, Easting, etc., little used new, licence paid; £100.—Rich, "Pentire," Stud Rd., Hanwell, W. [4

1921 Enfield Combination, 8h.p., Magdyno, spe meter, hood, screen, side curtains, absolu as new, guaranteed; £110.—Homac's, 243, Lower C ton Rd. N.E. Dalston 2408. [4

ENFIELD-VICKERS 1922 8h.p. Combination, dyno, with unused spares, scarcely used, tax lovely outfit, as new; absolute sacrifice, £115; bu car.—Law, 87, Cobden Rd., S. Norwood, S.E. [

WAUCHOPE'S, 9, Shoe Lane, London.—1918 Royal Enfield Combination, all accesso speedometer, £85; 8h.p. 1916 Enfield combination accessories, tax paid, £75; easy terms arranged. [

1922 Royal Enfield-Vickers Combination, deliv May, fully equipped, tax paid, low mile absolutely as new; £100.—Kenneth Kemp and Co. Berkeley Mews, Connaught St., Marble Arch, Lon Padd. 1177. [

1922 Royal Enfield-Vickers Combination, deliv June, mileage 800, guarantee as new, equipped of test, comprehensive cover to June, £160; quick sale, £135; trial or tuition give 93, Brudewell Rd., Upper Tooting. [

WAUCHOPE'S, 9, Shoe Lane, London.—2¼ Royal Enfield, 2-stroke, 2-speed, sporting m £55; with kick-starter, £57; old machine taken exchange and treated as first payment down, mainder in 12 equal monthly payments or more [

96 Guineas.—8h.p. Enfield Combination, p J.A.P. engine, delivered August, 1920, only 5,000 miles, dynamo lighting, hood, screen, many ex absolutely new condition throughout, owner must s 18, South Bruton Mews, Bond St., W. Mayfair 42 [

1922 Enfield Combination, delivered July, s or double-seated sidecar, windscreen, hood, curtains, Tan-Sad, Lucas dynamo lighting, sp meter, small mileage; cost £175, accept £140 offer; all as new.—Lambert, Baker, Redhill, Surr [

1922 8h.p. Enfield Combination de Luxe, L magdyno, Cowey trip speedometer, Cowey ha bar watch, Easting Royal windscreen, Aero aluminium number plates, tax paid, owner buying £130 for quick sale.—Blyth, Rhayader, Radnors [

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kay Bond St., Ealing. [

ENFIELD Spares and Repairs a Speciali Pulling's Garage, London Rd., Croydon. 'Ph 1619. [

Excelsior.

1921 2¾h.p. Excelsior, 2 speeds, condition per £45.—Voce, Low Hall, Knaresboro', Yorl [

F.N.

F.N. 2½h.p., 2-speed, hand clutch, kick-starter, v tight Bosch, identical to 1922 model; £20 change.—Kennard, 78, Yerbury Rd., Holloway, N. [

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

L.M.C.

L.M.C. 1920 6h.p. Combination, fully equipped, Easting screen, in very good condition; £60.—The Layton Garages, 30, Holywell St., Oxford. [5473

L.M.C. 1920 6h.p. Twin, countershaft 3-speed, hand clutch, kick-starter, small mileage, tax paid; £65.—Maudes', 100, Great Portland St., London. [5470

Martinsyde.

1921 6h.p. Martinsyde Combination, lamps, as new; £72/10.—2, Fortune Gate Rd., Harlesden, N.W.10. [5666

ROBERTSON'S Motors, Ltd., are the London Martinsyde Service Agents; trial runs arranged; spares stocked.—157b, Gt. Portland St., W.1. [5929

MARTINSYDE 1922 6H, Mortgomery sidecar sports, Lucas accessories, speedometer, mileage eligible; £115.—Ratcliffe Bros., 200, Gt. Portland St., [5503

1920 Martinsyde Combination, speedometer, leg-shields, Easting; £75.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Manchester. [5587

MARTINSYDE; £105; purchased new, March 24th, 1922, model 1921, fully insured, full equipment, Easting, little used; view Saturday.—41, Honeybrook Rd., Clapham Park. [4754

1922 Martinsyde 3½h.p. sports model, Lucas lamps and horn, Cowey speedometer, licence paid to December; £76; new May, done 1,600 miles, like new. Eborn's Garage, Aylesbury. 'Phone: 150. [4731

GET your Motto be: "A Martinsyde for me." Nothing better made, finest value for money; cash, exchange, or deferred payments.—In stock at the Service Depot, Marlborough Motor Works (The Motor House), 20, Finchley Rd., N.W.8. [9583

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones' Garage, The Broadway, Muswell Hill, London. N.10. [0918

Matchless.

1910.—3½h.p. Matchless, single speed and basket sidecar.—King, Egrove Farm, Oxford. [5568

MATCHLESS, Model H, perfect condition, complete equipment; £140.—82, Belgrave Rd., Wanstead, E.11. [5036

MATCHLESS Combination 8h.p., 2-speed, damaged but working order; first cash secures.—21, Forest Rd., Catford. [5035

1920 Matchless-Jap, fully equipped, excellent condition; 100 guineas.—Jewellers, 840, High Rd., Tottenham (Bakers Arms). [5103

1919-20 Victory Matchless, interchangeable wheels, Cameo windscreen, completely equipped; £75. 97, Mason's Hill, Bromley, Kent. [5304

1921 Model H Matchless Combination, spare wheel, Easting, absolutely as new; must realise 85 guineas.—67, Fernlea Rd., Balham. [5656

1914 7-9h.p. Matchless M.A.G. Combination, 3-speed countershaft, equipped, good order; £70.—Heyborn's, Grand Garage, Maidenhead. [4824

1922 Matchless Model H Combination, new condition, every possible accessory; £115, nearest.—Jones, c/o Bradmores, 482, Harrow Rd., Paddington. [5430

£130 Buys the Latest Matchless Outfit, cash or payments; also we have 1921 and 1922 second-hand bargains.—Knight's, 126, Upper Tooting Rd., S.W.17 [0759

1922 Matchless 2-seater Combination, brand new, Magdyno, spare wheel, etc.; list £206; accept £5.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [5396

MATCHLESS Touring Model J Combination at 1923 price [£130]; exchanges, deferred; finest value on market.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [9167

MATCHLESS 1922 8h.p. Combination, M.A.G. engine, dynamo lighting, spare wheel, all lamps, leg-shields, horn, very small mileage; £140.—Maudes' (below).

MATCHLESS 1921 2-seater, M.A.G. engine, dynamo lighting, electric horn, mirror, legshields, speedometer, unused spare wheel, excellent condition; £155.—Maudes' (below).

MATCHLESS.—We are now delivering latest models at revised 1923 prices; exchanges or deferred payments.—Maudes' Motor Mart, 100, Great Portland St., London; Paris St., Exeter; The Norwich Garage, Norwich; and Walsall Garage, Walsall. [5462

RUSSELL, 1a, Bloomfield Rd., Plumstead, for Matchless Combination; deferred payments; types of all dates; trade supplied where agents not appointed. [2241

1920 8h.p. Matchless Combination, splendid condition throughout, hood, screen, spare wheel, Tan-Sad, etc.; £110; tax paid Dec.—23, Grosvenor Av., Wallington. [4965

1922 Matchless model H Combination, dynamo lighting, electric horn, speedometer, legshields, hood, screen, spare wheel, run 668 miles only, as new; £140.—Reg. 173, Gt. Portland St. 'Phone: Langham 1257. [5512

A REAL RUBBER NON-SKID

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28×3.....	51/-	7/11	68/-	10/6
700×80...	54/6	7/6	69/6	9/9

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"You may be interested to know that the 26 x 2½ x 2¼ Elite super non-skid cover which you supplied to me in February last has covered 3,000 miles on the driving wheel of my P. & M. Combination and still looks good for an equal mileage."

Yours sincerely, G. L.

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This is not an ordinary tube repairing outfit, but a Cover and Tube Outfit. Containing 1 cover patch, 9 assorted tube patches, wire brush, 1 roll canvas, 1 insulating tape, valve tubing, large tin of solution and chalk. Special price, 2/9. List price, 3/6. Send for one to-day.

'Phone Victoria 6553.

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'Grams: "Tyreliday, London."

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266, VAUXHALL BRIDGE ROAD, S.W.1, to where all post orders should be addressed.

And at 44, Surbiton Rd., Kingston-on-Thames; Telephone—Kingston 3385.

Steele Publicity.

MOTOR CYCLES FOR SALE.

Matchless.

PHOTOGRAPH Free.—Matchless Model H Combination, new February, 1921, spring frame, spare wheel; 78 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [5629

WAUCHOPE'S, 9, Shoe Lane, London.—Matchless, model H, spring frame model combination, latest improvements; can be sent direct from works; £130; easy terms or exchange. [5530

MATCHLESS 1920 8h.p., model H, Magdyno, spare wheel, speedometer, Easting, legshields, sidecar step, Goodyears, new, splendid condition; £110.—48, Clifton Rd., Kingston Hill, S.W. [4704

1922 8h.p. Matchless Combination, electrically equipped, mileage under 200; nearest to £150; terms and exchanges.—Midland Garage, 166, Shaftesbury Av. Phone: Gerrard 8461. [4932

MATCHLESS Double-seater Combination, 7-9h.p. M.A.G. engine, 3-speed countershaft, hood, screen, perfect; exchange lighter machine and cash, or £59/10.—211, Garratt Lane, Wandsworth. [5094

IN Liquidation.—For sale, a 1920 Matchless Combination, 8h.p., standing at Clayton Garage, 384, Kennington Rd., S.E.11. Offers to Fincham, Partridge and Co., 3, Warwick Court, Gray's Inn, W.C.1. [4724

MATCHLESS 1914 3½h.p. Twin Cylinder, o.h.v. Gradua gear, fully equipped and licensed, actually ridden in the 1914 T.T., exceptionally fast; £27.—The Layton Garages, 30, Holywell St., Oxford. [5477

MATCHLESS Combination, 8h.p., March, 1923, electric lighting, spare wheel, Tan-Sad, speedometer, Easting screen; cost £210; mileage 2,000, as new; accept best offer over £150.—47, Norfolk House Rd., Streatham. [4967

1923 Matchless Models, rockbottom revised prices, no need to wait for the Show. Buy now, immediate delivery; cash, exchange, easy terms.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [5202

MATCHLESS H Combination, low mileage, spring frame, spare wheel, Lucas Magdyno, Watford speedometer, hood, screen, horn, beautiful condition, any trial; £120, or offer.—Steele, 240, Plumstead Common Rd., Plumstead. [5316

MATCHLESS H Combination, 1920, J.A.P., Lucas acetylene, Tan-Sad, Watford, Easting and hood, spare wheel, fully insured to September, 1923; completely overhauled and refitted by makers, September, 1922; excellent condition; £115; Salisbury district.—Box 4019, c/o *The Motor Cycle.* (D) [5341

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

Spare Parts:

MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0809

McKenzie.

MCKENZIE Lightweight, 1922, shop-soiled; £25.—Honchin, 188, High St., Peckham, S.E.15. [5328

MCKENZIE Lightweight, 1922, new, equipped and licensed; £25.—Godfrey's Garage, Cranbrook Rd., Ilford. [4857

MCKENZIE-HOBART, the Lightweight Motor Cycle; 26 guineas, ex works; catalogue free.—Lockhart, East Markham, Newark. [5266

MCKENZIE, new August, 1922, mileage 500, as new, just overhauled by makers, perfect, spare cover and tube; buying combination; £22.—35, Ashen Grove, Wimbledon Park. [5042

Metro.

1920 Metro-Tyler, complete with discs, licence paid, lamps; £38.—Saunders, 32, High St., Hampstead. [3644

1920 Metro-Tyler 2¾h.p., sports model, splendid order, tax paid; £27/10.—Homac's 243, Lower Clapton Rd., N.E. Dalston 2408. [4430

METRO-TYLER, 2¾h.p., 1920, rebushed, discs, countershaft, long exhaust, variable jet, very racy; £29.—4, Thorncombe Rd., Dulwich. [4952

1922 2¾h.p. all enclosed Metro-Tyler, 2-speed, chain and belt drive, tax paid December, only used for demonstration purposes, very little mileage, as new; £40.—D. and S. Autocar Co., 33, The Parade, Golder's Green. [5360

Minerva.

£8.—Minerva 2¾h.p., 4-stroke, good running order.—Howarth, Heston, Middlesex. [5275

£14.—Minerva lightweight, overhauled, or exchange 2-stroke.—Chatfield, Winsor Woodlands, Southampton. [4767

MINERVA 2¾h.p., thoroughly renovated, overhauled, taxed; £12/10, snip.—17, Heatoo Rd., Mitcham. [5131

MOTOR CYCLES FOR SALE.

Minerva.

MINERVA 5h.p. twin, mechanical valves, detachable cylinder heads, watertight Bosch, new heavy Druids, machine re-enamelled, ready for erecting; £15. —78, Yerbury Rd., Holloway, N.19. [4822

Monarch.

MONARCH-PRECISION 3½h.p., H.B. clutch, B. and B. variable jet, Bosch, tyres, belt nearly new, rebushed, overhauled, mechanically sound, smart appearance, 90 m.p.g., all accessories, trial; £28; after 5 p.m. —3, Beechcroft Rd., East Sheen, S.W. [4923

Ner-a-Car.

NER-A-CARS.—The ideal solo mount, immediate delivery; 2¼h.p., 2-stroke, electric and acetylene lighting, variable gear, ready to ride away; £65.—South Eastern Garage, Herne Hill, S.E.24. [4935

New Comet.

2¾h.p. New Comet, new 1922, lady's or gent's machine, fitted with Comet sidecar; £65; easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [5538

New Hudson.

NEW HUDSON 2-stroke, 2 speeds, taxed; bargain, £18.—Fisher, Springwell Rd., Heston, Hounslow. [5279

1920 2¼h.p. New Hudson, 2-stroke, fully equipped, perfect running order; £35.—37, Lytton Grove, Putney. [4707

NEW HUDSON 2¼h.p., 2-speed, popular model, brand new; £45, or offer.—Wardman, High St., Cheltenham. [4987

NEW HUDSON, late type, 2-stroke, 2-speed, all on, like new; £21.—Ward, South Western Garage, New Malden, Surrey. [5680

NEW HUDSON 3½h.p. 1914, 3-speed, clutch, tax paid, excellent condition; bargain, £23.—28, Hornsey Park Rd., Hornsey. [5249

1920 New Hudson Combination, fully equipped, perfect condition; £60. — James, c/o Bradmores, 482, Harrow Rd., Paddington. [5428

NEW HUDSON Motor Cycles.—London Depot, 45, Grays Inn Rd., London, W.C.2. All models in stock. Easy payments. Spares. Trade supplied. [0851

NEW HUDSON 2¼h.p., 2-speed, 2-stroke, 1920, new 1921; lamps, horn, Stewart trip speedometer; £30.—Paterann, 68, St. George's Avenue, Sheerness. [5291

NEW HUDSON 1922 2¼h.p. De Luxe, new, £50; ditto Popular, new, £40; both models shop-soiled. —New Hudson Depot, 45, Gray's Inn Rd., London, W.C.2. [4336

1922 New Hudson 4¼h.p. Combination, lamps, horn, etc., delivered June, small mileage, condition as new; owner abroad; accept £80 for quick sale.—Apply, W. R. Young, St. Albans. [4794

1919-20 4¼h.p. New Hudson, 3-speed, kick-start, clutch, lamps, tax paid, standard sidecar, with detachable child's seat, absolutely first-class running order; £70; exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [3880

New Imperial.

NEW IMPERIAL-J.A.P. 2¾h.p., 2-speed, perfect; £28, nearest.—Tunaley, Stotfold, Beds. [4839

3½h.p. Imperial, 2-speed, very fast, perfect; £30.—Saint, Regent St., Cambridge. 'Phone: 724. [5373

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

2¾h.p. New Imperial, 2-speed, all accessories, perfect condition, semi T.T., long exhaust; £33.—1, Tree Villas, Iffley, Oxford. [4909

1922 New Imperial 2¾h.p., 3-speed, all-chain drive, shop-soiled; £63.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. [5517

NEW IMPERIAL, 1916, 2¼h.p. J.A.P., 2-speed, really fine condition; any trial; £25.—Stubbs' Garages, Ltd., Loughborough. [5111

2¾h.p. New Imperial, 2-speed, equipped, perfect condition, trial; £35, offers; part exchange Rudge cycle.—64, Mount Rd., Mitcham. [4911

1919 New Imperial, 2-speed, clutch, kick-start, fully equipped, licensed; £27.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [5069

NEW IMPERIAL 2¾h.p. J.A.P., 2-speed, 1916, licensed, complete with Tan-Sad and equipment; £25.—Godfrey's Garage, Cranbrook Rd., Ilford. [4858

£27.—1917 New Imperial-Jap, 2-speed, lamps, horn, etc., brand new tyres, perfect throughout, any trial; offers.—Barnes, 83c, Trinity Rd., Balham, S.W. [5022

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. 1922 New Imperial, 3 speeds, hand-controlled clutch, and all accessories; £57/10; extended payments. [5531

1920 New Imperial 2¾h.p., 2-speed, clutch, kick-start, fully equipped, tax paid, Binks carburetter; 30 guineas.—Edwards, 50, Harrington Rd., South Kensington. [9134

1922 New Imperial all-chain, lamps, tools, done 3,500 miles, excellent condition; £52/10 cash. —K. Ireland, Magdalen College School, Brackley, Northants. (D) [4836

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MOTOR CYCLES FOR SALE.

New Imperial.

AT Edwards.—1919 2¾h.p. New Imperial, 2-s fully equipped, tax paid, good condition thro out; 32 guineas. Deferred payments and exchang 101, Great Portland St., W.1. [

NEW IMPERIAL 2¾h.p., model No. 3, 3-s kick-start, all-chain drive; £73; immediate livery; cash, exchanges, easy payments.—P. J. E John Bright St., Birmingham. [

8h.p. New Imperial Combination, absolutely b new, 3-splendid outfit; offered at special clear price, £135; convenient easy payments.—Harrods M Salesrooms, 118, Brompton Rd., London. [

AT Edwards.—1921 8h.p. New Imperial, fitted electric lighting, Easting windscreen, equipped, tax paid, perfect condition; 85 gui Deferred payments and exchanges.—101, Great land St., W.1. [

CLEARANCE Bargain.—New 1922 No. 3 Imperial 2¾h.p., 3-speed, chain drive, kick-s list price £73; reduced to £65; easy payments 4 cent. extra; exchanges.—Premier Motor Co., A Rd., Birmingham. [

AT Edwards'.—1922 3h.p. New Imperial, Mode all-chain drive, kick-starter and clutch, Ma electric lighting equipment, horn, tax paid, as throughout; 60 gns.. Deferred payments and changes.—101, Great Portland St., W.1. [

NEW IMPERIAL.—We are now delivering 1923 models at reduced prices; Model No £65; No. 5 super sports, £73; No. 6 super sp £78; 8h.p. combination, £125; immediate deliv deferred payments 6% extra; exchanges arrang Maudes', 100, Great Portland St., London; Paris Exeter; and The Norwich Garage, Norwich. [

Spare Parts:

NEW IMPERIAL Spare Parts.—London stock Rey, 173, Gt. Portland St. 'Phone: Lang 1257. Open till 7.30 p.m., 4 o'clock Saturdays. [

New Scale.

NEW SCALE 1920 Combination, 3h.p. Precision gine, fully equipped, new tyres, guaranteed fect; £34.—51, Upper Richmond Rd., East Putn [

Norton.

PREMIER Motor Co. for Norton Bargains.

SLIGHTLY Showroom Soiled 1922 Nortons at mous reductions; write for stocktaking clear list. Model No. 9, 3½h.p., single gear, £68; 3½h.p., 3-speed, £95; No. 1 Big 4, 3-speed, £99; ferred payments 4% extra; carriage paid to address.—Premier Motor Co., Aston Rd., Birmingh [

NORTON 16H 1922, as new, fully equipped; £8 cash.—Ratcliffe Bros., 200, Gt. Portland St., [

1922 (July) 3½h.p. Norton, 16H, practi unused; nearest £95.—Dickinson, Holmle Ocker Hill, Tipton. [

1922 Norton, brand new, unregistered, 16H, size tyres; best cash offer, or exchange, list £117/10.—391, King St., Hammersmith. [

1922 Model 16H Norton, gold medal winner, condition; owner bought car; offers.—Cookso Trafford Rd., Eccles. 'Phone: 243 Eccles. [

BIG 4 Norton Combination, 1922, countersh kick-start, equipped, taxed; £98.—Sidney, Romford Rd., Manor Park, London, E.12. [

1922 16H Norton, countershaft, Brooklands sp racer, kick-start, taxed, as new; £115.—Wal 769, Romford Rd., Manor Park, London, E.12. [

DAN GUY, Weymouth.—Big Four Norton, s ing sidecar, delivered from works 3 weeks absolutely as new in every way, tax paid; £110. [

FOR Sale, 1921 3½h.p. 16H Norton, O'Don tuned, only done 3 months' light work, guara as new; 75 guineas.—Custance, Avalon Bungalow, stanton. [

1921 3½h.p. Norton Sports Combination, Rica close ratio, guaranteed perfect and to ex 60m.p.h.; best offer.—Williams, Springfield Rd., trincham. [

80 M.P.H. 1921 16H Norton for sale, in pe order, as per advertisement in *The Motor C* September 14th; offers over £70 solo.—G. MacWat Almondsbury, Bristol. [

1921 Norton Combination, 3-speed, Binks carbu ter, fully equipped, unscratched, indistingu able from new; genuine bargain, £95.—19, Wel ton St., Moss Side, Manchester. [

80 m.p.h., 65 m.p.h. sidecar.—1922 16H No winner of 18 awards; unbeaten 500 c.c. c engine perfect, external appearance as new, mil 3,000; offers.—Fitzgerald, 94, Palace Rd., Tulse [

N.S.U.

£10.—3½h.p. N.S.U., 2-speed, clutch, M.O. magneto ignition.—King, Egrove Farm, Oxfo [

N.U.T.

N.U.T. 3½h.p. Twin, new 1922 model, slightly soiled; list price £100; genuine bargain, P. J. Evans, John Bright St., Birmingham. [

MOTOR CYCLES FOR SALE.

N.U.T.

N.U.T., brand new, shop-soiled 1922 model, all-chain drive, 3 speeds; listed £110, reduced price £90.—Maudes' (below).

N.U.T.—A few latest shop-soiled fully guaranteed 1922 sports models; 3½h.p. twin, 3 speeds, chain-cum-belt, £85; all-chain, £90; list price £115 and £125.—Maudes', 100, Great Portland St., London. [5460

1921 N.U.T. and Swan Sidecar, dynamo, discs, etc., one of the sportiest combinations on the road; £90.—Snow, 58, Malvern Rd., Dalston, E.8. [5671

O.K.

O.K. 1920, just overhauled, new belt, etc., licensed; £26.—Underhill, 44, Wayford St., Battersea. [4816

1916 O.K., splendid condition, fully equipped; must sell. £21.—25, Ravensbourne Rd., Catford. [5034

O.K. Lightweight, 2-stroke engine, September, 1921, countershaft gears, brand new appearance; 25 guineas.—Fersfield, Westbury Rd., New Malden. [5091

Omega.

OMEGA Model 2B, shop-soiled; only at special price of £58/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5483

OMEGA Model No. 3, shop-soiled; only at special price of £59/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5484

2¾h.p. 2 speeds Omega-Jap, new engine, magneto, carburetter, 1921, very fast; £26.—7, Cowdrey Rd., Wimbledon. [5419

1920 Omega-Jap, 2-speed, lamps, horn, splendid condition; £30.—37, Arlington Rd., Surbiton. Phone: Kingston 1274. [5070

OMEGA-J.A.P. 2¾h.p., 2-speed, clutch, and kick-start, lnng exhaust, Tan-Sad, lamps, tools, spares, condition as new, perfect order; £32.—18, Durlston Rd., Upper Clapton. [5242

P. and M.

P. and M. Combination, 1917¾, little used, must sell; £38.—153, Station Rd., Hampton. [4823

£18.—3½h.p. P. and M., 2-speed, clutch, T.T. bars, fine running order.—King, Egrove, Oxford. [5570

£50.—1919 P. and M. Combination, perfect, reliable, lamps, taxed.—Pickering, Sutton Valence, Maidstone. [4903

P. and M., fully equipped, first-class order; bargain, £34 for quick sale.—198, King St., Hammersmith. Phone: 2474. [5065

1918 P. and M. Combination, good condition, Binks; £50.—Virgo, Wilderness, Coolinge Lane, Folkestone. [5364

P. and M. 1919 3½h.p. Combination, perfect condition, all accessories, tax, insurance paid; £55. Matthey, 51, Brailsford Rd., S.W.2. [4813

1918 P. and M. Combination, brand new, sidecar renovated as new, smart lot; £38/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5508

P. and M. 1920 3½h.p., Binks carburetter, electric lamps, tax paid, excellent condition; £55.—Maudes', 100, Great Portland St., London. [5450

1920 P. and M. Combination, Millford, with screen, fully equipped, tax paid, perfect condition; £50.—137, Gordon Rd., West Ealing, W.13. [5271

P. and M. Combination, 1918, excellent condition; A.A. examination welcomed; all on, sporting sidecar; £55.—26, Grosvenor Park Rd., Walthamstow. [5673

P. and M. Combination 1918, polished discs, accessories, splendid condition, any trial; £50, or near offer.—Williams, 126, Doyle Gardens, Willesden, W.10. [4699

T Edwards.—1919 3½h.p. P. and M. Combination, fully equipped, tax paid, perfect order; 46 guineas; deferred payments and exchanges.—101, Great Portland St., W.1. [4522

PRIVATELY owned, P. and M. Combination (1919), in perfect condition, tax and insurance paid, a real bargain at £65, or near.—Write, H., 156, Fernhill Rd., Brixton. [4702

1922 4½h.p. 4-speed P. and M. Solos and Combinations. Immediate delivery from stock at the makers' revised list price: Model A, £105; Model B, £100; exchanges.—Below.

1921 P. and M. Sporting Combination, Swan sidecar, exceptional condition; £75; exchanges.—Below.

1918 P. and M. Combination, Sandum sidecar, makers' overhaul, splendid condition; £47/10.—Kenneth Kemp and Co., 4, Berkeley Mews, Conaught St., London. Padd. 1177. [5383

1922 P. and M. de Luxe Combination, 4h.p., 4 speeds, all on, cost £150, shop-soiled; £130 cash, or deferred payments.—Taylors, 52, Sussex Place, W.7. 'Phone: Kens. 7260. [0919

P. and M., late R.A.F., 2-speed, K.S., complete in parts, engine fitted with new cylinder, new tank, maker's colonrs, new wheels, new magneto, all parts perfect; £25.—1, Springfield Park Crescent, Catford, S.E.6. [5285

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P. and M. Combination, 1918, 2-speed, C.K.S., all-enclosed chain, new Easting, electric, fully equipped, perfect condition; photo; exchange solo and cash; sell £52, offer.—30, Carlton Rd., Leytonstone. [5401

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Pope.

POPE 2¾h.p., splendid running order; £12, or near offer.—9, High St., Peckham. [4752

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3½h.p. Premier Combination, coachbuilt sidecar, 3-speed countershaft, K.S., complete with lamps, screen, etc., good running order; real bargain, £40.—Alford, Grocer, Compton Abbas, Shaftesbury. [4738

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Priory.

PRIORY-J.A.P., brand new; £50.—Clark, 7, Exhibition Rd., S.W.7. [2305

AT Edwards.—2¾h.p. Priory 2-stroke, 2-speed, brand new; £38.—101, Gt. Portland St., W. [5626

AT Edwards.—Brand new 2¾h.p. Priory-Jap, 2-speed, C.K.S., listed 52 guineas; our end of season price, £50; exchanges or deferred.—101, Gt. Portland St., W. [5625

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1922 Quadrant Combination, all-chain drive, shop-soiled only; £97, or deferred payments.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0942

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Radco.

RADCO 1921 2½h.p., 2 speeds, kick-starter, hand clutch, lamps, horn, tax paid, as new; £35.—Maudes', 100, Great Portland St., London [5472

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ALL Raleigh models in stock.—Premier Motor Co. Birmingham.

IMMEDIATE delivery of the new 2¾h.p. 3-speed all-chain drive Raleigh; £75; easy payments 4 per cent. extra; exchanges arranged.—Premier Motor Co., Aston Rd., Birmingham. [5576

RALEIGH 5-6h.p., shop-soiled; only at special price of £115.—Ratcliffe Bros., 200, Gt. Portland St., W. [5488

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RALEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £62.—7, Exhibition Rd., S.W.7. [3588

RALEIGH machines, all models in stock, from £68.—Ratcliffe Bros., 200 Gt. Portland St., W. [5497

RALEIGH, brand new, 2¾h.p., 3-speed; £68; tax paid.—Dean, Elliott St., Tyldesley, Lancs. [4081

RALEIGH 1922 3h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £70/4. — Stubbs' Garages, Ltd., Loughborough. [5109

RALEIGH 1922 2¾h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £65/14. — Stubbs' Garages, Ltd., Loughborough. [5108

RALEIGH Combination 5-6h.p., spring frame, run 4,000 miles only, sprung-wheel sidecar, every accessary; 118 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [5631

1922 Raleigh Combination 5-6h.p., completely equipped with Lucas lamps, detachable wheels, horn, speedometer, tools, etc., tax paid; £100, a real bargain.—H. Bagott, The Vicarage, Mossley, Manchester. 'Phone: 97 Mossley. [3852

CLEARANCE Bargain.—New 1922 2¾h.p. 3-speed Raleigh with Montgomery lightweight sidecar, reduced to £82; another, fitted with Hughes aluminium sporting sidecar, reduced to £85; easy payments 4 per cent. extra; carry maker's full guarantee.—Premier Motor Co., Aston Rd., Birmingham. [5577

EXCEPTIONAL Bargain.—Raleigh 5-6h.p. flat twin combination, 1922, used once, bought car, Cowey speedometer 238, spring frame, Tan-Sad. Easting screen, Lucas head lamp and generator, sidecar lamp, lucas horn, legshields, luggage grid, tax paid, cover to sidecar; £135/10; cost over £190; absolutely like new; inspection invited.—Wilkins, Simpson, opposite Olympia, London. [5368

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SPEED Merchants.—Late 1920 Reading-Standard, 1,200 c.c., 3-speed, aluminium piston, firm cones, enclosed valves lubricated from engine, Wex carburetter, hot air intake, 70 m.p.g., sprig chain, and shock absorber, 29×3½ tyres.—2, Madrid Rd., Barnes, S.W.13. [5118

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REVERE-VILLIERS 2-speed, hardly used, well equipped; £30 or offer; bargain.—R. Wilberforce, Markington, Harrogate. [4896

Rex.

8h.p. Rex Combination 1920; £90.—Ratcliffe Bros., 200, Gt. Portland St., W. [5500

1911 Rex Twin, 2-speed; £18, or near.—22, Park View, Down Lane, Tottenham. [4975

WAUCHOPE'S, 9, Shoe Lane, London.—5-6h.p. Twin Rex and Sidecar. 2-speed gear model; £25, first cheque. [5532

REX-J.A.P. 8h.p. Combination, 3 speeds, chain drive, complete accessories, good condition; £55.—Bickerton, Victoria St., Shrewsbury. [5346

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35 Guineas, genuine bargain, exchanges.—1914 Rex 6h.p., 2 speeds, handle start, roomy coach sidecar, hood, screen, lamps, overhauled by engineers, good appearance, any examination, trial.—Seabridge, 35, Hansler Rd, East Dulwich. 'Phone: Sydenham 2452. [4687

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3½h.p. Rover, 3-speed, speedometer, perfect; £29; also sidecar.—157, Tulse Hill, Brixton, S.W.2. [4715

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30 Guineas.—1919 Rover, Philipson, lamps, horn, perfect condition.—Boult, 7, Holywell St., Chesterfield. [5248

1921 Rover 6h.p., with Lucas electric lighting, splendid condition; £50.—102, Westwood Rd., Earlsdon, Coventry. [5603

ROVER 1922 4h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £90.—Stubbs' Garages, Ltd., Loughborough. [5107

ROVER 1914 3½h.p., 3-speed, overhauled, mechanically perfect; £28.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5620

LATE 3½h.p. Rover Combination, very sporty and fast, condition as new, windscreen, etc.; 42 guineas.—67, Fernlea Rd., Balham. [5657

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Rover 1914 3½h.p., Philinson hand-controlled V pulley; £30; extended payments. [5533

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6h.p. Rover Combination, 1921, 3-speed, K.S., clutch, chain drive throughout, spares (£20), tools, mileage 3,000, as new; £95 inclusive; tax December.—Davis, 94, Elsenham St., Southfields, S.W.18. [4920

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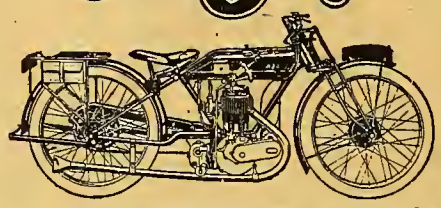

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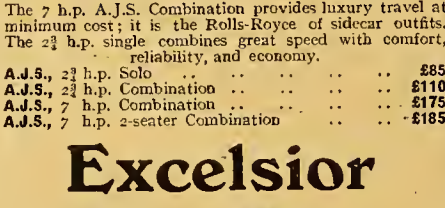

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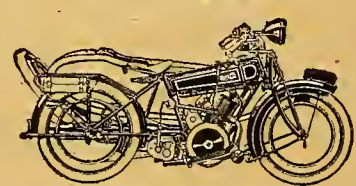

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1921 Royal Ruby Touring Model 2¾h.p., 2-speed, clutch and kick-starter, condition as new, only run one month, not used since October, 1921; owner on service abroad; sacrifice £40, no offers.—Birch, Littlecot, Sutton-at-Hone, Dartford, Kent. [3900

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1922 Rudge-Multi 3½h.p., unscratched; £46.—67, Fernlea Rd., Balham. [5668

NEW 3½h.p. Rudge-Multi, T.T. model; £65.—13, Crooklog, Bexley Heath, S.E. [5178

7-9h.p. Rudge Combination, fully equipped; £75.—Ratcliffe Bros., 200, Gt. Portland St., W. [5498

3½h.p. Rudge 1917, T.T. model, good condition; £32.—27, Mount Ararat Rd., Richmond, Surrey. [5014

3½h.p. I.O.M Rudge 1922, complete with lamps; £65.—Ratcliffe Bros., 200, Gt. Portland St., W. [5499

1916 Rudge-Multi Coachbuilt Combination; bargain, £28.—Tyler, 76, Kempe Rd., Kensal Rise. [4703

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£16.—1912 3½h.p. Rudge, perfect mechanical condition, equipped.—King, Egrove Farm, Oxford. [5559

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RUDGE-MULTI, I.O.M., 1921, 3½h.p., clutch, tax paid; £55; perfect condition.—36, Cannon Hill, Southgate. (After 7.) [5127

RUDGE 1911 3½h.p., single-speed model, sound running order, tax paid; £25.—Maudes', 100, Great Portland St., London. [5451

RUDGE-MULTI 1921 3½h.p., all lamps, tax paid, Tan-Sad, excellent condition; £57.—Maudes', The Walsall Garage, Walsall. [5457

£35.—1920 I.O.M. Rudge, new handle-bars, tyres, tubes, equipped, speedometer.—A. Cox, 161, Rye Lane, Peckham, London. [5148

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RUDGE-MULTI ombination, horn, speedometer, good order, accept £60 for quick sale.—The Layton Garages, 30, Holywell St., Oxford. [5476

£38.—1918 Rudge-Multi combination; expert examination invited.—Speechley's, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [5029

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Rudge

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AT Edwards'.—1921 Rudge-Multi 3½h.p., equipped, splendid condition; 50 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2223

3½h.p. Rudge-Multi, believed 1916, perfect condition, lamps; £30 or offer, or exchange Scott.—Chapman, Tymawr, Rhiwsaisou, Pontyclun. [4873

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RUDGE-MULTI 1920, new lamps, horn, back tyre, Tan-Sad, etc., perfect condition; ride away; £40. Also sporting sidecar; £5.—Box 3957, c/o *The Motor Cycle*. [4747

WAUCHOPE'S, 9, Shoe Lane, London.—3½h.p. Rudge-Multi, 1921, including accessories, tax paid, £62/10; 1922 Rudge-Multi, tax paid, all accessories, £69. [5535

SHOP-SOILED Brand New 5-6h.p. Rudge Solo, £69; also ditto combination, £87/10; also ditto 7-9h.p. combination, £97/10.—Shepherds, Enfield Highway Tel.: Waltham X 31 [0925

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Scott.

£68/10.—Scott Squirrel, mileage 3,000, various extras, perfect.—350, Burton Rd., Derby. [5425

SCOTT 1921 3¾h.p. Standard Specification, lamps, horn, etc., tax paid; £65.—Maudes', 100, Great Portland St., London. [5466

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SCOTT Combination, lamps, Easting, splendid condition; great bargain, £22, or nearest.—99, Little Park St., Coventry. [5353

SCOTT Solo, £36; combination, £43; take 3 adults; trial; spares; appointment evenings after 5.30.—, Queensland Av., Merton. [5077

1922 Scott Squirrel, brand new, with carrier; list £106/5; accept £87.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [5395

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SCOTT (engine 1777) and Sidecar, recently fitted new cylinders and overhauled works April, 1921, fine running condition, 1920 type lubrication, complete tools, chain, spares; £40.—Simpson, 30, Lansdowne Rd., Tunbridge Wells. [2518

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ALEC FRASER'S 1922 2¾h.p. o.h.v. Sheffield-Henderson, 78 m.p.h., Brooklands winner, etc., special J.T. Blackburne engine, condition better than new, unique opportunity, cost £165; sell best offer.—1, Lancaster Rd., Brighton, Sussex. [5146

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WATERPROOF MOTOR CLOTHING.

Fig. 1

WATERPROOF MOTOR CYCLE SUIT

(Fig. 1)

SPECIFICATION

MADE from hard wearing double texture material with an interlining of Rubber. Double Breasted jacket, with all-round pleited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof. Overall Leggings with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the leggings to be pulled off in a moment.

SUIT Complete, with overall leggings - - **35/-**

„ „ with seatless trousers **42/-**

JACKET only - - - - **25/-**

When ordering by post, state Chest measurement over ordinary Jacket, and height, and enclose remittance.

WATERPROOF TRENCH COAT

(Fig. 2)

Fawn material, rubber lined, double-breasted, with all-round belt and buckle, wind cuffs in sleeves. Medium weight. An ideal coat for riding, walking, and all purposes where a rain-resisting covering is required. Guaranteed waterproof.

Smart and Serviceable.

COAT Complete - **25/-**

When ordering by post, state Breast measurement over ordinary Jacket, and height, and enclose remittance.

TRENCH COATS in heavier and superior materials are priced in our list.

Fig. 2

SEATLESS TROUSERS

(Fig. 3)

Waterproof Fawn double texture material, rubber interlined, apron front, with wind and mud gussets, patent clasp fasteners, leather straps and buckles to fasten round boot. Perfectly waterproof. All sizes. **18/-** per pair.

Fig. 3

Fig. 4

When ordering by post, state height & enclose remittance.

WATERPROOF OVERALLS (Fig 4). Double texture material, interlined, rubber, with strap to fasten on to trouser buttons, patent clasp fasteners, seams cemented and taped. All sizes. Thoroughly waterproof.

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Martin Waterproof Co.,

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MOTOR CYCLES FOR SALE.

Singer.

£12.—2½h.p. Singer lightweight, enclosed Bosch, good running order.—King, Egrove, Oxford. [5560

Spare Parts:

THE Promptest Firm for Genuine Singer Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3164

GENUINE Singer Parts.—By return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5416

Spark.

BRAND New 2½h.p. Spark; to clear, £30.—Carnforth Motor Co., Carnforth. [4798

Sparkbrook.

SPARKBROOK 2½h.p., 2 speeds, 1919 model, splendid condition, all accessories; £28, or offers.—Turrill, Finningley, Doncaster. [4734

1922 Sparkbrook, Villiers flywheel, magneto, 2 speeds, clutch, tax paid, fully equipped; £42.—198, King St., Hammersmith. 'Phone: 2474. [5068

SPARKBROOK 2½h.p., 1921, Model A, Villiers engine, flywheel magneto and V.E.C. lighting, 2 speeds, and Canoelet Minor sidecar, tax paid; £55.—Eagles and Co., 275, High St., Acton, London, W. [5357

Sun.

2¾h.p. Sun-Vitesse, equal new, take 2 anywhere; sell, exchange.—24, General St., Blackpool. [5406

FOR Sun-Jap, or Sun-Vitesse, get in touch with the solo North London agents. Models in stock, single Special, 42 gns.; 2¾h.p. J.A.P., 2-speed, K.S., 60 guineas. Send for catalogues. Trade supplied.—Jones' Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM Sports 1921 3½h.p., magnificent machine; offer.—The Morris Garages, Oxford. [5218

SUNBEAM 4¼h.p. 1922, shop-soiled; £125.—Ratcliffe Bros., 200, Gt. Portland St., W. [5487

85 Guineas.—Sunbeam 3½h.p. 1921, as new, Lucas Magdyno, all on.—47, Mortimer Rd., Dalston. [4716

SUNBEAM 1921 3½h.p., new condition, Lucas acetylene, speedometer, taxed, 26×3; £85.—7, Exhibition Rd., S.W.7. [5618

SUNBEAM 1922 4¼h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £128.—7, Exhibition Rd., S.W.7. [5619

SUNBEAM Combination, 3½h.p., 1919, perfect condition throughout; £97/10, or offer.—1, Melrose Terrace, Hammersmith. [4750

SUNBEAMS.—1922 sporting 3½h.p., shop-soiled, £123; 1919 touring 3½h.p., first-class condition, £70.—Dosser's, Slingsby, Yorks. [5106

SUNBEAM 1922 3½h.p., brand new, shop-soiled, double purpose model, complete to standard specification; £120.—The Morris Garages, Oxford. [5211

SOUTHPORT.—Clearance sale. I.O.M. Sunbeam actual racer, special throughout; 62 guineas; exchanges.—Kents, 417, Lord St., Southport. [5051

3½h.p. 1916 Sunbeam Combination, black and gold, legshields, electric light, very fine condition, expert examination; £69.—230, Archway Rd., N.6. [5038

SUNBEAM Combination 8h.p., J.A.P. engine, licensed to December, lamps, horn, legshields, in beautiful condition; offer.—The Morris Garages, Oxford. [5219

SUNBEAM, believed 1921, interchangeable wheels, leaf forks, speedometer, lamps, spares; will sacrifice first £73.—18, Canterbury St., Coventry. [5299

1922 Sunbeam Combination, interchangeable wheels, leaf spring forks, slightly shop-soiled only; 140 guineas.—47, Bridge St., Northampton. [4905

1919 3½h.p. Sunbeam Combination, fully equipped, perfect condition; nearest £105.—Write Evans, 12, Lime St., E.C.3. 'Phone: Avenue 5535. [4919

SUNBEAM 1921 8h.p. Combination, little used, in new condition, cost over £300; a great bargain, price £160; seen London.—Box 3920, c/o *The Motor Cycle*. [4629

SUNBEAM 1919 8h.p. Combination, perfect order, tax paid, insurance transferable; £115, or offer.—Dunn, c/o Crooks, 10, Warwick St., Regent St., London. [5085

SUNBEAM 1921 Sports Model, electric light, speedometer, Cowey horn, mileage 3,000, as new; £85.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [5582

1922 4¼h.p. Sunbeam Combination, most luxurious outfit, 5 weeks old, every possible accessory, unscratched; £130, near.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [5426

SUNBEAM Combination, 1919, excellent condition, auto hood and screen, speedometer, new tyres; price £90.—Private owner, c/o Colonial Motor Co., 106A, Finchley Rd., N.W.3. [4554

1921 Sunbeam 8h.p. Combination, brand new condition, dynamo, electric horn, spare wheel, hood, screen, and numerous extras, smartest outfit on road; £130.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [5427

MOTOR CYCLES FOR SALE.

Sunbeam.

1919 Sunbeam 3½h.p., black and gold, French military model, fully equipped, guaranteed faultless, tax paid; £60.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [4431

JULY, 1922, T.T. Sunbeam, 75 m.p.h., mileage under 1,500, careful use, new appearance, fitted knee grips, horn, carrier, any examination; cost £140, nearest offer £100.—Flt.-Lt. Balfour, R.A.F., 128, Piccadilly. [4985

1921 Sports Sunbeam, 3½h.p., and semi-sporting aluminium sidecar, Watford speedometer, extra sprockets, legshields, etc., small mileage, beautiful combination: 100 guineas.—Harley, 8, Cearns Rd., Birkenhead. [4768

1919 Sunbeam 8h.p. Combination, fully equipped, leg guards, new semi-sports body to match, Brooks cantilever saddle, Binks, guaranteed perfect; £85; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [4432

EXCEPTIONAL Bargain.—Sunbeam 1922 4¼h.p. and Watsonian sidecar, Dunlops, Easting screen, Klaxon, tax paid, only done about 300 miles, absolutely like new; £125/10; just cost £172; inspection invited.—Wilkins, Simpson, opposite Olympia, London. [5369

AT Edwards'.—1922 3½h.p. semi-Sports Sunbeam, with Burlington semi-Sports sidecar, equipped with lamps, horn, speedometer, and knee-grips, tax paid, absolutely indistingnishable from new; 110 guineas; deferred payments and exchanges.—101, Great Portland St., W.1. [5624

Triumph.

PREMIER Motor Co. for Triumph bargains.

FINAL reductions to clear; new 1922 Triumphs, carrying maker's full guarantee.—Below.

TYPE S.D., 4h.p., 3-speed, chain drive, list price £115, reduced to £95; type H, list £105, reduced to £90; type R, 3½h.p., overhead valve, list £120, reduced to £105; also several sidecar combinations; easy payments 4 per cent. extra; carriage paid to any address.—Premier Motor Co., Aston Rd, Birmingham. [5578

TRIUMPH 1920 Lightweight, 2 speeds, excellent condition; £32.—Maudes' (below).

TRIUMPH 1919 4h.p. Single Speed Model, lamps, horn, excellent condition; £42.—Maude' (below).

TRIUMPH 1918 4h.p. Countershaft, Dunlop tyres, lamps, horn, tax paid; £62.—Maudes' (below).

TRIUMPH 1921 4h.p. Chain Driven, 3 speeds, condition equal to new; £80.—Maudes' 100, Great Portland St. London. [5465

TRIUMPH-RICARDO in stock; £120.—Premier Motor Co., Aston Rd., Birmingham. [0868

£12.—3½h.p. Triumph, M.O.V. magneto ignition, good running order.—King, Egrove, Oxford. [5561

TRIUMPH Combination 1918, in splendid condition, any trial; £45.—67, Feinlea Rd., Balham. [5663

1914 4h.p. 3-speed Triumph, running order; £26.—Honchin, 138, High St., Peckham, S.E.15. [5327

TRIUMPH; £22; splendid order, take push cycle part.—57, Kenbury St., Camberwell, London. [5321

£48.—Countershaft Triumph 1918, lamps, Tan-Sad, perfect.—42, Clifton Gardens, Chiswick, W.4. [5180

TRIUMPH Combination, 1920, little used; nearest £80.—Fiadlay, Bovington Camp, Wool, Dorset. [4736

TRIUMPH Combination 1920, fully equipped, splendid bargain; £59.—41, Gateley Rd., Brixton, S.W.9. [3844

3½h.p. Triumph, good condition, new carburetter, fast; offers.—March, East St., Farnham, Surrey. [4928

1919 Triumph Combination, Montgomery sidecar, good condition; £75.—Hickman, Crown St., Acton. [5023

1919 second-hand 4h.p. Triumph Combination; £72/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5496

TRIUMPH type H, shop-soiled only, at special price of £94/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5491

TRIUMPH S.D., shop-soiled only, at special price of £103/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5492

TRIUMPH, late 1918, 4h.p., equipped, licence, new condition; £55; instalments.—63, Solon Rd., Brixton. [5411

1920 Baby Triumph, 2-speed, new condition, licence paid; £40, or near offer.—70, Burr St., Luton, Beds. [4467

1920 Triumph and Sidecar, lamps, horn, etc., in new condition; £67/10.—74, Brighton Rd., Surbiton. [5434

1915 Triumph 4h.p., good order, T.T. model; £30; tax paid.—W. Prior, Manor Hotel, Datchet, Bucks. [5165

1918 Triumph, completely equipped, perfect; £45.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [5429

BRAND New Triumph, ex Irish M.T. Stores, not renovated, as new; £50.—120, Sutherland Rd., Croydon. [5432

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The CARB-JECTOR is the SILENCER that gives 100% Efficiency.

Mr. C. G. Pullin recently wired us as follows:—

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500 c.c. size 2/8 extra.

Plated all over 3/- extra. We also supply 2⅜" x ⅞" x ⅞".

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NO LOSS OF POWER.
NO OVERHEATING.
The "NO-TROUBLE" SILENCER.

All steel. Plated ends.

GET YOURS TO-DAY
You'll be pleased with it.

Quote h.p. of engine and diam. of exhaust when ordering.

The outlay of 25/- may save you Pounds!

Copy of letter received from:—

Wyheham Cottage,
West Grove, Hersham,
Walton-on-Thames.
22nd September, 1922.

Dear Sirs,

I beg to inform you that I was yesterday successful in an attempt with 3½ Douglas 494 c.c. and Sidecar, on the Class F 600 c.c. Records as follows:—

50 miles—64·13 m.p.h. World's Record, subject International approval.
100 miles—61·53 m.p.h. World's Record, subject International approval.
1 hour—63 miles 1586 yds. World's Record, subject International approval.
2 hours—120 miles 1297 yds. World's Records, subject International approval.
Subject A.C.U. confirmation.

Mr. Pullin supplied me with the Carb-Jectors fitted, which quietened and at the same time gave a very pleasing note.

Yours faithfully,
(Signed) J. EMERSON.

A.C.U. SIX DAYS TRIAL
3 Carb-Jectors entered, 3 Gold Medals.

Copy of letter received from:—

Messrs. Alldays & Onions Ltd.,
Matchless Works,
Birmingham.
September 18th, 1922.

Dear Sirs,

I am glad to report that the Carb-Jector Silencers fitted to the three "Allon" machines in the recent A.C.U. Six Days Trial gave every satisfaction.

In my opinion this Silencer on our machine gives off a tone that no one could reasonably take exception to, and as to the speed of the machines the results on Brooklands Track will show that even after Six Days' gruelling they were able to average 40 miles per hour, that is 5 miles per hour more than required.

Yours faithfully,
(Signed) R. E. CLULEE.

BRIDGEHEAD Ltd.,
Bankhey Works,
BLACKPOOL.

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1921 4h.p. Chain-drive Combination, practically unscratched; £100.—The Morris Garages, Oxford. [5221

TRIUMPH, clutch, Philipson, fully equipped, taxed, perfect; £23.—51, Upper Richmond Rd., East Putney. [5639

ALL-CHAIN Triumph, take 1914-1920 Triumph part exchange.—"Highgrove," Swallowfield, Reading. [4878

1919 Countershaft Triumph, fully equipped; £52. Ditto, 1917; £42.—24, Balliol Rd., North Kensington. [5161

1919 Triumph Combination, 3-speed, countershaft, kick-start, tax paid; £65.—7, St. Mark St., Peterborough. [4819

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

1922 Triumph model H 4h.p., 3-speed, shop-soiled only; £94.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. [5514

TRIUMPH Junior 1921, with Maglita set, including lamps, not done 5,000 miles; offer.—The Morris Garages, Oxford. [5222

TRIUMPH 1918 Combination, Swan sporting, Easting, lamps, horn; £65.—11, Kilmartin Avenue, Norbury, S.W.16. [5363

TRIUMPH 1922 Brand New Motor Cycles; Model H, £92/10; S.D., all chain, £95.—Batchelor's, Clarence St., Kingston. [5099

1921 Triumph Junior, perfect working order, electric lighting; £45.—"Ardeen," Woodcote Rd., Wallington. (D) [4927

TRIUMPH Countershaft, excellent condition, new lamps, tyres, belt, smart appearance; £37.—69, Kingston Rd., New Malden. [5188

WAUCHOPE'S, 9, Shoe Lane, London.—4h.p. 1914 3-speed Triumph and sidecar, kick-starter and clutch; £45; easy terms. [5536

1922 3½h.p. Triumph, Type R, brand new; list £120; accept £100.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [5394

1920 Triumph Combination, Millford car, Easting, lamps, tax paid; £65.—M. Hillier, 216, Portobello Rd., North Kensington. [4007

TRIUMPH, 3-speed, clutch, fast, economical, mechanically perfect, lamps, etc.; £30.—Andress, Thames St., Walton-on-Thames. [5268

TRIUMPH, countershaft, 1918-19, completely equipped, spares, little used, new condition; £60, offers.—30, London Rd., St. Albans. [4761

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3589

SEVERAL second-hand Triumphs always in stock. Triumph Service Agents for Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbourne. [1181

£40.—1918 Countershaft Triumph, fully equipped, in perfect order, 1917; £37/10.—204, Ladbrooke Grove, W.10. 'Phone: Park 5541. [5083

ROBERTSON'S Motors, Ltd.—1922 chain drive Triumph combination, tax paid, all accessories; £132.—157b, Gt. Portland St., W.1. [5933

TRIUMPH 3½h.p. 2-speed, N.S.U. with latest type frame and tank, guaranteed; £26.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [5479

1921 Triumph Combination, Lucas equipment, original tyres, Easting; £77/10.—M. Hillier, 216, Portobello Rd., North Kensington. [4008

TRIUMPH 1921 (Sept.), fitted Montgomery sidecar, Lucas lighting, not run 2,000 miles, and as new; £85.—Batchelor, Clarence St., Kingston. [5098

£63.—Late 1919 Countershaft Triumph, in excellent condition, engine recently overhauled, just reinsured.—Digby, 25, Loudoun Rd., N.W.8. [4722

TRIUMPH, Model H, just delivered; accept £94/10; would exchange for good light car or runabout.—Buntings Motor Exchange, Wealdstone. [5375

£75.—1921, type S.D., all-chain Triumph, new condition, licensed, insured, equipped, any examination.—Bacon, Offington Lane, Worthing. [5276

TRIUMPH 3½h.p., clutch model, re-enamelled and thoroughly overhauled, drop frame; 26 guineas.—Kenwood, Eglinton Rd., Plumstead, S.E.18. [5300

CROYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's Presta Motor Works, North End, Croydon. [0864

TRIUMPH 1922 2¼h.p. Model H, the old favourite, brand new, shop-soiled, with or without sidecar; price solo, £95.—The Morris Garages, Oxford. [5215

1918 Triumph Combination, splendid condition licensed, equipped; bargain, £58; exchanges.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [4697

1921 Triumph Combination, lamps, Tan-Sad, Sanaam screen, tools, Klaxon, insurance, tax, little used; £85.—30, Langthorne St., Fulham Palace Rd. [4840

19 Guineas.—3½h.p. Triumph, Bosch, B. and B., good tyres and belt, excellent condition; exchange 2-stroke.—5, Thames View, E. Molesey. [4921

MOTOR CYCLES FOR SALE.
Triumph.

£55.—1918 Countershaft Triumph, all accessories, perfect condition, new rear Dunlop, tax paid, bargain.—1, Norwood Rd., Herne Hill, S.E.24. [4934

TRIUMPH 4h.p., 1922, chain drive, Millford side-car, Lucas lamps and horn, tax paid, indistinguishable from new; £112.—Maudes', Paris St., Exeter. [5453

TRIUMPH, Model H, brand new and unused, listed at £105; our price, £95; exchanges or deferred. —Edwards, 50, Harrington Rd., South Kensington. [4533

ALL Triumph models always in stock; also full range of Triumph Spares. Triumph Service Agents for Sussex.—Cuffyns, Ltd., 56, Terminus Rd., Eastbourne. [1180

3½h.p. Triumph, overhauled, new Senspray, belt, lamps, horn, taxed £22; near. Exchange lightweight.—A.W., 76, Mayplace Rd. East, Bexley Heath. [5173

1918 Triumph Combination, fully equipped, perfect condition; £55.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

BRAND New 1922 Triumphs, shop-soiled, 10% off list, Ricardo and all-chain in stock; exchanges. —Homac's. 243, Lower Clapton Rd., N.E. Dalston 2408. [4433

1921 Triumph Combination, Montgomery sidecar, Easting, all on; £65.—Railton, Cobham and Co., Ltd, Water St., off Blackfriars St., Manchester. [5688

£48.—Triumph 4h.p., 3-speed, Sturmey, perfect running order, licensed and equipped, smart appearance.—Chastney, 8, Bellclose Rd., West Drayton, Middlesex. [4712

TRIUMPH 3½h.p. 3-speed, clutch, lamp, horn, tools, new back tyre, taxed, good order; £28/10. Lawrence, c/o Brocks Garage, Union St., Stonehouse, Plymouth. [4834

TRIUMPH Combination, 4h.p., 3-speed, countershaft, 1916, fully equipped, exceptional value; £45.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. [5135

TRIUMPH 1919 Countershaft, 3-speed, in fine running order, with or without sidecar, any trial; best offer.—J. Smedley, Market Pl., Ashbourne, Derbyshire. [5170

3½h.p. Triumph, Philipson pulley, new tyres, new Binks carburetter, in perfect order; bargain, £27/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [3878

1921 Triumph 4h.p. Combination, fully equipped Coupette sidecar, guaranteed date and condition; £77/10, exchanges.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [5507

1919 Countershaft Triumph Sporting Combination, innumerable spares, equipped, taxed, guaranteed; 69 guineas; consider exchange.—284, South Lambeth Rd., S.W.8. [5677

1922 4h.p. Triumph, Engine No. 81266, guaranteed perfect, not ridden 1,000 miles, Lucas lamps and horn; £80.—Eastwood, 10, Kemerton Rd., Beckenham, Kent. [4755

TRIUMPH 4h.p. countershaft, very little used, enamel unscratched and absolutely indistingnishable from new; bargain, £90.—Smith, High Rd., Goodmaves. 'Phone: Ilford 1082. [3869

TRIUMPH 1921 Model H, fully equipped and licensed, and Milford sidecar, very small mileage, approval anywhere; £75.—The Layton Garages, 50, Polywell St., Oxford. [5474

AUGUST, 1921, 4h.p. Triumph-Gloria Combination, all-chain drive, Sturmey-Archer countershaft, 3-speed gear, etc.; £110, or best offer.—Drummond, 7, Sydney Grove, Hendon. [4701

1920 Trinmph-Gloria Combination, Lucas lamps, horn, speedometer, splendid condition, date guaranteed; £70.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [5071

£77/10.—Triumph 1921, countershaft, all-chain model, in practically new condition, equipped, tax paid.—Delancey Street Garage, Camden Town, N.W.1. Hampstead 2012. [4751

TRIUMPH Motor Cycles.—Clearance. 1922, chain drive, brand new, with makers' guarantee; list price £115, offered £90; sidecar to fit, £10.—Oswald Parker, London Rd., Derby. [5691

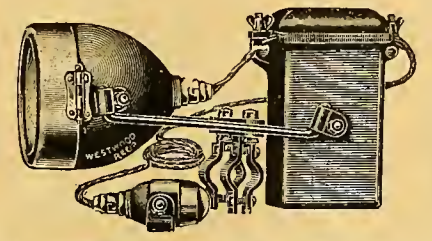
1919 4h.p. Triumph, 3-speed, kick-start, clutch, luxurious sidecar, windscreen, etc., fully equipped; £75; exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [3881

LATE 1919 Countershaft Trinmph T.T. bars, Cox Atmos, Tan-Sad, oversize tyres, fully equipped, splendid condition; £60. 1921 Henderson Sidecar, as new; £16.—Bowker, Sedbugh. [5082

TRIUMPH.—Immediate delivery of all 1922 models. Sidecars to suit from £20. Write for catalogue and full particulars of easy payments.—P. J. Evans, 30hn Bright St., Birmingham. [5550

1920 Triumph Combination cycle (May), lamps, horn, and Watford speedometer; only 3,000 miles; rear light worked in conjunction with accumulator lighting of sidecar lamp; handsome coach built sidecar, bulbous back forming locker, waterproof cover, luggage grid, spare engine sprocket for solo work; £140.—Ash, Belvedere, Abbey Rd., Rhos-on-Sea, Colwyn Bay. [4862

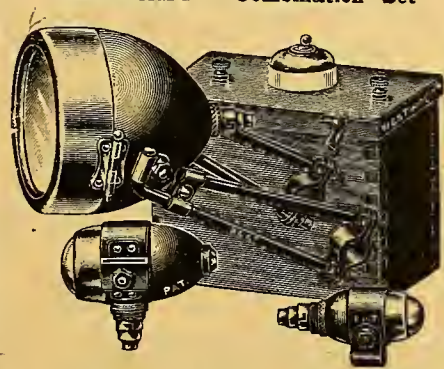
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

Complete Outfit, List No. 30/1, Price £5 5 0

"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

Complete Outfits, List No. 30/2, Price £7 7 0

"DAYBEAM" Complete Electric Set for Lightweights.

Solo Outfit, £3 3s.
Combination Outfit, £3 15s.

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Westwood Special Lines are stocked by all reputable agents.

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LAWDEN RD BORDESLEY BIRMINGHAM.

MOTOR CYCLES FOR SALE.
Triumph.

1920 4h.p. Triumph Combination, special sidecar, complete lamps, tools, small mileage, genuine; £70; cash or deferred.—Marlborough (The Motor House), 20, Finchley Rd., N.W.8. [9577

1914 Triumph Combination, Sturmey J.S. 3-speed hub, Easting windscreen, horn, lamps, licensed, good condition and perfect running order; £55.—Jackson, 23, Vicarage Rd., Gloucester. [4874

4h.p. Triumph, Type H, 3-speed clutch and kick-starter, in perfect condition; special clearance price, £95; convenieot easy payments.—Harrods Motor Salesrooms, 118, Bromptoo Rd., London. [4979

1922 Brand New All-chain Triumph Combination; £120, or near offer; exceptional opportunity. —Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177 [5382

3½h.p. Triumph-Grado, dropped frame, £12 maker's overhaul, new Bosch and tank, 4h.p. forks, many extras, runs splendidly; £25; would exchange 4-cyl. F.N. Hants.—Box 3995, c/o *The Motor Cycle*. [4853

79 Guineas, exchange.—1921 countershaft Triumph, smart and comfortable coach sidecar, electric lighting, new condition, any examination.—Seabridge, Hausler Rd., East Dulwich. (Sydenham 2452.) [3550

AT Edwards'.—1922 4h.p. Triumph, Model H, fully equipped, lamps, horn, licensed, indistinguishable from new in every respect; 85 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2226

1921 4h.p. Triumph Combination, 3-speed, Gloria sidecar, windscreen, tax paid, numerous accessories; best offer over £100; terms and exchanges.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [4931

TRIUMPH Combinatioo 1918, Bluemel windscreen, extra comfortable leather upholstery, Watford trip speedometer, tax paid, in good condition, fully equipped with spares; £80, or near offer.—34, Queen Anne's Gardens, Enfield. [5303

1922 Brand New Triumph Combination, 4h.p., 3-speed, tax paid, extra engine sprocket for solo, latest Terry spring saddle, fully equipped, all on; bargain, £125.—Ash, Belvedere, Abbey Rd., Rhos-on-Sea, Colwyn Bay. [4862

TRIUMPHS.—We have 6 only for disposal, fully overhauled and renovated; £45, or easy terms; take advantage of this splendid offer.—Write, 'phone, or call on The Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [5647

TRIUMPHS.—Buy from official appointed agents. New 1922 4h.p. combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D. all-chain, £115; model H, chain-cum-belt, £105; Junior 2¼h.p., £65; also several second-hand Trinmphs from £40; second-hand machines taken in exchange, remainder on easy terms; value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168. [5537

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

COMPLETE Stock Triumph and Sturmey-Archer spares, no waiting.—Ward's, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [9126

TRIUMPH Spares.—All parts, all models, in stock, second-hand or new; goods sent per return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5417

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

WE Hold a Complete Stock of Brand New Genuine Triumph Parts for Countershaft Models. Send your requirements to us and secure immediate service and a special discount of 33%.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Talse Hill, Brixton. 'Phone: Brixton 1292. (Half minute from Brixton Skating Rink.) Look for the Golden Arrow. [5478

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa [7361

Velocette.

PREMIER Motor Co. for Velocette Bargains.

FURTHER Great Reductions in showroom soiled 1922 models. E2, 2-speed, £55; E3, 3-speed, £60; EL2, lady's open frame, £58; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra; write for special clearance list. —Premier Motor Co., Aston Rd., Birmingham. [3579

1921 Velocette, 2 speeds, very nice condition; £33. —244, Old Christchnrch Rd., Bournemouth. [4726

1921 Velocette, 2¼h.p. 2-speed, lamps, horn, new tyres; £45; splendid condition; owner buying heavyweight.—Middleton, Cross St., Teobury, Worcs. [4949

MOTOR CYCLES FOR SALE.

Velocette.

2¼h.p. Velocette, in perfect running order, good tyres; bargain, £20.—Rhind and Co., Stone Place, Rusholme, Manchester. [3879

1922 Velocette, nearly new, legshields, Lucas accessories, Terry spring saddle; cost over £70; accept £50, or near:—317, Brockley Rd., S.E. [5018

Verus.

VERUS 1920 2¾h.p., Blackburne engine, fully equipped, tax paid; £45.—Ratcliffe Bros., 200, Gt. Portland St., W. [5505

49 Guineas.—1920-21 Verns-Blackburne, latest Canoelet, electric lighting, discs, almost as new; solo, £45, exchanges.—122, Lower Mortlake Rd., Richmond. [5172

Vindec.

VINDEC 1917 2¼h.p. 2-stroke 2-speed, all accessories, perfect; bargain, £24.—2, Palmerston Rd., Southfields, S.W.18. [5101

Wooler.

WOOLER 1920, fully equipped, perfect; £30.—Dow, 20, Hemingford Rd., St. Ives, Hunts. [4740

75 M.P.H.—1921 Special Racing Wooler, 3½h.p., o.h.v., mileage 500, taxed; best offer; or cheaper machine.—"Fairview," Thorkhills Rd., Thames Ditton. [4990

PHOTOGRAPH Free.—Wooler, 1921, 3h.p., flat twin, variable gear, excellent order; 38 guineas; exchanges:—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [5628

WOOLER, 1922, variable gear, Cowey speedometer, dissolved acetylene lamp and cylinder, flexible copper exhausts, legshields, perfect condition; owner satisfied, purchasing chain-drive; £50, or best offer; view by appointment.—New House, Ashley Rd., Walton-on-Thames. [4968

Zenith.

THE Zenith Specialists.

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1.

WE are prepared to undertake special tuning of Bradshaws and Super-Sports all-chain 8h.p. machines at very reasonable prices; also complete overhauls.

OUR Latest Bargain.—1920 5h.p. Sports Zenith, with all accessories, mileage about 1,000, tyres unmarked, belt as new; the machine was delivered middle of 1921, and is in perfect condition throughout; £55. [5381

ZENITH 1922, Bradshaw chain, very special; £78.—Clark, 7, Exhibition Rd., S.W.7. [2306

ZENITH 1915 8h.p., O.H.V., Gradua gear, very fast; £65.—The Morris Garages, Oxford. [5223

BRAND New 1922 3½h.p. Zenith-Bradshaw; to clear, £78.—Carnforth Motor Co., Carnforth. [4795

£28.—4h.p. Zenith, perfect order, very fast, numerous spares, sporting.—26B, Ingleton St., Brixton. [5277

1922 Zenith-Bradshaw, chain drive, lamps, speedometer, horn, tools, as new; £70.—2, Madrid Rd., Barnes. [5119

ROBERTSON'S Motors, Ltd. — 1922 short-soiled Zenith-Bradshaw, Gradua gear; £98.—157b, Gt. Portland St., W.1. [5932

1922 Zenith-Bradshaw, all-chain drive, shop-soiled only; £98.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0943

1920 5h.p. Sports Zenith, all on, fine condition; £60, or nearest.—Wright, 101, St. George's Rd., Aldershot, Hants. [4956

8h.p. Zenith Combination, good condition, running order; quick sale, £25.—Falmouth Villa, Kentish Rd., Belvedere, Kent. [5017

AT Edwards'.—1920 5h.p. Sports Zenith, lamps, horn, speedometer, knee grips, good order; 53 guineas.—101, Great Portland St., W.1. [5623

5-6h.p. Zenith Combination, 1920, just had makers' overhaul, electric light, all on; £75.—Seen at 181, Hale End Rd., Walthamstow, E.17. [4775

ZENITH 5h.p. 1916, countershaft, equipped, just completely overhauled, rebushed, any examination; £55.—8, The Avenue, Chingford. [5290

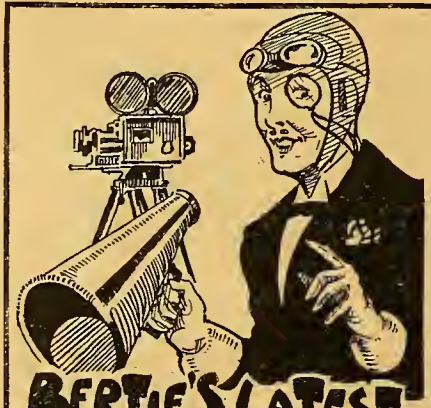
F.O.C.H. Invite Inspection. Zeniths and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3861

8h.p. Zenith with sidecar, good condition, K.S., new tyres, cyclometer, lamps; bargain, £45.—Harwood, 100, Avenue Rd., Swiss Cottage, N.W.3. [4817

5-6h.p. Sports Zenith, Oct., 1921, fully equipped, mileage 3,500, excellent condition, insurance; 70 guineas, or nearest.—Clements, Ardmore, Hessle, Hull. [4714

1922 3½h.p. Zenith-Bradshaw, all-chain drive, shop-soiled, a gift; £90; exchanges and deferred payments.—Bambers, Eastbank St., Southport. 'Phone: 607. [4414

AT Edwards'.—1922 5h.p. Sports Zenith, excellent condition, two months old; 68 gns. Deferred payments and exchanges.—101, Great Portland St., W.1. [2218

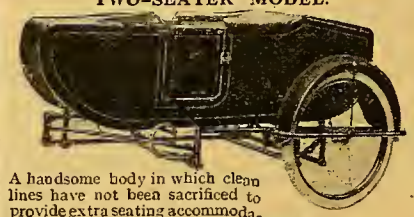


BERTIE'S LATEST PRODUCTIONS

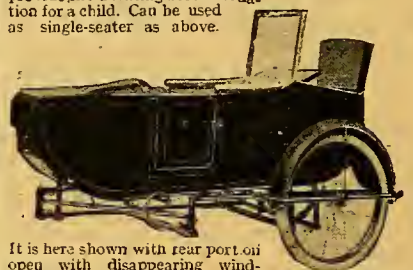
Are all illustrated in his New Sidecar Catalogue.

Why not send for one now?

TWO-SEATER MODEL.



A handsome body in which clean lines have not been sacrificed to provide extra seating accommodation for a child. Can be used as single-seater as above.



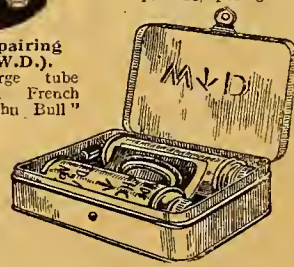
It is here shown with rear portion open with disappearing windscreen in position for rear passenger. Approximate body weight 68 lbs.

Prices: Sidecar complete with waterproof apron **£35 10**

P. & H. Streamline Sidecar Lamp.

Ebony with N.P. mounts, with special bracket for attaching to sidecar body or mudguard.

Our price **10/-** postage 1/-



Tyre Repairing Outfit (W.D.).

Containing large tube solution and French Chalk, 6 "John Bull" patches, spare valve parts, emery paper and pencil. Only 500 to clear at **1/6** each.

Postage 6d.

Spares—if it's for a Douglas we have it.

TRADE SUPPLIED.

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MOTOR CYCLE CO., Ltd.

7, South Side, Clapham Common, S.W.4.

Phone: Brixton 2417.

Wires: Burlington Motors, Clapham.

Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH Combination 5-6h.p., with countershaft clutch and kick-starter, lamps, speedometer, horn etc., Easting windscreen; £55.—The Morris Garages Oxford. [5220

1922 shop-soiled 5-6h.p. countershaft, Zenith, £75 to clear; 1922 shop-soiled 3½h.p. Zenith-Bradshaw £70.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W.1. [3870

ZENITH-BRADSHAW Combination, Montgomery chain drive, or sell solo, all accessories, new o.h.v. gear, lovely condition; £100.—13, Alfred Place, South Kensington. [5004

1920 5h.p. Zenith Combination, in good condition lamps, speedometer, windscreen, Tan-Sad licensed; £60; owner bought car.—Aylmer, Fincham King's Lynn. [5012

1922 (June) 5h.p. Zenith-Jap-Gradua Sports, unpunctured, tax paid, Tan-Sad, all on, perfect picture; owner ordered not ride; best cash offer.—Norman, 52 Westbourne Rd., Forest Hill, S.E. [4783

1920 8h.p. Countershaft Zenith Combination dynamo lighting, Sandum, Easting screen, smart turnout, tax paid; £76/10, or exchange.—198, King St., Hammersmith. 'Phone: 2474. [5067

ZENITH, 1921, bought new April, 1922, 8h.p. countershaft, clutch, lamps, Klaxon, speedometer spares, etc., as new; £80.—F. Franklin, 23, Midhurst Av., East Finchley, N.2. 'Phone: Hornsey 2398. [5670

ZENITH 1920 (late) 6h.p. Combination, counter shaft, kick-start, clutch, dynamo lighting, screen speedometer, special sidecar, outfit in new condition and perfect; £62/10.—51, Upper Richmond Rd., East Putney. [5640

ZENITH 8h.p. 1921 Combination, absolutely perfect small mileage, lamps, licence, speedometer, Easting, Tan-Sad; a real bargain; any trial; £120, or close offer.—Green, 22, Templars Av., Golder's Green N.W.11. [4970

ZENITH 1920 8h.p. Sports, Watsonian sidecar electric and acetylene, low generator, new tyres belt, mileage 7,000, whole outfit enamelled blue, beautiful condition; accept £75, no offers; photo; appointment Sundays.—Emmott, Chesterfield Lodge, Sydenham. [5030

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8 Bond St., Ealing. [5070

Ladies' Motor Cycles.

VELOCETTE 1919 Open Frame, 2 speeds, chain drive, excellent condition; £26.—Maudes, 100 Great Portland St., London. [5464

SHOWROOM Soiled 1922 Lady's Open Frame Velocette, 2-speed, clutch, kick-start; list price £68 reduced to £58; easy payments 4% extra; write for special clearance list.—Premier Motor Co., Aston Rd., Birmingham. [4600

Miscellaneous.

ROOTES, Ltd., Maidstone, have for sale:

3h.p. Twin Enfield, complete with all accessories, about 1916, licence to end of year; £25.

4h.p. Blackburne, good condition, licence to end of year, 1920 model; £60.

4h.p. Blackburne, good condition, complete with all accessories, licence to end of year, 1916; £50.

ENFIELD Combination 1915, first-class condition with all accessories; £80.

1920 Powerplus Indian Combination, dynamo lighting set, screen, all accessories, licence to end of year £85.—Rootes, Ltd., Maidstone, 8-9, Long Acre, and Dorking. Tel.: Maidstone 460, Regent 6026, Dorking 214. [3640

£14.—3½h.p. Precision, Mabon countershaft gear, splendid condition.—King, Egrove Farm, Oxford. [5550

1912 Motor Cycle, 4h.p., T.T.; £10; exchange cycle and cash.—28, Shelbourne Rd., Bournemouth. [5250

BARR and Stroud All-chain Drive, 3 speeds, £70 new, with sidecar, £85.—16, Willoughby Rd., Hampstead. [4970

JONES'S Garage.—Here you are! London's lowest prices. 3 months' guarantee. Big list free. 'Phone: Hornsey 2917.

SPECIAL Bargain of the Week.—1915 3½h.p. Le Francis, twin J.A.P., all chain, enclosed, perfect silent, and easy to start; countershaft, box, clutch K.S., lamps, horn, tools, etc., D.R. bars, very sporty as new; £30. 1918 Douglas 4h.p. combination, £50 1919 Douglas, £60. 6h.p. Bat 1914, luxurious combination, as new, very fully equipped, remarkable value; £45. 8h.p. Matchless-Jap 1913 combination Gloria sidecar, fully equipped; £45. 1921 8h.p. Blackburne-engined Bleriot-Whippet light car; £65 fully equipped; no extra outlay required. Here you are; the best girl won't sniff at this. Buy a car and marry a woman with money.—Jones's Garage, Broadway, Muswell Hill, N.10. [5590

1922 New Motor Cycles.—Bargains at end of season prices; secure now; cash or easy terms.—Sam. I Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10 [5200

MOTOR CYCLES FOR SALE.
Miscellaneous.

1914 4¼h.p. Countershaft Precision, broken cylinder, otherwise perfect; going cheap.—Keller, 4, Perth Rd., Plaistow, E.13. [4880

F.O.C.H. for New and Second-hand Cycles, cars, etc.; bargains; cash or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube). [3864

WALDRON Motor Mart have the following machines for sale or exchange at bargain prices.—645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607.

WALDRON.—A.J.S. 1922 7h.p. combination, brand new 7 days ago, only run 80 miles, spare wheel, complete with accessories, tax paid; cost over £195; accept £155.

WALDRON.—A.J.S. 1921 combination, 7h.p., Lucas dynamo lighting and electric horn, spare wheel, speedometer, tax paid, practically unscratched; £125.

WALDRON.—Lea-Francis, 1920, 3½h.p. twin M.A.G. engine, countershaft gear, all-chain drive, looks almost new, all accessories; £48.

WALDRON.—Douglas 2¾h.p., 1916, 2-speed, all accessories, tax paid, excellent condition; £26.

WALDRON.—Sunbeam, 1919, 3½h.p., 3-speed, extra smart machine; £52/10.

WALDRON.—Sunbeam 3½h.p., 3-speed, clutch, kick-starter, tax paid, excellent original condition; £42/10.

WALDRON Motor Mart, 645, Garratt Lane, Earlsfield, S.W.18. [4997

PRECISION 4¼h.p., 3-speed, K.S., C.B. sidecar, windscreen, apron, overalls and spares, in splendid condition, a real bargain, any trial; £55.—11, Cottage Green, Camberwell, S.E.5. [5580

SPORTS model Barr and Stroud Precision, new August, gold medal and manufacturer's team, prize Scottish two days, guaranteed perfect; £75, no offers.—Batten, Pencaitland, E. Lothian. [4906

BARGAINS.—1915 T.T. B.S.A., fast, Philipson pulley, £35; 1915 Baby Triumph, £25; both taxed and insured; seen by appointment; offers considered.—A. Meller, Caverhill, Wallington. [4947

BLACKPOOL Bargains.—Shop-soiled 1922 Rudges, Ariels, New Imperials, Royal Rubys, Bradburys, Martinsyde; reduced prices; exchanges.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone 1451.

BLACKPOOL Bargains.—3½h.p. Triumph, £16/10/6; Triumph, 3-speed, £19/10/6.—Booth's Motories.

BLACKPOOL Bargains.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Humber, £19/10/6; 4½h.p. Premier, £24/10/6; 5h.p. Rudge 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed O.K., £16/10/6; 3½h.p. Singer, 2-speed, £24/10/6; 2-speed A. & M., £19/19/6; another, £35/10/6; N.S.U. Lightweight, £11/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Rudge, I.O.M. model, £45/10/6; another, Dynamo Lighting, £57/10/6; 4h.p. Douglas, £55/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed Douglas, £19/10/6; 2-speed Scott, £19/19/6; 1920 Douglas, 3-speed, kick start, £52/10/6; 1921 Allon, £32/10/6; 2-speed Connaught, £25/10/6; 2-speed Calthorpe, £25/10/6.—Booth's Motories.

BLACKPOOL Bargains.—9h.p. Indian, £29/10/6; 7h.p Indian, 2-speed, £29/10/6; 3½h.p. New Hudson Combination, £35/10/6; 8h.p. Dot Combination, £55/10/6; 1920 Matchless Combination, £89/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Martinsyde Combination, £85/10/6; Acme Combination, new 1921, spare wheel, £89/10/6; 8h.p. Premier Combination, £97/10/6; Enfield Combination, £39/10/6; 1921 Enfield Lightweight, £39/10/6; 3h.p. Twin Enfield, £37/10/6; 1920 Sun 2-speed, kick start, £35/10/6.—Booth's Motories.

BLACKPOOL Bargains.—8h.p. Carden Cyclecar, £32/10/6; 1920 Tamplin Cyclecar, £49/10/6; 1921 Fabre light car, 4-cylinder, W.C., 4 speeds, electric lighting and starting, spare wheel, fully equipped, £175/10; several others cheap; push cycles taken in exchange.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [3473

SOUTHPORT.—Clearance sale. 1919 Invicta-Jap, 2-speed, 25 guineas; 2h.p. F.N., 2-speed, clutch, 20 guineas; Triumph, 19 guineas; o.h.v. Bat 8h.p., 3-speed, K.S., 32 guineas; Diamond-Villiers, 15 guineas; exchanges.—Kents, 417, Lord St., Southport. [5056

AMERICAN Pillion and Carrier, dynamo lighting, horn, Cowey, speedometer, T.T. bars and tourer, engine and gear box polished, with sporting sider, in absolutely perfect condition; one of the most luxurious machines on the road; cost £250, sell £80 cash.—2, Madrid Rd., Barnes. 'Phone: Hammersmith 888. [5121

HENDERSON 4-cyl. Combination, recently overhauled by us, new magneto, carburetter, engine and gear parts, electric lighting, very smart; £57. Scott, O.K. throughout; £38. Opposed magnetos, £2. Overhauls to motor cycles and all parts, duplicating parts, welding all metals. Estimates by return. All forms of insurances effected. Lowest London premiums.—The Mill Hill Engineering Works, Edenbridge, Kent. [4829

GREAT REBUILDING —SALE—

A. TURRELL & SONS, portable MOTOR HOUSES at COST PRICE.

To make room for NEW WORKSHOPS, we have decided to clear our huge stocks of MOTOR HOUSES, &c., AT COST PRICE.

Send for illustrated Catalogue of Portable Buildings.

GREAT BARGAINS

No. 7. Portable Motor House

SPECIFICATION:—

Ends, Walls, &c. Framed 2 in. and 3 in. Swedish timber covered ⅜ in. tongued and grooved boards.

Roofing. Framed of principals and purlins covered matching and good quality felt.

Windows. As per illustration, glazed 21 oz. glass.

Doors. Double hung on strong garnets, fitted Lock and Tower bolts.

Floor. Strong joists and 1 in. Boards for covering.

General. Houses are sent out in sections, holes are bored and bolts supplied for easy erection on arrival.

Length.	Width.	Height to ridge.		Height to eaves.		£	s.	d.
ft.	ft.	ft.	in.	ft.	in.			
8	6	7	6	5	3	6	17	6
9	7	8	0	5	6	9	15	0
10	8	8	4	5	9	11	0	0
12	8	8	4	6	0	15	0	0
14	8	8	7	6	3	17	15	0
15	8	8	7	6	3	20	15	0
16	9	8	9	6	4	22	10	0
18	9	8	9	6	4	27	0	0
20	10	9	0	6	6	32	0	0
20	12	9	4	6	9	35	0	0

No. 6 M. MOTOR HOUSE.

Specification as above, windows as per illustration, almost the whole length of side.

Length.	Width.	Height to ridge.		Height to eaves.		£	s.	d.
ft.	ft.	ft.	in.	ft.	in.			
10	8	6	0	8	0	11	5	0
12	8	6	0	8	6	15	5	0
15	10	6	3	8	10	20	15	0
16	10	6	6	9	0	23	15	0
18	11	6	6	9	0	28	15	6
20	12	7	0	9	3	35	7	6

Do not delay, order at once.

500 Houses of sizes as above, must be cleared with **OTHER PORTABLE BUILDINGS**, Bungalows, Stables, Loose Boxes, Pavilions, Summer Houses, Green Houses, etc.

ALFRED TURRELL & SONS,

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Portable Building Works, Stanstead Road, Forest Hill, S.E. 23.
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MOTOR CYCLES FOR SALE.
Miscellaneous

HALIFAX. — 1922 B.S.A., Norton, Sunbeam, Triumph, and Martinsyde models; special liberal exchange quotations to reduce our stock. Write us quickly.—Halifax Motor Exchange, Horton St., Halifax. [5392

CASH Tempters.—Baby Triumph, 1921, £35; Enfield 2-stroke, almost new, £40; Levis, with kick-start, £25; numerous others, but remember the first caller gets biggest choice.—Bunting's Exchange, Wealdstone. [5379

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite station, L.S.W. Railway). 'Phone: Latchmere 4388. Terms: No extra with good deposit; immediate delivery; no inquiries; satisfaction guaranteed.

ALLBER.—Blackburne 1920 4h.p., 3-speed, clutch, kick-start, all accessories, tax paid; £65.

ALLBER.—New Imperial 2¾h.p., 2-speed, complete with all accessories, tax paid, runs splendidly; £26/10.

ALLBER.—Clyno 1920, 2-stroke, 2 speeds, hand clutch, all accessories, tax paid, as new; £32.

ALLBER.—1916 B.S.A. Combination 4¼h.p., countershaft, Easting, all accessories, in good order, tax paid; £52.

ALLBER.—Humber Combination, 1914, 3½h.p., 3-speed, clutch, kick-start, all accessories, tax paid, good order; £26. [5599

LEVIS Popular, 24 guineas; Indian Combination, 7-9h.p., 43 guineas; 6h.p. Twin Matchless, 28 guineas; Rover 3-speed combination, 41 guineas; Ariel 3-speed combination, 32 guineas; Triumph 3-speed combination, 32 guineas; Douglas 2-speed, 27 guineas; British Excelsior combination, 6h.p., 48 guineas; Sparkbrook-Jap combination, 6h.p., 48 guineas; Precision 2¾h.p., 12 guineas; Zenith-Gradua 3½h.p., 14 guineas; Hobart-Villiers, 2-speed, 2-stroke, 24 guineas. All guaranteed 3 months; exchanges; photographs; full list free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open Sundays. Tel.: Putney 2865. [5632

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272. [1519

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

H.

F.

EDWARDS and Co.,

101 Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

T.B.

WANT

500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5564

WE

ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0332

1922 Triumph-Gloria Combination, chain drive.—Thompson, 158, Park Av., Hull. [5232

WANTED, Late C.S. Triumph, cheap for cash.—Dorset House, Allbrook, Eastleigh. [5233

TRIUMPH 1920, 1921, 1922; cash, cheap.—35, Mount Pleasant Rd., New Malden. [5149

WANTED, Countershaft Triumph, price not exceeding £40.—Box 4023, c/o *The Motor Cycle*. [5562

WANTED, Motor Cycle, any make or condition, about £10.—Box 4024, c/o *The Motor Cycle*. [5563

ROVER, 1915-19, single speed; engine number and particulars.—"Dugdale," Radford, Coventry. [5061

WANTED, Combination or lightweight.—Full particulars, Wood, 2, Hillfield Rd., West Hampstead. [5366

WANTED, 2-stroke motor cycle, 24in. wheels, 2-speed, clutch and K.S.—M., 44, Grant Rd., S.W.11. [4964

WANTED, Countershaft James or similar combination, not exceeding £30.—Box 4025, c/o *The Motor Cycle*. [5564

MOTOR CYCLES WANTED.

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a specialty of motor cycles in the weekly auction sale, every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

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COMBINATION, twin, must be thoroughly sound, fully equipped and cheap.—Box 4020, c/o *The Motor Cycle*. [5343

WANTED, Douglas 2¾h.p. 2-speed 1922.—Particulars to Moorby, The Platanes, Champion Hill, London, S.E. [5039

COMBINATION, Matchless or Sunbeam preferred; exchange car, 2-seater, dickey.—176, South Ealing Rd., W.5. [5158

WANTED, Combination or Solo Triumph or Sunbeam preferred.—W., c/o 30, Canterbury Rd., Kilburn, N.W.6. [2768

WANTED, 2¾h.p. Douglas, in good condition, for cash.—Particulars, 164, Revelstoke Rd., Wimbledon Park, S.W.18. [5117

COUNTRY Clergyman with wide Parish needs Combination; can only offer £30.—Box 4014, c/o *The Motor Cycle*. [5113

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WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

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YOUR present machine and cash exchanged for brand new P. and M. solo or combination at the reduced list price.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [5385

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CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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SIMPLEX Motor Attachment, 1921; £20, with back wheel; ill-health causes sale.—Hope, Winthorpe, Newark. [4756

B.S.A. Auto Wheel, perfect, tricycle fitting, complete; reasonable offer.—Mellows, 4, High St., Hornsey, N.8. [5015

WAUCHOPE'S, 9, Shoe Lane, London.—1¼h.p. motor fitted to a pedal cycle, all accessories; £22/10; tax paid. [5540

1921 1¼h.p. Young Cycle with motor attachments, had very little use, excellent condition, tax paid for 1922; £17/10.—Harrods Motor Salesrooms, 118, Brompton Rd., London. [4983

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WINDSCREENS.—Sandum, with apron, 55/-; Easting, £3/18; Cameo, 50/-.—Bright and Hayles, 78, Church St., Camberwell, London. [354

30/-.—Bower adjustable windscreen, 30/-, complete with coverall apron, carriage paid on approval, 30/-; Easting screens from £3; Sandbar V screens, £2/15; all makes of screens repaired new panels fitted from 12/-; aprons supplied from 10/-; hoods, complete, 30/-.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [462

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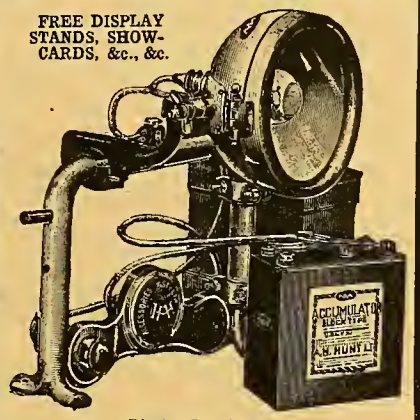

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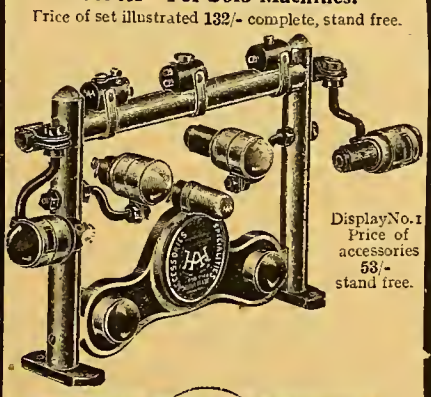

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SIDECAR Chassis with tyre, £2/10; cane body, 10/-; Bosch twin magneto, 50/-; T.B., suit Douglas, 55/-.—176, South Ealing Rd. [5160

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1921 Coventry Premier 3-wheeler, original paint as new, every accessory; £100.—24, Balliol Rd., North Kensington. [5155

CARDEN 2-seater Cycle Car, spare wheel, hood, 7h.p., new April this year, electric lights.—Mandle, Maryport. [4912

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1921 10h.p. Douglas light car, C.A.V. lighting and starter, as new; £170, exchange good combination.—24, Balliol Rd., North Kensington. [5157

LAGONDA 3-wheeler, 9h.p. water-cooled twin, 3 speeds and reverse, foot and hand brakes, foot clutch; £70.—58, Ironmill Lane, Crayford. [5047

GIBBONS Cycle Cars, £109, £98, £89, reduced prices; descriptive literature and trial runs.—Gibbons and Moore, Chadwell Heath, Essex. [4744

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RUNABOUTS AND CYCLECARS.

A.V. 2-seater 1920 8h.p., excellent condition, Bedford cord spring cushions, well equipped; bargain, £90 only wants seeing.—10, Courcy Rd., Hornsey. [471

£20.—A.C., complete or in parts, minus 1 flywheel dynamo lighting, new cylinder, and piston, water proof Bosch.—28, Western Cottages, Mitcham. [540

2-SEATER 7h.p. Cycle Car, £10; three-wheeler, £14 four-wheeler cycle car chassis, £4.—Write, H. I Hall, c/o Green Man Hotel, Whetstone, London. [476

REYNOLDS Runabout, as new, mileage under 100 horn and licensed, cost £75; £50, or nearest offer.—Naylor, Barleycote, Riddlesden, Keighley. [507

7-9h.p. 3-wheeler, 3 speeds, fully equipped, over hauled, repainted; £60, or exchange combination —Odart, 34, Melrose Gardens, Shepherd's Bush Rd. [516

BELSIZE-BRADSHAW 1922 9h.p. 2-seater, fitted speedometer and licensed, only run 1,600 miles practically new; £225.—The Morris Garages, Oxford. [520

A.V. Monocars in stock; exchange solo and com bination. Spares, repairs, overhauls. A.V specialist.—13A, Worple St., Mortlake. (9 'Buses.) [512

G.N., late 1920, first-class condition throughout, en gine specially tuned, any trial, full equipment £120; London area.—Box 4015, c/o *The Motor Cycle* [517

1919 Spur 2-stroke, 2 speeds, perfect condition, full equipped; £20.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548 [007

A.V. Monocar special 8h.p., J.A.P. engine, almost new fast, sporty, discs, electric light, exchange for moto cycle, cash either way.—9, Red Hill, Bassett, Southamp ton. [529

WAUCHOPE'S, 9, Shoe Lane, London.—G.N. car 1921 model, fully equipped, in excellent condi tion, spare wheel and tyre; £130.—'Phone: Central 5168. [554

HAMILTON Light Car, fully equipped, ready for service; early delivery; £176; write for booklet —Smith and Co., Ltd., Compton Works, Wickford Essex. [151

G.N. Cyclecar (believed 1914) and P. and M. coach built combination, exchange for w. c. Morgan cash adjustment either way.—Seaborn, Myland, Col chester. [489

1917 Morgan, G.P., cream, Binks carburetter Searchlight headlamp; £90.—Railton, Cobham and Co., Ltd., Water St., off Blackfriars St., Man chester [559

1920 8h.p. A.V., 2-seater, electric lighting, abso lutely like new, guaranteed perfect, full equipped; £56; exchange entertained.—89, East Hill Wandsworth. [513

TWO Lovely G.N.'s, little used, privately owned dynamo; open to any reasonable offer of ex change; to be sold cheap.—Marlborough, 20, Finch ley Rd., N.W.8. [957

1916 Grand Prix Morgan, w.c. J.A.P., tax paid, full equipped, excellent condition; £87.—Elce, Ltd 13-15-16, Bishopsgate Av., Camomile St., E.C.3 'Phone: Avenue 5548. [007

1920 Morgan De Luxe-Jap, w.c., dynamo lighting electric horn, speedometer, watch, aluminium dash, tyres new; £130, offer.—Bran, 20, Farlton Rd Earlsfield, S.W., after 6. [488

HALIFAX 10h.p., 4 cyl., tiny 2-seater car, dynamo lighting, £120; Morgan Grand Prix, water cooled, overhead valves; £87/10.—Halifax Motor Ex change, Horton St., Halifax. [538

1920 A.V. Monocar, 5-6h.p. J.A.P., electric light ing, full perfect condition, fully equipped; £50.— Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St E.C.3. 'Phone: Avenue 5548. [007

A.V. runabout, latest model, 2-seater, Blackburn engine, painted pearl grey, brand new, never been used; cost £160, will sacrifice large discount for cash —Thomson, 110, High St., Teddington. [485

1920 G.N. Standard 2-seater, 5 wheels, electric light ing, full equipment, speedometer, perfect con dition; £87/10.—Elce, Ltd., 13-15-16, Bishopsgate Av Camomile St., E.C.3. 'Phone: Avenue 5548. [007

1921 Tamplin 2-seater, 8h.p. J.A.P., 3 speeds clutch, tax paid, full equipment; £60; excel lent condition.—Elce, Ltd., 13-15-16, Bishopsgate Av Camomile St., E.C.3. 'Phone: Avenue 5548. [007

129 Guineas; Exchanges.—Really nice 1921 Rove 2-seater, dynamo, 5 detachables, hood, side curtains, speedometer, fast, splendid engine.—Seabridge 35, Hansler Rd., East Dulwich. Sydenham 2452. [558

1922 8h.p. Rover, brand new, spare wheel and tyre, dynamo lighting, hood, screen, reduced to £180; easy payments 4 per cent. extra; ex changes.—Premier Motor Co., Aston Rd., Birming ham. [557

COVENTRY PREMIER, 1922, brand new, latest model; £230; cash or easiest of easy payments any car or motor cycle taken in part exchange; best prices allowed.—Wilkins, Simpson, opposite Olympia London. [537

BRAND new latest type Salmson, hood, screen, dickey detachables, dynamo, Micheline, listed at £285, a extraordinary good allowance made for modern moto cycle part payment.—Graff, Hayes, Kent. 'Phone: Bromley 532. [488

RUNABOUTS AND CYCLECARS.

SACRIFICE 59 Guineas.—1921 Bleriot-Whippet, dynamo lighting, splendid 2-seater, Blackburne engine, hood, screen, exchange motor cycle; easy terms.—Woodsworth Motor Exchange, Ebner St., Wandsworth Town Station). [5400

1923 Morgans, in stock for immediate delivery; G.P. model, 10h.p. Blackburne, w.c., standard equipment, discs, £163/10; also latest De Luxe model, v.c. J.A.P., dynamo lighting, £177; deferred 4%.—Homac's (below).

1922 Grand Prix Morgan, dynamo lighting, speedometer, discs, electric horn, etc., guaranteed; £155; tax paid.—Homac's (below).

1920 De Luxe Morgan, 10hp., fully equipped, in really excellent order, guaranteed perfect; £110.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4434

MORGAN. — Largest agents for these popular vehicles; immediate delivery at recently reduced prices; motor cycles part payment.—Maudes', 100, Great Portland St., London; Paris St., Exeter; and Norwich Garage, Norwich. [5463

39 Guineas, exchanges.—Exceedingly smart Baby Peugeot 1916 De Luxe 2-seater, 7h.p., 4-cyl., late change, dynamo lighting, repainted, any examination.—Seabridge, 35, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [4688

BLERIOT-WHIPPET 1921, 3 speeds and reverse, electric and acetylene lighting, clock, trip speedometer, mirror, 5 detachable wheels, all in good condition, taxed and insured to December; £80, or offer.—9 Lebanon Rd., East Croydon. [5267

1922 Aero model Morgan, Lucas dynamo lighting, speedometer, hood with side curtains, discs, indistinguishable from new, smartest Morgan on the road; £175; exchanges or deferred.—Edwards, 50, Carrington Rd., South Kensington. [5610

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125.—1914 Perry Coupe, engine overhauled, 5 wheels, good tyres.—Sanderson, Tuxford. [5287

DE DION 2-seater, less engine, new body; offers; exchanges. Parts sold.—63, Solon Rd., Brixton. [5412

DAIMLER 25h.p. S.K., 7-seater, C.A.V., perfect; £125.—J. Daniels, Jun., 8, Crowhurst Rd., Brixton. [5198

METALLURGIQUE 38h.p., all-weather body, dynamo; £125, or exchange.—2, Bromfelde Rd., Clapham, S.W.4. [5200

GLADIATOR ¾ Landaulet, C.A.V., Rudge wheels, almost reliable; £125.—Mrs. Moore, 106, Acre Lane, S.W.2. [5199

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WEST Norwood 1—60 cars, absolute bargains, list free, exchanges.—Douglas S. Cox, Lansdowne, West Norwood [1952

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6-SEATER Car, smart, 14h.p., Zenith, 3-speed and reverse, double dickey; £80, or exchange commutation.—12, Spring St., W.2. [4815

ROVER 8h.p. 1921 (late), special finish, many extras; £150, exchanges.—Hillier, 9, Wallingford Avenue, North Kensington. (7 or 7a 'bus.) [5306

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash, deferred payments 4% extra.—Redcliffe Bros., 200, Gt. Portland St., W.1. [0729

SWIFT 7-9h.p., late 1913, been well cared for and just overhauled, dependable little car and smart; £95.—Bunting's Motor Exchange, Wealdstone. [5377

LUMBER 10-12h.p. Commercial Traveller's Car, roomy sample box at rear, in excellent condition; £95.—Bunting's Motor Exchange, Wealdstone. [5378

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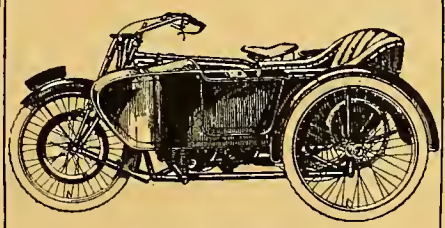

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PALMER'S Garage, Tooting.—12-15h.p. Panhard cab landaulet 4 cyls., just overhauled; £50.

PALMER'S Garage, Tooting.—10h.p. Citroen 2-seater, dynamo lighting, self-starting; £175.

PALMER'S Garage, Tooting.—12h.p. Humber light delivery lorry, in excellent running order; £30.

PALMER'S Garage, Tooting.—15.9h.p. Arrol-Johnston touring car, dynamo lighting, extra smart; £90.

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PALMER'S Garage, Tooting.—22h.p. S.C.A.T. 10-seater waggonette, good running order; £35.

PALMER'S Garage, Tooting.—30h.p. Sheffield-Simplex full landaulet, dynamo lighting, roomy car; £95.

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189 Guiocas, Exchange.—Really ultra-smart 1920 Sports Singer, 2-seater lighting, starter spare wheel, lovely condition.—Seabridge, 35, Hansler Rd., East Dulwich. (Sydenham 2452.) [2400

HALIFAX.—New Lagonda reduced prices, 4-seater or coupe, 450 guineas; 2-seater, 280 guineas; Rover, Morgan, or combination taken in exchange.—Halifax Motor Exchange, Horton St., Halifax. [5390

ROVER.—Godfrey's are authorised agents for the 8h.p. model; early deliveries of 1923 models: 2-seater, £180; 4-seater, £190; exchanges; gradual payments.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

1920 2-3-seater Emscote, 8.9h.p. J.A.P. engine, w.c., as new, Lucas dynamo lighting, 5 Sankey detachable wheels, hood, screen, etc., first-class running order; £140; exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [3883

ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

BUCKINGHAM 10h.p. 1922 Clorerleaf 3-seater, dynamo lighting (C.A.V.), spare wheel, aluminium bonnet, full equipment, tax paid, mileage only 300; cost £225, accept £170, or exchange good combination and cash.—Hillier, 9, Wallingford Avenue, North Kensington. (7 or 7a 'bus.) [5307

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BLACKBURNE Engine, 2¾h.p., new, with magneto; a bargain. £10.—11, Warwick St., Oxford. [4916

4½h.p. Riley Engine, w.c., with magneto, good condition; £5, no offers.—71, Stanbury Rd., Peckham, S.E. [4781

P. and M. Engines, £4/10; overhauled and completed, £6/10; stamp.—7, Hereford Rd., Bayswater. [2715

CEDOS 2¼h.p., new, magneto, carburetter, silencer, spare parts; £9.—Tilley, 10, Vernon Terrace, Northampton. [4786

CHATER-LEA 2¾h.p. engine and 2-speed gear box, new, all complete; £15 the lot.—5, Palace Mews, Enfield. [5358

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5-6b.p. J.A.P., w.c., m.o.v., Binks, 3-speed gear box, clutch, perfect; £15; suitable light car.—Wardman, High St., Cheltenham. [4988

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THOMSON-BENNETT singles and twins, brand new, any degree, enclosed, waterproof, variable; 55/-.

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C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

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BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern, ideal for Douglas, 2¾h.p. and 4h.p.; £4.

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FELLOWS new magnetos always in stock, any degree for any engine; also a large selection of second-hand magnetos, all makes.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute. —Reliance Magneto Repairing Co. (1914), 283, St. John St., London, E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco, Smith, London. [9816

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24×2 Hutchinson Rubber-studded, 22/3; new tubes, 5/-.

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26×2¼.—Avon and Rom Combination, 30/-; Hutchinson Brooklands R/S, 19/6; Macintosh chain tread, 28/-; Palmer cord heavy 3-ribbed, 34/9; Dunlop Magnum (pattern), 35/-; new tubes, 6/6.

26×2⅜ to fit 2¼ rim.—Dunlop retreaded, grooved, 20/6; Clincher de Luxe, extra heavy, 24/3; Hutchinson passenger, 26/-; Palmer cord heavy, 34/9; new tubes, 6/6.

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26×2½.—Rom Combination, 30/-; Palmer cord 3-ribbed, 31/10; Hutchinson rubber studded or ribbed, 27/-; Macintosh chain tread, 28/-; Clincher de Luxe, E.H. rubber stud, 27/6; new tubes, 6/6.

650×65.—Emanuel's extra heavy rubber studded, 26/-; Hutchinson 3-ribbed, 32/-; Palmer cord 3-ribbed, 31/10; Burnett grooved, 30/-; Dunlop 3-ribbed, 40/-; new tubes, 6/6.

700×80 to fit 650×65 rim.—Emanuel's anti-rubber non-skids, 41/9; new tubes, 6/6.

28×2½.—Continental rubber stud, extra heavy, 30/-; new tubes, 6/6.

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PREPARED Patches, assorted, M/C sizes, 1/8 dozen. Belts, all makes, any lengths; prices on application.

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26×2⅝.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

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28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 8/-.—Below.

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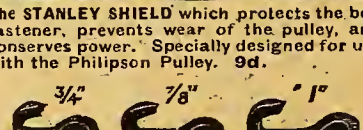

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⅝"	1/2
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ECONOMIC.—26×2 Clipper Rubberstud, 17/6; 2 2¼ Palmer heavy cord, 37/6; Firestone non-s 28/6; tubes, 5/6.

ECONOMIC.—26×2½×2¼ Goodyear All-weat 37/6; Rom rubberstud, 25/-; tubes, 6/6.

ECONOMIC.—26×2½ O.S. Redlern heavy rubberst 27/6; Clipper Ideal, extra heavy, 35/-; tubes,

ECONOMIC.—28×3 Goodyear All-weather, 47 Goodrich Safety, 45/-; Firestone non-skid, 4 Portage non-skid, 41/-; tubes, 6/6.

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ECONOMIC.—700×80 Beldam V-grooved, 5 Economic, extra heavy, 42/6; tubes, 6/6.

ECONOMIC.—Dunlop Rubberstud, fully warrant 24×2, 22/6; 24×2¼, 24/9; 26×2, 24/6; 26× 25/9.

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26×2½.—Hutchinson Passenger R.S., 29/-; cher E.H., 29/6; Hutchinson T.T., 2 Palmer, 35/-.

26×2½×2¼.—Dunlop H., 46/-; Hutchinson 30/-; Avon E.H., 28/-; Belgrave cord, 2 Continental H., 32/6; Palmer cord, 35/-.

28×3.—Clincher E.H., ribbed, 39/6; Dunlop car, 30/-; Macintosh chain tread, 25/-; year Diamond, 47/6; Firestone, 39/6; Goodrich, Portage, 39/-.

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MASONS, the most competitive market.—Fu supplies Wood-Milne Key-Grip at unbea prices: 26×2½, 4-ply, 24/6; 26×2⅝, 4-ply, 26×2¼, 4-ply, 23/6; 26×2½×2¼, 4-ply, 28/-; 2¼, 3-ply, 18/-; 700×80, 3-ply, 28/6; 650×65, 26/-; 28×3, 3-ply, 27/6; 28×2½, 3-ply (Amer 24/6.—Below.

MASONS.—Following perfect stock, maker's gu tee: 26×2½, D. heavy, fluted, 22/6; 26 ditto, 19/6; 26×2½, D. extra heavy, ribbed, 3 650×65 ditto, 32/-.—Below.

MASONS.—700×80 Palmer cord, 42/6; 28×3 year A.W.T., 47/6; any tyre approval a remittance, carriage paid.—Masons, The Tyre H Ipswich.

700×80 Covers and Tubes. Special pur Compare these prices. Covers, Cli ribbed, De Luxe, Rom, grooved light car Bu Grimston, Macintosh, ribbed Avon, Spencer-Mo Macintosh, all 40/- each. Steel-studded Macin Beldam, Wood-Milne, Avon, 38/- each. Tubes: cher, 6/-; extra heavy Beldam, 6/6; carriage ext all covers and tubes. Cut prices quoted for any lorry, or char-a-banc tyres.—Harris, 51, Upton Forest Gate, E.7.

TANKS.

TANKS in stock for all makes, new and s hand, from 30/-; partition leakage and all r undertaken; re-enamelling, makers' colours and fers guaranteed.—Park Tank Works, 1a, Paradise Highbury, N.5.

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

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The Paris Salon.

AT one time the motor cycle industries of France and England were closely allied, and the developments of one often influenced the other. This is hardly the case to-day. The British industry has continuously expanded, while motor cycle interests in France are still struggling to exist.

The Paris Salon, described on pages 515 to 522 of this issue, reveals no great progress over last year; in fact, manufacturers across the Channel appear to be making a fresh start in an endeavour to interest a new public rather than to cater for those who are already motor cyclists. We refer to the intense interest taken in the pedal-assisted bicycle, almost to the exclusion of the orthodox motor cycle.

Conditions in France are widely different from those prevailing in this country. The young Frenchman is not so thrifty as his English *confrère*; he rarely saves sufficient to purchase a motor cycle. Furthermore, the sport and pastime have fallen into disrepute, which is curiously accounted for by the war. A large number of war-worn machines were sold at a very low price, with the result that they got into the hands of a type of rider whose dress and behaviour disgusted the better class of pre-war motor cyclist. Thus, having lost the old motor cycling public and found a new *clientèle* that is undesirable, France has now turned to the pedal cyclist to provide an outlet for the products of her motor cycle factories.

Despite this state of affairs, we cannot but think that motor cycling in France will eventually return to popularity. The roads, although bad on the whole, are not all in such poor condition that motor cycle riding cannot be enjoyed.

Agents for British makes are naturally fettered by the adverse exchange, which keeps up prices to an inordinately high level. Our motor cycles are admired and appreciated by the French public, and in spite of all difficulties some British machines are sold.

Apparently the French are apathetic towards sidecars, for very few are exhibited at the Salon. The large number of small, low-priced cycle cars recently introduced is said to be responsible.

The few firms which seriously consider the possibilities of the motor cycle are producing machines closely following British lines.

Opposition to Amateur Race.

IT has been decided, since the I.O.M. authorities look favourably on the suggestion to close the Manx roads for three days next year instead of two, to run a sidecar T.T., but the proposal to hold an amateur race has already been turned down by the general committee of the A.C.U.

New objections have sprung up against an event for private owners. Last spring it was said that the time was too short to organise such a race, but that the idea had been sympathetically considered. Now it is considered that although the satisfactory definition of an amateur is not an insuperable difficulty, the enforcement of such a definition is beyond the powers of the ruling body. Reasons change, but the strange opposition continues.

Ordinary members of the A.C.U. cannot understand the position at all. They think, despite the fact that a trade-supported sidecar race will undoubtedly be a better financial proposition for the Union, that a most propitious opportunity has been lost of deciding once and for all whether an amateur race would be a success.

More will probably be heard of this policy of condemnation without trial of an event which might easily become one of the premier sporting fixtures of the year and a source of keen interest to thousands of motor cyclists.

An index to the advertisements in this issue will be found on the page facing the back cover.

Whew!

OUR Gallic cousins are boosting the cycle car for all they are worth. The latest French cycle car is intended to outsalmson the Salmson both in speed and price. Weight, under 6 cwt.; horse-power, 29, as attested by the French Club's laboratory over six hours' bench work. Engine, a vertical four-cylinder, with separate cylinders enclosed in an aluminium refrigerator, through which a blower passes the equivalent of the Brighton sea-front atmosphere in March once every hour. Five h.p. per cwt. is the outside edge of the absolute limit in power-weight ratios, and this cycle car will be formidable if it is built as well as it is designed. The British trade is at present leaving the cycle car market too much in the hands of small car firms, which look upwards to identify their competitors, instead of downwards. Let me say again that if air-cooling is to make permanently good in passenger work, it must be applied to engines equal in refinement to their water-cooled rivals.

One Toolbag.

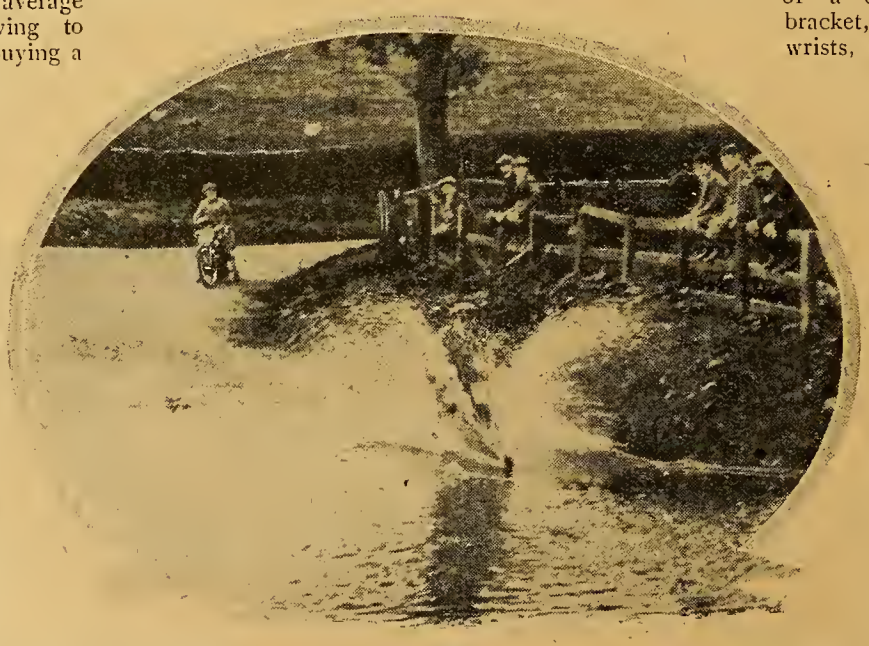
I ONCE owned a pal who made it a point of honour to carry all his kit in a military hairbrush case secured to the base of the front fork. Men of this kidney will despise me for suggesting that no sane rider can stow all he wants to carry in one small pannier bag, and that the average rider resents having to spend money on buying a second toolbag after he has put down eighty or ninety of the best for a new mount. But this week two friends of mine have taken delivery of single-toolbag machines. Moreover, in each case the free kit had been whittled down to suit the reduced accommodation, and the contents of the lonely little bag provoked vitriolic comparisons with the free kits presented by a generous trade with pushbikes. As readers have probably forgotten what kit goes with a new push-bike, let me explain that it consists of item, one teeny tin oilcan; item, an aertex duster; item, a stamped-out spanner, to fit all the nuts; item, a tyre repair kit (matchbox pattern). Well, these two motor cycles arrived with very little more than that; and their irate buyers had to lay out about 30s. apiece at the local garage next day.

Photographing Misery.

A PROPHET is not without honour save in his own country or until after he is dead. So for the nonce my friend Capt. Aston is merely regarded by an ungrateful nation as a genial journalist. When he is dead, some foreign body—the American edition of the S.M.M. & T. or the Automobile Club de France, maybe—will erect a life-size statue of solid platinum to his memory. Why? Certainly. He is the first man I have met who wants to clear up why one springing system is comfortable and another is uncomfortable. He does it so simply, too. He just hunts about till he finds a nice piece of road, disfigured by one solitary but pronounced bump or pothole. He waits for a moonless night, and sticks his large camera by the roadside with the shutter open. Then he straps numerous one-and-threepenny flash lamps to various parts of the motor; axle, body, and driver's cap in case of a car; hub, lamp-bracket, tank, driver's wrists, etc., in case of a bike. After passing the camera at various set speeds, he adjourns to his dark room

The Resultant Negative.

THE prints thus obtained depict a number of wavy white lines on a black ground. These lines add to the sum of human knowledge. For example, any motor cyclist who has owned a W—— machine, fitted with the X—— fork, is aware that this



NOT A MINIATURE HYDROPLANE. Alec Hill in the Harrogate M.C.C.'s President's Trophy Trial preferred this spectacular manner of crossing a splash to the more sedate, but probably surer, method of dropping into low gear.

Occasional Comments.—

combination represents the zenith of misery; whereas contrariwise, those lucky-folk who have sat on a Y—— machine equipped with the Z—— fork know that it feels like riding on whipped cream or rising dough. More than this, the rider cannot say. But Aston, after one intelligent squint at his ugly little negatives, can tell you exactly why the WX combination is so abominable. He dabs with his forefinger at the various sorts and sizes of waves, and discourses in terminology which makes my head ache. Happy thought; why does the A.C.U. not get Aston to award "comfort" marks in the next Six Days Trials. If 900 marks out of the 1,000 were awarded for comfort, and Aston and his staff were allowed to play about with the entry on Brooklands from 9 p.m. to 6 a.m. on the Friday, the trials would be of real service. Happy thonght No. 2: Why don't they put up that platinum statue to Aston while he is alive and could appreciate it? It would be a kindly thought to give him a replica for his own use.

Wounded to the Quick.

MY unkind remarks about the yellowing effect which many celluloid visors and screens have upon the landscape have provoked the Celastoid people to send me some sample panels of their white nonflam material. They admit that at present nobody can render this stuff scratchproof, though various patent revivers (amyl acetate for nitro-celluloid, or acetone for Celastoid) will soften the surface, which will then reset fairly smoothly. Their stuff is certainly white, and a peep through it doesn't suggest that the peeper needs a good dose of bismuth or a prairie oyster. But they will pardon me for saying that if the best nonflam celluloid obtainable is liable to scratch, and though white is only "cloudy-white," we have not reached finality. A good philosopher sees both sides of every case, so I hasten to add that glass is heavy and brittle. The output of Celastoid will shortly reach two tons per week, and is more than absorbed by the demand from car, sidecar, and aeroplane manufacturers.

NATURE'S COMPENSATION. It is a general, although not infallible, rule in Scotland that the more picturesque the scenery is, the worse are the roads.

More "Views."

"KUKLOS" of the *Daily News* has taken up with avidity our discussion of the loveliest views in Great Britain. As he publicly describes me as "gifted," I can't be rude to him, especially as the Editor says my only gifts are laziness and impertinence. But he makes it clear that, in his opinion, motor cyclists don't look at scenery, being far too much absorbed in their machines. He even quotes a Highgate novice who is returning to the push-bike, because his motor cycle compels him to concentrate overmuch on actual locomotion. It takes all sorts to make a world. In any Six Days Trials you will note men dismount at one of the more superb coigns of vantage in some gorgeous landscape, and, according to their temperament,

1. Damn the road surface.
2. Enquire where the next pub is.
3. Chaff the other competitors.
4. Abuse the officials.
5. Reminisce about their hard luck or fine riding.
6. Silently soak themselves in the scenery.

But I must snap a lance with "Kuklos" when he objects to my pen name as the most violently unsuitable I could have chosen. To quote his own words: "Ixion was a gentleman (thanks, gentle 'Kuklos'!) who for his sins was chained to a wheel and condemned to roll with it for ever." Exactly! Just how I feel when I set out on my umpteenth London-Exeter.

All things considered, however, the idea that motor cyclists do not see the scenery is one to be discountenanced. At everyday speeds one is far less concentrated on the road than the average cyclist, whose view in hilly districts is frequently limited to the top of his front tyre.

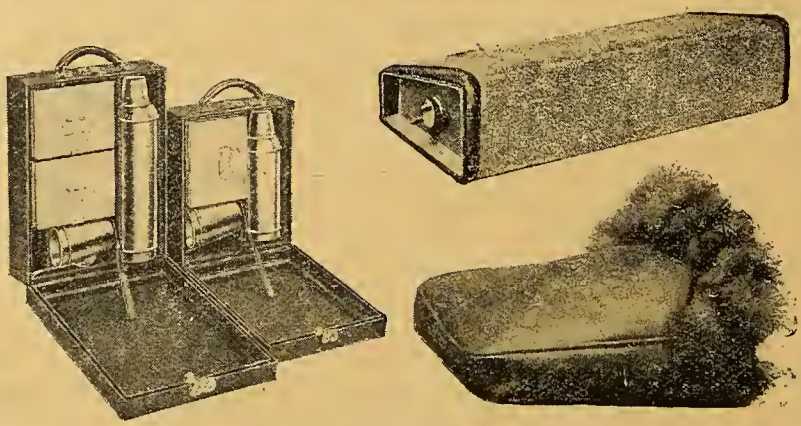
"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

The Passenger's Comfort

Making the Sidecar Cosy in Winter

By "FRIAR JOHN."

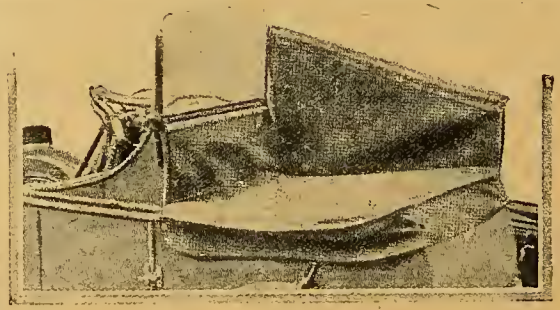
THE time of the year has arrived when special precautions have to be taken if sidecarring is to be thoroughly enjoyed. In our fickle climate the changeable summer weather is sufficiently disconcerting, but the lightning temperature changes of our autumn, when the midday may be tropical and the night bitterly cold, call for special thought on the part of the owner, especially if he sets out on a long journey with a passenger not accustomed to travelling. Motoring in a most expensive but badly equipped car can be a misery in bad weather, but an ill-equipped sidecar outfit driven against a wet wind from the north-east can kill all enthusiasm.

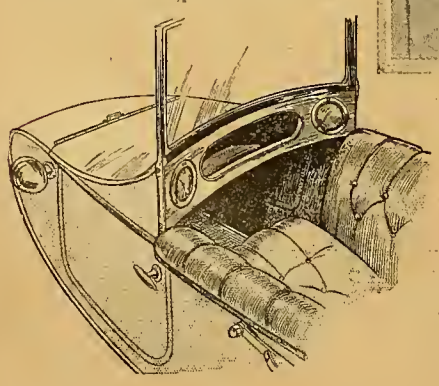


Sandwich and flask cases, footwarmer and loot-muff. Although these useful accessories are proprietary articles, in each case they can be replaced by home-made devices which answer the purpose very well.

No one but the most thoughtless and careless would, for instance, invite a passenger into a screenless sidecar either in summer or winter, although I am not quite sure whether a simple flat screen is not worse than no screen at all. The several marketed side-screens and the many ugly improvisations to be seen on the road only show that effective side-screening is one of the first and most important considerations in achieving comfort for the passenger. To counteract that deadly side-draught which is deflected from the body of the driver on to the face of the passenger should be the very first job for the considerate owner whose front screen is of the flat type. To suggest in detail how this simple improvisation may be carried out would be superfluous. The obvious thing is to select a workable material and fix the shield in a manner similar to one of the screens shown.

My next job if I were seeking to transform a bare and ordinary type of sidecar into something more comfortable would be to study the springing of the sidecar cushion. The standard system of body suspension cannot be altered easily, but the majority of spring cushions can be improved upon. I would at once scrap any existing spring seat and substitute an air cushion. Speaking from experience, I can confidently assert that no existing spring seat gives anything like the

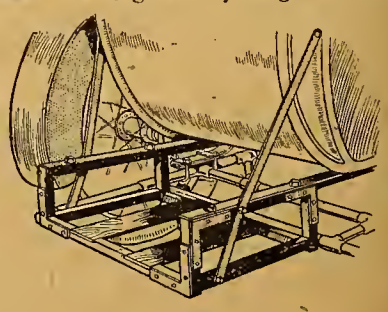


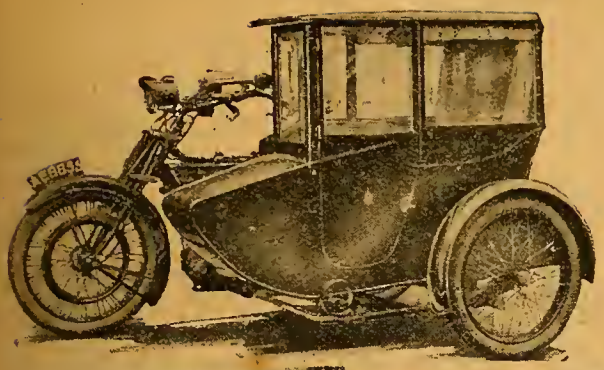


(Top) A sidescreen that prevents air currents being deflected from the driver's body on to the passenger's face.

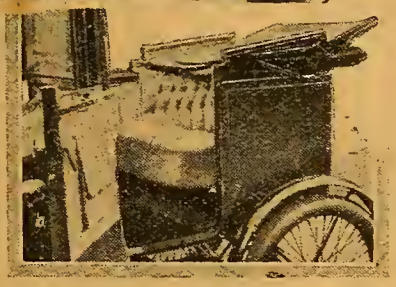
(Left) Fitting a little shelf in the dash similar to this one should be comparatively easy and all lady passengers appreciate such a fitment.

(Right) Instead of cumbering up the passenger with luggage a quite inexpensive grid may be made by anyone possessing the requisite tools and ingenuity.





This coupé top, which gives complete protection, was made by a reader, and it must be admitted the work has been done without giving a heavy or cumbersome appearance to the outfit.



Interior of a sidecar cabriolet complete with air cushion. The upholstery of Bedford cord gives an impression of luxury and comfort.

comfort of a pneumatic one. It lessens the sins of those sidecar makers whose sole thoughts would appear to have been anything and everything but the springing of their sidecar. The form of revenge I secretly harbour against such makers is to force them to ride at thirty miles an hour in one of their own bare, hard sidecars, say from Birmingham round about the Potteries district, then to London on to the Uxbridge Road, say from Ealing to Staines, and keep them at it all day long whilst I ride in a Rolls-Royce alongside. I know this is diabolic, but it would be just.

Fortunately I can think of several little sidecars which are as admirable as these black sheep are bad.

Extras that matter.

In conjunction with the air cushion, present your passenger with a small feather cushion also.

A hood may or may not be fitted; if a hood is carried, however, a useful tip for ladies who feel the cold and draughts at their backs is to pull up the hood slightly and fasten it in that position. With a good side-screen and this little device the passenger will feel completely snug and comfortable.

But there are still other little ideas that may be carried out which will further add to the comfort of sidecarring. Rugs are, of course, always thought of, but it does not follow that wrapping the feet in rugs will keep them warm, especially if the door fits badly; therefore nail strips of material inside the body to overlap the edges of the doorway to keep out the draughts. There are several foot-warmers on the market, but a couple of rubber hot-water bottles enclosed in some strong, loosely-woven material answers very well. A more elaborate idea is to carry the exhaust system through the sidecar body by a flexible tube, but I have had no experience of this and have heard and read of the idea more often than I have seen it carried out.

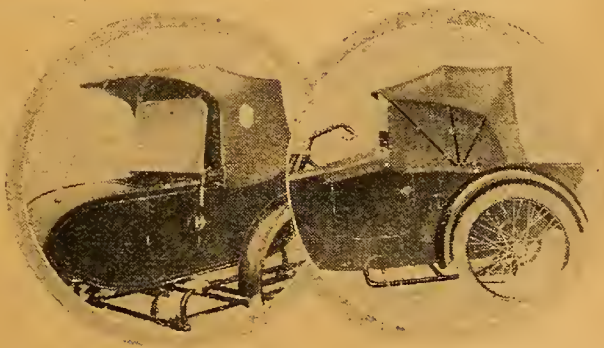
The other day I saw a capital contrivance made out of two or three lamb-skins of the cheaper sort—not the stuff that is so fashionable this winter for the trimming of ladies' coats. These cheap skins were modelled into a bag, and my lady slips her feet into it, sitting on the open end and allowing the top side to form a rug. It seemed worthy of emulation.

To carry still further the furnishing of the sidecar, a small locker can usually be fixed in the upper part of the sidecar nose or beneath the dash. In many instances this would be useless until the apron was removed, but in those cases it is quite possible to fix this very useful receptable—which usually contains the powder box and spare plug, looking-glass, and a patch or two—on the right-hand side of the body.

A unique position for the suit case. This hinged portion folds over the passenger's knees, yet leaves plenty of room in the body of the sidecar.

All the propositions mentioned, and even the fitting of bigger tyres, are quite practicable and can be carried out easily by the owner of any existing type of sidecar. The fitting of the largest possible tyres should certainly be considered. It is certain that scores of passengers tolerate uncomplainingly a sidecar that could, with little effort, be made very much more comfortable. The driver, probably a most considerate man, does not give a thought to draughts and cold feet, and takes the outfit exactly as fitted up by the makers. No wonder many women object to autumn and winter riding, whereas a little thought and energy would make them enthusiasts all the year round.

An original idea that gives good protection against strong wind.



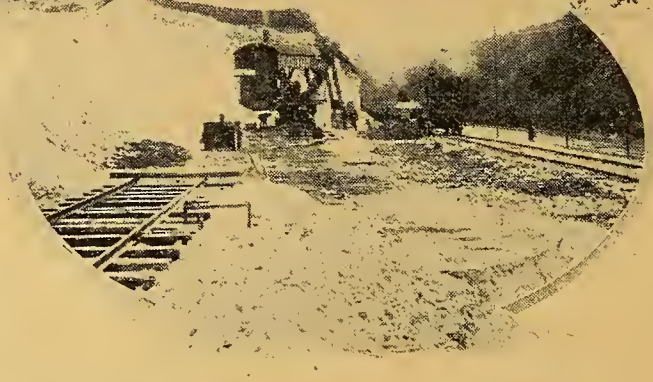
(Left) The effectiveness of this device is negatived by a screen obviously not designed in combination with the hood. Draughts can enter at the top and sides. (Right) A well fitting hood, screen and side curtain.

MAKING A MODERN HIGHWAY.

A Visit to the Section of the new London-Folkestone Road now under Construction.

Wrotham Hill, where the gradient is being eased and the road taken round the village.

A portion of the new road which will cut out the old narrow stretch through Ruxley.



One of the very few steam excavators at work. The greater portion of the excavating is done by manual labour.

A ROAD of romance, of real history and of legend is the London-Folkestone road.

Planned probably by our neolithic ancestors in the distant flint age, surveyed later by the Romans, and used no doubt as a military road even in those early days, this highway is steeped in poignant history. The imagination is stirred and stimulated at the mere thoughts of the stories which might be unfolded about this road since its beginning as a hill track and series of ridgeways, to the present time when monster excavators are biting out great mouthfuls of earth in obedience to our engineers' conception of what a modern road should be.

A portion of it, indeed, has been altered out of all recognition, and the old is giving way to the new. The spirit of utility presides over the gigantic undertaking, and romance flies from the old hedgerows and the quaint historic houses that are being elbowed out of the way for this great modern highway.

A Riddle of the Chalk.

Even the chalk is yielding up bones to conjure with, for a skeleton has been found which scientists have determined as being the remains of a Saxon invader. He was buried in a sitting position, had a hole in his skull before he was buried, and suffered from lumbago. It is an exquisite summing up, but probably quite correct. Bones do indeed reveal a lot.

The new road at present extends as far as Wrotham, about fourteen miles from London, so motor cyclists cannot hope to run down to the coast along this fine speedway for some time to come.

We recently had an opportunity of inspecting the new scheme in the company of Mr. W. D. Harding, A.M.I.C.E., Chief Engineer of Roads and Public Works, Ltd., the concern which has the work in hand between Farningham and Wrotham. He pointed out some of the difficulties encountered in cutting through chalk cliffs and filling up valleys, work which necessitated the handling of 160,000 tons of material, quite apart from the cartage of 150,000 tons for the preliminary operations. The drawings, too, needed for the work numbered over 400. In fact, the operations are very similar to those undertaken during the laying of a great railway track, and certain sections of the work give the appearance of deep railway cuttings more than they do of a highway in the making.

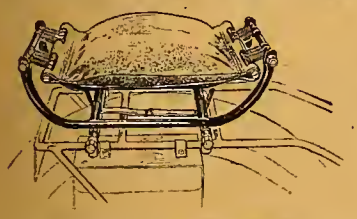
Setting a High Standard.

Here then can be seen what may be the commencement of great series of road operations all over the country. Modern transport demands drastic improvements in our highways, and in the London-Folkestone alteration a high standard has been set, from the point of view of both roadmaker and road-user. A standard so high, in fact, that one doubts the country's capacity to keep up the pace. But this section, together with a few other schemes round London, is a fine start, and for those motor cyclists who love these great naked-looking stretches of straight roadway, this addition will be a paradise.

Apart from its ultimate utility, the new road is justified in the provision which it makes for the employment of large numbers of men; with this in view excavating machinery is only sparingly employed.

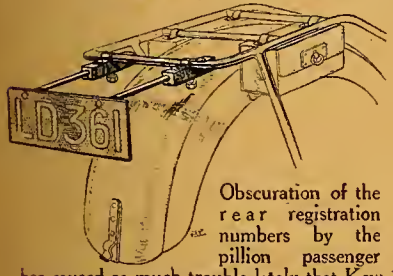
AMONG THE ACCESSORIES

Hammock-type Pillion Seat.



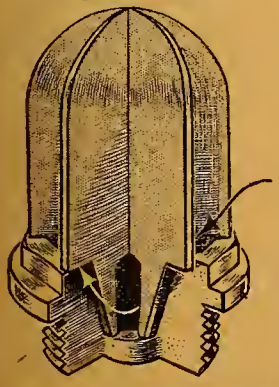
Several constructional improvements have been made in the Skiff pillion seat, which is both serviceable and simple. The cushion is suspended, hammock-fashion, on coil-springs, the recoil of which is checked by a strap. All carrier widths from 6 to 12 in. are available (The Tubular Gate Co., Ltd. Lord St., Southport.)

Overcoming a Pillion Difficulty.



Obscuration of the rear registration numbers by the pillion passenger has caused so much trouble lately that Kew Bros., 119, Higher Bridge St., Bolton, have protected an extensible rear-plate. 4s. 6d., post free.

Air-cooled Valve Cap Improvement.

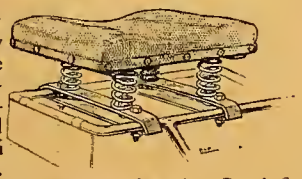


Study of valve cap radiators has led A. Altree (279, Wilmslow Road, Fallowfield Manchester) to the conclusion that improved cooling is gained by means of through air passages in the base.

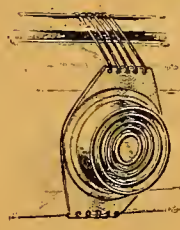
Ultra-Long Rubber Grips.

Exceptionally long and very comfortable handle-bar grips have been added to the range of John Bull specialities. 4s. per pair, including tape. (The Leicester Rubber Co. Ltd., Post Office Place, Leicester.)

Inexpensive Pillion Seat.



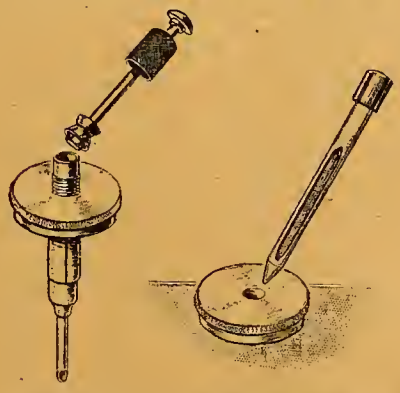
Excepting only the homely cushion, the limit in simplicity is probably reached in the Robini pillion seat. 14s. 6d. (The Robini Manufacturing Co., 1-3, Tulse Hill, Effra Rd., London, S.W.2.)



Sensible Knee-Grips from Italy.

Readily yielding and elastic rubber pads are commendable features of these Italian-made knee-grips. (Societa Anonima Allinovi Besana & C., 12, Via Vittoria, Milan, Italy.)

Primer or Gauge in Filler Cap.

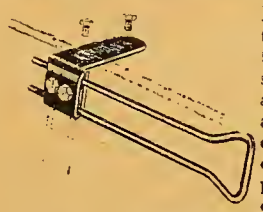


There is much to be said in favour of the idea of embodying such items as a petrol primer or a petrol level gauge in the tank filler cap. This has been done by Barracloughs Ltd., Thornton, Bradford, as shown, left and right respectively, the gauge being of the container pattern.

Springing the Rear Lamp.

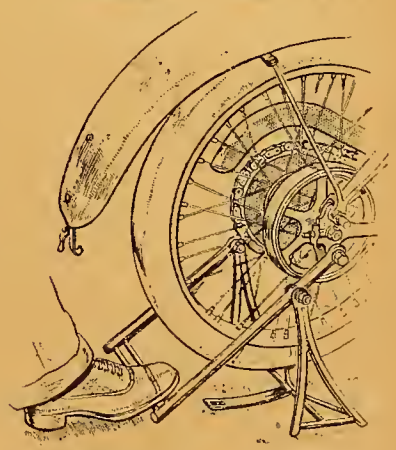
Whether electric or acetylene, rear lamps are always adversely affected by vibration; hence the Birt sprung bracket. 4s. (M. E. Birt, East Avenue, Cowley Road, Oxford.)

Neat and Simple Prop Stand.

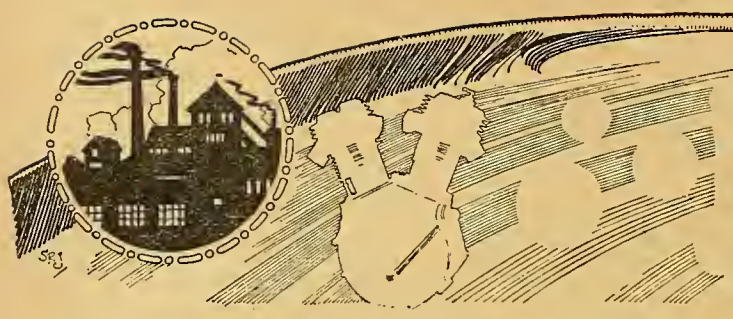


For attachment to a footboard, the Nipit prop-stand is adjustable in length and can be quickly locked or unlocked by pulling the prop outwards and rotating it. (Brown Bros. Ltd., Gt. Eastern St., London, E.C.2.)

Lever-assisted Rear Stand.



Much of the labour attendant on jacking up the rear of a heavy machine is eliminated by the Ford stand. An auxiliary member pivoted on the main stand comes into action first, when the foot pressure may be applied to the main cross-bar. When fully depressed the stand is automatically locked, and a simple toe-catch allows for its return. (R. Ford, 14, Coombe St., Stoke, Coventry.)



Castor Oil in Engine Lubrication.

Properties of Vegetable and Mineral Oils. Blending to meet Definite Requirements.

By E. A. EVANS, F.C.S., M.I.P.T.

FREQUENTLY the question is asked by motor cyclists: "Will castor oil damage my engine?"

To such a query no immediate answer can be given, for the reply must be modified by certain qualifications suggested by a general review of the principles of lubrication and the physical properties of oils.

Oils are chemical combinations of fatty acids and glycerol (glycerine). The differences which exist between the numerous oils are brought about by the various fatty acids combining with the glycerol to form individual glycerides, and these glycerides when mixed together give rise to the liquid and solid fats as we know them.

Some fatty acids are fluid, others are solid, at atmospheric temperature, whilst others may have any consistency between the two extremes, and each acid, when it combines with glycerol, produces a glyceride of definite melting point. The way in which olive oil remains fluid in the summer, but gradually deposits solid matter as winter progresses, is a manifestation of the presence of both liquid and solid glycerides in the oil. Hence it is that it is possible to supply oils of required cold test to meet specific needs.

The Fatty Acids.

Some of the fatty acids are particularly stable and belong to a class of compounds which are designated as "saturated." On the other hand, the unsaturated fatty acids may be affected by air, depending upon the temperature and period at which they are freely exposed, and so produce solid deposits or other decomposition products. It is commonly supposed that the degree of unsaturation is a measure of the instability of a glyceride or fatty acid, but this is not quite correct, because it is possible to stabilise an unsaturated body by introducing protective groups into it without reducing its unsaturation. In lubrication problems this consideration frequently arises.

There is yet another type of unsaturated acid, but this is one of special interest, because it contains a group, called a hydroxyl group, near to the point at which the unsaturation exists which lends properties of value. This acid is known as ricinoleic acid, and in combination with glycerol forms the chief component of castor oil.

Insolubility and High Viscosity.

Perhaps the most striking property of castor oil is that it is scarcely soluble in petrol, whilst other oils are completely soluble. For this property alone, if for no other, it is particularly valuable for petrol engine lubrication. It at once eliminates the source of complaint that the oil has become so thin that it has lost its body by the oil being reduced in viscosity through the admixture of unburnt fuel.

Another very valuable property of this unique oil is its abnormally high viscosity or its resistance to shearing stresses. By virtue of this it is capable of maintaining two moving surfaces apart when they are being forced together under considerable pressure. Further, it differs from most lubricants in being only very slightly compressible. This means that if a film of castor oil be compressed it will contract in volume to a very much less extent than would a pure mineral oil if subjected to an equally high pressure. The gravity of such an attribute is borne home when we realise that bearing surfaces are full of tiny crests and dips, and that the bearing pressure is carried on the crests and not on the dips, and as the portion of the bearing carrying the greatest pressure is narrow, the actual pressure on the crests in that narrow belt must of necessity be a great tax upon the oil to withstand it. One naturally wonders whether it is better to flood the lubricated part with oil or to limit the feed. Some people advise one thing and some another. Doubtless both advisers are right, but only when the conditions are different. This story is a long one and deserves separate attention.

Securing Maximum Lubrication.

For our purpose let us now assume that the only variable under consideration is the oil. To obtain the best lubrication the amount of oil passing at any one moment depends entirely upon the oil used, *e.g.*, speaking generally, the effective thickness of film of a mineral oil increases with the increase of viscosity or fluidity up to a certain feed, and if one exceeds this feed the lubrication is not so good; the limit, of course, varies with each oil used. With castor oil it is different—a thin film is as good as a thick film, consequently it is more economical to concentrate one's efforts upon obtaining a satisfactory thin film.

Castor oil is usually regarded as an expensive commodity used by the rich and the racing enthusiast. True as this may be, the less wealthy and the less enthusiastic are realising that lubrication is a vital factor in the efficiency of their engines, and are therefore rapidly being convinced by their own experience that a thin film of oil which will do its job is less

Castor Oil in Engine Lubrication.—

costly and troublesome than an oil which must be used in greater quantity.

Not only does this advanced practice in lubrication appeal to riders when considering the bearings, but perhaps in a greater measure if they have ever had a seized piston. As in the case of bearings so in the case of cylinder lubrication, a thin film only is necessary. If a thin film is sufficient the risk of excessive carbonisation is reduced, if only by virtue of the absence of oil to carbonise in the combustion space.

Objections to Castor Oil.

Although castor oil has some very decided advantages over mineral oils, it has a few objectionable properties, but they are not equal in all varieties of castor oil. Discussions have lately centred about the corrosive properties of castor, presumably due to its free fatty acid content. Corrosion can take place both with used castor oil and mineral oil if free fatty acids be present, especially in the presence of water. The action may be perceivable on copper, but hardly noticeable in the case of steel or cast-iron, except in very extreme cases. It is advisable, however, to remember that the aircraft specification of the British Engineering Standards Association states that the acidity shall not exceed 1.75% calculated as oleic acid.

Every lubricating oil known will produce solid decomposition products when subjected to a high temperature for a prolonged period in the presence of air, and castor oil is no exception. Carbonisation is another subject about which much ought to be told, but space limits me to the instruction "limit the feed and eliminate the carbon."

It is surprising how two words partly similar and partly dissimilar can be confused both when written and when pronounced. Yet it is so. The two words "castor" and "Castrol" are euphoniously and visibly different. The former is the name of a particular oil extracted from the castor oil plant which grows in the Tropics, and has certain characteristics which are peculiar to itself.

Castrol and Castor.

Castrol is a registered trade name adopted for a certain class of motor oils which contain castor oil. The idea being, of course, to impart to the mineral oil which is best suited for the various types of petrol engines the valuable properties of castor oil, and at the same time making an endeavour to eliminate the objectionable qualities. In some engines one cannot use such a viscous oil as castor, so a less viscous mineral oil is blended with castor. In other engines where castor oil could be used, but the rider will not reduce his feed as he ought, a suitable mineral oil is blended with castor to make a lubricant to suit the rider's propensities. Or it may be that the initial cost apparently eclipses the long-run economy.

The proportion of castor oil varies in Castrol. It should also be pointed out that Castrol "R," which is very much richer in castor oil than the other grades, is not a substitute for castor oil, but a competitor. It is essentially a proprietary article conforming to a definite quality. In this respect it differs from castor oil which may be pharmaceutical, firsts or seconds, but still the three classes are castor, and who except an expert in oils can discern to which class a particular sample belongs? This is a serious difficulty to the purchaser of castor oil.

WEIGHTS FOR REGISTRATION.

Definition of "Unladen Weight" by the Transport Ministry. Must Lamps be Included?

THE question of what exactly must be included with a motor cycle when it is weighed for registration purposes has aroused some controversy lately, and something approaching a definite ruling has at last been obtained.

Following is an extract from a circular letter, dated September 30th, 1922, by the Ministry of Transport to the local authorities :—

"Motor Cycles: Unladen Weight.—As regards the accessories under Section 7 (6) of the Roads Act, 1920, to be included in the unladen weight of a motor cycle, it is considered that the applicant for a licence can properly be required to include—

(1) Head lamp and generator.
(2) Horn.
(3) Number plates.
(4) Sidecar attachment lugs if permanently fitted to the motor cycle;

and that the applicant is entitled to remove—

(1) Rear lamp and generator.
(2) Mirror.
(3) Tool bag.
(4) Badge.
(5) Sidecar attachment lugs if fitted to sidecar.
(6) Oil and petrol in tanks.

"The general principle on which the above division is arrived at is that the articles to be included in the unladen weight are ordinarily used with the vehicle when working on a road. The rear lamp is included in the second list because a licensee is not compelled to have an illuminated rear number plate unless the vehicle exceeds 3 cwt. (R.B. 1712)."

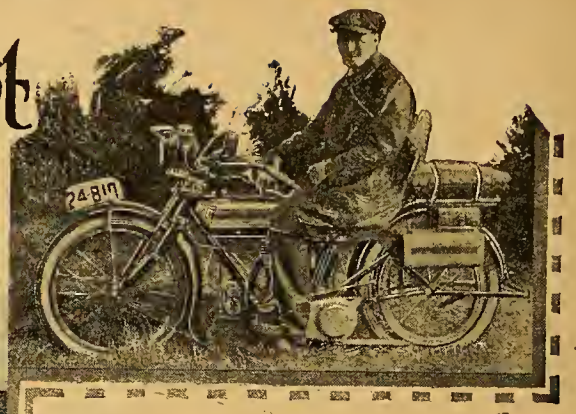
In consequence many local authorities have insisted on a headlamp being fitted to a machine before it is weighed; and the A.C.U. has got into communication with the Minister of Transport on the subject. His reply is appended :—

"With reference to the suggestion made in your letter that many owners of vehicles do not desire to use them at night and consequently these vehicles are not provided with lamps, I am to state that it is considered that such cases are very unusual and exceptional. If, however, in fact, such a case occurs, the Minister agrees that a lamp need not be acquired and affixed for ascertainment of unladen weight."

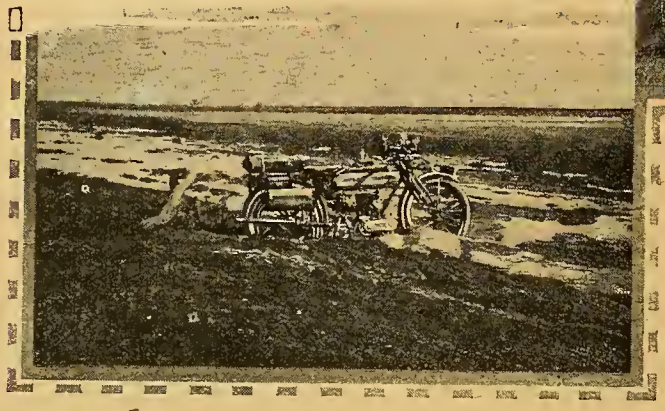
It remains to be seen whether the local authorities will recognise the supplementary recommendation. The qualification that "it is considered that such cases are very unusual and exceptional" may prove a stumbling block, for it should be pointed out that the Ministry of Transport cannot give a legal ruling on a point of this nature, although the courts generally follow the interpretation of the department concerned.

It has been estimated that 25 per cent. of the motor cycles in this country are not fitted with lamps, and that 20 per cent. of motor cyclists use their machines only in the daytime.

Into the Heart of Australia



The author and his Triumph on which he accomplished tour of 2,573 miles across Australian bush and plains.



Showing the nature of the country through which the author travelled. The name of the district—Nevertire—where this black soil area commences is certainly appropriate.

2,500 Miles across Three States. The Thrill of Pioneering.

THE writer's object in taking, last April, a trip across Australia was not to accomplish a motor cycle stunt, but mainly to see what real Australia consisted of, and life as it is lived far from the maddening crowds of the great cities..

From a motor cyclist's point of view, however, a description of the roads that were met with may interest more than notes on the character of the people and country.

On leaving Sydney just after Easter, New South Wales was experiencing one of the heaviest rainstorms of the year, and consequently the roads between Sydney and Mt. Victoria on the Blue Mountains were no joy, but from Mt. Victoria to Orange was easier, despite the wet weather. Incidentally, an inch and a half of rain fell during the 60 miles between Molong and Wellington.

On the Edge of Uncertainty.

Accordingly two days were spent at the latter town awaiting a change in the weather conditions before attempting to cross the Western Plains. Eventually the rain gave way to a good, drying southerly wind, so a start was made for Nyngan —135 miles. All went well until Narromine was reached, where I stopped for fuel. There several motor enthusiasts gathered round, and a hot discussion went on as to whether I could get through the Black Soil or not. Some were undecided, others held pessimistic views, but as the day was still young I decided to have a shot at it. Beyond Narromine all attempt to make roads had ceased. I was out on a dead level plain where the track is perfectly straight and level for 100 miles. At Trangie the dust created by wheat carting had developed into a slippery film of mud, and at Mullengudgery I struck the real Black Soil. None but those who have experienced it can realise how it loves you when it is wet. Inevitably I got wedged into it. Getting off, I tried to push the machine through, but to my surprise found it was stuck fast, and could not be moved backwards or forwards.

No Need for a Stand!

The photograph will help to illustrate to some extent the condition of things. Note that the stand is not down; the machine is simply sticking up in the mud to such an extent that it was utterly impossible to get either of the wheels to turn. I had to lift it out one end at a time, which took over half-an-hour. Some little time afterwards I passed a motor cycle and also a car stuck in the mud—both abandoned.

The sun began to sink in the west, and everything pointed to spending night on the Black Soil Plains; but, having only some 20 miles still to go, I decided to ride for it. Fortunately by this time I had learned how to ride over black soil when wet.

Arriving safely at Cobar, I had my tanks filled ready for an early start next morning to cross No-Man's-Land.

Leaving at 6 a.m., I had 180 miles to span between there

This illustration conveys a good idea of the grey Western Plains of Victoria. In the distance are the Grampian Mountains.

Into the Heart of Australia.—

and Wilcannia on the Darling. The road strikes due west from Cobar, out into the great lonely, empty west, across undulating country consisting of red clay and sand hills covered with thick, scrubby, stunted trees. Mile after mile of this vast empty land unwound without disclosing a single living thing in the shape of animal life. In fact, all I came in contact with during that 180 miles of water-washed gutters and sand hills were two sheep, a few galahs, and a man with a horse and cart mending one of the endless number of gates that are across the road.

In this part of the country the term "cut-line" is used instead of road, which simply means a clearance about four chains wide through the trees, perfectly straight as far as the eye can see—like an avenue to eternity.

At 3 o'clock that afternoon a long line of green gum trees loomed in view, which proved to be my objective, and at 3.30 I shot across the great white bridge that spans the Darling at Wilcannia.

The Last Police Station.

Next day I made for White Cliffs, the one-time famous opal diggings, from where most of the world's opals have come; it lies some 60 miles north-west of Wilcannia.

Some few miles out of Wilcannia a road leads in the direction of a red, stony, desert plain. This is the road to the dead heart of Australia, along which Wright guided Burke and Wills when crossing Australia in 1860 on their way to Cooper's Creek.

White Cliffs is the farthest out-back town in New South Wales. It contains the last public school and the last police station. There I got some interesting snaps of camel teams, etc., and life as it is lived on the fringe of the Empire.

The West is a region of mystery, which seems to be associated with all countries bordering on desert lands. Great dust-storms were experienced; mirages were common, and the nights deadly silent.

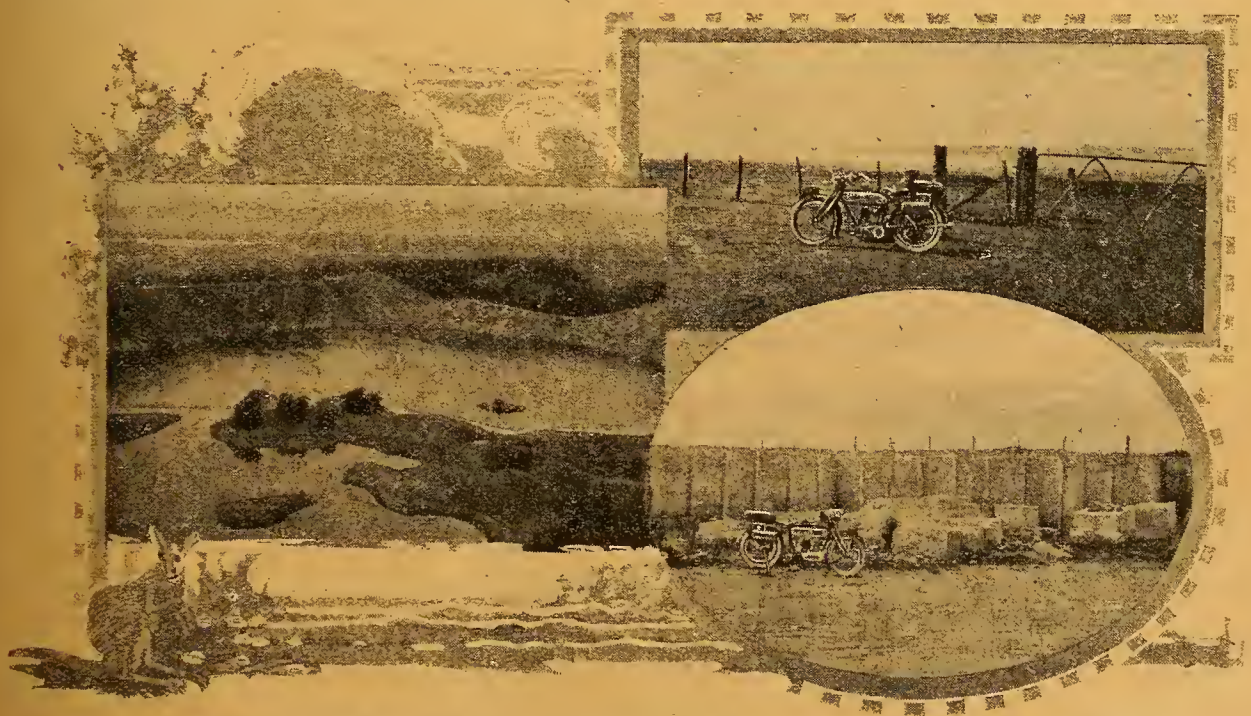
Better Going off the Roads.

Slipping away next morning just as the sun was peeping over the snow-white opal fields, a fine sight that there was no time to admire, I commenced the journey of 180 miles of unknown road to Broken Hill.

The sand on this stage was particularly trying, as it extended for miles without a break; and I reverted to the camel pads (the tracks that the camel trains follow). They provide good going, but they do not follow the cut-line always, and one has to be careful that he is not led away to some outlying station.

I anticipated that when I got to Broken Hill good roads would prevail to Adelaide. Greatly to my surprise they were if anything worse than those I had just traversed. There was still 220 miles of bush road to be tracked, with no recognised place of accommodation on the way. I made for Lilidale Station—127 miles—and experienced some of the roughest roads I have ever been over.

Presenting myself for accommodation at the station, I was treated most handsomely, and next morning was greatly assisted by the station people, who supplied me with a sketch map of how to avoid a boggy creek some few miles further on. I had to ride for miles without even a track to follow, through salt bush, myall, gidgea, mulga and tobacco bush scrub, with only the fences of huge paddocks as a guide. There, too, I rode into great herds of



(Left). One of the largest craters on Mount Gambion, South Australia. (Top). Where monotony reigns—the road across the plain from Broken Hill. (Bottom). A contrast to the desert country—a stone quarry in South Australia.

Into the Heart of Australia.—

kangaroos and emus. Eventually I reached and crossed the deep sandy creek. Feeling rather anxious as regards my direction, I took my bearings from the sun, made across a wide open plain, and found Gum Tree Tank, where I again struck the track as marked on the station sketch map.

A few more hours through salt bush country brought me into the Burrow-Burrow copper mining district at Kooringa in South Australia.

From the Burrow into Adelaide—130 miles—one passes through the great wine-making district of South Australia. Dotted amongst the thousands of acres of vines are the beautiful white-painted, well-kept vineries. Along their roofs, shining in the bright sun, in big black letters are the names of some of Australia's most famous wines. Through this picturesque district winds a beautiful white limestone road, so different from the rutty, boggy, sand-ridged western tracks.

From Adelaide over Mt. Lofty across the Murray Valley and down to Meningie on Lake Albert is 93 miles of really good going. To Kingston, through the Coorong, where some of the most "desperate" road in the whole country exists, is nothing but pure sea sand with limestone rocks sticking through it.

From Kingston through Ballarat, Bendigo, Murchison, Albury to Picton all kinds of roads were encountered, but from Picton into Sydney they were found to be in a uniformly deplorable state.

19 m.p.h. throughout.

In conclusion, a word or two is due to my machine, a W.D. Triumph fitted with two extra petrol tanks—one on each side of the carrier—holding a gallon each. When the three tanks are full I can span 300 miles, allowing 90 miles to the gallon—easily done on moderately good roads. In addition to this, 3in. Rail-Road Dunlop tyres were fitted.

I was 23 days covering 2,573 miles, the shortest stage being 15 miles, the longest 257, averaging 112½ miles per day. A note of each day's running time and mileage was kept, 19 m.p.h. being averaged throughout.

G. W. H.

DATA FOR SPEED MEN.

Interesting Figures provided by Half-distance Timing in Scottish Speed Trials.

IN the provision of really complete results sheets of speed events no club excels the Scottish Western M.C.C.

Immediately after an event each competitor is supplied with a detailed schedule of the times, speeds and formula figures of merit of every rider who crossed the starting line.

At the most recent speed trials of the club, already described in *The Motor Cycle*, a further innovation was made: times were taken at half distance as well as for the full half-mile. Timing, of course, was electrical; and, although to avoid interfering with the first timing strip the actual start was ten feet to the rear, the times in effect are those for a standing-start quarter-mile followed by a flying-start quarter-mile.

Below are some of the speeds:—

	1st quarter mile.	2nd quarter mile.	Full distance.
	m.p.h.	m.p.h.	m.p.h.
600 c.c. Solo.			
J. A. Porter (348 New Gerrard) ...	61.1	75.4	67.3
J. B. Longmuir (492 Sunbeam)	61.8	73.9	66.7
R. M. Wilson (349 A.J.S.)	59.7	74.3	65.9
E. A. Small (492 Sunbeam)	60.0	73.2	65.9
J. B. King (490 Norton)	57.2	75.0	64.8
Unlimited Solo.			
J. A. Porter (696 New Gerrard) ...	69.3	76.3	72.5
J. S. D. Price (738 Martinsyde) ...	61.1	75.1	67.2
R. Watson (738 Martinsyde)	61.1	74.3	66.9
J. B. Longmuir (492 Sunbeam)	62.6	71.7	66.8
R. M. Wilson (349 A.J.S.)	59.3	75.4	66.4
J. Lloyd (492 Sunbeam)	60.0	73.6	66.0
E. A. Small (492 Sunbeam)	59.3	72.8	65.3
J. B. King (490 Norton)	56.3	74.4	64.0

It will be observed that in the 600 c.c. class Porter's 348 c.c. New Gerrard was slower over the first quarter-mile than Longmuir's long-stroke Sunbeam, yet the former was 2 m.p.h. faster towards the finish Although 350 c.c. engines favour "revving," it would hardly be justifiable, since Porter won his class, to say that his machine was over-geared. Most probably the Sunbeam was under-geared, a conclusion borne out by the speeds of the A.J.S. that was third, which also was faster than the Sunbeam on its second quarter-mile. By the same reasoning, it might be assumed that King's Norton was over-geared.

The unlimited class is even more interesting. The first three machines are probably each capable of approximately the same maximum speed, but the New Gerrard was 8 m.p.h. faster over the standing-start half-mile. The President of the Club who sends us the figures suggests that Porter was under-geared; but again, since he won, the suggestion hardly seems warranted. Had he employed a higher ratio there is no practical, apart from theoretical, reason for supposing that he would have been appreciably faster on the second quarter-mile. Apparently Porter gained his speed by stupendous acceleration. Incidentally his speed for the standing half-mile—72.5 m.p.h.—beats Remington's record speed on a 998 c.c. Blackburne—71.88 m.p.h.—for a standing kilometre at Brooklands.

Reverting to the Glasgow tables, it will be noted that Wilson's A.J.S. and King's Norton respectively are only 1 and 2 m.p.h. slower than the New Gerrard over the second portion, yet their full distance speeds are 6 and 8½ m.p.h. slower. Longmuir's Sunbeam, which we have already accused of being under-geared, seems to have dropped two places owing to the lack of a high enough maximum speed; but again, it may be retorted that he beat four faster men by his superior acceleration, which shows that it is not safe for outsiders to generalise on the matter.

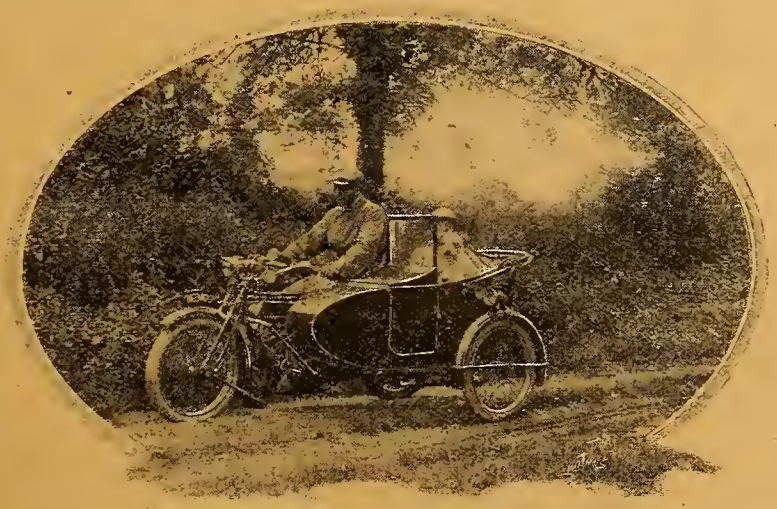
Road Tests of New Models

The Four-cylinder F.N. Sidecar Outfit.

SPECIFICATION.		
ENGINE: Four-cylinder (52 × 88 mm. = 748 c.c.).	*TRANSMISSION: Shaft and bevel.*	*TYRES: 26 × 3 in.*
GEAR BOX: Three-speed.	*WEIGHT: 300 lb.*	*PRICE: Solo, £125.*
	CARBURETTER: Amac.	*Sidecar, £160.*

JUST as Great Britain had the honour of turning out the first six-cylinder motor car, so to Belgium must be given the credit of rendering the first four-cylinder motor cycle a marketable proposition. The F.N. motor cycle made its appearance in 1905 and has been manufactured steadily ever since, the first four-cylinder machine designed (in England, by General Holden) being only sold in limited quantities.

A trial of the F.N. was particularly interesting to the writer, for he has followed its development from the time when it had automatic inlet valves and no gear, through the period when it had a two-speed gear, when, in 1914, it was completely modernised, with mechanically-operated side-by-side valves, a three-speed gear box and a plate clutch, to the present model, which has overhead inlet valves. It has been improved out of all recognition; and, although the 1922-23 F.N. is not in the sports model category, it is capable of commendably high average speeds.



Neat sidecar design characterises the quiet running F.N. outfit.

Our first acquaintance with the machine was on the occasion of the finish of the Six Days Trials, when necessity compelled us to make two ascents of the Brooklands test hill, which naturally were accomplished on first speed but required a very slight throttle opening. Since that date numerous journeys have been made, mostly over average roads, and the behaviour of the outfit on the 1 in 4 section of the test hill proved but an appetiser of its power and capabilities generally for going anywhere.

Take, for example, the hill between Welwyn and Woolmer Green, which is approached by a curve that is never safe to take too fast. Laden with a heavy passenger, the machine ascended comfortably on top gear.

Speed on the level, as already indicated, is all that can be desired, and it seems that the vehicle will hold its own with any outfit of a similar cylinder capacity.

No difficulty was experienced as regards starting; the "take up" of the

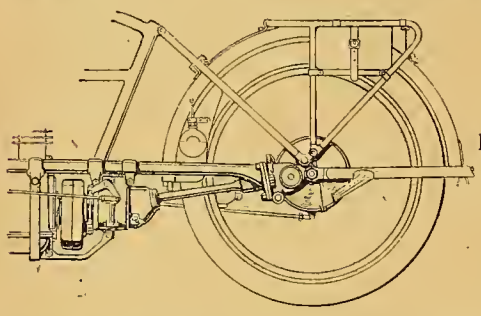
Road Tests of New Models.—

plate clutch was exceedingly smooth; and the steering left nothing to be desired.

Throughout, the machine is thoroughly well designed, so that not only is it efficient but also it possesses thoroughly up-to-date features, such as a really well-carried out mechanical oiling system, a neat inspection plate to the gear box, and a very nicely thought-out cover to the universal joint.

Minor Criticisms.

However, one or two easily remediable details call for criticism. It is hard to understand why, after having an excellent single lever carburetter of their own manufacture in 1914, the makers should elect to use one of the two-lever variety in 1922; it certainly detracts from the flexibility of the engine. It is also strange that



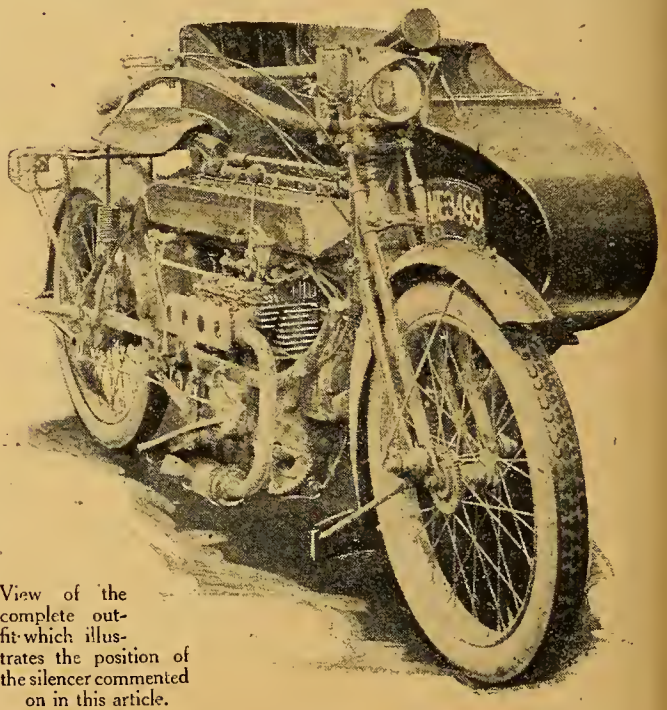
Layout of the shaft drive.

the outlet of the silencer should be underneath the off-side footboard so that the exhaust fumes and exhaust noise are unduly noticeable.

Probably due to the machine placed at our disposal having had a hard season's use and not a few honours to its credit in various important trials, the bevel was rather more noisy than might have been, and it would also appear that the balance of the engine at high speeds is capable of slight improvement. The mudguards, too, appeared to be rather small for the large section tyres fitted.

Were attention paid to the small items mentioned, the F.N. sidecar outfit would be very nearly ideal. Flexibility and smooth running are the true attributes of the four-cylinder, while the weatherproof, no-trouble transmission in itself is worth a great deal.

Made at a gigantic factory, renowned for good workmanship and excellent material, the F.N. has a reputation for longevity second to none.



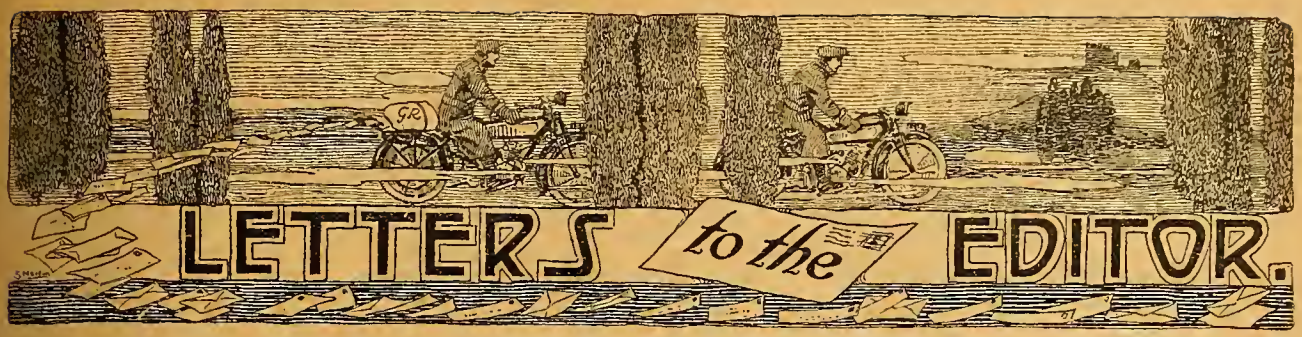
View of the complete outfit which illustrates the position of the silencer commented on in this article.

NEED FOR HIGHWAY RESTORATION.

RECENT fatal accidents in which the heavier varieties of motor vehicles were involved have brought into prominence the question of rendering the roads of Great Britain more suitable for the traffic which they are nowadays generally called upon to carry.

Roads, as they are to-day (says *The Autocar*), were planned for traffic that existed at the time they were made. Originally, in many cases, so far as the main traffic routes are concerned, they were laid over open expanses of country, and were wisely provided with wide margins on either side for such purposes as the driving of sheep and cattle from place to place, for riding on horseback, and that travellers might not be attacked unawares by bandits. At a later period a movement followed for the enclosure of waste lands, and as a result roadside wastes were encroached upon to such an extent that the highways in most places became tortuous and hemmed in by the enclosing fences. These conditions were not found to be dangerous until less than a century ago, when, in the palmy days of the stage coach, the roads were found to be too restricted and inconvenient. A number of improvements were undertaken to make them suitable for the continually increasing volume, weight, and speed of the vehicular traffic they were called upon to carry.

This movement for improved roads would, no doubt, have continued to advance had it not been for the introduction of the steam locomotive. The all-powerful horse and stage coach interests of that day successfully resisted the introduction of the steam coach upon the public roads by passing through Parliament the Red Flag Act, which made it compulsory for any locomotive driven on the public highway to have a man walking in front carrying a red flag. Mechanical traffic was driven off the public roads on to railways, which were developed for its reception. It is conceivable that, except for this shortsighted policy, horsed traffic and mechanically propelled vehicles might both have retained their places on the roads and jointly brought about improvements which would have made the roads suitable for modern developments in motor transport.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address

ENCOURAGED BY A TRIALS PERFORMANCE.

Sir,—It was the performance of a similar machine in the London to Edinburgh Trial that encouraged me to undertake a recent most successful journey from Edinburgh to Worthing and back on a 225 c.c. Enfield two-stroke.

Hence trials are of some value to the public after all.

Edinburgh. H. W.

SO-CALLED EASY PAYMENTS.

Sir,—Col. Le Mesurier has done well to call attention to the so-called "easy payments" of some firms and the high rate of interest which is really charged. He is in some cases much under the mark. Take a recent advertisement :—

Cash price £99.
Deposit £27 5s. 6d.
12 monthly instalments of £7.

Now in instalments the buyer will pay back £84. That is—taking deposit from cash price—he will pay £12 5s. 6d. interest for the loan of £71 14s. 6d. for six months, as the amount gets less each month. This comes to somewhere near 17 %. Not a bad rate, especially when one considers that if the instalment plan were not adopted the machine would probably be unsold for a year and no interest be accruing. SHYLOCK.

Barnsley.

THE CHARM OF THE 1,000 c.c. SOLO MOUNT.

Sir,—I notice with pleasure that you are taking up the cause of the big twin enthusiast, but I also notice a paragraph in which you mention the high speeds obtainable from 250—350 c.c. machines.

How many of these high speed lightweights are actually in ordinary users' hands? I have never met any so far, and consider that the majority of ordinary 350 c.c. machines are not up to the standard of performance of even an old 500 c.c. single; and, should one of their riders ever try a solo big twin, whatever his opinions may have been previously, he is a certain enthusiast for the 1,000 c.c. machine ever after.

G. ROSEKILLY.

DEAF MOTOR CYCLISTS.

Sir,—I have driven a sidecar outfit for the last three years, and although for all practical purposes stone deaf, I have never found my affliction any inconvenience or danger to myself or to other motorists, provided that the following simple precautions are always strictly observed :—

Always ride well on the near side of the road.

Always take blind corners or cross roads at a crawl.

Never pull out to pass anything until you are sure there is no danger from front or rear.

Look continually in the mirror to watch for overtaking cars.

To sum up. Use your eyes instead of your ears.

I consider that there would be far fewer accidents if all motorists, deaf and sound, trusted more to their eyes and less to their ears. AFFLICTED.

London, W.1.

"40,000 MILES WITHOUT DECARBONISING."

Sir,—I submit that the A.C.U. should form a Society for the Prevention of Cruelty to Engines. EVERY 500.

Manchester.

CRASH HELMETS FOR LADIES.

Sir,—Why was it that all the male competitors were compelled to wear "crash helmets" in the Scarborough speed trials, and the ladies were not?

Manchester. "ONE WHO WAS THERE!"

THE FINEST SOLO MACHINES.

Sir,—After holding a discussion amongst my friends I have formulated the following list of machines which, in our opinion, are the first, second, and third best standard solo machines in each class :—

1,000 c.c. class ...	"S.S. 80" Brough-Superior-Jap.
	Super-sports Matchless-Jap.
	Super-sports Zenith-Jap.
750 c.c. class ...	733 c.c. o.h.v. Douglas.
	"Quick-Six" Martinsyde.
	80 m.p.h. Coventry Victor.
500 c.c. class ...	Long-stroke Sunbeam.
	o.h.v. Douglas.
	Scott Squirrel.
350 c.c. class ...	o.h.v. Massey-Blackburne.
	o.h.v. Sheffield Henderson.
	o.h.v. Cotton-Blackburne.
250 c.c. class ...	249 c.c. Coventry Eagle-Jap
	249 c.c. New Imperial-Jap.
	249 c.c. Diamond-Jap.

I would also like to send you a list of the worst machines in each class, but I dare not: my life is too valuable!

WARWICK. ANUBIS.

LARGE TYRES ON SMALL MACHINES.

Sir,—The idea seems prevalent that a big tyre rolls a great deal. Now this theory is discounted, to our minds, by the unanimous opinion we get about "the super-steadiness of our machines" from those who ride them.

We have made no mention of the comfort derived from the use of large tyres. "It is simply stupendous," says one rider; another, "comfort for motor cyclists has never been known unless they have ridden a machine so equipped."

There is also another great feature in favour of large tyres, and that is the long life of the cover, its freedom from trouble, and its power to overcome obstacles which would cause its more "anæmic" brothers distress.

It has been indisputably proved that the loss of speed, except in short sprints, is negligible, and many of our Brooklands record men use the large section cover.

However, we think that the small tyre has had its day; we feel that a general change over is imminent, and that soon we may see the 250 c.c. machines fitted with 26×3in. tyres, and the larger classes *pro rata*. This step would spell the doom of the spring frame for medium weight solo riding.

BERT HOULDING, Works Director,
THE MATADOR MOTOR CYCLE CO., LTD.

HUMIDITY AND POWER OUTPUT.

Sir,—With reference to "Enquirer's" letter I would like to offer an explanation as to why his machine gets into its wonderful stride "in the dusk of a dewy evening."

To commence with, the efficiency of the charge taken into the cylinder of his engine (or any other; this applies to any I.C. engine) depends upon its weight per volume. In the middle of the day the air is warmer and so more rarified than is the case in the evening, when the atmosphere tends to become humid and so heavier. At night a denser mixture is drawn into the cylinder, resulting in (1) a more violent explosion and (2) a greater expansion of the gases following it, from which more power is derived.

May I also add for "Enquirer's" attention that the engine most to be desired is the one possessing the highest volumetric efficiency, together with the greatest turbulence of the gases immediately before they are fired, and in my opinion no appreciable benefit would result in facing the air intake to the front of the machine. M. B. B. H.

Letchworth.

WHERE THE MINIATURE FAILS.

Sir,—It appears that small engines will be much to the fore next year; the "350's" have already obtained alarming speeds on the track, and now engines of 150 c.c. are advocated.

While admitting that small engines may be very highly developed, they must depend on "revs" for their speed and will not, one supposes, have the power to propel the large frames, saddles, and petrol tanks that one is now accustomed to. Therefore, these items will decrease in size proportionately until we get something like a 100 c.c. engine with push bike saddle, light frame, miniature tank, and lightly sprung. While this will no doubt prove an excellent vehicle to run errands on and go for an occasional 50 mile run, it appears to be nothing more than reverting to our old push bike days; half the pleasures of the present day mount and its capabilities will be absent soon, and we may even be driven to light cars for our motoring. XL-2948.

London, W.2.

FUEL CONSUMPTION ON A BIG SINGLE.

Sir,—"Triumph" (Batley) doubts Mr. A. D. Harper's 127 m.p.g. on his 550 c.c. Triumph; he states his petrol consumption is 60 to 70 m.p.g. I presume they both rode solo.

What will he say to the following? Mine is a 1918 standard Triumph, with the standard carburetter. It is fitted with the heaviest sidecar and chassis ever known (chassis tubing is ⅛in. thick) and a large windscreen.

Recently, with immense camping out gear, quite equal to an extra passenger, and with my son in the saddle and myself in the sidecar (so loaded I could scarcely get in it), we started from Liverpool and went *via* Chester, Shrewsbury, Gloucester, Bath, Wells, Cheddar (partly up the Gorge), and Bristol back to Liverpool in 4½ days (distance about 500 miles). The next week my two sons, with even more equipment, went from here through Chester, Worcester, Gloucester, Bristol, Minehead, Porlock, Lynmouth, Lynton, Ilfracombe, Taunton, Bristol, and home in five days (distance about 550 miles). The petrol consumption was 84.6 m.p.g. This is very carefully worked out and cannot be doubted. The only trouble experienced was a burnt-out exhaust valve, due to climbing Porlock and Lynton Hills.

ARTHUR E. LEE.

Sir,—I do not doubt that Mr. A. D. Harper can get 127 m.p.g. on his solo Triumph.

During the tests of numerous machines I organised in April last I found that similar makes of machine differed as regards petrol consumption by as much as 40 m.p.g. Each engine appears to require a definite quantity of fuel to drive it a given distance at a given speed. "Triumph's" 60 to 70 m.p.g. solo is certainly very poor showing, and I would suggest that he has the machine examined to see if there isn't something amiss. At 20 m.p.h., with my chain-driven 1922 Triumph outfit (Gloria sidecar), 3 up, I have done 76 m.p.g. At 25 m.p.h. average (touching 40 occasionally and 35 m.p.h. for a few miles) with 3 adults up I generally average 60 to 63 m.p.g. I have tried six makes of carburetter and nearly all the economisers, and the figures given are the best I can do. H. S. B. BOOTH.

WHY?

Sir,—I notice in your issue of September 14th a letter entitled "Why?". I should like to ask a few more questions. I am a Colonial, and have had a fair amount of experience of touring in Victoria and southern New South Wales. I should like to purchase an English machine to take back with me, but so far have seen nothing to come within miles of an Indian Scout.

Why do not English manufacturers build motor cycles instead of two-cat power sewing machines? I have not seen anyone riding a big twin solo since I arrived. If English manufacturers want to capture our trade they will have to build stronger frames and larger tyres.

Why do all English machines have the saddle nearly over the back wheel? I rode a four-cylinder Henderson for some time, and it was the most comfortable thing I had ever been on; the saddle was just about half way between front and back wheels. Give me a long wheelbase for comfort every time. I have never noticed any increased tendency to skid.

Why is the transmission on all English machines so terribly crude? The latest type of enclosed chain as fitted to the Triumphs and other makes is fairly silent, but the whole principle of chain drive to the countershaft is antediluvian. For the past six years, excepting a short interval when I had a Henderson, I have ridden 678 c.c. J.A.P.s, with Colonial frames and Brampton forks, and I have never been stuck up by fork or engine yet. I do not hit the high spots at 60 or 70 m.p.h., but I always keep up an average of over 30 on the roughest of country roads, which means as you know, a speed of close on 50 over the good parts. For the past three years I have had a Sturmey-Archer box, and in spite of every sort of ill use it has never turned me down. Still the chain to the countershaft makes, and always did make, a noise like a chaffcutter.

W. H. MOULE.

HOME-BUILT FRONT DRIVE THREE-WHEELER.

Sir,—My three-wheeled cycle car has the driving and steering-wheel in front, a four-speed and reverse friction drive, and a 6 h.p. engine. The entire machine (barring back wheels and back axle) has been built by myself in my spare time.

The body is three-ply, the bonnet only being metal. The machine can be braked hard enough to lock the wheel (the brakes being, foot brake on front wheel, and hand brake on countershaft), when it will skid forward in a perfectly straight line until it comes to rest. It feels far more stable than the conventional three-wheeler, owing no doubt to being pulled, instead of being pushed. The friction discs are both 12in. diameter—cast iron for the driver; compressed cork face on the driven. The body is light blue grey, with black guards. A Ford silencer makes the machine very quiet. The front cover is 700×80 mm.; the rear 650×65 mm.

The chassis is of English oak with steel plating from front to rear springs.

I have not yet experienced wheel spin, as all the weight is on the driving wheel. Incidentally the car weighs about 6 cwt., without passengers, and has taken about six months of my spare time to build. A. E. FOULGER.

Front wheel driving and steering has given every satisfaction on this home-made three-wheeler described in the letter from Mr. A. E. Foulger.

CANCELLATION OF CLUB EVENTS.

Sir,—"Fed-up" refers to a competition organised by him, where seven entries were received from 130 members. That points to one of two things: indifference of members to competitive events, or indifferent organisation of the competition in question. Since, at a hill-climb of the club in question, some 60 entries were received, the latter suggestion appears to be the cause.

He mentions that of the seven entries there were two committee men, two *bona fide* club members, and three "pot-hunters." This prompts me to wonder what is his distinction between a pot-hunter and a *bona fide* club member. Obviously both must be members of the club in order to compete in its events. Having a shrewd suspicion that I am numbered amongst the three pot-hunters, I ask, why should I not be a pot-hunter?

It is to be presumed that any competitor enters an event because he hopes that he may win, and I do not think that there would be much support for competitive events with no awards.

Why do people ride in competitions? Either because they are private owners and wish to prove their capabilities or else because they are connected with the trade and wish their riding to be an advertisement. To my mind either is a legitimate object, and both might be termed pot-hunters.

My reason for wishing to win is that my firm deals in second-hand machines, and it falls to my lot to drive in competition machines taken from our sale stock. In common with any manufacturer, the more wins the better the advertisement. That is pot-hunting, but is it any more so than the private entrant, who wishes to win merely for his own private satisfaction?

E. C. GORDON
(Peter Gordon, Ltd.).

THE ETHICS OF "HANGING-ON."

Sir,—Mr. James R. Thorpe takes it for granted that the average motor cyclist does not fear a crash involving a cyclist, as the odds would be so much against the latter. This seems to me to be a very good reason why he should fear such a collision, and if he takes note of the erratic riding and lack of road sense of so many young cyclists at least, he is likely to regard any rider of a pedal cycle with suspicion.

An experience of my own might not be out of place. I was returning from a short run, and when passing a side turning a schoolboy on a bicycle shot out and caught me amidships. The only damage, fortunately, was a buckled front wheel on the bicycle, and while we were trying to straighten this out the young criminal cheerfully admitted it was his own fault, as he could not stop, *having no brakes*. On further enquiry he informed me he regulated the speed downhill by putting his foot on the front tyre, but had not thought it necessary in this case, as "nobody ever passed that hill."

To come to the point. If motor cycles are required by law to have two brakes in addition to the considerable braking power of the engine, it is only logic that on free-wheel bicycles the use of at least one brake should be enforced.

K. G.
Liverpool.

Sir,—"Benedict" draws some very unreasonable comparisons with walking couples, etc., and apparently has not heard of the fellowship of the open road. Neither does he realise that circumstances alter things, and that I advocated "tucking in" *within reason*.

If a sidecarring couple must not be approached, even for the briefest interval, I suggest that they exhibit a special sign. Possibly the London Safety First Council would oblige with an appropriate design. I certainly agree that it *is* very rude of a stranger to thrust his nose down the neck of B.'s wife, but think that the easiest solution would be for "Benedict" to have a sidecar of usual design, and remove his wife from the grave dangers to which she is now exposed. That this gentleman can be in ignorance of the proximity of a "banger-on" is a mystery. Surely his passenger instantly warns him—even to ensure personal comfort only.

The loose insinuations that "these people" have nothing but abuse in response to polite requests are indicative of prejudice, and the statements regarding speed and forces of resistance, sheer ignorance. Has "Benedict" ever heard of that considerable item—Tractive Resistance?

In conclusion, may I suggest that to remove his wife from the contact of a mere cyclist's nose "Benedict" should speed up for a short distance and save his temper and "tear" gas.

JAMES R. THORPE.

Sir,—As an ex-cycle speedman, and a present motorist who drives Lancia and Crossley cars and a solo motor cycle, it gives me great pleasure to endorse the remarks of Mr. A. C. Godfrey and Mr. James R. Thorpe.

For years I have practically lived my life on the road we all treasure so highly, and did not drop the furious pedalling part of it until a cartilage caused me to motor all the time.

However, I might say that the ease and extra speed derived from pace-following, which, I hold, troubles the motorist, whatever he be, not a jot, is a great boon to the cyclist, to whom wind-resistance remains always the great obstacle.

More camaraderie on the road between classes would be for the mutual benefit of all road lovers.

Burnley. UBIQUE.

WIRELESS FOR MOTOR CYCLISTS.

Sir,—"A.J.'s" suggestion in your issue of September 28th for a sidecar passenger to converse with the driver by means of wireless when travelling, is interesting, but is he serious? Why bother with a wireless set, with its delicate crystal or valve, in addition to—as "A.J." suggests—a dynamo to supply the current? Why not an ordinary telephone set and two dry cells?

Does "A.J." realise that the noise he mentions which prevents the passenger from hearing the driver would also be collected by the transmitters and served up into the receivers in a concentrated form?

Has "A.J." realised also that wireless telephony under present practice necessitates an earth return, and that when cyclists are travelling, and would wish to converse by this means, they would be insulated electrically from earth except on a very wet road?

I think the practically noiseless machine will come along before wireless telephony for cyclists when travelling is a practical proposition.

A. P.
Darlington.

SUMMARY OF CORRESPONDENCE.

In reply to "Trusty Triumph's" letter, which invited verification by local readers, on 40,000 miles without decarbonisation, "H.D." (Iron Acton) asks, among other things, if the extra special spirit that gives his engine such staying power is supplied by the Cross Hands or the White Hart.

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Issued in conjunction with *The Motor Cycle*.

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The standard handbook of the motor cycle.
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Obtainable by post (remittance with order) from ILIFFE & SONS Ltd., Dorset House, Tudor Street, London, E.C.4, or of leading Booksellers and Railway Bookstalls.

CURRENT CHAT

Time to Light Lamps

Oct.	12th	5.43 p.m.
„	14th	5.39 „
„	16th	5.35 „
„	18th	5.31 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Pointers to Parking Places.

Owing to the large number of prosecutions for obstruction, the Teignmouth magistrates have asked the Urban Council to put notices on the sea-front acquainting motorists of parking places in the neighbourhood.

Standard Specification for Motor Spirit.

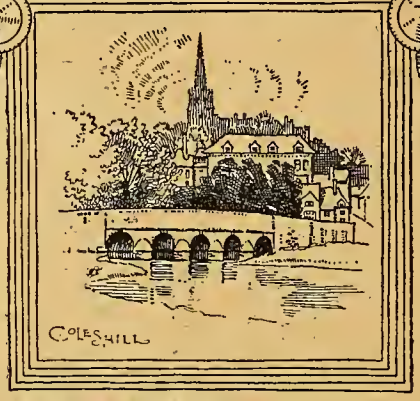
At the instance of the A.A. and M.U., the British Engineering Standards Association has taken up the subject of standard purchasing specifications for motor spirit, and a representative committee has been appointed.

99 m.p.h. Belgian Record.

Rossi, the Motosacoche rider who made such a splendid performance in the Monte Bré hill climb, broke the 500 c.c. flying km. record in the Belgian speed trials at 145.160 km.p.h. (90.7 m.p.h.), also making the fastest time of the day.

The Missing Sidecar Wheel.

The mystery of the disappearance of a sidecar wheel, when the spindle broke on the Gloucester-Bristol road, reported in our columns of last week, has been solved. After being advertised for locally for nearly a week after its loss, it was reported in the possession of a farm hand, who found it, the next morning, three fields away from the road, at a point approximately level with the spot at which it left the outfit. It appears to have bounded across country in a curving track, and it is remarkable that it should have passed the first field, which had wheat standing in stooks.



A Floating Mobile Garage.

A well-known Belgian yachtsman has had built a hundred-foot motor yacht which embodies a garage for his motor cycle and sidecar.

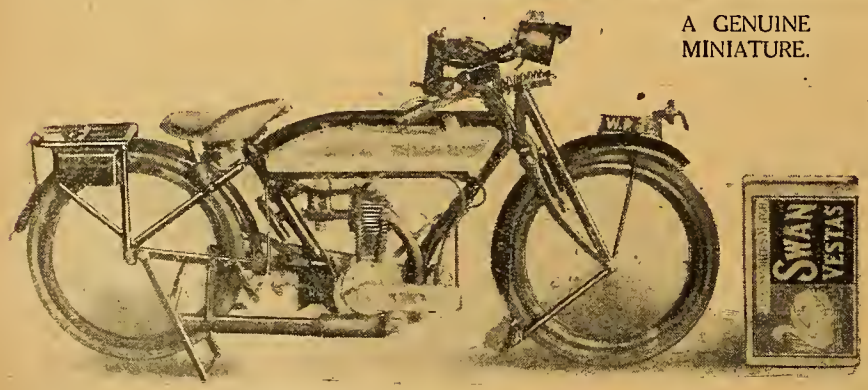
SMALL CAR PROGRESS'ON

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.



A GENUINE MINIATURE.

DECEPTIVE. Were it not for the box of matches photographed alongside, the picture of this clever little one-seventh scale model would pass for one of the full-size Triumph which it represents. The model is the work of Mr. W. G. Pepperell, of Salisbury.

Special Features

THE PARIS SALON.
INTO THE HEART OF AUSTRALIA.

Distinguished A.C.U. Life Member.

Mr. George Bernard Shaw is a life member of the A.C.U., which he first joined in 1912 as the owner of a Lea-Francis motor cycle.

An Elusive Rattle.

An elusive and annoying rattle which manifested itself on a new machine was traced to an extremely small item of equipment—the catch designed to hold down the handle of the Best and Lloyd pump.

Final Brooklands Meeting.

October 21st, will see the last Brooklands meeting of the year, when, as is customary, the various championships will be decided. Incidentally, the car world borrowed this idea, at the recent Essex Club event. Since all the championships are scratch races, a good day's sport should be assured; the programme is a long one, commencing at 11 a.m.

Furious Calculation.

Pulled up by a policeman in Gosforth, Newcastle-on-Tyne, a reader was informed that he had covered 200 yards in 17 seconds, which worked out at 27.5 m.p.h. Let us hope the accuracy of the timing was not on a par with the mathematics of the man in blue.

Variations in Petrol Prices.

Revisions of petrol prices in England are not accompanied by strictly proportionate reductions for other parts of the British Isles. In Scotland 1d., in the Isle of Man 2½d., in Ireland 3½d., in the Channel Isles (excluding Guernsey) 4½d., and in Guernsey 5½d. must be added to the new prices ruling in England, which of course are 2s. per gallon for No. 1 grade and 2s. 4d. for Aviation.

Topical Discussions at I.A.E. Meetings.

Four meetings of the Institute of Automobile Engineers are being held during October, and at two of them, at the Railway Hotel, Coventry, on the 24th, at 7.30 p.m., and at the Assembly Room, Education Offices, Salford, Manchester, on the 18th, at 7.30 p.m., a paper entitled "The Light Car and the Motor Cycle and Sidecar Compared" will be read by Mr. W. H. Hingston.

An Ulster Grand Prix.

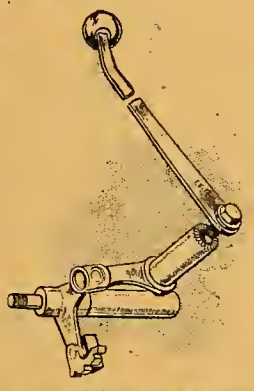
There will be a big motor cycle road race in Ulster on Saturday the 14th inst. Called the Ulster Grand Prix, it will be fully open to English and Scottish riders, of whom it is hoped many will participate. Permission has been obtained to close the roads on a very suitable twenty-one mile circuit, starting and finishing near Antrim, which will be covered seven times, 147 miles in all.

GEAR BOX WEIGHING 14½ lbs.

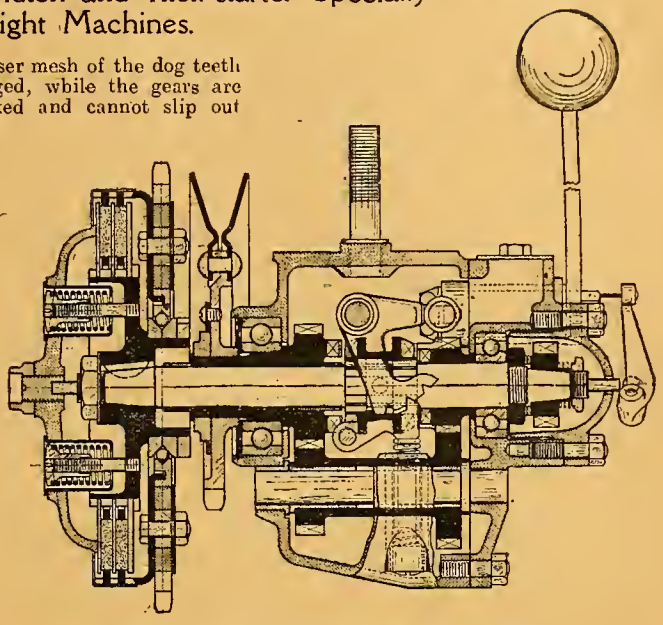
New Two-speed Burman Gear with Clutch and Kick-starter Specially Designed for Lightweight Machines.

ONE of the most popular gear boxes now on the market is the Burman three-speed, which is best known in two sizes—for heavy sidecars and for the lighter 500 c.c. machines. In view of the popularity of small machines it has now been decided to market a two-speed gear with clutch and kick-starter suitable for 350 c.c. two-strokes or 250 c.c. four-strokes.

External view of the new two-speed box.



Details of the striking mechanism which makes use of a universal joint.



Section of the box, showing the gear locating quadrant and spring loaded pawl.

This little box, complete with all controls weighs no more than 14½ lb., and is beautifully constructed in all its details. The main shaft runs on ball bearings throughout, with a very long plain spigot bearing, while the lay-shaft is stationary, the two lay-shaft wheels rotating on plain bushes.

Both ratios are engaged by means of dog clutches, the dogs, which slide on splines, being unusual in that they are slightly tapered instead of being undercut. This feature facilitates changing and permits a closer mesh of the dog teeth when fully engaged, while the gears are permanently locked and cannot slip out of engagement owing to a special Burman internal locking quadrant. The change speed lever is attached to a shaft engaging through a universal joint with a bell crank forming a tooth quadrant at its lower end; this quadrant is located by a spring controlled pawl and carries close to its lower end a steel block engaging with the recess in the dog member.

Kick-starter and clutch details.

A separate pair of wheels is used for the kick-starter, and some slight modifications in the attachment of the kick-starter pedal to the spindle have been carried out. As might be expected, the Burman system of rectangular cork clutch plates has been retained; there are two friction plates and three pressers, the whole being forced together by a series of light coil springs. Rubber shock absorbers are introduced into the mounting of the driven primary sprocket on to the clutch plate.

The box may be obtained for either final chain or belt drive and the detail work throughout is both excellent and practical. A large filler hole in a convenient position is provided for lubricant; and the gear lever is serrated like its shaft so that it may be set at any angle to suit the rider.

SUCCESSFUL WORKS TRIAL.

SPORTING events organised by motor firms are rapidly gaining popularity throughout the country, and it is not surprising that a reliability trial, held on September 28th by the Cambridge firm of Herbert Robinson, Ltd., aroused much interest in the district.

The organisers intended that the trial should be a test of reliability, but should form, in addition, a pleasant social run for the firm's employees and their friends, and in this they succeeded admirably. The course chosen was a comparatively easy one, sixty-three miles in length, which had to be covered at the usual schedule of 20 m.p.h., but without the aid of speedometers; two fairly stiff observed hills were included.

Prizes were won by motor cycle competitors as follows:—

Second prize: B. Haines (Douglas), 15 marks lost.

Fourth prize: O. Clark (Humber sc.), 17 marks lost.

LOSS TO SPORT IN SOUTH WALES.

COMPETITION circles in South Wales were heavily hit last week, writes Dr. A. Lindsay, well-known rider and A.C.U. Consul. Two accidents, a fatal aeroplane crash at Swansea, and a crash in the Aberdare M.C.C. speed trials at Penderyn, have lost the district its leading two big-twin experts.

P. F. Bush, the victim of the aeroplane accident, was a very capable Harley-Davidson rider, and won the 50 mile race at Pendine on Whit Monday comfortably. He was an extremely good rider, and handled his big machine like a two-stroke lightweight. Personally we had many tussles—the score was about evens, I think. He was a thorough sportsman, and certainly will be missed very much.

Another big-twin expert.

Handel Davies, S. Wales's Brough Superior exponent, met with a very serious crash at Penderyn. Travelling at about 80 m.p.h. his machine left the road at a corner, and hit a nearby heap of road metal.

Davies sustained two fractured arms and a fractured thigh, apart from other minor injuries, and lies in a critical condition in Aberdare General Hospital. I am afraid that his competition days are finished. An expert rider, rather prone to recklessness, his absence from competitions would be felt in S. Wales.

DERBY TRACK READY NEXT YEAR.

Concreting Operations Started. Further Details of the Layout and Accommodation. Not Intended to Compete with Brooklands.

SOONER than most people expected, England will have a saucer racing track comparable in every way with the American type of "speed-drome."

As already exclusively announced in *The Motor Cycle*, a combined motor cycle track and sports ground has been laid out at Derby, and the work has progressed so well that it is now hoped to have it ready for racing next season. Concreting has commenced.

Mr. C. A. Clews, the Chief Engineer to the Derby Council, has retained the services of Professor Low as consultant, and the work is being carried out under his direct supervision.

The track is approximately three laps to the mile, and will be constructed to be safe at 80 m.p.h., having progressive banking, so that the ordinary amateur can take his machine round and gradually increase speed with perfect safety. Arrangements for distributing news and proper stands will be fitted up. The banking will be specially designed for motor cycles, and the switch banking leading from the straights to the two ends will fall gradually towards the centre in order not to obstruct the view of the spectators. On one side will be a terrace capable of accommodating an enormous crowd. The centre will be used as a football ground and the immediate outside as a running track.

Theoretically Correct Banking.

As far as possible the banking has been arranged so that, even with four-wheeled vehicles, high speeds can be attained with reasonable safety. The surface will be of properly reinforced concrete.

The transition bankings are being built in such a manner that a vehicle, on entering the curve, will not tend to leave the ground or skid, the curves being "corrected" in both directions. There will be an almost vertical wall forming part of the edge of the banking.

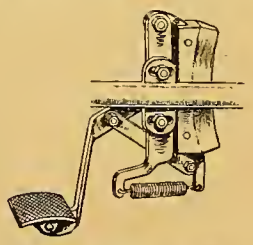
The great disadvantage of finishing down a straight or round a loop, which is experienced at Brooklands, will be entirely avoided. However, the Derby track is in no way competing with the Weybridge one, but is intended as a thoroughly sporting race course, and as such it should certainly fill a very important place in the world of motor cycle sport.

PRACTICAL ASSEMBLED LIGHTWEIGHT.

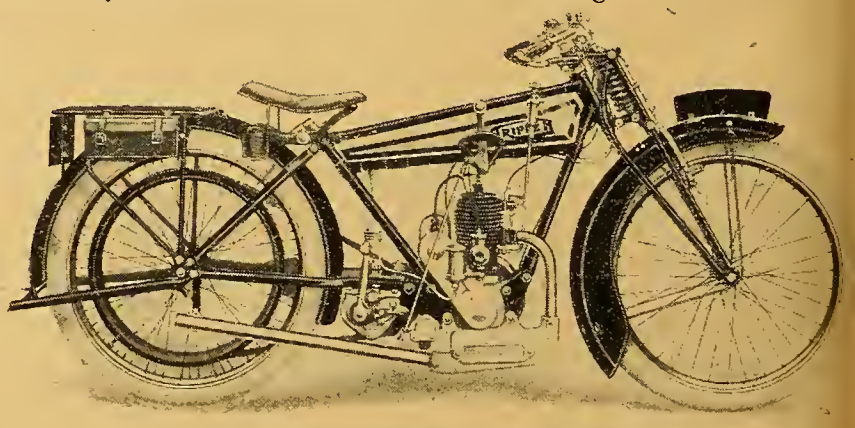
Moderately Priced Triple-H Two-Stroke with Morris Engine.

THOSE who require a thoroughly well turned out medium-weight machine at a strictly moderate price will be interested in the Triple-H productions, which are manufactured by Hobbis Bros. & Horrell, of West Heath, Northfield, Birmingham.

The specification of this machine includes a Morris two-stroke engine of 67×70 mm. (247 c.c.) and a Moss two-speed gear with clutch and kick-starter; transmission is by chain and belt and every detail is practically designed. The magneto is carried well behind the cylinder, where it is clear of mud and water; sensible mudguard sizes are employed; Maplestone front forks are fitted, and the rear brake is a particularly ingenious piece of work; it is constructed of strip steel, a large friction shoe working on the inside of the belt rim, and is operated by a direct heel pedal, eliminating the necessity for a long rod.



Simple direct acting rear brake.



Semi-sporting model, but fitted with a sensibly large silencer.

Another feature of the Triple-H motor cycles is the large aluminium silencer which lies below and to one side of the engine. This silencer has a detachable side plate through which it can be cleaned and which may be fitted with baffle plates if desired. The final tail pipe extends to the rear spindle. The tyres fitted are 26×2¼in. Avons. A sloping top tube gives the machine a neat appearance, and complete with aluminium footrests, tool bags, clutch and kick-starter, it is priced at £45 3s.

It may be recalled that a special feature of the Morris engine, which has proved very satisfactory in use, is the unusual system of lubrication; oil is fed direct to the piston through the side of the cylinder, passes round suitable grooves in the piston and thus reaches the hollow gudgeon pin. Surplus oil is then led to the main bronze crankshaft bushes.

GAILLON HILL-CLIMB.

BY reason of weather conditions and the road surface, the pace was not particularly fast at this year's Gaillon hill-climb, held on Sunday morning of last week. The fastest time of the day was made by Franconi on a 500 c.c. Motosacoche, who covered the flying kilometre in 28 4-5sec., thus beating two Peugeots, the much-feared Pullin's Douglas, and Bartlett's A.B.C.

Pullin Wins 350 c.c. Class.

C. G. Pullin did his best work in the 350 c.c. class, for here he took his Douglas up the hill in 32 4-5sec., winning easily over his rival Meunier on Alcyon.

The results were as follows :—

250 c.c. SOLO.—1, G. Jolly (Alcyon), 45⅗s.; 2, M. Jolly (Armor), 50⅗s.

350 c.c. SOLO.—1, C. G. Pullin (Douglas), 32⅘s.; 2, Meunier (Alcyon), 36⅕s.

500 c.c. SOLO.—1, Franconi (Motosacoche), 28⅘s.; 2, Péan (Peugeot), 31⅖s.

750 c.c. SOLO.—1, Péan (Peugeot), 30⅗s.; 2, Franconi (Motosacoche), 32s.

1,000 c.c. SOLO.—1, Duverne (Harley-Davidson), 31⅕s.; 2, Vulliamy (Harley-Davidson), 32⅕s.

Motor Cycles at the Paris Salon

Motor Assisted Bicycles the Vogue. Miniature Motor Cycles. Few Medium and High Powered Machines. British, American, Belgian and Swiss Motor Cycles also Represented.

IF all the French motor cycles exhibited at the Paris show were on exhibition in an English city, there is no doubt that a large number of our readers would make a point of inspecting them, if only for the reason that British motor cyclists are keenly interested in all kinds of machines propelled by mechanical means. It is because we appreciate this that we annually visit the Paris Salon in order to place on record, for the benefit of our readers, an impression of the progress made by and the trend of the French motor cycle industry.

Not so Representative as in 1921.

Many years ago the motor cycle industry in France promised to equal our own, but those days passed, and motor cycles were in a moribund state until after the Great War, when, owing to the success of the motor cycle in the Services, the industry received an impetus which led one to believe that a great revival was on the horizon. Last year's Salon appeared to confirm this, but one is not so sure after examination of the 1922 exhibits. For instance, fewer manufacturers are represented, there are less really practical motor cycles and very few sidecar outfits.

It is impossible to say whether public interest has increased or decreased since last year, for the reason that in 1921 the exhibits were in the Grand Palais along with the magnificent automobile display, and it was impossible to discriminate between the merely curious and the potential motor cycle buyers. This year the motor cycles, together with the cycle cars and fire-engines, omnibuses and tip-waggons, were sent across the Seine to a group of temporary buildings in the shadow of Les Invalides, wherein lie the mortal remains of Napoleon Bonaparte and his generals.

Whether this separation is to the good of the motor cycle exhibitors is a moot point; some of them think that it is, but we consider that the importance of this section of the automotive industry is minimised in the eyes of the general public.

Motorised Bicycles the Vogue.

As has already been mentioned in *The Motor Cycle*, the motorised bicycle is at present the most popular type of motor cycle with the French manufacturers. Nearly every exhibitor displays a specimen in one form or another, ranging from pedal cycles, of standard design, fitted with auxiliary engines to machines which are slightly reduced editions of the orthodox motor bicycle.

It appears that the French industry is making a bid to draw into the petrol vehicle field buyers who have not hitherto been partial to the motor cycle.

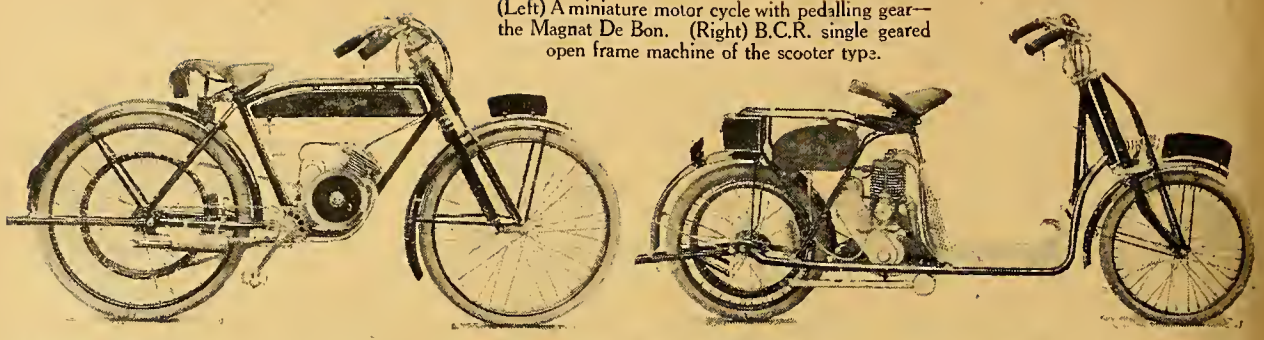
Apparently it is not expected that these cyclists, after having enjoyed the advantages of an engine, will develop into motor cyclists proper. There are many million cyclists in France and it would seem that the French motor cycle industry will be content to provide auxiliary powered bicycles for them. Therefore the makers have produced machines of the type which this section of the community *thinks* it requires, at the danger of losing their custom, rather than endeavouring to teach the pedal cyclist that (1) an ordinary bicycle is not quite suitable for the extra stresses, on account of the higher speeds attained and (2) that discomfort is bound to accrue with ordinary cycle tyres.

Three Types of Miniatures.

A few of the French designers have realised this and have embodied spring forks, others have produced miniatures of the conventional type, but, on the whole,

THE MOTOR CYCLE SALON. This year the motor cycles, together with the pedal cycles and cycle cars, are accommodated in a group of temporary buildings just across the Seine from the Grand Palais where the Automobile Salon is held.

(Left) A miniature motor cycle with pedalling gear—the Magnat De Bon. (Right) B.C.R. single geared open frame machine of the scooter type.



the French idea is a motor propelled pedal cycle rather than a true lightweight motor cycle as proportionate to the 250 c.c. type as the latter is to the 350 c.c. machine.

Thus, taken generally, the French motor cycle industry is producing three types of machines for a new market, which is considered to be immense :—

(1) Auxiliary engines for existing pedal cycles.
(2) Re-designed pedal cycles fitted with miniature engines.
(3) Miniatures of conventional motor cycles.

Taking each of these types separately we may group them as below :—

Auxiliary Engine Attachments.

CYCLOTRACTOR. — 50×55 mm., two-stroke, driving front wheel by friction pulley in contact with tyre.

MICROMOTEUR.—46×38 mm., two-stroke, driving front wheel by friction pulley in contact with tyre.

SICAM.—50×55 mm., two-stroke, driving by belt a separate countershaft from which the drive is usually taken to the back wheel by chain. Expanding pulley used as a variable gear and clutch.

VELOTOURISTE.—60×40 mm., two-stroke unit designed to fit under bottom bracket of a pedal cycle. The crankshaft is at right angles to a countershaft, from which the final drive is taken.

LUTETIA.—50×55 mm., two-stroke, embodying reduction gear. For fitting directly over the rear wheel, which it drives by chain.

HUNTER.—55×48 mm., two-stroke, embodying a reduction gear in a case integral with crank case.

LA CYCLETTE.—51×45 mm., two-stroke, embodying a countershaft and clutch.

VELO MOTO.—A unit, on the lines of the original Motosacoche, made to fit complete with tank into the diamond frame of a pedal cycle. It embodies the Sicam engine.

ANZANI.—60×40 mm., four-stroke, M.O S.V.S valves, mechanical lubrication, gear reduction by spur wheels.

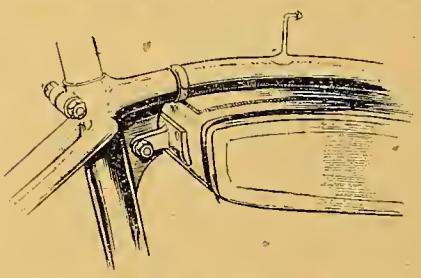
WONDER.—Flat twin, two-stroke, gear drive to bicycle bottom bracket axle.

EXSHAW.—50×50 mm., two-stroke, on the carrier driving rear wheel by belt.

These little engines are splendidly made and finished, and more than one enthusiast no doubt would like a specimen to place in his drawing-room cabinet. Apart from this they do not interest the man who is already a motor cyclist, although they are attracting considerable attention on the part of the non-motoring public.

Motorised Bicycles.

It is on examining the many examples of bicycles built specially to take small engine units that one realises that a large



Webbed lugs are used on the Louis-Clement motorised bicycle.

number of the people making them are cycle manufacturers pure and simple. Lack of experience is written too plainly on many of the machines by the manner in which the adaptations have been carried out. For example, on one motorised bicycle it had evidently been found that the driving chain fouled a projection on the engine, and in order to raise the chain a diminutive jockey sprocket is fitted. Again, where there is belt drive, almost flat leather straps are used instead of the type long proved to be the most satisfactory, *i.e.*, the 28° rubber belt. On some no effort has been made to lessen front wheel shocks by fitting spring forks, while the flimsiest of stirrup brakes are relied upon for safety and small cycle saddles for comfort.

To Attract the Lady Cyclist.

In the majority the workmanship and finish are of the best, and to the uninitiated, probably, they will make a strong appeal. Ladies who hitherto have eschewed the motor cycle are attracted by their apparent simplicity and the manner in which engine and transmission are guarded, but whether these miniatures will, by introducing their riders to the more substantial types, prove of lasting value to the motor cycling industry is somewhat doubtful. So much depends on the individuals riding them. If moderate speeds are adhered to, then they might be useful recruiting agents to the motor cycle world proper. On the other hand, if maximum speeds are indulged in, the road vibration from the small tyres—and perhaps the engines also—will cause motor cycles to be condemned *untried* as uncomfortable. Very many of these machines are now being offered to the bicycling public, but not all of them are exhibited at the Salon. Those shown are :—

ARMOR.—La Cyclette engine, light pivoted spring fork, final belt drive, 26×1¾in. tyres.

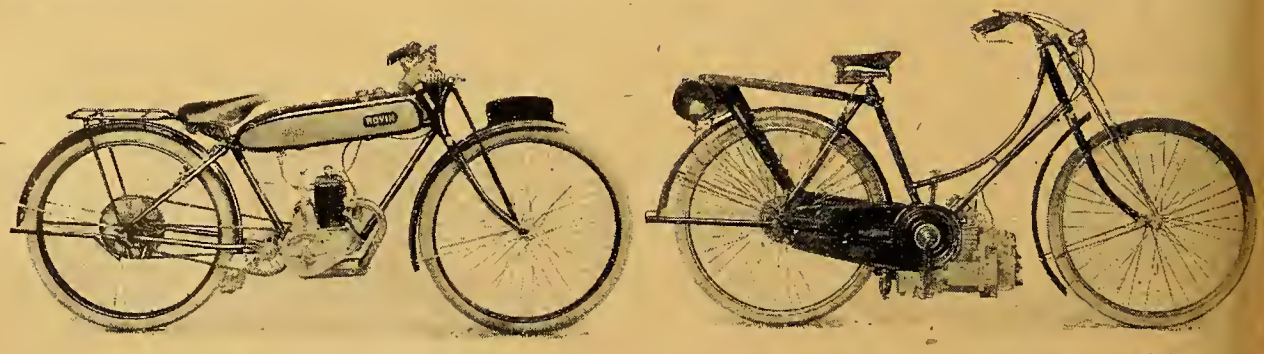
ALCYON.—A pedal cycle with a slightly elongated frame to accommodate small two-stroke engine forward of the pedalling gear. All-chain drive, light pivoted spring fork, 26×1¾in. tyres.

LA CYCLETTE.—La Cyclette unit. Gentleman's model: ordinary cycle frame with spring forks, final drive by belt. Lady's model: frame designed to take unit. A third model more on motor cycle lines with curved top tube, extra tank rail.

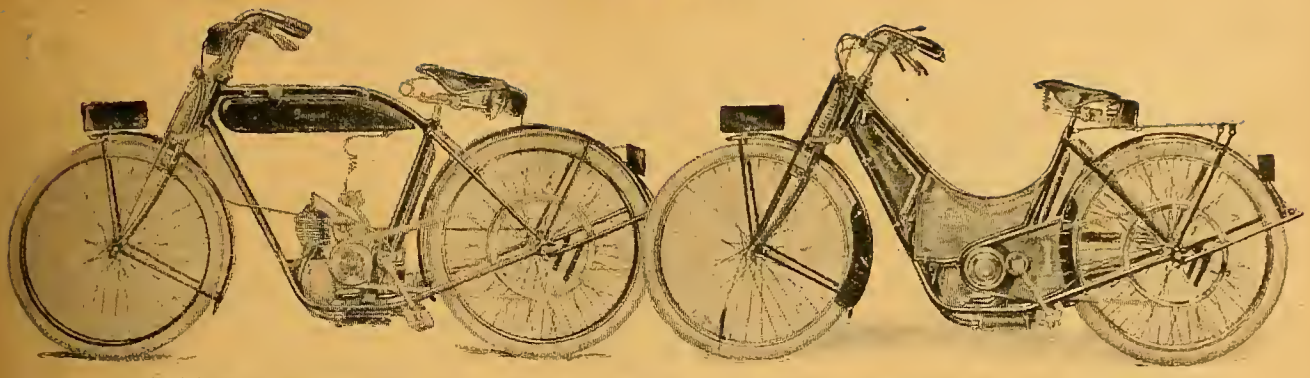
GRIFFON.—Following the general lines of a motor cycle, with sloping top tubes, spring forks, but has pedalling gear and 26×1¾in. tyres, Sicam engine unit.

P.S.—Similar to the Griffon, but with a Train engine unit, clutch and chain-drive. Linked spring fork with vertical laminated spring. Neat lady's model also shown.

LABOR.—Practically a duplicate of the Armor.



The Rovin miniature with two-speed gear, clutch, and all-chain drive. A Mototouriste lady's bicycle fitted with spring forks.



Reminiscent of the Swift design of 20 years ago, the Peugeot has a small engine gear unit set across the frame.

PEUGEOT.—An excellent production. 52×52 mm., two-stroke engine, set across the frame between duplex tubes, worm reduction gear, final drive by belt, spring forks, pedal cycle brakes, 26×1¾in tyres.

LELOIR.—In spite of its pedalling gear more like a conventional motor cycle than the majority. 55×52 mm. Train two-stroke unit with clutch. Final drive by belt. 26×1¾in. tyres. Triumph type spring fork, pedal cycle brakes.

MOTOTOURISTE.—An ordinary bicycle frame fitted with a spring fork. Velotouriste proprietary engine unit. Chain transmission. 26×1¾in. tyres.

THOMANN.—La Cyclette unit, final belt drive, spring forks, 26×1¾in. tyres.

MONET-GOYON.—An elongated bicycle with power unit between rear wheel and bottom bracket. Four-stroke engine, with automatic inlet.

LOUIS CLEMENT.—On bicycle lines but having webbed lugs to the frame. A miniature two-stroke engine drives a countershaft by chain, final drive by belt. Spring forks of the link type with laminated springs.

MAGNAT DE BON.—A neat little machine, with spring forks, curved top tube, two-stroke engine, all-belt drive, 26×1¾in. tyres.

SPADA.—An open frame miniature, resembling the Skootamota, but with its power unit immediately in front of the rear wheel. This is a side-by-side twin two-stroke, embodying reduction gear and driving small rear wheel by chain. The cylinder dimensions are 44×49 mm.

B.C.R.—A single-speed open frame miniature, on the lines of the Reynolds Runabout, 20×2in. tyres.

LA FRANCAISE DIAMANT.—Probably the neatest machine of its type in the Salon. Frame embodies welded tank. Two-stroke engine with integral reduction gear, final drive by enclosed chain, 1 to 1 ratio. A lady's model on similar lines is also shown.

PROPUL CYCLE.—Reminiscent of the early J.E.S. motorised bicycles. Small 4-stroke engine, rather high in the frame. Chain drive to countershaft (below the bottom bracket), containing clutch, motor cycle type brakes, final belt drive, 26×1¾in. tyres.

MOTOSOLO BABY.—Inclined top tube to frame, spring forks with laminated spring across the top of handle-bars, two-stroke engine, driving its magneto from mainshaft. Primary drive by friction wheel on countershaft engaging similar wheel on engine-shaft, final drive by chain, 26×1¾in. tyres.

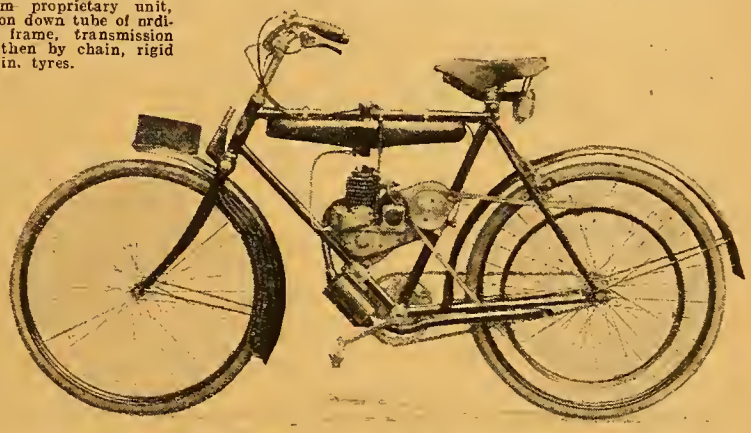
O. PAPIZE.—A Diamant under another name.

GOLIATH.—Two-stroke, horizontally arranged over the rear wheel, driving by chain a countershaft, on which is a friction wheel engaging with the edge of the wheel rim.

COLUMBIA.—Train engine unit with clutch, chain drive, spring forks, 26×1¾in. tyres.

D.F.R.—Train engine unit.

SICAM.—Sicam proprietary unit, countershaft on down tube of ordinary bicycle frame, transmission by belt and then by chain, rigid forks, 26×1¾in. tyres.



A popular type in France—the Labor, which embodies a pedal cycle frame and is fitted with a light spring fork.

AUTO MOTO.—Two-stroke with reduction gear in front of engine, belt drive, motor cycle brakes, 26×1¾in. tyres.

Miniature Motor Cycles.

Rather than the merely re-designed pedal cycle, we think the ultimate type of machine "for the million" will be on motor cycle lines, but lighter and smaller than existing 250 c.c. machines. At the present time there are very few of this class on the market. We are glad, therefore, to see that a few French makers have recognised the possibilities of this step between the motorised bicycle and the present 250 c.c. motor cycle.

The examples of this type of miniature motor cycle at the Salon are :—

ROVIN.—Except for its pedalling gear, a reduced edition of a conventional motor cycle, with sloping top tube, small two-stroke engine, two-speed and clutch, 24×2½in. tyres.

LELOIR.—A flat twin four-stroke engine of 175 c.c., with Albion two-speed gear and clutch, spring forks, chain drive, 650×50 mm. tyres.

MONET-GOYON.—125 c.c. Villiers engine, sloping top tube, 600×50 mm. tyres, 2-speed and clutch, chain and belt transmission, link type spring fork.

Lightweight Motor Cycles.

While many manufacturers have abandoned the orthodox motor cycle in favour of the motorised bicycle, there is a good sprinkling of genuine lightweight motor cycles, but in most cases very little change has been made since the last Salon. Although several makers produce their own engines, proprietary units are largely used.

Of orthodox motor cycles, the 250 c.c. and 350 c.c. types are the most popular in France. The following examples are exhibited :—

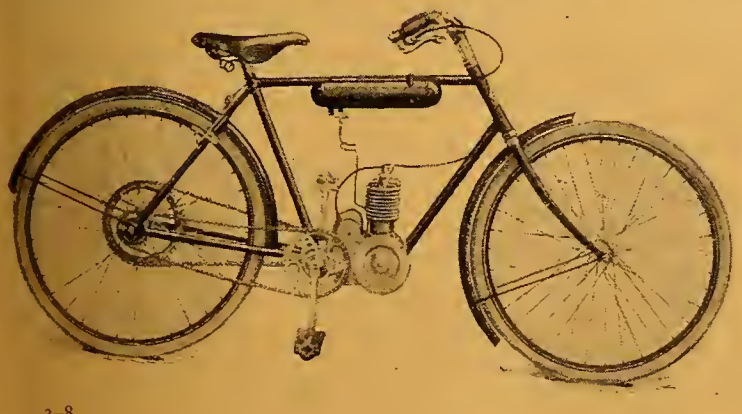
SUPPLEXA-JAP.—On conventional British lines, with sloping top tube and embodying English components, such as Jap engine and Albion gear box, 26×3in. tyres.

MAGNAT DE BON.—Inclined two-stroke, loop frame, 24×2½in. tyres.

SOYER.—An excellent production made by a firm seriously interested in motor cycles. It is reminiscent of the American Cleveland so far as general outlines are concerned, but follows British practice in the lay-out of the power and gear units. 250 c.c., two-stroke. Chain-belt transmission. 650×55 mm. tyres.

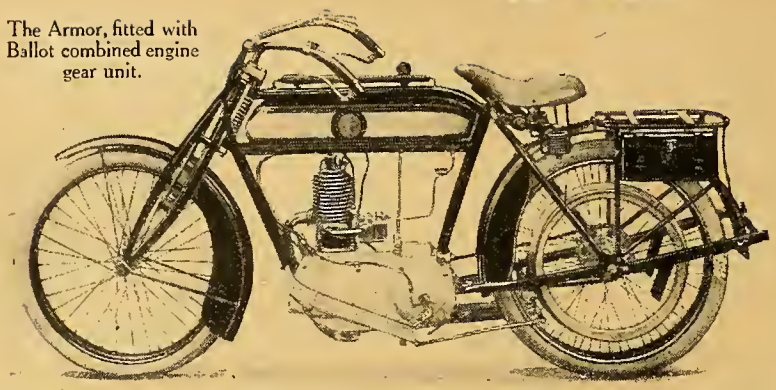
MOTO SOLO.—Loop frame. 250 c.c., two-stroke engine. Druid type forks.

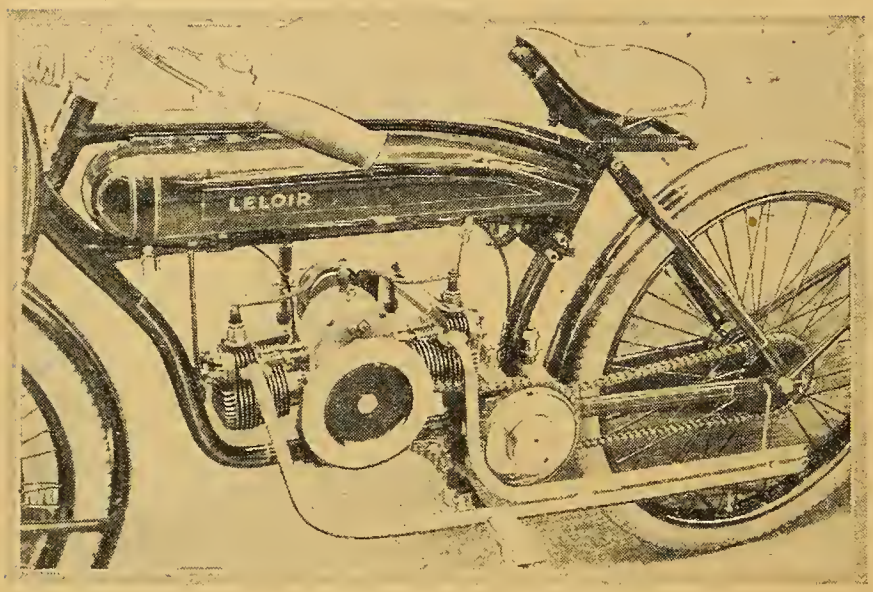
ULTIMA.—On similar lines to Moto Solo and many others; sloping two-stroke engine.



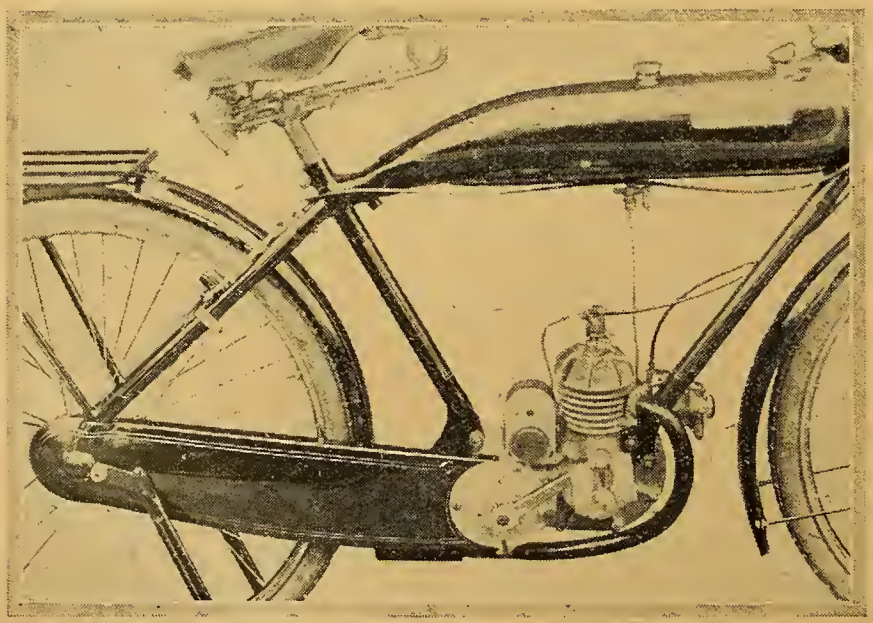
The Alcyon ultra lightweight, fitted with a two-stroke of 98 c.c. It has chain drive, but no spring forks.

The Armor, fitted with Ballot combined engine gear unit.





A 175 c.c. flat twin—the Leloir.



The Diamant, which embodies a welded tank as part of the frame.

TERROT.—One of the best known lightweights, similar to the Moto Solo, Ultima, Peugeot, etc.

YVELS.—A Villiers-engined machine on British lines. Druid forks. 26×2½ tyres.

D.F.R.—A good range of two-stroke and four-stroke machines, the latter with an o.h.v. Blackburne engine and all-chain drive, through an Albion gear box.

PEUGEOT.—A proprietary two-stroke engine. Two-speed gear. Curved top tube.

ALCYON.—A good-looking machine with Ballot combined engine-gear unit.

ARMOUR.—As Alcyon.

LABOR.—As Alcyon and Armour.

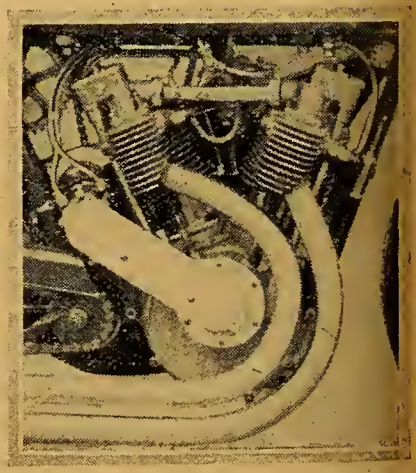
BASTIDE.—A machine built round an o.h.v. Blackburne engine.

B.C.R.—Conventional type of 250 c.c. lightweight, with 650×65 mm. tyres.

Both Brakes on Rear Wheel.

There is nothing of particular interest in connection with the machines mentioned above. All are of average design and construction, excepting that in the majority of designs both brakes operate on the rear wheel. Sometimes these are side by side, at others inside and outside the belt drum, or, a third method, with both shoes engaging the V of the drum, one above and the other below the stay. Taken generally, the engines are well made and finished, being perhaps more "clean" than the average British machine. Against this, however, many mudguards are not of good quality, and a few of the tanks are very indifferently finished.

One motor cycle in this group—the Bastide—calls for special mention, as an example of how not to build a frame around an engine unit. Apparently the makers decided at the last moment to stage a model embodying the o.h.v. Blackburne engine, perhaps on account of the success of the D.F.R.-Blackburne at the Bois de Boulogne speed trials. A standard frame obviously did not leave room for the rather tall Blackburne, so to accommodate it the lower tank tube was bent upwards to clear the o.h. valve gear. This was not sufficient, however, to render the cylinder head accessible, hence it was necessary to take this distorted tube by a circuitous route. By the time this was achieved there was no room for the tank beneath the sloping top tube, and so it finally found a resting place on the top of the tube. The result is something startling, to say the least.



The latest 993 c.c. M.A.G. engine has enlarged fins on the valve pockets.

The Gnome-Rhone follows English practice throughout and embodies a 499 c.c. engine with outside flywheel.

Medium Power Singles.

As most manufacturers are focussing their attention upon the motorised bicycle, it is perhaps natural to expect that the medium-size single would be neglected. Very few machines of the types approximating to the Triumph, B.S.A., Sunbeam, etc., are exhibited, but those that are on show are produced by firms which take the motor cycle industry seriously rather than make it merely a side line in some other business.

In this class the French makes represented are:—

GNOME-RHONE.—A four-stroke of 499 c.c. with outside flywheel, closely following British lines. Produced entirely by its makers.

GRIFFON.—A rather large but handsome machine with an Anzani engine. Spring frame, using laminated springs, and Sturmey-Archer gear.

MAGNAT DE BON.—A 500 c.c. four-stroke with overhead valves. The engine is inclined in the frame.

GILLET.—A large two-stroke with gear unit in front of power unit.

French Twin Motor Cycles.

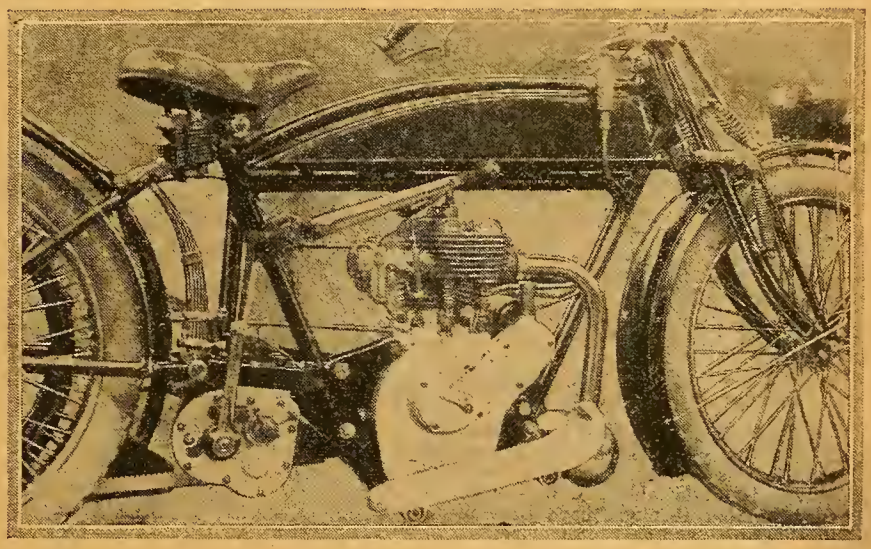
The twin-cylinder engine seems to be falling into disfavour in France if the number of exhibits is to be taken as any criterion. Perhaps, however, the makers consider foreign competition too strong. The only examples of French multi-cylinder machines of the types used for sidecars in the Salon are given below, but the Alcyon Co.'s catalogue quotes prices for such a model, although it is not staged.

RENE GILLET.—A conventional type of sidecar machine, very heavily constructed, with 3 speeds, all-chain drive, 26×3in. tyres, Brooks' cantilever saddle, spring sidecar wheel.

A.B.C.—The French-produced model of the well-known British design.

ORIAL.—An M.A.G.-engined mount at one time sold in this country as the G.L. A nicely-made machine with all-chain transmission and rounded pressed steel tank.

LUTECE.—Vertical twin engine gear unit combined. Shaft transmission, spring frame, electric lighting and starting.

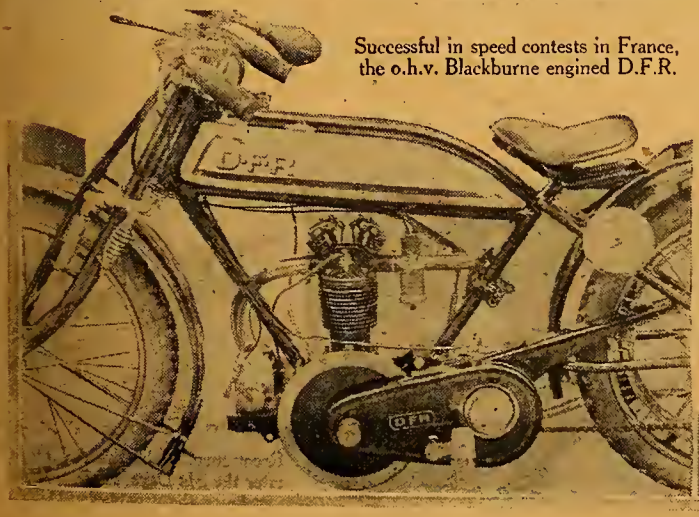


An Anzani engine and a Sturmey-Archer gear are the chief units of this spring-frame Griffon.

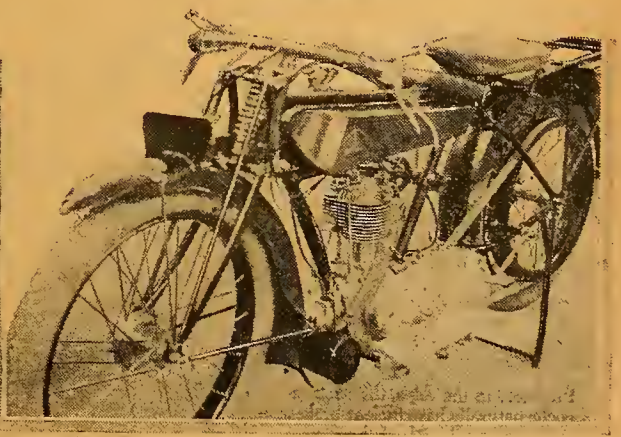
French Sidecars.

So few are the sidecars at the Salon that they are almost overlooked. Last year there were many very excellent productions, such as only a French coach-builder could build, but this year, with one exception, there is nothing which would attract attention at Olympia. The exception is a Lutece boat-built body.

Successful in speed contests in France, the o.h.v. Blackburne engined D.F.R.



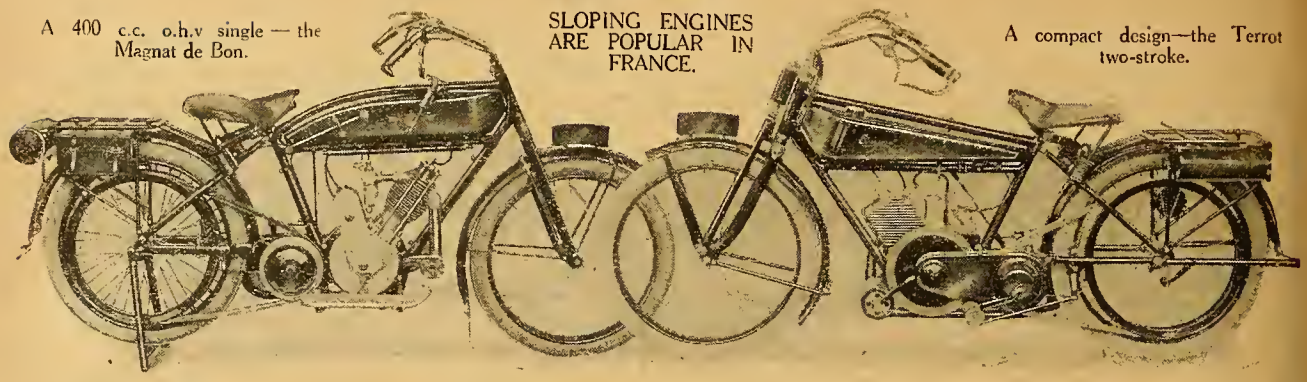
A J.A.P. engined lightweight following British practice, the Supplexa.

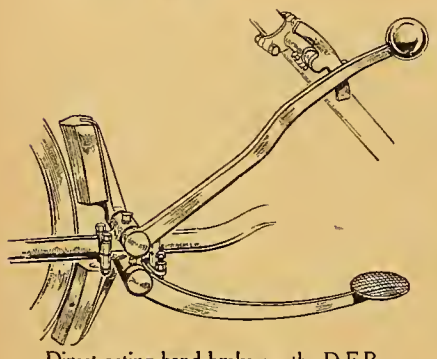


SLOPING ENGINES ARE POPULAR IN FRANCE.

A 400 c.c. o.h.v single — the Magnat de Bon.

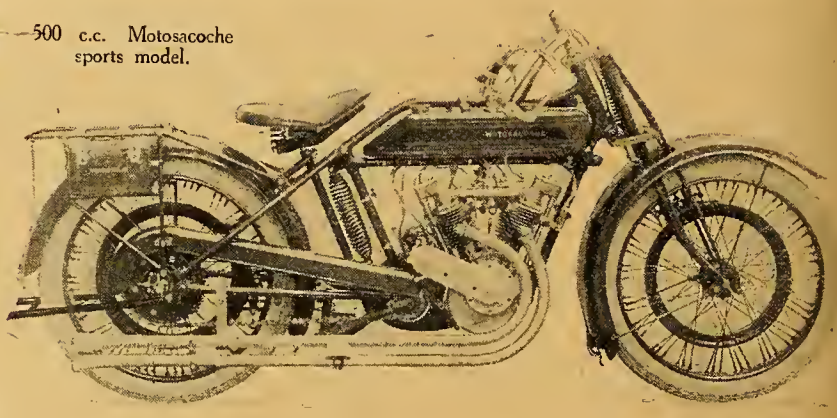
A compact design—the Terrot two-stroke.





Direct acting hand brake on the D.F.R.

500 c.c. Motosacoche sports model.

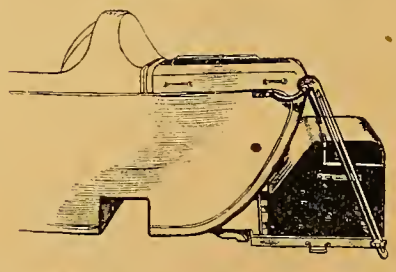


Of the others, the Ceel is an all-metal body of the type better known in America than in this country, and although probably it is comfortable and well made, it suggests that it might have been made in a foot-bath and dust-bin factory.

The Vannod has a torpedo body of stream-lined contour, while the Garnier, easily the best from the English point of view, is not so splendidly finished as it was last year.

British Motor Cycles.

Although not quite so many British machines are represented as last year, there is a good sprinkling of well-known productions. The tariff and rate of exchange render the prices of imported machines almost prohibitive; in fact, there are French small cars on the market at a lower price than several of the British motor cycles. Nevertheless, motor cycles produced in this country are appreciated in France, and always attract the attention of the visitor to the salon.

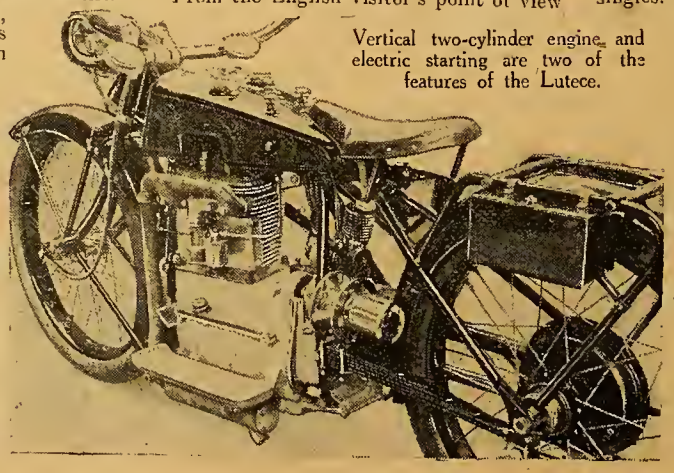


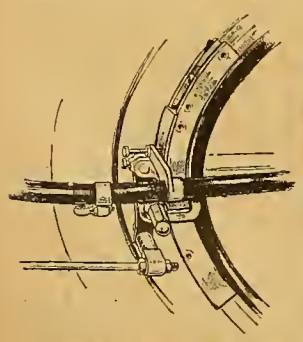
Metal luggage case on the grid of the Garnier sidecar.

From the English visitor's point of view probably the most interesting machine is the new o.h.v. Norton, which will also be on view at Olympia next month. It is a very substantial mount with the centre of gravity kept as low as possible. In order to accommodate the slightly higher engine, the lower tank tube is curved and disappears from sight into a recess in the tank. The overhead valve mechanism is supported on bronze columns in the cylinder head, and a finned nut is used to fix the exhaust pipe. A separate oil pump is located behind the seat tube, which carries the oil tank.

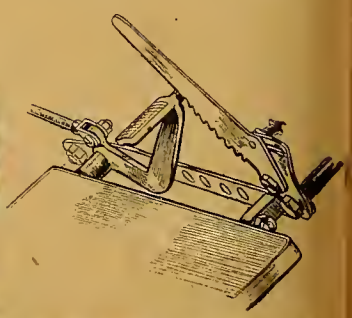
Another new model is the 350 c.c. B.S.A., an all-chain driven and slightly reduced replica of the well-known B.S.A. singles. The New Hudson agents also show, among the complete range of their motor cycles, one of the new 350 c.c. New

Vertical two-cylinder engine and electric starting are two of the features of the Lutece.





Produced in the Alps, the Motosacoche naturally has efficient brakes. Observe the length of the shoe



Recommended by the A.C.U. judges after the Six Days Trials. A ratchet brake on the new Harley-Davidson.

Motor Cycles at the Paris Salon.—

Hudsons, a very taking machine which will be more fully described in a subsequent issue.

Improvements in detail are also to be found in the Douglas, always a popular machine in France. The larger model now has quickly detachable wheels, a shock absorber in the rear wheel, and double exhaust box below the engine. Larger collars to the overhead valves are also fitted, and the cylinder head bolts have been continued to the base of the cylinders

The latest Cedos models, recently described in *The Motor Cycle*, are among the best finished machines in the show.

Scotts are exhibited by the makers' depot. The full Triumph range, too, is on view; and other British makes represented are:—

Aston-Atlas miniature. Cotton.
Kenilworth miniature. Velocette.
Skootamota. New Imperial.
Ner-a-Car.

Apart from the Scott and the Douglas the British twin is not represented, excepting in the Morgan, which, produced in France, is exhibited fitted with a J.A.P. engine.

American Motor Cycles.

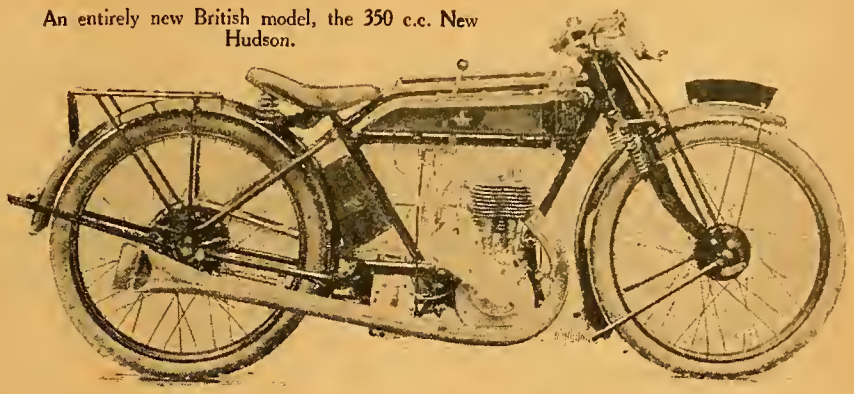
The fact that no British big twin side-car outfits are exhibited would, at first sight, suggest that there is a very limited demand for this type of machine, yet three of the best known American machines are staged, *i.e.*, the Indian (Scout, Powerplus, and Chief), Harley-Davidson (flat twin and big twins), and Henderson four-cylinder. The Cleveland lightweight is also shown by M. Picaud, who at one time was well known as the Clyno agent. M. Picaud informed us that he had sold 300 of these lightweights during the present year; they are very popular on account of their 26 x 3in. tyres.

The Briggs-Stratton Auto-wheel is also exhibited attached to various types of machines, including a weird cycle-car. The Evans motorised bicycle is also prominent.

Other Countries Represented.

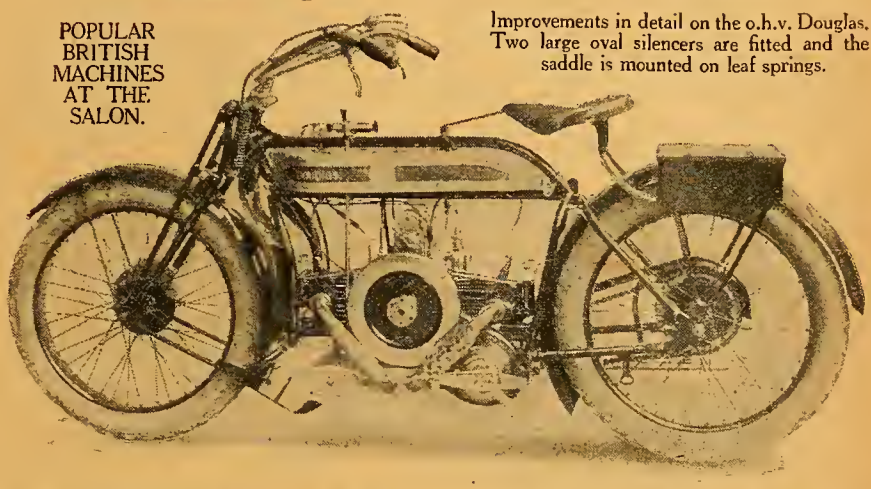
One feature of the Salon, compared with Olympia, is its international character. In addition to the French, British, and American motor cycles mentioned above, there are representatives of Belgium Switzerland, and Italy in the F.N., Motosacoche, and the Bianchi respectively.

An entirely new British model, the 350 c.c. New Hudson.

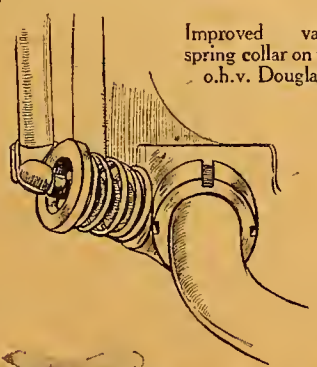


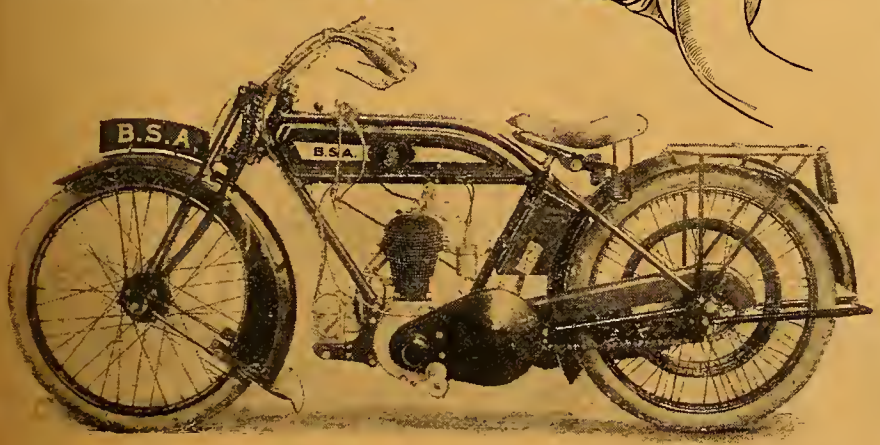
POPULAR BRITISH MACHINES AT THE SALON.

Improvements in detail on the o.h.v. Douglas. Two large oval silencers are fitted and the saddle is mounted on leaf springs.



Improved valve spring collar on the o.h.v. Douglas.





A 350 c.c. B.S.A., a machine that is sure to be popular with the many admirers of this make.

The F.N. is of course quite familiar in this country, and Motosacoche is associated with M.A.G. engines. The Bianchi motor cycle is not so well known, but deserves to be. It is a big single with combined gear unit, but otherwise follows British lines. The Motosacoche employs an Enfield type gear, but has three speeds in which each gear ratio has its own clutch; this is one of the improvements for 1923. Another improvement is the enlargement of the fins on the cylinder of the 993 c.c. M.A.G. engine.

Accessories.

One does not go to the Paris show to study motor cycle accessories, but a look round is always instructive. Naturally Great Britain holds as great a lead over other countries in the accessories as in complete motor cycles. Nevertheless there is always something to learn.

Carburetters, for instance, unless of English make, are the products of such leading firms as Claudel, Zenith, and Longuemare, which have been two decades in the industry, and while they may cost rather more than our own, they aim at full automaticity. Claudel has produced a new model with the diffuser jet in an inclined position.

The Zenith motor cycle carburetter is not normally used in England, but is found on the A.B.C. and others, while Longuemare has produced a two-lever pattern for the first time.

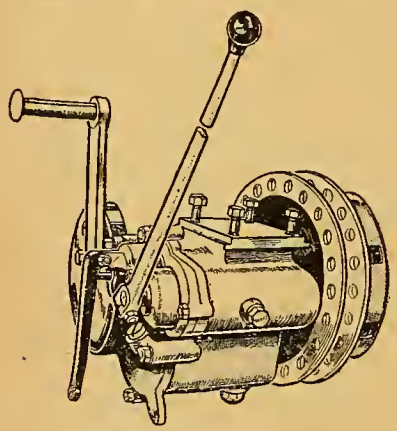
This year has shown a slight, but still marked improvement in motor cycle odd-

Motor Cycles at the Paris Salon.—

ments, and whereas last year only one motor cycle headlamp was discovered, this year we found several, and one by the famous firm of Ducellier, which was quite up to expectations.

A most ingenious idea is carried out in the Cicca generator (made at 41, Rue Charles-Lafitte, Neuilly s/Seine). The water needle valve is not only controllable by a screw in the ordinary way, but when open can be pushed up and down against a spring. This allows the valve to be cleared without dismounting it, and permits of an easy regulation of the gas delivery. Dupont et Traizet, 3, Rue Tesson, Paris, sell quite a good lamp set with a horizontal type generator.

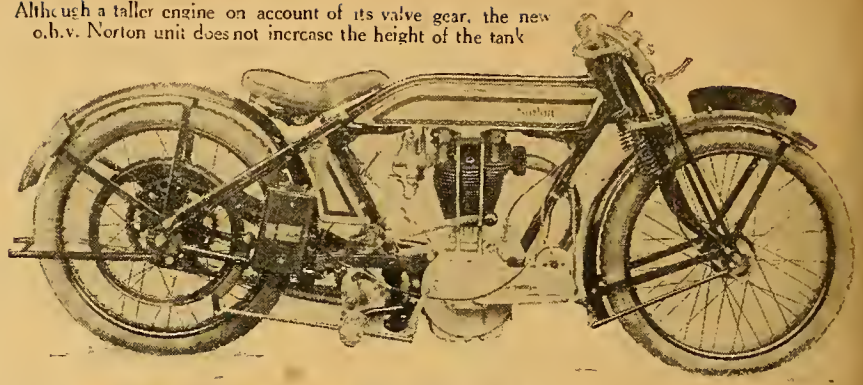
As in other Continental countries, the vendors of dissolved acetylene are more enterprising than our own, for they deal in cylinders in a greater variety of sizes. The Société Anonyme l'Acétyl, 19, Rue Brunel, Paris, sells cylinders for motor

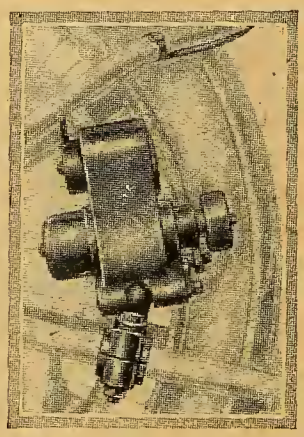


The Gnome-Rhone gear box—like the rest of this capable machine—closely follows British lines. Gear operation is by a long direct acting lever.

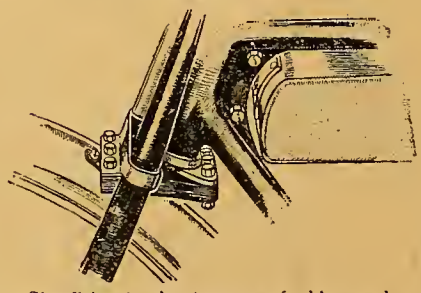
cycles of quite reasonable dimensions and weight, equipped with a simple form of gauge, the dial of which comprises no figures, but merely shows by means of a red hand if the cylinder is full or empty. One lamp set sold by the Société des Appareils Magondeaux, 212, Boulevard

Although a taller engine on account of its valve gear, the new o.h.v. Norton unit does not increase the height of the tank

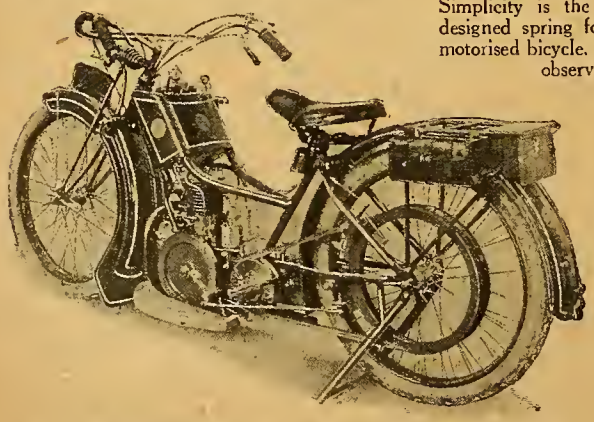




Mounting of the Lucifer dynamo which is friction-driven off the rear tyre.



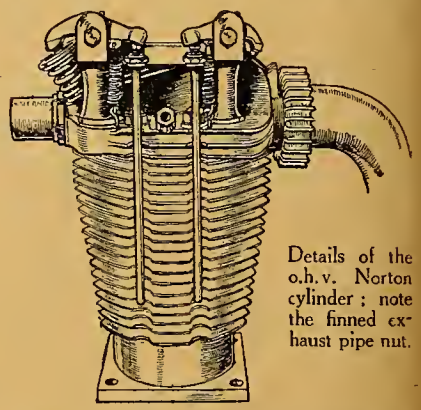
Simplicity is the keynote of this neatly designed spring fork on the Louis Clement motorised bicycle. The head lug, it will be observed, is webbed.



The only fully developed lady's motor cycle in the Salon—the Soyer, which has a tank integral with the duplex frame.

Pereire, Paris, has a bracket specially constructed to take a gas cylinder.

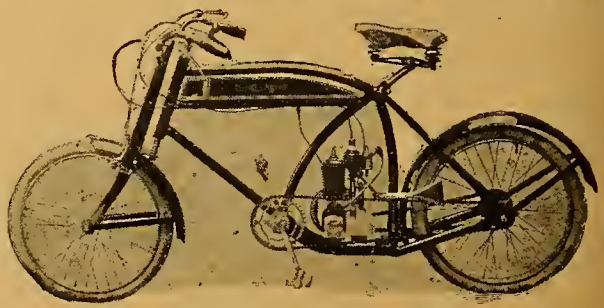
There is only one dynamo lighting set which is really up to British standards, and that is the production of Lavalette, an old-established French electrical firm. The set is well made and finished, and the dynamo is of small dimensions; it is demonstrated on a Harley-Davidson. We saw, however, several examples of the



Details of the o.h.v. Norton cylinder; note the finned exhaust pipe nut.

smaller electrical outfits friction-driven off the tyre. At present these sets have not been popular in England, but it is worthy of mention that one of the most famous Continental ignition specialists has placed an outfit of this type on the market.

Quite a good specimen is the Lucifer—La Societé An. des Magnétor Lucifer—which hails from Carouge, near Geneva, the dynamo of which generates a continuous current capable of charging a 4 volt 10 amp. accumulator. On the accumulator box the switches are neatly



Scooter or motorised bicycle? The Monet-Goyon, which has a miniature four-stroke engine and chain drive.

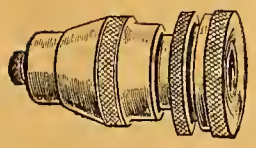
Motor Cycles at the Paris Salon.—

carried, while the excellently made headlamp has a small auxiliary bulb for use in towns. Much thought has been expended on the generator which is of the permanent magnet type, enclosed in an aluminium case which is water- and dust-tight, while ball bearings are employed, and a cut-out is provided to prevent the current returning from the accumulator to the generator at low speeds or when the machine is at rest. Owing to the ingeniously designed bracket which has a universal joint the dynamo or generator may be driven off either front or rear tyre or by means of a belt off any conveniently accessible shaft. As a safeguard against theft a lock switch is incorporated in the distribution box. Provision is made for an inspection lamp, the connection to which is on the fuse box.

Section of the Le Johest silencer.

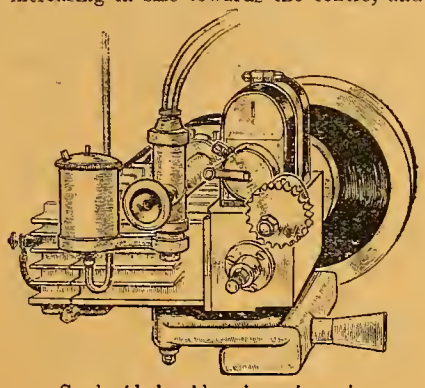
Another example of the above system is the Alternacycle, which has been seen in England, but in this set an alternating current is produced, and no dry battery is supplied for keeping the lamps lighted when the machine is at a standstill, though it would not be difficult to fit one.

Holding down bolts on the new Douglas.



The Immediat push-on-inflator connection.

In view of the compulsory silencing of motor cycles in England a few words on the Johest silencer (E. Morlé, 37, Boulevard Richard-Lenoir, Paris) will not be out of place. The outer casing is composed of two inverted cones welded together, while inside is a spiral gradually increasing in size towards the centre, and then diminishing to the same extent, with a hole drilled throughout the whole of its length. It is claimed that the exhaust gases meet with no obstruction, that a turbulence is set up which actually creates a suction, with the result that not only extra silence but greater efficiency is obtained.

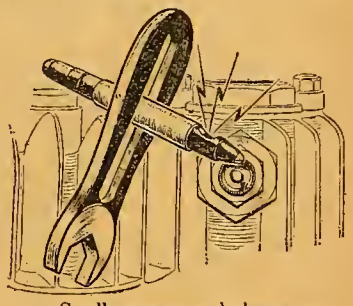


Spada side-by-side twin engine unit.

Mention must be made of the excellent American cloth inner tube protector sold by J. Drapier et Cie, 5, Rue de Montmorency, Paris. The tube is rolled round the handle-bar and the cover is clipped over it. It is quite a good idea and is moderate in price.

A unique hand torch, the S.A.M., the illuminant of which is dissolved acetylene.

Naturally English accessories were represented by various concessionnaires, Amac and Brown and Barlow carburetters, the products of North and Sons, S. Smith and Sons, and Tan-Sad specialities were to be seen at the Salon and in the Invalides Annexe.

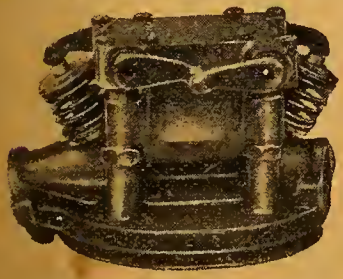


Sarello spanner and plug tester.

WELL-LUBRICATED OVERHEAD GEAR.

MODIFICATIONS of the cylinder head tending towards external cleanliness, will be made in the "oil-cooled" 350 c.c. Bradshaw engine for next year.

The valve rockers, which have an extensive bearing area, are lubricated by a wick permanently dipped in an oil bath at the foot of the rocker box.



Cylinder head assembled showing oil-bath rocker box.

Details of the head. From left to right: the actual head, illustrating the large diameter of the valves; the rocker box with wick-fed rocker bearings, and the same item assembled.

Basing their claim on experiments, the makers say that the valve gear will look after itself for many thousands of miles without attention.

Two other good points are noticeable in the 1923 head. The valves themselves are of particularly large diameter, and the rocker arms are so arranged that the push rods are perpendicular. Angularity of thrust is thus avoided.

James Walmsley and Co. (Preston), Ltd., Marathon Engineering Works, Frank Street, Preston, is the address of the makers.

WIDE RANGE OF SPRING FRAME MACHINES.

ALTHOUGH a very wide range of P.V. machines will be marketed next year there has been no radical change in the design of this old-established spring frame motor cycle.

1923 plans are best described by enumerating the various engines used:—247 c.c. and 343 c.c. Villiers; 349 B. and S.; 293 c.c. and 349 c.c. single-cylinder and 500 c.c. and 678 c.c. twin-cylinder J.A.P.s. Both the twins are of the sports type and provide an excellent combination of liveliness with comfort.

The makers are P.V. Motor Cycles, Ltd., Perry Vale, Forest Hill, S.E.23.

ECLIPSE OF THE 500 c.c. SINGLE.

Successes by 662 c.c. Twin and 349 c.c. Single at South Midland Centre Kop Hill-climb.

D. F. C. Fitzgerald (490 Norton sidecar) breaking the tape which operated the signalling arm on the left.

IN spite of a wintry wind that swept the bleak face of Kop Hill, a goodly crowd of spectators watched the postponed South Midland Centre climb there on Saturday.

It was a homely little event, especially the timing arrangements, but would have been quite interesting had not the majority of the onlookers omitted to bring field glasses, or, alternatively, had the figures on the scoring board been twice as large. The timekeeper had located himself on a far-away knoll, whence he could see the starting and finishing lines, and the Heath Robinsonian string-operated signal arms thereon.

The timing could not have been accurate to the tenths of seconds employed, but probably the error factor was constant.

In the 350 c.c. and 500 c.c. solo classes G. L. Werts (349 Curtis-B. and S.) had things all his own way, but in the 750 c.c. and two unlimited solo classes competition was much keener. Nevertheless H. H. Saddington surprised everybody by extracting a little more speed out of his 662 c.c. James on each ascent, winning his first class easily, tieing with E. J. Cross (989 Harley-Davidson) in the second, and beating Baragwanath (Matchless) in the third. Star performance, however, in the last-mentioned event, for which entries were received on the hill, was made by the third man, E. A. Marshall (499 Matchless-M.A.G.), who only lost second place by $\frac{1}{10}$s. Furthermore, Marshall, whose machine is seven years old, by clocking 30.9 seconds in an inter-club contest, made second fastest time of the day.

De Lissa's M.A.G. was hard pressed by Baragwanath's Matchless in the "any condition" sidecar class, but won both that and the ordinary 1,000 c.c. event. Baragwanath got his own back by making fastest sidecar time of the day by two seconds in the inter-club contest, which much to his disgust was not officially recognised.

The 500 c.c. single did not shine.

By the close margin of 11 to 10 the North-West London M.C.C. beat the North London M.C.C. in the twice postponed annual inter-club contest. On the other hand, the Luton and South Beds. A.C. won the club contest in the hill-climb proper, scoring 55 points against Oxford's 27 and North London's 15.

Results:

250 c.c. SOLO.—1, E. C. Gordon (248 New Imperial), 52.2s.

350 c.c. SOLO.—1, G. L. Werts (349 Curtis-B. and S.), 36.7s.; 2, E. C. Gordon (248 New Imperial), 41.0s.

500 c.c. SOLO.—1, G. L. Werts (349 Curtis-B. and S.), 34.4s.; 2, T. W. Harris (490 Norton), 38.6s.; 3, O. G. H. Dunham (490 Norton).

750 c.c. SOLO.—1, H. H. Saddington (662 James), 31.2s.; 2, R. F. Overbury (744 Zenith), 35.0s.; 3, C. G. H. Dunham (490 Norton), 38.1s.

UNLIMITED SOLO.—1, H. H. Saddington (662 James) and E. J. Cross (989 Harley-Davidson) tied, 31.5s.; 3, E. W. Finch (976 Zenith), 32.9s.

UNLIMITED SOLO (ANY TYPE; ENTRIES ACCEPTED ON HILL).—1, H. H. Saddington (662 James), 30.4s.; 2, E. C. Baragwanath (996 Matchless), 31.3s.; 3, E. A. Marshall (499 Matchless-M.A.G.), 31.4s.

600 c.c. SIDECARS.—1, R. Newitt (494 Douglas sc.), 45.3s.; 2, E. C. Gordon (499 Triumph sc.), 53.4s.; 3, G. Slade (490 Norton sc.), 56.1s.

1,000 c.c. SIDECARS.—1, O. de Lissa (993 M.A.G. sc.), 36s.; 2, L. Avery (989 Harley-Davidson sc.), 38.2s.; 3, E. A. Bridgman (998 Indian sc.), 42s.

500-600 c.c. SOLO.—1, J. W. Gibson (550 Triumph), 43.7s.; 2, H. Flitt (550 Triumph), 53.5s.

UNLIMITED SIDECARS (ENTRIES ACCEPTED ON HILL).—1, O. de Lissa (993 M.A.O. sc.), 35.0s.; 2, E. C. Baragwanath (996 Matchless sc.), 35.5s.; 3, L. Avery (989 Harley-Davidson sc.), 38.8s.

"THE MOTOR CYCLE" REDUCED TO 3d.

We are pleased to announce that as and from the next issue (October 19th) the price of "The Motor Cycle" will be 3d. weekly.

The quality of the reading matter and the exclusive news service of the paper will be unaffected by this reduction in price; indeed our aim will be to maintain the high standard we have set, and which is appreciated by over 120,000 regular readers.

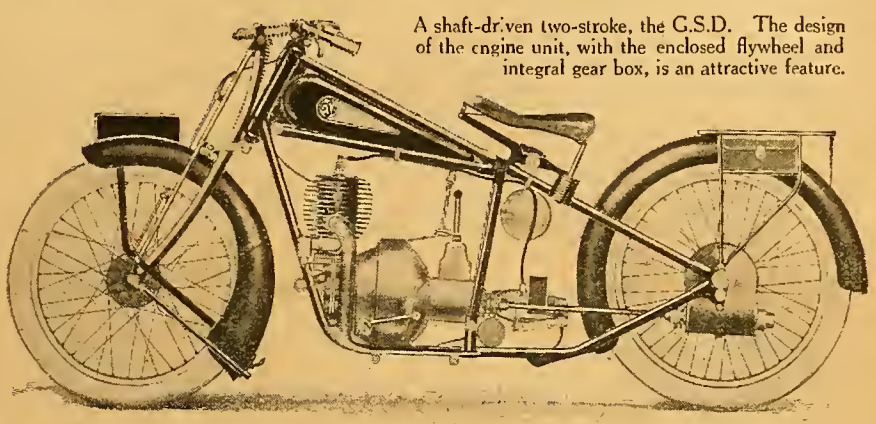
ILIFFE & SONS LTD.

A BRITISH SHAFT DRIVEN MOTOR CYCLE.

Enclosed Worm Transmission and Four Speeds; Transverse Engine Mounting.

MANY motor cyclists are constantly grumbling that the selection of shaft-driven machines is extremely limited. These and many others will be interested in the new G.S.D., which will make its first appearance at the forthcoming Olympia Show.

The machine has many unusual features, notably that it employs a four-speed gear box, duplex frame, shaft drive, and is capable of being fitted with engines varying from 350 to 1,000 c.c. h.p., with very slight modifications.



A shaft-driven two-stroke, the G.S.D. The design of the engine unit, with the enclosed flywheel and integral gear box, is an attractive feature.

Single Two-Stroke and Big Twin.

The two models which will be shown at Olympia will be engined with the White and Poppe 350 c.c. two-stroke and the 976 c.c. side-by-side valve twin Jap.

In each case the crankshaft will lie parallel with the centre line of the machine, the drive passing through a large diameter cork insert clutch to the primary gear shaft. From the four gears pressed on to this shaft the drive is transmitted to the secondary shaft, all the speeds being indirect. It is sometimes argued that an indirect top gear provides lower efficiency than the direct type, and yet it must be remembered that a single reduction for the lower gears is more efficient than a double reduction, and here the indirect box scores.

Transmission Lay out.

Both shafts are mounted on ball bearings, and the primary shaft is hollow, while through the centre of it runs a light shaft, attached to the flywheel, driving the magneto, which is placed directly behind the gear box.

From the above it will be gathered that the engine, clutch, gear box, and magneto are mounted as a single unit, the final drive passing from the secondary gear shaft to an underslung worm below the rear spindle by means of a shaft fitted with a Hardy flexible joint at each end.

An important point is that both worm and worm wheel are enclosed in a single housing, which is separate from the frame and cannot be distorted by frame stresses. In addition, arrangements have been made whereby the rear wheel, complete with worm gear, can be very readily detached. It is necessary only to slack off the spindle nuts, one torque nut, and the brake connection, to slide the wheel completely out of place. If, however, a tube is to be removed for inspection, a distance piece may be detached by unscrewing one spindle only, leaving room for the tube to be entirely removed without further disturbing the unit.

Internal expanding brakes are fitted front and rear; the front wheel being mounted in Brampton forks, while whatever size of engine is employed 26 in. × 3 in. tyres will be fitted.

The frame itself is duplex everywhere except for the top tube, which is single. The main tank carries fuel only, oil being contained in the forward portion of the clutch housing, and mechanical lubrication is employed.

Mudguarding and Weatherproofing.

All details are carefully carried out; the saddle is adjustable for position; a short stand is pivoted just in front of the rear wheel; 5-inch D section mudguards are fitted, and the aluminium footboards are adjustable for angle. From these footboards rise long curved leg shields passing up above the top tube, and the engine unit may be isolated from the rider by detachable panels corresponding to the bonnet of a car.

It is hoped that the machine will be sold at a price of £85, with an increase in price according to the size of engine used.

The producer of the machine is Mr. Grant, 15, St. Paul's Road, Foleshill, Coventry.

DOUGLAS AND HARLEY RECORDS.

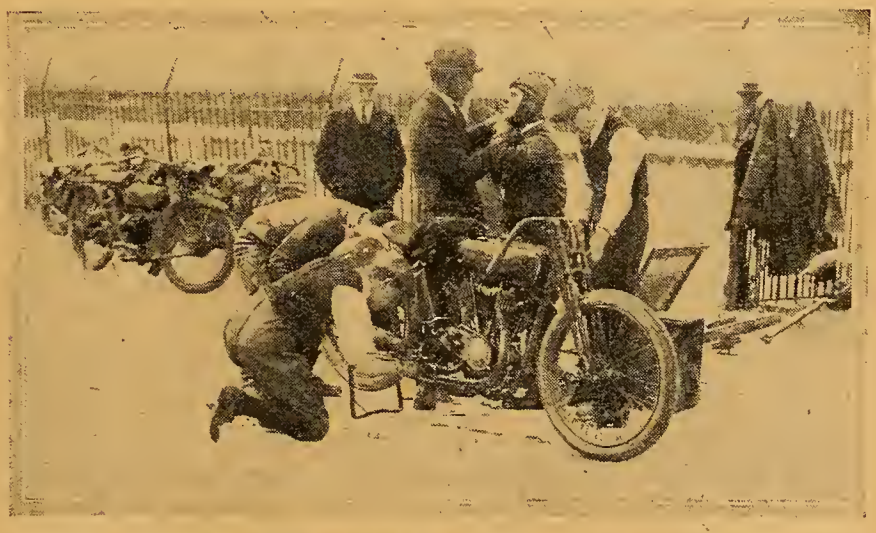
ON October 2nd the famous rider, J. L. Emerson (494 Douglas), succeeded in breaking two 500 c.c. records. In 3 hours he covered 194 miles 1,394 yards, an average speed of 64.93 m.p.h.; and, carrying on, gained the 200 miles record in 3 hours 4 min. 28.15 sec., at a speed of 65.05 m.p.h.

On Wednesday of last week C. F. Temple and F. Allchin gained an important series of Class E (1,000 c.c. solo) records on a 998 c.c. Harley-Davidson.

Time.	Distance.	Speed.	Km.p.h.
2 hours.	163 miles 606 yds.	81.67 m.p.h.	(131.43)
3 hours.	228 miles 708 yds.	76.13 m.p.h.	(122.51)
4 hours.	307 miles 361 yds.	76.80 m.p.h.	(123.59)
5 hours.	385 miles 1712 yds.	77.19 m.p.h.	(124.22)
6 hours.	444 miles 849 yds.	74.08 m.p.h.	(119.22)

Distance.	Time.	Speed.	Km.p.h.
200 miles.	2 h. 30 m. 32.30 s.	79.71 m.p.h.	(128.28)
300 miles.	3 h. 53 m. 3.22 s.	77.23 m.p.h.	(124.28)
400 miles.	5 h. 10 m. 41.22 s.	77.24 m.p.h.	(124.34)

The last two hours were run in heavy rain, which caused a certain amount of ignition trouble and seriously inconvenienced the drivers.

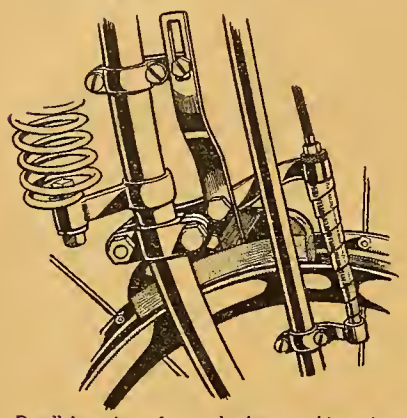


T. R. Allchin and his Harley-Davidson being prepared to continue the successful record attempt achieved in conjunction with C. F. Temple.

NEXT YEAR'S HUMBER MODELS.

Improvements in Mudguarding and Braking. Sporting Model Practically Unaltered.

VERY few modifications will be found in the 1923 Humber. The flat twin engine of 75×78 mm. bore and stroke remains unchanged, but there are a few details of some importance which have been modified. The front fork is now considerably wider so as to allow the fitting of a 6in. "D" section guard without valances.



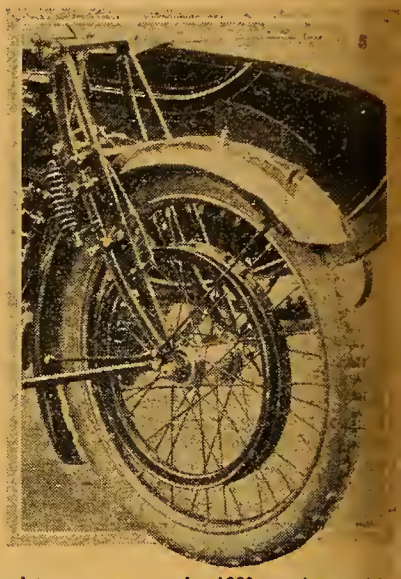
Parallel action front brake working in a dummy belt rim.

A similar guard is fitted over the rear wheel, the hinged portion behind the carrier being retained so as to render the wheel easily accessible. The front wheel is now fitted with a dummy belt rim brake, the shoe of which has a parallel action; the movement is very easily obtained by means of a tail-piece and slotted guide. The brake is applied by the pressure of the outer casing of the Bowden connection, instead of through the cable.

Further modifications concern chiefly the strength of the front stand and minor accessories, the object of the manufacturers being to supply a machine which is particularly suitable for heavy work overseas.

Adequate Mudguard Clearance.

As might be expected after the successes which have been obtained this year, the sports model will still be listed; this machine is similar in most respects, but the wide guards and new brake are not included. The mudguards on the standard models are provided with considerable clearance, and ample room between the forks for the fitting of oversize tyres, although the standard section is 26×2½in.

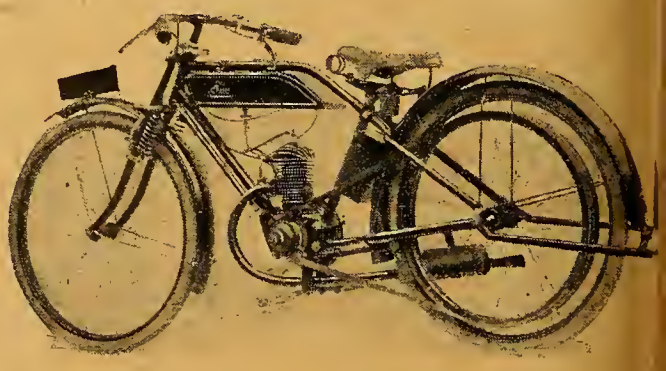


Improvements on the 1923 touring model Humber are the fitting of a front belt rim brake and much wider mud guards.

NEW ULTRA LIGHTWEIGHT.

THERE are, no doubt, many who will be interested to hear that the manufacturers of the well-known Sun-Vitesse two-stroke are now making an ultra lightweight, embodying a small two-stroke engine with flywheel ignition, 26×2in. tyres, and Druid forks.

As will be seen from the illustration, the frame is of the conventional type, giving a low riding position, and is suitable for the use of either lady or gentleman. The tank has separate compartments for petroil mixture and oil, the latter chamber being equipped with a measure. The single gear model is catalogued at £26 7s., and with two-speed gear £30 9s. Deliveries will commence almost immediately.



Of a type which promises to be popular next year: the new Sun ultra lightweight.

350 c.c. AND 499 c.c. SPORTING NEW HUDSONS.

NEXT year the makers of the New Hudson will cater more extensively for the solo rider than they have done hitherto.

The two-stroke lightweight and the single-cylinder sidecar outfit, considerably improved, will be retained, and in addition there will be a chain-driven three-speed 350 c.c. solo model in sporting and touring guises, and a 499 c.c. sports model really designed for speed work.

Prices will be lower all round; one model of the two-stroke, shorn of refinements but with the same engine as at present and a two-speed gear, will be very much cheaper.

The *de luxe* lightweight will be r tained; and the sidecar outfit will e body many new features as the result the company's experience with this yea design. Alternative sidecar bodies w be offered, including one with an ext seat for a child, and a folding sidec will also be available.

DUBLIN RAMBLERS' TRIAL.

THE Dublin Ramblers M.C.C., which was formed as an amateur organisation, but has now decided to admit to its ranks those engaged in the trade, held a reliability trial on Saturday last over two circuits of a sporting course of forty-six miles in Co. Dublin and Co. Wicklow.

A very handsome trophy was put up for the event by the president, Mrs. Callaghan, who is an active motor cyclist, and in addition she provided tea at her residence for the competitors and officials. The route embraced three well-known test hills, Devil's Elbow, near Glencullen, the Red Lane, from the Glen of the Downs to Calary, and Goat's Pa near Enniskerry. The Devil's Elbow w in good condition and claimed fe victims, but the other hills were grea Of the twenty-one starters, five failed complete the course, and nine of the oth sixteen were able to claim non-stop ru through all the observed sections.

CLUB NEWS.

Bristol M.C. and L.C.C.

Difficulty in finding a hill for the formula hill-climb caused its postponement until the Bath Club came to the rescue with Kingsdown Hill; great credit is due to the latter body for its sporting action in obtaining permission for an outside club to run on its preserves.

Southport M.C.

Birkdale Sands was the site selected for holding, on the 30th of last month, the third and last race meeting of the year. The popularity of the event may be judged from the entry list of 172 competitors. Results:

250 c.c. (GENERAL).—J. N. Roberts (248 New Imperial).

250 c.c. (EXPERTS BARRED).—T. Amery (249 New Scale).

350 c.c. (GENERAL).—1, C. H. Foster (349 New Scale); 2, F. Collard (349 Sheffield-Henderson); 3, H. Burrell (348 Rex-Acme).

350 c.c. (EXPERTS BARRED).—C. H. Foster (349 New Scale).

500 c.c. (GENERAL).—1, F. T. Hatton (494 Douglas); 2, T. Simister (490 Norton); 3, W. Johnson, jun. (492 Sunbeam).

500 c.c. (EXPERTS BARRED).—1, W. Lord (492 Sunbeam); 2, W. Johnson, jun. (492 Sunbeam).

750 c.c. (GENERAL).—1, F. T. Hatton (733 Douglas); 2, G. E. Cowley, jun. (490 Norton); 3, T. Simister (490 Norton).

750 c.c. (EXPERTS BARRED).—W. Johnson, jun. (492 Sunbeam).

UNLIMITED (GENERAL).—1, G. E. Cowley, jun (490 Norton); 2, F. T. Hatton (733 Douglas); 3, W. Johnson, jun. (492 Sunbeam).

UNLIMITED (EXPERTS BARRED).—W. Johnson, jun. (492 Sunbeam).

500 c.c. SIDECARS (GENERAL).—C. G. Bullough (490 Norton sc.).

750 c.c. SIDECARS (GENERAL).—G. E. Cowley, jun. (490 Norton sc.).

UNLIMITED SIDECARS (GENERAL).—1, A. Tinkler (999.5 American X sc.); 2, G. E. Cowley, jun. (490 Norton sc.).

FIVE MILE RACE.

350 c.c. (GENERAL).—1, F. Collard (349 Sheffield-Henderson); 2, H. Burrell (348 Rex-Acme); 3, J. N. Roberts (248 New Imperial).

350 c.c. (EXPERTS BARRED).—C. M. Needham (349 New Scale).

500 c.c. (GENERAL).—1, G. E. Cowley, jun. (490 Norton); 2, T. Simister (490 Norton); 3, F. Collard (349 Sheffield-Henderson).

500 c.c. (EXPERTS BARRED).—1, T. H. Dickinson (496 Duzmo); 2, C. M. Needham (349 New Scale).

UNLIMITED (GENERAL).—1, T. Simister (490 Norton); 2, F. T. Hatton (733 Douglas).

Week-End Club Events.

Oct. 13th.—Matlock and West Derbyshire M. and M.C.C.—Social Committee Meeting.

Oct. 14th.—Dumfries and District M.C. and C.C.—Social Run.

Oct. 14th.—Liverpool M.C.—Reliance Cup Trial.

Oct. 14th.—Coventry Triangle M.C.—Hill Climb.

Oct. 14th.—Bristol M.C. and L.C.C.—Captain's Run.

Oct. 14th.—Ulster M.C.C.—Ulster Grand Prix.

Oct. 15th.—Rochester, Chatham and District M.C. and L.C.C.—Trial for "The Short Silver Rose Bowl."

Oct. 15th.—Sheffield M.C.C.—Run to Birchinlee.

Oct. 15th.—Coventry Triangle M.C.—Run to Princethorpe Wood.

Oct. 15th.—Atherton and District M.C.C.—Run to Chester.

Oct. 15th.—Halifax and District M.C. and L.C.C.—Run to York.

Oct. 15th.—Rotherham and District M.C.—Social Run via Penistone.

ESSEX AND SOUTHEND CLUB'S SPEED TRIALS.

SATURDAY'S speed trials of the Essex County and Southend Automobile Club were held before a select few at a little-known and little-advertised spot in the wilderness near Shoeburyness.

The entire lack of prior publicity was perhaps prompted by a becoming modesty anent the shortcomings of the organisation. Unwarned spectators were allowed to drive their machines up the "running out" stretch behind the finishing line, thus meeting 70 and 80 m.p.h competitors on a none too wide road, while again and again competitors were despatched back up the half-mile course before a class finished, passing the last man on his way. No times were posted, but an unused blackboard showed good intentions. Finally, the programme "entry" of 76 resolved itself into some 19 or 20 actual competitors, who rode in anything up to seven classes.

Slow Off the Mark.

Some excellent riding was witnessed, but really good starting (the distance was a standing-start half-mile) was not a feature. R. Weatherell (348 Weatherell), and L. McCardle (989 Harley-D.), were exceptions in this respect, however.

It will be noted that in the organising club's official results (below) a 398 c.c. A.B.C. figures as second place winner in the 350 c.c. classes, while W. H. Norris rode a 698 c.c. Raleigh also in the 350 c.c. class. This we are unable to explain.

CLASS 1. (350 c.c. TOURING SOLO.)

Closed and Open.

	Time. secs.	Formula.
S. M. Greening (348 Francis Barnett)	30⅘	1st
F. R. Colgrove (398 A.B.C.)	32	2nd

CLASS 2. (500 c.c. TOURING SOLO.)

Closed and Open.

S. M. Greening (248 Francis-Bennett)	30⅘	1st
W. A. Newell (398 A.B.C.)	31⅖	2nd

CLASS 3. (UNLIMITED, TOURING SOLO.)

Closed and Open.

F. McCardle (989 Harley-D.)	27⅖	—
H. E. Bolton (998 Indian)	30⅘	—
S. M. Greening (248 Francis-Barnett)	—	1st
W. A. Newell (398 A.B.C.)	—	2nd

CLASS 4. (350 c.c. SPORTS SOLO.)

Closed.

R. Weatherell (349 Weatherell) ...	25⅘	1st
L. F. Peaty (349 Hawker)	28	—
N. A. Lowe (349 Coventry Eagle) ..	—	2nd

Open.

R. Weatherell (349 Weatherell) ..	25⅘	1st
L. F. Peaty (349 Hawker)	28	—
F. W. Jelpke (349 Weatherell) ..	29⅗	2nd

CLASS 5. (500 c.c. SPORTS SOLO.)

Closed.

K. S. Duncan (489 Sunbeam)	25	—
H. S. Hendrie (490 Norton)	25⅕	—
S. M. Greening (248 Francis-Barnett)	—	1st
N. Lowe (348 Coventry Eagle).. ..	—	2nd

Open.

K. S. Duncan (489 Sunbeam)	25	—
J. S. Hendrie (490 Norton)	25⅕	—
S. M. Greening (248 Francis-Barnett)	—	1st
N. Lowe (348 Coventry Eagle) ..	—	2nd

CLASS 6. (UNLIMITED SPORTS SOLO.)

Closed.

L. McCardle (989 Harley-Davidson) ..	24⅗	—
H. Baldwin (492 Sunbeam)	24⅕	—
S. M. Greening (248 Francis-Barnett)	—	1st
R. W. Weatherell (349 Weatherell)	—	2nd

Open.

L. McCardle (989 Harley-Davidson) ..	24⅗	—
H. Baldwin (492 Sunbeam)	24⅕	—
S. M. Greening (248 Francis-Barnett)	—	1st
R. W. Weatherell (349 Weatherell) ..	—	2nd

CLASS 7. (500 c.c. SIDECARS.)

Closed and Open.

K. S. Duncan (489 Sunbeam)	28⅕	1st
S. M. Greening (248 Francis-Barnett)	32⅕	2nd

CLASS 8. (UNLIMITED SIDECARS.)

Closed and Open.

K. S. Duncan (489 Sunbeam)	28⅕	1st
L. F. McCardle (989 Harley-D.) ..	28⅖	—
S. M. Greening (248 Francis-Barnett)	—	2nd

MEMBERS RESIDING IN ESSEX.

SPECIAL AWARDS.

Silver Vase (fastest time of any cycle).—L. McCardle (989 Harley-D).

Motor Cycle Watch (best formula of sports model).—K. S. Duncan (489 Sunbeam).

Binks Carburetter (fastest time touring model).—S. M. Greening (249 Francis-Barnett).

Silver Trophy (best formula of touring model).—S. M. Greening (249 Francis-Barnett).

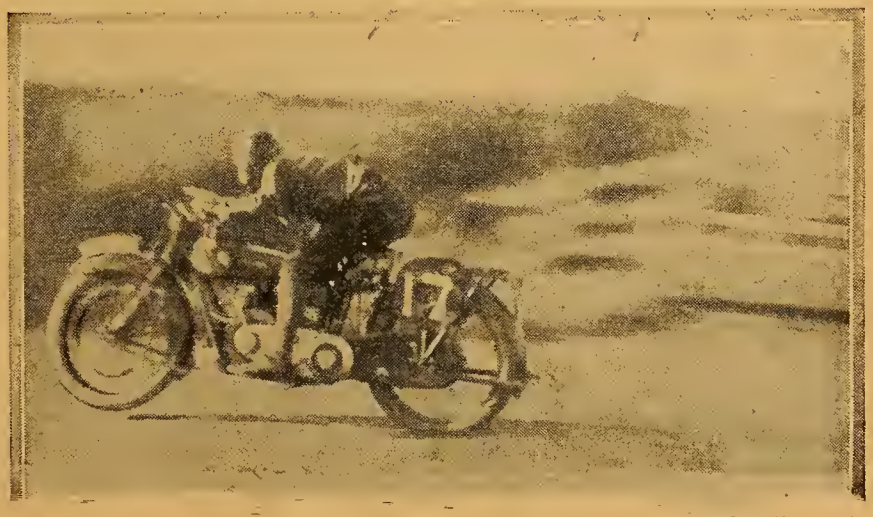
ANY MEMBER OF THE EASTERN CENTRE OF THE A.C.U.

Silver Cup (fastest time of the day).—L. McCardle (989 Harley-D.).

Small Trophy (best formula of sports model).—K. S. Duncan (489 Sunbeam).

Small Trophy (fastest time of touring model).—S. M. Greening (249 Francis-Barnett).

Small Trophy (best formula of touring model).—S. M. Greening (249 Francis-Barnett).



W. H. Norris (698 Raleigh) covering the standing start half-mile in 30⅘ secs. at the Essex County and Southend A.C. speed trials. The photograph shows his front wheel quite clear of the ground after passing a small bump.

UNEXCITING MANVILLE TROPHY TRIAL.

Obliterated Dye Causes Difficulty in last Saturday's Coventry and Warwickshire M.C. Event.

OF the thirty-four motor cycle entrants for the Manville Trophy Trial of the Coventry and Warwickshire M.C., on Saturday, every one faced the starter, but eleven failed to finish in schedule time. This large number of retirements was not so much due to the severity of the course, but rather to mischance and difficulties in following the route, which caused sundry delays and consequent hurryings.

Midland Test Hills.

Starting from Hearsall Common, Coventry, the 77-mile morning route included Swans Hill, Gravel Pit Hill, the Gutter, Lower Walton Hill, Hagley Wood Hill, Noah's Ark Hill, and Abberley Hill. Owing to a shortage of observers, only three of these acclivities were observed, a matter of small moment since, with the exception of the two last mentioned, they are not sufficiently severe to cause any trouble. On Gravel Pit Hill, for instance, there was not a single failure.

Again, on Abberley Hill there were only two failures, both owing to the greasy nature of the road, which caused skids.

J. Thomas (600 Humber) fell after passing the worst gradient, and D. Radford (688 Coventry Victor) wobbled and fell while passing another competitor. With these exceptions the performances were uniformly good, and it is difficult to distinguish the most meritorious climbs owing to the fact that many good riders took matters quietly and climbed slowly but steadily.

On the return journey the chief points of interest were New Walton Hill—a tricky climb with a greasy left-hand hairpin near the top—and an acceleration test on Weatheroak Hill. At the latter spot certain technical objections were raised by the police, but the event was carried to a successful conclusion.

The shallow but rocky water splash at the foot of Noah's Ark Hill is alarming only in appearance, and the hill itself has no gradient worthy of a modern machine.

Changing Up Too Soon.

Several spoiled their chances by changing up too early, although the performances on the whole were good. No official times are available, but the following showed up best: R. Grindlay (600 Humber), G. Kirby (499 Triumph), E. A. Barnett (346 Francis-Barnett), W. Brandish (600 Humber), H. Stretton Ward (499 Triumph), J. Thomas (600 Humber), L. Crisp (600 Humber). Amongst the sidecar performances which we observed, F. T. Sibley (499 Rudge sc.) and A. Perrey (770 B.S.A. sc.) were the best.

There were some further difficulties about the route on the return journey and some competitors reached the finishing point from the reverse direction.

SIDECAR T.T. NEXT YEAR.

No Amateur Race. Important Decisions at General Committee Meeting of A.C.U.

BY far the most important business transacted at the General Committee of the A.C.U. on Friday last was that connected with next year's Tourist Trophy Races.

It was, of course, obvious that the announcement that our premier road speed events should be held in England in June was altogether too sanguine, and that a return to the Isle of Man was inevitable. News that the I.O.M. Highway Board would sympathetically consider the allotment of three days to racing, announced by the secretary, was somewhat of a surprise, but it was further confirmed by Mr. Cowans, the Isle of Man representative, who stated that Mr. G. J. A. Brown had had an unofficial interview with the Board, which had declared that it would not be adverse to the favourable consideration of three days' racing on Monday, the 11th June, Wednesday, 13th, and Friday, 15th.

Sidecar T.T. Discussed.

Touching the question of a race for sidecars, which Professor Low's proposition at the Competitions Committee stated was "worthy of serious consideration," a lengthy discussion followed. Mr. W. H. Wells made strenuous opposition in view of possible danger, but other members of the trade present, Messrs. J. L. Norton, S. L. Bailey, V. Horsman, E. B. Ware, and F. W. Barnes were equally strongly in favour of the idea. Mr. Norton, however, feared that the wrong type of outfit might be developed, but Mr. Bailey took the view that racing models of to-day generally became touring models in the near future. Some argument ensued as to the advisability of limiting the engine size to 350 c.c.

Finally, it was decided that T.T. races should be held for 250, 350, and 500 c.c. solo mounts, and for sidecar outfits up to 500 or 600 c.c. Exact details will be left to the Competitions Committee, the chairman of which, Mr. J. W. G. Brooke, suggested that the 250 c.c. and sidecar races might be held on the morning and afternoon of one day, the 350 c.c. race on the second day, and the senior race on the third day.

Naturally, the question of an amateur race caused a good deal of discussion. Mr. Loughborough pointed out that the definition of amateur was not an insuperable difficulty, but that it was almost impossible to ensure a rider conforming to the conditions required. Mr. Quintin Nicol then said he thought that the A.C.U. had its hands full enough with the other races and the new sidecar event, so it was decided to abandon the amateur race for next year.

It was announced that no official results of the South-Eastern Centre reliability trial of July 8th had been issued, and it was therefore decided that unless these results were forthcoming in seven days no permit for an open event would be granted in future.

Regret was expressed that the Anglo-Dutch Trial could not be organised this year, but it was hoped that it would be possible to arrange it next year.

Nineteen applications from provincial clubs for affiliation to the parent body were accepted.

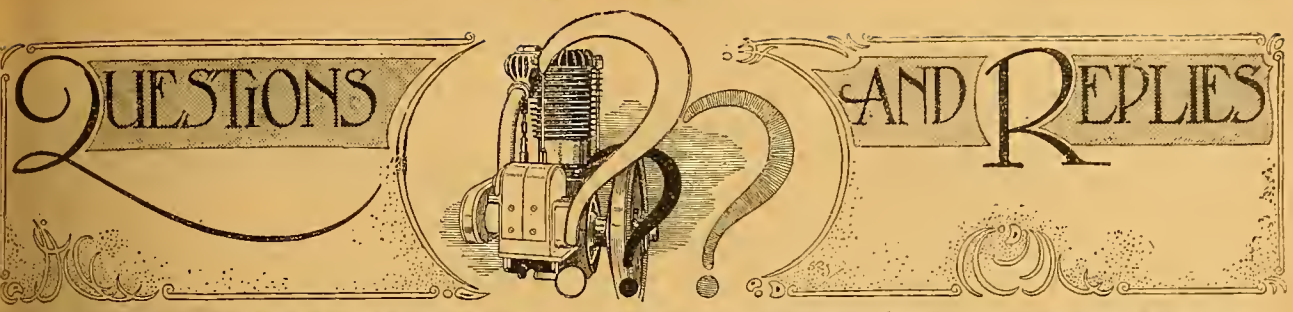
AT KOP ON SATURDAY.

H. H. Saddington (662 James) making fastest time of the day. He won every class that he entered.

NEXT WEEK—

"THE MOTOR CYCLE"

THREEPENCE.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

FUEL CONSUMPTION.

I have a 1920 two-stroke two-speed Clyno with petrol lubrication, and can only get 50 to 60 m.p.g. It is free from all air leaks, belt and clutch slip; the carburetter is an Amac; I am using a 24 jet. (1) Could you tell me what m.p.g. I should get; (2) and how to get it?—C.E.B.

Your machine should do at least 60 m.p.g. From your description everything appears to be in good order, and we can only suggest, therefore, that you check over (*a*) the petrol level (this should be about $\frac{1}{16}$ below the top of the spraying jets in the Amac carburetter); (*b*) the magneto timing (this should be set so that the spark occurs when the piston is on top dead centre with the ignition control $\frac{2}{3}$ retarded); and (*c*) the petrol supply system (which should be quite free from leakage at the petrol tap and pipe unions).

DISAPPOINTING PERFORMANCE WITH SIDECAR.

My machine is a 500 c.c. standard outfit as supplied by makers, and the gears are 5⅓, 8½, and 16½ to 1 (chain and belt). The machine is rather heavy, and so is the sidecar; and since my weight is about 15 stone, with an adult passenger in the sidecar, the unfortunate engine has something to propel. The engine is clean; compression very good; timing standard; new valve springs; B. and B. carburetter, single jet, size 36. The roads over which I go are pretty severe for a small engine and are so bumpy that what speed I get is very rapidly knocked off. I find that on the slightest gradient second speed is required, and some quite moderate gradients almost require low. The engine runs very hot. I have gone through the various causes mentioned in "Hints and Tips," and the only one that seems to fit the facts is "Too high a gear." The engine will run but will not increase speed after the throttle has been opened more than half-way. I cannot explain exactly, but when I open the throttle more than half-way I can tell I am not getting any value for it. Moreover, the fuel consumption is bad, due, I suppose, to the amount of second gear work and continually having to shut off the extra air on the slightest gradient to prevent knocking. (1) Would a lower gear be better? (It would still further reduce the speed of the machine.) How could a lower gear be obtained? The front sprocket has 14 teeth and the makers do not supply one with less. (2) As I only use the machine about once a week for a run of 25 miles or so, do you think a ⅞in. belt would do the work and reduce the gear? (3) The machine was originally fitted with 26in. × 2¾in. tyres. I have on now 26in. × 2½in. × 2¼in. This would raise the gear, I suppose. Would the smaller tyres be better? (4) Should I fit a larger jet. 35 is standard for the machine; I am using a 36. I have a 37, but have not tried it as the engine gets so hot. (5) Am I right in supposing that with such a heavy load and bad roads a 500 c.c. engine is bound to run pretty hot. I do not think the engine gets too hot when I have the sidecar empty. (6) Would a variable jet adapter give me any more power?—J.O.E.

(1) As you do not state the make of your machine we cannot tell you whether its performance is similar to other models of

Important Dates.

Wed., Oct. 4th, to Sun., Oct. 15.—Paris Salon.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

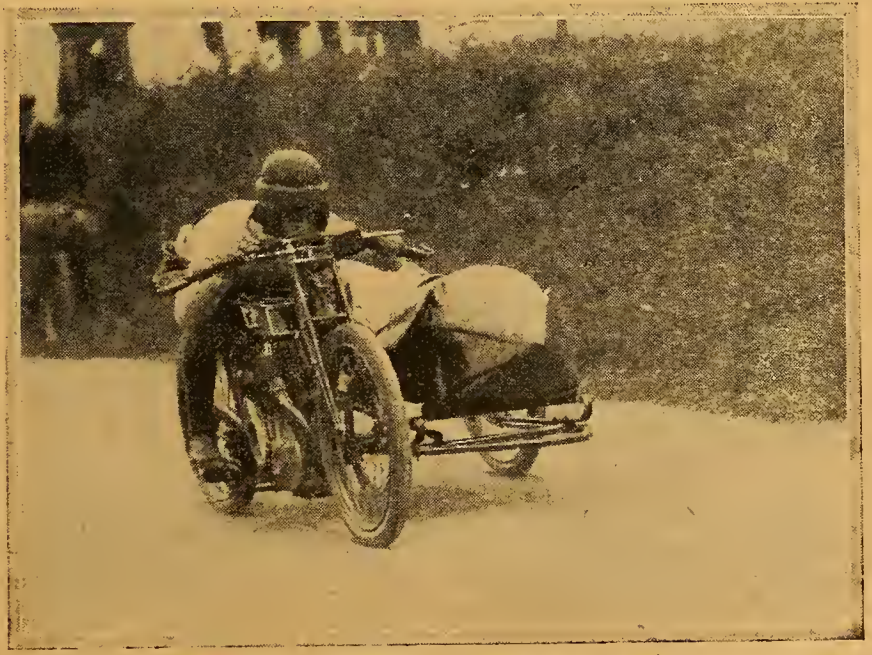
Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th and Wed., Dec. 27th.—M.C.C. London-Exeter Run.

Sat., Jan. 13th to Wed., Jan. 24th (1923).—The Belgian Salon.

Fri., Jan. 26th to Sat., Feb. 3rd (1923).—Scottish Motor Show.



CAUGHT AT SPEED. An impression of B. Fleming on his Sunbeam sidecar at a hill-climb held recently by the Basingstoke M.C.C.

the same make; however, with a 500 c.c. machine used with sidecar a 5⅓ to 1 top gear is rather high; at the same time it would not be advisable to use an engine shaft sprocket with a smaller number of teeth than 14. (2) A ⅞in. belt would be under-sized for your machine and load and we could not recommend it, although it might answer your purpose; its life would be short. (3) The fitting of larger tyres has the same effect as raising the gear, and as you apparently do not use the machine extensively it might possibly be advisable to use the smaller diameter covers. (4) A larger jet should not be necessary. (5) A 500 c.c. machine even when used with sidecar should go almost anywhere and be capable of maintaining an average speed of about 20 m.p.h.; it should have a maximum speed with sidecar of at least 38 m.p.h. There is no reason why a machine of this capacity should overheat if it is in good order. (6) A variable jet adaptor would not necessarily give you more power, but it would be of great assistance when tuning up.

FITTING A GEAR BOX.

? I am proposing to fit a four-speed gear box with belt and chain drive on my motor cycle. The belt pulley is 6in. in diameter and the belt rim is 19in. Being desirous of obtaining a 4½ to 1 gear on top, what numbers of teeth on the engine shaft sprocket and countershaft sprocket are required?—C.L.

If you are fitting a four-speed gear box to your machine, we do not recommend that you have the belt pulley on the box any smaller than 8in. in diameter, as otherwise on the low gears you will probably get excessive slip. It is not much use attempting to give you the figures you ask for, as usually the size of the countershaft sprocket is determined for you by the manufacturer of the gear, and no alternative selection is offered, therefore, the only variation possible is obtained by altering the size of the engine sprocket. When you know the former you can calculate the number of teeth by the aid of the tables usually given in the gear manufacturers' booklets.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"J.B.E." (Barmouth)—348 c.c. Douglas; B. and B. carburetter.

"W.H.L." (Penzance).—398 c.c. A.B.C. after 3,000 miles running.

"A.H." (Pontefract).—349 c.c. A.J.S. touring model B.

"H.E.R.M." (Winchester).—349 c.c. A.J.S., B1; W.S.R. variable jet; suitable settings for starting, fast and slow running.

"F.R." (Romsey). 348 c.c. o.h.v.; F.N.: suitability for touring.

"G.L.L." (Manchester).—348 c.c. two-speed Douglas: tuning for speed regardless of economy; Wex carburetter.

"D.S." (Sherborne).—249 c.c. Velocette.

"H.R.R." (Towyn).—398 c.c. A.B.C.: tuning, gear ratios, and jet sizes for fast solo riding.

"L.M." (Manchester).—170 c.c. McKenzie.

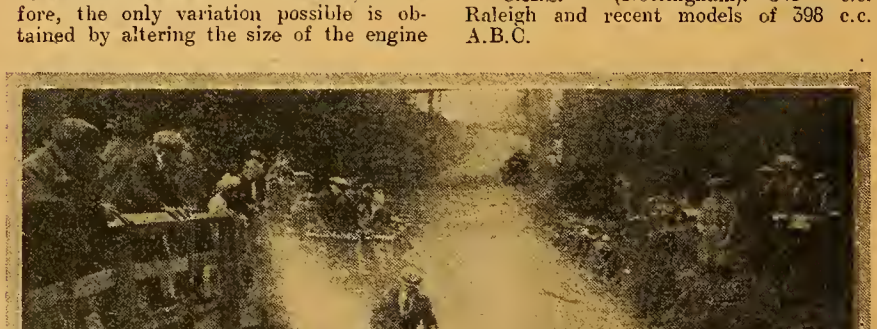
"R.M." (Tavistock).—Binks carburetter on 989 c.c. Harley-Davidson and 348 c.c. Douglas.

"A.V.V." (Wembley Hill).—McKenzie lightweight.

"A.J.C." (Stockwell, S.W.8).—398 c.c. A.B.C.: experiences in tuning.

"H.E.W." (Moorgate, E.C.2).—Two-seater sidecars, for two adults.

"C.A.S." (Nottingham).—348 c.c. Raleigh and recent models of 398 c.c. A.B.C.



WATERSPLASHES EVERYWHERE. North, south, east or west, the crossing of unbridged streams is a feature, if not *the* feature, of motor cycle trials. While providing much fun for the spectators, "watersplashing" tends to be overdone. A scene in the Levis Trial.

The Dutch Championship.

The championship of Holland, together with a gold medal and other awards, has been won by A. Steensma, riding a 499 c.c. Dunelt motor cycle.

Confusion of Addresses.

There are apparently half-a-dozen Uptons in England; and we are asked to state that the Alexander twist grip, described in our issue of September 28th, hails from Upton, near Birkenhead.

Change of Address.

New and extensive premises, a few doors west of the present address, will be occupied by the Service Company at the end of this month. The new address will be 273-274, High Holborn, London, W.C.

Changing the Name.

The lower-priced V-type windscreen made by the Sandham Engineering Co. Ltd., of Gray's Inn Road, will in future be known at the Popular model. Hitherto its name of Junior conveyed the idea that it was only suitable for fitting on small sidecars.

Cross-Country Italian Race.

In the twenty-four-hour race between Milan and Naples, held during September over a distance of 887 kms. (551 miles) two Norton machines were first and second in the 500 c.c. class, being ranked also second and third in the unlimited category.

Warning.

According to the secretary of the A.C.U., a person giving the name of H. R. Melville Freeman, and using cards bearing the title and address of the Auto Cycle Union, is abroad in London. We are advised that no person of the same name is on the staff or membership list of the Union.

On Such Small Things—

It is rumoured that owing to the size of the tyres on Pullin's Douglas not complying with F.I.C.M. dimensions, his mean speed of 83.76 m.p.h. on the Bois de Boulogne cannot be recognised as a record. If this is so Bernard (9½ Indian) will come up into the record list with a mean speed of 81.5 m.p.h.

The Sport in Russia.

In spite of the extraordinary conditions now prevailing in Russia, speed trials were held on the 27th and 28th August over a course of 556 versts, Moscow - Wyschnu - Wolotschek - Moscow, which Malewitsch, on a pre-war 499 c.c. Triumph, finished first, in 11h. 28m. 41s., or at an average speed of approximately 30.2 m.p.h.

Catalogues Received.

The County Legging Co., Franche Street, Perry Bar, Birmingham: Illustrated booklet of leather leggings.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postat Orders and Cheques sent in payment for advertisements should be made payable & Co. to ILIFFE & SONS Ltd., and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements the mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt. The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way, the seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, ½%. All deposit letters are dealt with at Dorset House, Tudor Street London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally serious, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. Combination, 1922, Gracemill sidecar, Easting, dynamo lighting, speedometer, licensed, insured, perfect; nearest 80 guineas.—1, Alexandra Rd., Kingston. [6411

"Recommended by"—

Over and over again we find new customers introduce themselves with these words, and it exemplifies the truth of an old slogan of Godfreys:

"Our Sales increase our Friends,
Our Friends increase our Sales."

Can GODFREYS be of service to YOU?

If it is a new machine you require you will find a selection of all the latest models at Godfreys, who can give immediate delivery of practically any well-known make.

If price is a consideration you have now an opportunity to secure a brand new (shop soiled) machine at a figure which only the necessity of clearing old stock renders possible.

Should you desire a sound secondhand machine we can supply you with one which has been thoroughly overhauled in our own workshops, and we give the same guarantee as issued with a new machine.

Should you wish to exchange your present mount, this can be easily arranged if it is a reasonably modern machine. Send full particulars stating the new machine you prefer and we will quote you our best allowance price. Further, the difference between the value of your present machine and the price of the new one can be paid by 12 equal monthly instalments.

We will sell you any new or secondhand machine on our gradual payment system on the following terms:—

4% only is added to purchase price.

You pay one quarter as a first instalment and the balance in 12 equal monthly payments.

MAY WE SEND YOU OUR FULL LISTS?

If you have any tyre troubles—end them by using the Challenger Patent Puncture Sealing Tubes. Any size supplied from stock.

Sample section and prices on request.

GODFREYS LTD.

208, Gt. Portland St., London, W.1.

Phone Langham 1300 (2 lines)

THE SERVICE HOUSE FOR B.S.A., INDIAN, LEVIS, and SCOTT SPARE PARTS.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1920, Lucas dynamo lighting, excellent condition throughout.—Davis, Crowthorne, Berks. [6312

A.B.C., kick, chain guard, Klaxon, speedometer, excellent condition; £55.—1, Northumberland St., Norwich. [6255

A.B.C., dynamo lighting, little used, kick-start, in first-class condition throughout; £65.—Garage, Bath Parade, Cheltenham. [4950

A.B.C. 1920, any expert examination, new heavy tyres; owner buying combination; £49.—Clarke, Bailiff St., Northampton. [6247

A.B.C. 1920 3h.p., Lucas Magdyoo lighting, 4-speed, chain drive, electric horn, tax paid; £55.—Maudes', 100, Paris St., Exeter. [6441

49 guineas.—1920 A.B.C., fully equipped, insured, registered, in good condition; exchanges; evenings.—4, Elm Gardens, Hammersmith. [6347

A.B.C. Sports Model, dynamo lighting, 7 months old, good condition; £65.—Troomes, Edwin Rd., Twickenham. 'Phone: Richmond 2667. [6143

1920 A.B.C., guaranteed mechanically, appearance as new, flexible exhaust, Cowey, Lucas lighting; sell, or exchange.—1, Park Hill Rd., Ewell. [5726

A.J.S

1922 A.J.S. 2¾h.p., mileage negligible; £70.—Ratcliffe Bros., 200, Gt. Portland St., W. [5495

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175, in stock. Dorset trade supplied. [0817

A.J.S. Motor Cycles on easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168 [6483

1922 A.J.S., 2¾h.p. B1, unpuctured, excellent condition, £70.—17, Leamington Rd., Bournemouth. [5698

WAUCHOPE'S, 9, Shoe Lane, London.—1913 6h.p. A.J.S. combination, 3 speeds, kick-start, and clutch; £45. [6484

A.J.S. 2¾h.p.-7h.p. Commercial Vehicles.—Write Merrick's Stores, Listerhills Rd., Bradford 'Phone: 2439. [2704

1922 2¾h.p. A.J.S., B1, insured, etc., spares, good condition; offers?—5, Central Buildings, Stockton, Durham. [6160

A.J.S. 1913 5-6h.p., 2 speeds, clutch, kick-start, all-chain drive, coachbuilt sidecar, with screen; £50.—Maudes', Walsall Garage, Walsall. [6435

F.O.C.H. Invite Inspection. A.J.S.'s and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3862

A.J.S. 7h.p. Combination, £175; 2¾h.p., 3-speed £85.—Immediate delivery can be obtained from P. J. Evans, John Bright St., Birmingham. [5948

A.J.S. 1916 6h.p. Combination, 3 speeds, clutch, kick-starter, fully equipped, beautiful outfit; £45.—113, High St., Clapham. 'Phone: Latchmere 4290. [6380

FOR A.J.S. 1922 models, 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

1921 A.J.S. Combination, 7h.p., every possible accessory, as brand new, little used; £125.—Cree, "Lansdowne," Worcester Park, Surrey. [6012

A.J.S. 1920 6h.p. Combination, spare wheel, electric light, good condition; £125, or offer; write appointment.—F. Ellis, 82, Durcombe Rd., N.19. [6273

A.J.S. Combination, magnificent turnout, equal to new, guaranteed perfect, electric lighting, fully equipped; £120.—"Lansdowne," York Av., Hunstanton. [5862

1919 A.J.S. 6h.p. Combination, spare wheel, screen, speedometer, fine condition; £85; exchanges.—Hillier, 9, Wallingford Av., North Kensington (7 or 7A 'bus). [6265

A.J.S. Combination, 1920, discs, speedometer, and all necessaries, and including a number of spares, in beautiful condition; £115.—174a, Lavender Hill, S.W.11. [6637

A.J.S. 2¾h.p., 1922, mileage 500, lamps, horn, Cowey speedometer, tyres as new, unscratched; £75, or near offer.—"Thorverton," Bishop's Rd., Whitchurch, Cardiff. [6122

SPECIAL Bargain.—One only new 1922 A.J.S. Model B.1, 2¾h.p., 3-speed, slightly showroom-soiled; reduced to £75; first cheque secures.—Premier Motor Co., Aston Rd., Birmingham. [6695

A.J.S. Combination, 1920, dynamo model, hood, screen, spare wheel, hardly used and absolutely as new; 100 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6554

A.J.S. 7h.p. Combination 1921, fitted with Lucas accumulator lighting, speedometer, spare wheel and tyre, mileage 2,000, guaranteed as new; £125.—Ratcliffe Bros., 200, Gt. Portland St., W. [5493

MOTOR CYCLES FOR SALE.

A.J.S.

2¾h.p. A.J.S. Sports, 1922, fully equipped, condition practically new, owner's riding equipment included; sacrifice, £69.—Taylor, 125, Goldhurst Terrace, Hampstead, N.W.3. [6025

1921 7h.p. A.J.S. and sidecar, fitted with several extras, speedometer, hood and screen, Lucas lamps, spare wheel, Tan-Sad, etc., splendid condition; £120.—H. H. Timberlake, Ltd., Wigan. [4793

A.J.S. 1922 2¾h.p., new, ridden 90 miles, unscratched, fitted with light sidecar, speedometer, all lamps, horn, tax paid, insured; cost £118, accept £85, or separate.—391, King St., Hammersmith. [6276

1922 2¾h.p. A.J.S. Model B, Bonniksen trip speedometer, large tyres, Lucas lamps, and horn, spares, only ridden 70 miles; £84.—7, Denmark Terrace, Fortis Green Rd., East Finchley, London, N. [5770

A.J.S. 6h.p. Combination, Dec./20, hood, screen, spare wheel and 2 tyres, D.A. head light, electric side and tail lamps, 2 horns, tax paid; exceptional bargain, 85 guineas.—Box 4056, c/o *The Motor Cycle*. [5724

1919 A.J.S. 5-6h.p. Combination, excellent condition, all lamps and accessories, spare wheel, new oversize tyres, fully insured 12 months; any reasonable trial; offers wanted.—5, Kensington Place, Coal Clough, Burnley. [6147

A.J.S. 1922 7h.p. Combination, mileage 1,500, practically new, unused spare wheel, hood and cover, Lucas Magdyno lighting, electric horn, speedometer, Ace discs; cost in June £235; accept £180.—Owner, 13, Ashen Grove, Wimbledon Park, S.W.19. [5828

A.J.S. 6h.p. Combination, overhauled and renovated by makers, cost £72, receipt proof, spare wheel, windscreen, speedometer, Lucas lamps and horn, accumulator sidecar light, Tan-Sad, spare valves, tyres almost new; sacrifice, £120.—Plumtree, Station Shop, Frodingham, Lincolnshire. [5920

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays

ALLON 1921, fully equipped; £37.—Ratcliffe Bros., 200, Gt. Portland St., W. [5504

1921 Alldays Allon, 2-speed, K.S., absolutely as new; will accept 28 guineas.—67, Fernlea Rd., Balham. [6654

1922 Allon, absolutely as new, 2-speed, licensed; cost £67; accept £47; guaranteed.—4, Gaywood Rd., Walthamstow. [5807

ALLON 1921 2¾h.p., 2-speed, clutch, K.S., lamp, tax, horn, legshields, little used; £32.—2, Madrid Rd. Barnes. [6103

ALLON 1917, 2-speed, clutch, accessories, aluminium shields, excellent condition; £28.—17, Minster Rd., Bromley, Kent. [6251

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

23 Guineas, Urgent Sale, Exchange.—1917 Allon 2-stroke, 2 speeds, lamps, footboards, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [4773

American X.

£28.—American X, 2-speed, clutch; or exchange lower power.—187, Snowdrop Rd., Lodge Lane, Welling. [8132

ROBERTSON'S Motors, Ltd.—1921 American X with Henderson Elite sidecar, accessories, tax paid, in beautiful condition; £95.—157b, Gt. Portland St., W.1. [2349

Ariel.

1922 Ariel (Sports), 3½h.p., fully equipped; sacrifice £80.—R. Linford, Dersingham, Norfolk. [5818

£12.—Ariel 3½h.p., Splitdorf, every accessory, guaranteed perfect.—Guinchard, 179, York Rd., North London. [6188

1922 Sports Ariel, complete with lamps, speedometer, horn, etc., new condition; £75.—H. Wright, Arlesey, Beds. [6011

1921 6-7h.p. Ariel Combination, chain, electric lighting, 2,000 miles; £96; lunch time or after 6.—King, 35, Baker St., W.1. [5972

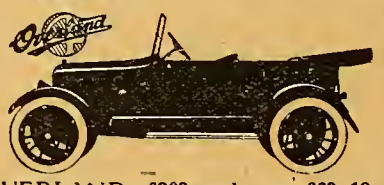
SOUTHPORT.—Clearance sale; 1920 3½h.p. Ariel combination fully equipped; 59 guineas; exchanges.—Kent, 417, Lord St., Southport. [6167

43 Guineas; exchange.—Ariel Countershaft Coach Combination, 3½h.p., 3 speeds, clutch, kick-start, electric lighting, Tan-Sad, Cameo, nice condition, any examination.—Seabridge 35, Hansler Rd., East Dulwich (Sydenham 2452). [6595

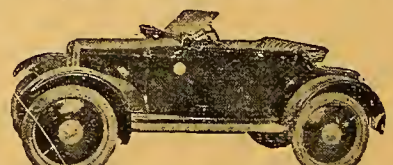
PHOTOGRAPHS Free.—Ariel, late 1920, 3½h.p., 3-speed combination; 65 guineas; solo, 55 guineas; also 1913 3½h.p. 3-speed Ariel combination; 32 guineas; solo, 26 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [6684

STARTLING REDUCTIONS!

MAXWELL (New Series), £330 cash, or £5 16 0 down and 12 payments of £21 9 0.

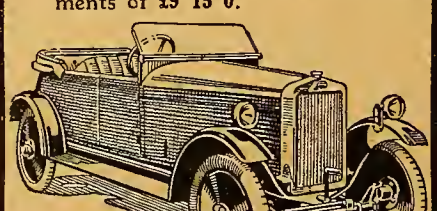


OVERLAND, £268 cash, or £69 13 7 down and 12 payments of £17 8 5.



ROVER "8" £180 cash, or £46 16 0 down and 12 payments of £11 14 0. De Luxe model £20 extra.

MORGAN "Popular" Model, £150 cash, or £39 0 0 down and 12 payments of £9 15 0.



RHODE, £250 cash, or £55 0 0 down and 12 payments of £16 5 0.

Deferred payments with option of discount.

LAMB'S Ltd

WALTHAMSTOW, LONDON, N.E., 151, High Street. Phone: Walthamstow 160.

GT. PORTLAND STREET, LONDON, W. (Opposite Station.) 'Phone: Museum 4973.

WOOD GREEN, LONDON, N., 50, High Road. 'Phone: Hornsey 1956.

MOTOR CYCLES FOR SALE.

Ariel.

AT Edwards'.—1920 6-7h.p. Ariel combination lamps, horn, speedometer, screen, perfect order 75 guineas.—101, Great Portland St., W.1. [6617

ARIEL.—All models cash or gradual payments Spares supplied from stock.—West Central Agency Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL Combination 1921, 6-7h.p. twin, all chain mileage 2,500, electric lighting, speedometer horn, Easting, Tan-Sad, etc.; £110.—28, Westfield Rd., Hornsey. [5986

ARIEL 1918 3½h.p. Combination, 3 speeds, counter shaft, clutch, kick-starter, fully equipped, licensed absolute bargain; £40.—113, High St., Clapham 'Phone: Latchmere 4290. [6376

1922 Ariel 4½h.p. Combination, complete with speedometer, lamps, horn, Easting windscreen, insurance, licence paid to December; bargain, £80; no offers.—364, Lillie Rd., Fulham, London, S.W. [5824

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones' Garage Broadway, Muswell Hill, N.10. [0804

Armis.

33 Guineas.—Armis, 1921, 3½h.p. 2-stroke Precision, 2 speeds, clutch, K.S., tax paid, equipped sporting Cannelet sidecar; 10 guineas; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5842

Atlas.

ATLAS, 1922, only 6 weeks old, absolutely perfect; bargain, £20.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 322. [6204

Bat.

£95.—1921 8h.p. Bat-Jap, makers' sidecar, sprung wheel, electric lighting, 4 detachable wheels Cowey, Easting, tax paid; consider another machine part.—1, Norwood Rd., Herne Hill, S.E.24. [5936

Beardmore.

3½h.p. Beardmore 1921, 2-speed, kick-start, double sprung, all accessories; nearest £45.—132, Walm Lane, Willesden. [5013

1922 Beardmore-Precision 4½h.p. Combination, mileage 600, Easting, insured; £110.—62, Falkner St., Gloucester. [6384

SPORTS model Barr and Stroud Beardmore-Precision, new August, gold medal and manufacturer's team prize Scottish two days, guaranteed perfect; £75, no offers.—Batten, Pencaitland, E. Lothian. [4906

Blackburne.

1920 4h.p. Blackburne, full accessories; £65.—Ross, 86, High Rd., Lee. [5904

BLACKBURNE 1920 Combination, 4h.p., 3 speeds, etc., any trial; £60.—Snow, Laurel St., Dalston, E.8. [6645

BLACKBURNE, June, 1922, 4½h.p., chain drive, 3-speed, fully equipped, very low mileage, condition guaranteed; offers.—Jukes, 37, High St., Wincanton, Somerset. [6303

Spare Parts:

ALL Blackburne Engine Spares from stock; list on application; trade supplied.—Maudes', 100, Great Portland St., W.1. [6454

Bradbury.

BRADBURY 1914 4h.p. Combination, 2-speed, excellent condition; £25.—7, Exhibition Rd., S.W.7. [2307

1914 4h.p. Bradbury, 2-speed, clutch, equipped, taxed, perfect; £35, near.—Box 4151, c/o *The Motor Cycle*. [6116

BRADBURY 2¾h.p., 1922, tax paid, 2-speed, clutch, and kick-starter; £55.—Wauchope's, 9, Shoe Lane, London. [6485

SOUTHPORT.—Clearance sale; 1921 Bradbury combination, all chain, 3-speed, K.S.; 50 guineas; exchanges.—Kents, 417, Lord St., Southport. [6164

AT Edwards'.—1922 2¾h.p. Bradbury, 2-speed clutch, equipped, tax paid, indistinguishable from new; 47 guineas.—101, Great Portland St., W.1. [6618

1922 Bradbury 4h.p., 3-speed, clutch, kick-start, licensed year, fully equipped, indistinguishable from new; 70 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

Brough.

BROUGH 1920 5h.p. Sports Combination, all chain, perfect; £85; ride 100 miles to buyer.—52, Harris St., Bradford. [6327

BROUGH horizontal twin 6h.p., speedometer, Binks, mechanical lubrication, electric lamps, thoroughly overhauled, insured; coachbuilt sidecar, excellent condition; would separate; nearest offer £75.—Box 4104, c/o *The Motor Cycle*. [5785

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

1921 (Sept.) 2¾h.p. Douglas 2-speed All-on Model, tax paid, fine condition; bargain, £42.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6601

DOUGLAS, 1920, 2¾h.p., heavy Colonial model, 3 speed, 1922 engine, electric speedometer, fast, scarcely used; £45; ship.—39, Craven Gar., Wimbledon. [5694

1921 Late Douglas 2¾h.p., new condition, speedometer, head and rear lamps, tax paid for year; £45; after 6 o'clock.—88, Calabria Rd., Highbury. [6174

2¾h.p. Douglas, late 1921, stored 6 months, perfect, 24 practically new, complete, also extras, tax paid, a real beauty; bargain, £45.—20, Kingsdown Av., West Ealing. [5740

1922 4h.p. Douglas Combination, absolutely new; illness; Amac carburetter, Tan-Sad, Royal Easting windscreen; £115.—Nelson, 7, Effingham Rd., Bristol. [6155

DOUGLAS 1922 2¾h.p., an ideal solo mount, fully equipped, lamp, horn, etc., brand new, shop-soiled, 2-speed £62, 3-speed £75.—The Morris Garages, Oxford. [6545

49 Guineas.—1918 4h.p. Douglas combination, splendid condition, electric lighting, disc wheels, 1920 sidecar, licensed.—1A, Hearne Rd., Kew Bridge, Chiswick. [6134

1920 Douglas 2¾h.p., 3-speed, clutch and K.S., accessories, as new; £45, or with cash for Triumph, N.U.T. similar. (Derby.)—Box 4159, c/o *The Motor Cycle*. [6235

1922 Douglas 2¾h.p., fully equipped, licensed year, insured, indistinguishable from new; exchanges or deferred; 45 guineas.—Edwards, 50, Harrington Rd., South Kensington. [6623

DOUGLAS 4h.p. late Model, practically unscratched, tyres absolutely new, lamps, horn, tools, tax paid, a genuine bargain; £45.—County Garage, Caterham, Surrey. 'Phone: 191. [6355

49 Guineas.—1919 4h.p. Douglas Combination, aluminium sidecar, Easting, legshields, speedometer, in excellent condition; exchanges; evenings.—4, Elm Gardens, Hammersmith. [6348

27 Guineas.—1915 2-speed 2¾h.p. Douglas, very fast, splendid condition, tax paid, lamps, horn, etc., must sell, seen any time.—Jones, 45, Lyndhurst Grove, Camberwell, S.E. [5866

1919 4h.p. Douglas Combination, plate clutch, speedometer, lamps, etc., perfect running order, privately owned.—To be seen at Holly Bush Garage, 138, Green Lanes, Stoke Newington, N.16. [5852

1922 4h.p. Douglas Combination, lamps, Bonniksen, Easting, only done 4,000, just overhauled by makers, owner bought car; £105; offers.—Askwith, Robeston House, Bury St Edmunds. [6162

1917 4h.p. Douglas Combination, 3-speed, clutch, K.S., good condition, recently overhauled, coachwork recently painted, lamps, etc., any trial; bargain, £50.—Yeates, Chislehurst Rd., Orpington. [6227

PHOTOGRAPHS Free.—Douglas, 2¾h.p., 2-speed; 25 guineas; another, 27 guineas; both exceptional condition and fully equipped; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [6686

DOUGLAS 4h.p. Combination, late 1920, hardly used, as new, mechanically perfect, Ace discs, etc., all on, very smart 'bus; take any fair offer.—Brealy, 86, Gladstone Park Gardens, N.W.2. 'Phone: Willesden 2172. [4971

1919 4h.p. Douglas, 3 speeds, lamps, horn, tax paid, good running order, no clutch or K.S.; £37/10.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 322. [6207

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill. [0786

26 Guineas.—Douglas 2¾h.p. 1916, new saddle, pannier bags, and tyre, lamps, horn, tax paid, long copper exhaust, distinctive appearance, guaranteed mechanically perfect, a very smart little 'bus.—239, Goldhawk Rd., Shepherd's Bush. [5970

4h.p. Douglas Combination 1919, Binks, lamps, speedometer, Klaxon, Triplex, windscreen, new Dunlops, tools, spares, been carefully used by expert and kept in first-class order; £80; trial runs and hill-climb.—6, Whitworth Rd., S. Norwood, S.E.25. 'Phone: Week-days 11-5 Central 2971. (D) [5965

4h.p. Douglas Combination, makers' blue, looks and goes like new, grand order, guaranteed, £65; another nearly as good, £60. Both are quite exceptional bargains; cash or deferred.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6559

DOUGLAS New 2¾h.p. 1922 2-speed Models, fully equipped, £68; 2¾h.p. 3-speed clutch and kick-start model, all on, £62; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £115; 6h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in 12 equal monthly payments or more.—Wauchope's, 9, Shoe Lane, London. Second-hand Douglas machines at bargain prices. [6490

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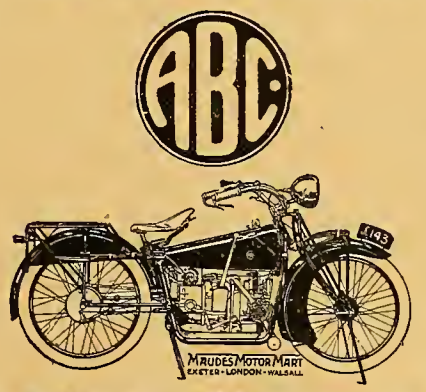
"The World's Best Motor Cycle"



Latest Models.

Brief Specification:

3 h.p. FLAT TWIN, 69×54, with latest type gudgeon pin fixing, four-speed gear box, incorporating clutch and kick-starter, all-chain drive, automatic lubrication, Claudel single lever carburetter, spring frame and forks, touring or semi-T.T. bars, carrier, toolbag, tools, etc.

MAKERS' FULL GUARANTEE.

NEW REDUCED PRICE

£74-0-0

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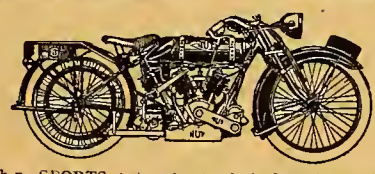
Also a few shop-soiled latest 1922 Sports Model N.U.T. machines.



3½ h.p. SPORTS twin, 64.5×76 (498 c.c.) aluminium pistons, roller big end, aluminium radiators to valve caps, Amac T.T. carburetter, 3-speed Sturmey-Archer gear, all-chain or chain-cum-belt, tyres 26"×2½", T.T. bars. All machines completely equipped.

MAKERS' FULL GUARANTEE.

£90-0-0 — ALL-CHAIN DRIVE

CHAIN-CUM-BELT — **£85-0-0**

We have a large number of other makes of shop-soiled models at reduced prices. See Miscellaneous columns for second-hand bargains.

MAUDE'S MOTOR MART

100, GREAT PORTLAND STREET LONDON ——— W.1.

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MOTOR CYCLES FOR SALE.

Douglas.

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [4303

ROBERTSONS Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Douglas specialists. Complete illustrated lists of 2¾h.p. or 4h.p. parts, 6d. each. The trade supplied. [6516

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927

Dunelt.

DUNELT Combination, brand new at agents, interchangeable wheels model; first cash offer accepted; buyer cannot take delivery.—Box 4105, c/o *The Motor Cycle*. [5763

Economic.

ECONOMIC, new, shop-soiled only; special bargain to clear, £27.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6600

ECONOMIC, latest model, 2-3h.p., variable gear clutch, dynamo lighting; slightly shop-soiled and reduced to £50.—South Eastern Garage, 1-7, Norwood Rd., Herne Hill, S.E.24. [5939

£34.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyres, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents; Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Deoman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Edmund.

EDMUND 1922 2¾h.p. Blackburne, 3-speed model, shop-soiled only; list price £90; accept £75.—The Layton Garages, 30, Holywell St., Oxford. [6081

1922 Edmund-Blackburne, spring frame, all-chain sports model, Burman 3-speed gear, Bonniksen, electric lighting, all accessories, only delivered June, cost £115, run 300 miles, fully insured, guaranteed perfect; £95.—Porte, 10, Park Hill Rd., Croydon. [6242

Enfield.

1918 8h.p. Enfield Combination, as new; £80.—Ross, 86, High Rd., Lee. [5894

1921 2½h.p. Enfield, as new; will accept 28 guineas for same.—67, Fernlea Rd., Balham. [6660

ENFIELD 2-stroke, 2 speeds, nearly new; best offer near £30.—42, Perran Rd., Tulse Hill. [6124

1921 Enfield, 2 speeds, clutch, K.S.; £30; any trial any time.—Hepple, 18, Farm Av., Streatham. [5889

1915 6h.p. Enfield Combination, in good running order; £58.—Chaston, Blackwood, Mon. Tel.: 66. [5793

1915 Enfield Combination, complete, in good order, any trial given; £50.—G. W. Green, Millgate, Thirsk. [5711

NEW dynamo Enfield Combination, only run few miles, every accessory; £105.—24, Balliol Rd., North Kensington. [6404

1922 Enfield Combination, Magdyno, mileage small, condition as new; buying car.—Bishop, Tuffley Avenue, Gloucester. [6125

ENFIELD Combination, June, 1922, as new, tax paid, insurance, all accessories; £103.—31, Woodside, Wimbledon. [6225

ENFIELD Combination, 6h.p., 1914, fully equipped, splendid tyres; after 6; £48.—66, Dynevor Rd., Stoke Newington, N.16. [5996

20/- A Week for Twelve Months, new Enfield 2-stroke, shop-soiled.—D. and S. Autocar Co., 33, The Parade, Golders Green. [6580

JUNE, 1922, 8h.p. Enfield Combination, mileage 1,200, speedometer; £115; owner going abroad.—Worsdell, Winster, Windermere. [5792

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A London Rd., Croydon. 'Phone: 1619. [5600

ROYAL ENFIELD 1922 Sports Model, shop-soiled only; list price £55; accept £45 cash.—The Layton Garages, 30, Holywell St., Oxford. [6076

ENFIELD Sports 1922 2¾h.p. 2-stroke, smart little machine, fast and economical, brand new, shop-soiled; £50.—The Morris Garages, Oxford. [6541

ENFIELD, complete range of 1922 models for immediate delivery; cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [5946

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD Combination, 1920, completely equipped, carefully used, unscratched, perfect; trial; £82.—Hill, 60, Marchmont St., Russell Sq., W.C.1. [6259

ROYAL ENFIELD Combination, coachbuilt, lamps, horn, tax paid, good condition; £38, or exchange.—Regina Motor Works, Tooting, S.W.18. [6664

£23.—3h.p. Enfield, twin M.A.G. engine, Enfield 2-speed, excellent condition, smart appearance, licensed, equipped.—Bacon, Offington Lane, Worthing. [6176

1920 8h.p. Enfield Combination, speedometer, Easting, new tyres, tubes, and chains, excellent condition; £85.—Carr, Park Crescent, Llandrindod Wells. [6320

ENFIELD 2¼h.p. Sports, 2 months old, mileage under 300, equipped, tax paid, for modern Norton, Zenith, or similar; cash adjustment.—148, Haslingden Old Rd., Rawtenstall, Lancs. [5722

WAUCHOPE'S, 9, Shoe Lane, London.—8h.p. 1918 Royal Enfield combination, all accessories, speedometer, £85; 8h.p. 1916 Enfield combination, all accessories, tax paid, £75; easy terms arranged. [6492

1922 Royal Enfield-Vickers Combination, delivered May, fully equipped, tax paid, low mileage, absolutely as new; £100.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [5384

1921 Enfield Combination, 8h.p. Vickers' engine, Lucas dynamo lighting, hood, screen complete with side panels, speedometer, in absolutely new condition, guaranteed perfect; £115.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [8569

WAUCHOPE'S, 9, Shoe Lane, London.—2¼h.p. Royal Enfield 2-stroke 2-speed sporting model, £55; with kick-starter, £57; old machine taken in exchange and treated as first payment down, remainder in 12 equal monthly payments or more. [6491

96 Guineas.—8h.p. Enfield Combination, picked J.A.P. engine, delivered August, 1920, only run 5,000 miles, dynamo lighting, hood, screen, many extras, absolutely new condition throughout, owner must sell.—18, South Bruton Mews, Bond St., W. Mayfair 4282. [4851

Spare Parts:

ENFIELD Spares. — Immediate delivery. — Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Enfield engine parts in stock; no waiting. [6517

Excelsior

1920 British Excelsior Combination, 3-speed Sturmey, K.S. and C.; £75.—Chaston, Blackwood, Mon. Tel.: 66. [5794

PHOTOGRAPHS Free.—British Excelsior, 1917, 6h.p. coach combination, 3 speeds; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [6687

Fafnir.

3½h.p. Fafnir, m.o.v., Bosch enclosed magneto, Druid forks; £6.—P. Willcocks, Datchet, Bucks. [6237

CHATER-LEA, Fafnir 3½h.p., M.V., accessories, taxed, perfect; £9.—Guinchard, 179, York Rd., Camden Rd. [6346

F.N.

5-6h.p. F.N. Combination, good condition; £25, or reasonable offer.—Apply, Langfords, Cricklewood Broadway. [6022

1922 F.N. 8h.p., latest overhead valve engine, 3-speed, etc., shaft drive, sidecar, hood and screen, brand new; reduced to £140.—Bartletts, 93, Gt. Portland St., W. [6477

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

Francis-Barnett.

FRANCIS-BARNETT 1922 2¾h.p. J.A.P., 2 speeds, clutch, kick-start, tax paid; £50.—Maudes', Walsall Garage, Walsall. [6429

Harley-Davidson.

1919 7-9h.p. Harley, very fast; 50 guineas.—Ross, 86, High Rd., Lee. [5906

HARLEY 1919, good condition, discs, lamps, tools; £75, or near.—17, Maude Terrace, Walthamstow. [6119

1915 Harley 7-9h.p. Combination, fully equipped, any trial; £40.—114, Holland Rd., Harlesden, N.W. [6401

7-9h.p. Harley-Davidson Combination 1920, fully equipped; £105.—Ratcliffe Bros., 200, Gt. Portland St., W. [5501

HARLEY 1920 7-9h.p., dynamo model, speedometer, electric horn, etc., perfect; £79.—58, Altmore Av., East Ham. [6612

1919 Harley-Davidson 7-9h.p. Sporting Combination, electric lights, fine lot; £75.—Bartletts, 93, Gt. Portland St., W. [6474

The HALIFAX MOTOR EXCHANGE

25, HORTON STREET
HALIFAX.

'Phone: 1400. 'Grams: Perfection.

1922 BRAND NEW MODELS.

LAGONDA Coupe, reduced price	350 gns.
LAGONDA 2-seater, reduced price	280 gns.
DOUGLAS, 2¾ h.p., 2-speed, all on	£68 0
ENFIELD, 2¼ h.p., 2-speed, all chain	£55 0
MARTINSYDE, 6 h.p. combination	£140 0
NEW IMPERIAL, 8 h.p. combination	£125 0
NORTON BIG FOUR	£140 0
REX ACME, 2½ h.p., 2-speed	£50 0
TRIUMPH, 4 h.p., all chain	£115 0

We are quoting very special exchange allowance against the above to clear.

SECOND-HAND BARGAINS.

Deferred payments, one-fourth deposit, 5 per cent. on balance, and 12 monthly payments.

SOLOS.

FEATHERWEIGHT, 1½ h.p., soring forks	£9 15
DOUGLAS, 1920, 2¾, 3-speeds, tax paid.	£49 10
LEVIS, 1922, G.1, 67×70 engine	£39 10
NORTON, 1922, Big Four, 300 miles	£93 10
RUDGE, 3½, clutch model, wants attention	£19 10
RUDGE-MULTI, 1920, 5-6 h.p., tax paid	£59 10
RUDGE-MULTI, 1920, 7-9 h.p.	£65 0
TRIUMPH, 1916, 4 h.p., c/shaft	£52 10

PASSENGER MACHINES.

B.S.A., 1919, 4½, all-chain comb.	£79 10
B.S.A., 1921, 6 h.p., all-chain comb.	£129 10
HARLEY, 1918, 7-9, 1920 Grindlay sc.	£87 10
HARLEY, 1919, electric comb.	£97 10
INDIAN, 7-9 h.p., 2-speed comb., tax paid	£47 10
MATCHLESS, 8 h.p. comb., belt drive	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£85 0
NEW IMPERIAL, 8 h.p., 3-speed comb.	£79 10
REX, 1913, 6 h.p., coach comb.	£42 10
ROVER, 3½, 3-sp. hub, coach sidecar	£37 10
SCOTT, 3¾ 2-speed comb., tax paid	£49 10
SCOTT, 1920 comb., screen, etc., tax paid	£82 10
TRIUMPH, 3½, 2-speed comb., tax paid	£39 10
TRIUMPH, 1916, c/shaft, 3-speed, new sidecar	£69 10

RUNABOUTS.

BLUMFIELD, 7 h.p. 3-wheeler, hood, screen, Chater Lea 3 speeds, tax paid	£59 10
BRIT-PRECISION, 8 h.p., 2-seater	£47 10
FORD, 4-seater, wants attention	£39 10
H.F.G., 1920, 8-10 h.p., 2-seater, dynamo	£97 10
MORGAN, Grand Prix, O.H.V.	£87 10
RICHARDSON, 1920, 2 seater, dickey seat.	£95 0
TINY, 10 h.p. 4-cyl., 2 seater, dynamo lighting, screen, new hood	£120 0

THE EASY WAY.

£5 deposit and 15/- weekly buys

BUCHET, 3½ h.p., 2-speed, tax paid	£19 10
DOUGLAS, 2¾, single speed	£17 10
STEVENS, 4½, single gear, spring forks	£17 10
HUMBER, 3½ h.p., 2-speed	£27 10
RUDGE, 3½ h.p., clutch, wants attention	£19 10
REX, 5/6 h.p., 2-speed combination	£29 10
PREMIER, 3½ h.p., 2-speed	£29 10
BRADBURY, 3½ h.p., 2-speed, tax paid	£29 10
HUMBER, 3½ h.p., engine wants attention	£15 0

SPECIAL CASH BARGAINS.

COVENTRY VICTOR, 1921, 5-7 comb.	£79 10
F.N., 4-cylinder, single speed, wants attention	£12 10
F.N., 4-cyl., 2 speeds, wants attention	£21 0
HUMBER, 3½, re-enamelled, wants attention	£11 10
INDIAN, 7-9, 2-speed, sidecar	£39 10
RUDGE-MULTI, 1920, 5-6, comb.	£69 10
RUDGE-MULTI, 1920, 7-9, comb.	£75 0

MOTOR CYCLES FOR SALE.

Harley-Davidson.

£45.—1916 7-9h.p. Harley-Davidson, coachbuilt Combination, 3 speeds, clutch, K.S., sound turn-out —King, Egrove, Oxford. [609

1916-17 Harley-Davidson Combination, in good running order; £55, great bargain.—Chaston, Blackwood, Mon. Tel.: 66. [579

HARLEY Combination, 1918, D.A. lighting; exchange late Morgan and cash.—H. Watts, 41 Caledonian Rd., London, N.7. [570

49 Guineas.—Harley-Davidson, 1917 model, 7-9h.p. clutch, 3 speeds, K.S.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [683

95 Guineas.—1921 Harley Combination, dynamo lighting, speedometer, excellent condition; exchanges; evenings.—4, Elm Gdns., Hammersmith. [834

1921 Harley-Davidson Combination, well equipped £100; exchanges; guaranteed.—Goad, 12 Maida Vale. 'Phone: Maida Vale 1353. [644

HARLEY-DAVIDSON Combination 7-9h.p., 191 electric lighting, windscreen; £89, offers; splendid running.—36, Cannon Hill, Southgate (in garage). [612

LATE 1918 Harley Combination, in splendid condition; £75, or offer; lightweight and cash considered.—Bryant, Milton Villa, Sterne St., Shepherd Bush, W. [597

HARLEY-DAVIDSON 1918 Sporting Combination electric model, R34 sidecar, just overhauled and repainted, very smart outfit; £85.—Phelan, 87, Dalston Lane, Hackney. [627

HARLEY-DAVIDSON W.D. 7-9h.p., thoroughly overhauled in our own workshops, complete with sports or touring sidecar; £75.—Maudes', 100, Great Portland St., London. [644

HARLEY-DAVIDSON Combination, late 1918, 7-h.p. 3 speeds, hand-foot clutch, Montgomery sports sidecar, lamps, licence, accessories; £65; exchanges.—63, Solon Rd., Brixton. [606

HARLEY-DAVIDSON.—Photo sent of the latest and prettiest combination in England, plated throughout, guaranteed; any trial; £155.—Harley Specialist, Wheeler St., Birmingham. [609

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [594

1920 Harley-Davidson Combination, electric model all on, perfect condition; £95, or exchange.—Croxford, The Motor Cycle House, 461, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 322. [620

HARLEY-DAVIDSON Combination, delivered May Watsonian R34 sidecar, windscreen, dash, etc Lucas lighting, speedometer, etc., specially tuned engine by makers; £115.—Colonial Motors, 104a, Finchley Rd., Hampstead 7822. [656

1920 HARLEY-DAVIDSON Combination, 4h.p. 8 twin, 3 speeds, clutch and kick-starter, all-chain drive, rear driven speedometer, all lamps, horn, etc., tax paid, absolutely as new; £75.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston, 2408. [657

EXCEPTIONALLY nice electric Harley de Luxe Combination (late 1920), speedometer, legshields, Tan-Sad, 3 new tyres, new chains, hood, screen curtains, used week-ends, mileage 4,700; 50 mile trial; medical advice compels owner to sell; £120 offers; would consider freehold land part exchange.—41, Dassett Rd., West Norwood, S.E.27. [577

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, Bond St., Ealing. [480

HARLEY-DAVIDSON.—We have a large stock second-hand parts.—Maudes', 100, Great Portland St., W.1. [645

WARNING.—A large number of spurious Harley Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St London, W.1. [094

Hawker.

WAUCHOPE'S, 9, Shoe Lane, London.—Latest model Hawker, 4¼h.p. Blackburne engine, £7 (shop-soiled only), 3 speeds, hand-controlled clutch and kick-start, all-chain drive, internal expanding brake both wheels, had on easy terms and exchange. 'Phone Central 5168. [649

Henderson.

ROBERTSON'S Motors, Ltd.—1922 De Luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [235

LUXURIOUS Henderson 1920 Elite Combination electric lighting, discs, screen; £87/10.—113, High St., Clapham. 'Phone: Latchmere 4290. [637

64 Guineas.—Late model Khaki Henderson 10h.p. Torpedo Sidecar Combination, fully equipped, low generator, taxed; after 4.30 p.m.—4, Elm Gardens, Hammersmith. [651

b20 **All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).**

MOTOR CYCLES FOR SALE.

Matchless.

MATCHLESS 1921, Model H Combination, M.A.G. engine, dynamo lighting, hood, screen, spare wheel, tax, insurance paid; £120.—9, Edith Rd., Clashet Grove, East Ham. [5994

NEARLY New Model H Matchless Combination, done 700 miles, dynamo lighting, electric horn, insurance, tax, guaranteed; sacrifice £125.—Chaston, Blackwood, Mon. Tel.: 66. [5795

VAUCHOPE'S, 9, Shoe Lane, London.—Matchless model H spring frame model combination, latest improvements; can be sent direct from works; £130; easy terms or exchange. [6495

9 Guineas.—Matchless Coachbuilt Combination, 8h.p. J.A.P., 2-speed, clutch, etc., licensed, equipped, guaranteed mechanically perfect and absolutely reliable.—239, Goldhawk Rd., Shepherd's Bush. [5969

BARGAIN.—1921 Matchless H2 combination, 1922 improvements, Lucas Magdyno, lamps, horn, equipped regardless of expense, mechanically oiled, perfect; £120, offers, must sell.—43, Ashcroft Rd., Cirencester. [5741

MATCHLESS 1921 (8h.p.) Double-seater Combination, electric lighting, absolutely complete with spares and accessories value £60, excellent condition, very small mileage; £140.—Barkus, Caversham Rd., Reading. [6307

1923 Matchless Models, rockbottom revised prices, no need to wait for the Show. Buy now, immediate delivery; cash, exchange, easy terms.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [5202

1922 (August) 8h.p. Matchless Combination, H2, as new, dynamo lighting, spare wheel, screen, dep. pillion, Terry saddle, fully insured; cost £215, sacrifice £160, or near.—Whiting, 58, Leigham Vale, Streatham. (P) [6009

MATCHLESS.—We can now offer delivery of all models at new 1923 prices. Exchanges or deferred payments.—Maudes', 100, Great Portland St., London, Paris St., Exeter. Norwich Garage, Norwich, and Walsall Garage, Walsall. [6426

YOUR Motor Cycle or Combination taken in part payment for a Matchless Solo or Combination; the famous spring frame machines; deferred payments. Barker's Motors, 194, Balham High Rd., S.W.12. Phone: 4441 Latchmere. [5941

MATCHLESS, dynamo lighting, electric horn, speedometer, double-seated sidecar, with warming apparatus, 2 screens with wings, hood, side curtains, spare wheel, driven 2,300 miles, absolutely new condition; £155.—26, Ardfillan Rd., Catford, S.E. [5762

MATCHLESS, late 1921, 2-seater, M.A.G. engine, 2 screens, side screens, electric lighting, electric bulb horns, luggage carrier, spare wheel, sidecar, step, speedometer, top tube, tool box, double hood cover, mechanical pump, just overhauled; £140.—Write, Wait, Upland Rd., Sutton. [5966

PHOTOGRAPHS Free.—Matchless, model H combination, 8h.p., spring frame, spare wheel, new February 1921, fully equipped; 78 guineas; also a 4h.p. single-speed Matchless-Jap, fine solo mount; 7 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [6691

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery, exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

MATCHLESS H, family model, M.A.G., August, 1921, mileage 3,000, two screens, hood, step, spare wheel, Lucas acetylene, Binks, legshields, best mechanical pump, speedometer, Klaxon, 8-day watch, perfect order throughout; bought new, receipt shown; carefully driven always; £135.—Knight, Glencairn, Park Crescent, Finchley, N.3. [6399

1921-22 double-seater Matchless H2, beautifully equipped, M.A.G. 7-9h.p. engine, 4 to 55 m.p.h., climb anything, Lucas Magdyno, rear speedometer, electric and wind horns, Terry pillion, Ace discs, hood, 2 screens, Orto side screens, step, mirror, specially fitted watch, new tyres, spares, etc., low mileage, expert examination invited, undoubtedly finest outfit in London, and is admired everywhere; cost £263, accept £195; buying car.—Letters only to "Matchless," 17, George Lane, Woodford, E.18. [5973

Spare Parts:

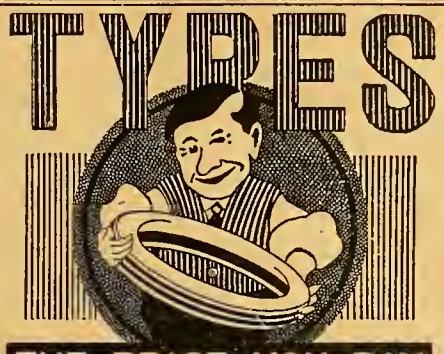
MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones' Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0803

McKenzie.

MCKENZIE, 1922, fully equipped, 300 miles only; owner getting combination; £24.—F. Fowle, 6, Vincent Rd., Tottenham, N.15. [6004

MCKENZIE Lightweights in stock; 26 guineas, or £7 down and 12 payments of £1/17.—Lambs, Ltd., 50, High Rd., Wood Green, N. Great Portland St. (opposite station), 151, High St., Walthamstow. [6584



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24×2¼	Clincher de Luxe, ex. hvy.	28/9	40/3
26×2	Elite, 3-rib., ex. heavy	26/6	38/6
25×2¼	Palmer, cord, heavy	34/6	47/9
"	Bates, spec. hvy. wired-on	32/6	38/6
"	Palmer, cord	31/-	43/4
"	Continental, heavy	21/0	—
"	Elite, super n-skid, ex.hvy	29/6	40/-
"	Bates, spec. heavy beaded	27/6	40/-
"	Michelin, steel stud	20/-	—
26×2⅛	Palmer, cord	33/6	45/8
"	Hutchinson, T.T.	24/-	40/6
26×2¼	Elite, super n-skid, ex.hvy	39/6	56/-
×2¼	Continental, extra heavy	32/6	—
26×2½	Clincher de Luxe, heavy	26/6	38/3
28×2¼	Clincher, Dreadnought	29/6	—
28×3	Clincher, Dreadnought	54/-	70/-
"	Elite, super n-skid, ex.hvy	46/-	68/-
"	Goodyear, all-weather	47/6	65/3
"	Palmer, cord	47/3	63/-
"	Goodrich, safety tread	45/-	—
"	Ajax, rubber non-skid	42/6	61/-
"	Rodace, rubber non-skid	35/-	—
650×65	Goodrich, safety tread	38/6	67/6
"	Clincher de Luxe, ex. hvy.	30/-	68/6
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MOTOR CYCLES FOR SALE.

Metro.

1920 Metro-Tyler, complete with discs, licence paid lamps; £38.—Saunders, 32, High St., Hampstead. [3644

BRAND New 1922 M.T. De Luxe, 2-speed; £45; makers' price £55.—55, Churchfield Rd., Acton, W.3. [6694

20/- A Week for Twelve Months, new Metro-Tyler, shop-soiled.—D. and S. Autocar Co., 33, The Parade, Golders Green. [6582

METRO-TYLER 1920 2-stroke, brand new, shop-soiled only; accept £40.—The Layton Garages, 30, Holywell St., Oxford. [6085

1920 Metro-Tyler 2-stroke Sports Model, tyres excellent, new belt, goes well; sacrifice £25.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408 [6572

Motosacoche.

1913 2¼h.p. Motosacoche, in exceptionally good order; £12.—37, Arlington Rd., Surbiton. [6159

Ner-a-Car.

1922 Ner-a-Car, mileage 500, tax paid, insured, accessories; sacrifice, £39/10.—1551, Gt. Western Rd., Glasgow. [5732

LOOK.—We have 3 slightly shop-soiled Ner-a-Cars for immediate delivery; call at once; ready to ride away; £57.—South Eastern Garage, 1-7, Norwood Rd., Herne Hill, S.E.24. [5938

New Comet.

2¾h.p. New Comet, new 1922, lady's or gent's machine, fitted with Comet sidecar; £65; easy terms arranged.—Wauchope's, 9, Shoe Lane, London. [6503

New Hudson.

£15.—1916 2¼h.p. New Hudson, 2-stroke, splendid running order.—King, Egrove Farm, Oxford. [6094

NEW HUDSON 2¼h.p., 2-speed, popular model, brand new; £45, or offer.—Wardman, High St., Cheltenham. [4987

1920 New Hudson Combination, Cameo screen, lamps, speedometer, etc.; £55.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [6233

NEW HUDSON Motor Cycles.—London Depot, 45, Grays Inn Rd., London, W.C.2. All models in stock. Easy payments. Spares. Trade supplied. [0851

NEW HUDSON 1916 6h.p. Combination, 3 speeds, clutch, kick-starter, fully equipped, licensed, absolute bargain; £40.—113, High St., Clapham. 'Phone: Latchmere 4290. [6381

NEW HUDSON 6h.p. Combination late 1919, engine just overhauled, new bearings, valves, guides, etc., Cowey, Cameo, lamps, tools, 68 m.p.g.; £75.—79, Fitzjohn's Av., N.W.3. [5879

1919-20 4¼h.p. New Hudson, 3-speed, kick-start, clutch, lamps, tax paid, standard sidecar, with detachable child's seat, absolutely first-class running order; £70; exchange.—Rhiod and Co., Stone Place, Rusholme, Manchester. [5954

New Imperial.

£26.—1916 2¾h.p. New Imperial-Jap, 2 speeds, clutch, K.S., sound machine.—King, Egrove, Oxford. [6095

NEW IMPERIAL 6-8h.p. 1920 Combination, hood, screen, electric lighting, taxed; £75.—50, Haverstock Hill, N.W.3. [6186

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; 58 gns.—Clark, 7, Exhibition Rd., S.W.7. [5856

NEW IMPERIAL-J.A.P. 2¾h.p., 2-speed, fully equipped, T.T. bars, fast, as new; £30.—137, Dalling Rd., Hammersmith. [6263

NEW IMPERIAL 1914 2¾h.p., countershaft, 2-speed gear box, tax paid; cash £15.—Lovetts, Ltd., 418, Romford Rd., Forest Gate, E. [5790

NEW IMPERIAL 2¾h.p. 3-speed, clutch, kick-start, unregistered; 55 guineas; offers; exchange.—George Cox, The Cross, Stroud, Gloucester. [6131

WAUCHOPE'S, 9 Shoe Lane, London.—2¾h.p. 1922 New Imperial, 3 speeds, hand-controlled clutch and all accessories; £57/10; extended payments. [6496

NEW IMPERIAL 2¾h.p. Sports Model, 1916, 2-speed, clutch and kick-starter, fitted new cylinder, piston, etc., equipped, taxed; £26.—103, Moore Park Rd., Fulham. [6390

HALIFAX.—1923 New Imperial models, 2¾h.p., 3-speed, all-chain, £65; 8h.p. combination, £125; liberal exchanges.—Halifax Motor Exchange, Horton St., Halifax. [6063

NEW IMPERIAL 2¾h.p., 1921, 2-speed, lamps, speedometer, taxed, insured to July, decent condition, private owned; £40.—After 6, at 16, Daleham Mews, N.W.3. [5883

NO. 3 New Imperial 2¾h.p. 3-speed, now ready for immediate delivery at 1923 price; £65; deferred payment or exchanges arranged.—Premier Motor Co., Aston Rd., Birmingham [6699

A. T. Edwards.—1919 2¾h.p. New Imperial, 2-speed, fully equipped, tax paid, good condition throughout; 32 guineas. Deferred payments and exchanges.—101, Great Portland St., W.1. [4529

MOTOR CYCLES FOR SALE.

New Imperial.

1922 New Imperial 8h.p. Combination, Lucas Magdyno, hood, side curtains, 2-fold windscreen, very low mileage, in perfect condition; £145.—Williams, 50, Trowbridge Rd., Bradford-on-Avon, Wilts. [5736

NEW IMPERIAL 2¾h.p., model 'No. 3, 3-speed, kick-start, all-chain drive; £65; immediate delivery of the 1923 model; cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [5949

AT Edwards.—1921 8h.p. New Imperial, fitted with electric lighting, Easting windscreen, fully equipped, tax paid, perfect condition; 85 guineas. Deferred payments and exchanges.—101, Great Portland St., W.1. [4524

NEW IMPERIAL.—We are now delivering latest 1923 models at new reduced prices. Deferred payments, 6% extra. Exchanges arranged.—Maudes', 100, Great Portland St., London; Paris St., Exeter; and The Norwich Garage, Norwich. [6444

AT Edwards'.—1922 3h.p. New Imperial, Model 3, all-chain drive, kick-starter and clutch, Maglita electric lighting equipment, horn, tax paid, as new throughout; 57 guineas. Deferred payments and exchanges.—101, Great Portland St., W.1. [2225

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 6 p.m., 1 o'clock Saturdays. [0855

Norton.

PREMIER Motor Co., for Norton Bargains.

FURTHER Great and Final Reductions to Clear.—All new 1922 models of the latest type carrying maker's full guarantee.—Below.

MODEL No. 1 Big-4 Norton, 3-speed, list price £120, reduced to £95; Model 16H 3½h.p. 3-speed, list price £115, reduced to £90; Model No. 9 3½h.p. single gear, reduced to £68; deferred payments 4% extra; free delivery by road or rail.—Premier Motor Co., Aston Rd., Birmingham. [6700

NORTON 1922 3½h.p., Model 16H, shop-soiled; list price £115; our price £95.

NORTON 1922 Big 4, shop-soiled; list £120; our price £98.—Victor Horsman, Ltd., 7, Mount Pleasant, Liverpool. [5926

NORTON 16H 1922, as new, fully equipped; £82/10 cash.—Ratcliffe Bros., 200, Gt. Portland St., W. [5602

BIG 4 Norton Combination, 1920, all accessories, mechanically sound; must sell, offers.—16, Priory St., Warrington. [5878

NORTON 1922 Model 16H, shop-soiled only; list price £115; accept £90.—The Layton Garages, 30, Holywell St., Oxford. [6077

1920 Norton 3½h.p. T.T., Philipson pulley, speedometer, has exceeded 75 m.p.h.; £50.—Bartlett's, 93, Gt. Portland St. [6470

NORTON 1922, model 16H, condition as new, lamp, horn, and licence, any trial; £90.—G. F. Gilding, Swineshead, Fenhouses, Lincs. [6608

BIG 4 Norton Combination, 1922, countershaft, kick-start, equipped, taxed; £98.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [5011

1922 16H Norton, countershaft, Brooklands special racer, kick-start, taxed, as new; £115.—Walker, 769, Romford Rd., Manor Park, London, E.12. [5008

NORTON 1921 4h.p., 3 speeds, clutch, kick-start, all-chain drive, Montgomery sidecar, Lucas lamps, condition as new, tax paid; £110.—Maudes', 100, Great Portland St., London. [6427

1921 3½h.p. 16H Norton with Montgomery sports sidecar, kept as stand-by to car and little used, original tyres unpunctured; £85.—Lucking, 15, Chatsworth Gardens, Acton, W.3. [6294

1922 Norton 16H, specially tuned, with Ricardo piston, closed ratio gears, speedometer, electric lighting and horn, low mileage, purchased May; £85, with tax and insurance paid.—Haven, Portsmouth Rd., Esher, Surrey. [5984

SPECIAL Norton-Henderson Combination, Big Four, latest model, reinforced tank, electric, acetylene lighting, Lucas bulb, Smith mechanical horn, Cowey speedometer, Binks, complete equipment spares, new spring-frame sidecar, locker, luggage accommodation, apron, photo; offers over £90.—Red Roofs, Oxshott; or ring Regent 3160. [6558

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—Complete Norton list post free. Trade supplied. [6520

N.U.T.

1920¾ 3½h.p. N.U.T., 3-speed, clutch, lamps, and Brooks cantilever, licence, as new; £60.—Boulton, Saffron Walden. [5801

N.U.T. 1920-21 Twin, dynamo lighting, Swan sporting sidecar, discs, very smart outfit; £85, or exchange.—Snow, Laurel St., Dalston, E.8. [6844

N.U.T. 1921 3½h.p., Lucas Magdyno lighting, 3-speed, clutch, kick-start, Watsonian sidecar, tax paid; £100.—Maudes', Walsall Garage, Walsall. [6436

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N.U.T.—Brand new shop-soiled 1922 models, ch cum-belt, 3-speed; list price, £110; our red price, £90.—Maudes', below.

N.U.T.—We still can offer two or three shop-so fully guaranteed 1922 Sports models, 3½h.p. t 3-speed, chain-cum-belt, £85; all-chain, £90.—Mau 100, Great Portland St., London; Paris St., Exe Norwich Garage, Norwich; and Walsall Garage, W sall.

N.U.T. 1921 Touring, twin J.A.P., powerful, ac sories, Tan-Sad, insured, magnificent mach bought combination; £75 guineas, or offer.—1, So sea Rd., Croydon.

O.K.

1921 O.K. 2½h.p., all on, tax paid; £27; Satur 12.30.—61, Casino Av., Herne Hill.

Olympic.

OLYMPIC 1919 2½h.p., 2-speed, clutch, kick-st Vici carburetter, tax paid; £26.—Maudes', Great Portland St., London.

Omega

1922 Omega 5-6h.p., 3-speed, chain drive, new; clear, £98.

1922 Omega 3h.p., fixed gear; to clear, £34/

1922 Omega 3h.p., Duplex frame, 3-speed, ch drive; to clear, £66.—Bartletts, 93, Gt. P land St., W.

2¾h.p. Omega-Jap, 2-speed, lampa, horn, first-c condition; £38.—Austey c/o Bradbeer, Mmeh

OMEGA Model 2B, shop-soiled; only at special p of £58/10.—Ratcliffe Bros., 200, Gt. Portl St., W.

OMEGA Model No. 3, shop-soiled; only at spe price of £59/10.—Ratcliffe Bros., 200, Gt. P land St., W.

1921 Omega-Jap 2¾h.p., 2-speed, clutch, kick-st lamps, horn, tax paid, excellent condition; w offers?—Borton, Aston, Nantwich.

OMEGA 1921 5-6h.p. J.A.P. twin, 3-speed, clu K.S., 3in. Dunlops, excellent condition, mile under 2,000; offers.—Stevens, 48, Arngask Rd., ford, S.E.

P. and M.

P. and M. 2-speed, K.S.; £23.—1, Springfield Cres., Catford, S.E.6.

P. and M., 2-speed, clutch; £15.—A. W. Platts, King's Rd., Fulham, S.W.6.

1913 P. and M. Combination; bargain; trial giv £34.—Ross, 86, High Rd., Lee.

1919 P. and M. Combination, as new, perfect dition; £55, or near.—C., 35, King St., Mai head.

P. and M. Combination 1917, Scott sidecar, smart, perfect condition, all on; £40.—62, shire Rd., Brixton.

P. and M. Combination, windscreen, hood, sp ometer, electric, splendid condition; £40.- Hazellville Rd., Hornsey Rise, N.19.

1918 P. and M. Combination, just overhauled renovated; £38/10, bargain.—Goad, Maida Vale. 'Phone: Maida Vale 1353.

P. and M. Combination 1919, kick-start, fully equip Easting, tax paid, in splendid condition; nea £50.—Simpson, 51, Belvedere Rd., Waterloo, S.E. 5.

P. and M., W.D., 3½h.p., R.A.F model, 2-speed, chain drive, B and B. carburetter, machine th oughly overhauled by ourselves, in first-class conditi £55.—Maudes', below.

P. and M. 1920 3½h.p., 2-speed, all-chain drive, el tric lamps, tools, pump, tax paid; £55.—Maud 100, Great Portland St., London.

1922 P. and M. de Luxe Combination, 4h.p., speeds, all on, coat £150, shop-soiled; £ cash, or deferred payments.—Taylors, 52, Sussex Pla S.W.7. 'Phone: Kens. 7260.

1918 P. and M. Combination, Sandum sidec makers' overhaul, splendid condition; £47/ —Kenneth Kemp and Co., 4, Berkeley Mews, C naught St., London. Padd. 1177.

RENOVATED 1918-19 P. and M., guaranteed months, 40 guineas; incomplete machi £17/10.—Inman and Co., Durham Rd., Seafor Liverpool. 'Phone: Waterloo 296.

P. and M. 1918 Combination, 2-speed, kick-star 1922 gears and B. and B. carburetter, lam horn, licence paid, trial by appointment; £45 or o —Flint Bungalow, Croydon Rd., Warlingham.

PHOTOGRAPH Free.—P. and M. Combination, and M. sidecar, hood, screen, electric and ace lene lighting, luxuriously equipped, run 4,000 m only and unscratched; 55 guineas; exchange Peter Gordon, Ltd., 110, Upper Richmond Rd., P Sheen.

Spare Parts:

P. and M.—We have a large stock of second-h parts.—Maudes', 10, Great Portland St., W.

MOTOR CYCLES FOR SALE.

P. and M.

and M. Spares Specialists.—Stamp brings list, every part stocked.—Inman and Co., Durham Scarforth, Liverpool. 'Phone: Waterloo 296. [6314

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P and S.

20 Pearson-Sopwith, 2-speed, fully equipped, guaranteed as new; £25.—99, Cannon Hill , Merton, S.W. [6158

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RALEIGH 2¾h.p., 1922; exchange higher powered bike or Morgan.—Price, Bulford House, Wellington, Somerset. [5723

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SPEED Merchants.—Late 1920 Reading-Standard, 1,200 c.c., 3-speed, aluminium piston, fir cones, enclosed valves lubricated from engine, Wex carburetter, hot air intake, 70 m.p.g., spring chain, and shock absorber, 29×3½ tyres, American pillion and carrier, dynamo lighting, horn, Cowey, speedometer, T.T. bars and touring, engine and gear box polished, with sporting sidecar, in absolutely perfect condition; one of the most luxurious machines on the road; cost £250, sell £80 cash.—2, Madrid Rd., Barnes. 'Phone: Hammersmith 888. [5121

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8h.p. Rex Combination 1920; £90.—Ratcliffe Bros., 200, Gt. Portland St., W. [5500

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£12/15—Rex 3½h.p., splendid order; take pedal cycle part.—57, Kenbury St., Camberwell, London. [6338

WAUCHOPE'S, 9, Shoe Lane, London.—5-6h.p. twin Rex and sidecar, 2-speed gear model; £25, first cheque. [6497

5-6h.p. Rex A.I.V., waterproof magneto, spring forks, running order; bargain, £10; carriage paid.—Kerswell, 56, Lawrence Hill, Bristol. [5908

REX-ACME 1922 3½h.p. Sports, shop-soiled only; list price £100; accept £87/10.—The Layton Garages, 30, Holywell St., Oxford. [6079

35 Guineas, genuine bargain, exchanges.—1914 Rex 6h.p., 2 speeds, handle start, roomy coach sidecar, hood, screen, lamps, overhauled by engineers, good appearance, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [4687

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1922 Rover 4h.p., 3-speed, chain drive, shop-soiled; only 84 guineas.—Rose's Garage, Uxbridge. [6261

ROVER 3½h.p. Countershaft Combination, fully equipped; £48; exchanges.—187, King's Cross Rd., London. [6184

ROVER 1920 3½h.p., N.S.U. gear, and clutch, all lamps, tax paid; £40.—Maudes', Walsall Garage, Walsall. [6431

ROVER 3½h.p., 3 speeds, clutch, equipped, electric lamps, excellent condition; £30.—5, Cross St., Bedford. [6018

ROVER 1914 3½h.p., 3-speed, overhauled, mechanically perfect; £28.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5620

1915 Rover 3½h.p. Combination, accessories, tax paid, 3-speed, countershaft; £48.—Bartlett's, 93, Gt. Portland St. [6468

ROVER 1921 T.T., Philipson pulley, h.b.c., splendid condition, small mileage; £55 or near offer.—Deates, Burgh Heath, nr. Epsom, Surrey. [6189

LATE 3½h.p. Rover Combination, 3-speed, etc., windscreen, nicely equipped; must realise, 39 guineas.—67, Fernlea Rd., Balham. [6652

WAUCHOPE'S, 9, Shoe Lane, Fleet St., London, E.C.4.—Rover 1914 3½h.p., Philipson H. controlled V pulley; £30; extended payments. [6498

3½h.p. Rover Combination, 1920, about, kick-start, countershaft, all on, taxed; £68.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [5010

1919 3½h.p. T.T. Rover, hand controlled Philipson, lamp set, speedometer, Klaxon, kneegrips, splendid condition; £50.—117, Mayfair Av., Ilford. [5873

3½h.p. o.h.v. Rover-Jap, Bosch, Amac, enamelled red, fast, equipped; sacrifice, £25.—Middleton, 35, Millais St., Albany Rd., Camberwell, S.E.5. [6642

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ROVER Combination, 1920, 5-6h.p., excellent condition; £80; can be seen Gloucester, Cheltenham, by arrangement.—Seabrooke, Hillcroft, Linton, near Ross-on-Wye. [5816

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1921-22 3½h.p. Sports Rover, 3-speed, clutch, K.S., registered, Cowey speedometer, unscratched, mileage 8,500; 69 guineas; exchanges; evenings.—4, Elm Gardens, Hammersmith. [6351

1922 Rover 4h.p. Combination, hardly used and as new, fitted with speedometer, automatic lubrication, Watsonian sidecar, very smart: £85, or exchange.—161, Castelnau, S.W.13. [5788

1920 Rover 3½h.p. Combination, 3-speed, kick-start, clutch, lamps, tax paid, absolutely equal to new; £72/10.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [5952

ROVER Combination 1920 3½h.p., 3-speed, clutch, kick-start, speedometer, windscreen, lighting set, completely equipped, taxed, new condition, guaranteed sound; 58 guineas.—186, St. James Rd., Croydon. [5987

AT Edwards.—1922 3½h.p. Rover Combination, all-chain drive, lamps, horn, speedometer, windscreen, tax paid, indistinguishable from new: 75 guineas; deferred payments and exchanges.—101, Great Portland St., W.1. [4527

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ROVER Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [5081

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ROYAL RUBY Combination, 8h.p., good condition: £72.—Marshall, 126a, High St., Slough. [5860

1918 8h.p. Royal Ruby, renovated as new, £60; with sidecar, £73.—Ross, 86, High Rd., Lee. [5897

1922 2¾h.p. Touring Ruby, new April, rear tyre unpunctured, all accessories, tax paid, sound bargain, £59.—Fiske, Hopton, Attleborough, Norfolk. [5749

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RUDGE-MULTI 1915, clutch, new condition, lamps, horn, etc.; £28.—103, Moore Park Rd., Fulham. [6391

RUDGE-MULTI 1920 3½h.p., clutch, lamps, Klaxon, good condition; £38.—2, Madrid Rd., Barnes. [6104

WAUCHOPE'S, 9, Shoe Lane, London.—New 1922 Rudge 3½h.p. I.O.M.; £77; easy terms arranged. [6499

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9 Guineas, near.—3½h.p. Rudge 1913, clutch model, requires attention.—Argyle Lodge, Newton Rd., Burton-on-Trent. [6035

RUDGE 1911 3½h.p., Senspray carburetter, Klaxon horn, tax paid; £25.—Maudes', 100, Great Portland St., London. [6419

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RUDGE-MULTI Combination, 1916, speedometer, lamps; £30; no reasonable offer refused.—4A, Petersham Rd., Richmond. [6219

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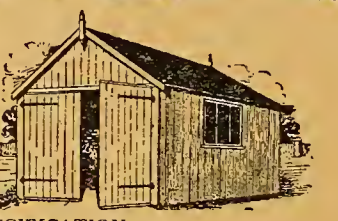

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ft.	ft.	ft.	in.	ft.	in.			
8	6	7	6	5	3	6	17	6
9	7	8	0	5	6	9	15	0
10	8	8	4	5	9	11	0	0
12	8	8	4	6	0	15	0	0
14	8	8	7	6	3	17	15	0
15	8	8	7	6	3	20	15	0
16	9	8	9	6	4	22	10	0
18	9	8	9	6	4	27	0	0
20	10	9	0	6	6	32	0	0
20	12	9	4	6	9	35	0	0

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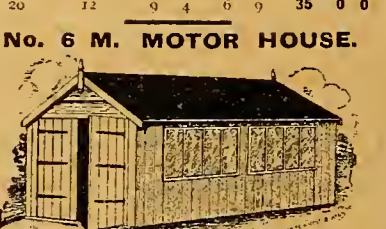

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ft.	ft.	ft.	in.	ft.	in.			
10	8	6	0	8	0	11	5	0
12	8	6	0	8	6	15	5	0
15	10	6	3	8	10	20	15	0
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1922 Squirrel, perfect condition, all access £80, or near offer; privately owned.—Au biles (Cheshire) Engineers, Bridge St., Chester. [

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SOUTHPORT.—Clearance sale; latest Scott Squ very slightly shop-soiled; 90 guineas; del payments; exchanges.—Kents, 417, Lord St., S port. [

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16 3½h.p. Sunbeam Combination, full accessories, hood and screen; £70.—Ross, 86, High Lee. [5892

RTING Sunbeam, electric lamps, disc wheels, perfect condition; 40 guineas, or near.—670, Holloo Rd., N.19. [5728

BEAM 1921 3½h.p., new condition, Lucas acetylene, speedometer, taxed, 26×3; £85.—7, Exhibi Rd., S.W.7. [5618

BEAM 1922 4½h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £128. Exhibition Rd., S.W.7. [5619

NBEAM Combination, 3½h.p., 1919, perfect condition throughout; £97/10, or offer.—1, Melrose ce, Hammersmith, W.6. [5777

. Sunbeam Combination, equal to new, in splendid condition, all complete.—117, Wright's Old Hill, Staffordshire. [5751

BEAM 3½h.p., 1916, fine condition, accessories; £50, or reasonable offer, or exchange Morgan, cash ment.—Turner, Alresford, Hants. [5742

BEAM 3½h.p. Combination 1914-15, all accesories, stored part of war; £75.—Rogers, Silver Cottage, Woodlands, Southampton. [5913

BEAM 1920 3½h.p., new condition, accessories and sidecar; £85, or exchange for lightweight, preferred.—48, Lavender Vale, Wallington. [5919

BEAM Combination, 3½h.p., splendid condition, new tyres, seen and tried any time; £100 or offer. Senson, Blackford, North Cadbury, Somerset. [5918

22 4½h.p. Sunbeam Combination, 5 weeks old, used twice, fully equipped, lamps, speedometer, Easting, taxed, only difference between this and the price; £135.—James, c/o Bradmores, 482, low Rd., Paddington. [6229

20 Sunbeam 3½h.p. 3-speed Combination, interchangeable wheels, fine condition, ready to ride lamps and speedometer, tax paid; in 1920 cost guineas; sacrifice, £112; good reason for selling.—son, Allerthorpe, York. [6234

PREMIER MOTOR COMPANY

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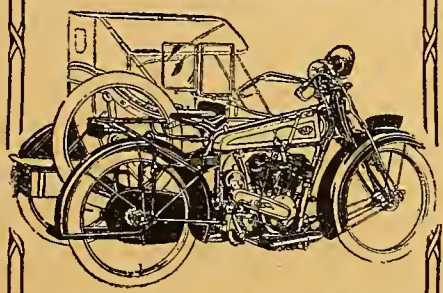
Brand New 1922

(slightly showroom soiled)

CLYNO

Sidecar Combination



8 h.p., 3-speed, chain drive, spring frame, spring sidecar wheel, all 3 wheels quickly detachable and interchangeable, 28×3 in. Dunlop tyres, CLYNO Coachbuilt Sidecar, with dash and wind screen; exactly as specification in current catalogue; carrying MAKERS FULL GUARANTEE!

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£135

At the above price these famous machines are undoubtedly the best value ever offered in high-grade Sidecar Combinations. After this 1 machine is sold we cannot repeat this offer, so you will be well advised to

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SUNBEAM 1922 3½h.p., brand new, shop-soiled double-purpose model, complete to standard specification; £120.—The Morris Garages, Oxford. [6540

3½h.p. Sunbeam Combination, hood, windscreen, lamps, etc., recently overhauled, perfect condition; £70.—Mackworth, Hallway, Kintbury, Berks. [5968

SUNBEAM, 6h.p., 1918, Combination, compressed acetylene lighting set, guaranteed genuine outfit; £110 (ride 50 miles).—176, Mansfield Rd., Nottingham. [5708

SUNBEAM 1920 3½h.p. and Montgomery sports sidecar, fully equipped and tax paid; bargain at £105.—The Layton Garages, 30, Holywell St., Oxford. [6086

SUNBEAM 1921 Sports Model, electric light, speedometer, Cowey horn, mileage 3,000, as new; £85.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6553

SPORTS Sunbeam 1921, 3½h.p., Lucas lamps and horn, speedometer, kneegrips, taxed, insurance, Tan-Sad, perfect condition, any trial; £92.—Edwards, 13, Orme Rd., Bangor. [6367

1921 3½h.p. Sunbeam Combination, faultless order, mileage under 5,000, Magdyno, Cowey speedometer, legshields, Easting windscreen, discs; £120.—Norman Fox, Liss, Hants. [5755

1919 Sunbeam 3½h.p., fully equipped, lamps, mechanical horn, French Military model, tax paid, engine just overhauled, perfect; £65.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [6573

SPECIAL Sporting 3½h.p. Twin Sunbeam Combination, delivered last year, lavishly equipped; cash absolutely necessary; best over £100.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [6334

1921 8h.p. Sunbeam Combination, special fittings, hood, screen, spare wheel, dynamo, electric horn, most luxurious outfit; £130; exchanges.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [6230

SUNBEAM 1922 3½h.p., light solo, as per manufacturers' specification, brand new, slightly shop-soiled; list price £136/10; our price £125.—Victor Horsman, Ltd., 7, Mount Pleasant, Liverpool. [5923

SUNBEAM 3½h.p. 1921 (September) Combination, magnificent machine, trip speedometer, leaf spring forks, Tan-Sad, Lucas lamps, mirror, all excellent condition; £125.—42, Highfield Rd., Bushey, Herts. [5932

3½h.p. Sports Sunbeam, April, 1922, K.S., largest Lucas lamp and horn, hand grips, tyres unpunctured, carefully driven, small mileage, tax, insurance; cost £143; £100.—Croshaw, 25, Southborough Rd., Bickley, Kent. [5827

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Sunbeam parts in stock. No waiting. [6522

T.D.C.

£15.—T.D.C. De Luxe 1920 2½h.p., new tyres, enamel, etc., as new.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [6246

Torpedo.

3½h.p. Torpedo, 2-speed, Simms' magneto, M.O.I.V., good condition; £17/10; cash needed, reasonable offers not refused.—F. Godwin, Hill Ridware, Rugeley, Staffs. [5753

Triumph

PREMIER Motor Co. for Triumph Bargains.

FURTHER and Final Reductions to Clear our Remaining Stock of new 1922 Triumphs, all carrying maker's full guarantee.—Below.

TYPE S.D. 4h.p. 3-speed, chain drive, list price £115, reduced to £90; type H, list £105, reduced to £85; also several sidecar combinations from £108 upwards; easy payments 4% extra; carriage paid to any address; this is an exceptional offer, and we cannot repeat at these prices; post your order to-day.—Premier Motor Co., Aston Rd., Birmingham. [6703

TRIUMPH Junior, brand new; what offers, must sell?—Rose's Garage, Uxbridge. [6260

£22.—1913 Triumph, splendid going order, fast.—White, Darvills Lane, Farnham. [5765

TRIUMPH 3½h.p., 1913, clutch model, equipped, fast; £18.—17, Heaton Rd., Mitcham. [6284

TRIUMPH 1918 4h.p., 3-speed, chain-cum-belt drive, Miller lamps, tax paid; £62.—Maudes', below.

TRIUMPH 1919 4h.p., single speed, semi-T.T. bars, Lucas lamps, tax paid; £42.—Maudes', below.

TRIUMPH 1921 4h.p. sporting model, 3-speed, clutch, kick-start, all-chain drive; £80.—Maudes', below.

TRIUMPH 1919 4h.p., 3-speed, clutch, kick-start, chain-cum-belt drive, P. and H. lamps, tax paid; £58.—Maudes', below.

TRIUMPH 4h.p., latest 1922 model, new but slightly shop-soiled, guaranteed all-chain drive model; £90; exchanges or deferred payments.—Maudes', 100, Great Portland St., London. [6421

MOTOR CYCLES FOR SALE.
Triumph.

1919 Triumph-Gloria Combination; bargain; tax paid; £75.—Ross, 86, High Rd., Lee. [5893

TRIUMPH, clutch, Phillpson, taxed, perfect; £21. —51, Upper Richmond Rd., East Putney. [6640

TRIUMPH Combination, 1914, new sidecar; £40.—Johnson, 6, North Villas, Camden Sq., N.W. [5872

TRIUMPH Combination, 3-speed, good order; £55.—H. T., 76, Baron Rd., Chadwell Heath, Essex. [5771

1919 4h.p. Triumph Combination, tax paid, all on; £70, or offer.—Nag's Head Hotel, Welling, Kent. [5851

LATE 1920 Triumph, 3-speed, as new, nicely equipped; 43 guineas.—67, Fernlea Rd., Balham. [6651

1919 second-hand 4h.p. Triumph Combination; £72/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5496

TRIUMPH type H, shop-soiled only, at special price of £94/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5491

TRIUMPH S.D., shop-soiled only, at special price of £103/10.—Ratcliffe Bros., 200, Gt. Portland St., W. [5492

1918 Countershaft Triumph Combination, fully equipped; £48.—9, Church Rd., Willesden, N.W. [6358

1920 Baby Triumph, 2-speed, new condition, licence paid; £40, or near offer.—70, Burr St., Luton, Beds. [4467

£35.—4h.p. countershaft Triumph, 3-speed, clutch, K.S., equipped.—Restalls, Furniture Removers, Oxford. [6092

£80.—1920 Triumph with nearly new Millford sidecar, all on, Easting; a bargain.—11, Warwick St., Oxford. [6144

TRIUMPH S.D., 1921, Lucas accessories, tax paid, as new; £83.—Ratcliffe Bros., 200, Great Portland St., W. [6681

£35.—Baby Triumph, late 1920, new belt, lamps, horn, tax paid; bargain.—Davis, Sports Outfitter, Allreton. [5821

TRIUMPH, 1922, 4-valve, 6 weeks old, only run 50 miles; £115.—Fletcher, Rutland Arms, Baslow, Bakewell. [5750

1918 Triumph, fully equipped, in splendid order; £45.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [6231

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TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

TRIUMPH Combination, 1918, Easting, Tan-Sad, excellent condition, trial; £60.—63, Arlingford Rd., Brixton, S.W.2. [6052

TRIUMPH Combination, 4h.p., countershaft, 1918, good tyres, accessories, any trial; £55.—406, York Rd., Wandsworth. [6372

TRIUMPH 1921 4h.p. Chain-Drive Combination, practically unscratched; £100.—The Morris Garages, Oxford. [6535

3½h.p. Triumph, Grado, Bosch, variable jet, all on; £24; after six.—Lorenzo, 18, Fieldway Crescent, Highbury. [5993

1918 countersbaft Triumph, £45; ditto 1919, £50; ditto 1919 combination, £57.—24, Balliol Rd., North Kensington. [6403

C.S. Triumph, late model, special mudguards, perfect; £56.—Simpson, Orchard Rd., near Reservoir Inn, Sunbury-on-Thames. [60

1922 Model S.D. Triumphs, all-chain drive, shop-soiled; real bargains, to clear, £90.—Williams' Garage Cheltenham. [6221

1919 Triumph 4h.p., electric lighting, all accessories; £55.—Rey, 173, Gt. Portland St. Phone: Langham 1257. [6460

£58.—Triumph, countershaft, 1920, in splendid condition, taxed to December.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [6244

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£35.—Triumph and coach sidecar, 3-speed, clutch, lamps, horn, ready for road.—Collyer, 286, High Rd., Wood Green, N. [5786

TRIUMPH 1920 Combination, fitted Watford speedometer, lamp, horn, in good condition; £107.—The Morris Garages, Oxford. [5834

1918 Triumph 4h.p., renovated by Triumph Co., all accessories; £48.—Rey, 173, Gt. Portland St. 'Phone: Langham 1257. [6461

37/- A Week for Twelve Months, new Triumph Model H, shop-soiled.—D. and S. Autocar Co., 33, The Parade, Golders Green. [6583

1918 Triumph 4h.p. 3-speed, Sturmey, clutch, kick-start, horn, lamps, licensed; £45.—91, St. James Park Rd., Northampton. [6298

TURNERS

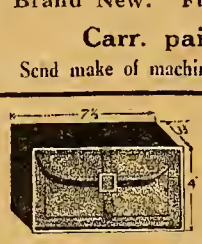
Genuine COWEY SPEEDOMETERS

(NON-TRIP.)

Brand New. Fully Guaranteed.

Carr. paid 55/-

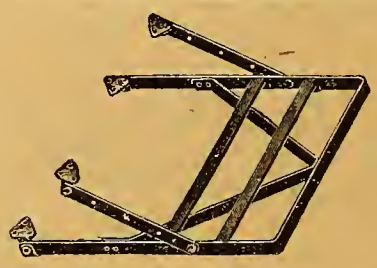
Send make of machine and size of tyre.



METAL CASED TOOL BAGS

Leather front. 2 clips supplied with each bag. Best value obtainable.

Carr. paid 8/6 per pair.



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10/6 Carr. paid.

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Sidecar fittings in endless variety.

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TRIUMPH 1918 coachbuilt Combination, equipped, excellent condition; £62.—R. B. and Co., 7, Exhibition Rd., S.W.7.

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SEVERAL second-hand Triumphs always in Triumph Service Agents for Sussex.—Caffyns, Ltd., 56 Terminus Rd., Eastbourne.

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TRIUMPH 1915, N.S.U. gear, perfect, just rallied, new tyres, belts, lamps; £35, ba genuine.—22, St. John's Rd., Putney.

1920 Baby Triumph, fully equipped, tax like new, any trial; £32.—Ward, Western Garage, New Malden, Surrey.

1918 Countershaft Triumph, new rear Dunlo on, perfect condition, tax paid; bargain for —7, Norwood Rd., Herne Hill, S.E.24.

£53.—Late 1919 Countershaft Triumph, in exc condition, engine recently overhauled, jus insured.—Digby, 25, Loudoun Rd., N.W.8.

BARGAIN.—1918 Triumph combination, equi perfect condition; £55; exchanges.—37, C bury Rd., Balls Pond Rd., Dalston, N.1.

TRIUMPH 4h.p., late 1921, unscratched an distinguishable from new, Lucas lamps, £85.—Goldsmith, Blackness, Crowborough.

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TRIUMPH, Camber, Combination, fully equ tax, insurance paid; £90; any trial, appoint —Pumping Station, Byegrove Rd., Merton.

CROYDON Agents Triumphs, all new model large range of second-hand in stock:—M Presto Motor Works, North End, Croydon.

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TRIUMPH 1921 4h.p. Model H and Millford s fully equipped and in very excellent order —The Layton Garages, 30, Holywell St., Oxford.

TRIUMPH, Model H, brand new and unused, at £105; our price, £95; exchanges or de —Edwards, 50, Harrington Rd., South Kensing

TRIUMPH 3½h.p., countershaft, 3-speed, kick and clutch, all on, tax paid; £35.—Richa 2, Kelton Villas, Hawkes Rd., Kingston-on-Tha

1922 Triumph-Ricardo Combination, lamps, Easting, luggage grid, tax paid, fully splendid condition; £107.—38, Cowley Rd., Ox

ALL Triumph models always in stock; also ful of Triumph Spares. Triumph Service Age Sussex.—Caffyns, Ltd., 56, Terminus Rd., Eastbo

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3½h.p. Triumph, Philipson pulley, new tyr 3½ Binks carburetter, in perfect order; £27/10.—Rhind and Co., Stone Place, Ru Manchester.

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MOTOR CYCLES FOR SALE

Triumph.

W Trinmph-Gloria all-chain Combination, not taken delivery, having bought car, licence just ved; £155.—Crabtree, 30, Calverley St., Tun- ge Wells [5773

5.—1920 Triumph-Gloria combination, electric lighting, Easting windscreen, Ace discs, tax very good condition.—Hall, Shortfurrows, Cater- Surrey. [6675

14 3½h.p. Triumph, 3-speed hub, hand clutch hub, and engine just overhauled, complete with s, licensed; £40, or offer.—Easter, Five Ways, ley, Kcot. [6005

22 4h.p. Triumph, Engine No. 81266, guaran- teed perfect, not ridden 1,000 miles, Lucas s and horn; £80.—Eastwood, 10, Kemerton Rd., enham, Kent. [4755

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20 Trinmph Combination, 3-speed, perfect con- ditiun, Easting, spares, accessories, taxed, in- ; £65.—19, Stockwell Park Crescent, S.W.9. ne: Avenue 2598. [5978

n. Trinmph, 1918, reconditioned, sold by makers 1920, perfect order, privately owned; price £55; at Martin's Garage, High St., Highgate, London. ne. Hornsey 350. [6223

1919 countershaft Triumph, 1921 sidecar, 3- speed, clutch, kick-start, splendid condition, fully ped, speedometer, taxed, tools, spares.—Beaulieu, ue Rd., St. Albans. [5991

THPORT.—1921 Triumph 3-speed sports, speci- ally tuned, lovely condition, Ricardo bars, long ist, very fast; 69 guineas; exchanges.—Kents, Lord St., Southport. [6168

21 Triumph Combination, brand new Coupette sidecar, fine combination, date and condition nteed; £77/10.—Goad, 122, Maida Vale. ne: Maida Vale 1353. [6464

19 4h.p. Triumph, 3-speed, kick-start, clutch, luxurious sidecar, windscreen, etc., fully ped; £75; exchange.—Rhind and Co., Stone , Rusholme, Manchester. [5953

UMPH, immediate delivery of all 1922 models; sidecars to suit from £20; write for catalogue full particulars of easy payments.—P J. Evans, Bright St., Birmingham. [5947

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UR Motor Cycle or Combination taken in part payment for a Triumph, any model; deferred pay- .—Barker's Motors, 194, Balham High Road, 2. 'Phone: 4441 Latchmere. [5944

1 Triumph-Gloria Combination, chain drive, speedometer, Easting, Lucas lighting, spares, tax nsurance to February, perfect condition; £105, er.—58, Oxford Rd., Chiswick. [6127

—3½h.p. Triumph C.B. Combination, 3 speeds, lutch, all accessories, taxed, splendid run- order, and cheap; trial.—Cubitt, 8, Devonshire Mews, Portland Place, N.W.1. [5781

6 Triumph Combination, exceptional condition, fully equipped; £50. Cash, exchange, ex- terms.—Elce, Ltd., 13 15-16, Bishopsgate Ave., nile St., E.C.3. 'Phone: Avenue 5548. [0065

2 Brand New All-chain Triumph Combination; £120, or near offer; exceptional opportunity. neth Kemp and Co., 4, Berkeley Mews, Con- t St., Marble Arch, London. Padd. 1177. [5382

Edwards' —1922 4h.p. Triumph, Model H, fully quipped, lamps, horn, licensed, indistinguishable ew in every respect; 77 guineas. Deferred pay- and exchanges.—101, Great Portland St., W 1 [2226

UMPH Combination, 1922, S.D. Model, fully equipped and tax paid, new in July; £125; ex- payment terms over 18 months with pleasure.— Sales, Ltd., 5, Victoria St., London, S.W.1. [6613

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UMPH-HENDERSON Combination, 4h.p., 3- peed, fully equipped, lamps, horn, speedometer, aid, charming turnout, almost as new, only about 1,500 miles; buying car; bargain, £100; 200.—Walton, Market Lavington. [5835

0 4h.p. Triumph, Type H., lamps, horn, 2 spare valves, knee grips, magneto cover, Cowey speedo- foot and hand clutch control, complete tool out- erfect condition, seen by appointment after 5 £80.—Tosland, 27, Holwood Rd., Bromley, [5697

1 Triumph, Paragon sidecar with bulbous back, oker and folding chassis, luggage carrier, pil- M.L. dynamo lighting and horn, speedometer, s, all accessories, condition perfect throughout; Write appointment, 12, Grange Rd., Barnes. e: 8251 Citv. [5960

POST YOUR ORDER EARLY

THE

"ALL WEATHER"

WATERPROOF MOTOR CLOTHING.

Fig. 1

WATERPROOF MOTOR CYCLE SUIT

(Fig. 1)

SPECIFICATION

MADE from hard wearing double texture material with an interlining of Rubber. Double Breasted jacket, with all-round plaited Leather Belt, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof. Overall Leggings with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the leggings to be pulled off in a moment.

SUIT Complete, with overall leggings - - 35/-
" " with seatless trousers 42/-
JACKET only - - - - 25/-

When ordering by post, state Chest measurement over ordinary Jacket, and height, and enclose remittance.

WATERPROOF TRENCH COAT

(Fig. 2)

Fawn material, rubber lined, double-breasted, with all-round belt and buckle, wind cuffs in sleeves. Medium weight. An ideal coat for riding, walking, and all purposes where a rain-resisting covering is required. Guaranteed waterproof.

Smart and Serviceable.

COAT Complete - **25/-**

When ordering by post, state Breast measurement over ordinary Jacket, and height, and enclose remittance.

TRENCH COATS in heavier and superior materials are priced in our list.

Fig. 2

SEATLESS TROUSERS

(Fig. 3)

Waterproof Fawn double texture material, rubber interlined, apron front, with wind and mud gussets, patent clasp fasteners, leather straps and buckles to fasten round boot. Perfectly waterproof. All sizes. **18/-** per pair.

Fig. 3

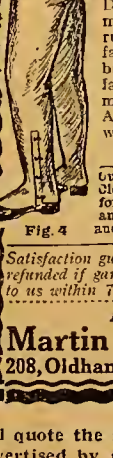
Fig. 4

When ordering by post, state height & enclose remittance.

WATERPROOF OVERALLS (Fig 4). Double texture material, interlined, rubber, with strap to fasten on to trouser buttons, patent clasp fasteners, seams cemented and taped. All sizes. Thoroughly waterproof.

12/6 per pair.

Our Illustrated List and Pattern Bunch of Cloths, together with measurement form, will be sent post free and without any obligation upon receipt of your name and address.

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208, Oldham Rd., New Cross, Manchester

MOTOR CYCLES FOR SALE.

Triumph

TRIUMPH 1919 Countershaft, 1922 spring-wheel Middleton sidecar, electric throughout, Tan-Sad, screen, oversize tyres, many spares, taxed and in- sured, splendid condition; reasonable offer accepted; evenings or week-ends.—Broadway House, Northolme Rd., Highbury, N. [6414

1922 4h.p. Triumph (all-chain drive) Combination, sporting Montgomery sidecar, 3 Lucas lamps, generators, horn, mirror, Cowey speedometer, wind- screen, all as new mechanically and appearance, un- punctured, mileage under 3,000, tax paid; exceptional bargain, £115.—Southall, 3, Selbourne Rd., Worcester. [5312

WE have a limited number of new 1922 Triumphs, Model H, £90; Model SD, £95; SD Com- bination, £127; H Combination, £122; 2-stroke lightweight, £52/10; terms and exchanges arranged. —Lamb's, Ltd., 50, High Rd., Wood Green, N.; Gt. Portland St. (opposite station); 151, High St., Walthamstow, N.E. [6556

TRIUMPHS.—Buy from official appointed agents. New 1922 4h.p. combination, all-chain drive, £155; chain-cum-belt combination, £145; 4h.p. S.D., all-chain, £115; model H, chain-cum-belt, £105; Junior 2¼h.p., £65; also several second-hand Tri- umphs from £40; second-hand machines taken in ex- change remainder on easy terms. Value allowed on old machine accepted as payment down.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168. [6502

Spare Parts.

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

HERBERT ROBINSON, Ltd., Green St., Cam- bridge.—The Triumph experts. Complete illus- trated list of spare parts post free. [6523

TRIUMPH Spares.—All parts, all models in stock, second-hand or new, goods sent per return ser- vice.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [6194

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph re- pairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa [7361

Trump.

TRUMP-J.A.P. 1922 8h.p. Sports, shop-soiled only; list price £140; accept £115.—The Layton Gar- ages, 30, Holywell St., Oxford. [6078

Velocette.

PREMIER Motor Co. for Velocette Bargains

FURTHER Great Reductions in showroom soiled 1922 models. E2, 2-speed, £55; E3, 3-speed, £60; EL2, lady's open frame, £58; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra; write for special clearance list. —Premier Motor Co., Aston Rd Birmingham. [3579

£24.—2¼h.p. Velocette, 2-speed, in splendid running order.—King, Egrove Farm, Oxford. [6091

2¼h.p. Velocette, in perfect running order, good tyres; bargain, £20.—Rhind and Co., Stone Place, Rusholme, Manchester. [5950

VELOCETTE 1922 2¼h.p., 2-speed, clutch and kick- start, shop-soiled; two only; list price £65; our price £55.—Victor Horsman, Ltd., 7, Mount Pleasant, Liverpool. [5927

Verus.

VERUS 1920 2¾h.p., Blackburne engine, fully equipped, tax paid; £45.—Ratcliffe Bros., 200, Gt. Portland St., W. [5505

1920 Verus-Blackburne Combination, perfect con- dition, insured till September; 70 guineas.— 44, Boston Rd., Hanwell, W.7. [6129

VERUS 1920 4h.p. Blackburne, 3-speed, clutch, kick- start, fitted with Dinkie sports sidecar, condition of machine as new; bargain, £75.—Maudes', 100, Great Portland St., London. [6428

Viper.

1920 Viper, 2¾h.p. J.A.P., 2-speed, excellent con- dition, accessories, licence paid; £30.—Capps, 10, Stainsby Rd., Poplar, London. [5808

Werner.

£22.—4h.p. Werner touring, fast, powerful, any trial; take pedal cycle part.—57, Kenbury St., Camber- well, London [6337

Williamson

1915 Williamson Combination, guaranteed; £60.— Ross, 86, High Rd., Lee, S.E. [5899

Wolf.

WOLF 2½h.p., 3 speed, free engine, kick start, senspray, tyres new, good condition, any trial; offers.—Constant, 46, Boundary Rd., Wood Green. [5709

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Zenith.

THE Zenith Specialists.

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1.

75 m.p.h. from a standing start inside ¼ mile on a Zenith-Bradshaw, the result of a little tuning by the Specialists.

YOU may purchase this identical machine for £115, or if you have a Bradshaw All-Chain Super-Sports 8h.p., or any other model Zenith, we are prepared to overhaul and tune at a reasonable figure.

OUR Latest Bargains.—5h.p. Sports, delivered July, 1921, mileage about 1,000, tyres and belt unmarked, tip-top condition, £50; 1920 8h.p. countershaft combination, thorough overhaul just completed, electric lighting, all on; £75. [6457

1920 8h.p. Sports Model Zenith, as new; £55.—Ross, 86, High Rd., Lee. [5901

ZENITH 1922, Bradshaw chain, very special; £78.—Clark, 7, Exhibition Rd., S.W.7. [2306

ZENITH-A.B.C. Sports; quick sale, 24 guineas.—113, High St., Clapham. 'Phone: Latchmere 4290. [6375

1922 3½h.p. Special Zenith-Bradshaw, 3-speed, all chain, licensed; £70.—Ford, High St., Sidmouth. [5847

ZENITH 1920 8h.p., Gradua gear, kick-start, clutch, complete with lamps; £64.—Maudes', 100, Paris St., Exeter. [6440

90-BORE Zenith, very fast; £55; exchange Henderson or Flat Twin.—Sheppard, 108, The Crescent, Slough. [6024

SPORTS Zenith, 1920, 8h.p., equipped, appearance and running order as new; 60 guineas.—4, Derby Av., Skegness. [6026

ZENITH-J.A.P. 4h.p. Single, all on; £26; call after 5 p.m., 12 Saturdays.—17, Wells House Rd., Willesden, N.W. [5877

ROBERTSON'S Motors, Ltd. — 1922 shop-soiled Zenith-Bradshaw, Gradua gear; £98.—157b, Gt. Portland St., W.1. [5932

1922 Zenith-Bradshaw, all-chain drive, shop-soiled only; £98.—Taylors, 52, Sussex Place, S.W.7. 'Phone: Kens. 7260. [0945

SUPER Sports 6h.p. Zenith, red and black, electric, 3,000 miles, long exhausts, 60 m.p.h., £43; offers —25, Fairfax Rd., N.W.6. [5699

AT Edwards'.—1920 5h.p. Sports Zenith, lamps, horn, speedometer, knee grips, good order; 53 guineas. —101, Great Portland St., W.1. [5623

43 Guineas.—Zenith-Gradua 1915 6-8h.p. combination handle start, licensed; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5841

F.O.C.H. Invite Inspection. Zeniths and other makes far below any anticipated price reduction. —5, Heath St., Hampstead (near Tube). [3861

ZENITH 1920, 8h.p. J.A.P., sports model, Gradua gear, machine as new, only ridden few miles; £80.—Maudes', 100, Great Portland St., London. [6422

90 BORE special Racing Zenith, 8-10h.p., o.h.v., red and gold, excellent condition, well tyred, fast, and sporting; £50.—Lyme Villa, Mottingham, S.E.9. [6007

1921 5-6h.p. Sports Zenith, done about 2,000, original tyres, excellent condition; a great bargain, £65.—West Sussex Motor Co., Portland Rd., Worthing. [6128

ZENITH 1920 8h.p. Countershaft Combination, perfect condition, speedometer, lamps, tax paid; £65; exchanges or separate considered.—Harbormere, Crutchfield Av., Walton-on-Thames. [5876

YOUR Motor Cycle or Combination taken in part payment for a Zenith, any model; deferred payments.—Barker's Motors, 194, Balham High Road, S.W.12. 'Phone: 4441 Latchmere. [5945

COMBINATION, Zenith 4h.p., mechanically perfect, appearance good, accessories, spares, etc., taxed December, full insurance and A.C.U. next July; £32; offer.—118, Lavender Hill, Clapham Junction. [6647

ZENITH, 1922, 5h.p., sports accessories, new £4 oversize Hutchinson tyre, mileage 1,000, guaranteed perfect; £75, or exchange Norton, 16h.p. or Triumph.—S. D. Williams, Fair St., St. Colnnb, Cornwall. [5713

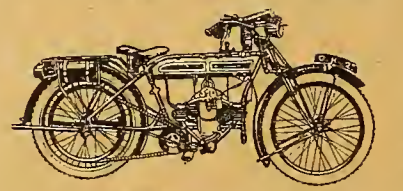
LATE 1921 Zenith, unscratched, 90 bore, overhead valves, Bonniksen speedometer, nearly new, mileage negligible, 7-70 m.p.h.; £85; cash or deferred.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6562

GREAT Bargain.—6h.p. Sports All-Red Zenith combination, coachbuilt, new hood and screen, discs all round, splendid condition, 50 m.p.h. with passenger, 70 m.p.g.; £48; photograph.—Bell, Gold St., Northampton. [6365

AT Edwards'.—8h.p. countershaft Zenith, super-sports J.A.P. engine (January, 1922), fitted with Hughes sports sidecar, on Millford chassis, electric lighting, speedometer, horn, new condition, tax paid; 85 guineas. —101, Great Portland St., W.1. [6616

To ensure successful motor cycling is to get in touch with Burlingtons. Our Easy Payments Terms are so *easy* they are bound to suit *your* pocket.

2¾ h.p. 2-speed Model, fully equipped.



Deposit £13 5 0
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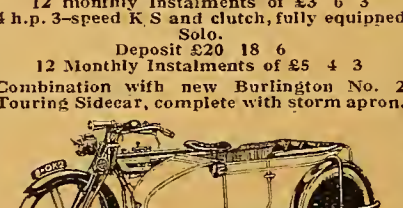
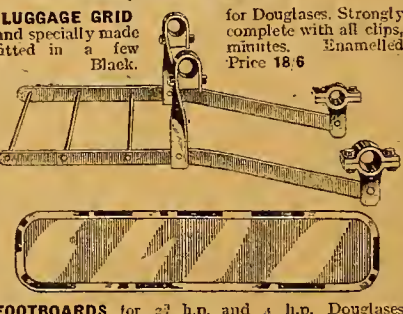
4 h.p. 3-speed K.S and clutch, fully equipped Solo.
Deposit £20 18 6
12 Monthly Instalments of £5 4 3

Combination with new Burlington No. 2 Touring Sidecar, complete with storm apron.



Deposit £25 16 6
12 Monthly Instalments of £6 9 6

LUGGAGE GRID and specially made fitted in a few Black. for Douglases. Strongly complete with all clips, minutes. Enamelled Price 18/6



FOOTBOARDS for 2¾ h.p. and 4 h.p. Douglases covered with lino; brass beading; with clips 12/6 per pair. Postage 1/6.

SPARES.—If it's for a Douglas, we have it.

TRAD SUPPLIED.

BURLINGTON MOTOR CYCLE Co., Ltd.
7, South Side, CLAPHAM COMMON, S.W.4.
Phone: Brixton 2417. Wires: Burlington Motors, Clapham.
Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH-BRADSHAW, new, special picked engine certificate given, black enamel picked out in red and gold, 3-speed and K.S., Sturmey all-chain drive, speedometer, horn, tax paid, a really beautiful sporting sports machine, and a genuine bargain; 67 guineas. County Garage, Caterham, Surrey. 'Phone: 191.

HERE'S a snip for an amateur speedman!—Super Sports Zenith, mileage 4,000, tyres and new belt, lamps, tax paid, long exhausts or standard silencer, Ekon carburetter, 75 m.p.g., 75 m.p.h. guaranteed; nothing will pass it on the road; £55 or near offer.—Box 4101, c/o *The Motor Cycle*.

Spare Parts:

ZENITH Spares. Immediate delivery — Kaye, Bond St., Ealing.

Ladies' Motor Cycles.

VELOCETTE 1919, open frame, 2 speeds, chain drive, excellent condition; £26.—Maudes', 100, Great Portland St., London.

Miscellaneous.

A.J.S. 1922 2¾h.p. Model B1; £85; immediate delivery.

A.B.C. 1922 3h.p. Motor Cycle, electric lighting, tax paid, perfect condition; £63.

TRIUMPH 4h.p. 1920 Gloria Combination, all £87/10; tax paid.

TRIUMPH 4h.p. 1921 Gloria Combination, Magdyno lighting, taxed and insured; £115; perfect condition.

NEW HUDSON 2¼h.p., 1922, 2-stroke, new, soiled, with lamps and horn; £55, bargain.

CALTHORPE. 3½h.p. Precision engine, combine, 3-speed and clutch, 1915, tax paid; £25.

DOUGLAS 2¾h.p., 1920, 3-speed, clutch, and start, all accessories, hardly used; £52/10.

READING-STANDARD 8-10h.p., 1922 model, dynamo lighting, lamps, horn, etc., new; £95.

READING-STANDARD 8-10h.p., 1922, with One sidecar, hood and windscreen; £1 Fredries and Co., Ltd., 89, Gt. Portland St., don W.1.

W.J.C.—Clearance sale of motor cycles. Huge gains. An opportunity not to be missed.

W.J.C.—1921 Rudge-Multi, L.O.M., fully equipped, taxed; 43 guineas.

W.J.C.—1920 special super sports 8h.p. Ruby, Swan sidecar, dynamo, every possible accessory, taxed, insured, winner of many competitions, cost £260; bargain, £98

W.J.C.—1919 Indian, 3-speed, lamps, £39/10; 1920 2-stroke, 2-speed Enfield, £32 5-6h.p. Clyno combination, 3-speed, interchange wheels; snip, £35.

W.J.C.—4-cyl. T.M.C. combination, fully equipped as new, taxed, cost £200; bargain, £70.

W.J.C.—Above machines are ready for any trial examination; exchanges.—W.J.C. Motor change, 5, Addison Av., Holland Park, W.11. 2071.

2¾h.p. Motor Cycle, cheap, requires slight overhaul —Apply, C. Proctor, The Hut, Church Lawton.

BARR and Stroud All-chain Drive, 3 speeds, new, with sidecar, £85.—16, Willoughby Hampstead.

£11.—J.A.P., 3½h.p., M.V., Splitdorf, all accessories guaranteed perfect.—Guinehard, 179, York North London.

BARGAIN.—4h.p. Magneto Motor Cycle, engine, clutch, perfect order; first £10.—Box c/o *The Motor Cycle*.

SELL or exchange 1914 Matchless combination flints 2/6 gross, bulbs 14/- 100.—Lee, 58, Wellville Rd., Golders Green.

F.O.C.H. for New and Second-hand Cycles, cars, bargains; cash or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube).

1922 New Motor Cycles.—Bargains at end of season prices; secure now; cash or easy terms.—Sanders Clapham (Motors), 27, Stockwell St., Greenwich, S.E.

1922 brand new 8h.p. Combination, shop-soiled, list price, £140; sell £115; also 2¾h.p., £55; sell £43; makers' full guarantee.—Fox, Co Garage, Lichfield.

SOUTHPORT.—Clearance sale; 1919 Invicta-Jap speed, 25 guineas; Triumph, 19 guineas; Bat 8h.p., 2-speed, K.S., 32 guineas; Dian Villiers, 15 guineas; exchanges.—Kents, 417, St., Southport.

SHEFFIELD-HENDERSONS.—Henderson Ltd., Fitzwilliam St., Sheffield, have for machines used in this year's competitions as und One 2¼h.p. o.h.v. T.T. model, one 2¾h.p. o.h.v. model, one 3½h.p. o.h.v. T.T. model, one 4h.p. dard combination. All the above are guaran perfect order and condition. Enquiries and tion invited.

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MOTOR CYCLES FOR SALE.
Miscellaneous

NDSWORTH Motor Exchange.—Finest selection motor cycles combinations, in London, choose from.

NDSWORTH.—Be sure of good motor cycle. Buy from the old-established firm; backed by ars' experience. Satisfaction guaranteed.

NDSWORTH.—Easy payments; ride while you ay. First deposit secures immediate delivery.

NDSWORTH.—Zenith 3½-4h.p., J.A.P., Gradua gear, runs well; cheap, 29 guineas; easy terms.

NDSWORTH.—Enfield 3h.p. twin, 2 speeds, chain-drive, lamps; 29 guineas; easy terms.

NDSWORTH.—Rex Coachbuilt Combination, 5 h.p. twin, J.A.P., 2 speeds; only 39 guineas;

NDSWORTH.—B.S.A. fine Coachbuilt Combination, 4h.p., 3 speeds, kick, chain-drive; 49 s.

NDSWORTH.—Premier nice Coachbuilt Combination, 3½-4h.p., bulbous back, lamps; 36 s; easy terms.

NDSWORTH.—F.N., magnificent machine, latest 5-6h.p., 2 speeds, clutch, kick, newly enamelled ; 49 guineas.

NDSWORTH.—Harley-Davidson Coachbuilt Combination, 7-9h.p., twin, kick, lamps; 49 guineas; erms.

NDSWORTH.—Indian, 1915, beautiful clutch model machine, 7h.p., complete; 39 guineas; erms.

NDSWORTH.—1920 A.B.C. Coachbuilt Combination, twin, 4 speeds, lamps; sacrifice, 59 s; terms.

NDSWORTH.—1920 Rudge Multi Coachbuilt Combination, 5-6h.p., kick, lamps; 59 guineas; erms.

NDSWORTH.—Peugeot fine Coachbuilt Combination, underslung, 5-6h.p. twin, 3 speeds; 35 s; exchanges.

NDSWORTH.—Triumph, almost brand new, shop-soiled, 4h.p., 3 speeds; 85 guineas; exs.

NDSWORTH.—1922 Douglas 2¾hp., 2 speeds, everything fitted, 100 miles only; 59 guineas; iges.

NDSWORTH.—1921 (Oct.) Diamond-Jap, 2¾ h.p., 2 speeds, little beauty; 39 guineas; terms.

NDSWORTH.—1920 Henderson, dynamo lighting, 10h.p., 4 cyls., 3 speeds; gift, 69 guineas;

NDSWORTH.—1921 Indian, Big Valve, dynamo lighting, 3 speeds; gift, 69 guineas; terms.

NDSWORTH.—1920 Blackburne Coachbuilt Combination, 4h.p., 3 speeds, lamps; 59 s; easy terms.

NDSWORTH.—1921 Coulson B 2¾h.p., Blackburne engine, 3 speeds, lamps; 55 guineas; erms.

NDSWORTH.—James 2¼h.p. Lightweight, 2 speeds, lamps, fine machine; 28 guineas; easy

NDSWORTH Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town). 'Phone: Latchmere 4686. [6344

DRON Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17 ('Phone: Wimbledon 607), e following machines for sale or exchange at prices:—

DRON.—A.J.S. 1922 7h.p. Combination, delivered Sept. 15th, with maker's 6 months' ee, run under 80 miles, fully equipped;

DRON.—A.J.S. 1921 7h.p. Combination, ucas electric lighting set, hood, speedometer, w mileage; £105.

DRON.—Douglas 4h.p. 1918 Combination, ully equipped, in good running order; £46.

DRON.—Ariel 6h.p. Twin Cylinder Combination, 3-speed gear box, kick-starter, Easting etc.; £52.

DRON.—Lea-Francis 1920 3½h.p. Twin, J.A.G. engine, countershaft gears, clutch and rter, all-chain drive; £48.

DRON.—Sunbeam 3½h.p., 1919 model, 3-peed, clutch and kick-starter, all-chain drive;

DRON.—Douglas 2¾h.p., in excellent unning order, fully equipped; £25.

DRON.—Garfield-B.S.A., 4h.p. engine, Sturmey-Archer gear box, clutch and kick- £26.

DRON Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [6482

GLAS 1919 4h.p., £37/10; Rudge-Whitworth h.p., clutch model, £18; 1915 Matchless, 7-9h.p. combination, £55; 1921 O.K. 2¾h.p., combination, £36; 1922 Atlas, 6 weeks old, 20 Harley-Davidson combination, electric model, 917 Radco 2¾h.p., £18; 1917 Douglas 2¾h.p., 1921, 2-speed, K.S., 2¾h.p. Enfield, £37/10; riumph, £48; all the above and heaps more xford's, The Motor Cycle House, 461, Upper nd Rd., East Sheen, S.W.14. 'Phone: Richnd 22. [6209

RIDEEZI REQUIRING ROOM

SELLS SLIGHTLY SOILED

VERY VALUABLE VELOCIPEDES

AT PRICES PERFECTLY PRICELESS.

IF YOU CANNOT sell for the price at which you bought, in 12 months' time, you can write for your money back.

You won't get it, but still there is no harm in writing.

NEW MODELS.

RALEIGH.

¾ h.p., 3-speed cl. and k/s Comb. £85
3 ,, ,, ,, ,, ,, £90
¾ ,, ,, ,, all chain £75
3 ,, ,, ,, ,, ,, £80

MATCHLESS.

Model H., M.A.G engine, single seater Comb. £155

Write for Extended Payment Terms of above.

SECOND-HAND BARGAINS.

DEPOSIT. £ s. d.		18 monthly Payments of £ s. d.
12 5 6	**RALEIGH,** 1922, 2¾ h.p., 2-spd. cl. and k/s, fully equipped and tax paid.	2 15 7
6 10 0	**SIRRAH,** 1922, 2¾ h.p., 2-spd. cl. and k/s, fully equipped.	2 5 0
10 18 5	**CONNAUGHT,** 1922, 2¾ h.p., 26 in. wheels, 2-spd. cl. and k/s, fully equipped and tax paid.	3 0 0
6 8 3	**ORBIT,** 1922, single spd., fully equipped.	1 18 11

SHOP-SOILED ONLY.

10 19 6	**ORBIT,** 1922, 2¾ h.p., 2-spd. cl. and k/s, and insured.	2 11 2

WRITE, CALL or WIRE to:—

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MOTOR CYCLES FOR SALE.
Miscellaneous.

BLACKPOOL Bargains.—Shop-soiled 1922 Rudges, Ariels, New Imperials, Royal Rubys, Bradburys, Martinsyde; reduced prices; exchanges.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone 1451.

BLACKPOOL Bargains.—3½h.p. Triumph, £16/10/6; Trinmph. 3-speed, £19/10/6.—Booth's Motories.

BLACKPOOL Bargains.—6h.p. Bat, countershoft, 3-speed, £39/10/6; 3½h.p. Humber, £19/10/6; 3½h.p. Premier, £24/10/6; 5h.p. Rudge 2-speed, £25/10/6; 5h.p Rudge, 3-speed, £27/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed O.K., £16/10/6; 3½h.p. Singer, 2-speed, £24/10/6; 2-speed P & M., £19/19/6; another, £35/10/6; N.S.U. Lightweight, £11/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Rudge, I.O.M. model, £45/10/6; another, Dynamo Lighting, £57/10/6; 4h.p. Douglas, £55/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed Douglas, £19/10/6; 2-speed Scott, £19/19/6. 1920 Douglas, 3-speed, kick start, £52/10/6; 1921 Allon, £32/10/6; 2-speed Connaught, £25/10/6; 2-speed Calthorpe, £25/10/6.—Booth's Motories.

BLACKPOOL Bargains.—9h.p. Indian, £29/10/6; 7h.p Indian, 2-speed, £29/10/6; 3½h.p. New Hudson Combination, £35/10/6; 8h.p. Dot Combination, £65/10/6; 1920 Matchless Combination, £89/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Martinsyde Combination, £85/10/6; Acme Combination, new 1921, spare wheel, £89/10/6; 8h.p. Premier Combination, £47/10/6 Enfield Combination, £39/10/6. 1921 Enfield Lightweight, £39/10/6; 3h.p. Twin Enfield, £37/10/6; 1920 Sun 2-speed, kick start, £35/10/6.—Booth's Motories.

BLACKPOOL Bargains.—8h.p. Carden Cyclecar, £32/10/6; 1920 Tamplin Cyclecar, £49/10/6; 1921 Zebre light car, 4-cylinder, W.C., 4 speeds, electric lighting and starting, spare wheel, fully equipped, £175/10; several others cheap; push cycles taken in exchange.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [3473

LEVIS Popular, 24 guineas; Indian Combination, 7-9h.p., 43 guineas; 6h.p. Twin Matchless, 28 guineas; Rover 3-speed combination, 41 guineas; Ariel 3-speed combination, 32 guineas; James 4½h.p. combination, countershaft 38 guineas; Douglas 2-speed, 27 guineas; British Excelsior combination, 6h.p., 48 guineas; Sparkbrook-Jap combination, 6h.p., 48 guineas; Precision 2¾h.p., 12 guineas; Zenith-Gradua 3½h.p., 14 guineas; Hobart-Villiers, 2-speed, 2-stroke, 24 guineas. All guaranteed 3 months; exchanges; photographs; full list free.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. Open Sundays. Tel. Putney 2865. [5632

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

DOUGLAS Combination, £5 per week; 1920 G.N., 8 gns. per week; fully insured.—Rodwell, 8, Red Lion Sq. Chancery 7272 [1519

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157B, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

H.

F.

EDWARDS and Co.,

101 Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

T.B.

WANT

500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5564

WE

ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391 [0332

DOUGLAS 2¾h.p.; £20 waiting.—63, Lynton Rd., Acton, W.3. [5822

LATE Model Solo or Combination; cash waiting. —497, Old Ford Rd., Bow. [6149

1922 Matchless 2-seater or A.J.S. 7h.p.—Drapper, 40, Royston Rd., Penge, S.E. [6002

SCOTT Squirrel or A.J.S., must be cheap for cash.—1, Othello St., Liverpool. [6318

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PALMER'S Garage, Tooting.—Catalogue free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [6529

WANTED, good solo, not earlier 1914; cheap.—23, Jupiter Terrace, Well Hall, S.E.9. [6398

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2-SPEED Lightweight Solo, guaranteed sound condition.—Hughes, Tanlan, Bettws-y-Coed. [5921

WANTED, 2¾h.p. 2-speed motor cycle; must be cheap.—Fisher, "Roseleigh," Heston, Hounslow. [6311

ZENITH 5h.p. Sports 1920-4; write particulars, price.—11, Kilmartin Ave., Norbury, S.W.16. [6302

WANTED, 4h.p. Countershaft Triumph; not exceeding £40.—Box 4150, c/o *The Motor Cycle*. [6089

WANTED, Scott motor cycle, condition immaterial; cheap.—Howard, 46, Scalpcliffe Rd., Burton-on-Trent. [6053

WANTED, Combination, countershaft gears, B.S.A. or similar; about £30.—Box 4149, c/o *The Motor Cycle*. [6088

WANTED, J.E.S., 2-speed, with pedalling gear, 1922 machine; cash or Lees.—Wyatt, Bishopswood, Chard. [6062

WANTED, motor cycle, solo or combination, any make; must be cheap.—King, Egrove, Kennington, Oxford. [6090

WANTED, 6-8h.p. combination, not earlier than 1917; quote price, accessories, and mileage.—Andrews, 6, Duke St., Kingston, Jamaica. [5806

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709—Edwards, 50, Harrington Rd., South Kensington. [0604

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YOUR present machine and cash exchanged for brand new P. and M. solo or combination at the reduced list price.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [5385

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LONGMAN Bros., 17, Bond St., Ealing, are requiring a number of first-class machines and combinations for spot cash, or sale on commission. Representatives will be sent to inspect after preliminary negotiations.—Write, 'phone, or call. 'Phone: Ealing 689. [6555

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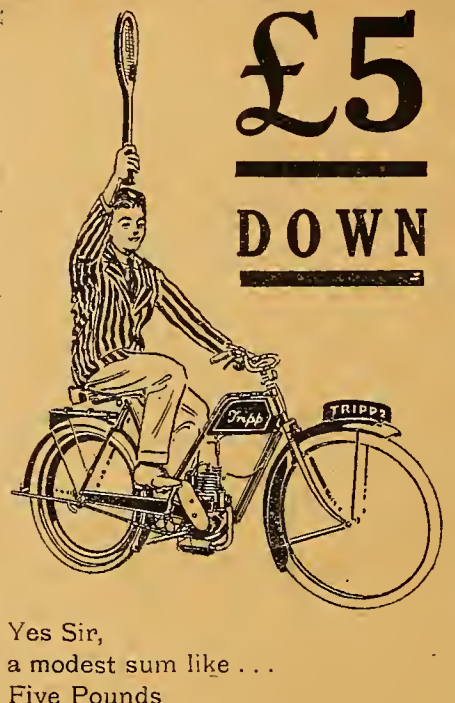
KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2590

SCOOTER, Autoped, dynamo lighting, free engine, disc wheels, fine order; £10.—1, Springfield Park Crescent, Catford, S.E.6. [6177



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HIGH-GRADE Hoods, polished hoops, brass 30/-; hoops, twill, etc.—Henry Jones, 77 Rd., Tottenham, London.

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LFORD Touring Body, apron, screen, good condition; £4.—63, Solon Rd., Brixton. [6071

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GLORIA Chassis, nice condition; £5/10; Douglas sidecar, £6/10.—9, Church Rd., Harlesden. [6173

FOLDING Sidecar Chassis, complete; 38/-.—Bunce Motor Works, Arthur Rd., Windsor. [6112

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HENDERSON Lightweight; £10; good condition and appearance, screen.—12, Faversham Rd., Catford [3612

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NORTON Big 4 Sidecar, with dickey, screen, apron, Dunlop heavy; £10.—24, Foxter Rd., Alun Rock, Birmingham. [6003

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MONTGOMERY Pattern Sporting Sidecar, new condition; gift, 10 guineas.—Watson, 31, Regina Rd., Southall. [6038

MILLFORD Commercial Sidecar, cost £30; accept £8; would separate body, £2.—61, Commercial Rd., Waterloo. [6661

COMMERCIAL Box off Harley, very strong 5-point chassis, suit big twin; £14.—Dodge, 55, High St., Marylebone. [5826

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SIDECAR, brand new, £15; coachbuilt S.H. sidecar, £4; Easting windscreen (Royal), new, £3; S.H. ditto (standard), 25/-; Cameo, S.H., 25/-.—H. Rock, Cradley, Staffs. [5911

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1921 Coventry Premier, as new; £100; exchanges.—24, Balliol Rd., North Kensington. [6410

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G.N., 1922 model, specially tuned, shop-soiled only, 2-seater and nice dickey; only £210.

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MORGAN, M.A.G., air-cooled, 1919, Binks carburetter, splendid order; £95.—The Morris Garages, Oxford. [6538

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MORGAN, Grand Prix, M.A.G., 1921, lavishly equipped, perfect; £145.—152, Bathurst Gardens, Willesden, London. [6643

G.N., 1922, May, under 5,000, exceptional condition, many extras, cost £250; sell £175.—The Morris Garages, Oxford. [6537

8-9h.p. Swift, 2-3-seater, thoroughly overhauled, re-enamelled, new tyres, and hood; bargain, £80.—Ellis, Aston Ingham, Ross. [6607

35 Guineas.—A.V. Monocar, 1920, 8h.p., 2-speed, discs, electric lamps; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [6250

BLERIOT-WHIPPET, fully equipped, first-class condition, bargain; exchange good motor cycle.—E. Pembrook, Grange Rd., Deal. [6101

1921 Rover 8h.p.; great bargain, £115. 1921 A.B.C. 11h.p. Sports, with 3-seater body; £180.—Bartlett's, 93, Gt. Portland St. [6466

WAUCHOPE'S, 9, Shoe Lane, London.—New A.B.C. light car, sports model; £255; immediate delivery; exchange and easy terms. [6507

CARDEN 1919, splendid order, low mileage; £45, or offers to clear.—Rance, 7, Westcliff Villas, Tottenridge Rd., High Wycombe, Bucks. [B760

HAMILTON Light Car, fully equipped, ready for service; early delivery; £175; write for booklet.—Smith and Co., Ltd., Compton Works, Wickford, Essex. [1517

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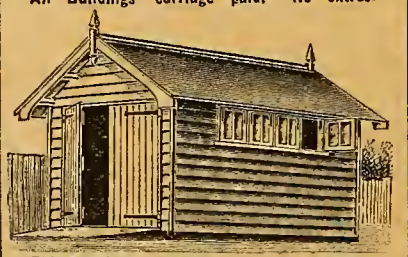

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Dear Sir,
I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.
Yours faithfully,
JOHN O. GRIFFITS

122, Shortlands Road,
Sittingbourne, Kent.
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Mr. Brodrick,
The South-Western Appliance Co.
Dear Sir,
The St. Helier Building arrived on Saturday, two days before promise of delivery, and we are more than satisfied with it.
We erected it on Wednesday and it went together like clockwork. I am very pleased we left the order with you, as all who have seen it think the value is remarkable and admire the artistic appearance. Trusting and believing it will get you further orders from this district.
Yours faithfully,
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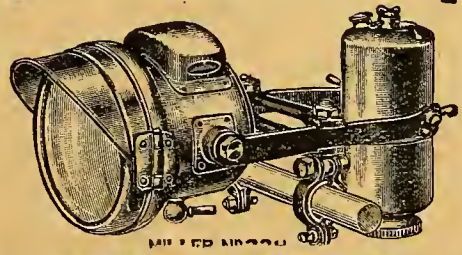

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)SCH Enclosed Waterproof Type D.A.L. Magnetos, Government surplus, ready to fit on Indian, Har- J.A.P., or any big single or twin, gives powerful k at all engine speeds, makes your engine a real engine, give you easy starting, smooth and rapid leration, high speed, and low fuel and oil con- ption with increased power; price only £5 each, rge 1/6 extra; a 12 months' written guarantee out with each magneto. We give you satisfaction fund cash.

EASE Note, the above type magnetos were origin- lly manufactured for 200h.p. aircraft engines; efore we have every confidence in claiming them e the magneto you require for your big machine. one to-day, and see life with a live machine.

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HY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for Magnetos?

IERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, plied by Magdynamo, beat all other Magnetos.

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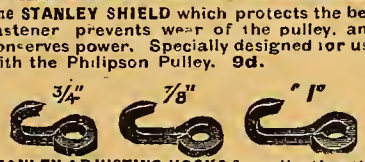

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FELLOWS new magnetos always in stock, any degree for any engine, also a large selection of second-hand magnetos, all makes.

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BASTONES.—26×2¾ Hutchinson T.T., rubber-stud, 23/-; Clincher de Luxe heavy, 23/-; Bergongnan rubber non-skid, 23/-; Palmer cord heavy, 28/-.

BASTONES.—26×2½×2¼ Goodrich Safety tread, 36/-; Clincher Dreadnought extra heavy, 36/-; Dunlop rubber-stud heavy, 33/-; Dunlop rubber stud extra heavy, 39/9; Hutchinson Pass rubber-stud, 36/-; Dominion Usco rubber non-skid heavy, 23/-.

BASTONES.—26×2¼ Michelin fine ribbed 15/-; Hutchinson T.T. rubber-stud, 24/-; Goodrich Safety tread, 35/-; Spencer-Moulton steel-stud, 25/-; Dunlop rubber-stud heavy, 34/9.

BASTONES.—650×65 Goodrich Safety tread, 38/6; Clincher Dreadnought, 34/-; Dunlop cord, 44/9.

BASTONES.—700×80 Improved Magnum, 44/3; Goodrich Safety tread, 44/3; Super Chain, 42/-; Clincher 3-ribbed, 44/3.

BASTONES.—28×3 Improved Magnum, 45/9; Dunlop Clipper cord, 53/9; Goodyear all-weather tread, extra heavy, 47/6; Goodrich Safety tread, 37/6; Firestone rubber non-skid extra heavy, 42/-; Clincher de Luxe, extra heavy, 35/-; Clincher Dreadnought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson and Red-Fox Tubes: 24×2 and 24×2¼, 3/9; 26×2¼ and 26×2½, 5/6; 700×80 and 28×3, 7/3; Goodyear butted, 28×3, 7/3.

ALL the above new and clearance covers and tubes are sent on approval against remittance.

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BULL'S have your size in bargain covers and tubes. A call on us will convince you, or 'phone, Gerrard 1347.—See Below.

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26×2½.—Avon Stonehenge, 27/6; Tricar, 30/-; Clincher rubber non-skid sidecar, 27/6; Goodyear cord 5-ribbed, 40/-; tubes, 5/9.—Below.

26×2½×2¼.—Palmer cord, 36/-; Beldam 3-ply, 30/-; 4-ply, 35/-; Wood-Milne 4-ply, 25/-; Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

26×2⅜.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Beldam all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6.—Below.

28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 8/-.—Below.

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ZOOM ! ZOOM ! ! The fashionable and efficient exhaust system. Adds pounds to the appearance of any Douglas and lets the engine give off its full power. In beautifully burnished copper, price **30/-**. In burnished nickel, price **33/6**.

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ECONOMIC.—28×3 Goodyear All-weather, ... Goodrich Safety, 45/-; Firestone non-skid ... Portage non-skid, 41/-; tubes, 6/6.

ECONOMIC.—650×65 Stepney Roadgrip, 39/6; ... rich Safety, 38/6; Clipper, extra heavy, ... tubes, 6/6.

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EASE the purchasing power you spend on tyres by having them retreaded at the Melton Rubber there is no query, better far than clearance with their defects; send for list. [0347

Free!—Startling reduction in Dunlop per tyres, brand new, not perished W.D. stock. new inner tube given free with every cover. 25/6, 26×2⅜ 27/6, 26×2½×2¼ .37/6, 28×3 50×65 37/6.—Herbert Robinson, Ltd., Cam- [6524

ONS, the most competitive market.—Further pplies Wood-Milne Key-Grip at unbeatable 26×2½, 4-ply, 24/6; 26×2⅜, 4-ply, 26/-; 4-ply, 23/6; 26×2½×2¼, 4-ply, 28/-; 24× y, 18/-; 700×80, 3-ply, 23/6; 650×65, 4-ply, 8×3, 3-ply, 27/6; 28×2½, 3-ply (American), elow.

ONS.—Following perfect stock, maker's guaran- : 26×2½, D. heavy, fluted, 22/6; 26×2¼ 9/6; 26×2½, D. extra heavy, ribbed, 32/6; dative, 32/-.—Below.

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.—Brand new tanks, latest pattern, for Doug- les machines.—Beechwood, Stapleton, Bristol. [6044

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WANTED, light car, 7-9h.p. Indian combination to be taken in part payment.—17, Byron St., Ilkeston. [5990

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ROVER and A.B.C. Light Cars at new reduced prices, £180 and £255, completely equipped, in exchange for your solo or combination and cash.—Below.

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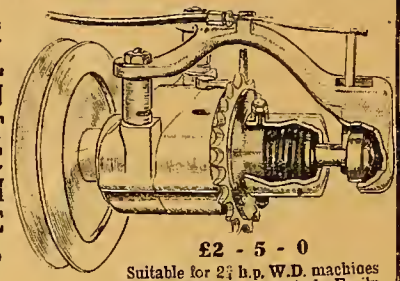

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3½h.p. Combination, smart, for shabby laglas Combination or higher power; cash ad-s.—Hallett, Ditchling, Hassocks. [6325

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Grandfather Clock, oak case, by Porter, ngham, £25; exchange late lightweight with yer, 213, Ebury St., Pimlico, S.W.1. [5692

920 Douglas Combination, mechanically per- and £25 for best combination, 6 or 8h.p.—4, Lovelace Gardens, Southend-on-Sea. [5814

EY Combination, 1919, electric, acetylene ting, discs, speedometer, oversize tyres, ex-lower power.—17, Sussex Rd., New Malden. [6043

CANGE for Solo and Cash, 1920 8h.p. 2-seater nplin, hood, screen, lamps, licensed, new aranteed; £58.—89, East Hill Wandsworth. [6108

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TUBES.—24×2 and 2¼, 4/6; 26×2¼ and 2¾, 4/11; 2¾, 5/6; 28×3 and 700×80, 6/6. Postage 9d.

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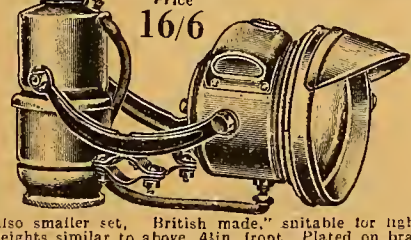

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ZENITH 8h.p., 1919-20, countershaft Combination, Montgomery, Easting, Bonniksen, insurance, small mileage; £78; exchange solo or Morgan.—31, Nelson Rd., Landport, Portsmouth. [6142

EXCHANGE 1916 Singer 2-seater, licensed, lamps, hood, screen, spare wheel, perfect, for G.P. Morgan, combination and cash.—"Parwood," 89, East Hill, Wandsworth, Battersea 443. [6107

MOTOR Cycle or Combination Wanted in exchange for twin Unic taxi, in good running order.—Croxford, 497, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Richmond 1142. [6203

1921 3½h.p. Sports Sunbeam, electric lighting, Bonniksen, and late 6h.p. Enfield combination, any examination, for late Rover 8h.p.—1, Dingwall Rd., Croydon. 'Phone: 1035. (P) [6140

EXCHANGES a Speciality.—Good second-hand 2- and 4-seaters at bargain prices. I also supply new Matchless solos and combinations.—Seabridge, Hansler Rd., East Dulwich, Sydenham 2452. [6942

5 LIGHT Cars, latest models, awaiting exchange for any motor cycle; deferred payments; list with pleasure.—Marlborough (Motor House), 20-22, Finchley Rd., N.W.8. Hampstead 7355. [6567

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LATE Indian 7-9h.p., Powerplus model, accessories, year's tax, splendid touring condition; exchange best 2¾h.p. Douglas offered and £17 cash, or 4h.p. Triumph, £12.—7, St. Mark's Mansions, Tollington Park, N.4. [6114

EXCHANGE very sporting 3-speed New Imperial, Precision, o.h.v. Green engine, yellow and black, perfect condition, unique machine; level for 4h.p. Norton, any year if good.—22, Fourth Av., Selly Park, Birmingham. [6402

EXCHANGE Flat Car, 12h.p., 2-seater, double dickey, spare wheel, hood, screen, electric light set, any trial, for 1922 8h.p. Zenith Sports, Sunbeam Scott; or sell £130.—Olliver, Bridge Inn, New England Rd., Brighton, Sussex. [5778

1921 Beardmore-Precision 3½h.p., 2-stroke, spring frame, new sprockets and chain, smart, ride 50 miles to exchange, valued £45; wanted, A.C Sociable and cash, or level exchange Tamplin or combination.—10, Avenue Rd., Weymouth. [5775

LATE 1918 Harley-Davidson Combination, excellent order, enamel and plating as new, fully equipped, new tyres large, comfortable sidecar, genuine outfit; £75, or lightweight and cash.—Bryant, Milton Villa, Sterne St., Shepherd's Bush, W. [5975

EXCHANGE.—1914 Enfield 2-seater, double dickey, tax paid, 12-14h.p., 2 new tyres, spare wheel, speedometer, clock, enamel very good, 4-speed and reverse, all lamps, good order, trial willingly; sell £75; exchange good combination and cash.—17, Southgate St., King's Lynn. [6331

LATE Sunbeam Combination (45 guineas), sidecar, screen, storm apron, speedometer (P. & H.), lamps, tools, spares, guaranteed perfect; also 90-bore Zenith super sports combination, 1918, very fast; separate or together, cash either way, for Morgan or Rover.—90, High Rd., Leyton. 'Phone: Marylard 2829. [5761

REPAIRERS.

BONNIKSEN Isochronous Speedometer Repair Specialist.

SEE what those who use this service have to say: "Many thanks for your rare and refreshing promptitude, efficient and economical repairs to my Bonniksen speedometer and parts." Signed ——.

THE Above Letter expresses an outstanding feature of this establishment.

ALL Repairs and Replacements are carried out same day; also orders for new instruments executed per return.

TRADE Enquiries welcomed.

CONVERSIONS Undertaken of any Bonniksen Speedometer.

ADDRESS: J. E. Bonniksen (Son of Inventor), 165, Tachbrook Rd., Leamington Spa.

BANKERS: The London Joint City and Midland Bank, Ltd. [0931

ARMSTRONG and Sturmey-Archer gears repaired promptly only genuine parts used.—21, Bramble St., Coventry. [4448

REPAIRERS.

ANY

ARMSTRONG or Sturmey-Archer Gears Repaired promptly and efficiently.—County Engineering Co., Hounslow. [0517

BAT Repair Specialists.

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machining of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Royal Bunting Engineering Co., 5, Palace Mews, Enfield, London, N. [8109

C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from 25/-.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd [0003

FRAME Repairs.—New tubes, forks, heads, etc. We are specialists.—Below.

CONVERSIONS to countershaft, gear boxes fitted, drop top tubes; workmanship guaranteed; immediate attention; reasonable charges.—Henry V. Smith, Osmondthorpe, Leeds. [5175

EXPERIENCE Counts; over 20 years is at your service in repairs.—Below.

FRAMES Repaired and Altered; the pioneers of cutting down to low riding position.—Below.

ENGINES Overhauled, rebushed, etc., cylinders rebored and new pistons fitted, aluminium pistons, engine sprockets, etc., made to pattern or sketch.—Below.

CONVERSIONS.—Sturmey-Archer, Jardine, or Burman gear boxes fitted to any hub or fixed gear machines. Particulars and quotations upon request. First-class workmanship guaranteed.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [3859

WHITTALL.—Pistons, cheapest, promptest; crankshafts reground, accuracy guaranteed.

WHITTALL.—Cylinders reground and new complete pistons, perfection guaranteed. Welding experts.—Whittall Machinists' Co., Whittall St., Birmingham. [0017

REPAIRS done for the Trade.—Mohawk Cycle Co., Ltd., 502, Alexandra Rd., Hornsey, N.8. [5971

SADDLES re-covered, returned 2 days; 7/-.—Welsh, 70, Culford Rd., Dalston, London. [6121

WELDING Aluminium Crank Case, gear boxes by experts; immediate attention; reasonable prices.—Below.

WELDING Broken Cylinders, flanges, combustion experts of 11 years' experience.—Below.

CYLINDER Grinding on latest machinery, installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [3797

ARMSTRONG and Sturmey-Archer gear repairs, and replacements from stock at competitive prices.—Tavistock.

ARMSTRONG Parts.—Main axle, £1/2/6; small Sun, 3/9; large Sun, 6/9.—Tavistock.

ARMSTRONG Parts.—Clutch cups, 5/6; Planet pinions, 1/3; send for latest price list.—Tavistock.

STURMEY-ARCHER Countershaft and hub gear repairs; parts from stock; please write.—Tavistock.

GEARS.—Any type of gear boxes or gear replacements made to pattern or drawing; send gears passenger train.—Tavistock Engineering Co., Johnson St., Notting Hill Gate, London. 'Phone: Park 3447. [0917

INDIAN Owners.—If you have trouble with your machine, send to Indian repair specialists, Dennis, 89, Brixton Rd., London. [3655

MORGAN Repairs carried out at reasonable charges by engineers.—Richardson's Garage, Rosslyn Mews, Rosslyn Hill, Hampstead. [5957

C.C.C.—Cylinders Reground; new light pistons; Triumphs quickly; revised prices.—Gradior Machine Co., Stafford. (Estd. 28 years.) [2376

FRAME, Fork and Chassis Repairs; tubes and lugs replaced as new by experts; discount to trade.—Langham and Co., Fitzroy St., Leicester. [5146

PLATING and Stove Enamelling, all colours; motor cycle parts and tanks as new; discount to trade.—Langham and Co., Fitzroy St., Leicester. [5145

WELDING.—Broken cylinders, crank cases, etc., made like new; work guaranteed; quick return.—Tonge Welding Co., Morton St., Middleton, Manchester. [6608

CYLINDER Grinding, new pistons, etc.; accurate and highly finished work; prompt delivery; price list on application.—W. and F. Wills, Ltd., Engineers, Bridgwater. [0728

SPEEDOMETERS.—Repairs to all makes, Stewart and Corbin a speciality, second-hand sets supplied.—The London Speedometer Co., 73, Tamworth St., Fulham, S.W.6. [4868

Cylinder Grinding—

You may send us your orders for Cylinder Grinding with perfect confidence, because it is work in which we specialise and guarantee. We grind cylinders truly circular and with sides parallel to within ·001 of an inch. Tell your Garage or Dealer to send your work to us to ensure prompt and satisfactory service.

WILLIAMS & JAMES
GLOUCESTER
'Phone 808

Gear Repairs

immediately

ARMSTRONG and STURMEY-ARCHER

We make a speciality of *prompt* and *efficient* REPAIRS, and GUARANTEE that when a Gear leaves our works it is in perfect order.

Gears repaired same day as received, or *while messenger waits.* Every Spare in Stock. Send for Price List

HUB or COUNTERSHAFT

County Engineering Co.,
Slaines Road, HOUNSLOW.
Railway: L. & S. W.
Wires: "Threespeed, Hounslow."
'Phone: Hounslow 322.

Reprint from "Sparklets" Columns in "The Motor Cycle."

THE REPAIR OF HUB GEARS.

On many occasions we are asked where parts and replacements for Armstrong and Sturmey-Archer hub gears can be procured. We recently paid a visit to the works of the Cromwell Engineering Co., 327, Putney Bridge Road, London, S.W.15, and were extremely well satisfied with the way repairs are carried out to epicyclic and other types of motor cycle gears. All parts are made on the company's premises, and all repairs are skilfully executed. It is interesting to note that during the war the Cromwell Engineering Co. were doing very accurate gauge work. They have special machinery for making gear wheels and for cutting the internally toothed rings used in the two hub gears mentioned. Repairs are also executed to countershaft gear boxes.

TRY— CROMWELL ENGINEERING Co.
Works: 327, Putney Bridge Road, S.W.15.
'Phone: PUTNEY 1601
FOR SOUND GEAR REPAIRS.

REPAIRERS.

WELDING.—Cracked, broken, or scored welded and machined; aluminium w. speciality.—Leeds Motor and Welding Co., P Lane, Leeds.

ENAMELLING, Plating. Tanks enamelled a handle-bars, etc., plated.—Send to Murray Works, Union St., Coventry. Platers and e to the trade.

WE can supply internal grinding spind jigs, specially designed for grinding on the lathe.—If you are interested, write P Park Rd., Rugby.

CYLINDER Regrinding and fitting of new p our speciality. We also supply piston gudgeons, valves, guides, bushes, etc., for a of engine.—C.M.D.

PISTONS complete for all standard makes fr to 21/-; despatched return post.—C.M.D.

CYLINDERS Reground and fitted with new rings, and gudgeons complete; 2¾h.p. 20/- each; 2¾h.p. Enfield, 25/-; 2¾h.p. J.A.P 3½h.p. and 4h.p. Triumph, Rover, J.A.P., B.S. beam, Rudge, etc., 35/-.—C.M.D.

2-STROKES.—Levis, Villiers, Velocette, Allda Hudson, etc., 35/- complete; all returne hours.—C.M.D. Engineering Co., Leamingto 'Phone: 768.

BAT Repairs.—You cannot do better th your machine to the makers, who pos necessary tools and jigs for alignment, thereb ing a satisfactory job.

BAT Gear Box Parts.—We can supply a from stock.—BAT Motor Manufactor Penge, London, S.E.

FRAME Repair Specialists.—New tubes, fork cut down, conversions, enamelling and at lowest prices; quick despatch.—A. E. and tain, Bently Lane, Walsall.

CONVERSIONS to Countershaft in 7 day boxes in stock; frames repaired and see Parts and Accessories.—Derrington, Craft New Malden. 'Phone: 256.

TRIUMPH Cylinders Reground and fitt genuine Triumph piston complete with ri gudgeon; 35/6; returned in 24 hours; J.A.P., Rover, etc., same price.—Below.

WE Specialise on Engines, complete overha part made to pattern or drawing, accura only.—Harvey and Co., 47, South Lambeth Rd (150 yards from Vauxhall Station). 'Phone Brixton.

HARLEY-DAVIDSON Repairs and Complet hauls, by late works foreman and mechanic.—Private address, J. F. Boughton, tison Rd., Child's Hill, N.W.2.

SCORED Cylinders Repaired in 48 hours, pr per cylinder; engines rebushed and ove 35/-; twins, 40/-; aluminium repairs of all Godwin's Garage, Sunbury-on-Thames.

STURMEY-ARCHER Hub and countershaf repaired and overhauled. Officially appoi Sturmey-Archer Co. Lightning delivery.— Motors, Forfield Place, Leamington Spa.

WELDING.—Broken flanges, aluminium cases, cracked water jackets, valve s welded and machined complete; scored bore in and ground to existing pistons.—Below.

CYLINDERS Reground, new pistons fitted c in cast iron or aluminium.—West Londor ing Co., Essex Place, Chiswick. 'Phone: C 536.

SUNBEAM Motor Cycles.—Repairs, overhaul renovation of Sunbeams by Sunbeam ex the makers' own depot, 57, Holborn Viaduct, Competent and satisfactory service assured.

CYLINDERS Reground, accurate finish, c sion guaranteed; Triumph, Rover, Premie 2¾h.p. Douglas, 25/-; 70mm. bores, 30/-; ri gudgeons complete, twins low price.—Below.

PISTONS, all patterns, oversize specialist price.—Below.

PISTON Rings, oversize or stepcut, 2/-; st 1/6; return post; none better. Thous testimonials.—Patent Rings, 30, Wigan Rd., A

ROC 2-speed overhauls; Humber, Rex, V.S., Alldays, Roc countershafts; manufactu all Roc parts.—J. Connolly and Co., Mfg. En New Crown Works, Lower Ford St., Coventry

HARLEY-DAVIDSON Repairs and Overha are now able to put work in hand withou skilled staff under careful supervision.—Harley-I Motor Co., Ltd., 74, Newman St., London, W.1.

CYLINDER Grinders.—We regrind cylinders oversize pistons. Douglas 2¾h.p., 18/9 pe der and piston complete; J.A.P. or any other bore, 30/- complete; Triumph or any 85mm 35/- complete. All work done on Heald and C machines. A first-class job and quick delivery teed.—The Edwards Engineering Co., 225, Acto Chiswick, W.4. 'Phone: Chiswick 1385.

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

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The 1923 T.T.

THE decision to hold Tourist Trophy races for 250 c.c., 350 c.c., and 500 c.c. types respectively, as recorded in last week's issue of *The Motor Cycle*, is again reviving the question, so often discussed in these columns, as to whether the capacity of the Senior T.T. machines should be reduced. The purpose of the Tourist Trophy races is to develop a type of motor cycle for touring purposes, and not, as some might think, merely to increase its speed. Brooklands exists for the latter purpose, and the Isle of Man course was chosen because it provided conditions met with by the tourist. But for the Tourist Trophy races the change-speed gear might have been longer in materialising, and the development of the sidecar machine retarded in consequence. A gear box is not an essential on a Brooklands racer. Speed is not the chief factor in a tourist machine; within limits, economy is more important. Therefore if the T.T. races eventually develop the ideal types of motor cycles for the public, they will have served their purpose. True, the racing machine of to-day is the touring motor cycle of to-morrow, but if, instead of encouraging the evolution of the 80 m.p.h. tourist's mount, the races produced one which halved the fuel bill, a better purpose would be served.

Effect of Reduced Capacity.

One way to bring this about is to reduce engine sizes. Speed must, of course, be the deciding factor in the race, but instead of endeavouring further to increase the speed of the 500 c.c. machine, an attempt should be made to equal the performances of this type with one of smaller capacity.

Last year's Senior race proved that this event has developed into a race between the most daring riders. It is questionable whether the designers of any of the motor cycles which finished learned anything to assist them in producing faster machines next year. From a technical point of view, undoubtedly, the 350 c.c. races produced more data. It would then appear that the I.O.M. course has no more to teach designers of 500 c.c. solo machines.

500, 350 and 250 c.c. or 350, 250 and 175 c.c.

It is not many years ago that the 250 c.c. engine was regarded as a toy. The Lightweight Tourist Trophy has developed it into a thoroughly practical proposition and capable of speeds exceeding those of the 350 c.c. class a few years ago. Now an even smaller type is coming into prominence, but has yet to be proved and developed, hence it seemed natural to suppose that the 1923 races would be for 350 c.c., 250 c.c., and 150 or 175 c.c. types.

As has frequently been pointed out in *The Motor Cycle*, the so-called lightweights of 250 c.c. are little, if any, lighter in weight than the senior contestants. If the governing body as organiser of the T.T. races exists to develop the tourist motor cycle, then its duty is to consider economy. The term lightweight is a misnomer while there exists a large number of lighter machines. The 350 c.c. engine now equals in performance the 500 c.c. type of pre-war days, and the efficiency of the 250 c.c. unit approximates to that of the 350 c.c. of a decade ago. With proper encouragement the 150 or 175 c.c. unit should take the place of the pre-war 250 c.c. engine.

To Encourage the Ultra Lightweight.

Not for a moment do we suggest a race for motorised bicycles, but everything should be done to foster the development of small motor cycles, cheap to run and capable of being produced at low initial cost.

An index to the advertisements in this issue will be found on the page facing the back cover.

Ad Nauseam.

GERMANS are patient fellows. In pre-war days they manufactured the only decent waterproof glove I have ever owned. Youngsters who have never seen one may be interested to hear that it was as thin and flexible as the lightest kid; that it was absolutely and positively storm-proof; that it furnished a perfect grip for levers—yes, even for wet metal; that it was not expensive; that, although waterproof, it was never really "sweaty" inside; and that it was durable—my 1910 pair have only lately dropped so far to pieces as to be absolutely unwearable. Yet, although many clever fellows are seeking a living in the rubber industry, no Briton has yet managed to produce a similar article. Here is a screaming opportunity for brains and capital. If anybody can produce a glove with these qualities, and back it by two-pennorth of very medium quality salesmanship, he could sell perhaps half a million pairs this winter. Every motorist would want them, plus not a few people who don't motor.

Puncture-Sealing Tubes.

MY own experiences of Challenger tubes have been so satisfactory that when two readers greeted my recent reference with complaints, I forwarded them to the manufacturers. They reply that complaints average very considerably less than 1 per cent. of the tubes sold. In these rare cases, the usual explanation is that a tube has been heavily chalked in fitting; that the nail or other puncturing instrument carries chalk into the patent tube; and that the chalk prevents proper sealing of the black mastic. Other complaints have been ascribable to bad fitting. They consider that if the tube is properly fitted in the first instance, with a minimum supply of chalk, satisfaction should be assured. I can only add that in two years of continuous use, I have been perfectly satisfied. One objection is, of course, common to all tubes listed at higher prices than the plain tube—your loss will be increased if a cover for any reason comes off the rim—e.g. through a skid, lurid cornering, a burst, or violent braking. But my luck has been well in so far.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

More Sales?

THERE are thousands of potential motor cyclists in the country, who fall into three classes, viz.:

(i.) Those who want a motor cycle, but cannot yet afford one.

(ii.) Those who intend to buy, but wait for "something different," or to be convinced that prices have touched rock bottom;

(iii.) Those who would relish the sport, but are too inert to take the plunge.

Motor cycle manufacturers must look towards (ii) and (iii.). The last point hinges on energetic salesmanship. The second class variously desire lighter machines, cheaper machines, a more "all-weatherish" machine, cleaner machines, more comfortable machines; prices have probably touched bottom until the motor cycle trade is Fordised by some Napoleon. In brief, bigger business hinges on more forcible salesmanship, coupled with a designer who will do what the Ner-a-car people attempted last year, and make a bold effort to meet the notions of those who do not fancy the conventional touring models.

Every Rider a Salesman?

THE welfare of the private rider is so bound up with the welfare of the industry that in these trying times every amateur ought to regard himself as its debtor and ally. If he owns a decent motor

Occasional Comments.—

cycle, he owes enormous pleasure and considerable convenience to the people who made it. He should pay his debt by regarding himself as an honorary salesman. He will not get his reward in the form of cash commissions, as the professional salesman does. But he will get it none the less. Not until the manufacturers are relieved of eternal financial anxiety can we expect that generosity of service, boldness in design, and perfection of material and workmanship which every decent producer longs to give the public if only commerce is stable enough to give him a free hand. The average professional seller of motor cycles is usually a poor salesman through no fault of his own. He cannot know his rather impecunious public really intimately. He generally has other irons in the fire—a repair shop, cycle trading, possibly gramophones and prams and hiring out Fords as well. If the industry provides us with an honest 'bus at a fair price, we can do it a good turn by advertising the 'bus, and we shall reap our reward in due course.

Sanity Plus Enthusiasm.

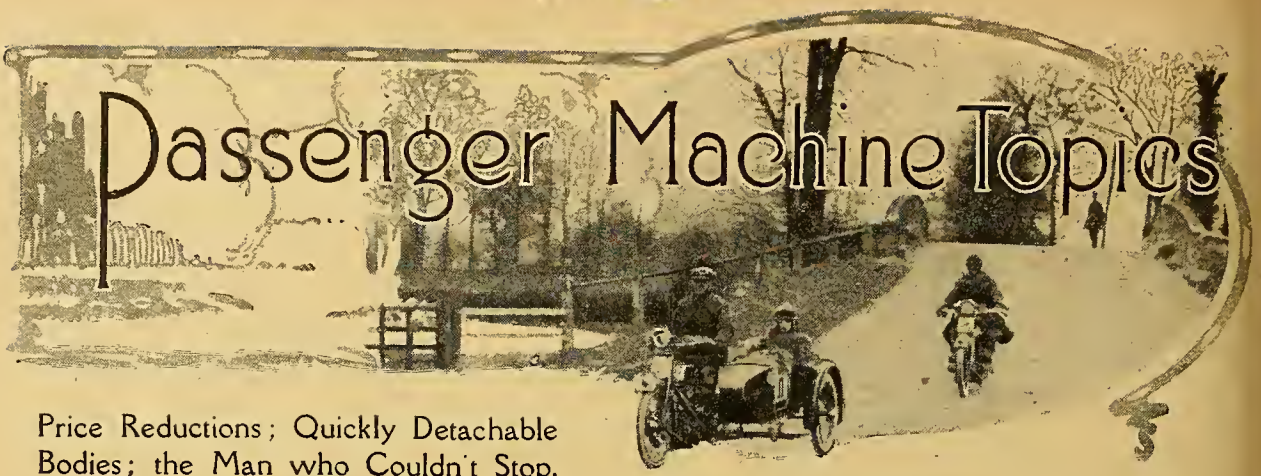
I HAVE sold thousands of motor cycles in my time without, of course, a penny of commission. When I come across a good machine, and eke make an acquaintance whose days would be brightened or whose labours would be lightened by owning a sister 'bus, I coax him to buy one, and he has repeatedly done so. On the rare occasions when I get stuck with an inferior machine, or a tolerable machine marketed by a stupid firm with bad business methods, I keep people off it; the sooner a "dud" concern feels the draught. the better for everybody concerned. I also try to keep my head. I never encourage a nervous elderly man to buy an S.S. 80 Brough Superior, nor do I humbug some 16st. resident in Devon into buying a single-geared baby two-stroke. (I have known professional salesmen guilty of both these crimes.) Some riders do not recognise the immense power which they wield. Cynical outsiders expect a professional salesman to lie (though the best salesmen do not lie). But what the private rider says, usually goes. The quiet, observant man, who is watching and wondering, never forgets when he hears one of us make some such remark as:- "Well, all I can say is that the machine has done me awfully well. I've had no trouble, I haven't replaced anything except tyres, she is comfortable and reliable, and I find the firm very decent people to deal with." The listener may not buy one himself there and then, but he will quote what you say when some friend of his is investing. It seems to me only just that we should pay for our happy hours on the road in this kind of way; and our debt is due not only to the financiers who have risked their capital and to the designers who have spent their brains, but also to many horny-handed men in modest streets, for whom a flourishing industry means regular work and freedom from those paralysing domestic anxieties which seldom come our way with any real acuteness.

IN ALMOST ANY TRIAL THIS YEAR.

This splash is the merest trickle compared with some which have been included in recent trials. Although of little value except in proving the water-tightness of the ignition system, the negotiation of a watersplash certainly provides some fun while it tests the driver's judgment.

Queer Carbide About.

OF course we should all like to use electric lamps, but dynamos are costly and do not realise a fair percentage of their price when we make room for a new machine, to which the old dynamo can seldom be neatly or easily transferred. (A hint for the trade in that. If only standardised design enabled us to take a dynamo off our 1922 Buzzbuzz and put it straight on to our 1923 Bark-Bark we should *all* buy dynamos instanter.) In the meantime we use acetylene. And there is some very funny carbide about. I know just enough chemistry to give a wide berth to ribbed blue bottles with red labels. Otherwise my mind is a blank on the subject. So I cannot explain why it is that my pet generator functions admirably on one tin of carbide, and yet when I buy another tin the burner essays the Morse code. As a bland ignoramus I should say that some of the carbide on the market generates more steam than gas, and steam is hardly illuminative. But I daren't say this lest some earnest young man in large horn spectacles with two dozen letters after his name should trample on me ruthlessly. So I will confine myself to the safe remark that carbide, beer, taxes, roads, and several other things aren't quite what they used to be. I have not found the same inconsistency in different tins of the same *marque*, nor can I condemn wholesale all carbide bought in bulk. Gentle reader, if you stumble on a brand of carbide which carburets evenly I strongly advise you to stick to it. Because some of them don't



Passenger Machine Topics

Price Reductions; Quickly Detachable Bodies; the Man who Couldn't Stop.

By "FRIAR JOHN."

HOW is it that petrol, a few sidecar outfits, and certain small cars are within shouting distance of pre-war prices, and yet many other things are still double the cost? Houses with garages, for instance, in a "desirable" locality are still double their old value. Beef, butter, and beer, I understand, are still double. Of course, there are a thousand and one logical reasons why things in general should be just as they are and why they cannot at the moment differ one iota from what they are—political economists tell us so. However, I do know I can buy a thoroughly reliable sidecar outfit for less than a hundred pounds, and that petrol is only 5d. per gallon more than I was paying in the old days. Vacuum flasks and tyres one can nearly beg. The thought of this will be a palliative on that day when I sign away £4 for taxation, and £6 or £7 for insurance, and £10 for garaging, and —but we will leave the rest. I *was* going to talk about depreciation.

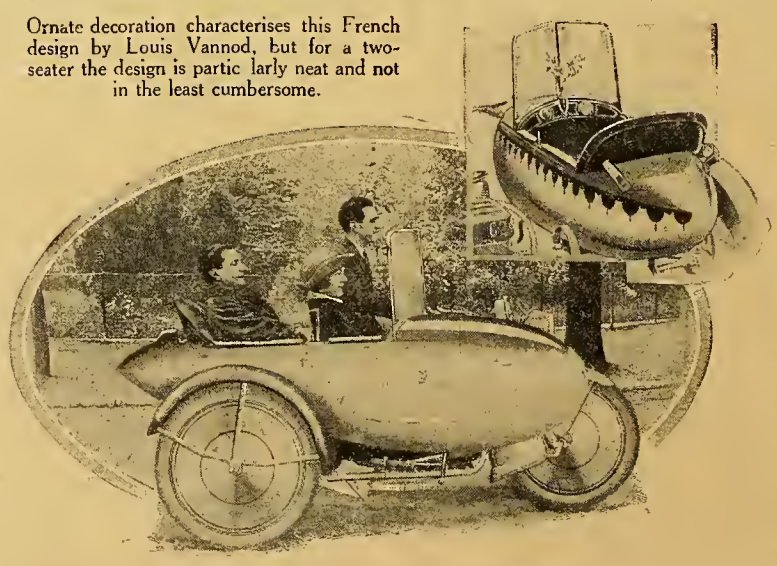
WHEN sidecars were first introduced, and for years afterwards, the advantage of quick detachability was a big talking point. But the popularity of the complete outfit has almost killed the double-purpose idea.

The lover of a highly-tuned solo machine has only luke-warm interest in sidecars, as a rule, and the ardent sidecarist is usually a thoroughly scared individual when riding a solo machine on anything but dry and smooth-surfaced highways.

A point that manufacturers should watch, however, is the quick detachability of the body from the chassis. The continual attaching and detaching of the chassis from the machine may cause faulty alignment, nuts may work loose more quickly, and at the best it is an awkward one-man job, but the lifting of the body from the chassis can do no harm. Whilst the line of least resistance continues to be taken by makers in their fitting of the transmission on the near side, all bodies should be made quickly removable. Surely, only a little favour to ask for; and when I say quickly and easily I mean quickly and easily, not confusing the term with contortionistic exercises in the nose and seat of the sidecar.

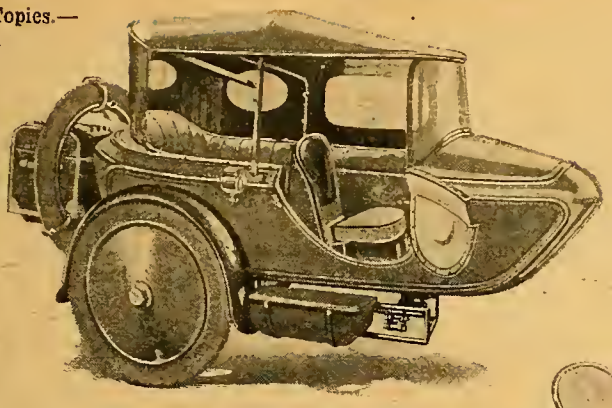
LAST year a colleague returned from the Paris Salon so eulogistic regarding the sidecars produced in France that this year I determined to visit the Gay City to see these wonders for myself. I was disappointed, but this was not due to any exaggeration of the qualities of last year's models, but fashion has changed, and instead of the splendid examples of French coachbuilding art which were exhibited last year, interest in the sidecar seems to have gone, and only a few mediocre types were exhibited.

In order to justify himself, my colleague has presented me with a photograph of a model which particularly appealed to him last year, and I give it here together with an illustration of the model exhibited in *Les Invalides* at this year's Salon. There is some difference, but all the same I think the present-day model is a standard production, while the 1921 affair was merely built for the exhibition. There is a lot of this sort of thing at shows, and my companion pointed out several specimens, in both the motor cycle show and the car salon.



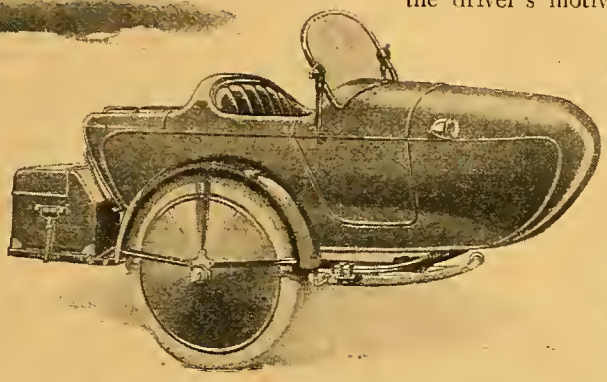
Ornate decoration characterises this French design by Louis Vannod, but for a two-seater the design is partic larly neat and not in the least cumbersome.

Passenger Machine Topics.—



which were exhibited last year and have evidently been wrapped up in cotton wool in the maker's warehouse meantime.

There was a really handsome sidecar attached to the Lutece machine, a miniature yacht finished in natural woods—mahogany and bird's-eye maple—and copper fastened. Nevertheless this was little if any better finished than the Berthon Boat Co.'s sidecar at last year's Olympia.



There is distinction and grace in both these A.G. models, made by A. G. Garnier, Paris. The upper illustration shows that the French were in no way behind us last year in their idea of what a fully equipped sidecar should be. The lower illustration shows that this year's model has been simplified in appearance.

SOME Victorian manufacturer made a fortune by "inventing" the safety-pin, and everybody admitted that the idea was cute and brainy; but it was an Egyptian invention for all that—about 2,000 years old. At the Paris Salon car makers and the public were enthusing about windscreens for rear seats which were fitted to hinged dashes exactly like those on many of our sidecars, in fact like the Turner sidecar of ten years or so ago. Car makers have been a long time recognising the value of this idea, but they did not forget to make it a talking point in Paris.

IN last week's *Autocar* a correspondent relates an extraordinary incident of a driver of a sidecar who was unable to stop his machine. The writer, speaking of cars getting out of control, said of the particular outfit that collided with his car:—

"... The magneto switch wire had been carried away, the throttle was not working, the gear lever was jammed in second, and the rider forgot the clutch. The front brake was not working and the rear one was not powerful enough to stop the machine. In despair the driver, who confessed he lost his head, turned off the main road in the hope of eventually using up his petrol; but he met my car instead, fortunately with no more damage than smashing up his machine and carrying away a running board and wing from my car." The writer continues, "I did all I could for the party by taking them on to their destination, but it is easy to see that there were all the elements necessary for a fatal accident, for a couple of hundred yards ahead was a right-angled turning with a stone wall, while a farm road led away in an enticing direction to the river with seven feet of water only fifty yards round a corner."

It is futile attempting to analyse the driver's motives for turning up a bye-lane under the circumstances. Maybe you and I would have done likewise.

The sudden realisation of being unable to regulate the speed of his machine owing to the jamming of the throttle probably caused the driver to lose his head and forget the clutch. But every sidecar should possess a rear brake sufficiently powerful to eventually stop the engine. It is past my comprehension how owners dare risk, as hundreds do, their passengers' and their own necks by riding outfits which are in the most decrepit condition.

I MET a friend recently whose habit it was before the war to order a new outfit each November when he visited Olympia. I asked what his choice was to be next month. He shrugged his shoulders; it was a shrug that spoke volumes. It meant everything that is horrible from an enthusiastic motor cyclist's point of view. For what can be worse than going along the blazing stands at the show knowing that none of the new models can be yours for the ensuing year. That was the burthen of his song. My friend couldn't sell his 'bus and had thoroughly made up his mind that it was impossible to sell it; that he wasn't going to Olympia; that if an accident did happen and he found a customer he should eschew

A coupé hood and screen by A. W. Ayden, 159 Hornsey Road, Holloway, London, N.7. A point of interest is that there are no loose side curtains to fit when a complete coupé effect is desired.

Passenger Machine Topics.—

motor cycles for ever; that the pastime wasn't worth the candle; that the country's trade was going to the dogs.

The day was typical of the summer we have had, damp and drizzling, and he went his way with a countenance thoroughly in keeping with his mood. I know I shall meet him again in the thronged aisles of Olympia, his pockets stuffed with catalogues. I know he will drag me by the arm to a particular stand and inflict on me his ebullient enthusiasm concerning some new model he intends to purchase. He will have found a customer for his old 'bus, or else conferred with one of the good Samaritans who say, "Old machines taken in part exchange."

THERE are still thousands of sidecarists using acetylene lighting, and will continue to use it because of its low cost. If their night riding is confined to a dozen hours or so throughout the winter they can hardly be blamed for hesitating to pay from £15 to £20 extra for the luxury and convenience of electric lighting. It's an excellent idea, however, to utilise battery lighting for the sidecar and tail lamps. Combined gas and electric lamps can be bought for 12s. 6d. or so complete with a 4-volt battery. An acetylene head lamp alone is an easy thing to manage, but when a single generator feeds the head and tail lamps and another the sidecar lamp almost invariably trouble ensues before the three lights are burning brightly. If the battery idea makes no appeal, the substitution of brass for rubber tubing throughout the installation will save a deal of exasperation.

THERE is a bite in the air, and there is a real tang of autumn in the sweet smell of sodden leaves. It is a glorious period of the year for sidecarring—if one can escape on the right day; a windless day when smoke ascends in thin, straight columns from village cottages that are veiled in the grey haze of autumn. There are no days quite like those of a bright October, and I join with the week-enders in the fervid hope for brilliant week-ends during the next month. If only to spite those who have laid by their machines, refusing to pay 30s. tax for the last quarter of the year, do I trust for a brilliant finish to 1922.

"PENNY plain and twopence coloured" forms part of the policy of several light car manufacturers. By this I refer to the practice of offering unpainted aluminium bodies with an option of a range of colours at an extra charge. Most sidecars are not made of aluminium, but that is no reason why manufacturers should not give us a larger selection of colours. It is not to be expected that our tastes coincide with those of the people responsible for the lack of variety. While on this topic, why don't motor cycle makers give us the option of having the tank of a colour we fancy? After all, it is the tank that gives the finishing touch to a machine. A friend rather fancied a Royal Enfield, but green is his pet aversion—and was responsible for him deciding on another machine. Several sidecar makers at the last show were offering to paint their wares in public school colours to order. I am not suggesting that tanks should be decorated in fancy colours, but surely makers should offer black tanks when their "standard" is bright green, red, blue, or purple.

TOURING IN SWITZERLAND.

Nowhere in Great Britain are hills to be found which test the cooling capacity of an engine like the long and finely-engineered roads of Switzerland. Those who have never driven up their tiring gradients, often miles in length, can have but little idea of the severity of the test. The illustration depicts a water-cooled Morgan in the Montier Gorge; the driver is M. Jules Neher, so well known as the President of the Swiss Motor Cycle Union.

IDEAS: USEFUL AND INGENIOUS.

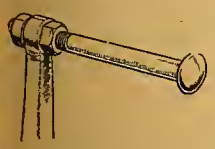
A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Taking Petrol from a Tank.

WHEN no drain tap is fitted, take off the horn bulb, squeeze it up as much as possible, insert the neck in the tank, under the petrol surface of course, and release the bulb; it will fill by atmospheric pressure, and the transfer to another tank is an easy matter; the operation is like filling a fountain pen on a larger scale; on replacing the bulb in its proper place a surprising improvement in the tone of the horn will be noticed, presumably due to the remains of the petrol cleaning the reed. F.A.S.

Cheap Kick-starter Pedal.

ON the gear box of a Birmingham reader ("H.A.") the kick-starter pedal was one of those separately screwed into the crank, and it gave trouble by frequently coming unscrewed. After making good one or two losses by standard replacements, "H.A." purchased a 4in. × ½in. coach bolt from the ironmongers, and with a couple of nuts

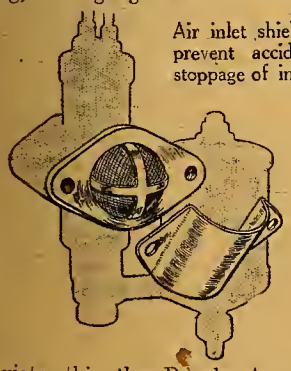


A coach bolt as a kick-starter pedal.

and a spring washer fixed it through the crank, where it has done long and efficient service. An improvement is to file down the sharp edge of the bolt head, or, better still, to fix over the unthreaded portion a piece of rubber hose-pipe.

Preventing Carburation Disturbance.

ON many two-strokes and most flat-twins the sideways projecting carburetter is often disturbed in its functions by the rider's leg, or part of his clothing, coming against the air intake.



Air inlet shield to prevent accidental stoppage of intake.

To obviate this the Douglas-Amac carburetter has a small cage over the intake gauge, but "G.M.," of Eythorne, has found a small U-shaped piece of sheet copper (fixed by the carburetter holding bolts) still more satisfactory; the illustration thereof shows the construction.

Timing for Speed.

AS a basis for experiment the following are suitable valve settings for various engines:

(i.) Inlet opens t.d.c., closes 44° after b.d.c., exhaust opens 53° before b.d.c., closes 20° after t.d.c.

(ii.) Inlet opens t.d.c., closes 60° after b.d.c., exhaust opens 60° before b.d.c., closes 17° after t.d.c.

(iii.) Inlet opens 3° before t.d.c., closes 45° after b.d.c., exhaust opens 73° before b.d.c., closes 27° after t.d.c. (for overhead valves).

D.J.H.

Aligning Chains.

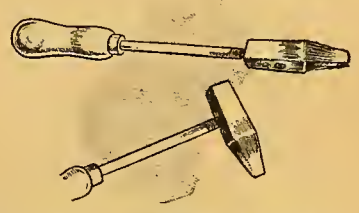
CHAIN alignment is vital, and is less easily verified in respect of the rear wheel than many people imagine. For perfect alignment, *e.g.*, in a speed event, the chain should be removed after final adjustment, and a long straightedge applied to both sprockets, making sure that it lies flush against the four peripheries which it crosses; for touring work it is enough to measure the distance between the rear tyre and the chain stays on both sides, which in the absence of a proper tool is easily done with a wooden slider on a stick, after the fashion of the shoe-fitter's foot measurer. See that brakes and gear controls are correct when the job is finished.

Lightening Reciprocating Parts.

IF the connecting rod of an engine being tuned for speed is of strong H-section the web may be drilled to reduce the weight. The type of piston required for speed work largely depends on the design of the engine; on most sports models the aluminium slipper type has proved a great success, but on mounts intended for side-car work the original cast iron or a light steel piston will probably give the best results. As it is essential that the reciprocating parts of a high-speed engine should be as light as possible, the piston skirt should be drilled profusely, and only one ring need be retained. J.H.D.

Useful Soldering Iron.

ALTHOUGH made some years ago, a soldering iron used by "C.E.J.," of Nottingham, is well worthy of mention. The copper bit is tapped with similar threads both axially and radially,



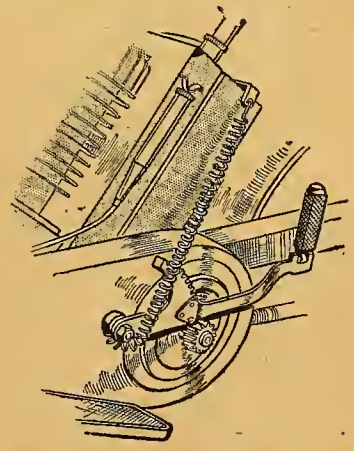
An idea which facilitates the soldering of small work.

so that it can be used straight or as a hatchet bit. The latter method of application is often advantageous when dealing with small work which is difficult to handle and elusive to hold.

For Old Indian Kick-starters.

HERE is another tip relating to the Indian machine sent by a reader in Holland (L. C. V.), who has previously contributed to these columns.

In this case the subject is the 1915-19 near-side kick-starter. Should the pedal return spring weaken or break, the idea is to obtain a long coil spring (in the instance mentioned the spring out of an

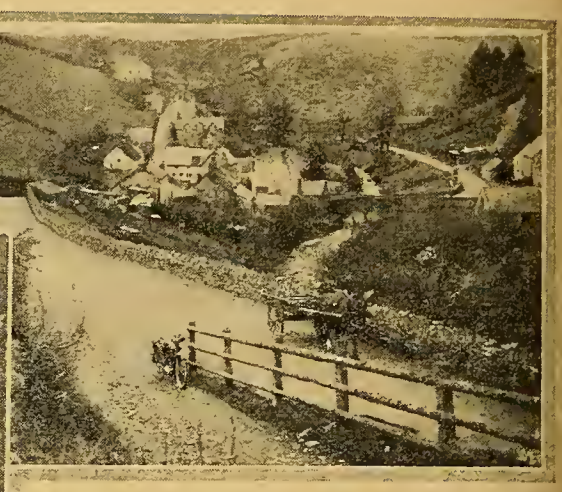


A cheap return spring for an Indian kick-starter pedal.

old candle bicycle lamp was used), and hook one end into the spring anchorage on the pedal. The other end is brought up to the top of the tool box on the saddle tube, where it is fastened by a strap iron hook or clip. As L. C. V. writes, "the whole is cheaper than one of your Virginian cigarettes."

The Sports Model as a Hack Machine

London-Land's End competitors who scaled Beggar's Roost last Easter may be surprised to hear that within two miles of the top of the hill they might have had to encounter lanes like this had not the route been altered.



The hamlet of Barbrook Mill showing in the foreground the commencement of Beggar's Roost; the farm cart is taking the avoiding road.

A 350 c.c. Lightweight and its Service in the hands of a Club Official.

By "WESTERNER."

RIDDEN in all weathers, a machine which loses its tune fairly quickly is likely to be a great hindrance to one who has but little spare time.

I expect a motor cycle in these days to be as ever-ready and reliable, as little in need of tinkering, as the pedal cycle. After all, that is just the need of the majority of motor cyclists, so my experience may serve as a very fair guide to those in a like position.

My previous mount was a docile flat twin, very satisfactory and reliable, but not over active in speed, so I was prepared to find my new machine, a Francis-Barnett 346 c.c. Jap-engined sports model, jumping out of my hands, so to speak.

The first 1,000 Miles.

Town riding has formed a fair proportion of my work, and at first I found the carburation a little erratic at low speeds in traffic, due probably to my lack of experience with the B. & B. carburetter; also, like all high-compression engines, this one was very susceptible to the ignition control lever.

The first real test came on attempting to follow part of the struggles of the riders in that now famous "Arctic" trial of the Western Centre on April 1st last; the snow-bound conditions are now history, but that single day produced more miles of slogging in low gear than might fall to one's lot in a twelvemonth.

In North Devon.

Ten days later I set out for Lynmouth, partly for business calls and also to see the "London-Land's End" competitors on Lynton and Beggar's Roost. I was informed at the "Ship" that I shouldn't get to Lynmouth on account of the snow, but I felt it might be worth trying, so pushed on.

This little 'bus had never seen Porlock Hill before; possibly it may have been the first F.B. to climb that hill. It did climb, and no mistake. I know the hill well, having ridden it many times on many machines, but had never attempted it on a lightweight.

Ploughing Through Snow.

A mile beyond the signpost the snow was reached, and following the hard, narrow ruts, which varied from 6in. to 12in. in depth, was no easy task. It was a low-gear grind, of course, and necessitated many stops. The deepest part came somewhere near County Gate, and there was no other course but to let the machine plough its way very slowly yard by yard, whilst I straddled over it or floundered by its side. The wide front guard and the footrests acted like scoops, forcing the lumps of snow up in heaps even on to my knees until at the end of this section the machine looked like a snowball on wheels. This was almost immediately washed off in a fair-sized lake which had formed from the melting snow, and stretched the full width of the road for fifty yards or so.

This sort of thing had the constant accompaniment of half a gale of wind and occasional sleet storms; it was not exactly enjoyable motor cycling, consequently the long descent of Countisbury, in spite of the rough surface, came as a welcome relief.

Lynton and Beggar's Roost.

Next morning, not having been touched, the machine looked as though it had been at the bottom of a river all night (mud, not rust, for it is singularly free from rusting propensities), yet the engine started first kick,

The Sports Model as a Hack Machine.—

and, without any attention, Lynton Hill was climbed quite comfortably, as also was Beggar's Roost.

An attempt to continue the route to Simonsbath proved hopeless; the moor was still snow-bound, and at one point the drifts were level with the hedge tops. Lynton Hill was climbed again next morning, and, after watching the "fun" on Beggar's Roost, the return trip to Countisbury was made.

This journey made up some 350 miles, the petrol consumption being approximately 92 m.p.g.; less than half a tankful of oil was used. No adjustments were made, nor was there any material damage done to tyres or any part of the machine.

Speed and a Strenuous Trial.

From Easter onwards there have been numbers of long-day business runs when speed was desirable, and it has been proved beyond doubt that over journeys of about 100 miles an average speed of 30 m.p.h. could be maintained if desired.

Perhaps the best day's work with the machine was a successful performance as a member of a club team in an inter-team trial—over a more or less freak course of eighty miles, including five hills, each taken twice, three of which involved the fitting of straps on the rear wheel to counteract wheel spin. Although it had the smallest engine in the trial, it completed the course without loss of marks, and with two out of a possible four bonus marks for clean ascents.

On Dartmoor.

The 4,000 mile mark was reached during a few days' touring from Torquay as a centre; each day was spent on the Moor or its fringe, and main roads were avoided as much as possible.

With close on 5,000 miles scored in a little over six months, I have still to experience trouble worthy of the name; this machine has brought me no end of good running, with speed enough for all my needs, and reliability without question. Moreover, I am surprised at the increase of comfort, or, in other words, the absence of weariness after long rides, as compared with my mounts of previous years.

INSURANCE PROBLEMS.

A Feature in which Insurance Questions are Answered and Discussed.

Insuring a Nondescript Machine.

C. Swindham, Caterham, writes: "I am building a motor cycle from various parts of two old machines. The engine is a twin of unknown make, about '5 h.p.,' and many years old. I should think the value would not be more than £25, as the market is to-day. What kind of policy would you advise me to take out? Obviously if I fill up the usual form as sent out by the majority of companies I shall be paying too much."

The insurance companies will not usually issue comprehensive policies in respect of motor cycles other than those of standard make, but you will, no doubt, be able to obtain a policy to cover third party claims, and this is the cover we should advise you to take.

* * * *

On a Strange Machine.

A reader interested in a case of questioned liability says: "A friend of mine, whilst out with his new sports single was asked by another motor cycling friend who came up on a sidecar outfit whether he would mind him trying his machine. This was reluctantly acceded to. Unfortunately, on coming round a sharp bend, the sidecar owner collided with another motor cyclist. This proved fatal to the latter rider. Is the owner of the sidecar mount liable to the solo owner? They were both insured. If the owner of the sidecar outfit is liable, is not the insurance company entitled to cover him against any claim for damage to the cycle he was riding? Is not the owner of the sidecar machine liable in case an action was taken by the parents for death of their son? Is insurance company liable in this case? Another insurance company repaired cycle belonging to rider who was killed."

In this case, the owner of the sidecar outfit would not be liable to the owner of the solo machine for damage to the machine, unless the solo owner can prove that there was gross negligence on the part of the person riding his machine. The question of insurance will depend upon the terms of the various policies held. If, for instance, the solo owner has taken out the ordinary policy, this does not insure the machine against damage whilst being ridden by some other person, unless a special additional premium is paid for this. The sidecar owner's policy, if taken out with one of the principal offices, will indemnify him in respect of third party claims whilst riding machines other than his own, but this would not cover him in respect of damage to his friend's mount, should he be found legally liable for the repairs. Any action taken on behalf of the fatally injured cyclist would be against the person who was riding the solo machine, namely, the owner of the sidecar outfit, and his policy should, as above stated, indemnify him in respect of such third party claims.

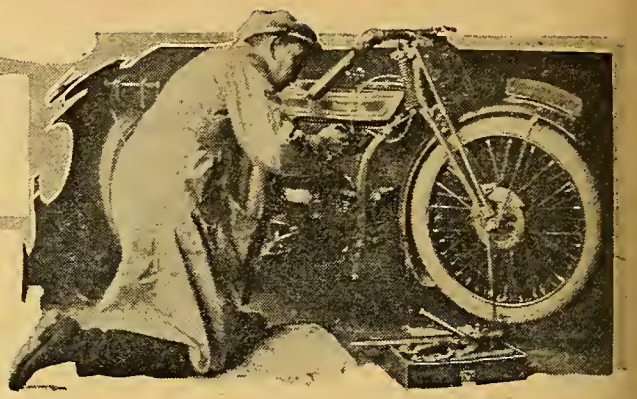
* * * *

Selecting Sound Companies.

Mr. A. Farnell, Leyton, E.10, says: "In April last I insured my motor cycle with a company for £50, receiving a policy dated May 5th on May 6th. On September 17th last I knocked a woman down, doing damage to my cycle to the extent of 25s. Everybody who saw the accident agreed it was not my fault. I sent in a claim and received a reply from another company telling me they had taken over policy holders of my company which had gone into voluntary liquidation on May 13th 'on certain conditions.' Of course they refused to entertain my claim, telling me they were very sorry and could not understand why I had not been informed before of liquidation. I shall be pleased if you would inform me whether it is worth while to put this matter into a solicitor's hands, as I am now in a position of being uninsured, and it would appear they have been grossly unfair to me."

In a case of this description your only right would be against the company that issued the policy, and as that company is in liquidation, it is not likely to be worth your while to trouble further in the matter. No doubt all the policy holders were circularised stating the terms upon which the other company would take over the policies, and it is certainly very unfortunate that either your name was missed, or the circular miscarried.

PREPARING for the WINTER



Attention to the Machine and its Equipment. Importance of Suitable Weatherproof Clothing.

By "ROAD RIDER."

THE approach of winter sets the tough type of rider thinking in two directions. First and foremost, he desires to reduce "trouble" to the absolute minimum, whether in his garage (steel tools do not feel nice in cold hands), or on the road (the always annoying stoppage becomes a positive tragedy on a dark, snowy night). Secondly, he will be wise to take precautions against personal discomfort due to driving under unpleasant conditions.

Of all winter roadside trouble, tyre stops are the worst. The tyres fitted at this moment to most machines have undergone a hard summer's wear, and are rather the worse for it. Covers may be thin or cut; non-skid corrugations may have worn down towards the flat stage; and tubes are disfigured by a number of patches, some of which leak. It is quite feasible to guarantee a tyre non-stop throughout the six winter months; and opulent riders will not regret the necessary outlay. Over-tyring—such as 3in. covers on a 500 c.c. machine—is an almost infallible insurance. Short of this, the cover allotted for use at this date must have a sound casing, free from cuts; thick rubber on the tread; and the heaviest obtainable scolloping as a preventive of side slip. The tube is preferably new and unpatched; some riders insert Jackson's Impervo, or swear by Challenger tubes. New valve rubbers may be fitted; the tyre repair kit overhauled, and any summer depletions made good; and the inflator connection is quite possibly wearing out.

Preparation of the Transmission.

When the tyres have been vetted O.K., the transmission should come in for attention. Naked chains should unquestionably be removed, thoroughly cleansed in paraffin, and re-lubricated in a *hot* bath. Whatever lubricant is applied, it will certainly not enter the fine clearances of the rollers until heat has thinned it down to the consistency of water; if it will penetrate cold, it is too light to keep out wet. Cold lubrication of chains is a sorry makeshift. Adjustment must be looked to; and if the chain has reached the stage at which a roller or two are missing, the time has come for a new chain. A test of the new chain will possibly indicate that new sprockets are advisable as well—it is folly to run a brand new chain over teeth which have worn away their virgin accuracy. An old chain should be set so that it is not too tight at its tightest point.

Thorough lubrication of the entire machine is the next stage, not forgetting such small bearings as those on the brakes; nor such inaccessible bearings as the steering head or the hubs. It is specially important that the hubs should be packed full of grease to keep out water; and Price's speciality runs in quickly when thinned by heat.

Wet Resisting Engine Details.

A trustworthy engine needs no special attention beyond decarbonisation when due. But it is well to commence the winter with the engine clean, and with gastight rings and valves. There will be plenty of low gear work and slow-speed work, both of which imply heating up towards the maximum working temperature; and hills will be far harder to climb when the wheels have to cut through inches of mud. So everything should be efficient. Drain the oil tank and crank case, replenishing with a lighter grade of oil.

The carburetter may be cleansed, and its control wires greased where they emerge from their casings; frayed wires should be renewed. If the magneto is not waterproofed, this should be done at once. To my thinking, there is no protection to beat a thick coating of vaseline, as it does not obstruct access; it is especially needed around the contact breaker, otherwise "fixed ignition" will occur on the first really filthy day. At the same time the platinum points may be adjusted, and if necessary cleaned.

All controls should be greased. Bowden wires may have hot Price's hub lubricant squirted down their casings. Pedals and levers, working on spindles, should have their bearings or eyes lubricated with a graphite grease—this will last through the winter.

Leg-shields and Handle-bar Muffs.

Finally, the question of legshields and handle-bar muffs should be considered. Both are more or less unsightly; but beyond all question they minister enormously to winter comfort. I never know which is the cosiest. When the front wheel swishes waves of icy surface water off a soused road against legs reposing on a pair of plain footrests, I feel that £10 would not be too much to pay for legshields. When an east wind plus a thermometer dropping towards zero make thick hide gloves feel like nun's veiling, I would swop all my gold medals for a pair of muffs. I rather fancy that the Easting solo screen will be "much worn this season," as the modistes say.

Preparing for the Winter.—

A lot of nightriding is inevitable from November to March. Fit a dynamo set if you can afford it. Otherwise, insist on a dry battery tail lamp set, overhaul the head lamp carefully, and if it is a gas type, mount a reserve carbide container on the machine. Carbide tins are not good for pockets, and carry a box of wind vestas; mine live inside the head lamp, camouflaged by a lump of waste.

Clothing—A Vexed Question.

No two winter riders agree about clothing. One school of thought believes in piling on as much clothing as possible, topping off with heavy waterproofs. This system does not make for comfort on long rides. Moisture is continuously evaporated from the human body, and if it cannot get out of the clothes, it stays in. The man who pads himself out to the dimensions of a grizzly bear will sweat his underclothing damp even if he refrains from exertion after he is dressed for the road. In a few miles the damp underclothing will chill him. If a rider so attired starts his ride with a minute or two of heavy exertion—kick-starting a sulky engine, pushing the machine out of a stable, pulling carrier straps tight, etc., he will be cold in five miles. Of course, if the trip ahead is brief, he will reach his destination before he feels frozen, especially if he avoids exertion after dressing up, and if he does not naturally perspire very much. But on a really long run or for a rider who perspires freely, the golden rules are:

1. Wear lots of thoroughly ventilated clothing.
2. Shun even mild physical exertion when once dressed (*e.g.*, start engine before donning overalls; strip off some clothing before roadside repairs, etc.).

Of course, if the day be wet or snowy, there is no help for it. You have to choose between getting wet from outside by the weather, or getting damp from inside the clothing by condensed evaporation. The weather being the greater evil, one dons drencher-proofs. The two vital points about storm overalls are:

1. They must keep water out (few do, except oilies).
2. They must let out the body steam, *i.e.*, be thoroughly ventilated.

The second merit is even rarer than the first. Two or three eyelets at the fork and under the armpits are usually the sole provision. A loose fit helps to some extent, for which reason it is a bad thing to pull the belt tight. These eyelet holes are often blanketed on the inside by an almost impervious coat and breeches.

No perfect winter glove exists. Lined fur, worn inside handle-bar muffs, is the best compromise. During stoppages in rain, remember to shove the gloves inside the breast of the jacket, when they may keep dry. Some cheap furs set board hard after a wetting; a few comparatively expensive furs are all but waterproof.

For the short ride to which many owners limit themselves in winter, such a get-up as snow or gum boots, a Sidcot suit, and a helmet with ear flaps is satisfactory. A pair of goloshes or snowshoes will render any old boot watertight, and they are more easily removed than waders or trench boots.

The best headwear is a helmet with ear rolls and flaps, and a neck valance. Seafaring men sometimes wear a sort of oilskin candle extinguisher with a face-hole in front. If the face-hole fits your face, and not somebody else's, these are excellent.

The leggings must not be of the pull-over type, for your boots will rapidly foul the inside of the legs. The market now offers plenty of leggings which collapse in a heap round your ankles after a few tweaks at the fastenings.

Four trials riders all of whom have different ideas of what constitutes the ideal winter riding-garb.

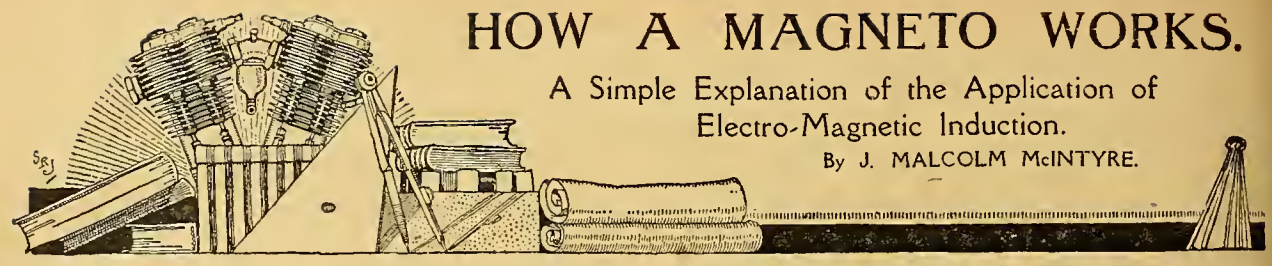
HIGHER MATHEMATICS.

A CORRESPONDENT forwards two silly season posers:—

(1) Do the spokes at the top of a motor cycle wheel travel faster than those at the bottom as observed by a person standing on the road?

(2) How would they appear to the rider of the machine if it were possible for him to see them?

Vast wagers hinge on the matter, which I present to the public for decision. But the second question completely metagrobolises what was previously my pet hypothesis, viz., What would Queen Elizabeth have done with/to Lloyd George? IXION.



HOW A MAGNETO WORKS.

A Simple Explanation of the Application of Electro-Magnetic Induction.

By J. MALCOLM McINTYRE.

TO go fully into the theory of the magneto in an article of this nature is obviously impossible, not to say undesirable; but the following notes should enable the average motor cyclist to get a grasp of the principles underlying the working of this small but essential part of his machine.

The working of the magneto depends entirely upon two simple electrical laws, or, to be more precise, two special examples of the application of one general law —that of electro-magnetic induction; and these two laws may be explained with the aid of a couple of simple diagrams.

For the first, then; in fig. 1 let A represent a bar of soft iron, around which are wound two coils of insulated wire, P and S. The ends of P are connected up as shown to a battery (B) and a switch (X), and the coil S to a galvanometer or other detector (G). It is found that so long as the current flowing through the coil P from the battery is steady, or is not flowing at all, no movement of the galvanometer needle is seen, but every time the switch is turned either on or off the needle of the detector is momentarily deflected, showing that a current is set up in the coil S. In other words, the coil S has a current "induced" in it whenever the current in P is varied—*i.e.*, increased or decreased.

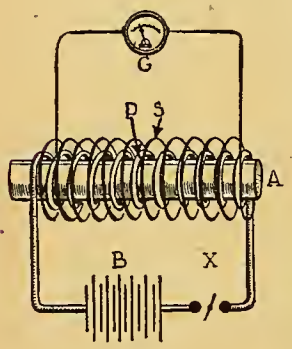


Fig. 1.

Production of Current.

It is also found that (i.) the more sudden the making or breaking of the circuit P, the stronger is the current in S, although it does not endure so long; (ii.) the induced current is always stronger at "break" than at "make"—that is, stronger when the switch is turned *off*; and (iii.) the voltage of the secondary current is to the voltage of the primary current as the number of turns of wire in the secondary is to the number of turns of wire in the primary. In other words, if our primary has twenty turns of wire and the battery gives four volts, and our secondary has two thousand turns of wire, the induced current will be at four hundred volts, but it will gain this at the expense of its intensity, the ampèrage of the secondary being only one one-hundredth of that of the primary. (Such would be the case in a coil of 100% efficiency, which cannot be obtained in practice; actually a certain percentage is always lost.)

In fig. 2 let N S represent the poles of a horseshoe magnet and C a loop of wire which can be rotated on the axis A B between the poles N S. The ends of the loop C are taken to two insulated slip rings S S, from which two leads are taken to our galvanometer G. If, now, the loop of wire is rotated by some mechanical means it will be found that a momentary current is induced in C twice in each complete revolution and that this current is at its maximum intensity when the loop is in the position shown in fig. 2, when the sides (*a b*) of the loop are cutting the imaginary lines of magnetic force between N and S (represented by the dotted lines), while the induced current is at its minimum (or zero) value when the loop has moved through 90° from the position indicated.

The current produced in the loop C is naturally a very small one, but its strength may be greatly increased by substituting a coil of a number of turns of insulated wire for the single loop, and by winding this coil on an "armature," as it is called, of soft iron, to concentrate the lines of magnetic force from the magnet N S through the wire coil, since the intensity of the current produced is proportional to the number of lines of force cut by each turn of wire.

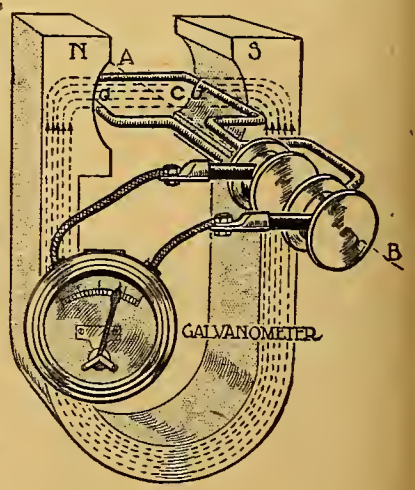


Fig. 2.

Practical Needs.

Let us now turn to the construction of the magneto —we will consider the simplest type, *i.e.*, one for a single-cylinder engine. In order to serve our purpose it has to supply a momentary current at a definite instant once in each cycle of operations of the engine, and this current must be of a voltage high enough to enable it to jump a spark gap of at least one millimetre, for which several thousands of volts are required.

The magneto may be divided for our purpose into four constituents: the field magnet, the armature, the contact breaker, and the condenser. The first-mentioned is simply a steel "horseshoe" magnet—or, in some cases, two such magnets placed together to

How a Magneto Works.—

form virtually one—of which the pole pieces N S are shown in fig. 3. The armature resembles a capital letter H in section, and it is built up of thin iron stampings, mounted on the armature shaft and compressed, usually hydraulically, until they form as nearly as possible a solid mass. On this iron armature are wound two entirely separate coils of insulated wire, of which the primary consists of a few turns of fairly stout wire, and the secondary of a great number of turns of very fine wire. One end of each coil is "earthed"; that is to say, connected to the iron core of the armature, and therefore—electrically—to the rest of the frame. The other end of the primary coil is connected up direct to the contact breaker. as shown in fig. 3.

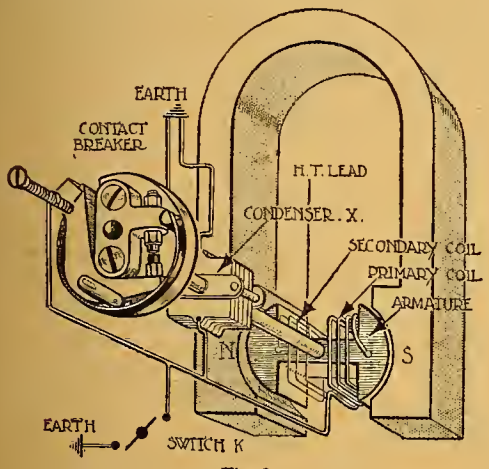


Fig. 3.

The construction of the contact breaker need not be gone into here; it is accessible by removing the contact breaker cover of a magneto, and its *modus operandi* is easily grasped if it is carefully examined; suffice to say that the platinum points are brought together and suddenly separated again once per revolution of the magneto (on a single-cylinder magneto) and that one of the points is connected to the end of the primary coil, and the other "earthed," *i.e.*, connected to the frame of the machine.

Producing the Spark.

Let us suppose that the contact breaker is not working for the moment—that its points are permanently in contact—and that the magneto is rotated. According to the principle of fig. 2, a current will be induced in the primary coil passing through the contact breaker and returning through the frame; this current, of course, rises to maximum and sinks to zero again twice per revolution, inducing a corresponding rising and falling voltage in the secondary.

But if our contact breaker *is* working, and is arranged to break the primary circuit suddenly at one of its maximum points, in accordance with our principle of fig. 1, we get an instantaneous and much more powerful "rush" of current in the secondary, the voltage of which is very great—owing to the large number of turns of wire in the secondary—and quite sufficient to give us our spark. Hence, if the free secondary lead is connected to an insulated slip ring on the armature shaft, on which impinges a collecting "brush" (of carbon) connected, *via* the H.T. lead, to the central electrode of the plug, our ignition system is apparently complete, a spark taking place at the plug once in every revolution of the magneto at the exact moment that the contact breaker points separate, the magneto being driven at half engine speed, to give a spark on each compression stroke when used on a four-stroke unit.

The Condenser.

But there is another point to consider; when the current in the primary coil is suddenly interrupted, it not only induces a powerful current in the secondary, but also tends to induce a "follow-on" current in the coils of the *primary* winding *itself*—every turn of wire in the primary coil acting inductively on every other turn, and this current, if neglected, will cause destructive sparking at the points of the contact breaker, and also mar the suddenness of the break in the primary, so essential to an efficient high tension "pulse" in the secondary.

The introduction of the condenser eliminates this trouble. Briefly, it is constructed of a large number of alternate sheets of mica (or paraffin waxed paper) and metal foil, alternate sheets of the metal being connected up to two leads as shown in fig. 3.

Preventing Contact-Breaker Sparking.

The theory of the condenser's action cannot be given here; suffice to say that, when connected up to the primary circuit as shown in fig. 3, it effectually chokes this self-induced "follow-on" current, rendering the breaking of the primary circuit instantaneous, and preventing destructive sparking.

In fig. 3 a cut-out switch as sometimes fitted is represented; this operates by permanently closing the primary circuit, so rendering the breaking of the circuit at the contact breaker ineffective.

Since the spark at the plug obviously takes place when the platinum points separate, rotating the cam ring so as to cause the fibre block of the contact breaker to strike the cams sooner or later will vary the timing; in this way advance and retard are obtained. The range of action, however, is limited by the fact that to get a hot spark the primary circuit must be interrupted at its maximum point, or very near it.

Twin-Cylinder Magnetos.

It has been seen from fig. 2 that the current generated in the primary attains its maximum value twice per revolution; hence if we arrange our contact breaker to operate twice instead of once, we can get two sparks per revolution, and if we arrange our slip ring suitably with two collecting brushes, we have all that is required for a twin-cylinder engine. But in a V-twin the firing intervals are uneven, so that if we arrange for one cylinder to fire when the armature is in the maximum position, the other will have to fire either before or after this maximum position is reached, resulting in a weak spark. Actually a compromise is effected, one firing slightly before and the other slightly after maximum position.

MID-WEEK SPEED TRIALS AT BETCHWORTH.

Flat-Twin beats o.h.v. Single at Reigate, Redhill and District M.C.C. Meeting.

E. W. Spencer (494 Douglas) crossing the finishing line after making fastest time of the day.

CHALKED across the Reigate-Dorking road on Wednesday of last week was an announcement in large white letters to the effect that speed trials were being held at Betchworth Park by the Reigate, Redhill and District M.C.C.

But apart from that little touch of originality the event proved to be very ordinary and very little different from any other meeting at any other time. However, there was plenty of enthusiasm, efficient though simple organisation, and some keenly contested duels for honours.

Measuring exactly a quarter of a mile, the course was a private road (used by permission of Lord Francis Hope) running through Betchworth Park golf course. Whether the golfers welcomed the intruders is a moot point; the sudden crackle of a well-tuned engine, disturbing despite compulsory silencers, was not calculated to improve a six foot putt on the 18th green

On the whole the riding was quite good. E. W. Spencer (493 Douglas) carried all before him in the larger solo classes, including (metaphorically) R. A. Green's o.h.v. Norton. Green, in turn, was usually a little faster than anybody else, although C. Volk on another Douglas beat him once. Sheraton's Sheffield-Henderson, which won the two 350 c.c. events by an easy margin, might have been heard more of in the later classes had it not been scratched. E. C. Gordon (499 Triumph) also rode most consistently.

The sidecar classes were not well supported, and probably the most creditable show, not excepting the placed men, was made by A. G. Harris (976 De Luxe-Jap sc.)—a one-armed rider on a home-built machine.

Otherwise the results sheets automatically give prominence to the right men.

250 c.c. Solo (General).—1, R. A. Green (247 Velocette), 21s.

250 c.c. Solo (Expert).—1, R. A. Green (247 Velocette) 21⅕s.

350 c.c. Solo (General).—1, W. H. Sheraton (349 Sheffield-Henderson), 17⅖s.; 2, A. Gruzelier (349 Ivy), 21⅗s.; 3, W. N. Peet (349 A.J.S.), 21⅕s.

350 c.c. Solo (Expert).—1, W. H. Sheraton 349 Sheffield-Henderson), 18⅗s.; 2, A. Gruzelier (349 Ivy), 21⅗s.; 3, W. N. Peet (349 A.J.S.), 21⅗s.

600 c.c. Sidecars (Expert).—1, C. Volk (494 Douglas sc.), 20s.

1,000 c.c. Sidecars (General).—1, P. C. Polhill (976 Zenith sc.), 22⅗s.; 2, E. C. Gordon (499 Triumph sc.), 22⅘s.

1,000 c.c. Sidecars (Expert).—1, E. Headlam (976 Zenith sc.), 22⅗s.; 2, C. Volk (494 Douglas sc.), 19⅘s.; 3, P. C. Polhill (976 Zenith sc.), 22⅕s.

600 c.c. Solo (General).—1, E. W. Spencer (494 Douglas), 16⅛s.; 2, R. A. Green (490 Nortou), 16⅖s.; 3, H. W. Purdey (389 A.B.C.) 17⅕s.

600 c.c. Solo (Expert).—1, E. W. Spencer (494 Douglas), 16s.; 2, C. Volk (494 Douglas), 17⅕s.; 3, R. A. Green (490 Norton), 17⅖s.

1,000 c.c. Solo (General).—1, E. W. Spencer (494 Douglas), 16⅕s.; 2, R. A. Green (490 Norton), 16⅘s.; 3, P. C. Polhill (976 Zenith), 18⅛s.

1,000 c.c. Solo (Expert).—1, E. W. Spencer (494 Douglas), 15⅘s.; 2, R. A. Green (490 Norton), 16⅗s.; 3, C. Volk (494 Douglas), 17⅘s.

Fastest sidecar time being made by E. Headlam (976 Zenith sidecar)

The Autocar

AND THE SHOW.

November 3rd to 11th is the date of the annual Automobile Exhibition at Olympia and The White City.

In connection therewith "THE AUTOCAR" will publish Four Special issues as under:

Oct. 20th. Accessories and Tyres.
„ 27th. Buyers' Guide of 1923 Models
Nov. 3rd. Show Forecast and Guide.
„ 10th. Complete Show Report.

Published in attractive coloured covers, these enlarged issues will be worthy of "The Autocar"—the representative British Motoring journal. To avoid disappointment copies should be ordered in advance!

EVERY FRIDAY. FOURPENCE.

OVER 300 EXHIBITORS TO BE AT OLYMPIA.

List of the Principal Exhibits of Motor Cycles, Runabouts and Sidecars which will be Staged at the Motor Cycle Show next Month.

MOTOR CYCLES AND RUNABOUTS.

Abingdon.
A.J.S.
Alldays Allon.
American X.
Argson.
Ariel.

Beardmore-Precision.
Bianchi.
Blackburne.
Bown.
Bradbury.
Brough.
Brough Superior.
B.S.A.

Calthorpe.
Campion.
Chater Lea.
Cleveland.
Clyno.
Connaught.
Cotton.
Coventry Eagle.
Coventry Mascot.
Coventry Victor.
Cyklaid.

Dayton.
Diamond.
Dot.
Douglas.
Dunelt.

Edmund.
Elswick.
Enfield.
Excelsior.

F.N.
Francis-Barnett.

Gnome and Rhone.
Grigg.

Hack.
Hagg.
Harley-Davidson.
Harper.
Hawker.
Hazlewood.
H.B.
Henderson.
Henley.
Hercules.
Hobart.
Humber.

Indian.
Ivy.

James.
J.D.

Lea-Francis.
Levis.
L.S.D.

Martinsyde.
Massey-Arran.
Matchless.
McKenzie.
Metro-Tyler.
Mohawk.
Monopole.
Morgan.

Ner-a-Car.
New Hudson.
New Imperial.
Norton.

O.K.
Omega.
Orbit.

P. & M.
Peugeot.
Powell.
P.V.

Quadrant.

Radco.
Raleigh.
Rex-Acme.
Rover.
Royal Ruby.
Rudge.

Scott.
Scott Sociable.
Sirrah.
Sparkbrook.
Stanger.
Sun.
Sunbeam.

T.B.
Triumph.

Velocette.
Verus.
Victoria.
Vindec.

Wolf.
Wooler.

Xtra Car.

Zenith.

PROPRIETARY SIDECAR ATTACHMENTS.

Canoelet.
Dorway.
Dunhill.
Grindlay.
Hughes.
Milford.
Montgomery.
Rideezi.
Sandum.
Watsonian.
Whitley.

MOTOR CYCLE ENGINE UNITS.

Barr & Stroud.
Blackburne.
Bradshaw.
J.A.P.
M.A.G.
Orbit.
Villiers.

GEAR BOXES.

Albion.
Burman.
Gardine.
Moss.
Sturmey-Archer.

"THE MOTOR CYCLE" FILM.

Last Year's Popular Feature in Clubland to be Repeated during the Coming Winter.

ONE of the chief features of last winter's club activities was the cinema entertainment which was arranged by about 100 individual clubs in conjunction with *The Motor Cycle*. This thrilling "picture" included incidents in all the big events of the year, and the appreciation expressed by our readers has encouraged us to offer again a film for club entertainment.

Many spectators at the various important 1922 trials may have observed the cinematograph operators who have so often been present. The net result of their efforts is a film approximately 2,000 feet in length, which will not only interest enthusiastic motor cyclists, but will demonstrate the efficiency and hill-climbing abilities of the modern motor cycle to the non-motoring public.

Occupying from thirty to forty minutes to show, *The Motor Cycle* film includes incidents in:—

The Junior T.T. Race.
The Senior T.T. Race.
The Car T.T. Race.
The Motor Cycle Grand Prix in France.
The French Grand Prix for Cars.
An Extraordinary Hill-climb in America.
London-Land's End Trial (Beggar's Roost).
London-Edinburgh Run (Kirkstone Pass).
Junior Car Club's Run to Manchester.
Beach Racing.
Brooklands Events.
Etc., etc.

An even larger number of clubs will be able to organise their cinema nights this winter, and club secretaries should make early application for a date, as the film will be released for loan immediately after the Olympia Show. Many dates are already booked, as a number of clubs approached us for a date immediately they had held their entertainment last winter. In applying, several dates should be suggested. No charge is made for the loan of the film, and local cinema managers are usually only too eager to include it in their programme. Last year, so keen was one Irish club (the Cork and District M.C.C.) that a special messenger was sent over to London to fetch it, in order to ensure its safe arrival. In another case, a hard-working club official rode 200 miles to collect it from a town where the club thoughtlessly retained it for "one more night." One copy of the film twice crossed the Straits of Dover, and another has gone to South Africa to demonstrate the utility of present-day motor cycles, and so help overseas trade.

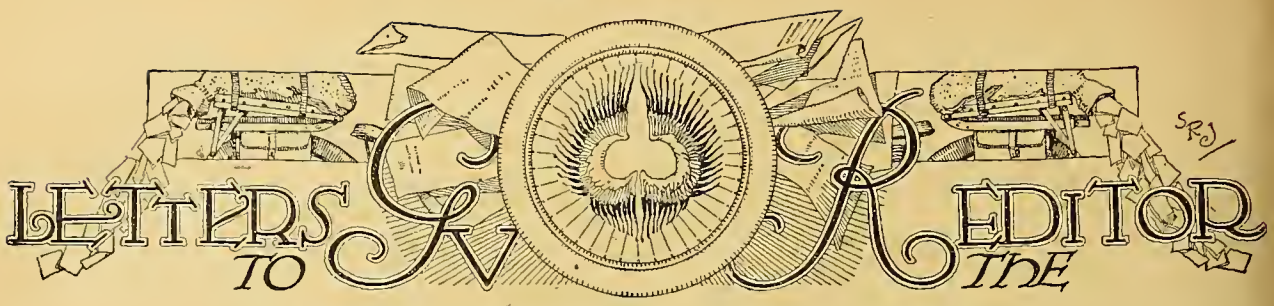
The main object of the film, of course, is to help clubs to provide entertainment for their members, and so retain their interest during the winter months.

All communications respecting the film should be sent to the Editor (Film Department), Dorset House, Tudor Street, London, E.C.4.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

Nov. 9th. Lightweights and Accessories.
Nov. 16th. Passenger Machines.
Nov. 23rd. Show Forecast and Guide.
Nov. 30th. Show Report.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

SILENCE.

Sir,—There are two matters which I think deserve the very serious consideration of motor cycle manufacturers, viz., riding position and silence. The great majority of motor cyclists use their machines for business or pleasure and do not want to ape the "scorcher" or "knut," but are in many cases compelled to do so owing to the position and style of handlebars, saddle and footrests provided. It does not add to a professional or business man's appearance to be doubled up in an unnatural position on a motor cycle. Machines should be provided with comfortable handlebars and footboards and capable of some adjustment so that the rider can assume a natural position.

Now as to silence. I cannot understand makers sending machines out for use without reducing the exhaust noise to the lowest possible. The general public are more up against motor cycling from this cause than anything else. There are one or two machines that are fairly quiet, but there is no reason why silencing should not be still much improved and with added efficiency to the engine.

I hope at the forthcoming show to find the makers are going to cater for the ordinary man a bit more and that the craze for sports models and noise will give place to comfortable and quiet machines, albeit with plenty of speed and power. T. GOLDSWORTHY-CRUMP.

Sir,—I am not a motorist, but I am a regular reader of your paper. A short while ago "Ixion" described how the village postmistress liked his new machine, simply because it made plenty of noise to warn her of his approach, allowing her to get the children in before he passed!

Seriously, I quite agree with her and think that noisy machines are the safest, by far. The "straight through" exhaust gives warning of its approach a reasonable time in advance. The horn does not. How on earth is a cyclist, or anyone else, to hear a motor cycle horn, if a Ford happens to be bouncing over pot-holes at the other side of a bend?

The "fish-tailed" exhaust is silent when the throttle is practically closed.

We see daily accounts of motor cyclists being fined for not having silencers, whether making a noise or not. I understood the police were the protectors of the people, not their rulers. I think it is time the public demanded that "fish-tailed" exhaust pipes be made sufficient in law.

Morpeth. NON-MOTORIST.

Sir,—I quite agree (as a rider of a motor cycle since 1899) with the police in their campaign against noisy motor cycles.

The majority of machines are much too noisy; in fact, in many respects the present-day motor cycle is not in advance of those of about 1904. It is often as noisy, as dirty—through want of proper mudguarding—and as hard to clean, as in those early days; in fact, as far as design goes the present motor cycle—with one or two exceptions—is in the same state to-day as cars were in 1903. The car in those days was a horse vehicle, minus shafts, and with an engine stuck on (at the wrong end, as it is to-day); the present-day motor cycle is merely a push cycle with a stronger and lower frame, and an engine, etc., stuck on.

Many machines are not properly silenced by the makers; many are made noisy by young people who think they are "knuts" (really nuisances); others, again, are noisy because some people have an idea that an efficient silencer slows the machine, which of course it does not.

About 1904 I had a Clement-Garrard motor bicycle (which incidentally was a four-stroke with outside flywheel, overhead inlet valve, and detachable head), rated at 2¼ h.p. I had a hole cut in the exhaust pipe about 2in. from the cylinder. When this hole was uncovered and the machine was exhausting practically into the open air, it would not climb a slight gradient, much less a hill. Close the cut-out, and it climbed well. So much for loss of power through an exhaust box.

Again, why are so many motor cyclists so dirty? Many have filthy hands, dirty faces, dirtier overalls, etc.—in fact, they are a disgrace to the sport. Such dirt is quite unnecessary. Is it another phase of the "knutty" rider? This type of rider, with his noisy machine and dirty appearance, does not encourage the non-rider. M. D.

Cosham.

Sir,—According to the warnings issued in your journal nearly every week, it seems that it is becoming quite a foolhardy practice to venture outside one's own premises on a motor cycle. Apparently, if you manage to negotiate one town in safety that fact is no guarantee that you will be so fortunate in another; in fact, most probably you will be stopped and summoned for driving a *noisy* machine, whether a silencer is fitted or not. Is it not high time something was done for us poor motor cyclists that we may be saved from this abominable persecution? If a motor cycle is really such a nuisance to others by reason of its noise, why not devise an efficient "silencer or other device" for all machines and make it compulsory? Or, if necessary, one for 250-350 c.c. machines, another for 500 c.c., and so on. If this were done by the authorities it would end this constant, irritable, abominable "sniping" by the police, at whose mercy we seem to be entirely. BOW-WOW.

Lincoln.

Sir,—Allow me to endorse the remarks of "One of the Audience" on noisy motor cycles. It is of little use to the general public to know that a cycle is fitted with all sorts of wonderful silencing devices if the machine in question makes a noise like a machine-gun—which a great many do.

I live about a quarter of a mile from a main road which has a considerable motor traffic in the summer, and, while motor cars will pass unnoticed all day, we are frequently disturbed by the motor cycle traffic. The average motor car is far more silent than the average motor cycle. I cannot see the force of "Objector's" remarks; they appear to me to apply to all motor vehicles, and although some cars are ultra-silent, people get out of their way just the same.

It is perhaps necessary to add that I ride a motor cycle.

Radnor. F. H. M. V.

Sir,—Why must the police persecute motor cyclists for making a noise, while lorries, steam waggons, electric trams, and even railway trains are allowed to create such a din that one cannot hear oneself speak?

After all, the exhaust of a motor cycle is not the only unpleasant noise that ever happens. I have been between two babies, both giving tongue continuously, in a non-corridor railway carriage for two hours. BIG SINGLE.

London, N.W.8.

BULK OF A FOUR-CYLINDER MACHINE.

Sir,—In the report of the M.C.C. one-day sporting trial you refer to the F.N. as lengthy and heavy. Whilst, of course, the machine is relatively lengthy and heavy, we think that a wrong interpretation might be placed on this remark, the reader thinking that it is *unduly* lengthy and heavy.

The weight, as a matter of fact, is only 300lb., which is less than some big single roadster machines.

The wheelbase is, we believe, no longer than several other makes of powerful machines. As a matter of fact, the general lines of the machine are apt to mislead. The long "in-line" engine and low centre of gravity make the machine look longer than it is, and the large crank case to accommodate the long stroke of the engine (88 mm.), and, of course, the addition of a sump for the oil, give the engine a bulky appearance, but as the crank case is merely an aluminium box, it is exceptionally light.

"F.N." (ENGLAND), LTD.

MORE DOPE.

Sir,—May I commend to your notice and that of all other motor cyclists the petrol intensifier known as Petrolex.

My present mount—a 90 mm. bore Zenith tuned for speed work, was a notorious petrol-eating demon, its average consumption being about 40 m.p.g. I was advised by the proprietor of the Quick Service Garage, Bedford, to try some of this "dope" in my 'bus. I did so! My petrol account almost immediately dropped while using it, and I am now doing in the neighbourhood of 70 m.p.g.

Upon making further inquiries the proprietor informed me that he could not say much about Petrolex as certain obstacles had to be overcome before it could be offered to the motoring community of this country.

Bedford. ECONOMIC.

BRITISH RACE TRACK POSSIBILITIES.

Sir,—At the race meet held at Syracuse, New York, on September 16th there was an attendance of 45,000 spectators. This is by no means an unusual "gate" at a well-managed motor cycle race meeting in America, and goes to show that if a track is properly constructed, with suitable grandstands so that spectators can see every bit of the racing (which they cannot do at Brooklands), there is bound to be a big attendance.

If in America, where more interest is taken in automobiles than motor cycles, they can muster huge crowds for motor cycle race meets, I can quite imagine that in this country, where interest in motor cycling is so keen, we would have "football" attendances if we had proper tracks and accommodation for spectators. W. H. WELLS.

SIDESLIP ON SPRING FRAME MACHINES.

Sir,—In reply to "XA5291," my present mount is a 349 c.c. Carfield-Blackburne spring frame model, fitted with a three-speed gear box, on which I have covered 11,500 miles by speedometer reading.

I have travelled over some of the worst roads in Scotland, as follows:—From the Midlands to Oban and back through the Pass of Glencoe. Most of this ride was done in very wet weather, but I did not find any tendency for the machine to skid. A. E. H.

Stafford.

Sir,—My machine is a Beardmore-Precision, and although I have only had one really severe crash, due to an emergency application of the brakes, there is an ever-present feeling when riding on grease that "something is going to happen."

Without claiming any special knowledge of the subject, the causes of skids and side-slips appear to me to be:—(1) Too rapid acceleration or deceleration; (2) distorted frames or slack hinge joints; (3) centre of gravity too high in the layout; (4) harsh drives or fierce engines; (5) nerves or "vertical breeze."

Manchester readers will be able to confirm the blood-curdling sensation of riding solo in the city streets amid grease, tramlines, and motor lorries.

A hundred hectic yards of our round-topped "sets" on a greasy day would cure "XA5291" for ever of any tendency to skid on mere tarmac.

My theory is that the springing allows the back wheel to bounce; if it hits the road squarely all is well, but if it strikes the side of a rounded "set," or the sloping side of a greasy pothole, the wheel sideslips.

What follows depends upon the tyres and the speed at which one is travelling; slow speeds seem to aggravate the trouble. A.M.I.E.E.

Manchester.

Sir,—My experiences, extending over ten years and many thousands of miles over all kinds of roads and riding conditions on a certain make of spring frame machine, may be of interest to your correspondent "XA5291," and possibly others.

My machines have always been ridden solo, and my present mount, which has done over 10,000, has never yet touched the ground except on its tyres, and I never had a skid on the others had enough to bring me off. I am quite sure that these machines are no more liable to skid than rigid frame ones, and, under certain conditions, less.

This is entirely due to their scientific though simple design, a design that does not copy car practice, which is quite unsuitable for a single track machine. This design provides for a vertical motion of the back wheel in the rear portion of the frame, but prevents any lateral movement whatever. It does not matter at what angle the machine is to the horizontal, the back wheel is always in perfect alignment.

There is no question of the rear portion of the machine tail-wagging or the wheel wobbling about at its own sweet will.

These conditions simply do not exist, and one feels as confident as when on a rigid frame.

One has only to ride a rigid frame machine with loose back wheel bearings to experience what riding some spring frames feels like. Is it to be wondered at that they will not steer properly?

Personally, I do not think tyres have any bearing on the matter. I have had three-rib on rear and studded on front and *vice versa*, and the only difference I have noticed is that the mud-slinging propensities of the one are greater

CURIOUS CARNIVAL CLOTHING. This owner of an Enfield outfit saw the humorous side of a wet summer. His outfit represents the "1922 Summer Tourist," in the recent Hull Motor Carnival held in aid of St. Dunstan's.

than the other. As regards stability, I do not think there is anything to choose between them.

With a spring frame machine it is quite possible to fit small-section heavy tyres and pump them board hard without any sacrifice of comfort, which means long life and economy in tyres.

I use 26×2in. tyres pumped board hard, and though my weight with luggage and samples is 15 stone, I find I can get 5,500 miles out of a 32s. tyre on the rear wheel.

Diss. DUMPLING.

THOUGHTLESS LADY MOTORISTS.

Sir,—I agree with "Elder Brother's" plea for motor cycles for our girls. Indeed, my wife has been seized with an ambition to possess a Scott-Squirrel, and when the funds run to it, we shall try to realise it.

But I must enter a protest against the very insufficient knowledge (to say the least) that some lady drivers possess of the unwritten rules and courtesy of the road. Yesterday, whilst passing four hunters in charge of two grooms, I slowed up to pass the animals with the least possible disturbing noise. At the same time, two cars travelling in the opposite direction and driven by ladies dashed past, hooting persistently. I was compelled to run on the grass bordering the road. Apparently the horses and their riders and I were not on the road.

A few weeks ago a motor cyclist lost his life in this district, apparently through a lady forgetting to give warning to other road users that she was turning a corner.

Leamington. "AN UNTURNING WORM."

DEPOSITS ON VALVE STEMS.

Sir,—The advice received by "Sidevalve" from one of Messrs. Wakefield's representatives at Olympia last year was quite sound, provided he was relating to a side-by-side valve Triumph used for touring, which apparently he was. Castrol "R" is not the most satisfactory oil for this particular engine, and as it is not good policy to recommend anything but the most suitable, it is our endeavour to persuade owners to use Castrol "X.L."

E. A. EVANS, Chemist,
C. C. Wakefield and Co., Ltd.

THE ETHICS OF "HANGING-ON."

Sir,—I strongly sympathise with "Benedict," who seems to have been indeed unfortunate in his experiences with hangers-on, but surely if he looks more closely into the reason for my letter he will realise that, intentionally or not, he is somewhat skilfully drawing the proverbial red herring across the argument.

The reason for my letter was not prompted by a desire to encourage any cyclist to thrust his nose down the neck of "Benedict's" wife, and, indeed, I would consider such conduct both indelicate and outrageous.

My interest in the conduct of "Norton Rider" is chiefly due to his somewhat "Hunnish" method of ridding himself of an annoyance at the expense of all users of our roads, and also, I fear, to the serious detriment of motor cyclists as a class.

As regards the cyclist, I have no objection myself to "followers," but I feel sure that their good sense and good manners would in most cases ensure their departure if they were politely requested so to do.

Should they fail to do this they would, I think, join that class of "persons" of whom "Norton Rider" is one.

A. C. GODFRY.

MISNAMED LIGHTWEIGHTS.

Sir,—What *is* a lightweight motor cycle? You say, "One should encourage the 150 c.c. engine." But it is absolutely no use encouraging a small engine unless the total weight of the machine is limited. Look at the last T.T. races. Could anything be more absurd than calling a motor cycle weighing 253 lb. a *lightweight*, simply because it had a small engine? There were many machines in the Lightweight T.T. that weighed many pounds *more* than the Junior and Senior machines! No! Keep the limit of a lightweight *under* 100 lb., all on, with a two-speed gear, and perhaps there will some day be developed the "motor cycle for the million." EDMUND CANBY.

TAPPET CLEARANCES AND NOISE.

Sir,—Now that the police are taking such a keen interest in the silencing of motor cycles, the following tip may be useful to your readers.

I find that the noise of the exhaust of my Norton is 100 per cent. louder when there is excessive clearance between the exhaust valve and tappet than when the clearance is reduced to a minimum.

I have noticed this phenomenon with two Nortons I have had, and can only account for it by the theory that with the adjustment as small as possible full advantage is taken of the slow lift arranged on the toe of the cam contour, whereas when the clearance is excessive the valve is opened more quickly, but slightly later, by the rocker striking the steeper portion of the cam and missing the slow beginning altogether.

Whether this tip is useful to other machines I cannot say, but it has only to be tried on a Norton to appreciate the difference it makes to the exhaust note. The exhaust crack entirely disappears.

Another point I noticed is that when running the engine slowly on the stand with a given throttle opening and a fair clearance between the exhaust valve and tappet, thus reducing the clearance by inserting a "feeler" to take up the play, the speed decreases. Why is this?

I have formed the idea that when the exhaust gases are released suddenly in a long pipe the inertia effect gives a better scavenging action. A. E. S.

[Other engines besides the Norton may be made more silent by reducing the exhaust tappet clearance, and probably "A. E. S.'s" reason for this is the correct one. On the other hand, it is difficult to explain a decrease in speed by inserting a "feeler" at the tappet unless this unintentionally gives a decompressor effect.—ED.]

APATHETIC CLUB MEN.

Sir,—At the risk of pitting my humble views against those of such a successful trials organiser as Mr. Alan Day, may I crave a little space to reply to that gentleman's recent letter?

In such a live club as that with which Mr. Day is connected, I quite agree that, in the event of a small entry for any competition, it is the latter itself which is at fault and that it must be made more attractive.

But I must repeat that it is my experience that in certain clubs the majority of members are so absolutely blasé, and utterly indifferent to what is done for them, that one may be excused for wondering why on earth they do not sell their machines and join an embroidery class! If one could guarantee these apathetic individuals that the start and finish would be at their own doors, the weather perfect, course about fifteen miles, freedom from punctures, a cup of tea *en route*, etc., then perhaps a few might be persuaded to clamber out of their bath chairs and struggle to the start!

Whilst Mr. Day's "probing mind" can soon discover a remedy for his own unsatisfactory entries, I am sure that he would have to probe for a very long while before he found anything that would suit the fastidious tastes of the members of some clubs I could name.

It is also pretty obvious that the majority of motor cyclists who sojourn in the environs of London all the week drift out into the "country" as a matter of course each week-end, and such as these—who form the greater percentage of the club which Mr. Day represents—would make no bones about a small ride of 20 miles to a venue. But it is a very different matter, strange to say, to get members whose club is actually in the country, to ride out even ten miles—particularly as they know they will have to ride back the same distance!

I was surprised to see that Mr. Day had chosen the cancellation of the S. Midland Centre Gymkhana as a suitable case to back up his argument. I believe I am correct in stating that less than twenty entries were received for that event, and if such was the case, then I contend that the organising committee did quite rightly in cancelling it. Surely one entry per club in the Centre was not enough to indicate that the event was wanted, and without doubt the course adopted was the wisest. "FED-UP."

Hertfordshire.

GETS YOU HOME.

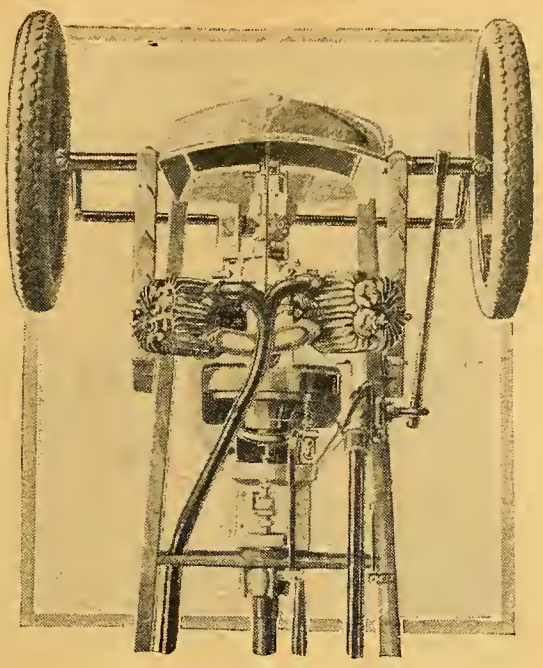
Sir,—With reference to the letter from Mr. A. Brascowe, Thorpe-on-the-Hill, published under "Insurance Problems," in one of your recent issues, in which he complains of the repudiation by an insurance company of his claim for towage, I would heartily recommend him and all fellow motor cyclists to join the Auto-Cycle Union, as a safeguard against such liabilities. The subscription is only £1 per annum, and this includes badge and "Get-you-home" forms.

The "Get-you-home" scheme is a very real benefit, as I can testify from personal experience. I had the misfortune to be "stuck" on a hill, a few weeks ago, through my brakes failing. The trouble was that new blocks fitted by a provincial garage were of such poor quality that they became useless after two applications. This was obviously not covered by any form of insurance. I had my wife and child, plus some kit, and we were over two miles from anywhere, with steep hills to negotiate.

As a member of the A.C.U. I filled up the necessary form and asked a passing motorist to be kind enough to hand it to the nearest R.A.C. repairer. Shortly after a car came out, took charge of the machine and party, ran us two miles to the garage, where the job was declared to be too long to be done at once. In consequence we went to the station (again in the car), and home by train.

The whole of this cost me nothing, the bill being met by the A.C.U. I consider that this affair alone was worth at least a year's subscription. ZENITH

London, S.W.11.



CYCLE CAR CHARACTERISTICS ABANDONED. For 1923 the air-cooled G.N. breaks new ground with a gear box and shaft and bevel driven axle. A new side-by-side valve engine will be fitted. A four-cylinder water-cooled model, two or four seater, will also be available. A full description appeared in last week's issue of *The Autocar*.

SHORT CUTS TO SPEED?

Sir,—Your article on "The Truth About Tuning" demands comment. Whilst admitting that the tips mentioned are useful in getting results from a machine, these results would not be comparable with those of a machine tuned by a man in possession of special knowledge, the existence of which your contributor seems inclined to deny.

He states that manufacturers send out the machines (sports models) with the best timing and compression for the job. And this job is very largely to be able to stand up to road work, to be reasonably tractable in the hands of some of the prize novices, who like any other person with the necessary cash, can ride a "sports" model. Were these people to sit on a really highly tuned machine they would not find it particularly tractable or comfortable for road work; consequently the average man cannot buy one.

The assertion that there are no short cuts to success may have a good general basis, but nevertheless there are quite a number of little-known tips of which racing men make use, and which are extremely effective. One occurs to me that is capable of sending up the speed (maximum for a burst and average) quite considerably, particularly where the machine is of more or less standard design. I remember increasing the maximum of a standard Rudge between 5 and 7 m.p.h., much to the mystification of the owner, who took the engine down three times to unravel the apparent mystery, but is now as wise as then. There is also another alteration to that particular machine which will put another 6 or 7 m.p.h. on top of that.

All such points as these are naturally the result of experience and experiment, and it is not likely that they will be distributed free, gratis and for nothing.

Finally, the hints given by your contributor alone would not give Dance hill-climbs or Pullin kilometres.

Bexley Heath. BEMSIST.

Sir,—I do not think the article, "The Truth about Tuning," is very informative. Most of the points mentioned by your contributor, *i.e.*, decarbonising, grinding in valves, etc., can hardly come under the heading of *tuning for speed;* it is simply an outline of the periodic proceeding carried out by all motorists or motor cyclists enthusiastic enough to keep their machines in decent running order.

The veriest novice knows that an engine runs better when it is clean internally. Incidentally, I do not agree that scores in a cylinder detract from the r.p.m. of an engine to any extent. I once owned a 1911 T.T. Triumph that had a very deep score in the cylinder wall, yet this antiquated wreck was timed over the half-mile at 63 m.p.h., and it also climbed Brockley Hill, near Edgware, at 48 m.p.h. (timed by stop watch and speedometer).

Bushey. RUMGO

AVERAGE SPEED OF SOLO MOUNTS.

Sir,—I think Mr. Williams' experience of fast solo mounts must be very small, if he really thinks that an average of 35 m.p.h. is extremely good. If he can only average 35 m.p.h. on his Scott, I should advise him to tune it up.

I ride myself a 650 c.c. Sports Zenith; the only thing in the way of tuning that has been done to it is that the pistons and connecting rods have been drilled. I do not consider my averages excessive or abnormally good, but any motor cycle which is meant for speed at all ought to be able to do likewise. The best of these in my opinion is Banstead to Cambridge, via Barnet, in 1 hour 52 minutes, 75 miles at an average of 40.7 m.p.h., including London; from Barnet to Cambridge, which is 48 miles, I averaged only a trifle under 50 m.p.h., doing the distance in 58 minutes; the times were taken by a watch carried in the outside pocket of my overcoat, and the mileage reckoned by a Bonniksen speedometer. Again let me emphasise the fact that I don't consider my speed abnormally good at all. ZENOOTH.

SUMMARY OF CORRESPONDENCE.

Mr. E. H. Mann Lawley wishes to thank the lady and gentlemen motorists who helped him on the Leamington-Birmingham road on the 6th inst.

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Gainsborough M.C. and L.C.C.

Motor cycle and light car enthusiasts residing in the Gainsborough district are invited to join a newly-formed club under the above title. Communications should be addressed to the hon. treasurer, Mr. W. J. Simmons, 15, Jubilee Crescent, Gainsborough, or to the hon. secretary, Mr. W. R. Adair, 2, Alfred Street, Gainsborough.

Loughborough and District M.C.C.

There were no less than 55 starters for the speed judging competition held on the 1st inst. over a 15-mile course. This was the final round for the Minor Competitions Trophy, which the club is awarding on the result of the three less strenuous events of its programme. The winner was F. Woolley (247 Sun-Vitesse), whose time error was only 30s. There was a tie for second place between A. Bowerman and Z. Payne (249 Velocettes), error 1m., whilst five tied for third position with an error of 2m. They were A. Prince (550 Triumph), H. Holmes (499 Sunbeam sc.), A. Yates (499 Sunbeam), M. Pickering (976 Mallard-Jap) and N. Franks (490 Norton). J. L. Putt (595 Douglas sc.) was next.

The Minor Competitions Trophy for the best aggregate performance in the three competitions has been secured by A. Prince (550 Triumph).

A gymkhana was afterwards held at Shepshed, and was attended by members of the Derby and Leicester clubs.

Gravesend and District M.C.C.

Notwithstanding adverse weather conditions, some excellent results were obtained in a petrol consumption test held on the 4th inst. Machines were ridden in ordinary touring trim, and had to cover twenty miles of stiff going. Results:—

LIGHTWEIGHT CLASS. — J. Payne (349 Beardmore-Precision), 106.66 m.p.g.

MEDIUM WEIGHT CLASS.—V. Deacock (481 Scott-Squirrel), 120.3 m.p.g.

LIGHTWEIGHT SIDECAR CLASS.—S. Mann (349 Beardmore-Precision sc.), 67.79 m.p.g.

HEAVYWEIGHT SIDECAR CLASS.—1, J. Milton (976 Matchless sc.), 64.79 m.p.g. 2, J. Davidson (678 Martinsyde sc.), 65.57 m.p.g. 3, J. Dray (976 Matchless sc.), 57.14 m.p.g.

Final results on formula:—

SOLO.—V. Deacock (481 Scott-Squirrel).

SIDECAR.—1, J. Milton (976 Matchless sc.); 2, S. Mann (349 Beardmore-Precision sc.).

At the conclusion of the event a very successful concert was held. The club has decided that during the winter months whist drives, dances, and socials shall have a share in its activities.

Wallington and District M.C.C.

Owing to the fact that the local council went to the extreme of digging gullies in the road to prevent it, the club's hill climb, which was to have taken place at Marlpit Lane, Coulsdon, on the 30th ult., had to be abandoned. Speed trials were substituted, and these took place at Betchworth Park, Dorking, by kind permission of Lord Francis Hope. Fastest time of the day was made by C. Volk (494 Douglas), who covered the 557 yards course from a standing start at 73 m.p.h. Results:—

EXPERT CLASSES.

250 c.c.—1, E. C. Gordon (249 New Imperial).

350 c.c.—1, Capt. F. C. Townshend (348 Ivy).

500 c.c.—1, C. Volk (494 Douglas); 2, R. A. Green (490 o.h.v. Norton); 3, A. Gruzelier (498 Zenith-Bradshaw).

750 c.c.—1, C. Volk (494 Douglas); 2, R. A. Green (490 o.h.v. Norton); 3, A. B. Lavy (492 Sunbeam).

750 c.c. SIDECARS.—1, C. Volk (494 Douglas sc.); 2, E. Headlam (498 Zenith-Bradshaw sc.).

UNLIMITED SIDECARS.—1, C. Volk (494 Douglas sc.); 2, O. de Lissa (993 Motosacoche sc.); 3, G. Baxter (998 Harley-Davidson sc.).

GENERAL CLASSES.

250 c.c.—1, E. C. Gordon (249 New Imperial); 2, R. A. Green (249 Velocette).

350 c.c.—1, R. A. Green (249 Velocette); 2, A. Gruzelier (349 Ivy); 3, E. C. Gordon (249 New Imperial).

500 c.c.—1, R. A. Green (490 o.h.v. Norton); 2, A. Gruzelier (498 Zenith-Bradshaw); 3, A. Leeding (496 Duzmo).

750 c.c.—1, R. A. Green (490 Norton); 2, A. Gruzelier (498 Zenith-Bradshaw); 3, A. Leeding (496 Duzmo).

Uxbridge and District L.C. and M.C.C.

The second annual competition for the Committee Cup was held on the 1st inst. It took the form of a reliability trial to Eastbourne and back, the total distance of 172 miles including a short colonial section. The winner was R. Dalton (499 Sunbeam).

Hexham and District M.C.

The club successfully held its first reliability trial for a silver cup, presented by the County Garage, Hexham, on the 24th ult. The route was via Alston and Killhope to Stanhope, where tea was taken; competitors then proceeded to Edmondbyers and Riding Mill, and thence to Hexham—a total distance of approximately 65 miles.

There were two observed hills and two secret checks on the route. Fourteen competitors started.

The winners were:—

SILVER CUP.—1, P. J. Guthrie (499 Humber), 30s. error; 2, A. E. Shield (550 Triumph sc.), 38s. error; 3, W. H. Lomax (993 Matchless sc.), 50s. error.

Ipswich and District M.C.C.

Perfect weather and beautiful surroundings contributed much towards the club's last hill-climb of the season, held at Belsted Brook Hill on the 23rd ult. A new system of electrical timing was employed, the efficiency of which was so high that sixteen classes, comprising over one hundred entries, were run off in 1h. 40m.; this included time taken to allow traffic to pass on the hill. A silver bowl, presented by the B.C.M.C.M.T.U., was won by K. S. Duncan, riding a 492 c.c. Sunbeam, who covered the course in 17⅕s. The special prize for old type machines was taken by L. Harrison. Results are as follow:

TOURING CLASSES.

350 c.c.—1, F. J. Lindley (350 Wetherell), 21⅗s.; 2, W. J. Pretty (349 A.J.S.), 22⅗s.; 3, A. V. Adams (350 Diamond), 25⅘s.

500 c.c.—1, L. H. Sharp (490 Norton), 18⅕s.; 2, D. Popplewell (499 Triumph), 19s.; 3, J. F. Rose (499 Triumph), 20⅘s.

600 c.c.—1, L. H. Sharp (490 Norton), 18⅘s.; 2, D. Popplewell (499 Triumph), 19s.; 3, F. J. Lindley (350 Wetherell), 20s.

750 c.c.—1, L. H. Sharp (490 Norton), 18⅕s.; 2, D. Popplewell (499 Triumph), 19s.; 3, F. J. Lindley (350 Wetherell), 20⅕s.

UNLIMITED.—1, L. H. Sharp (490 Norton), 18⅗s.; 2, D. Popplewell (499 Triumph), 18⅘s.; 3, F. J. Lindley (350 Wetherell), 20s.

UNLIMITED SIDECARS.—1, G. Bird (976 Zenith sc.), 28s.; 2, F. H. Mayhew (499 Triumph sc.), 30s.; 3, G. C. Butler (976 Zenith sc.), 31⅕s.

TWO-STROKE CLASS.—1, A. V. Adams (269 Excelsior), 25s.; 2, C. E. Claxton (269 Excelsior), 28⅕s.; 3, J. W. Whisstock (247 Levis), 30⅘s.

STRIPPED CLASSES (EXPERTS).

350 c.c.—1, F. J. Lindley (Wetherell), 20s.; 2, W. J. Pretty (349 A.J.S.), 23s.; 3, A. V. Adams (350 Diamond), 24⅘s.

500 c.c.—1, K. S. Duncan (492 Sunbeam), 18⅗s.; 2, F. K. Portway (490 Norton), 19s.; 3, D. Popplewell (499 Triumph), 19⅕s.

600 c.c.—1, K. S. Duncan (492 Sunbeam), 17⅗s.; 2, O. G. Smart (490 Norton), 17⅘s.; 3, F. K. Portway (490 Norton), 18⅖s.

750 c.c.—1, K. S. Duncan (492 Sunbeam), 17⅘s.; 2, F. K. Portway (490 Norton), 18⅗s.; 3, O. G. Smart (490 Norton), 18⅘s.

UNLIMITED.—1, D. Popplewell (499 Triumph), 18⅕s.; 2, F. K. Portway (490 Norton), 18⅖s.; 3, K. S. Duncan (492 Sunbeam), 18⅘s.

600 c.c. SIDECARS.—1, E. C. Rose (500 N.U.T. sc.), 22⅕s.; 2, K. S. Duncan (492 Sunbeam sc.), 23⅕s.

UNLIMITED SIDECARS.—1, O. G. Smart (490 Norton sc.), 21s.; 2, E. C. Rose (500 N.U.T. sc.), 23s.; 3, K. S. Duncan (492 Sunbeam sc.), 23⅕s.

FORMULA RESULTS.

TOURING SOLO CLASSES.—J. F. Lindley (350 Wetherell), 382 points.

TOURING SIDECAR CLASSES.—G. Bird (976 Zenith sc.), 870 points.

STRIPPED SOLO CLASSES.—K. S. Duncan (492 Sunbeam), 365 points.

STRIPPED SIDECAR CLASSES.—E. C. Rose (500 N.U.T. sc.), 382 points.

Worcester and District M.C.C. and Worcestershire M.C.

Members spent an enjoyable afternoon in a visit to the works of A. J. Stevens, Ltd., of Wolverhampton, makers of the A.J.S. motor cycle. Mr. Geo. Stevens personally conducted the party through the works.

Heaton Moor M.C.C.

A short reliability trial was held on the 1st inst. over a course which proved none too easy. F. Slack (499 Sunbeam) was awarded a gold medal with a total loss of only 19 marks, whilst W. Vines (499 Sunbeam) and B. Rowley (550 Triumph) came in second and third, securing a silver medal (21 marks lost) and a bronze medal (22 marks lost) respectively.

Hinckley and District M.C.C.

Results of a reliability time trial which took place on the 30th ult. are as follows:—

1. R. E. Cleaver (550 Triumph sc.), 180 marks, gold medal.
2. F. Morgan (550 Triumph sc.), 167 marks, silver medal.
3. L. Goodman (499 Triumph), 166 marks, bronze medal.

Coatbridge, Airdrie and District M.C.C.

Postponed from earlier in the year, a formula hill-climb was held recently at Wollinsburn. The "New Imperial Cup" was won by J. Stirling on an o.h.v. A.J.S., who also made fastest time of the day. Formula results:—

275 c.c.—J. Muir (269 New Gerrard).
350 c.c.—J. Stirling (349 A.J.S.).
500 c.c.—W. Kennedy (348 New Imperial).
600 c.c.—W. Kennedy (348 New Imperial).
750 c.c.—W. Kennedy (348 New Imperial).
1,000 c.c.—W. Kennedy (348 New Imperial).
750 c.c. Sidecars.—J. Muir (490 Norton sc.).

Oxford M.C.

The informal hill-climb at Alms on October 8th again drew a big crowd. The hill was dry but extremely rough.

Many notable riders were present. E. A. Bridgman (Indian), H. Saddington (James), T. Gibson (Triumph), and Broom-Smith (Indian Chief) repeated the fast climbs they had made at Kop the day before. Bridgman and Saddington caused excitement by tearing down at speed with locked back wheels, asking in vain for bangers on.

It was not a sidecar day; the Indian and James, a Harley, a Model H Matchless, and a 292 c.c. O.K. Junior were the only sidecars to make clean climbs. L. A. Welch, on the last mentioned, under official observation of the A.C.U., made a clean climb with an adult passenger normally seated. This is believed to be the first lightweight sidecar to get up the hill.

Leinster M.C.C.

Championship races were run off at Portmarnock Sands on the 30th ult. Weather conditions were far from agreeable, rain falling during the greater part of the afternoon, while, owing to the tide having risen sooner than was anticipated, it was found necessary to substitute a five miles scratch race for the sidecar championship events. Results:—

TWO-STROKE CHAMPIONSHIP.

300 c.c.—1, J. E. Burney (225 Royal Enfield), 39m. 46s.; 2, R. Humphreys (249 Velocette), 40m. 42s.

ALL TYPES.

350 c.c.—1, S. Woods (348 Cotton), 30m. 21s.; 2, S. Gill (348 Douglas).

600 c.c.—1, A. Carton (490 Norton), 29m. 49s.; 2, S. J. Redmond (596 Indian), 30m. 22⅖s.

UNLIMITED.—1 T. E. Greene (494 Douglas), 27m. 21⅗s.; 2, S. J. Redmond (596 Indian), 32m. 16s.

FIVE MILES SCRATCH RACE.

600 c.c. SIDECARS.—1, D. Allen (490 Norton sc.); 2, C. S. Maguire (600 Humber sc.); 3, H. Nesbitt (490 Norton sc.).

UNLIMITED SIDECARS.—1, E. F. Ashton (996 Indian sc.); 2, T. J. Redmond (998 Indian sc.); 3, C. D. Maguire (976 Matchless sc.).

CURRENT HAT

Times to Light Lamps.

Oct. 19th	..	..	5.29 p.m.
„ 21st	..	..	5.25 „
„ 23rd	..	..	5.20 „
„ 25th	..	..	5.17 „

One number plate must be illuminated as above under Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Club's £100 to Local Charities.

Approximately £100 for local charities was realised at the Birmingham M.C.C. Gymkhana in September. Ticket No. 6682, held by Mr. H. C. Gross, won the bicycle prize.

Speed Limit Roads.

A hummocked surface in the main road (London-Brighton) has been seriously suggested at Sutton, Surrey, in order to limit the speed of vehicles in the High St. The hummocks proposed are a series of nine-inch high undulations calculated to be unrideable at over 10-12 m.p.h.

Electric Bulbs.

Users of electric lighting should now begin to carry spare bulbs. These essential replacements are not always available, and even when a garage does stock a miscellaneous handful, the staff usually betrays a collective colossal ignorance of voltages and amperages.

An Alec Ross Trophy.

Limited to contributions of 5s., it has been decided to open a fund to provide for a trophy to be competed for in open competition, to perpetuate the memory of the late Mr. Alec Ross, whose death created a sad loss among the A.C.U. officials. Donations may be sent to the Secretary of the A.C.U., 89, Pall Mall, London, S.W.1.

Incorrect Abbreviations.

Official announcements of records by the Auto-Cycle Union continually give the incorrect abbreviation for kilometre, which is invariably given as kilo. Kilo has really no meaning, but in France is the colloquial abbreviation for kilogramme. The correct abbreviation for kilometre is km., and for kilogramme kg. Surely the official body should set an example in accuracy.

New Solo Machine.

Very shortly a new medium-weight solo machine will make its appearance on the market as the result of a partnership between Alec Burney, who is responsible for several well-known engines, and O. M. Baldwin, the well-known Matchless rider. It will be manufactured by the Reading firm of Winters, which makes the Warwick commercial delivery three-wheeler.

Fuel Mixtures.

Benzole-petrol mixtures have now become thoroughly popular, yet a road-side garage man was lamenting that one company was about to abandon its mixture owing to lack of profit thereon.

Ferry Charges.

Cyclecarists on four wheels should avoid the Gravesend-Tilbury ferry, for they will find that they are classed with Rolls-Royces and Daimlers, etc., as "motor cars under two tons" at 6s. the single journey. Six shillings will buy three gallons of petrol.

Records in Records.

When H. Le Vack recently broke the standing ten miles record (250 c.c. class) on a 248 c.c. New Imperial-Jap, it was discovered that his lap speed of over 76 m.p.h. also gained for him the flying mile and flying kilometre records. The A.C.U. has now confirmed this.

M.C.C. Annual Dinner.

The actual date of the M.C.C. annual dinner has been announced as Thursday, December 7th, at the Wharnecliffe Rooms, Great Central Hotel, Marylebone, London, N.W.1. The president of the club, Mr. J. K. Starley, will occupy the chair. The dinner has been selected as an opportunity of celebrating the twenty-first anniversary of the club's foundation, and it is expected that a number of the original members will be present.

Swiss Pass Closed.

Owing to the presence of foot-and-mouth disease, the Swiss Touring Club informs us, the Grimsel Pass is closed to motorists.

M.C.C. Sporting Trial Awards.

Of the list of thirty-one claimants for gold medals published in our report of the M.C.C. One Day sporting trial in the issue of October 5th, only one, F. T. Sibley (Rudge), has to be deleted from the list.

Motor Cyclists!

If you desire to be posted up to date with all automobile developments, read *The Autocar* four special Show numbers, October 20th and 27th and November 3rd and 10th.

The Autocar is the representative British motoring journal, embracing all types of cars. Published every Friday—fourpence.

Award After Eight Years.

In an article in our Summer Number Mrs. G. D. Hardee, the well-known lady competitor, mentioned that an award gained by her in a Birmingham trial in 1914 never materialised; she writes to tell us that this, her first gold medal, is now safely to hand, after eight years! Mrs. Hardee has also just received a wrist watch from H. Collier and Son, Ltd., for her performance on a Matchless sidecar in this year's Scottish Six Days Trials.

A LADY CLUB ENTHUSIAST. Miss Phyllis Barker, who takes part in most of the events organised by the Bradford M.C. and L.C.C., on her P. and M. sidecar. At the start of the recent hill-climb.

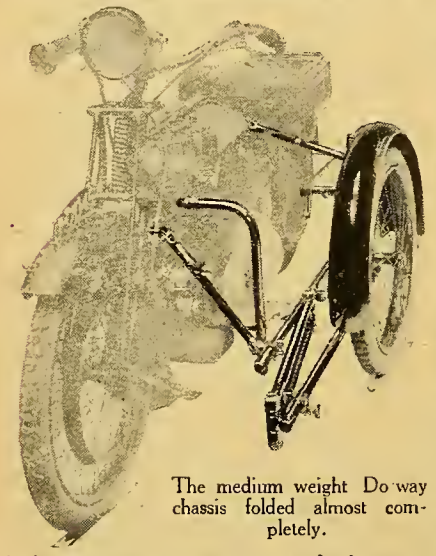
ADVANCE DETAILS OF 1923 MODELS.

SIDECAR WITH FOLDING CHASSIS.

Quickly Detachable Body on Separate Sub-Frame. The Dorway Sidecar to be Adopted by Many Makers.

IN the past there have been many attempts to produce a sidecar which will enable the complete outfit to pass through an ordinary doorway.

These attempts have been successful to a very fair degree, but never seem to have caught the public fancy to any great extent. Now a new folding chassis has been produced by the Dorway Sidecar Co., of Bellbarn Road, Birmingham, and



The medium weight Dorway chassis folded almost completely.

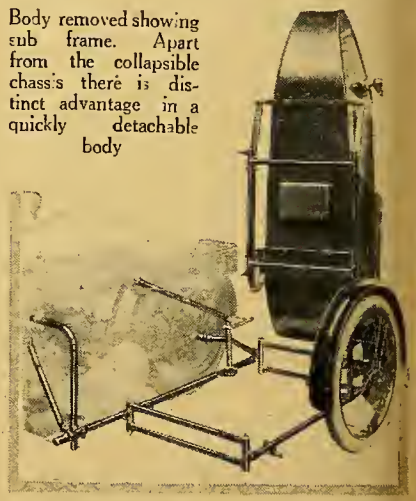
it is arranged to carry a standard complete coachbuilt body and springs, mounted on a light rectangular frame, which can be lifted off when it is desired to fold the chassis alongside the motor cycle in order to pass the outfit through a gate or doorway. There are several additional advantages besides the ability for passing through narrow spaces (down to 28in. wide), in that after the removal of the body the inner side of the motor cycle is completely accessible and can be reached for inspection or adjustment just as easily as the off-side. There are various modifications of the main idea being manufactured at the present time, and these will be seen at the forthcoming Olympia Exhibition on several well-known makes of motor cycle, but in each case the underlying principle is the same and may be briefly described as follows :—

The sidecar attachments are fixed to a stout tube lying parallel with the centre line of the motor cycle; at the front and rear of this tube are vertical pivots to which the cross members of the sidecar chassis are attached, these cross members are joined by a second tubular member, to which also they are pivoted so that the unit forms a construction similar to a parallel ruler; the wheel is, of course, attached by suitable fixings just in front of the rear cross members. Normally this construction is capable of being moved backwards or forwards so as to be closed up alongside the motor cycle, and it is locked rigidly in the extended position by the tubular sub-frame on which the body is mounted. This sub-frame is rectangular, and at each corner carries pegs, which drop into suitable sockets in the main chassis frame, thus locking it rigidly and preventing any tendency to close.

A Lightweight Pattern.

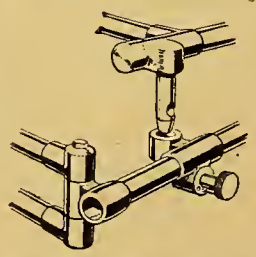
The light-weight type is so arranged that taper pegs slide into horizontal sockets on the front cross member, while extensions of the rear tube drop into suitable vertical sockets and are held therein by spring clips. In the heavier model double parallel tubes are employed for the cross members, and vertical pegs brazed on at each corner of the sub-frame drop into vertical sockets and are locked at two opposite corners by spring pegs. It should be pointed out that the locking pegs and clips in the two instances mentioned are totally unnecessary as regards safety, but are employed merely to prevent rattles when there is no passenger in the sidecar.

In addition to the advantages enumerated above, the simple method of body attachment provides great scope for the small tradesman who utilises his sidecar with a box body for light deliveries through the week, and can in the space of a few minutes change over to a touring body for week-ends or holiday purposes.

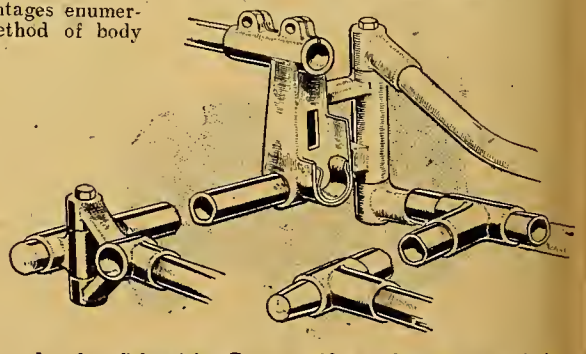


Body removed showing sub frame. Apart from the collapsible chassis there is distinct advantage in a quickly detachable body

In construction the Dorway chassis is robust, and the workmanship throughout is excellent; all pivot joints are of first-class fit and are packed with grease to prevent rusting up, and the construction is such that the complete outfit is perfectly normal in appearance, any type of flat-bottomed body being suitable.



Spring plungers at two of the four corners lock the sub-frame of the collapsible chassis in the heavier type of Dorway sidecar



In the lightweight Dorway sidecar the sub-frame locks to the chassis by means of taper sockets in front, and tubular extensions dropping into the sockets at the rear

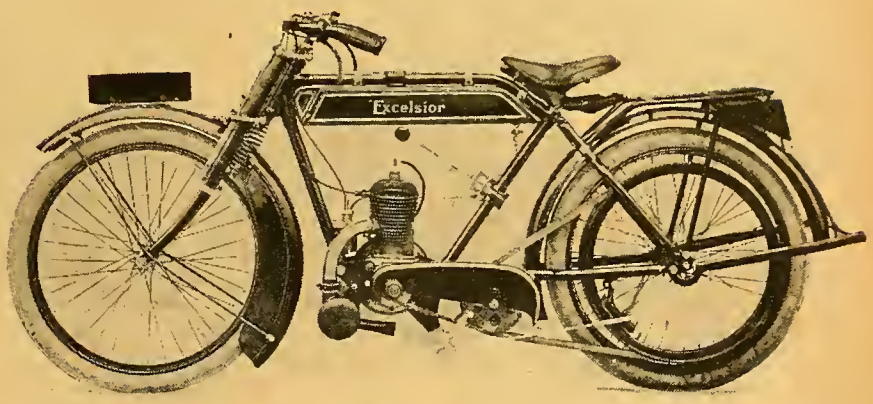
NEW EXCELSIOR MODELS.

Miniature Solo Mount of Light Weight and Low Price Introduced.

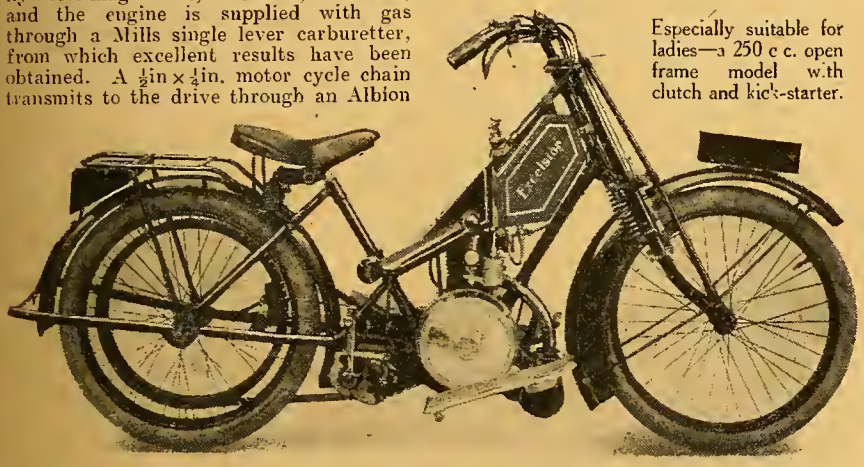
INCLUDED in the Excelsior range for 1923 is a new miniature two-stroke fitted with the latest type 147 c.c. Villiers engine.

This machine, complete with two-speed gear, will sell at the price of £28 10s., and since both an electric lighting set and engine shaft clutch can be fitted at a very moderate figure, it is probable that £35 will cover the cost of a most completely equipped lightweight.

Although many people consider that so small a machine is something of a toy, nevertheless, from personal experience, we may state that this example is a thoroughly practical little machine, well suited to the needs of an enormous number of people. Gear ratios of 6½ to 1 and 13 to 1 enable the little engine to maintain a steady speed of well over the legal limit if necessary, and to climb any hill which is likely to be encountered by the average rider. Added to this the little engine is beautifully balanced, and is almost vibrationless, slipping along quietly and without fuss. The Villiers flywheel magneto is, of course, a feature, and the engine is supplied with gas through a Mills single lever carburetter, from which excellent results have been obtained. A ½in. × ¼in. motor cycle chain transmits to the drive through an Albion two-speed gear box, the final drive being by three-quarter inch belt. 24in. × 2in. Avon tyres are fitted. In spite of the small proportions of this little machine no essential details have been omitted; the mudguards are of sensible width, and half valanced in front; a deeply flanged top chain guard is fitted; Druid forks are employed, and the saddle is of sensible proportions. The weight is approximately 110lb.



An Excelsior lightweight fitted with 147 c.c. engine; an attractive low-priced model.

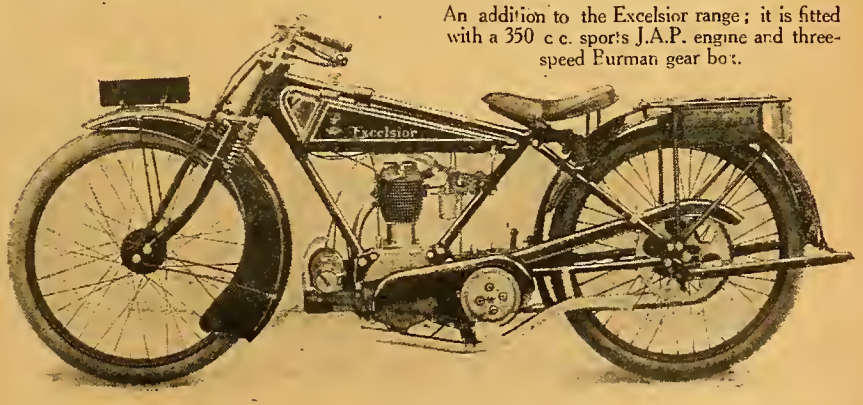


Especially suitable for ladies—a 250 c.c. open frame model with clutch and kick-starter.

More Powerful Models.

Next in engine size amongst the products of Bayliss, Thomas and Co., Ltd., come two models, both fitted with 250 c.c. Villiers two-stroke engines, the specifications of these machines being similar, since they both have flywheel magneto, Sturmey-Archer two-speed gear, clutch and kick-starter, Druid forks, and 2¼in. tyres, but the first has a normal frame with sloping top tube, and has 26in. wheels, and is listed at £48. The second is an open frame model with 24in. wheels, which has been a feature of the Excelsior range for some time past, and is listed at £50.

The well-known 349 c.c. Blackburne engined Excelsior remains almost unchanged; it is fitted with a Burman three-speed gear, clutch and kick-starter. Druid forks, 26in. × 2¼in. wheels, and internal expanding brakes front and rear. The price is £67. At the same price, however, a new model will be listed. The specification is exactly as above, but a 350 c.c. special J.A.P. engine is fitted, and with its all-chain drive, large silencer, and sensible mudguards, it forms a most attractive addition to the existing range. The needs of sidecarists are catered for by the 976 c.c. sidecar outfit, fitted with side-by-side valve, J.A.P. engine, Burman three-speed gear, with all-chain drive, 28in. × 3in. tyres, and internal expanding brakes front and rear. At the price of £123, it is an attractive proposition.

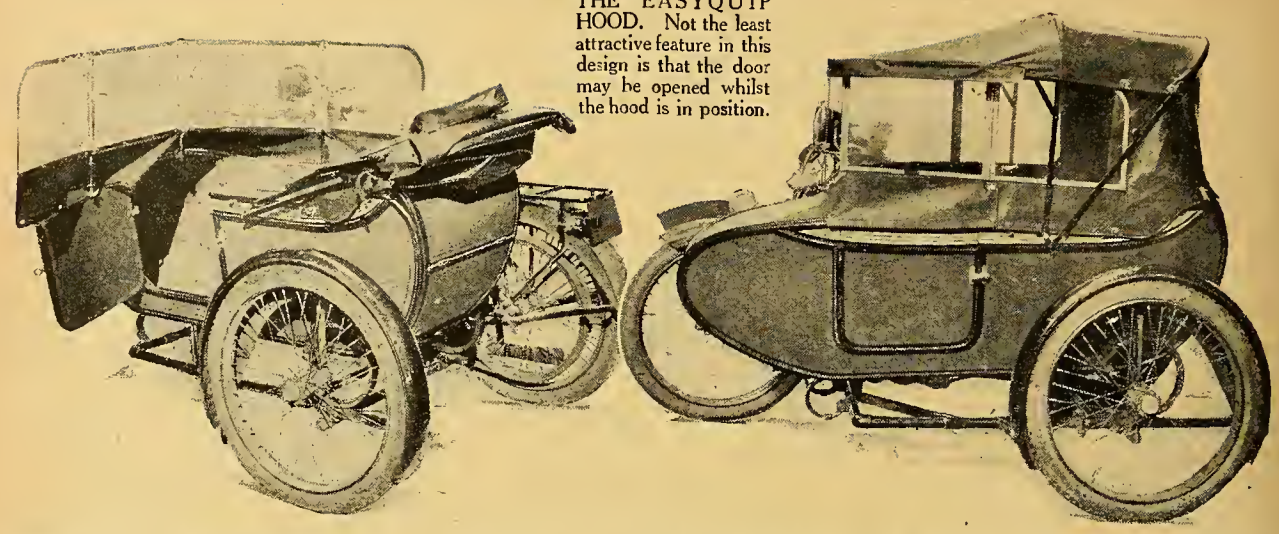


An addition to the Excelsior range; it is fitted with a 350 c.c. sports J.A.P. engine and three-speed Burman gear box.

LUXURIOUS HOOD EQUIPMENT.

SIDECAR luxury has now been developed to such an extent that it would seem difficult to make any further great improvements. Yet the Easyquip hood and screen has been designed to convert a normal sidecar body into the equivalent of a cabriolet.

The V-fronted celluloid screen is mounted on the fore part of the body, the lower portion being attached to the bodywork by fabric shields giving neat and tidy lines. The screen is supported on vertical rods, that on the door being



THE EASYQUIP HOOD. Not the least attractive feature in this design is that the door may be opened whilst the hood is in position.

so designed as to permit its opening without interference. The celluloid screens are mounted in aluminium beadings and are detachable therefrom should replacement become necessary. In addition to this, side members on similar lines are fitted, and these again do not interfere with the opening of the door; the whole side with the front screen panel bodily hinges back while the hood is still in position. The hood itself has a V-front to match the screens, and a single strap attachment secures it when in use, while when folded back it is covered by a waterproof case.

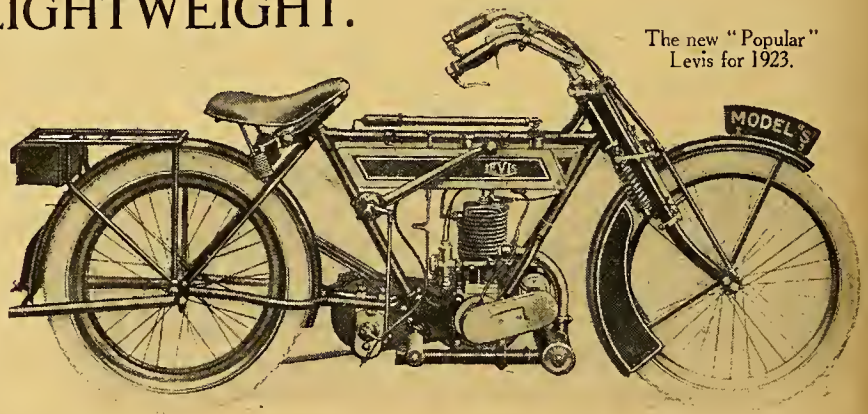
The hood and fittings may be obtained in waterproof leatherette, or twill. A diamond-shaped celluloid panel is fitted to the back of the hood, and the workmanship is well carried out. One cannot say more than that Easyquip fittings provide full protection when in use, while allowing perfect freedom of entrance and exit when desired, yet, in addition, any part such as the side screen and curtains may be readily detached and left at home if not required. It should be mentioned that there is an extraordinary absence of wing nuts and such like accessories which are usually part and parcel of hoods, side screens, etc. The manufacturers are Coventry Equipments, Ltd., Clarendon Works, Coventry.

A POPULAR LIGHTWEIGHT.

A £48 Model to replace the 1922 £60 type.

AS one of the machines which proved the possibilities of the two-stroke engine, the Levis has always been one of the most popular lightweights on the market. The full programme for 1923 has not yet been finally settled, but it has been decided to introduce a £48 model to replace this year's £60 machine. This little solo mount has an engine of 211 c.c. and is fitted with a Sturmey-Archer two-speed gear with clutch and kick-starter.

It will be seen from the illustration that this new model "S" is an attractive machine at a very moderate price.



The new "Popular" Levis for 1923.

THE LATEST EDMUND MODELS.

One of the most attractive machines at last year's Olympia Show was the semi-spring frame Edmund. Two of the 1923 models are shown above—the 349 c.c. o.h.v. sports and the 499 c.c. tourist type, both being fitted with Blackburne engines.

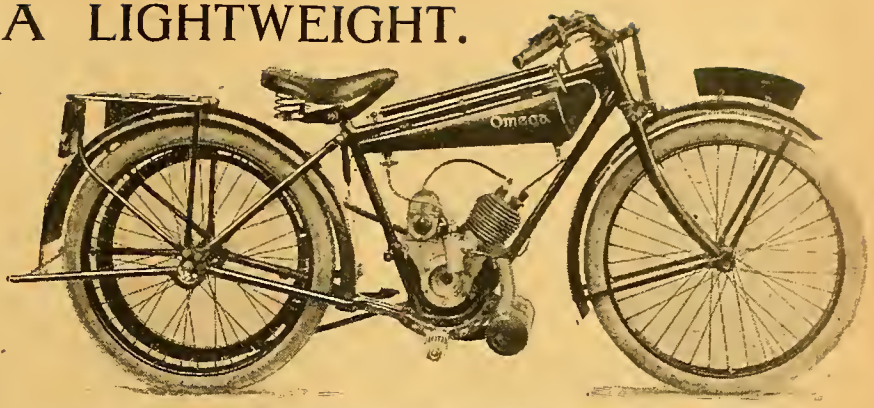
ANOTHER ULTRA LIGHTWEIGHT.

A New Omega with 170 c.c. Two-stroke Engine.

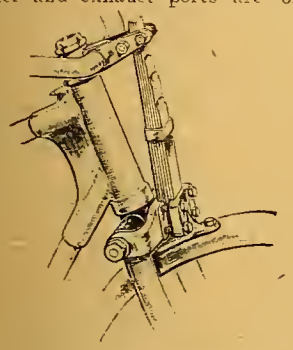
A 170 c.c. two-stroke Omega is the latest ultra lightweight, a type which promises to be one of the features of the show next month. To be known as the Omega Junior and manufactured by W. J. Green, Ltd., Stoke, Coventry, the new model weighs but 96lb. and is designed to provide a saddle height, in the lowest position, of no more than 26 inches from the ground.

In detail the 60×60 mm. engine is thoroughly well made, having a one-piece overhung crankshaft with a very long bearing. The big end bush is of phosphor bronze, but the gudgeon pin is fixed in the connecting rod and floats in a cast-iron two-ring piston.

The engine, which is of the normal three port type slopes to the front, and in order to avoid the exhaust pipe fouling the front down tube the cylinder is turned slightly on the crank case, so that the transfer and exhaust ports are off the centre line of the frame. A further interesting point is that the cylinder is offset in relation to the crankshaft by ⅜ of an inch. A Fellows magneto is carried on a platform cast on the crank case behind the sloping cylinder, and gas is supplied by a single lever carburetter.



Between the motorised bicycle and the lightweight touring machine—the 170 c.c. Omega Junior.



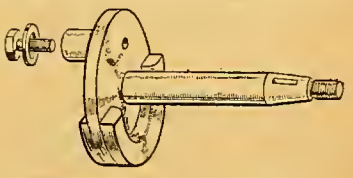
A vertical laminated spring is used in the Omega-Junior fork.

A light loop frame with single top tube is used, and extra stiffness is ensured in the neighbourhood of the loop by a pair of curved steel members which are drilled at spaces of approximately an inch apart so as to provide alternative positions for the foot rests.

24in. ×2in. tyres are fitted, and lubrication is by the petroil system, the tank, which carries approximately a gallon of fuel, having a separate oil tank with a suitable measure combined with the filler.

An unusual feature is to be found in the front fork, which is pivoted below the steering head and employs a vertical leaf spring attached rigidly to the crown and capable of sliding in a link attached to the steering head. We can speak highly of this fork in action, for a short trial run convinced us not merely of the wonderful pulling powers of the tiny engine but also of the general comfort of the machine.

In spite of the fact that a single gear of 6½ to 1 was fitted to the trial machine it was very flexible. In this form the machine will sell at £25. With two-speed gear the price is to be £32, and a further £4 will be added for clutch and kick-starter. In addition to this a single geared clutch model will be marketed at the approximate price of £27.



Overhung crankshaft of the new ultra lightweight.

A BETTER TAXATION SYSTEM IN 1924.

HAS the Government realised that the taxation system, introduced in January, 1921, has been proved to be unsatisfactory? Whatever the feeling in 1920, when the present system was introduced, there is certainly a tendency now to consider favourably a petrol tax.

Owing to the necessity for securing legislative sanction to any acceptable alternative, the present system must remain until the end of 1923. Nevertheless, it is satisfactory to learn that efforts are being made to bring about a more equitable system.

The question of taxation has many times been discussed in these columns, and we have shown that to obtain taxation in proportion to the type of machine used and the mileage such machine is used, there are only two factors which can be considered, namely, tyres or fuel.

For many reasons a tax on tyres would be open to criticism; for example, one may have the ill luck to cut a new cover very badly. A little consideration will show that a tax on fuel would be far better, and the present system eventually will be abandoned in its favour.

A memorandum has been prepared by the Motor Legislation Committee representing the views of the Auto-Cycle Union, the Automobile Association and Motor Union, the Royal Automobile Club, the Royal Scottish Automobile Club, and the principal trade organisations, to be submitted to the Departmental Committee of the Ministry of Transport.

The system of taxation suggested is a flat rate on motor spirit, to be levied at the port of entry. It is not suggested that any excise duty should be imposed on benzole, pure alcohol, or kerosenes. It is suggested that motor spirit should be defined by flash-point and distillation tests, and that the use of paraffin be allowed by special licence.

The main objection to the present system, says the memorandum, is that vehicle taxation has no regard to road usage, which is obviously an important factor in road wear, and that the tax is the same whether the vehicle travels 400 or 40,000 miles per annum. It is also shown that the present system tends to restrict the use of vehicles to certain periods of the year, *i.e.*, 15,760 motor cycles were licensed during the first quarter of 1922, and 62,846 during the second.

No rebates of any kind are suggested as regards motor spirit used for road purposes.

The signatories to the memorandum inform the Ministry that at a later date they will be prepared to indicate the amount of motor spirit to be used necessary to produce in 1924 the figure at which they could agree with the Government as a reasonable contribution from mechanically-propelled road vehicles towards road expenditure.

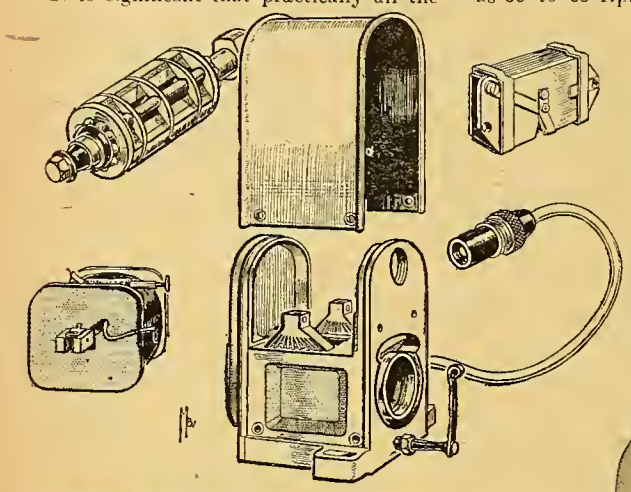
With a motor spirit duty of 5d. a gallon, a nominal registration duty equivalent to 2s. 6d. per h.p., for cars, a nominal registration duty of £1 on goods and hackney vehicles, of £2 on vehicles exceeding 3 tons, and 7s. 6d. on motor cycles, a gross revenue of £10,315,000 is anticipated. With a motor spirit duty of 4d. and a 75% reduction on the existing taxes, which would mean that motor cycles would average at 12s. 6d. registration, the gross revenue would be £10,375,000.

ADVANCED MAGNETO DESIGN.

Rotating Magnet with Stationary Armature and Contact-breaker in New B.L.I.C. Model.

WITH the increasing demands of the modern high-speed engine upon its ignition apparatus, improvement in magneto design is a matter of continual urgency.

It is significant that practically all the modern departures in magneto design from the conventional pre-war Continental pattern, both electrically and mechanically, have originated in this country.



Component parts, showing great accessibility

The latest development is the new B.L.I.C. magneto, from which the rotating armature and stationary horseshoe magnet are eliminated; instead a stationary winding has its armature poles extended, and between them revolves a small magnet of cobalt steel, which only weighs 12 oz. The armature poles are laminated and high efficiency is obtained, good sparking being characteristic at speeds as low as 50 to 60 r.p.m. The total weight of the single-cylinder magneto is 3½ lb.

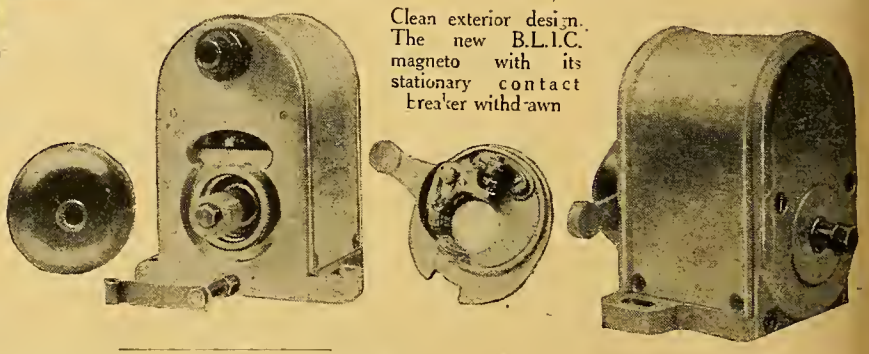
The pole shoes are incast in the aluminium body of the magneto, and the armature is mounted across these. The armature high tension connection makes direct contact with the end of the high tension lead, there being no slip rings, brushes, or brush holders. The rotating magnet is about the same size as the average armature winding.

A stationary contact-breaker is employed, and it is operated by a cam carried on the brass spindle of the revolving magnet—the only rotating part.

Great Advantages.

Obviously a great advantage inherent in this form of construction is that the mechanically weak high-tension windings of the armature windings are not subjected to the intense centrifugal stresses of the ordinary magneto. This advantage, of course, has previously been obtained in magnetos of the polar inductor type, but at the expense of several air-gaps in the magnetic circuit. In the B.L.I.C. instrument these air-gaps are no more than in the conventional rotating armature magneto, while the path of the magnetic flux is equally short.

The makers are the British Lighting and Ignition Co., Ltd., Cheston Road, Aston, Birmingham.



Clean exterior design. The new B.L.I.C. magneto with its stationary contact breaker withdrawn

ULSTER GRAND PRIX.

H. W. Hassall (Norton) wins at over 60 m.p.h. by covering 143½ Miles in 1 hr. 42 mins 9 secs.

H. W. HASSALL (Norton) won the Grand Prix Road Race promoted by the Ulster Motor Cycle Club on Saturday last. It was a very popular win, for there are few parts of the country where the Norton is more favoured than in Ulster, and, while perhaps the local populace would have been better pleased had the winning Norton been steered by Jimmy Shaw, a great reception was accorded to the Birmingham rider.

Shaw was going well when he punctured on the fifth lap.

The race was held over a triangular circuit of 20½ miles, which had originally been selected for the suggested light car race, and seven laps of it were covered; it lay on the outskirts of Belfast, and was generally regarded as a very suitable course for a race. Absence of anything in the nature of hills tended to fast times. Further, a delightful autumn day favoured the event, and a huge crowd of spectators attended.

Of 75 entrants, there were 70 starters, the large field being accounted for by the fact that the event was run on handicap lines with separate awards in each of classes. The limit man was despatched promptly at one o'clock.

The placings and actual times were:

1. H. W. Hassall (Norton), time 2h. 22m. 9s.
2. Andrews (Trump-Jap), time 2h. 53m. 54s.
3. Dinsmore (Norton), time 2h. 29m. 30s.
4. Whiteside (Scott), time 3h. 14m. 43s.

The fastest in the 250 c.c. class was W. L. Handley (O.K.); S. Wallace (Rex) was second. In the 350 c.c. class, F. Andrews (Trump-Jap) was fastest, and in the unlimited class N. P. Metcalfe (Brough-Superior) was the winner.

A Lap at 68 m.p.h.

Fastest lap was made by H. Langman (Scott), who covered a circuit at the rate of 68 m.p.h.

The following won medals by finishing within 20m. of the winner's time: Hamilton (Scott), Handley (O.K.), Hill (Douglas), Wallace (Rex), Murray (Francis-Barnett), McCleery (Scott), Sleaton (Mohawk), Mallon (Sunbeam), and Metcalfe (Brough-Superior).

EASY HALF-DAY TRIAL.

A SUCCESSFUL and well-organised half-day trial was held by the Sutton Coldfield and N. Birmingham A.C. on Saturday over a 60-mile course embracing some of the prettiest parts of Worcestershire.

The route ran through Halesowen and Stourport, then lay chiefly in the Tenbury district, finishing up at the Hundred House, Great Witley. Some 50 competitors faced the starter.

There were three observed hills, a stop and restart test, and an acceleration test; only one hill caused any trouble—Flagstaff. There were one or two patches that were decidedly greasy, which necessitated careful driving on the part of the solo men. Only three absolute failures were recorded, B. H. Cunningworth (Levis), A. R. Edwards (Levis), and T. M. Eastwood (349 A.J.S.), who attempted to take the first part too fast, got out of control, and dashed into the ditch. L. V. Bowen (249 Radco) swerved on a bit of grease, ran into the grass, but after footing cleverly recovered without stopping and carried on.

THE SIDECAR T.T.

Decision to hold Sidecar Race Next Year hailed with Satisfaction. Opinions of well-known Personalities in the Sidecar World.

AS recorded in last week's issue, there is to be a sidecar race in the Isle of Man next year. For several years motor cyclists have asked, through the columns of *The Motor Cycle*, for such a race, but of late, owing perhaps to the increase of speeds of T.T. mounts, the demand has been less insistent.

Now that a race is to be held, there are not a few who look forward to the event a little apprehensively, and during the past week three questions have been freely discussed in club and trade circles.

(1) Would such a race help the development of the sidecar?

(2) Is the sidecar a suitable vehicle to race on comparatively narrow and tortuous roads?

(3) Should three-wheeled runabouts be admitted to the race?

These three questions have been answered by well-known personalities in the sidecar world, who almost without exception are in favour of a sidecar race.

Developing the Touring Machine.

The object of all T.T. races is to help the development of the tourist machine; the Sidecar T.T. should have the same object.

Mr. J. L. Norton is not only a maker of fast touring sidecar outfits, but is a sidecar exponent himself. He knows the limits of the sidecar, if any man does, and in answer to the first question he writes:

"It (the Sidecar T.T.) will undoubtedly help development in certain directions, but the type of vehicle developed for a race over a course like the T.T. would not be the best type of vehicle for ordinary use."

Mr. F. E. Baker, of Precision fame, says: "I welcome the prospect of a proposed race as an earnest endeavour to demonstrate the present possibilities of the sidecar machine and as a means of research for future development."

Mr. C. R. Collier, of the Matchless firm, a past T.T. winner and an expert sidecarist, does not think that the race would further develop the sidecar itself, but would possibly be of some assistance as regards developments in engine design and brakes.

That such a race will tend to prove the efficiency of motor cycles in general is the opinion of Mr. L. F. Peaty, the well-known Hawker sidecar driver, which seems to be the opinion also of Mr. Frank Smith, managing director of the Clyno Engineering Co., and an expert sidecar driver of many years' standing.

Steering Important.

"I consider," he writes, "that any race such as the Sidecar T.T. must help the development of the sidecar. Engines, gear boxes, transmission, brakes, and frames would be submitted to the severest test. . . . Steering at high speeds would also have to receive special attention."

That well-known competition rider, Mr. W. B. Gibb, of Gloucester, looks to a Sidecar T.T. to eradicate the weakness of design which becomes apparent in the English or Scottish Six Days Trials.

A well-known Coventry sidecar manufacturer, Mr. W. Montgomery, who has now been making sidecars for twenty-one years, submits the view that, in spite of what theorists say, the sidecar is fundamentally sound. He agrees that a Sidecar T.T. should help its development.

Messrs. Mills-Fulford, Ltd., also old-established sidecar makers, have no doubt whatever that they could build a chassis to stand the severe test which the race will impose upon the competing machines.

As a means of exploiting the sidecar, Mr. S. L. Bailey, the Douglas exponent, welcomes the race. He writes:

"There is little doubt in my mind that the holding of a sidecar T.T. race would focus considerable attention on the sidecar movement generally, and the British section of that movement particularly, especially so at a time when the smaller light car movement is directly attacking the sidecar section of the industry.

"I think that the two markets are quite distinct, and there will ever be a big demand for a fast, light and economical outfit that will take all main road hills on top gear and at a much faster speed than the usual light car. Proof of this, of course, can only be demonstrated in such a race as the T.T., and I think the results over a mountainous and varying course like the I.O.M. T.T. circuit will surprise most people."

Our correspondents appear to be unanimous regarding the assistance the race will be in developing the sidecar. Mr. Victor Horsman, record breaker on two and three wheels, is just as certain on this point as Mr. George Brough and Mr. Osborne de Lissa, managing director of M.A.G. Engine Co., Ltd., who is not unknown as a sidecar expert on the track.

Mr. T. Watson, of Watsonian Sidecars, agrees that the race will materially influence sidecar design and development, "possibly to the good of the industry in certain respects, but adversely in other directions."

"Freakish designs will be incorporated which will be useless to the general public," he affirms. "But weaknesses will be found and improved upon. Careful thought will have to be given to brakes."

The Question of Safety.

Anyone who knows the nature of the T.T. course, with its 80 odd bends, must think of the possible danger to the competitors. Mr. George Brough says he would prefer to be the driver rather than the passenger.

Mr. Watson thinks that while the course is not ideal for a sidecar race, owing to the narrow roads and the difficulties of one competitor passing another, each rider will have the same chance.

"There can be no question that the race will be dangerous," says Mr. Victor Horsman, "but not any more so than the present race for solo machines. In the event of a crash two people will be involved, unless it is decided to carry a dead load in the sidecar."

Mr. de Lissa, to this question of danger, answers: "Most emphatically, no!" and Mr. C. R. Collier, "Decidedly no," while Mr. S. L. Bailey writes:

"I can see no reason why a sidecar should not be safe on this course. It depends entirely on the driver, which equally applies in the case of a solo rider. It would be no more difficult for sidecars to pass than for cars, and it must be admitted that there were very few accidents in the car T.T. race."

The experts of the Mills-Fulford and Montgomery firms consider that the risk of cornering should be no more than has to be taken in consideration under the usual conditions of the T.T. races. Mr. Frank Smith is of similar opinion, and considers "a properly designed sidecar quite suitable to race on narrow and tortuous roads."

Mr. W. B. Gibb thinks that manufacturers entering the race will fit flexible joints on similar lines to those used on the dirt tracks in America, and Mr. F. E. Baker believes that a sidecar can be raced over any road on which a four-wheel or two-wheel vehicle can compete.

"I certainly consider the element of danger would be greater with a sidecar outfit than either solo or four-wheeler vehicles," writes Mr. Norton on this point.

Sidecars and Runabouts.

As to whether three-wheel runabouts should be admitted to the race opinion is fairly evenly divided. Mr. W. B. Gibb thinks a mixed race would provide useful data for the buyer; Mr. W. Montgomery says: "Let 'em all come—the superior qualities of the sidecars can be demonstrated quite safely and effectively." Messrs. C. R. Collier, Frank Smith, and George Brough and the Mills-Fulford firm also agree.

The designer of Watsonian sidecars considers that it would be better to concentrate upon sidecars, and Messrs. Victor Horsman and O. de Lissa consider that the three-wheeler would have an unfair advantage.

Mr. F. E. Baker says that if the race is regarded as a development race for sidecar machines, then it should be confined to sidecars, an opinion shared by Mr. J. L. Norton and Mr. L. F. Peaty.

Letters have also been received from Messrs. W. A. Fell Smith, Harry Bashall, Geo. Grinton, J. A. Masters, F. W. Giles (A.J.S.), T. C. de la Hay (Sunbeam), F. W. Barnes (Zenith), and J. E. Greenwood (Sunbeam), and in every case these expert sidecarists agree that the race will be of great benefit to the development of the sidecar, and that in the hands of a capable driver the element of danger is not great. But Mr. W. H. Wells, of the Indian firm, is emphatic that sidecars must not be allowed to practice on the course at the same time as solo machines

LIVERPOOL'S

One particular spot on the bank had a magnetic attraction for the soloists. C. C. Wilde (499 Triumph) is making way for G. Warbink (499 Sunbeam).

"S.N.S.S." Competitors in last Saturday's Liverpool M.C. Reliance Cup Trial will dream of these cryptic letters (denoting the start of a non-stop section) for many a day.

The event appeared to be nothing else but observed sections, one following the other with bewildering rapidity, and none of them without cause. It was one of the most sporting scrambles of 1922, and it is a great pity that it should have been marred by inefficient route-marking. It was a test of hill-climbing, of controllability, and, perhaps most of all, of brakes.

That the sun shone all day did not, as sometimes happens, convert a strenuous trial into a joy-ride; rather, rain might have made it an impossibility. A very active fresh-water spring attended to the lubrication of Alt-y-Bady, and clean ascents were as rare as failures were numerous, but several of the other hills were by no means dry.

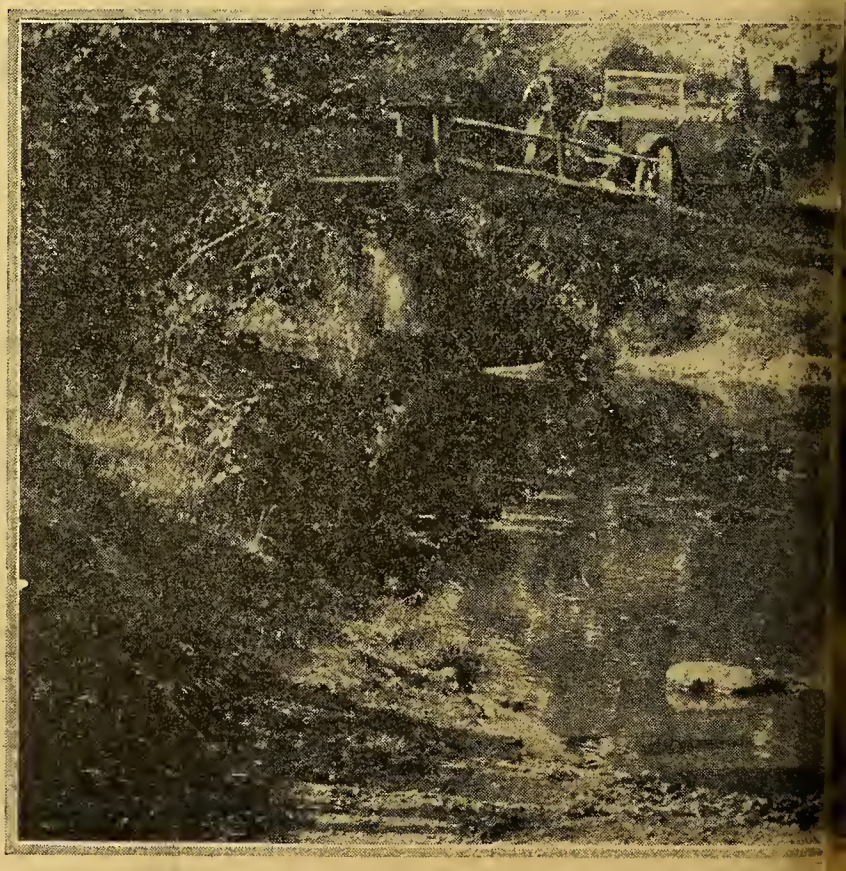
Sporting Visitors.

There was a strong contingent of sporting Yorkshiremen among the competitors, and another from the East Midland Centre clubs; neither party was disappointed.

Within a mile or two of the start at Queensferry the fun began—water-splashes, cross-gullied cart-tracks, grassy virgin paths that on a wet day would have delighted, or broken, the heart of the enthusiast, sudden turns, ascents and descents equally precipitous. Near Ffrith there was quite an ambitious ford, but it was not very deep. (Had it been more than 10 inches the regulations, thoughtfully, would have allowed the competitors to push their machines through.) The sidecars, which had to average only 18 m.p.h., against the solo 20, were first; most of them made good crossings, although one of the Brough Superior outfits was reported to have stopped, and E. Foster's lightweight Raleigh very nearly underwent an involuntary bath.

About a mile further on came Ffrith Hill, rearing up with surprising suddenness just beyond a railway bridge. The lower and steeper portion left something to be desired in the matter of surface, and loose stones caused wheel-slip with one or two of the sidecars. The first to fail was J. Taylor (633 Norton sc.); a burnt-out clutch was suspected. Then W. Roberts (800 A.J.S. sc.) stopped, baulking J. H. Green (269 Excelsior), who wobbled so badly in passing that he, too, failed. J. G. Collins, on another A.J.S. outfit, appeared to be most unhappy for the first 30 yards, then decided that he was to get up all right, which he did smiling!

The soloists were almost monotonously successful, vastly entertaining the small boys of the neighbourhood, who appeared to be most enthusiastic about "mottr pikes" (another version: "mottr picycles"). However, A. E. Musker on a 1915 Triumph came perilously near failure after several wild zigzags, and W. J. Knight (499 Triumph), appeared to have been taken by surprise at the suddeness of the climb. The other four-valve Triumph, C. C. Wilde's, made one of the best climbs of all. No one else failed. The following made the most imposing ascents: G. S. Boston (532 Scott), Miss M. Cottle (547 Powell). W. Westwood Wills (547 Powell). J. L. Fox (490 Norton), A. J. Bailey (633 Norton sc.), C. P. Wood (532 Scott sc.). J. H. Davies (492 Sunbeam), A. Bennett (492 Sunbeam), G. W. Shepherd (L.S.D. three-wheeler—with chains), G. Clapham (532 Scott), G. F. Burns (492 Sunbeam), G. L.



Although V. Horsman (Norton sidecar) himself appears quite unperturbed by this

CE CUP TRIAL.

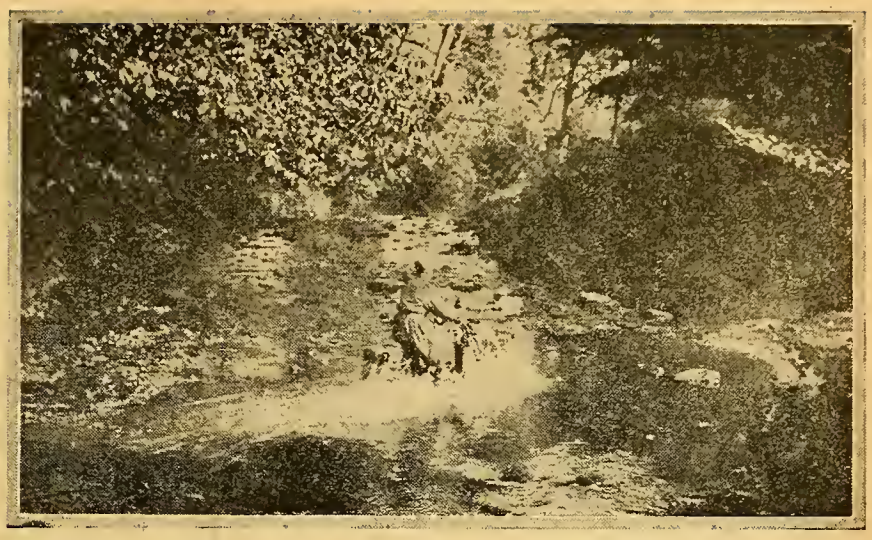
Falck (499 Rover)—curiously impressive plugging—W. J. Kellett (492 Sunbeam), L. Randles (492 Sunbeam), W. H. Hadfield (348 Raleigh), F. E. Nash (481 Scott), J. T. Waring (499 Sunbeam), D. T. Bruce (494 Douglas), and G. Clarkson (492 Sunbeam).

G. E. Barnard (678 Martinsyde sc.) was noticed paying a visit to the local smithy in the village down below; he retired here.

Llangollen was reached by way of the Old Horse-Shoe Pass, but before being allowed to lunch there the riders were sent round a merry two-mile detour among the clouds, prominently signposted "public footpath"; the Llangollen public must be a hardy race!

Then came the "Bady." One could write a volume on how to climb this remarkable hill; and attempt the task oneself next day—and fail. A low gear and two stout ribbed tyres are probably the most useful aids. Even a Scott cannot be sure of rushing it successfully.

All honour, therefore, to the four soloists who went up at speed without any suspicion of footing. They were: Miss Cottle (Powell), not *very* fast, but wonderful to watch, correcting every little skid and wobble in a masterly fashion; G. Clapham (Scott), who took the wrong turn after reaching the foot again *via* Dolywern, and made a second faultless climb, amusing everybody by innocently asking if he had not been up before; G. F. Burns (492 Sunbeam), one of the six riders in England who apparently always climb Alt-y-Bady successfully; and E. Eggers (349 A.J.S.), particularly creditable, for his gears were apparently standard.



The first soloist to cross the Cymmau water-splash—J. H. Fox (633 Norton)—demonstrated that it was not to cause much trouble.

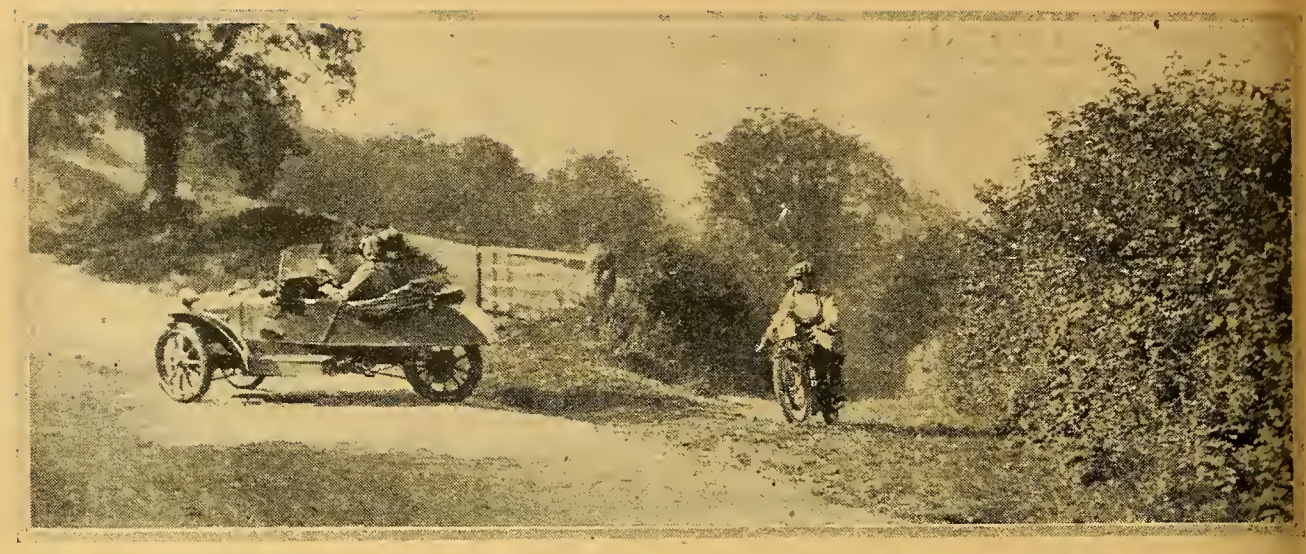
...ers to "be prepared." The water was not deep but the approach was precipitous

No marks should have been lost by: Westwood Wills (Powell), one perfunctory dig marring an otherwise exceptionally fine climb by one who is alleged to live on the hill; G. S. Boston (Scott), also fast, but touched once; E. Foster (348 Raleigh), with feet ready and occasionally touching, but non-stop; E. H. Welch (490 Norton), like Foster, but more so; G. L. Falck (499 Rover), ditto; F. H. Hawkins (348 Raleigh), ditto; W. J. Kellett (499 Sunbeam), who overtook Hawkins, but not elegantly; S. Doward (269 Sun-Vitesse), helped by an extremely low gear; L. Randles (Sunbeam), feet down, but quite good; Hugh Gibson (348 Raleigh), undecided whether to foot or not; C. H. Fox (557 B.S.A.), ready to slog, but did not touch; G. Clarkson (Sunbeam), footed most judiciously; and J. Graham Oates (248 Grindley), fast, clever, but stormy.

Problems for the Observers.

There were several bouts regarding which the verdict can only be "No decision." For example, Alec Bennett brought an I.O.M. Sunbeam up at great speed, and was regarded as likely to make the star ascent of the day until he "found" both banks in rapid succession; whether he stopped long enough to fail is doubtful. A. R. Evans (Sunbeam) repeated Bennett's performance in a minor key; J. H. Green (269 Excelsior) stopped with a spinning wheel, but got going again unaided; and W. H. Hadfield (348 Raleigh) received unnecessary outside assistance.

There is no need to enumerate all the solo failures—merely to charge the bank was too frequent a happening to interest much—but one or two were either more spectacular or quite instructive. For instance, P. G. Thomason (398 A.J.S.) skidded on a bone-dry slab of rock, presumably because his tyres were wet and slippery; J. H. Davies (492 Sunbeam) deserved a better fate than the bank; so did C. C. Wilde (499 Triumph) and G.



G. W. Shepherd (L.S.D. three-wheeler) leading A. Bennett (492 Sunbeam) into the main road immediately after the worst watersplash.

Warbink (Sunbeam), who were both hampered by a stationary sidecar; J. H. Simpson (349 A.J.S.) pirouetted broadside without any apparent provocation on his part and restarted without difficulty; and G. A. Clarke reared his Sunbeam vertically up the bank.

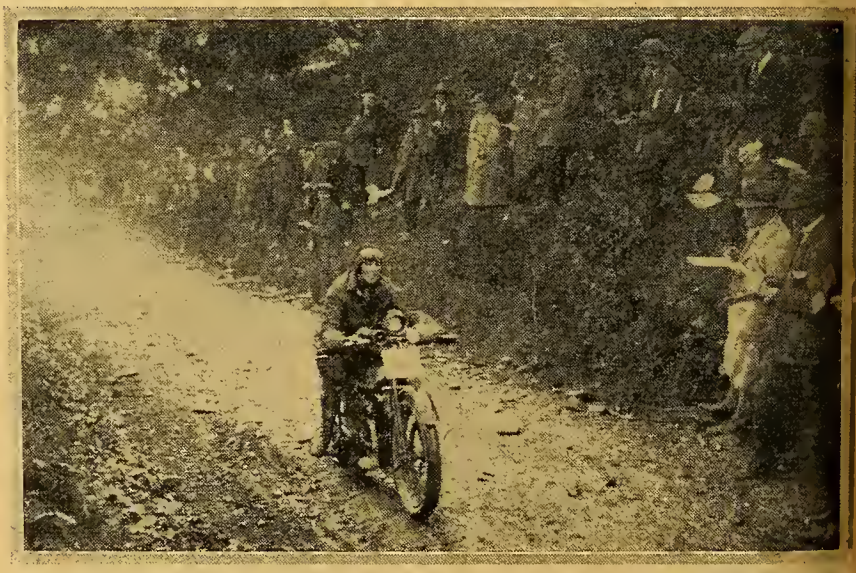
There were 18 passenger machines, but only four got up non-stop at first attempt. In the cases of C. P. Wood (Scott sc.) and V. Horsman (Norton sc.) their passengers wriggled nearer the carrier than was in order, but it would have been quite excusable had not Reg Brown (Sunbeam sc.) shown that it was unnecessary. G. W. Shepherd (L.S.D. three-wheeler) was the fourth and last to get up non-stop; he used Parson's chains. C. Bingham (Enfield sc.) was absolutely baulked, but eventually after one or two further abortive attempts came up in great style.

When the last man had failed on Alt-y-Bady the spectators went their ways, obviously thinking that the difficulties of the trial were over. It was a mistaken idea. Dol-y-wern, Conquering Hero, Glyn-Arthur, Afonwen, and particularly Bodfari are hills of the first order, hills that, could they be bodily moved to Kent, would cause more consternation than the notorious Rook.

The writer makes this claim without prejudice. Yet there were very few failures; even Bodfari, steeper than 1 in 3 with huge rocks and loose sand, caused only H. J. Drury (A.J.S.) and Graham Oates (Grindlay) to go on the observer's sheet as having failed, and A. E. Musker (550 Triumph) as having run alongside.

Interspersed with these formidable climbs were equally formidable descents and more rough and tortuous mountain tracks. Fortunately the route marking took a turn for the better here. Spills were common. Shepherd's L.S.D. overturned near the top of one mountain, and the later men had to take a detour round the base in consequence. The Scott sidecar chassis broke. Clapham took a nasty toss by hitting a gulley at speed, and a Douglas rider was rather seriously hurt.

Keeping to schedule was a hard task in itself, and the omission of the restarting test on Pen-y-Ball should not cause any ties for the premier awards.



Quite the star ascent of Alt-y-Bady was made by the only lady competitor, Miss Cottle (Powell), who earned the applause of the spectators.

BELGIAN RECORD ATTEMPTS.

FINE weather favoured the attempts at records, organised by the Belgian Motor Cyclists' Federation, which were made on the magnificent surface of the Oostmalle road. These attempts were made over the flying kilometre in two directions. The average speeds are given below:

MOTOR ASSISTED BICYCLES.—Joncret (125 Tordor), 25.6 m.p.h. (Belgian record).

250 C.C. SOLO.—Claessens (F.N.), 63.54 m.p.h. (Belgian record); Cravillon (Rush-Blackburne), 61.12 m.p.h.; Vermeulen (Griffon), 38.96 m.p.h.

350 C.C. SOLO.—Remington (Rush-Blackburne) and Claessens (F.N.), 76.5 m.p.h.; Philippart (F.N.), 73.90 m.p.h.

500 C.C. SOLO.—Rossi (Motosacoche), 90.20 m.p.h. (Belgian record and fastest time of the day); Defer (Norton), 75.25 m.p.h.; Vidal (Saroléa), 63.91 m.p.h.

750 C.C. SOLO.—Breslau (Norton), 77.13 m.p.h. (Belgian record).

1,000 C.C. SOLO—Bouillon (Indian), 89.47 m.p.h (Belgian record); Piérard (Indian), 86.5 m.p.h.

350 C.C. SIDECARS.—Delvigne (Rush-Blackburne), 62.13 m.p.h. (Belgian record); Philippar (F.N.), 60.45 m.p.h.; Reynaertz (Gillet), 58.5 m.p.h.; Berry (Sheffield-Henderson), 57.35 m.p.h.

600 C.C. SIDECARS.—Defer (Norton), 66.6 m.p.h (Belgian record).

1,000 C.C. SIDECARS.—Milhoux (Indian), 75. m.p.h. (Belgian record); Springuel (Harley-Davidson), 72.5 m.p.h.

TRYING CUMBERLAND TRIAL.

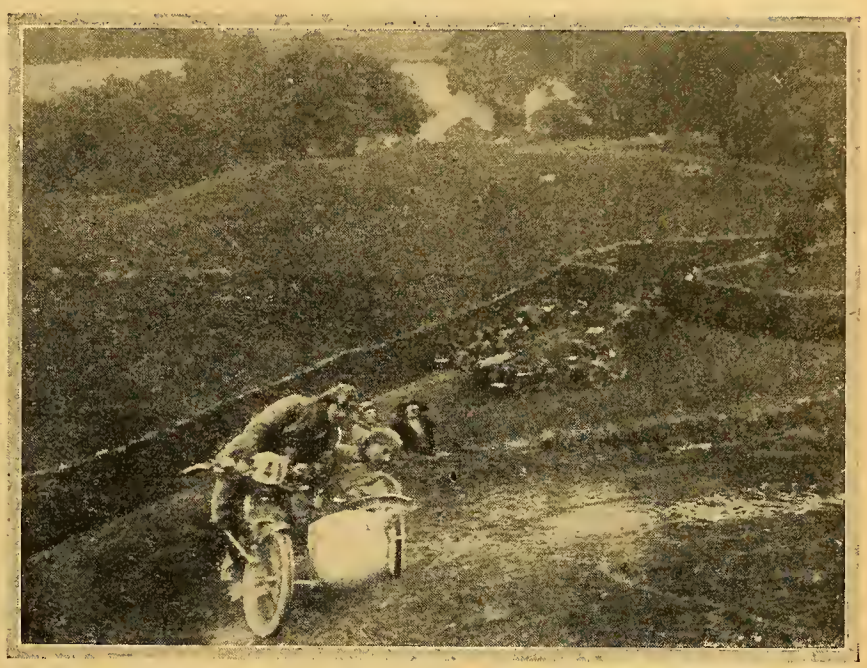
Cumberland Club's Sporting Event in the Lake District.

IN foul weather and fair, mostly the former, the Cumberland Club has held numerous sporting trials during the present year. The last of the competition season, organised by the Western Section, was held on the 7th inst. over a course that had some new and novel features.

The course was good, and very few marks were lost before the luncheon stop was made at Workington. On the way thither the slimy slope of Whinfell from Lorton Vale caused a few adventures, and W. Tweddle (550 Triumph) failed owing to a wide skid; D. H. Watson (Morgan) also slid into the grease. Between Branthwaite Brow top and Workington, T. B. Westmorland (Harley-Davidson sc.) unfortunately suffered a puncture, and arrived five minutes late, yet five minutes earlier than Goddard (770 B.S.A. sc.), who had similar trouble.

After the re-start excitement soon became fast and furious. Certainly, many stuck fast and most were furious in the bog of "Muddy Avenue," on the Branthwaite-Dean portion. This new and surprising "colonial section," so-called, was two miles long and six to eight inches—some said two feet—deep in mud and water. Every rider was late at the end of this section.

The once-trying Buttermere Hause was surmounted in capital style, but the crossing of Rake How, between Naddle Vale and the Vale of St. John, shattered the hopes of many. Neither sun nor wind had been present to dry the two greasy corners, and in consequence there were many thrills. The solo machines were all successful, and very noticeable were the skilful ascents by L. and J. Edmondson on Massey-Arrans. Remarkable acrobatic feats were performed by sidecar passengers, and several required assistance. The lighter outfits were most successful, notably, A. D. Reid on a 349 c.c. A.J.S. For the spectators, the tit-bit of the day was the attack by Parry (Morgan). The first corner was taken at high speed, but on the second, owing to a sharp skid, the driving chain jumped off the sprocket. There was sudden collapse and the machine almost dashed back over the edge, but immediate help was forthcoming. But for this, Parry would have won the passenger class.



An anxious moment on the slippery bend of Rake How Hill. The rider is J. Casson (550 Triumph sidecar).

On Robin Hood Hill, near Bassenthwaite, three riders charged the bank, including the secretary, J. P. Bennett (499 Sunbeam). The final feature was the last mile run to Castle Inn at the speed of four miles an hour, which was accomplished quite easily.

The winners in the various classes were:—

BEST PERFORMANCE OF THE DAY (N. H. Richmond Cup).—L. Edmondson (349 Massey-Arran).

HEAVYWEIGHT SOLO CLASS.—G. Guinness (499 Sunbeam).

PASSENGER CLASS.—H. Dixon (Rover Ic.).

LIGHTWEIGHT SOLO CLASS (F. R. Anderson's Cup and Gold Medal).—Leslie Edmondson (349 Massey-Arran).

RECORD ACTIVITY AT BROOKLANDS.

AT this time of the year there is usually a veritable epidemic of records at Brooklands. Such has been the case during the past few months. Nortons, as usual, and Harley-Davidsons and Douglas machines have been well to the fore, while a motor cycle not often seen on the track in record attempts—the 749 c.c. Bradbury—has recently acquitted itself well.

Wednesday of last week (October 11th) witnessed the fall of no less than nine records through the activity of four riders on three machines. R. N. Judd (490 Norton) broke the following Class C (500 c.c.) records, which also cover Class D.:—

100 miles. 1hr. 20m. 46.64s. = 73.88 m.p.h.
2 hours. 147 miles 1,261 yards = 73.86 m.p.h.

C. F. Temple and F. Allchin (998 Harley-Davidson sc.) gained the following Class G (1,000 c.c.) records:—

50 miles. 40m. 36.59s. = 73.87 m.p.h.
100 miles. 1hr. 23m. 57.12s. = 71.47 m.p.h.
1 hour. 73 miles 1,018 yards = 73.58 m.p.h.

R. E. Dicker (749 Bradbury, standard V-twin side-by-side valve) also broke the following Class D (750 c.c.) records on that day:—

200 miles. 2hr. 55m. 58s. = 68.19 m.p.h.
300 miles. 4hr. 41m. 23.87s. = 64.02 m.p.h.
3 hours. 204 miles 1,417 yards = 68.26 m.p.h.
4 hours. 271 miles 1,350 yards = 67.94 m.p.h.

The tank burst within three laps of the end of the 300-mile record, but Dicker continued for nearly two laps, when he completely ran out of petrol. He dismounted, pushed the machine to his depôt, filled up and carried on with the fuel streaming out in all directions. As he approached the timing box Mr. Ebblewhite signalled that the 300 miles had been completed in record time. Dicker pulled up and, as he stopped, the petrol burst into flames and the machine lay burning in the centre of the track. A number of Pyrenes were turned on the fire and the blaze extinguished.

DOT DEVELOPMENTS.

THE Dot motor cycle has been known for many years, especially in the North of England where it is made. In future it is highly probable that more will be heard of it, since a new company has been formed to exploit it. For 1923 Dot Motors, Ltd., will have a comprehensive range of models, which will be at Olympia next month. These include:—

293 c.c. J.A.P. engined lightweight, with three-speed gear and clutch, selling at £65.

346 c.c. sports model, with special J.A.P. engine, three-speed gear and clutch, £78.

976 c.c. big twin sports model, with close ratio three-speed gear box, £140.

976 c.c. sidecar outfit, £130.

CURRENT CHAT (continued from p. 551).

"The Motor Cycle" 3d.

With this issue the price of *The Motor Cycle* reverts to three-pence.

Next Year's Grand Prix.

Possible venues for the 1923 Grand Prix are Lyons or Strasbourg, which was used this year.

Enthusiasts from the North.

Are North Country riders keener and more capable than those of the South? The suggestion has been made in *The Motor Cycle* before, and last Saturday's Reliance Cup Trial seemed to add weight to the idea.

Census-Taking by Our Readers.

In response to a small paragraph recently, many readers have taken a census of motor cycle traffic in various areas, showing the most popular makes. We hope to publish a representative selection next week.

D.R.'s Reunion Dinner.

It is hoped to arrange a reunion dinner during show week of the 1st and 5th Division and Abbeville L. of C. ex-D.R.'s. Mr. B. F. G. Fowke, c/o Trooms, Edwin Road, Twickenham, is attending to the organisation, and can be reached by telephone : Richmond 2667.

Novelty in Trials Next Year.

Preliminary arrangements have been made by the Worcester and District M.C.C. and the affiliated motor club to hold a "Selling Trial" next spring. It will be on the lines of a horse race selling plate, and only standard machines will be eligible. An open permit will be sought. Further details will be given later.

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Huge Fields at Brooklands.

Everybody who is anything in the racing world will compete in next Saturday's Championship meeting at Brooklands. Nearly sixty entries have been received for one race.

For the Hospitals.

An anonymous donor has presented six McKenzie motor bicycles to the Prince of Wales' Day collection for the hospitals. It is possible that these will be put up to ballot.

New A.C.U. Centre.

Club activity in the Bristol district has now been given a firm foundation by the formation, already announced in *The Motor Cycle*, of a new A.C.U. Centre, to be known as the Wessex Centre. A large and representative gathering was present at a meeting held at the Old Red House, Bath, when a strong board of club representatives was selected.

Imports and Exports.

An increase in the importation of motor cycles is shown for September, but compared with the figures of 1920 their value is extraordinary low.

IMPORTS.

	1920	1921	1922
Value of machines ..	£6,325	£21,448	£410
Value of parts	£16,449	£15,043	£3,643
Total	£22,774	£36,491	£4,053

Unfortunately a decrease of nearly £20,000 is indicated in the export figures for last month when compared with August, and more startling still are the figures when contrasted with September, 1920, when we exported £291,273 worth of motor cycles and parts. Compared with September last year, however, the figures are well maintained.

EXPORTS.

	1920	1921	1922
Value of machines	£227,745	£34,747	£30,80
Value of parts ..	£63,528	£18,841	£21,30
Total	£291,273	£53,588	£52,10

CLUB NEWS (continued from p. 550)

Aberdeen and District M.C.C.

Annual speed trials were held on Cruden Bay sands on the 7th inst., and some fine riding was witnessed by a large crowd. Mr. George Davidson, manager by a large crowd. Results were as follows:—

CLASS 1 (UNLIMITED, HANDICAPPED IN CLASSES—Mr. P. W. Smith's Challenge Cup).—1, A. Brown (490 Norton); 2, R. Dempster (499 Triumph); 3, W. Cheyne (492 Sunbeam).

CLASS 2 (UNLIMITED, HANDICAPPED IN CLASSES, EXPERTS BARRED).—1, W. Cheyne (492 Sunbeam); 2, G. Cumming (494 Douglas).

CLASS 4.—350 c.c.—1, G. Ferries (349 Massey-Arran).

CLASS 5.—560 c.c.—1, A. Brown (490 Norton); 2, R. Dempster (499 Triumph); 3, W. Cheyne (492 Sunbeam).

SPECIAL PRIZE FOR FASTEST TIME.—A. Brown (490 Norton).

Bristol M.C. and L.C.C.

A stiff event held on the 7th inst. over a 28-mile course to be covered twice, the Walters Cup Trial, included East Dundry and Burledge Hills on both circuits. No non-skid devices allowed. Much of the course and the hills were in a very treacherous condition, and of the 25 starters only 13 finished; Burledge proved the chief obstacle, and only 5 clean solo climbs out of 18 attempts were recorded, and only 1 sidecar out of 13 succeeded in getting up without assistance—F. Cooke's Sunbeam outfit. The results were:

1, Walters' Challenge Cup and Gold Medal, F. A. Simpson (346 Francis-Barnett); no loss on time, and clean climbs of Burledge on each circuit.

2, Silver Medal, Stanley Gill (269 New Imperial); no loss on time, and one clean climb of Burledge.

3, Bronze Medal, E. C. Collins (490 Norton); 1 mark lost on time, and one clean climb of Burledge.

Special Amateur Prize, W. Le Brun (499 Rudge) solo, Bernard Allen (499 Triumph) tied; no loss on time, failed Burledge both times.

Barrow and District M.C.

Results of the reliability trial for the Fisher Cup are now to hand, and are as follow:

1. G. D. Barker (799 A.J.S. sc.), winner in 1920.
2. J. C. Dearden (490 Norton).
3. J. Morrison (498 P. and M.).

Birmingham M.C.C.

Open to all members of Midland Centre A.C.U. clubs, a sporting half-day trial has been arranged by the above club to take place on Saturday next. Nine hills and four watersplashes will be included in the route, while there will be tests of silence, acceleration and braking.

Week-End Club Events.

Oct. 20th.—Cumberland County M.C.C.—Lecture.
Oct. 21st.—Reigate, Redhill and District M.C.C.—Short Night Trial.
Oct. 21st.—Essex County and Southend A.C.—Speed Judging Competition.
Oct. 21st.—Coventry Triangle M.C.—Circular Run.
Oct. 21st.—Bristol M.C. and L.C.C.—Six Hour Trial.
Oct. 21st.—Birmingham M.C.C.—Sporting Half-day Trial.
Oct. 22nd.—Coventry Triangle M.C.—Run to Temple Balsall.
Oct. 22nd.—Doncaster and District M.C.C.—Run to Dukeries.
Oct. 22nd.—Sheffield M.C.C.—Run to Cresswell Crags.
Oct. 22nd.—Halifax and District M.C. and L.C.C.—Run to Ashopton.
Oct. 22nd.—Rochester, Chatham and District M.C. and L.C.C.—Run to Hawkhurst.
Oct. 22nd.—Bradford M.C. and L.C.C.—Speed Trials.

Ulster M.C.C.

Amended results for one class of the Autumn speed trials at Magilligan Strand reach us as follows:

TEN-MILE HANDICAP (350 c.c.).

1. H. Chamber (349 A.J.S.).
2. D. M. Hunter (349 Massey-Arran).
3. W. C. Hunter (348 Hunter).

Guernsey M.C. and L.C.C.

An excellent afternoon's sport was provided for members by a hill-climb held on the 5th inst. The hill selected was that from Fermain Bay to St. Martin's Road, and, despite the slippery nature of the surface on the lower part, some good times were registered. Sidecar drivers experienced little difficulty at the upper hairpin, but three solo riders collided with the wall. Mrs. Mauger, a lady competitor, made several neat and faultless climbs. The fastest ascent was made by E. Bougourd (550 Triumph), his time being 1m. 8⅗s.

The competitors and their times were as follows:—

SMALL SOLOS.—L. Hill (225 Enfield), 1m. 41⅘s. (winner); C. Thorne (269 Coventry Eagle), 1m. 42⅗s.; J. Tullier (293 Calthorpe), 2m. ⅕s.

SECOND SOLOS.—L. Brehaut (349 A.J.S.), 1m. 22s. (winner); K. Bell (348 Douglas), 1m. 39⅖s.

MEDIUM SOLOS.—P. Mauger (548 Blackburne), 1m. 35⅖s. (winner); S. P. Peek (494 Douglas), 1m. 36⅗s.; T. Le Cheminant (293 Coventry Eagle), 1m. 43s.; Mrs. P. Mauger (548 Blackburne), 1m. 43⅗s.

HEAVYWEIGHT SOLOS.—E. J. Bougourd (550 Triumph), 1m. 8⅖s. (winner); R. Genge (Alldays), 1m. 12⅗s.; H. W. Prins (557 B.S.A.), 1m. 42⅕s.

LIGHT SIDECARS.—A. Gorman (550 Triumph), 1m. 46⅘s. (winner); H. Slatror (550 Triumph), 2m. 32s.

HEAVY SIDECARS.—G. Lihou (654 Quadrant), 1m. 39⅖s. (winner); E. De Putron (633 Norton), 1m. 41⅕s.; A. De Carteret (633 Norton), 1m. 46⅗s.

QUESTIONS AND REPLIES

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp) and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

RELATING TO HAND STARTER MAGNETOS.

In your publication, "Magnetos," by A. P. Young, A.M.I.E.E., on page 181 is a diagram for a hand-starter magneto, the firing point of which is shown on the cylinder next behind the one which would be normally fired by the magneto proper. Would you kindly inform me if this is correct, as it seems to me it should fire on the same cylinder, but some few degrees behind the ordinary point.—C.J.D.

The drawing is quite correct. In order to prevent all chance of backfire, it is necessary to make the auxiliary distributer arm for starting some 30° or so behind the main arm. In the case of an eight- or twelve-cylinder engine this makes it appear that the trailing point is connected to the wrong cylinder, but actually it will have moved on by the time the actual sparking moment occurs; on a four- or six-cylinder engine the illusion would not be apparent, as there would be a much greater space between the distributer segments.

MORE SPEED NEEDED.

On a 1922 two-stroke Sun-Vitesse the most I can do is 30 to 35 m.p.h. Surely something is wrong? Could you suggest anything which would cause it to be so slow? Would a larger jet make any difference to the speed? (I believe it has a 24 jet in now.) H. G. B.

A slightly larger jet would no doubt improve the speed a little, but it might be necessary to provide some means for admitting extra air also, if you wish to keep the consumption within economical limits. The magneto timing should be fairly well advanced. Make quite sure that the contact breaker points are breaking when the piston reaches top dead centre with the magneto control fully retarded. It is difficult to tell you of any simple way of tuning up for speed—there is no one thing which you can do that can be guaranteed to increase the speed of the machine; every little point must be seen to, and everything must be in perfect working order, otherwise you cannot get the best results. Your best plan is to obtain a copy of "Two-stroke Motor Cycles," and having read it carefully make quite sure that your machine is in the best possible mechanical order. The best results the engine is capable of giving should then follow naturally. Your machine should certainly attain 40-45 m.p.h.

Important Dates.

Sat., Oct. 21st—Cheshire Centre A.C.U. Open Reliability Trial.

Sat., Oct. 21st—B.M.C.R.C. Championship Meeting at Brooklands.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.

PERPETUAL MOTION!

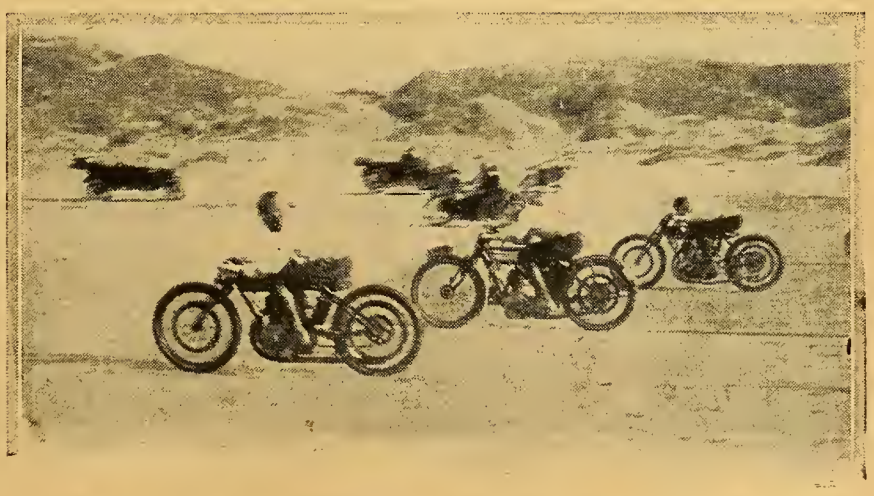
I am thinking of setting up a dynamo lighting and charging plant, with a dynamo of 20 volts 6 amps output. If I used two of these dynamos, would one drive the other without an engine? Would the first dynamo make enough current to drive the second, and also leave, say, about half the current for the lighting, etc.? What voltage accumulators should I want? Should special switches be used? Would belt-drive be suitable?—R. J. N.

Your questions are not at all clear, and it would appear that you have insufficient knowledge of electrical apparatus to proceed without more complete instruction on the subject. You cannot use one dynamo to drive another in the way you suggest. A dynamo must be driven from some external source of power, and you cannot use the dynamo itself to provide that power for obvious reasons. We think your best plan is to obtain some simple elementary text book on electricity before proceeding further

CARE OF ACETYLENE GENERATOR.

My acetylene lamp (separate generator) gives a splendid light for a short time; then the flame drops from a broad fishtail to a mere glimmer; the rear lamp is also fed from the same generator, which personally I believe to be too small. Do you think this likely?—H. S.

If the generator is kept perfectly clean, and if there is no leakage at any of the joints, the strength of the flame should



SPEED TRIALS AT SOUTHPORT. At the North Liverpool M.C.C. event on the sands: F. E. Marsden (492 Sunbeam), G. E. Cowley (490 Norton), and D. Swift (492 Sunbeam) in an exciting triangular duel.

be maintained for the greater part of the duration of the consumption of the charge. It is advisable to remove any filtering pads which may be fixed in the generator, as if these become soaked with moisture they are apt to cause the trouble you describe. If the generator was the one supplied with the lamp it should give good results, and we think it is only a matter of making sure that the generator is properly cleaned and charged, and also that there is an even flow from the water valve.

IN HALF-MILE STAGES.

[?] A 1913 499 c.c. Triumph on which I recently fitted a new Amac carburetter, runs well for about half a mile on a 34-jet and then commences misfiring. I then have to take out the plug and clean it, after which it goes on as before. I don't think it is the plug which is at fault. The engine also runs excessively hot, although tappet clearances seem all right.—K.W.

You do not give very complete details, but as the engine commences to run again after cleaning the plug it would appear that the trouble is due to excessively rich mixture. You do not say whether the plug is covered with soot after the misfiring has occurred; if it is, it is conclusive evidence that the jet is too large or that insufficient air is admitted through the carburetter. We assume, of course, that the engine is receiving a sufficient supply of oil.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"D." (Durham).—499 c.c. Dunelt sidecar; 654 c.c. Quadrant and sidecar: reliability, running costs, hill-climbing, suitability for poor road surfaces.

"J.S.B." (Liverpool).—733 c.c. Douglas and sidecar.

"J.D." (Peebles).—698 c.c. Raleigh flat twin sidecar: speed, hill-climbing, fuel consumption and silence.

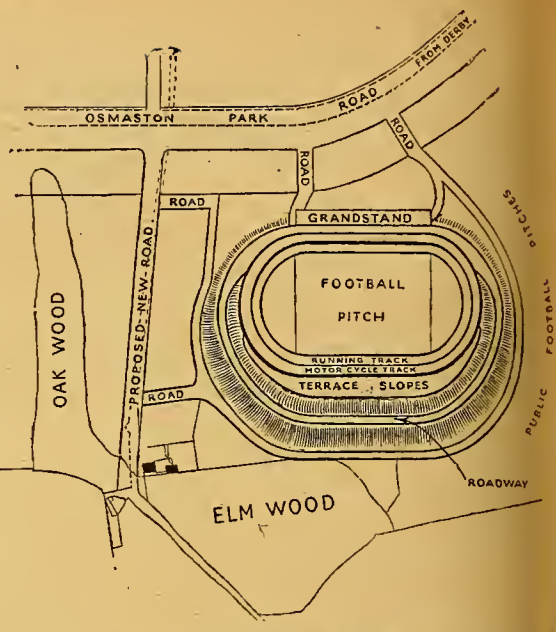
"A.J.D." (London).—550 c.c. Triumph: additional silencing arrangements.

"I.J.C." (Wimbledon).—293 c.c. Connaught: fuel consumption, speed, suitability for tall rider, Grado gears for same or similar machine.

"M.J." (Manor Park).—499 c.c. Rudge-Multi and 398 c.c. A.B.C.; petrol consumption (with and without pillion passenger), maximum speeds, and comfort.

"A.S.D.C." (Perth).—976 c.c. Morgan (Popular model), air-cooled J.A.P. engine; accommodation for two adults and child, and wear of rear tyre.

"T.W.P." (Southampton).—Possibility of fitting semi-automatic or mechanical lubrication system to 499 c.c. Triumph; also general information.



DERBY THREE-LAP TRACK. Work on the new race track and sports ground at Derby is steadily advancing. The plan of the site is here clearly shown. Terraced slopes form a natural grandstand, the grandstand proper being not yet commenced. The motor cycle track gives three laps to the mile and is banked for 80-90 m.p.h. It is situated just outside Derby near the Osmaston Road tram terminus.

A Royal Motor Cyclist.

H.R.H. Prince Aimone of Savoy is the enthusiastic rider of a four-valve Triumph.

Found.

On Gravelly Hill, Birmingham, a kick start sprocket wheel with plated dome.—Ref. No. 109.

Popular Tyres in France.

Hutchinson tyres triumphed in the recent international speed trials held in the Bois de Boulogne, Paris, as every class winner used them.

Gliding as a Side Line.

Having made a careful study of the subject of gliding, the Plus-One Sidecar Co., 62, Chalk Farm Road, London, N.W.1, is prepared to construct gliders or offer technical advice to those interested.

Dutch Club Championship.

An amendment of the results of the recent club championship trial in Holland reaches us. It is to the effect that the trade team prize has now been awarded to the Indian team.

New Address.

Owing to increase in business, the T.O.M. Co., Ltd., specialists in camping equipment, are moving into larger premises at 61-62, Newman Street, London, W.1. Telephone: Museum 8318.

Olympia Show Publicity.

Publicity arrangements for the Motor Cycle Show have been taken over by A. H. Clackson, Ltd., 199, Fleet Street, London, E.C.4, while Mr. Laurence H. Cade will occupy the position of Press representative.

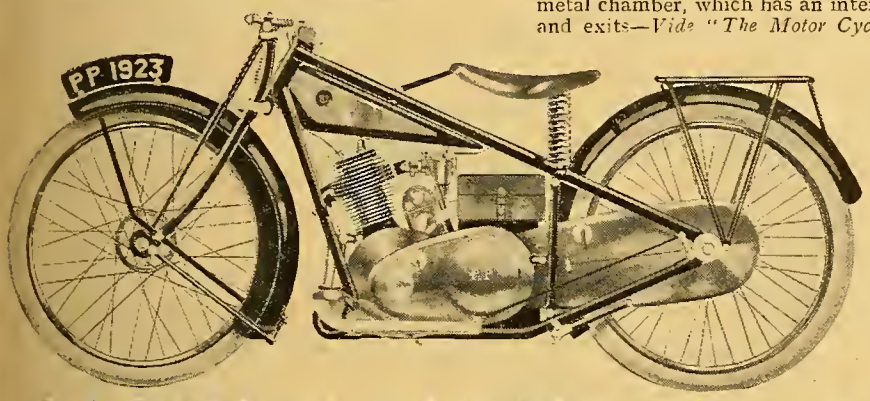
OCTOBER SUNSHINE. In the crisp Indian summer days of the late autumn there is no keener pleasure than a brisk run through the lanes, with the low October sun painting long shadows on the glowing road surface.

The P. & P. Motor Cycle

"The Silent Three."

A SERIOUS attempt to Eliminate Noise and to provide Protection.

A 350 c.c. Barr and Stroud engine is employed as the power unit, and, as is well known, the absence of poppet valves renders it particularly free from mechanical noise, while its power and reliability have already been proved. In addition, special precautions have been taken to render the exhaust as quiet as possible, and we may state, from experience with the preliminary experimental machine, that the designers have already met with considerable success, though the latest model, which will be exhibited at Olympia, will have further improvements in the silencing arrangements. First of all, the exhaust is led to a large aluminium expansion box, thence to a second sheet-metal chamber, which has an internal division and carefully designed inlets and exits—*Vide "The Motor Cycle."*



STAND 146 OLYMPIA.

We will give you further details about the P. & P. in future issues of "The Motor Cycle."

PACKMAN & POPPE, Moor St., COVENTRY.

The PROGRAMME of the SUN COMPANY

will be as follows:

150 c.c. Single Speed	25 Guineas
150 c.c. „ „	29 „
250 c.c. with Vitesse Engine, 2-stroke, 2-speed, clutch and kick-start, Dunlops	£49 10 0
Ditto, the highly successful Rotary Valve model, so successful in the recent 6 days A.C.U.	£52 10 0
Light J.A.P. 2¾ h.p. belt-cum-chain Sturmey k/s and clutch, Dunlops	£58 0 0
Sun Blackburne, 350 c.c. with 3-speed, all chain, a real refined machine	£68 10 0

YOU WILL SEE THEM AT

OLYMPIA on Stand No. 100

(Centre Aisle, Addison Road Entrance).

Machines are delivered free of charge to you except the 150 c.c.

SEND YOUR ENQUIRIES TO

THE SUN CYCLE & FITTINGS CO., LTD.,

Established 1885. ASTON BROOK STREET, BIRMINGHAM.

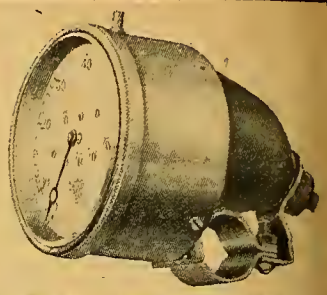
Do not fail to call and inspect the Smith Motor Cycle Accessories on Stand No. 266 at Olympia, November 25th to December 2nd, 1922.

All Smith Motor Cycle Accessories are fully guaranteed under a 48 Hour Service Scheme.

PRICE DOWN—SALES UP.

The reduction in price of the Smith Motor Cycle Speedometer has enabled many motor cyclists to fit this to their machines, who before were unable to on account of the price. For £4 10 the Smith Motor Cycle Speedometer is the cheapest instrument of its class on the market, and is supplied complete with front wheel drive for any machine.

PRICE COMPLETE WITH DRIVE - - **£4 10 0**



SMITH'S (M.A.) LTD., CRICKLEWOOD WORKS, LONDON - - N.W.2

London Showrooms - - 179 185, Great Portland Street, London, W.1

Smith's Motor Cycle Speedometer, complete with drive, £4 10. Extra for rear drive, 15/-.

Modernise your machine by fitting an

ALBION LIGHTWEIGHT COUNTERSHAFT GEAR

Three-Speed with Clutch and Kick Starter..	£12 0 0
Two-Speed with Clutch and Kick Starter ...	£9 0 0
Two-Speed Plain Box	£5 10 0

IMMEDIATE DELIVERY
From Stock.

ALBION ENGINEERING CO., LTD.,
Upper Highgate Street, BIRMINGHAM.

Know your Speed & Mileage!

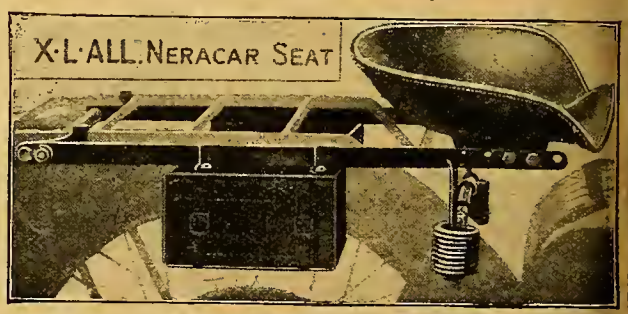
Model 42 *(as illustrated)*—Black finish. Nickel-plated bezel. Indicates speeds to 60 miles per hour. Total mileage counter to 10,000 and repeats. Quickly reset trip-counter.
Price £6 5 0 (or without trip model 40) **£5 15 0**
Back wheel drive for Triumph, **5s.** extra. Back wheel drive for Indian or Harley-Davidson, **10s.** extra.
Manufactured by
NORTH & SONS, Ltd., WATFORD, & 14, Soho Sq., London, W.1

NORTH'S BRITISH MADE **Watford**
SPEEDOMETERS for Motor Cycles.

SPEEDON MOTOR OILS

HIGH GRADE AND UNEXCELLED FOR CYCLES.

John S. Morris & Son (Oils), Ltd., Cross Lane Oil Works, Manchester



PROTECTED DESIGN.
Sole Makers:
JOHN LECKIE & CO., LIMITED,
(London Showrooms: 84, Fore St., E.C.2.)
WALSALL.

As shown, **70/-**.
Without Tool Bags, **60/-**.
Postage extra.

FLEECE-LINED GUARANTEED PERFECT.
Made for the American Army.

8/6
per pair, post paid.

Cost 25/- per pair to make.

Money refunded if dissatisfied.

BUY NOW & AVOID DISAPPOINTMENT.

S. J. & A. FELDBLUM, 75, Leadenhall St., E.C. 3.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable ____ & Co. to ILIFFE & SONS Ltd., and crossed ____ Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House Tudor Street, London, E.C.4. *Readers who reply to Box No advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt. The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, ½%. All deposit letters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., latest models produced by the Sopwith Aviation Co., Ltd.; new Standard model, £74; dynamo model, £88; only a few remaining.—Maudes', 100, Great Portland St., London. [7398

THE SIGN OF GOOD SERVICE

An Upheaval in the West.

The House of Godfrey's is in a state of Siege. Decorators are scaling our walls and clinging to our ceilings. Ladders and trestles cumber the floors of our showrooms, and our basement is thronged with (1922 model) refugees.

To sum up, we are preparing for the invasion of the 1923 models, and are in the mood to accept very low prices for our present end of season stock.

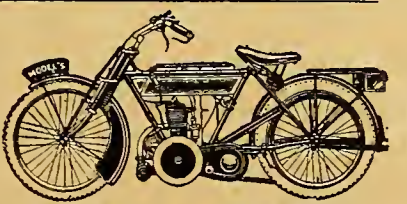
We give below three selected bargains available this week. For others, equally attractive, we refer you to our full list, which will be sent on request.

Or, better still, call and inspect the machines without delay—as at the greatly reduced prices we are prepared to accept, our stock will soon be cleared.

During **Godfrey's Upheaval Sale,** any visitor from the country may claim as a further reduction his travelling expenses to London.

1922 (Brand New) SHOP-SOILED MODELS

1922 3½ h.p. Scott-Squirrel. SALE PRICE £78



1922 2¾ h.p. Model S. Levis. SALE PRICE £48

Indian

1922 4 h.p. Indian Scout. SALE PRICE £96

With full Electric Equipment & Speedometer £113

For complete List of Bargains write for List.

GODFREY'S LTD.

208, Gt. Portland Street, LONDON, W.1

'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

1921 A.B.C. 3h.p., 4-speed, perfect condition, Lucas Magdyno; £60, or nearest.—Macmillan, Kings Langley. [7251

1920 A.B.C. November Sports, fully equipped, taxed, insured, just overhauled, perfect; £58.—155, Adelaide Rd., N.W.3. 'Phone: Hampstead 4460. [6942

A.B.C. 1921, Henderson De Luxe sidecar, Easting, Lucas headlight, good condition, tax paid; best offer over £65.—Box 4273, c/o *The Motor Cycle.* (D) [7460

A.B.C. 3½h.p., 2-speed, 1914 type, specially built for racing, but only ridden a few miles; equipped, licensed; any trial; £38; or exchange 2¾h.p. Douglas and cash.—Dowell, Pyrford, Surrey. [7453

A.B.C. 1921, Cowey, horn, lamps unused, nearly new tyres, spare tube (new) and case, perfect throughout, tools and spares, taxed; £50.—Bacon, 10, The Broadway, London Rd., Norbury, S.W.16. [6813

Spare Parts:

A.B.C. Spares, repairs, and special fittings. See advertisement index.—Jarvis and Sons, Ltd., Victoria Crescent, Wimbledon. [7480

Abingdon.

ABINGDON 3½h.p., variable gear, kick-starter, perfect; £15.—17, Heaton Rd., Mitcham. [7323

A.J.S.

2¾h.p., brand new, unpacked, A.J.S., B1; £74.—51, Upper Richmond Rd., Putney. [7532

1922 A.J.S. 2¾h.p., mileage negligible; £70.—Ratcliffe Bros., 200, Great Portland St., W. [7595

A.J.S. Motor Cycles on easy terms.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168. [7383

DAN GUY, Weymouth.—1922 7h.p. A.J.S. Combination, £175, in stock. Dorset trade supplied. [0817

A.J.S. 1914 6h.p. Combination, equipped, drive away; £40.—Mylam, 197, London Rd., Croydon. [6869

A.J.S. 5-6h.p. Combination, 1920, as new, spare wheels, lamps, windscreen; £95.—Flito, Wellington Rd., Watford. [6719

WAUCHOPE'S, 9, Shoe Lane, London.—1913 6h.p. A.J.S. Combination, 3 speeds, kick-start, and clutch; £45. [7384

A.J.S. 2¾h.p.-7h.p. Commercial Vehicles.—Write Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [2704

1920 A.J.S. Combination, spare wheel, hood, windscreen, condition as new; 76 guineas.—67, Fernlea Rd., Balham. [7542

1921 7h.p. A.J.S. Combination, beautifully equipped; any trial; £105.—24, Balliol Rd., North Kensington. [7029

1921 A.J.S. 2¾h.p. Standard Touring Model, condition perfect, Cowey, lamps and spares; £65.—Clapp, 3, Surbiton Hill Park, Surbiton. [6812

F.O.C.H. Invite inspection. A.J.S.'s and other makes far below any anticipated price reduction.—S, Heath St., Hampstead (near Tube). [3862

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

A.J.S. Combination (March, 1922), very fully equipped, licensed, insured, perfect condition, any trial; best offer.—Hawkins, Horsehay, Salop. [7181

A.J.S., late 1919 6h.p., spare wheel, screen, speedometer, lovely outfit; £85, or exchange good solo and cash.—Hillier, 9, Wallingford Av., North Kensington. [7127

1917 A.J.S. and Sidecar, lamps, etc., in first-class order; must sell; only £55, or near offer.—Edgar, 46, Cumming St., Pentonville Rd., King's Cross, N.1. [7277

SPECIAL Bargain.—One only new 1922 A.J.S. Model B.1, 2¾h.p., 3-speed, slightly showroom-soiled; reduced to £75; first cheque secures.—Premier Motor Co., Aston Rd., Birmingham. [6698

A.J.S. Combination, 1920, dynamo model, hood, screen, spare wheel, hardly used and absolutely as new; 95 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6554

A.J.S. 7h.p. Combination, fitted with Lucas accumulator lighting, speedometer, spare wheel and tyre, mileage 2,000, guaranteed as new; £125.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [7594

1920 A.J.S. Combination, electric lights, speedometer, insurance, fine condition; £95, deferred terms, with £24 down.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7351

A.J.S. 1922 2¾h.p. Touring, recently purchased, only done 30 miles, good as and looks like brand new, too fast for owner, licensed to end of year; £72/10.—Williams, Rivermede, Romsey, Hampshire. [6822

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 1921 7h.p. Combination, with Lucas battery lighting set, speedometer, etc., very small mileage; £120.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7417

£45.—A.J.S. 5h.p. Combination, mechanically sound, 2-speed, clutch and K.S., pillion, spares, hood, screen, smart; exchange equal value 2-seater car, Rover single or similar.—Box 4267, c/o *The Motor Cycle*. [7364

A.J.S. Combination, 1921, 7h.p., mileage 4,000, perfect in every way, speedometer, lamps, spare wheel, windscreen, sidescreen, hood, many extras; bargain, £100.—Readett, Hand Lane, Leigh, Lancs. [7095

A.J.S. 6h.p. Combination, Dec./20, hood, screen, spare wheel and 2 tyres, D.A. head light, electric side and tail lamps, 2 horns, tax paid; exceptional bargain, 85 guineas.—Box 4056, c/o *The Motor Cycle*. [5724

A.J.S. 1920 5-6h.p. Combination, Easting, and full equipment, lamps, etc., perfect condition; £80; cash, exchange, instalments.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.J.S. 7h.p. Combination, 1921, with hood, hood-cover, screen and side screen, spare wheel, 3 Lucas lamps, horn, all extras, licence paid, very carefully used, condition perfect; £120 or near offer.—Marston, 31, Bridge St., Chester. [7330

1922 2¾h.p. A.J.S., B1, Lucas, equipped regardless, appearance, condition perfect, tyres excellent, mileage under 3,000; two pistons, three sprockets, valve, spares; 70 m.p.h. timed; numerous awards; tax paid; as new; good reason; £73.—Elt, Nurseries, Stourbridge. [6999

A.J.S. 1922 7h.p. Combination, 2-seater sidecar, Lucas Magdyno lighting, speedometer, Klaxon, Binks touring carburetter, spare wheel, 5 tyres 700×80, splendid condition, new March, many spares, well-furnished tool kit, an outfit to be proud of, any reasonable trial and inspection invited, insurance and tax paid, owner purchasing car, cost £250; accept £180, lowest.—46, Gerrard St., London, W.1. [6877

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

1921 Alldays Allon, 2-speed, clutch, kick-starter, as new; 28 guineas.—67, Fernlea Rd., Balham. [7540

NEW 1922 Alldays 2¾h.p., 2-stroke, 3-speed, clutch, kick-start; £56 or nearest.—H. Rose, March, Cambs. [7159

1921 Allon 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £38.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [7605

1922 Alldays Allon 2-stroke, 3 speeds, clutch, kick-start, bought May, hardly used, perfect condition, accessories; sacrifice £48.—21, Strand, Southchurch, Southend. [6767

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

American X.

49 Guineas. — 1920 American X Combination, dynamo lighting, speedometer, etc.—40, Aynhoe Rd., W.14. [7134

TWO 1919 American X's, perfect condition, any examination, new tyres; £68 each.—Apply 118, Alma Rd., Aveone, Southampton. [7261

AMERICAN X, 7-9h.p., 3-speed, clutch and K.S., very fast, perfect; £38, a real snip.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [7575

ROBERTSON'S Motors, Ltd.—1921 American X with Henderson Elite sidecar, accessories, tax paid, in beautiful condition; £90.—157b, Gt. Portland St., W.1. [2349

PHOTOGRAPH Free.—1921 American X Combination luxurious sidecar, electric lighting, many extras; 89 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [7202

AMERICAN X Combination, new 5h.p. twin J.A.P., o.h.v. countershaft, 3 speeds, kick-start, electric light and horn, speedometer, limousine sporting sidecar, smartest outfit on road, mechanically perfect; £85 or near offer.—32, Park Rd., Ealey Rd., Wembley. [6956

Antoine.

ANTOINE 2¾h.p., Bosch, Amac, all accessories, perfect; £9.—Guinchard, 179, York Rd., Islington. [7183

Ariel.

ARIEL 1920 4h.p. Combination, fully equipped; £58.—185, Shernhall St., Walthamstow. [7005

SOUTHPORT.—1920 3½h.p. Ariel Combination, fully equipped; 59 guineas; exchanges.—Kents, 417, Lord St., Southport. [7046

ARIEL 3½h.p. Coachbuilt Combination, 3 speeds, clutch, kick-start, windscreen, Tan-Sad; £70; take Baby Triumph part.—Waterloo House, North Cheam. [6960

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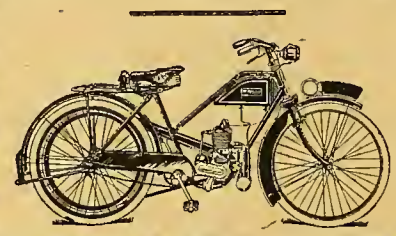
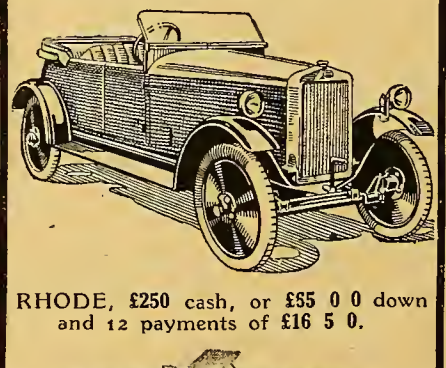


McKENZIE, 26 guineas cash, or £7 0 0 down and 12 payments of £1 17 0.



RHODE, £250 cash, or £55 0 0 down and 12 payments of £16 5 0.

ROVER "8" £180 cash, or £46 16 0 down and 12 payments of £11 14 0. De Luxe model £20 extra.

SECONDHAND MACHINES IN STOCK

1922	**I.O.M. RUDGE**, S/H.	£60 0
1922	s/s **O.K.**, electric lighting, clutch	£37 10
1921	2-speed **O.K.**, clutch	£39 10
1920	**AMERICAN EXCELSIOR**, comb. dyo.	£97 10
1922	**CONNAUGHT**, 2-speed, kick-starter	£45 0
1921	**TRIUMPH** and sidecar	£97 10
1922	**COVENTRY PREMIER**	£175 0
1921	**G.N.**	£135 0
1921	**ROYAL RUBY**	£52 10
1921	**ROYAL ENFIELD**, Mag. dyno.	£125 0
1922	**NEW HUDSON**, 4 h.p. comb., only soiled	£105 0
1915	**B.S.A.** and sidecar	£47 10
1914	**BRADBURY** and sidecar	£25 0
1920	**RUDGE**, 7-9 h.p., and sidecar	£79 0
1919	**TRIUMPH**, e.c.b. (Meade & Deakin s.c.)	£62 10
1915	**CALTHORPE**, J.A.P.	£24 10
1922	**O.K.** 2-speed	£27 10
1921	**OVERLAND**	£165 0
1920	**ENFIELD**	£89 10
1922	**A.J.S.** dyn., fully equipped, June model	£175 0
1916	**DOUGLAS**, W.D.	£29 10
1921	**ENFIELD**	£115 0
1921	**RUDGE**, 3½ h.p.	£55 0

LAMB'S Ltd

GT. PORTLAND STREET, LONDON, N.W (Opposite Station.) 'Phone: Museum 4978.

WOOD GREEN, LONDON, N., 50, High Road. 'Phone: Hornsey 1956.

WALTHAMSTOW, LONDON, N.E., 151, High Street. Phone: Walthamstow 169.

MOTOR CYCLES FOR SALE.

Ariel.

ARIEL 1920 3½h.p. Combination, countershaft, 3-speed, new condition; photograph; £52.—49, South Lambeth Rd., S.W.8. [7553

1920 3½h.p. Ariel Combination, lamps, Bonniksen, new tyres and belt, just overhauled by makers; £65.—Gardner, 5, Albany Rd., Coventry. [7322

AT Edwards'.—1920 6-7h.p. Ariel combination, lamps, horn, speedometer, screen, perfect order; 75 guineas.—101, Great Portland St., W.1. [6617

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

43 Guineas; exchange.—Ariel Countershaft Coach Combination, 3½h.p., 3 speeds, clutch, kick-start, electric lighting, Tan-Sad, Cameo, nice condition, any examination.—Seabridge 35, Hansler Rd., East Dulwich (Sydenham 2452). [6695

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents, and Spares Service Depot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0804

Bat.

£95.—1921 8h.p. Bat-Jap, makers' sidecar, sprung wheel, electric lighting, 4 detachable wheels, Cowey, Easting, tax paid; consider another machine part.—130, Norwood Rd., West Norwood, S.E.27. [7527

Beardmore.

3½h.p. Beardmore, spring frame, perfect; £38/10 bargain.—47, Leigh Rd., East Ham. [6983

Blackburne.

1920 8h.p. Blackburne Combination, spare wheel, fully equipped as new; 90 guineas.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [7083

4h.p. Blackburne, late 1920, all-chain, 28×3 tyres, £10 worth equipment, guaranteed perfect condition; £63.—Roberts, 18, Florence Rd., Maidstone. [7116

1920 4h.p. Blackburne, fitted Venus sidecar, good condition, owner driven since new; £70, or near; owner going abroad; no agents.—1, Lansdowne Avenue, Winchester. [7000

BLACKBURNE 4h.p. 1921 all-chain, Sturmey 3-speed, clutch, kick-start, aluminium number plates, fully equipped, lamps, speedometer, Binks special carrier, spare head and special cam for speed, tax paid, fine condition, cost over £150; sell £75.—Mason, The Kiosk, Grand Parade, Eastbourne. [6755

1922 Blackburne 8h.p. Combination, special sidecar, U.A.C., hood, screen, and side screens, luggage grid, spare wheel, all oversize tyres, lamps, dynamo generator, Tan-Sad, horn, tools, and tax paid, done about 500, guaranteed as new; 150 guineas; will ride 50 miles; given reason for selling.—F. Blaxley, Burton Latimer, Kettering. [6755

Spare Parts:

ALL Blackburne engine spares from stock; list on application; trade supplied.—Maudes', 100, Great Portland St., W.1. [7400

Bradbury.

1922 2¾h.p. Bradbury, new, 3 speeds, clutch, taxed complete; £55.—Sheldon, Wheatley, Oxford. [7255

BRADBURY 1914 4h.p. Combination, 2-speed, excellent condition; £25.—7, Exhibition Rd., S.W.7. [2300

£22.—1914 4h.p. Bradbury, 3-speed (Sturmey) clutch, K.S., new condition.—King, Egrove, Ilford. [7055

BRADBURY 2¾h.p., 1922, tax paid, 2-speed, clutch and kick-starter; £55.—Wauchope's, 9, Shoe Lane, London. [7300

SOUTHPORT.—1921 Bradbury Combination, 2 chain, 3-speed, kick-starter; 49 guineas; exchanges.—Kents, 417, Lord St., Southport. [7046

17 Guineas.—4h.p. Bradbury, overhauled, rebushed new Philipson, lamps, perfect, fast, East Grinstead district.—Box 4254, c/o *The Motor Cycle*. [6800

1922 Bradbury 4h.p., 3-speed, clutch, kick-start, licensed year, fully equipped, indistinguishable from new; 70 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2200

Brough.

3½h.p. Brough o.h.v., 3-speed, countershaft, fully equipped, fast, perfect, cheap; Lightweight part.—27, Wandle Rd., Wandsworth Common, S.W.18. [7200

1921 3½h.p. Brough, condition perfect, lamps, Cowey, close ratios, K.S., low mileage, a trial, cost £140; nearest £70.—174, Oakbrook Rd., Sheffield. [6800

Brough Superior.

BROUGH SUPERIOR, 1922, Mark 2, 6h.p. M.A.C. combination, Bonniksen, Easting, fully equipped, tax paid; £110.—K.J. Motors, Bromley, Kent. [7000

1922 Super Sports Brough Superior Combination, very elaborate, and absolutely as new, speedometer, electric lighting, cost recently £208, sacrifice £155.—51, Upper Richmond Rd., East Putney. [7500

b23 **All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue**

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

1920 Douglas Combination, 4h.p., hood, Easting Royal, speedometer, lamps, 1922 oiling system, splendid condition; £80, or offers.—D., 56, Duke's Avenue, Chiswick, W.4. [7002

1918 Douglas Combination, recently overhauled and enamelled, new 2-seater body, upholstered and painted, splendid turn-out, carry 4, tax paid; £60.—Sand, Longcross, Chertsey, Surrey. [6978

1921 2¾h.p. Douglas, 3-speed, clutch, kick-start, Cowey horn and speedometer, tax paid, only used during school vacations; £55 or nearest.—Burton, Broadway, Mill Hill, N.W.7. [7212

PHOTOGRAPH Free.—1920 Douglas, 2¾h.p., 2-speed, 34 guineas; ditto, 1916, 26 guineas; ditto, 1914, 24 guineas; all guaranteed; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [7201

DOUGLAS 2¾h.p., absolutely brand new throughout (not reconditioned or renovated), carrying guarantee, same as maker's; sacrifice £35; willing send on approval against cash.—20, Romola Rd., Norne Hill, S.E. [7346

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill [0786

6h.p. Douglas Combination, makers' blue, looks new and goes like new, grand order, guaranteed, £65; other nearly as good, £60. Both are quite exceptional bargains; cash or deferred.—Marlborough Motor House), 20, Finchley Rd., N.W.8. [6559

DOUGLAS 4h.p. 1917, 3 speeds, clutch, Amac, good tyres, fast, powerful, nice condition, comfortable inch sidecar, windscreen guaranteed perfect, all accessories, trial any time; bargain, £45.—Stepney Garages, 3, Salmon Lane, Commercial Rd., Stepney. 'Phone: East 4542. [7300

DOUGLAS new 2¾h.p. 1922 2-speed models, fully equipped, £68; 2¾h.p. 3-speed clutch and kick-start model, all on, £82; 4h.p., all on, £110; 4h.p. combination, all on, £135; 3½h.p. sports model, £115; 4h.p. combination, all on, £165; your old machine taken in exchange and treated as payment down, the remainder in twelve equal monthly payments or more. Wauchope's, 9, Shoe Lane, London. Second-hand Douglas machines at bargain prices. [7390

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Douglas specialists. Complete illustrated lists of 2¾h.p. or 4h.p. parts, 6d. each. The same supplied. [6516

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Eddis Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927

Dunelt.

DUNELT Combination, 1922, complete, interchangeable 3in. and spare wheels, Easting, Lucas lamps, speedometer, horn, tax paid; £90.—King, 125, Upper Rd., Leicester. [6748

Economic.

27.—1922 Economic, slightly shop-soiled only; reduced to clear; a bargain.—South-Eastern Garage, Herne Hill, S.E.24. [7215

ECONOMIC 2-stroke Twin, friction drive, new May last, 6 speeds, mileage 100; £28/10; want Baby Triumph.—Waterloo House, North Cheam. [6962

1934.—Economic, 6-speed, clutch, vibrationless twin 9 motor cycles, heavy tyres, Druid forks, for ladies & gentlemen; see it climb Muswell Hill!—North London agents; Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor Cycles, £34; immediate delivery 2½b.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Dunman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Enfield.

4h.p. Enfield and Sidecar; 39 guineas.—Bevis, 33, Granfield St., High St., Battersea, S.W.1. [7136

ENFIELD 1921 2-stroke, 2-speed, as new, taxed; £36.—Mylam, 197, London Rd., Croydon. [6871

1921 Enfield Lightweight, 2-speed, unscratched; must realise 28 guineas.—67, Fernlea Rd., Balham. [7539

1922 Enfield Combination, delivered June, all on; what offers?—Box 4284, c/o *The Motor Cycle*. [7606

MAUDES' BARGAINS

We can offer shop-soiled and second-hand machines at reduced prices. Our stock is always ready for inspection and trial runs given without obligation.

All machines guaranteed in sound running order.

FULL LIST SENT ON APPLICATION.

SECOND-HAND MACHINES.

SOLO.

DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£38
OLYMPIC, 1919, 2½ h.p., 2-sp., cl., K.S.	£26
RUDGE, 1911, 3½ h.p., tax paid	£25
RUDGE, 1921, 3½ h.p., I.O.M. model, as new	£48
TRIUMPH, 1919, 4 h.p., single-sp.	£42
TRIUMPH, 1919, 4 h.p., 3-sp., cl., K.S., tax paid	£58
ZENITH, 1920 J.A.P., Sports model, as new	£80
CALTHORPE, J.A.P., 1921, 2¾ h.p., 2-sp.	£28
DIAMOND, 1920, 2¾ h.p., 2-sp.	£29
ZENITH, 1920, 8 h.p., clutch model	£64
A.B.C., 1920, 3 h.p., dyno ltg.	£55
INDIAN SCOUT, 1921, 4 h.p., dyno ltg.	£86
ENFIELD, 3 h.p., 2-sp., cl., K.S.	£28
A.B.C., 1921, 3 h.p., tax paid	£60
COULSON B., 4 h.p., Phillipson pulley	£42
NEW HUDSON, 2½ h.p., 2-sp., tax paid	£28
P. & M., W.D., 3½ h.p., R.A.F. model, good cond.	£55

COMBINATIONS.

COULSON B., 1921, 4 h.p., Sports, sidecar	£88
DOUGLAS, 1922, 6 h.p., single-seater sidecar	£130
HARLEY-DAVIDSON, W.D., 7-9 h.p., Montgomery sidecar	£75
L.M.C., 1920, 5-6 h.p., twin, with sidecar	£70
MATCHLESS, 1922, 8 h.p., M.A.G., dyno ltg., single-seater sidecar	£140
MATCHLESS, 1921, M.A.G., dyno ltg., 2-seater s/c.	£156
INDIAN, 1921, 4 h.p., Montgomery sidecar	£110
VERUS, 1920, 4 h.p., Dinkie Sports sidecar	£75
TRIUMPH, 1922, 4 h.p., Mills Fulford skiff sidecar	£112
B.S.A., 1919, 4½ h.p., with sidecar	£53
TRIUMPH, 1920, 4 h.p., Gloria sidecar	£80
BROUGH, 1920, 5 h.p., Brough sidecar	£70
A.J.S., 1913, 5-6 h.p., coachbuilt sidecar	£50
N.U.T., 1921, 3½ h.p., magdyno ltg., Watsonian sc.	£100
P. & M., 1917, 3½ h.p., Whitley sidecar	£50

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100, GREAT PORTLAND STREET
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108, PRINCE OF WALES RD, NORWICH

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MOTOR CYCLES FOR SALE.

Enfield.

1919 Enfield Combination, Easting windscreen; bargain, £62.—Harrington, 21, Brent St., Hendon. [6746

BRAND New Dynamo Enfield Combination, used few times; £100—24, Balliol Rd., North Kensington. [7030

ENFIELD 1916 3h.p. Twin, fully equipped, smart machine; real good condition; £30.—5, Old Square, Warwick. [6827

ROYAL ENFIELD Combination, 5-6h.p. perfect outfit; £48.—Norfolk, Dorset Mews, Dorset Rd., Clapham, S.W. [7557

1922 Enfield Combination, Magdyno, hood, screen, Cowey, Tan-Sad, insured, two months old; £115.—12, York Rd., Peckham. [7192

ENFIELD 1922 8h.p. Combination, slightly shop-soiled only; bargain, £120.—P. J. Evans, John Bright St., Birmingham. [6907

£65.—Late 1919 Enfield Combination, 8h.p. J.A.P., Tan-Sad, speedometer, windscreen, excellent condition.—9, Clifton Rd., Finchley, N.3. [6938

ENFIELD Combination 6h.p. 1916, fully equipped, excellent condition, small mileage; evenings; £65.—16, Beverley Rd., New Malden. [7080

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [5600

8h.p. Enfield Combination, Magdyno lighting, Sept., 1921, screen, side curtains, pillion, speedometer; £140.—Apply A. Mills, Gulson Rd., Coventry. [6705

1922 Enfield 2¼h.p., 2-speed, taxed, perfect, new condition, only done little mileage, photo; £36.—Brooker, Mill House, Salters Rd., Kings Lynn. [7083

1921 Enfield Combination, double sidecar, 2 screens, Tan-Sad, hood, Magdyno, speedometer, perfect condition; £120.—Davis, 184, Union St., Torquay. [7585

ENFIELD 2-stroke 2-speed, as new, unscratched, 500 miles, lamps, accessories, licensed, legshields, insurance, perfect; 32 guineas.—79, Castleton Mansions, Barnes. [7281

1922 8h.p. Royal Enfield Combination, brand new, list £140; accept £114. Also new 1921 model; £104.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [7342

1921 Enfield, 2-stroke, kick-start, 2-speeds, tax paid until May, 1923, fully equipped and insured, splendid condition; £35.—Barnes, 152, Coldharbour Lane, S.E. [6791

1922 brand new 8h.p. Enfield Combination, shop-soiled only, list price £140, sell £115; also 2¼h.p., list £55, sell £43; maker's full guarantee.—Fox, Central Garage, Lichfield. [6288

1922 8h.p. Enfield Combination, indistinguishable from new, very slightly used, complete with accessories and tax paid; £120; a bargain.—Willoughby, Merstham, Surrey. [7199

1914 6h.p. Enfield Combination, in good condition, windscreen, lamps and tools, all on, licence paid up to December; £85.—Pixton Lodge, Pixton Park, Dulverton, Somerset. [6808

WAUCHOPE'S, 9, Shoe Lane, London.—8h.p. 1918 Royal Enfield Combination, all accessories, speedometer, £85; 8h.p. 1916 Enfield Combination, all accessories, tax paid, £75; easy terms arranged. [7392

1922 Enfield-Vickers Combination, Magdyno, speedometer, hood cover, windscreen, Terry spring saddle, as new, unscratched, including new suit overalls, tax paid; £128.—Pryce, 227, Vicarage Rd., Leyton, E.10. [7172

1921 Enfield Combination, 8h.p. Vickers engine, Lucas dynamo lighting, hood, screen, complete with side panels, speedometer, in absolutely new condition, guaranteed perfect; £115.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7217

WAUCHOPE'S, 9, Shoe Lane, London.—2¼h.p. Royal Enfield, 2-stroke, 2-speed, sporting model, £55; with kick-starter, £57; your old machine taken in exchange and treated as first payment down, remainder in 12 equal monthly payments or more. [7391

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Enfield engine parts in stock; no waiting. [6517

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SOUTHPORT.—1920 Excelsior 2¾h.p., Villiers, Sturmey, 2-speed, kick-starter, good machine; 27 guineas; exchanges.—Keats, 417, Lord St., Southport. [7050

EXCELSIOR 5-6h.p. 2-seater Combination, completely overhauled, perfect condition, fully equipped, licensed, spares, any trial, ride 50 miles.—Moore, 85, South St., Taunton, Somerset. [7163

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3½h.p Fafnir, m.o.v., enclosed Bosch magneto, Druid forks; £6.—P. Willcocks, Datchet, Bucks. [7175

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1922 F.N. 2½h.p., shaft drive, 2-speed, clutch, kick-start; £42.—Bartletts, 93, Gt. Portland St. [7482

F.N. 2½h.p. Lightweight, 2 speeds, shaft drive, splendid condition: £15; take push bike part.—406, York Rd., Wandsworth. [7309

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F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langlord's, 37, Cricklewood Broadway, London, N.W.2. [1353

Harley-Davidson.

HARLEY Combination, fine condition, electric light; £66.—10, Briscoe Rd., Merton, S.W. [7327

£35.—1919 7-9h.p. Harley-Davidson, Sports, slightly damaged crank case.—King, Egrove, Oxford. [7060

1919 Harley-Davidson 7-9h.p. Sporting Combination, electric lights, fine lot; £70.—Bartletts, 93, Gt. Portland St., W. [7486

4h.p. Flat Twin Harley Combination, perfect, screen, Tan-Sad, any trial; best offer over £80.—Cornell, Jeweller, Cobham, Surrey. [6711

HARLEY Combination, 1918, sporting sidecar, perfect condition, fully equipped, taxed, insured, any trial; nearest £80.—55, Rhodesia Rd., Leytonstone. [6840

7-9h.p. Harley Combination, mileage 1,500, ridden 3 months, fully equipped, disc wheels, tax and insurance paid as new; £120.—49, Howards Lane, Putney. [6799

HARLEY-DAVIDSON 1922 brand new Combination, slightly shop-soiled, last one left; £145 or near offer.—Longman Bros., 17, Bond St., Ealing 'Phone: Ealing 589. [7512

HARLEY-DAVIDSON 1920 4h.p. Solo, fully equipped, excellent condition, tax paid; great bargain 50 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [7611

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [8943

HARLEY-DAVIDSON Combination, as new; compulsory sale; this combination will be sold on the premises by auction at 3 o'clock to-morrow, Friday.—"The Paddock," Greville Place, Maida Vale. [6896

1921 Harley-Davidson Combination, electric model, excellent condition, Coupette sidecar; £110, or £27/10 down and 12 monthly payments of £7/9/7.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [7348

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1920 Harley Combination, 4h.p., flat twin, 3 speeds, clutch and kick-starter, all-chain drive, rear-driven speedometer, all lamps, horn, etc., tax paid, absolutely as new; £75.—Homac's, 243, Lower Clapton Rd., N.E.. 'Phone: Dalston 2408. [7218

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Hawker.

1922 Hawker 2-stroke, ridden about 300 miles, 2-speed; £40.—18, Ranelagh Av., Barnes. [6949

1922 Hawker 2¾h.p., 2-speed, fully equipped, tax year, Tan-Sad, indistinguishable from new; 38 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [7519

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HOBART 1921 2¼h.p., 2-speed, excellent condition; bargain, £25.—P. J. Evans, John Bright St., Birmingham. [691

1921 Hobart-Villiers, brand new, shop-soiled £39/10.—Shepherd, Enfield Highway. Tel. Waltham Cross 31. [092

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£14/10.—Humber 3½h.p., 2-speed, fine machine. Speechley, 86, Churchfield Rd., Acton, W.3. [688

HUMBER 3½h.p. Combination, fitted head lamp horn, in good order; £30.—The Morris Garage Oxford. [743

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HUMBER 3½h.p., 3-speed, clutch, K.S., fine condition, all on; £37; lightweight considered.—108 Croydon Rd., Anerley, S.E. [69

HUMBER 6h.p. Water-cooled Combination, will be equipped, a grand turnout; £70. Allow us to demonstrate its capabilities.—Bunting's Exchange Wealdstone. [74

HUMBER 4½h.p. Sports, February, 1922, very fast condition as new, tyres unpunctured, done 3 miles; £75, or offers; cost £100.—Payne, 10, Thurl Rd., West Norwood, S.E. [73

HUMBER Combination 1921 4½h.p., competition engine, electric lighting, accessories, perfect order condition new, any trial; what offers?—Hamill Garage, Highbury Barn, N. North 2994. [69

19 Guineas, Bargain, Exchanges.—Humber 19 3½h.p., 2 speeds, starter, dropped back frame Druid forks, coach sidecar, lamps, good appearance any examination, trial.—Seabridge, 35, Hansler Rd East Dulwich. 'Phone: Sydenham 2452. [46

Indian.

SALE, Indian, sidecar, spring.—27, Vernon Rd Luton. [72

1919 Indian Combination, perfect, complete; £ —65, Kellett Rd., Brixton. [65

INDIAN, 1922, Scout, like new, taxed; 68 guineas R. B. Clark and Co., 7, Exhibition Rd., S.W. [3

INDIAN Scout, 1920, sold this year by Indian must sell; offers.—4, Hanover St., London, [71

£34.—Indian 3½h.p. Twin, 3-speed, clutch, kick-st good condition.—11, Shobnall Rd., Burton-Trent. [6

INDIAN 7-9h.p. Powerplus Combination, a splen outfit; £60.—Bunting's Motor Exchange, Wea stone. [74

INDIAN, 1921, Scout, original tyres, perfect, paid; £58.—A., 30, Thornsett Rd., Earlsfi London, S.W. [7

INDIAN Powerplus, Magdyno, electric lamps, ho etc., new tyres; £47/10.—Norfolk, Dorset Me Dorset Rd., Clapham, S.W. [7

SOUTH African Sports Indian 1919, special eng and frame, 80 m.p.h., lamps, speedometer; £ —Hamlyn, Martham, Norfolk. [6

INDIAN Powerplus 1919, excellent condition; p for immediate cash, £45.—Baxter, 1, Hove side Villas, Portslade, Brighton. [6

A T Edwards.—1922 Indian Scout, Lucas equipm spring seat pillar, demonstration model, re licence; 78 guineas.—101, Gt. Portland St., W.1 [7

7-9h.p. Sporting Dynamo Indian Combination, speeds, clutch and right-hand, kick-start; £ 59, Palfrey Place, Dorset Rd., Clapham Rd., S.W [6

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NEW IMPERIAL, 2½h.p., 1915, 2-speed, good condition, any trial, fast and sporty; £29.—Playfoot, Pellington Arms, Hawkhurst. [6793

NEW IMPERIAL, brand new, super-sports, 3-speed and clutch; £55.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., London. Padd. 1177. [7603

3½h.p. New Imperial, late 1921, 3-speed, clutch, kick-start, electric lighting, perfect condition, used very little; bargain, £55.—204, Fulham Palace Rd. [7308

1922 New Imperial, Brand new 2¾h.p. (all-chain), makers' guarantee, list £73; to clear, £59/10.—101, King St., Hammersmith. 'Phone: Hammersmith 37. [7285

£5 Guineas.—1919 8h.p. New Imperial-Jap combination, tax paid, speedometer, all-chain drive; trial.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [7085

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NORTON 3½h.p., 16H, 1922 models. End of season bargains.

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NORTON 1922 3½h.p., Model 16H, shop-soiled; list price £115; our price £95.

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1922 Standard Norton, brand new; list price £80; accept £63.—12, Conduit St., Lichfield. [7608

NORTON 16H, 1922, fully equipped; £82/10.—Ratcliffe Bros., 200, Great Portland St., W. [7599

£20.—1914 3½h.p. Norton, 3-speed (Sturmey), clutch, K.S., slightly incomplete.—King, Egrove, Oxford. [7061

HALIFAX.—Norton 1922 models, special exchange allowances to clear.—Halifax Motor Exchange, Horton St., Halifax. [7440

NORTON 1915 Big Four Combination, 3-speed, countershaft; £65; trial.—Gutteridge, Jeweller, Market Harborough. [6772

NORTON 3½h.p. 16H, 3-speed, absolutely new 1922 model, list price £115; will accept £86.—Marston, 2 Bridge St., Chester. [7336

1922 3½h.p. Norton, model 16H, brand new, list £115; accept £88.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [7340

BIG Four Norton Combination, 1922, countershaft, kick-start, equipped, taxed; £98.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [5011

NORTON 16H 1922, Lucas lamps, Bonniksen, mechanical oiling, licensed and insured end of year; £85.—Seen 114, Brixton Hill, S.W.2. [6847

1922 16H Norton, countershaft, Brooklands special racer, kick-start, taxed, as new; £115.—Walker, 76, Romford Rd., Manor Park, London, E.12. [5008

1922 Norton Combination, with special 1921 engine, condition like new, fully equipped, tax pd; £85.—Cope, 15, Upper Hagley Rd., Birmingham. [7077

1922 Norton 16H, brand new, makers' guarantee, oversize tyres; cash £95, or exchange.—391, King St., Hammersmith. 'Phone: Hammersmith 247. [7284

1922 Big Four Norton and De Luxe sidecar, Lucas Magdyno lighting, 700x80 tyres, legshields, Clyer, Klaxon and speedometer, machine in very good condition, mileage about 3,500; owner leaving England; price £120.—Coates, Moore Hall, Wotton-under-Edge, Gloucestershire. [6817

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£20.—2¾h.p. N.S.U. Wolf, 2-speed, perfect order; real bargain.—115, Wyggeston St., Burton-on-Trent. [7038

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1922 N.U.T. 3½h.p., new condition, Lucas lighting set, speedometer, licensed and insured; price £80.—Apply Carr, at 177, Great Portland St. 'Phone: Langham 1542. [6758

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O.K., 1920 2¾h.p., licensed, perfect; 27 guineas, or near.—Land's, Chemists, Rushden. [7035

O.K. 2¼h.p., new May, 1922, perfect, all on; £30.—220, Links Rd., Tooting, S.W.17. [6795

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1922 Omega 5-6h.p., 3-speed, chain drive, new; to clear, £98.

1922 Omega 3h.p., fixed gear; to clear, £34/10.

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OMEGA, Model 2B, shop-soiled only; at special price of £58/10.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [7591

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£15.—3½h.p. P. and M., 2-speed, clutch, good running order.—King, Egrove Farm, Oxford. [7062

P. and M., complete, in parts, 1917, 2-speed, K.S.; £20.—1, Springfield Park Cres., Catford, S.E.6. [7154

P. and M., October, 1920, equipped, taxed and insured, any trial; £59.—Falkingbridge, 5, Symons St., S.W.3. [6958

1920 P. and M. Combination, fully equipped, tax, insurance paid; £75.—Can be seen, Maude's, 100, Great Portland St., London. [6816

1918 P. and M., 1921 Amac, good tyres, good machine all round; £30.—Fardell, 274, Burdett Rd., E.14. 'Phone: 126 East. [7042

P. and M. 1918 Combination, overhauled recently, re-enamelled, accessories and £5 spares; lot £47/10.—Spink, 52, Brodrick Rd., Wandsworth Common. [6769

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P. and M. 1918 Combination, 2-speed, kick-starter, 1922 gears and B. and B. carburetter, lamps, horn, licence paid, trial by appointment; £45 or offer.—Flint Bungalow, Croydon Rd., Warlingham. [5861

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3½h.p. Premier Combination, Grade gear; bargain, £20.—Fisher, Springwell Rd., Heston, Hounslow. [7295

PREMIER Combination, 3½h.p., 3-speed, countershaft, splendid order; 38 guineas; lightweight part.—57 Kenbury St., Camberwell, London. [7313

Spare Parts:

PREMIER.—All parts in stock; by return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. —[7152

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PRIORY-J.A.P., brand new; £48.—Clark, 7, Exhibition Rd., S.W.7. [2305

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SUNBEAM Semi-Sports, absolutely new, slightly shop-soiled; £100; must be sold.—Marston, 31, Bridge St., Chester. [7337

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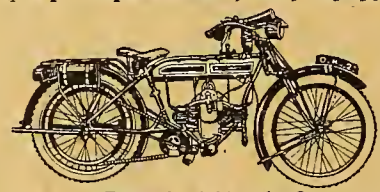

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SUN-VITESSE, Sturmey-Archer 1922 model, 2-speed, clutch and k.-s., original Olympia Show model, shop-soiled only - - **£52 10s.**

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Sunbeam.

SUNBEAM Sports 1921 3½h.p., magnificent m chine; offer.—The Morris Garages, Oxford. [74

1920 3½h.p. Sunbeam, in perfect condition, be tifully equipped with best Cowey and Lu accessories; 6,000 miles; 85 guineas, or near off Seen by appointment.—Box 4220, c/o *The Mo Cycle*. [67

1920 Sunbeam 3½h.p., and brand new Sucbe Sandum sidecar and screen, interchangea wheels, full equipment, original tyres, exceptio condition; gift, £90.—391, King St., Hammersmi 'Phone: Hammersmith 2837. [72

3½h.p. Sunbeam Touring Outfit, new February, 19 leaf-spring fork, interchangeable wheels, Ove good 3in. tyres, Easting Royal, legshields, 3 lam speedometer, etc., tax December, mechanically perf going abroad; £100.—110, Denmark St., Bedford. [6

EXCEPTIONAL Bargain.—Sunbeam 1922 4½h and Watsonian sidecar, Dunlops, Easting scre Klaxon, tax paid, only done about 300 miles, ab lutely like new; £119/10; just cost £172; inspect invited.—Wilkins, Simpson, opposite Olympia, Lond [72

1921 8h.p. J.A.P. Engined Sunbeam Combinati Lucas Magdyno lighting, electric horn, speedome Tan-Sad, back rest, legshields, hood, luggage grid, sp wheel, all tools, 2 waterproof covers, tax paid Decem insured March 1923, beautifully kept; nearest £15 Taylor, Bull Inn, East Sheen, Surrey. [7

1922 4½h.p. Sunbeam Combination, leaf sprit interchangeable wheels, Lucas Magdyno lig ing set, electric horn, spare wheel, luggage grid, shields, apron, Easting windscreen, Bonniksen, condition, tax and insurance paid; best over £14 Arntz, 8, Byward St., E.C.3. Central 7520. [7

SUNBEAM 1919 8h.p. Combination, Sunbeam s car, spare wheel, Lucas lamps and horn, separ generators, Easting, Cowey speedometer and mir Dunlops Extra Heavy, Bowden extra air, perfect dition throughout; thoroughly overhauled and all w parts replaced; £115; buying car.—Beckwith, field, Walton Rd., Altrincham. [6

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HERBERT ROBINSON, Ltd., Green St., C bridge.—All Sunbeam parts in stock. No wait [6

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TRIPLE-H, the latest lightweight, illustr October 12th, "The Motor Cycle." Why chase a second-hand mount when a 1923 Triple costs from 33 guineas only? Demonstration pleasure. Instalments. — Full particulars, Me Motors, Dorking. [7

Triumph.

PREMIER Motor Co. for Triumph Bargains.

SPECIAL Clearance Offer of New 1922 Type all-chain drive Triumph 4 h.p., 3-speed; price £115, reduced to £90; unbeatable value, ca maker's full guarantee; deferred payments 4% ex exchanges arranged; carriage paid to any addr supplied from stock with standard touring or T.T. handle-bars, solo or sidecar gear ratios.—Pre Motor Co., Aston Rd., Birmingham. (Triumph ag since 1906.) [7

4h.p. Countershaft Triumph, complete, and tax p £46.—Cross, Agent, Rotherham. [7

TRIUMPH 3½h.p. 1913 Sports Model, clutch, fect; £17.—17, Heaton Rd., Mitcham. [7

MODEL H Triumph, brand new but shop-soi £94/10.—Cross, Effingham Sq., Rotherham. [7

AUGUST, 1920, Triumph, fully equipped, condi as new; £70.—Grundy, Harlaxton, Grantham [7

TRIUMPH 1921 4h.p., chain drive, practically scratched; £100.—The Morris Garages, Oxfo [7

£18/10.—Triumph, splendid order throughou Speechley, 86, Churchfield Rd., Acton, [6

1921 Triumph Combination, chain-drive, like n £68, no offers; after 6.—79, Friern Rd., wich. [7

TRIUMPH 3½h.p. Single, taxed, perfect; £28; of exchange lightweight.—David, Chalford, Glouce shire. [7

TRIUMPH 3½h.p., Philipson pulley, running or £17.—A. Smith, 5, Pattison Rd., Child's N.W.2. [7

1919 Second-hand 4h.p. Triumph Combinat £72/10.—Ratcliffe Bros., 200, Great Port St., W. [7

TRIUMPH, Type H, shop-soiled; at the special of £94/10.—Ratcliffe Bros., 200, Gt. Port St., W.1. [7

TRIUMPH 1918 4h.p. countershaft, general c tion and appearance as new; £45.—1, P Rd., Kew. [7

3½h.p. Triumph 1912, 2-speed, kick-start, la speedometer, perfect; £23.—11, Vorley Highgate. [7

1918 Triumph Combination, latest gear change, ceptional condition; £58.—Buckwell, 6, Par Mead, Croydon. [7

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RIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High , Lee, S.E. [3245

RIUMPH Combination, 1918-19, new sidecar, bulbous, tyres, belt, all on, trial; £65.—11, King's , Edgware. [6717

100.—4h.p. 1921 Triumph-Gloria combination, accessories, etc., tax paid.—Drummond, 7, Sydney ve, Hendon. [7590

46.—4h.p. Countershaft Triumph, fully equipped, discs, Tan-Sad, fast and sporty; snip.—104, Al- Rd., Croydon. [7041

RIUMPH 1918 (November), countershaft, licence, accessories, new condition; £50, bargain.—63, n Rd., Brixton. [7148

)18 Countershaft Triumph, as new, £45; ditto, 1919, £50; ditto, 1921, £62/10.—24, Balliol , North Kensington. [7027

AUCHOPE'S, 9, Shoe Lane, London.—4h.p. 1914 3-speed Triumph and sidecar, kick-starter, and ch; £45; easy terms. [7375

ALIFAX.—Triumph 1922 models. Special exchange allowances to clear.—Halifax Motor Exnge, Horton St., Halifax. [7441

)22 4h.p. Triumph, type H, brand new, list £105; accept £88.—J. Hebden and Sons, 71, Scotland Nelson, Lancs. Tel.: 91. [7341

RIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark Co., 7, Exhibition Rd., S.W.7. [3589

IUMPH Montgomery, 1920, Easting, all lamps, in splendid condition; £65.—M. Hillier, 216, obello Rd., North Kensington. [6100

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OBERTSON'S Motors, Ltd.—1922 chain drive Triumph combination, tax paid, all accessories; 5.—157b, Gt. Portland St., W.1. [5933

)21 Triumph Chain-driven Combination, fully equipped, and perfect condition, tax paid; /10.—Kays, 8, Bond St., Ealing. [6953

IUMPH 1922 Junior, 2-speed, Lucas, accessories, mirror, taxed, insured, cost nearly £80; accept —4, Gaywood Rd., Walthamstow. [6858

TE 1921 Triumph, model H, as new, mileage negligible, spare plated exhaust, tax paid; £85.— Bigland Scar, Cark in Cartmel. [6712

)20 Triumph Combination, fully equipped, guaranteed; £60; deferred terms.—Goad, 122, la Vale. 'Phone: Hampstead 1353. [7350

IUMPH 4h.p., 3-speed countershaft, 1916, reenamelled and overhauled; £38.—Marble Arch or Exchange, 135, Edgware Rd., W.2. [7574

IUMPH-GLORIA S.D. Combination, £139/10; Model H, £94/10; also several second-hand; cash change.—Bunting's Motors, Wealdstone. [7468

OYDON Agents Triumphs, all new models and large range of second-hand in stock.—Moore's o Motor Works, North End, Croydon. 0864

IUMPH, clutch, Grado, engine overhauled, countershaft tank with new fittings, perfect running order; or near.—21, Keston Rd., Peckham, S.E.15. [6732

20 Triumph Combination, fully equipped, licensed, insured, condition perfect, any trial; 77 guineas, —Hodgson, 7, High Holborn, Sedgley, Dudley. [6715

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UMPH Combination, late 1918, tyres new, equipped, good condition, tax, fully insured; £55. 1 Roslyn Av., Kenbury St., Camberwell, S.E.5. [7566

UMPH, Model H, brand new and unused, listed t £105; our price, £95; exchanges or deferred. Ebsrds, 50, Harrington Rd., South Kensington. [4533

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UMPH 1920, bought 1921, Type H, and Millford sidecar, speedometer, Brooks seat, excellent on ion; £80.—Mylam, 197, London Rd., Croyor, [6872

30 Triumph Combination, aluminium discs, leg- shields, Cameo, petrol carrier, Lucas lamps, ne mileage, as new; £75.—54, Steele Rd., Leyton- o. [6981

RGAIN.—1918 4h.p. countershaft Triumph, all accessories, new rear Dunlop, perfect condition rughout, tax paid; £55.—1, Norwood Rd., Herne ill, S.E.24. [7213

18 Countershaft Trinmph, recent £50 overhaul, practically everything new, oversize punctureroof tyres, Klaxon, F.E.S. head lamp, 1922 clutch, te accessories, indistinguishable from new, mechaniall perfect, insured; best offer over £68 secures, barain.—40, Wrottesley Rd., Plumstead, S.E. [6848

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(Fig. 1)

Fig. 1

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SUIT Complete, with overall leggings - - 35/-
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JACKET only - - - - 25/-

When ordering by post, state Chest measurement over ordinary Jacket, and height, and enclose remittance.

WATERPROOF TRENCH COAT

(Fig. 2)

Fig. 2

Fawn material, rubber lined; double-breasted, with all-round belt and buckle, wind cuffs in sleeves. Medium weight. An ideal coat for riding, walking, and all purposes where a rain-resisting covering is required. Guaranteed waterproof.

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COAT Complete - **25/-**

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TRENCH COATS in heavier and superior materials are priced in our list.

SEATLESS TROUSERS

(Fig. 3)

Fig. 3

Waterproof Fawn double texture material, rubber interlined, apron front, with wind and mud gussets, patent clasp fasteners, leather straps and buckles to fasten round boot. Perfectly waterproof. All sizes. **18/-** per pair.

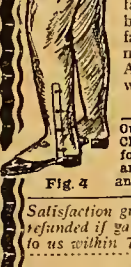
Fig. 4

When ordering by post, state height & enclose remittance.

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TRIUMPH Countershaft Combination, 1918, accessories splendid working order, exceptionally powerful engine, any trial; £55.—406, York Rd., Wandsworth. [7310

53 Guineas.—Triumph Combination, Sunbeam sidecar, fully equipped, licensed, any trial or examination, taxed; exchanges; evenings.—4, Elm Gardens, Hammersmith. [7396

£75.—Triumph 1920 C.S. Combination, Henderson sidecar, Easting, Lucas dynamo lighting, perfect order, seen evenings.—Spink, 52, Brodrick Rd., Wandsworth Common. [6903

TRIUMPH 4h.p. 3-speed Countershaft Combination, with good accessories, £67; another, ditto, £63; another, £50.—Newnham Motor Co., 223, Hammersmith Rd. W.6. [7421

1919 Countershaft Triumph, sporting combination, every conceivable spare equipped, taxed, guaranteed; 66 guineas; exchange solo.—284, South Lambeth Rd., S.W.8. [7558

1914 4h.p. Triumph and Coachbuilt sidecar, 3-speed, kick-start and clutch, all in perfect order and condition; any trial; £44.—Jones, 4, Woodside Parade, N. Finchley. [7410

TRIUMPH-RICARDO, 1922, Best-Lloyd mechanical pump, Challenger tubes, all accessories and spares, perfect, cost £130, accept £100.—Jakins, 247, High Rd., Lee, S.E. [6794

TRIUMPH 4h.p. Countershaft, very little used and unscratched, can be had with Canoelet sidecar, tax paid, and all accessories; bargain, £80.—Smith, High Rd., Goodmayes. [6552

1922 Triumph-Gloria Combination, Royal Easting, tyres unpunctured, perfect; bought car; cost £170 July 1; first cheque £120 secures.—Gandy, Heap Bridge Vicarage, Bury. [7303

3-SPEED Chain Coach Combination, 4h.p. Triumph engine, handle clutch, kick-start, lamps, Easting, good condition; £45, close offer.—Gill, 51, Nassington Rd., Hampstead, N.W.3. [6895

£100.—Triumph 1922 Combination, Model H, Rideezi touring sidecar, Easting screen, accumulator lighting, perfect order, trial by arrangement.—Lieut. Small, Whale Island, Portsmouth. [6937

SOUTHPORT.—1921 Triumph 3-speed Sports, specially tuned, lovely condition, Ricardo bars, long exhaust, very fast; 69 guineas; exchanges.—Kents, 417, Lord St., Southport. [7048

£27/10.—1913 Triumph coachbuilt Combination, excellent condition throughout, overhauled, 3-speed, all accessories; exchanges.—115, Holland Park Avenue. 'Phone: Park 518. [6809

1913 Triumph, 3-speed, excellent condition, complete with lamps; £20 Also specially overhauled single gear T.T. model £22/10.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [7513

NEW 1922 Triumph, all-chain drive and Junior Models; special bargain prices to clear; write, call, or 'phone Greenwich 751.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6599

YOUR Motor Cycle or Combination taken in part payment for a Triumph, any model; deferred payments.—Barker's Motors, 194, Balham High Road, S.W.12. 'Phone: 4441 Latchmere. [5944

1921 May Triumph-Gloria Combination all-chain, fully equipped, mechanical lubrication, Bluemel's windscreen, a first-class job; £110 or nearest offer.—43, Patriot Sq., Cambridge Heath, E.2. [6709

1922 Triumph-Ricardo, brand new but shop-soiled, £105 to clear Also 4h.p all-chain, clearing at £100; easy payments 4%.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [7221

1913 Triumph, completely overhauled, new Villiers clutch wheel, practically new tyres, Lucas lamps, Coway horn, taxed; £28; exchange considered.—West, Grocer, St. Cuthbert's, Bedford. [6819

1914 Coachbuilt Triumph Combination, 3-speed hub, £10 overhaul, new magneto, lamps, tools, fitted Sandum windscreen; in perfect condition: £42, or nearest.—Owner, 29, Cromer Rd., Watford. [6773

AT Edwards'.—1922 4h.p. Triumph, Model H, fully equipped, lamps, horn, licensed, indistinguishable from new in every respect; 77 guineas. Deferred payments and exchanges.—101, Great Portland St., W.1. [2226

1921 Triumph Combination, fully equipped, Gloria sprung-wheel chassis, aluminium sidecar; £80, or £20 down and 12 monthly payments of £5/8/4.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7349

1922 Triumph Combination cycle (May), lamps, horn, and Watford speedometer; only 3,000 miles; rear light worked in conjunction with accumulator lighting of sidecar lamp; handsome coach built sidecar, bulbous back forming locker, waterproof cover, luggage grid, spare engine sprocket for solo work: £140.—Ash, Belvedere, Abbey Rd., Rhos-on-Sea, Colwyn Bay. [4862

MOTOR CYCLES FOR SALE.

Triumph

1919 Triumph Combination 4h.p. Countershaft, 3-speed, K.S., hand clutch, fully equipped, bulhousback sidecar, glass windscreen, etc., perfect condition, tax paid, must sell; £60.—36, Queen's Av., Watford. [6725

TRIUMPH 1918 Combination, exceptional condition, fully equipped, lamps, speedometer, etc.; £50; cash, exchange, instalments.—Elce, Ltd., 13-15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

1921 4h.p. Triumph Combination, 3-speed, Gloria sidecar, windscreen, tax paid, numerous accessories; best offer over £100; terms and exchanges.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [4931

THE HACKFORD ENG. CO. have 4 more renovated countershaft Triumphs at £45. Cash or extended payments. Do not miss this opportunity. Call, write, or 'phone Brixton 3062.—33, Hackford Rd., Brixton, S.W.9. [7581

TRIUMPH 4h.p., latest 1922 model, new but slightly shop-soiled, all-chain drive model, guaranteed, £90 Junior Triumph, 2-speed, 1922 model, new but shop-soiled, £40 exchanges or deferred payments.—Maudes', 100, Great Portland St., London. [7397

1922 Triumphs, brand new, S.D. (all-chain), several in stock, roadster and T.T. bars, exceptional offer, secure now; cost £115; clearing at £89; makers' full guarantee.—Harry Nash, Contracting Agent, 391, King St., Hammersmith. 'Phone: Hammersmith 2837. [7282

1922 4h.p. Triumph (all-chain drive) Combination, sporting Montgomery sidecar, 3 Lucas lamps, generators, horn, mirror, Cowey speedometer, windscreen, all as new mechanically and appearance, unpunctured, mileage under 3,000, tax paid; exceptional bargain, £115.—Southall, 3, Selbourne Rd., Worcester [5812

4-VALVE Triumph, Lucas Magdyno, Bonniksen trip speedometer, knee-grips, spares, etc., carefully run in, delivered June 10th, 65 m.p.h. and 100 m.p.g. guaranteed, just overhauled as new at Triumph works, 1922 tax paid, insured for £150 to June, 1923; £108, or £103 less speedometer.—Maclennan, 110, Alexandra Rd., St. John's Wood, N.W.8. [6934

TRIUMPH-GLORIA Combination, 1921, type S.D.C., all-chain drive, with 1922 pattern mudguards, 4h.p., 3-speed, Lucas electric lighting, Cameo windscreen, nearly new 26in.×2½in. Hutchinson superstudded tyres, appearance and mechanical condition as new, guaranteed perfect; clearance price, £125.—Premier Motor Co., Aston Rd., Birmingham. [7408

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HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Triumph experts. Complete illustrated list of spare parts post free. [6523

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TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

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£20.—2¼h.p. Velocette, 2-stroke, 2-speed, 24in. wheels, fine order.—King, Egrove, Oxford. [7064

1921 Velocette, new condition, mileage under 500, 2-speed, very fast; £40; approval.—Merrill, "Hill Crest," Mickleover, Derby. [7020

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VELOCETTE 1922 2¼h.p., 2-speed, clutch and kic start, shop-soiled; two only; list price £65; o price £55.—Victor Horsman, Ltd., 7, Mount Pleasan Liverpool. [592

Verus.

£70 to Clear.—Verus 1922, 2¾h.p. Blackburne engin shop-soiled; listed £77.—Smith and Hardin March. [71

Wilkin.

1922 Wilkin-Blackburne 4h.p., Sturmey-Archer speed and clutch, Brampton Biflex forks, a chain drive, absolutely as new, registered June; £6 —Marble Arch Motor Exchange, 135, Edgware Rd W.2. [75

Williamson.

58 Guineas.—1916 8h.p. Williamson Combinatio splendid condition inside and out, any trial; e change Blackburne solo; appointment.—429, New Cro Rd., S.E. [68

Wolf.

1922 Wolf-Villiers, 2-speed, unscratched; guineas.—67, Fernlea Rd., Balham. [754

Wooler.

WOOLER, 1920, just fitted with 1922 engine in provements, speedometer, semi-T.T. bars, lo aluminium footboards, lamps, Klaxon, spare belt, t paid; £45.—Poletti, 5, Intermediate Rd., Brynmaw Brecon. [71

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ZENITH 1922, Bradshaw chain, very special; £69. Clark, 7, Exhibition Rd., S.W.7. [23

£33.—5-6h.p. Zenith-Gradua, clutch, K.S., fine ru ning order.—King, Egrove Farm, Oxford. [70

1922 3½h.p. Special Zenith-Bradshaw, 3-speed, chain, licensed; £70.—Ford, High St., Sidmout [58

£26.—4h.p. Zenith-Gradua, absolutely perfect cond tion, taxed, spares, 1915.—26B, Ingleton S S.W.9. [70

ZENITH 1920 Coachbuilt Combination, speed meter, luggage carrier, insured March; £75.—14 Widmore Rd., Bromley. [70

ZENITH-GRADUA 6h.p., overhauled, new Dunlo any reasonable offer accepted.—15, Sidney R Bowes Park, London, N.22. [68

1921 Zenith, 90 bore, o.h.v., long exhausts, tyr new, condition perfect, very fast; £75.—2 York St., W.1. Mayfair 575. [67

ZENITH 1920 Sports 8h.p. J.A.P., new tyres, bel Lucas lamps, magnificent speedy machine; £5 —48, Halesworth Rd., Lewisham. [70

F.O.C.H. Invite Inspection. Zeniths and oth makes far below any anticipated price reductio —5, Heath St., Hampstead (near Tube). [38

ZENITH 5-6h.p. Sports model, absolutely perfec electric lighting, speedometer, accessories; a re bargain, £50; any trial.—Ede, 100, Hook R Epsom. [70

1921 8h.p. o.h.v. Zenith, Bonniksen, lamps, equi ment, little used; cost £147; nearest £80. M sidecar, sporting aluminium: £20.—Mitchell, Linden Farnham. [68

ZENITH 8h.p. Countershaft Model, with special Sw sidecar, clutch, K.S., almost new, absolutely u scratched, licence paid; great bargain, £100.—Marsto 31, Bridge St., Chester. [73

1922 Zenith-Bradshaw, quite new; list price £113; will take £78, or exchange for ligh car and pay difference.—Write Owner, 7, Rookfiel Av., Muswell Hill, N.10. [75

YOUR Motor Cycle or Combination taken in pa payment for a Zenith, any model; deferred pa ments.—Barker's Motors, 194, Balham High Roa S.W.12. 'Phone: 4441 Latchmere. [59

ZENITH 1921 8h.p. Countershaft Combination electric lamps, speedometer, absolutely first-cla condition throughout; £85.—Newnham Motor Co., 22 Hammersmith Rd., W.6. 'Phone: Hammersmith 8 [74

ZENITH 8h.p. Countershaft Combination, goo mechanical condition, but appearance rough great bargain to clear; £49.—Newnham Motor Co 223, Hammersmith Rd., W.6. 'Phone: Hammersmit 80. [74

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Zenith

ENITH o.h.v. twin, Brooklands model, enamelled, plated by makers this year costing £20; accept 2.—106, North End Rd., W.14. [7040

ATE 1921 Zenith, unscratched, 90 bore, overhead valves, Bonniksen speedometer, nearly new, eage negligible, 7-70 m.p.h.; £85; cash or de- ed.—Marlborough (Motor House), 20, Finchley , N.W.8. [6562

1922 all-chain-eight Zenith Combination, super-sports J.A.P engine, Montgomery sports side-, Easting, electric light, Bonniksen, under 2,000; 50 or near offer.—Page, 53, St. John's Park, ckheath. On view, Bromley Motor Works, Kent. [6777

OUTHPORT.—Snips: 1922 (June) Super Sports 8h.p. Zenith countershaft, indistinguishable nd new, cost £150, gift 85 guineas; 1922 all in Zenith-Bradshaw Sports, extra hot, cup winner, Lucas accessories; 72 guineas; exchanges.—Kents, , Lord St., Southport. [7049

ATE 1922; £80, or instalments; 3½h.p. twin Zenith-Brads aw, cost £119 without numerous as, all-chain, Sturmey-Archer 3 speeds and kick-t, as new. Special 20 guinea light bulbous back ear with folding up luggage carrier, as used one on same. £10. Deliver within 100 miles radius . Photo, full particulars.—Solwaybank, Hayes, t. 'Phone: Bromley 532 (No. 54 'bus). [6824

Spare Parts:

ENITH Spares. Immediate delivery — Kays, 8, Bond St., Ealing. [5078

Ladies' Motor Cycles.

ADY'S 2¾h.p. Crescent-Villiers, 1919-20, 2speed, excellent condition, appearance as new, tax paid; , near offer.—Clark, 15, Churchville Rd., Bed- t. [6811

Miscellaneous.

ARWOOD for Exchanges, cash either way.

ARWOOD.—1920 specially tuned T.T. Rudge, new tyres, lamps, perfect; £38; exchange.

ARWOOD.—1918 Rover combination, lamps, speedo-meter, Easting, smart; £48; separate; exchange.

ARWOOD.—1920-21 3½h.p. twin James, all on, absolutely perfect, as new; £45; exchange.

ARWOOD.—1922 G.P. Morgan, hardly used, com-plete; £125; exchange.

ARWOOD.—8h.p., light box body, 3-speed, reverse, differential, good tyres, sound; £30; exchange glas.

ARWOOD Exchange House for Bargains; several others.

ARWOOD Garage, 89, East Hill, Wandsworth. Battersea 443. [7122

p. Coachbuilt Combination, 3-speed, all-chain drive; £35.—Parris, 7 Old Paradise St., Lambeth. [6955

4.—3½h.p. Precision, Mabon countershaft gears, splendid condition.—King, Egrove Farm, Oxford. [5558

.C.U. for New and Second-hand Cycles, cars, etc., bargains; cash or easy payments; exchanges ged.- 5, Heath St., Hampstead (near Tube). [3864

22 New Motor Cycles.—Bargains at end of season prices; secure now; cash or easy terms.—Sam. E. ham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5203

5.—Matchless 8h.p. combination, 3-speed, kick-start, M.A.G. engine, 1916, appearance as new, nel and plating unscratched, Swan sidecar, wind-c n, fully equipped, powerful engine.

19 Chater-Lea-Villiers, 2-speed, fully equipped, tax paid, smart and mechanically perfect en- will guarantee; £25.

19 Hobart-Villiers, 2-speed, fully equipped, tax paid, sound as a bell; £25.

h.p. B.S.A., pedal start, enamel and plating like new, particularly fast machine; £25.

and M., 2-speed, 1918; £30; in excellent run-ning order.

.—Harley-Davidson combination, 1918, excep-tionally smart and fast machine, fully equipped, hood, etc., most luxurious sidecar; £58.—Below.

X Combination, 5-6h.p., fully equipped, guaran-teed, smart and reliable, only wants seeing; any ri- £25.—Below.

IFT 2-seater, 1915, fully equipped with hood, screen, speedometer, electric lighting, 5 tyres 2-seater dickey, just overhauled and painted cost of £36; will take 4 anywhere; £68, or ex-hange for combination.—Below.

22 Matchless Combination, H model, only done 20 miles, Lucas lighting, etc.; a gift at £130; £195; or exchange for solo.

20 2¾h.p. New Imperial-Jap, 2-speed, kick-start, hand clutch, new tyre on front, and nearly n back, smart and reliable; a snip, £25.—Below.

h.p. Douglas, 2-speed. Here's a bargain, £21.—Below.

20 Kingsbury Scooter, only done 200 miles; £8.—Naylor and Kirk, 406, Garratt Lane, Earls-S.W.18. 'Phone: Wimbledon 2041. [7459

WHAT A CHANCE!

Brand new shop-soiled MOTOR CYCLES BEING SOLD REGARDLESS OF COST!

AT

ALEXANDER'S GREAT BARGAIN SALE.

LOOK AT THIS!

List Price.		Sale Price.
£68	2¾ h.p. **DOUGLAS,** 2-speed, fully equipped. What a chance!	£55
£82	2¾ h.p. **DOUGLAS,** 3-speed, clutch and kick-starter, fully equipped.	£68
£67 10s.	2¾ h.p. **HENLEY-BLACKBURNE,** 2-speed, clutch and kick-starter.	£55
£73	2¾ h.p. **NEW IMPERIAL,** 3-speed, clutch and kick-starter, all-chain drive.	£60
£168	8 h.p. **NEW IMPERIAL** Combination, Lucas dynamo elec. lighting. What a chance!	£125
£55	2¼ h.p. **ENFIELD,** 2-stroke, 2-speed	£45
£140	8 h.p. **ENFIELD** Combination. What a chance!	£120
£39 18s.	2½ h.p. **SPARK,** 2-str., single gear ..	£30
£78 15s.	2¾ h.p. **MASSEY-BLACKBURNE,** 3-speed, clutch and kick-starter.	£65
£107	4¼ h.p. **B.S.A.,** Model K2, chain-cum-belt. What a chance!	£79
£115	3½ h.p. **NORTON,** Model 16H, all-chain drive.	£85
£120	4 h.p. **NORTON,** 3-speed, all-chain drive.	£90
£65	2½ h.p. **VELOCETTE,** 2-speed, clutch and kick-starter.	£55
£39 18s.	2½ h.p. **O.K.,** single speed, 2-stroke..	£30
£112	4 h.p. **INDIAN SCOUT,** standard model. What a chance!	£96 10s.
£48	2¼ h.p. **LEVIS,** 2-stroke, single speed	£41
£58	2¼ h.p. **LEVIS,** Model S, 2-speed and clutch.	£45
£215	8-10 h.p. **T.B. CYCLECAR,** dynamo electric lighting, spare wheel, hood, etc. What a chance!	£165

N.B.—All machines are carriage paid to any address in the United Kingdom.

We have also a number of other makes which we are selling at "throwing away" prices and it will pay you to write at once for our list. We feel sure that our sale prices are lower than 1923 prices and that the present is most certainly a great money-saving opportunity.

REMEMBER—When we clear our present stock these offers cannot be repeated.

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Rd., GLASGOW.

MOTOR CYCLES FOR SALE.
Miscellaneous.

BLACKPOOL Bargains.—Shop-soiled 1922 Rudges, Ariels, New Imperials, Royal Rubys, Bradburys, Martinsyde; reduced prices; exchanges.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone 1451.

BLACKPOOL Bargains.—3½h.p. Triumph, £16/10/6; Triumph. 3-speed, £19/10/6.—Booth's Motorics.

BLACKPOOL Bargains.—6h.p. But, countershaft, 3-speed, £39/10/6; 3½h.p. Humber, £19/10/6; 3½h.p. Premier, £24/10/6; 5h.p. Rudge 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed O.K., £16/10/6; 3½h.p. Singer, 2-speed, £24/10/6; 2-speed P. & M., £19/19/6; another, £35/10/6; N.S.U. Light-weight, £11/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Rudge, I.O.M. model, £45/10/6; another, Dynamo Lighting, £57/10/8; 4h.p. Douglas, £55/10/6.—Booth's Motories.

BLACKPOOL Bargains.—2-speed Douglas, £19/10/6; 2-speed Scott, £19/19/6, 1920 Douglas, 3-speed, kick start, £52/10/6; 1921 Allon, £32/10/6; 2-speed Connaught, £25/10/6; 2-speed Calthorpe, £25/10/6.—Booth's Motories.

BLACKPOOL Bargains.—9h.p. Indian, £29/10/6; 7h.p Indian, 2-speed, £29/10/6; 3½h.p. New Hudson Combination, £35/10/6; 8h.p. Dot Combination, £65/10/6; 1920 Matchless Combination, £89/10/6.—Booth's Motories.

BLACKPOOL Bargains.—1920 Martinsyde Combination, £85/10/6; Acme Combination, new 1921, spare wheel, £89/10/6; 8h.p. Premier Combination, £47/10/6. Enfield Combination, £39/10/6; 1921 Enfield Lightweight, £39/10/6; 3h.p. Twin Enfield, £37/10/6; 1920 Sun 2-speed, kick start, £35/10/6.—Booth's Motories.

BLACKPOOL Bargains.—8h.p. Carden Cyclecar, £32/10/6; 1920 Tumplin Cyclecar, £49/10/6; 1921 Zebre light car, 4-cylinder, W.C., 4 speeds, electric light-ing and starting, spare wheel, fully equipped, £175/10; several others cheap; push cycles taken in exchange.—Booth's Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [3473

A LIMITED Number of second-hand and shop-soiled models for disposal. All machines thoroughly overhauled at works and guaranteed. Prices from £30. Genuine bargains.—Connaught Depot, 111, Gt. Portland St., W.1. [6783

JONES Garage, The Broadway, Muswell Hill, N.10, open all Saturday; London's lowest prices, all machines guaranteed 3 months; we live in a mountainous district and will give any machine a severe trial without obligation.

JONES Garage.—1919 4h.p. Douglas Combination, very fully equipped, exceptional condition; £50.

JONES Garage.—1914 8h.p. Matchless Combination, countershaft gear, clutch, K.S., Gloria sidecar, spring wheel, completely equipped, tax paid, very fast; our special cash offer for this week; £37/10; wire secures.

JONES Garage.—1915 2¾h.p. New Imperial-Jap, 2-speed, fine sporty little 'bus; £25.

JONES Garage.—1914 Triumph, 4h.p., coachbuilt underslung combination, excellent indeed; £40.

JONES Garage.—Brand new Hobart 2¾h.p., Villiers, Brampton forks (gear box, at £5/10, can be fitted later if desired); list price £48; £36.

JONES Garage.—1919 4h.p. Douglas Combination, original enamel and plating, excellent condition; £65.

JONES Garage.—Indian sidecar for spring frame, perfect condition; a gift, £12/10.

JONES Garage.—1921 Bleriot Car, tax paid, electrical equipment, seat starter, perfect and guaranteed; £65.

JONES Garage.—Heaps of Bargains from £20; big list free; all guaranteed. It takes 30 minutes from Highgate or Finsbury Park by 'bns, which stops outside our door.—Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [7416

BARGAIN.—2¾h.p. De Dion, entirely reconstructed and modernised, good running order, re-enamelled, magneto, spring forks, T.T. bars, Pedley grips, B. and B., Hutchinsons, lamp, accessories, tax paid, sound little 'bus, silver medal 1914; best offer over £15.—Waverley, York Rd., Guildford. [7586

MISCELLANEOUS.—1919 Scott, 55 guineas; 1917 A.J.S. combination, 55 guineas; 1918-19 Power-plus Indian, 48 guineas; 1913 3½h.p. Indian, 23 guineas; 1911 Douglas, 15 guineas; 1919 Invicta, 25 guineas; 1916 Calthorpe combination, 36 guineas; Royal Ruby Tbrocker combination, 24 guineas.—Kents, 417, Lord St., Southport. [7052

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. 'Phone: Latchmere 4388.—We have a few combinations, solos, and runabouts that we are offering at knock-out prices for cash, terms, or exchange. Call, write, or 'phone your requirements. We can fix you up at the right figure. Last week's bargain, Matchless model H 1920 combination; £70. [7239

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

MOTOR CYCLES FOR HIRE.

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157B, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

H.

F.

EDWARDS and Co.,

101, Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

T.B.

WANT

500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [5564

WE

ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391 [0332

WANTED, Radco, new or second-hand.—Box 4241, c/o *The Motor Cycle*. [6832

LATE Solo or Combination; reasonable price; cash.—497, Old Ford Rd., Bow. [7094

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale, a nominal auction fee is charged—for motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free.—Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [7244

WANTED, 1922 8h.p. Rover; cash and new James 2-stroke.—7, The Vale, Acton, W.3. [7229

CHEAP Motor Cycles, any quantity, cash on the spot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0947

WANTED, Countershaft Triumph; not exceeding £40.—King, Farmer, Kennington, near Oxford. [7067

WANTED, J.E.S., 2-speed, with pedalling gear, 1922 machine; cash or bees.—Wyatt, Bishopswood, Chard. [6062

WANTED, 2¾h.p. New Imperial, Omega, similar; about £20; not earlier 1919.—Box 4263, c/o *The Motor Cycle*. [7066

WANTED, lightweight and cash for 1921 Triumph combination, or sell; £88.—Blackburn, 79, Friern Rd., Dulwich. [7560

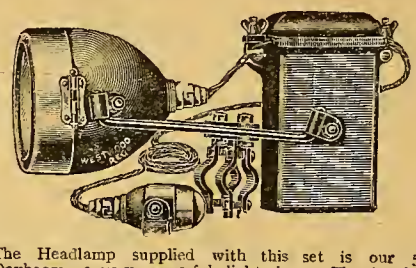
1920-22 2¾h.p. Douglas, frame and all parts, for cash, incomplete machine considered; approval, cheap.—Box 4261, c/o *The Motor Cycle*. [6927

COULD anyone offer clergyman with wide country parish reliable modern combination for about £30?—Box 4264, c/o *The Motor Cycle*. [7370

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709—Edwards, 50, Harrington Rd., South Kensington. [0604

MOTOR Cycle wanted, for cash and unused small Precision Lathe with treadle, cost over £25.—Letters, Estate Office, 43, South Street, Ponders End, N. [7141

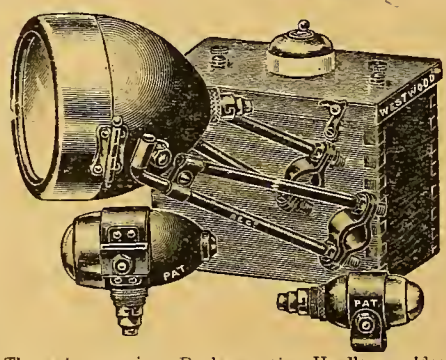
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

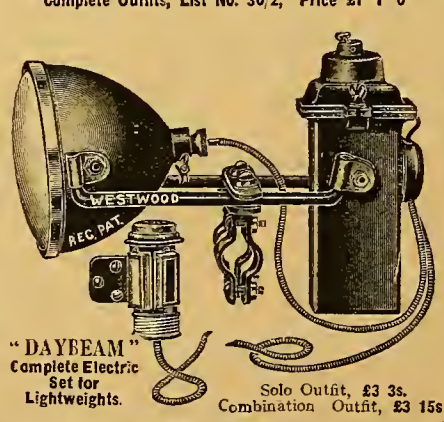
Complete Outfit, List No. 30/1, Price £5 5 0

"DAYBEAM" Combination Set



The set comprises Daybeam 7in. Headlamp, Idea Sidecar Lamp, and Torpedo S.B.C. Tail Lamp Each lamp is fitted with an indepeadent switch, and is finished in ebony black with nickle-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

Complete Outfits, List No. 30/2, Price £7 7 0



"DAYBEAM" Complete Electric Set for Lightweights.

Solo Outfit, £3 3s.
Combination Outfit, £3 15s

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LAWDEN RD BORDESLEY BIRMINGHAM.

MOTOR CYCLES WANTED.

SUNBEAM, preferably Sports, wanted, solo or combination, not earlier 1921, must be really cheap and absolutely perfect; cash waiting.—Box 4251, c/o *The Motor Cycle*. [69

BUNTING'S Buy, sell, or exchange any make motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [08

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 491, 493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [03

CASH Buyers.—Triumphs, B.S.A.'s, Enfields, Douglases, Matchlesses, A.J.S.'s, Sunbeams, Rudges, Humbers, Rovers, Scotts, Zeniths, New Imperials, James, P. and M.'s, A.B.C.'s, Martinsydes, Ariels, Rexes, Levis, Clynos.—Below.

CASH Buyers.—Red Indians, Harley-Davidsons, 8-cyl. Hendersons, F.N.'s.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [72

LONGMAN Bros., 17, Bond St., Ealing, are requiring a number of first-class machines as combinations for spot cash, or sale on commission. Representatives will be sent to inspect after preliminary negotiations.—Write, 'phone, or call. 'Phone: Ealing 689. [65

SEND Your Motor Cycle to Palmer's Garage, Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Near station Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [7

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—Beaufort Works, Richmond Rd., Twickenham. [2

SKOOTAMOTA, licensed, perfect condition; £14 offer.—52, Vicarage Rd., Harborne, Birmingham. [7

A.B.C. Skootamota, new, unsoiled, latest model, £55; accept £20; wonderful bargain.—Fry, Whitworth, 139, New St., Birmingham. [5

MOTOR ATTACHMENTS.

£2.—A.J.S. cycle set, C.A.V., running order.—Ellen, "Wigwam," Victoria Rd., Maldon, Essex. [4

YOUNG Attachment, on good machine, scarcely used; £18.—Bunting's Exchange, Wealdstone. [7

AUTO-WHEELS from £5/5, overhauled; any trial.—J. W. Robins, 97, Latchmere Rd., Battersea. [7

SIMPLEX Set, done 25 miles, cost £23; accept £6/10.—Mrs. Nash, 80, Cotterill Rd., Surbiton. [6

WALL Auto-wheel, excellent condition; £8, or nearest offer.—Jones, Highbury, Llanwern, Mon. [6

WAUCHOPE'S, 9, Shoe Lane, London.—1½ Kenilworth motor Cyclette, 1921 model, as new, £30. [7

WALL Auto-Wheel, complete, and running order, £6/10.—19, Wilcox Rd., South Lambeth, London, S.W.8. [6

WAUCHOPE'S, 9, Shoe Lane, London.—1½ motor fitted to a pedal cycle, all accessories, £22/10; tax paid. [7

AUTO-WHEEL, B.S.A. model, little used, £9, or with Humber 2-speed cycle, £12/10.—Myles, 197, London Rd., Croydon. [6

YOUNG Cycle with motor attachment, little use, tax paid, 1922; £15, or near offer.—Park Motor Depot, London Rd., Derby. [6

YOUNG De Luxe 1922 Chater-Lea Tandem Juvenile Sidecar; £30; illness forces sale.—Ournsford Rd., Wimbledon Park. (P) [6

CYCLOTRACTEUR fitted to any cycle; make price £21; my price £10, carriage paid; or change.—Edwardes, 277, Camberwell Rd., S.E. [7

HOODS, WINDSCREENS, ETC.

AUSTER Triplex Windscreen, 18×7½, mahogmonnt, brackets; 16/-.—Carter, Sylvan Grove, Darlington. [7

COMPLETE B.S.A. Hood, 25/-; trip speedometer 50/-; luggage carrier, 10/-, nearest.—Sandham, Husthwaite, Easingwold. [6

HIGH-GRADE Hoods, polished hoops, brass fittings 30/-; hoops, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [2

BEST quality sidecar hoods, 35/- and 45/-; celluloid 1/6, 2/6, and 3/6 sq. ft.—Hercules Hood Co., 7, Seven Sisters Rd., Tottenham. [6

BASTONES for Windscreens.—Sandum windscreen with apron 55/-; Easting, £3/18.—228, Stonville Rd., King's Cross, London, N.1. Tel.: North. [6

AUSTIN 12in.×7in., polished aluminium frame, adjustable fittings, 9/6; our own, polished aluminium frame, adjustable fittings, Triplex glass, 11×11in., £1/5; 20in.×13in., £1/10; packed with box, carriage free; any design made.—Derrington, 6 ton Rd., New Malden. [

HOODS, WINDSCREENS, ETC.

J.C.—Renovated Easting windscreens, perfect and absolutely as new, complete with plated fittings, dy for fixing, special offer; 48/6; postage 1/6; e one on approval; money returned if not satisfied.

J.C.—Sidecar hoods from 30/-; 2-seater, 45/-; best quality double texture material, guaran- d waterproof.

J.C. Adjustable Windscreen, complete with apron, 25/-; other screens at 30/- and 35/-.

J.C. fit celluloid panels, new aprons, side curtains, etc., in a few hours. Your present screen en in part exchange.

J.C.—All above brand new goods and guaranteed by us to be perfect. Money returned if not isfied.

J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. Business hours, 8.30 8.30, including Saturday. [7562

9/-.—Bower adjustable windscreen, 30/-, complete with Coverall apron, manufactured under ent Nos. 108334 of 1916 and 109601 of 1916, car- e paid on approval, 30/-; Easting screens from Sandum V screens, £2/15; all makes of screens ired; new panels fitted from 12/-; aprons supplied n 10/-; hoods, complete, 30/-; catalogues.—Robini nufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W. one: Brixton 1585. [6922

BODIES.

ELEN Sidecars! Helen Sidecars! Helen Sidecars!

ND of season's bargains, must be cleared; complete bodies, beautifully finished, from £3/15; write for strated catalogue of our wonderful offers; a few nd-hand bodies from £1.—Robini Manufacturing 1 and 3, Tulse Hill, Brixton, S.W. 'Phone: kton 1585. [6917

LEARANCE Sale of Sidecar Bodies to make room for new stock. Send p.c.—Willowbrook Sidecar Leicester [0336

ASTONES for Sidecar Bodies, latest models in stock. Call and inspect before purchasing elsewhere. All at low prices.

ASTONES.—Great clearance of sidecar bodies (stock-soiled), semi-sporting lightweight, £2/15 ; ditto, not painted or upholstered, 20/- each; ring models, 70/- each; ditto, not painted or upholstered, 30/- each.—228, Pentonville Rd., King's ss, London, N.1. Tel.: 2481 North. [3567

EVERAL Sidecar Bodies to clear, upholstered, painted, complete, £4/4; upholstered in lead ur, £5/18.—Motor Works, 44b, Benhill Rd., Camwell, S.E.5. [6782

J.C.—We are the actual manufacturers, and can save you pounds. Send for catalogue. Remember all our goods are sent on approval. Money refunded if not satisfied.

J.C.—All models, from lightweights to 2-seaters, in stock.

J.C.—Send us your inquiries. Special bodies made to order. 12 months' guarantee with all bodies. Repairs.

J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. [7563

E can supply Coachbuilt Bodies to suit any chassis.—Sporting models from £3/7/6, carriage ; these are finished complete ready for fitting car Works, Broadstairs.

BEAUTIFULLY Finished Bulbous Bodies, £4/15; other models from £2/10; write for specification urton, Sidecar Works, St. Peter's Park Rd., Broadt s. [3637

PPELTHWAITE'S—Brand new Douglas type bodies, £4/15; upholstered, bulbous, and locker; ire a finishing coat of paint only; photo on re t.—19, Wilcox Rd., South Lambeth, London, .8. 'Phone: 1958 Brixton. [6594

IDECAR Body Designs for the trade only. Work ing, coloured pencil, or line drawings of original ns, also working drawings, full-sized or to scale.— er's Vehicle Journal, Designing Dept., established ers to the coach trade for over 80 years. Con us when designing new ideas.—Dorset House, r St., London, E.C.4 [0004

IE Famous Cobb Speedman Sidecar Bodies. All new designs for 1923. High-class coachbuilt ons and sports from £3/10; beautifully finished comfortably upholstered ready for fitting to any sis. Unpainted from £2/5. All carriage paid. hing further to pay on advertised prices. Reliable lully guaranteed.—Veruon Cobb, Sidecar and ery Works, Nottingham Rd., Burton Joyce, Notts. [6844

SIDECAR ATTACHMENTS.

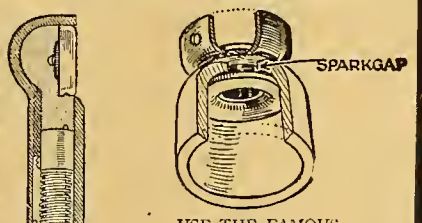
ELEN Sidecars! Helen Sidecars! Helen Sidecars!

ID of season's bargains, must be cleared; write for illustrated catalogue.

EW Chassis, complete tyre and tube, streamline body, £10; a few new chassis, complete, £6 each; ded payments taken.—Rohini Manufacturing Co., d 3, Tulse Hill, Brixton, S.W. 'Phone: Brixton 5. [6918

PREVENT TROUBLE

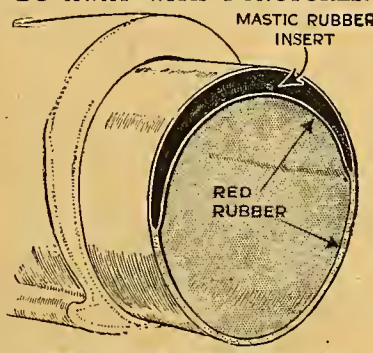
CUT OUT MISFIRING.



USE THE FAMOUS
SPARXEKAS
SPARK GAP.

Will fit any plug and make it fire even if oiled up. A most desirable fitment. It incorporates a waterproof hood. 2/6 each post free.
Sparxekas quick detachable shock-proof Terminal, 2/-.
Sparxekas with hood, 4/6.

DO AWAY WITH PUNCTURES.



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Practically indistinguishable from the ordinary old-fashioned tube. Absolutely pneumatic throughout, contain no messy or sticky substances. The only difference from an ordinary tube is that the tread portion is very slightly thicker and is built of three layers so adjusted as to be self-sealing; the centre layer being composed of the patent hole-proof composition, which instantly closes up when the nail or article causing the puncture is withdrawn. Made in all sizes for motor cycles.
MOTOR CYCLE SIZES—24×2, **14/3**; 24×2¼, **15/-**; 26×2¼, **15/3**; 26×2⅜, **16/9**; 26×2½, **18/-**; 26×3, **18/6**; 28×3, **£1 0s. 3d.**; 650 65, **£1 0s. 9d.**; 700×80, **£1 1s. 6d.**
Packing and Carriage Free.

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SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Our pre-war prices were the talk of the show; £14 to £50. Write for new catalogue

SANDUM (V-shaped) Wind Screen; a hood, screen, and apron; £2/15 and £3/18. Write for list.

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MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

EXTENDED Payment Arrangements if desired, on most generous terms at Middleton's.

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200 MILE Sidecar Race. Davidson first, riding Indian with Middleton spring wheel sidecar; Le Vack second, riding Zenith-Jap with Middleton spring wheel sidecar.

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1922 Watsonian with Triumph fittinga, as new; £13.—1, Othello St., Liverpool. [7045

BASTONES for Sidecars.—No better or cheaper house; all latest models in stock.

BASTONES.—End of season. Great reductions in 1922 models.

BASTONES.—Montgomery sports model, stock soiled only; list price £23/10; to clear, £18/10.

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BASTONES.—Complete sidecar to fit any machine, £11; ditto sports model, £16/19; touring bulbous back sidecars, £17/7/6. Several other models in stock.

BASTONES.—If you are buying a sidecar, kindly inspect our stock before purchasing elsewhere, and save money.—228, Pentonville Rd., King's Cross, London, N.1. Tel: 2481 North. [4639

W.J.C. for Sidecars. New bulbous back models, complete with underslung chassis, £12/10.

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W.J.C.—Special offer. Sports model H, streamline body, underslung chassis complete, all attachments, any colour, £12/10; side door, 10/- extra. The greatest value in sidecars ever offered.

W.J.C.—Any model supplied on easy payments. Your present sidecar taken in part exchange. Send for catalogue.

W.J.C.—The above sidecars are of the finest material and workmanship, and are fully guaranteed. Any sidecar sent on approval against cash. Money returned if not satisfied.

W.J.C.—We make a special sidecar for Clyno motor cycles, fitted with interchangeable wheel, bulbous back, underslung chassis, 26in. or 28in. wheel, fitted tyre and tube, any colour; we are offering these at the ridiculous price of £19/15; honestly worth £25; satisfaction guaranteed; your present sidecar taken in part exchange.

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SIDECAR off P. and M., coachbuilt, late 1920, bulbous back, £7/10.—31, Winson St., Dudley Rd., Birmingham. [6805

CANOELET M.M.4 Body on Douglas chassis, Sandum screen, saxe blue, both in excellent condition; £11 or close offer.—F., 25, Kildare Ter., Bayswater, W. [7579

SIDECAR ATTACHMENTS.

CANOELET Light Touring Sidecar, beautifully upholstered and as new; 12 guineas.—51, Upper Richmond Rd., East Putney. [7537

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P. and M. Chassis, renovated, brand new tyre and tube, complete with brand new body, £11/10; with fittings for Triumph or any other machine, £12/10.

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LIGHTWEIGHT. Lightweight. Lightweight.—Really light coachbuilt bodies in best finish, weight 36 lb., special offer, £4/10; medium-weight bulbous back, painted and finished to choice, £7/10; lightweight chassis to suit these bodies, £8. Call on us for a practical demonstration. There is nothing like seeing and trying before buying.—Light Car and Motor Cycle Engineering Co., Ld., 26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (Half minute from Brixton Skating Rink.) Look for the Golden Arrow. [6611

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G.N., 1922 model, specially tuned, shop-soiled only, 2-seater and nice dickey; only £210.

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BEDELIA.—The new 1922 model, 8-10h.p., air-cooled or water-cooled to choice; immediate deliveries.

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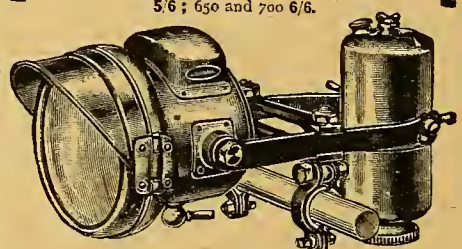

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WAUCHOPE'S, 9, Shoe Lane, London.—Car 1914; £45. [7

1921 Coventry Premier, every fitment, as n £100.—24, Balliol Rd., North Kensingto [7

A.V. Monocar, 1919, engine overhauled, last, l needs repainting; £30.—Box 4252, c/o *The M Cycle.* [6

GRAND Prix Morgan, W.C., J.A.P., discs, lar horn, excellent condition; £85.—17, Churchg Bolton. [6

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WANDSWORTH.—Exchanges.—Wandsworth M Exchange, Ebner St., Wandsworth (T Station). 'Phone: Latchmere 4686. [7

MORGAN 1922 Popular Model, absolutely as licence paid; 100 guineas.—Marston, 31, Br St., Chester. [7

A.V. Bicar, 1921, 8-9h.p., mileage only 1,000, l equipped, very fast, as new; £85.—Clegg, Tet Bath Rd., Slough. [6

COVENTRY PREMIER, 1922, shop-soiled only; bargain price, £165.—Ratcliffe Bros., 200, Portland St., W 1. [7

AT Edwards.—1921 G.N., dynamo lighting, l equipped, good condition; 100 guineas.—101, Portland St., W.1. [7

G.N. 1921, dynamo lighting, well equipped, sm 100 guineas; part exchange motor cycle.—5, toria Av., Surbiton. [7

1921 Bleriot-Whippet, fully equipped and in fect order; a gift at £65.—Jones, 4, Wood Parade, N. Finchley. [7

A.C. Sociable, splendid condition, new hc £30; solo exchange considered.—Raynes, H moorside Chesterfield. [7

WAUCHOPE'S, 9, Shoe Lane, London.—New A.J light car, sports model; £255; immediate livery; exchange and easy terms. [7

BLERIOT-WHIPPET 1921, perfect running dition; no reasonable offer refused; owner n sell.—59, Lebanon Rd., East Croydon. [6

COVENTRY PREMIER Cycle Car, large enamel stove, new; offers; exchange Morgan or m cycle.—81, Rockingham Lane, Sheffield. [7

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MORGAN Grand Prix Model, particularly good dition, 8h.p. J.A.P. water-cooled engine, hig paid; £100.—Marston, 31, Bridge St., Chester. [7

LIGHT car chassis, 10h.p., W.C. Lagonda eng 2-speed and reverse, gear box; lot £41, exchange motor cycle.—111, Kirby St., Poplar. [6

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MORGANS.—Hall, 91, St. Peter's St., St. Alb can give early delivery of this famous runab Grand Prix £160, De Luxe £165, Family Model £ [0

WAUCHOPE'S, 9, Shoe Lane, London.—G.N. 1921 model, fully equipped, in excellent dition, spare wheel and tyre; £130. 'Phone: Cen 5168. [7

1921 A.B.C. 11h.p. Sports model, 4 speeds and verse, dickey seat; £160. 1921 Rover 8 2-seater, fine order; £115.—Bartletts, 93, Gt. P land St. [7

MORGAN G.P., M.A.G. w.c. engine, dynamo, head and side lamps, colour dark green, excel appearance and condition; £90.—Hill, 6, High Uttoxeter. [6

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OVER Eight, April, 1922, dickey, perfect, small mileage; £157/10—R. B. Clark and Co., 7, hibition Rd., S.W.7. [5621

MORGAN Grand Prix, 8h.p. water-cooled J.A.P., tax paid and in topping condition, for solo or bination.—Naylor and Kirk, 406, Garratt Lane, sfield, S.W.18. [7347

1921 Carden 2-seater, electric lighting, tyres perfect, hood, screen, etc., perfect order; £65; exnges.—Homac's, 243, Lower Clapton Rd., N.E. one: Dalston 2408. [7222

9 Guineas; exchanges.—1913-14 G.N. 2-seater, hood, screen, polished bonnet, electric lamps, sedometer, smart, any examination, trial.—Seabridge, Hansler Rd., East Dulwich (Sydenham 2452). [6596

19 Guineas; Exchanges.—Really nice 1921 Rover 2-seater, dynamo, 5 detachables, hood, side tains, speedometer, fast, splendid engine.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [5584

1922 8h.p. Rover, brand new, spare wheel and tyre, dynamo lighting, hood, screen, reduced £180; easy payments 4 per cent. extra; exnges.—Premier Motor Co., Aston Rd., Birmingn. [5579

8 Guineas, Exchanges.—1915 Baby Pengeot De Luxe 2-seater, 3 speeds, 7h.p., 4 cyls., hood, en, spare rim, smart; any examination, trial.—Seadge, 35, Hansler Rd., East Dulwich. Sydenham 2. [7526

MORGAN, 1921, special Aero body, none similar, water-cooled, M.A.G. engine, just repainted, new s., splendid condition, must sell, owner going ad; £135.—Box 36, Harrods Advertising Agency, S.W.1. [6756

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1920 Morgan, De Luxe model, 10h.p. Precision engine, fully equipped, hood, screen, lamps, in excellent order; £105.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: lston 2408. [7225

MORGAN 1919 De Luxe, w.c., M.A.G., red with black discs, spare tubes, speedometer, hood r, Binks, insured £120, tax paid, fast, climb hing, any trial; £95.—Swainson, 26, Park de, Cambridge. [6989

V. Monocar, with dickey, 1920, 8h.p., 2-speed, car dynamo lighting, 3 head and tail, perfect con; £60; other cars in stock; exchanges; cash r way.—A.V. Specialist, 13A Worple St., Mort- (No. 9 'buses.) [7491

1923 Morgan De Luxe, 8h.p. J.A.P. w.c., Lucas dynamo lighting, aluminium dash, hood, screen, mats, etc., immediate delivery; £177.—Homac's, an Service Depot, 243, Lower Clapton Rd., N.E. ne: Dalston 2408. [7227

1920 Morgan, De Luxe model, 10h.p. w.c. M.A.G. engine, equipped with hood, screen, all lamps, in splendid order, tax paid; £115.—Homac's, an Service Depot, 243, Lower Clapton Rd., N.E. ne: Dalston 2408. [7226

1922 Aero model Morgan, Lucas dynamo lighting, speedometer, hood with side curtains, discs, inguishable from new, smartest Morgan on the £175; exchanges or deferred.—Edwards, 50, ington Rd., South Kensington. [5610

1922/10.—Morgan, 1921, Aero model, M.A.G. engine, special fixed starting handle, tyres excelhood, screen, aluminium dash, discs, lamps, ometer, mechanical horn, spare tube, etc., tax —Delancey St. Garage, Camden Town, N.W.1. [6946

3HT Car Chassis, 4-wheel, wire, Carden drive, good gears, £6; twin water-cooled V engine with friction plate, perfect, £8; 3-wheeler chassis, twin, oled, 2-speed, chain drive, £11; write for appoint-.—H. R. Hall, c/o Green Man Hotel, Whetstone, on. [6787

1923 Morgan Grand Prix, 10h.p. Blackburne engine, disc wheels, grey, in stock for immediate ery, fully equipped as maker's specification; /10; easy terms 4%.—Homac's, Morgan Service 243, Lower Clapton Rd., N.E. 'Phone: Dal- 2408. [7224

1922 Grand Prix Morgan, 8h.p. w.c. J.A.P. engine, Lucas dynamo lighting, electric horn, screen, disc wheels, spare petrol carrier, etc., in utely perfect condition, fully guaranteed, tax £150.—Homac's, Morgan Service Depot, 243, r Clapton Rd., N.E. 'Phone: Dalston 2408. [7223

PER Carden 2-stroke, dynamo lighting, 28×3 tyres with new spare, radius rods with roller bear- luggage shelf in bonnet, luxurious seat, improved s, rear axle ends tapered to fit special steel hubs, only done 5,000, splendid order; first over for quick sale.—R. Sankey, Astley Abbotts, Bridg- [6764

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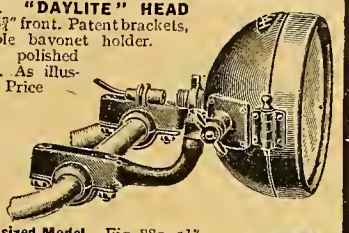
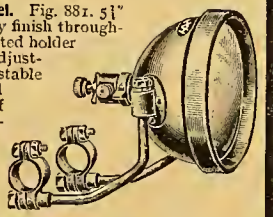
H.A.H. MOTOR CYCLE HEAD LAMPS.

Fig. 805. **"DAYLITE" HEAD LAMP,** 6¾" front. Patent brackets, adjustable bayonet holder. Highly polished reflector. As illustrated. Price Nickel 60/- ea. Black 65/- ea.



Medium-sized Model. Fig. 881. 5½" front. Best quality finish throughout. Totally insulated holder with switch and adjustable focus, adjustable brackets, dust and weather-proof front, as illustrated. 36/- ea. Nickel. 39/- ea. Black.



H.A.H. REAR LAMPS.

Fig. 576 to take Bayonet Bulb. Supplied less Bulb and Wire. **Price 4/9 each.**

Fig. 347.

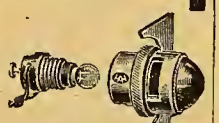


Fig. 574. Supplied with screw-in Bulb and Wire. **Price 5/9 each.**

Fig. 347. Speedolite. **Price 7/6 each.**

H.A.H. Insulating Tape.
Fig. 455. ½" small roll, 7½d. each.
Fig. 456. ½" large roll, 1/- each.
Fig. 457. ½" small roll, 6d. each.

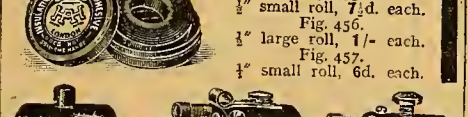


Fig. 410. Cut-out. **Price 2/- each.**

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DASH Switchboards, 4-way, with ammeter, 20/-; with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept. H.1). 9, Colonial Av., Minories, E.1 [0760

SURPLUS Magnetos, with written guarantee one year, M-L single, 35/-; B.L.I.C. ditto, 42/-; Bosch ditto, 45/-; C.A.V. single or twin, 50/-; Thomson-Bennett ditto, 60/-.—We specialise in repairs and spares for all makes. Lists, 2d. stamp. Deal with experts and avoid certain disappointment.—Whitdale Magneto Service, Cherry Orchard, Croydon. 'Phone: Croydon 1625. [5880

IGNITION, LIGHTING, ETC.

M-L Singles, 30/-; C.A.V., 37/6; variable ignition guaranteed.—84, Greenside Rd., Croydon. [6984

RELIANCE Magneto Repairing Co. (the largest London Repair Depot), for repairs and magnetos.

RELIANCE guarantee to return your magneto within 5 days, and if necessary 24 hours, with a 12 months' written guarantee against all defects.

RELIANCE test every magneto after repair, under all running conditions, and as we contract for many of the largest concerns, you need have no hesitation in placing your orders with us.

RELIANCE stock spares for all makes. Special line, genuine platinum screws for all types, 12/- per pair. Magneto work of every description is carried out solely on our premises. We are, therefore, enabled to give you quicker and more efficient service at the right price.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co. for new and second-hand magnetos. See following list.

THOMSON-BENNETT singles and twins, brand new, any degree, enclosed, waterproof, variable; 55/-.

THOMSON-BENNETT, large type single or twin, enclosed, waterproof, variable, suit Harley, Indian, etc.; £3/10.

C.A.V. singles and twins, enclosed, waterproof, variable, suit Triumph, Douglas, and all Lightweights; 55/-.

E.I.C. enclosed, waterproof, variable, suitable for Triumph, B.S.A., or any Lightweight; £3.

BOSCH, type Z.A.2, enclosed, waterproof, variable, latest pattern, ideal for Douglas, 2¾h.p. and 4h.p.; £4.

BOSCH D.A.L. twins, enclosed, waterproof, any degree, suitable for Indian, Harley, etc.; £4/10.

FELLOWS new magnetos always in stock, any degree for any engine, also a large selection of second-hand magnetos, all makes.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list, giving full particulars, sent upon application. It will pay you to deal with a firm of repute. —Reliance Magneto Repairing Co. (1914), 283, St. John St., London, E.C.1. Tel.: Clerkenwell 4290. T.A.: Remagco, Smith, London. [9816

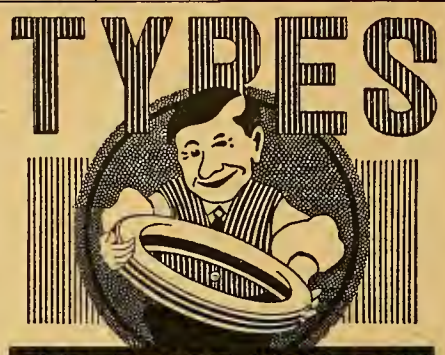
JEBRON, registered 291298, greatly superior to platinum for blades, screws, etc., cures misfiring, Jebron screws, fit Bosch magnetos, 10/6 pair; old screws, any make, Jebrouised, 4/9 each, return post.

JEBRON, the pioneer motor contact, registered March, 1907, and March, 1921; hundreds of unsolicited testimonials.—Jebron, 38, Herbert Rd., Woolwich, S.E.18. [0001

MAGNETOS.—M-L single-cyl., clock, complete, oil Rotary engines; 20/-, postage 1/3; the above, less contact breakers, 12/-, postage 1/3; 4-cyl. Dixie, complete, 25/-; new B.T.H. 6-cyl., complete, £1/10; B.T.H. 8-cyl., complete, 25/-; C.A.V. starting magnetos, complete, 18/6, postage 1/3. Carriage extra. Cash with order. Send 1½d. for list of Aero parts.—Coley, Ordnance Works, Queen Elizabeth Rd., Kingston-on-Thames. 'Phone: Kingston 365. [3380

THE Central Ignition Works (London Depot).—For magnetos, spares, and repairs (Bosch specialists). All magnetos and repairs guaranteed one year. Bosch Z.E.1 enclosed and variable ignition, Bosch Z.E.2 enclosed and variable ignition, Bosch Z.A.2 enclosed and variable ignition, M.L. P.M.1 enclosed and variable ignition, Thomson-Bennett 1 and 2 enclosed and variable ignition, E.I.C. 1 and 2 enclosed and variable ignition, Ruthardt (late type specially made for Douglas machines). Our prices below any offered. Write us, it will pay you. Cash refunded if dissatisfied, approval willingly.—The Central Ignition Works (London Depot), 9 and 14, Loughborough Rd., Brixton, London, S.W. Tel.: Brixton 210. [7587

EUSTON Ignition Co., sole representative for the Splitdorf Electrical Co.—Repairs, spares service to Splitdorf magnetos, dynamos, Dixie magnetos, etc. We have the factory, plant and experience. Official Indian electrical service station. Thomson-Bennett repairs and spares; spares and repairs to all makes of magnetos; all repairs are tested on an approved A.I.D. test bench before dispatch, and carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London. Twins, all degrees, charged accumulators, all voltages always ready. We stock everything electrical for the motorist. We give you real live service always. —Euston Igniition Co., 329, Euston Rd., N.W.1. 'Phone: Museum 5034. T.A.: Magdymo, Eusroad, London. [0263



TYRES

THESE SPECIAL CLEARANCE LINES are qu te new and not old stock as offered at ridlculous prices. All goods are sent on 7 days' approval against remittance. Carriage Paid.

Size	Make.	Our Price.	List Price.
24×2	Palmer, ribbed	16/6	29/6
24×2¼	Clincher de Luxe, ex. hvy.	28/9	40/3
26×2	Elite, 3-rib., ex. heavy ..	26/6	38/6
26×2¼	Palmer, cord, heavy	34/6	47/9
"	Bates, spec. hvy. wired-on	32/6	38/6
"	Palmer, cord	31/-	43/4
"	Continental, heavy	21/0	—
"	Elite, super n-skid, ex.hvy	29/6	40/-
"	Bates, spec. heavy beaded	27/6	40/-
"	Michelin steel stud	20/-	—
"	Hutchinson, T.T.....	18/6	26/9
"	Hutchinson, Pass.....	25/-	33/9
26×2⅜	.....	3	5
"	Hutchinson, T.T.....	20/9	35/-
"	Elite, 3-rib., ex. hvy.	29/6	—
26×2½	Elite, super n-skid, ex.hvy	39/6	56/-
×2¼	Continental, extra heavy..	30/-	—
26×2½	Clincher de Luxe, heavy ..	26/6	28/3
28×2½	Clincher, Dreadnought ..	29/6	—
28×3	Clincher, Dreadnought ..	54/-	70/-
"	Elite, super n-skid, ex.hvy	46/-	68/-
"	Goodyear, all-weather ..	44/-	65/3
"	Palmer, cord	47/3	63/-
"	Goodrich, safety tread ..	37/8	—
"	Ajax, rubber non-skid ...	42/6	61/-
"	Rodace, rubber non-skid .	30/-	—
650×65	Goodrich, safety tread ...	38/6	67/6
"	Clincher de Luxe, ex. hvy.	30/-	68/6
700×80	Dominion, chain	47/6	—
"	Elite, super n-skid, ex.hvy	50/-	69/6
"	Continental, extra heavy..	39/6	—

MOTOR CYCLE TUBES. Best Quality Guaranteed. 24×2, 4/9; 26×2, 4/9; 26×2¼, 5/9; 26×2⅜, 6/-; 26×2½×2¼, 6/9; 26×2½, 6/9; 28×3, 7/11 700×80, 7/6.

MOTOR CYCLE BELTS. In Standard Lengths. Per foot ⅜in. 1/-, ½in. 1/5, ⅝in. 1/9, 1in. 2/-, 1¼in. 2/6.

RETREADING

Rubber Non-skid Pattern.

		Ex. hvy.	Heavy.
We fit only the finest quality treads obtainable, and guarantee satisfaction. Send us your cover.	26in.	20/6	17/6
	28in.	25/-	20/-
	700 x 80	25/-	—

'Phone Victoria 6553.

ELITE RUBBER Co. LTD Tyre Specialists

Grams: Tyreliday, London."

LONDON'S LEADING TYRE HOUSE,
266, VAUXHALL BRIDGE ROAD, S.W.1
to where all post orders should be addressed.

And at 44, Surbiton Rd., Kingston-on-Thames.
Telephone—Kingston 3355.

Steele Publicity.

TYRES.

A EXCEPTIONAL Offer.

BRAND New Covers.—Reflex Clipper Ideal, m by Dunlop, heavy, 3-ribbed, each cover guar teed perfect, 26×2¼, 23/-; 26×2⅜, 26/-; 26×2½, fit 2¼, extra heavy, 4-ply, 30/-; 28×3 extra hea 4-ply, 35/-.—Below.

TUBES.—26×2½, to fit 2¼, 5/9; 28×3, 6/6, m by Dunlop; postage on all above extra.—Bel

MARBLE Arch Motor Exchange, 135, Edgw Rd., W.2. 'Phone: Padd. 789. 'Grams: A motex, Padd, London. [7

A MAUDES' Clearance Covers, all guaranteed by carriage paid.—24×2¼ Hutchinson T.T., 19 26×2 Hutchinson Brooklands, 15/6; 26×2¼ A Durolith, 21/-; 26×2¼ Hutchinson T.T. 3-rib, 2 26×2⅜ Hutchinson T.T., 21/-; 26×2½, to fit Belgrave cable cord, 20/-; 26×2½, to fit 2¼, Hutch son passenger, 30/-; 26×2½ Hutchinson passe R.N.S., 27/6; 26×3 Hutchinson T.T., 27/6; 28 Goodyear, 45/-; 700×75, to fit 650×65, Hutchin 3-rib, 25/-; 700×80 Burnett 3-rib, 35/-; 700; Avon Durolith, 37/6; 700×80 Stepney road grip type, 52/6; tubes, strong red rubber, 24 to 28 5/-; 700×80, 6/-.—Maudes', 100, Great Portland W.1. [7

BASTONES for Covers and Tubes. No better cheaper house.

BASTONES.—26×1¾ Clincher de Luxe; 10/6.

BASTONES.—24×2 Dunlop rubber-stud, 16 Clincher de Luxe Junior, 16/-; ditto e heavy, 21/-.

BASTONES.—24×2¼ Hutchinson T.T., rubber-s 21/-; Dunlop rubber-stud heavy, 26/-.

BASTONES.—26×2¼ Hutchinson T.T., 22/-; D lop rubber-stud heavy, 26/9; Michelin Sem 20/-; Goodrich safety tread, 27/-; Clincher de L extra heavy, 24/-; Spencer-Moulton steel-stud, 2

BASTONES.—26×2⅜ Hutchinson T.T., rubber-s 23/-; Clincher de Luxe heavy, 23/-; Berg nan rubber non-skid, 23/-; Palmer cord heavy, 2

BASTONES.—26×2½×2¼ Goodrich Safety tr 36/-; Clincher Dreadnought extra heavy, 3 Dunlop rubber-stud heavy, 33/-; Dunlop rubber extra heavy, 39/9; Hutchinson - Pass rubber-s 36/-; Dominion Usco rubber non-skid heavy, 2

BASTONES.—26×2¼ Michelin fine ribbed 1 Hutchinson T.T. rubber-stud, 24/-; Good Safety tread, 35/-; Spencer-Moulton steel-stud, 2 Dunlop rubber-stud heavy, 34/9.

BASTONES.—650×65 Goodrich Safety tread, 38 Clincher Dreadnought, 34/-; Dunlop c 44/9.

BASTONES.—700×80 Improved Magnum, 44 Goodrich Safety tread, 44/3. Super Chain, 4 Clincher 3-ribbed, 42/6.

BASTONES.—28×3 Improved Magnum, 45/9; D lop Clipper cord, 53/9; Goodyear all-wea tread, extra heavy, 47/6; Goodrich Safety tr 37/6; Firestone rubber non-skid extra heavy, 4 Clincher de Luxe, extra heavy, 35/-; Clincher Dr nought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson Red-Fox Tubes: 24×2 and 24×2¼, 3/9; 2¼ and 26×2½, 5/6; 700×80 and 28×3, 7/3; G year butted, 28×3, 7/3.

ALL the above new and clearance covers and t are sent on approval against remittance.

BASTONES, 228, Pentonville Rd., King's C London, N.1. Tel.: 2481 North. [6

BULL'S have your size in bargain covers and t A call on us will convince you, or 'phone, rard 1347.—See Below.

26×2¼.—Palmer cord, 32/6; Beldam all-rul 25/-; Wood-Milne 3-ply, 22/6; Clincher Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

26×2½.—Avon Stonehenge, 27/6; Tricar, Clincher rubber non-skid sidecar, 27/6; year cord 5-ribbed, 40/-; tubes, 5/9.—Below.

26×2½×2¼.—Palmer cord, 36/-; Beldam 30/-; 4-ply, 35/-; Wood-Milne 4-ply, Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

26×2⅜.—Palmer cord, 34/3; Wood-Milne key 3-ply, 22/6; 4-ply, 27/6; Beldam all-r 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Be all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, Below.

28×3.—Clincher rubber-studded sidecar, Clincher de Luxe extra heavy, 45/-; Be 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, Below.

650×65.—Palmer cord heavy, 42/6; Wood-M 4-ply, 37/6; 3-ply, 30/-; Goodyear cor ribbed, 42/6; tubes, 8/-.—Below.

BULL'S Rubber Co., Ltd., 3, Upper St. Ma Lane, London, W.C.2 (next door to Aldrid 'Phone: Gerrard 1347. [

TYRES.

ARGAIN.—Two only, Dunlop extra heavy, 26×2¼ covers; 19/6 each.—Lee Aston, Nantwich. [6704

6×2¼ Dunlop Heavy, new, 19/- each; 26×2⅜, £1/2 each.—35, Citizen Rd., Holloway, Lon., N.7. [6857

OTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., xton, Derbyshire. [5836

COTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., Argyle St Glasgow List post free. [4918

EAL Good reliable second-hand motor cycle tyres, all sizes and makes; 10/- each, plus 1s. carriage. displayed advertisement.—H. Emanuel and Co. [0832

CONOMIC Tyre Co.—The following new blemished and clearance covers and tubes sent on seven s' approval against remittance, per passenger train. riage paid.

CONOMIC.—24×2 Clipper Ideal, 14/6; tubes, 4/6; 24×2¼ (also fit 2in. rims) Dunlop heavy, 26/-; ther Junior, 16/9.

CONOMIC.—26×2¼ Dunlop heavy, 26/9; Firestone extra heavy, 22/6; tubes, 4/9; 26×2⅜ lop heavy, 30/-; extra heavy, 35/9.

CONOMIC.—26×2½×2¼ Goodyear Diamond, 30/-; Avon extra heavy, rubber stud, 25/-; Palmer es, 6/6.

CONOMIC.—26×2½ old standard Clipper extra heavy, 27/6; Redfern, rubber stud, 25/-; tubes,

CONOMIC.—28×3 Goodyear Diamond, 42/6; Goodrich Safety, 39/6; Firestone non-skid, 39/6; s, 6/6.

CONOMIC.—650×65 Goodrich Safety, 34/6; Stepney road grip, 54/6; Clipper extra heavy, 27/6; s, 5/9.

CONOMIC.—700×80 Goodrich Safety, 39/6; Beldam extra heavy, 44/3; Goodyear, 44/3; Goodcord, 58/-.

CONOMIC.—Dunlop rubber stud, fully warranted, 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26× 18/6.

CONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [7428

3×3, 2½, 2⅜, 2¼ and 2.—Remaining stock of new Beldam covers, to clear; 15/- each; post- 1/6 extra.—Homerton Rubber Works, Brooksoy s k, Homerton, E.9. [0331

CLEARANCE Tubes in perfect condition, mostly Hutchinson 26×2, 2¼, 2⅜, 2½, 24×2, 28×2¼-; it 4/6 to clear; postage extra.—Ashgate Garage, dale Rd., Sheffield. [6835

WORLD'S Heaviest Tyre, "Royal Dutch" clearance, puncture-proof, 6-ply, ⅞in. thick, 650×65 700×80 45/-; American Ford covers, £2/18/6.— at, Bourne, Farnham. [7166

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of r to tyres and tubes in 24 hours, retreads in 4 —The Motor Tyre Co., 66, High St., West Brom [3955

UPPELTHWAITES for Tyres at knock-out prices. —700×80, 605×65, 26×2½, ⅝, ¼, 25/- each; tubes in boxes, 4/6 each. 'Phone: 1958 Brixton.— Mag Hep, 19, Wilcox Rd., South Lambeth, Lon- S.W.8. [7525

1/- EACH.—Special offer of brand new Beldam Bulldog covers, 26×2¼in., 26×2⅜in., 26× to fit 2¼in., postage 1/6. Have one on approval; y returned if not satisfied.—W.J.C. Motor Exge, 5, Addison Av., W.11. Park 2071. [7564

RING-DISTANCE Retreads, three-ribbed pattern, returned like new, 26in. tyres, 20/-; 28in. tyres, burst tyres made perfect, chafed beads reded, tube vulcanising, butt ends fitted; best work e country.—Melton Rubber Works, Melton Mow-

INCREASE the purchasing power you spend on tyres by having them retreaded at the Melton Rubber s; there is no query, better far than clearance with their defects; send for list. [0347

SONS.—Tyres are down, and the following offers beat all:—Wood-Milne Key-Grip, 4-ply covers, ½, 24/6; 26×2⅜, 26/-; 26×2¼, 23/6; 26×2½× 28/-; 650×65, 26/-; 3-ply covers, 24×2¼, 18/-; 80, 28/6; 28×3 (American), 27/6; 28×2½ rican), 24/6.—Below.

SONS.—26×2½ Dunlop Heavy Fluted, 21/6; 26×2¼ ditto, 18/6; 26×2½ Dunlop extra heavy l, 32/6; 650×65 ditto, 30/-; perfect stock, 's guarantee.—Below.

SONS.—700×80 Palmer Cord (light car type), 41/-; 28×3 Goodyear A.W.T., 43/6; any tyre val against remittance, carriage paid.—Masons. Tyre House, Ipswich. [0916

TANKS.

NKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [5830

JAMES GROSE LTD.,

OLD JEWRY, CHEAPSIDE, E.C.2,

and at 255-257, Holloway Road, N.;

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Established 1876.

'Phones: 7712 Central. 1297 North. City 3684.

SPUR SIDECARS

We specialise in Sidecars, and can supply from Stock to fit almost any make of machine.

THE 'SPUR' LIGHT TOURING MODEL

Fitted with a well-made coachbuilt body, side door, locker under seat, detachable cushion; the chassis is light and strong, has quick detachable fittings, wide mud-guard and C-springs, complete with studded tyre

£12 12 0 Body only, £5 0 0.

SHOP SOILED MOTOR CYCLES

The following are absolutely new, but slightly soiled 1922 models.

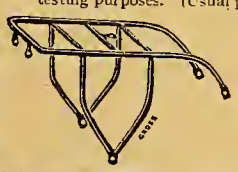
MATCHLESS, Model H, with screen and spare wheel. (Usual price £180) .. **£125**

SPUR, 3 h.p. DALM 2-speed **£35**
(Usual price £55)

DOUGLAS 2¾ h.p., with Lamps, Horn, Tools, etc. (Usual price £65) **£50**

HENDERSON "ELITE" Sidecar, with Windscreen, Disc, etc. (Usual price £45) **£20**

SPUR Jap 2¾ 2-speed Clutch and Kick-starter with accessories. This machine has been ridden a few miles for tyre-testing purposes. (Usual price £65) .. **£30**

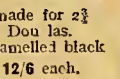


REAR CARRIERS

made for 2¾ Douglas. Enamelled black **12/6** each.

PILLION FOOTRESTS

New pattern with cast clip, made for Round and D-shape stays, **3/6** pair.

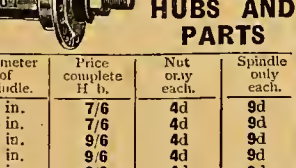


MOTOR CYCLE HUBS AND PARTS

Width over Cones.	Diameter of Spindle.	Price complete H.b.	Nut only each.	Spindle only each.
4⅛ in.	⅞ in.	7/6	4d	9d
4¼ in.	⅞ in.	7/6	4d	9d
4⅜ in.	⅞ in.	9/6	4d	9d
4½ in.	⅞ in.	9/6	4d	9d
5 in.	⅞ in.	9/6	4d	9d
5½ in.	⅞ in.	9/6	4d	9d
6 in.	⅞ in.	9/6	4d	9d
4⅞ in.	1 in.	11/6	6d	1/-
5⅛ in.	1 in.	13/6	6d	1/-
6⅛ in.	1 in.	13/6	6d	1/-

Cones only, 2/- each. Cups only, 6d each.

SIDECAR HUBS AND PARTS



Spindle Stump.	Price.	Cones only each.	Adjusting Nuts each.	Caps each.	Cup only each.
⅞ in.	10/6	1/-	3d	1/3	1/-
1 in.	12/6	1/3	6d	1/3	1/-
1 in.	16/6	1/6	6d	1/3	1/-

TANKS.

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [5831

TANKS for Humber, 1921 pattern, to fit 1910-19; 36/-.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [5832

TANKS Made or Repaired, re-enamelled, lined, transferred, handle-bars, etc., plated. Established 30 years.—Attwood's, 86, Rosebery Av., London, E.C.1. [7073

I SPECIALISE in Repairs, re-builds, and tanks to measure. Enamelling to any pattern. Quick delivery.—Below.

COVENTRY Tankers, Ltd., makers to the principle manufacturers; petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [5829

TANKS.—Invicta, scratched, new, 30/-; Omega, Francis-Barnett, second-hand, £1 each; makers' colours, no caps, stamp.—Fitter, Home Farm, St. Julians, Newport, Mon. [6926

DOUGLAS Pattern Tanks, new and enamelled, complete with all fittings and B. and L. pump; 55/-; folder with photo on request.—G. Day, 85, Cheapside, Birmingham. [6602

TANKS re-enamelled to pattern, high-class work only; 16/6; special terms to trade.—Jenkins and Sons, Richard St., Atkinson St., Deansgate, Manchester. Established 25 years. [6557

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry. 'Phone: 1774. [0896

P. and M. pattern tanks, 35/-; Douglas latest pattern 4h.p., 30/-; 2¾h.p. Douglas latest pattern, to fit all models from 1913, using old fittings, 32/6; others to order; we undertake all repairs.—Lings, 14, Ecclesbourne Rd., Islington, N.1. [7320

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

TANKS.—All kinds made to order, 32/6 each, including 2 plated fillers, 2 taps. Delivery 14 days, carriage paid. Satisfaction guaranteed or money returned. Enamelling, one colour, 10/6; two colours, 17/6.—Order forms from H. Peel, The Liverpool Tank Hospital, 5 Smithdown Lane, Paddington, Liverpool. [9194

BELTS.

50 ONLY Left.—⅝in.×6ft. 6in. brand new surplus belts, made by Palmer; 5/9 each; condition guaranteed; postage 9d.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [7570

BASTONES for Belts.—Dunlop Round Top, ¾in., 1/9; ⅞in., 2/1; 1in., 2/7; 1¼in., 3/1 per ft. Buffalo hide and chrome, ⅞in., 1/9; 1in., 2/-; 1¼in., 2/3 per ft.—228, Pentonville Rd., King's Cross, London, N.1. Tel: 2481 North. [6628

BELTS.—John Bull, 7ft. 6in.×⅞in., 12/6; 7ft. 6in.× 1¼in., 16/-; Dunlop, Avon and Pedley cut to order, 1¼in. 2/-, 1in. 1/9, ⅞in. 1/6, ¾in. 1/4 per foot; all brand new and guaranteed. Sent on approval against cash.—Maude Rubber Co., 58, Praed St., W. [6697

500 Motor Cycle Belts, odd lengths, best makes, clearing at gift prices, not W.D. goods; 6ft.× ¾in., 6/-; 6ft. 6in.×1in., 9/6; 7ft. 6in.×1½in., 13/6; splendid chance to secure a spare; carriage paid, approval.—William Arthur, Scottish Tyre Mart, 10, Hamilton St., Paisley. [4861

BALATA and Chrome Belts.—A client writes to say the advantages of these belts are absence of slip in wet weather, indestructibility of its wearing surfaces, where rubber would peel off in shreds; price per foot, ¾in. 1/4, ⅞in. 1/6, 1in. 1/9, 1¼in. 2/-; fasteners 9d. each, postage 1/-.—Sole manufacturers, Pollin and Son, Hollington, St. Leonards-on-Sea. [4877

BELTS.—Clincher clearance, not W.D., ¾in., 6ft. 6in., 8/2; 7ft. 6in., 9/5; ⅞in., 7ft. 6in., 9/5; 8ft. 10/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1¼in., 8ft., 16/-; Bates' short lengths, ¾in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

CARBIDE.

FINEST Carbide, pre-war quality; 19/6 cwt.—Carbide Depot, Denby Dale, Huddersfield. [4760

CARBIDE.—Highest-grade only, 18/6 cwt., immediate delivery.—Kemp's Garage, Importers, Louth. [6829

CARBIDE, finest quality, 19/6 cwt., l.o.r. nearest depot; coated, 25/-, ex Bristol only, c.w.o.—Hodge and Co., Warwick Rd., Bristol. [7301

CARBIDE, highest grade only, no seconds, all meshes; 19/- cwt. drum; ex 22 depots; immediate delivery.—Elloc Cycle Works, Gedney Drove End, Wisbech. [6967

CARBIDE.—Immediate delivery of all sizes in 1lb., 2 lb., 4 lb., and 7 lb. lever lid tins, also 1 or 2 cwt. drums. Labelled or plain, quality guaranteed. The cheapest firm in the trade.—The Premier Lamp and Engineering Co., Ltd., Armley, Leeds. [5088

CARBIDE.

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 21/6, ½-cwt. 12/6, 28 lb. 7/6, drums free. (Depots in all parts.)—Yonng, Importers, Misterton, Somerset. [1316

CARBIDE, finest quality obtainable; 20/- per cwt., drums free, cash with order, free on rail, Aberdeen, Bristol, Belfast, Cardiff, Dublin, Edinburgh, Glasgow, Gloucester, Grimsby, Hull, Leeds, London, Lowestoft, Liverpool, Lincoln, Manchester, Newcastle, Preston, Port Talbot, Runcorn, Sharpness, Swansea, Yarmouth.—International Products, 77, Victoria St., Bristol. [3271

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [4808

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672. [7917

H. N. and W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E., Associate I.E.E., etc.; W. S. Skerrett, A.I.E.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

PATENTS, EXPERIMENTAL WORK, ETC.

DESIGNS, patterns, castings of 2½h.p. o.h.v. engine, 2-speed gear box; insufficient capital cause of sale; best offer accepted.—25, Fleet St., Coventry. [6757

EXPERIMENTAL Work.—My tool room, engineering works, drawing office, and laboratory are devoted entirely to experimental engineering; secrecy guaranteed. —Leopold Ward, B.Sc., A.C.G.I., Harmood Place, Chalk Farm, N.W.1. 'Phone: Hampstead 7559. [0945

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate 3d. per word, minimum 3/-.

INSURANCE.

COMPREHENSIVE Policies from £3/10 to £5/5, sound company.—Broadhurst, 24, Holborn, E.C.1. [6929

£3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Holborn 328. [0005

DARK Nights are Coming. Be wise in time and insure against accidents. May I quote you?—E. Sutton, Bynam, Ferrybridge, Yorks. [6950

HENDERSONS, Harleys, etc. (approved cases), £6/15. Comprehensive policy. Others at lowest rates, finest security.—Noble and Wilkins, Insurance Brokers, 329, High Holborn, W.C. 'Phone: Holborn 601. Established 60 years. [6736

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

SITUATIONS VACANT.

LOCAL Representative wanted, with or without experience.—Tynesider Pillion Seat Works, Union St., North Shields. [0907

ENTHUSIASTIC Motor Cyclist wanted with thorough knowledge of Spare Parts Business, must be first-class correspondent, able to write business pulling letters and suggest ideas to obtain new business; salary and commission to competent man.—Write with full particulars, Box 4282, c/o *The Motor Cycle.* [7494

FINANCIAL.—PARTNERSHIPS.

PARTNER Wanted, capital £200, to start electro-plating business in another town. Advertiser has present business. Established 13 years. Young man with knowledge of plating preferred.—Box 4160, c/o *The Motor Cycle.* [6738

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

FREEHOLD Motor Agency Premises, light cars, cycles. Splendid position London suburban main road. No serious opposition; all sales, repairs; no garage; £2,500 freehold; no goodwill. Substantial mortgage procurable. Stock optional. Unique opportunity.—Box 4268, c/o *The Motor Cycle.* [7363

GARAGES.

BRIXTON Private Lock-ups; combinations 4/- weekly; clean, dry.—26B, Ingleton St. [7023

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole address, Palmer's Garage, Tooting, London. [7248

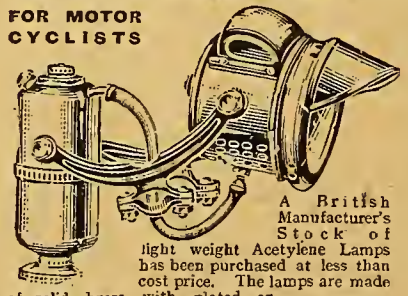
BARKER BARGAINS FOR THE CYCLIST

The special attention of all motor cyclists is directed to the extraordinary values detailed below. Orders of £1 are sent post free to any address in the United Kingdom.

OFFER OF 300 GOVERNMENT R.A.F. TAN LEATHER HELMETS for Motoring. All new goods made from the finest quality Skins, lined throughout with Chamois Leather and real Nutria Beaver Fur. Adjustable ear rolls and bead straps. Suitable for Ladies or Gents. Full sizes. This remarkable offer cannot be repeated. Cost to manufacture to-day 63/- BARKER Price Postage 9d.

17/6

420 HEAD LAMPS FOR MOTOR CYCLISTS



A British Manufacturer's Stock of light weight Acetylene Lamps has been purchased at less than cost price. The lamps are made of solid brass with plated or ebonised finish. 4 in. glass, 4 in. mirror reflector. Burns for 4½ hours on one charge. Price Postage 1/- extra. Rear lamp with 5 ft. gas tubing and Y-piece, 5/9

15/6

£1 ORDERS POST FREE

John Barker and Compy., Ltd.
KENSINGTON, W.8.

VEVO 3 SPOUT INJECTOR

No. 74. POST FREE 3/6

FOR INJECTING GREASE AND OIL INTO GEAR BOXES, CRANK CASES, &c.
MADE BY
ARTHUR R. PRICE (Aston Manor) Ltd.,
VEVO WORKS, PARK LANE, ASTON, B'HAM.

WANTED.

WANTED, 2¼h.p. F.N. engine.—Wood, Ansde House, Whitstable. [700

WANTED, Sturmey-Archer gear box, cheap.—3 Hackford Rd., Brixton. [758

CYLINDER, Triumph 3½h.p., 1912, sound. Sta bore.—Bragg, Billericay, Essex. [685

HARLEY Sidecar wanted, complete, good condition. Roydene, The Drive, Sidcup, Kent. [716

SIDECAR, condition immaterial; must be reasonable.—277, Camberwell Rd., S.E.5. [710

WANTED, Villiers Hub in wheel for 1913 Triumph —Potter, 28a, High St. Hampstead 5298. [693

PULLEY side half crank case, Calcott 2¼h.p., abo 1914, sound.—Rumming, Headley, Newbury. [677

STURMEY-ARCHER 3-speed gear boxes, any co dition.—16, King's College Rd., Swiss Cottage. [727

WANTED, 3h.p. to 4½h.p. unit, sound and cheap cash; particulars.—Dent Farm, Beechburn, Croo Durham. [677

MILLFORD Sidecar with connections for 8h.p countershaft Zenith.—Forsyth, Victoria Pie Folkestone. [699

WANTED, 2- or 3-speed gear box, or speed whee —Price and particulars, 56, Sutton St., Aston Birmingham. [709

INTERNAL Parts of Armstrong Mark VII. ho gear, good condition.—Bach, Little Bsyham, Lan berhurst, Kent. [685

LIGHTWEIGHT Machine and Auto-Wheel wante condition immaterial; state lowest price.—9 Latchmere Rd., Battersea. [601

1914 Henderson Parts.—Top half crank case, ca shaft, crankshaft, 2 pistons, cylinder, con. rod. Box 4262, c/o *The Motor Cycle.* [692

PREMIER Parts, or complete Premier or Triumph motor cycles in or out of repair.—Jack War 11, Radford Rd., Leamington Spa. [723

WANTED, for countershaft Triumph, S.A. 3-spee box, incomplete, back stand, driving side fl wheel, or pair complete.—Hole, 129, Park Lane, Wa lington. [624

MOTOR Cycles, light cars, spares, and accessorie new or S.H.; prompt cash paid for above. McNeille and Platt, 57, Great George St., Liverpoo 'Phone: 1092 Royal. [70

OLD Man Hep will purchase gear boxes, engine spring forks, carburetters, magnetos, and dynamo also other parts; please state price.—19, Wilcox R South Lambeth, London, S.W.8. [45

EXCHANGE.

WARD and Co. for exchanges.—Below.

ROVER and A.B.C. Light Cars at new reduce prices. £180 and £255, completely equipped, exchange for your solo or also G.N. combination a cash.—Below.

HAVE you realised how little cash may be necessa with your outfit? Deferred payments if require Distance no object. Send full particulars of yo machine, we do the rest.—Below.

WARD and Co., 51, Upper Richmond Rd., Ea Putney. 'Phone: Putney 2754. [68

14-16h.p. Belsize Landaulet, 4-cyl., gate chang exchange; sell £50.

1915 Ford Van, fully equipped; exchange; s £35.

1916 Studebaker Box Van, dynamo lighting, 5 c tachable rims; exchange; sell £60.—War South Western Garage, New Malden, Surrey. [74

GEAR Box, 2-speed, exchange good camera; or s £3.—7, Vincent St., Crewe. [70

EXCHANGE 1920 Rudge-Multi for A.V.; cash eith way.—13A, Worple St., Mortlake. [74

1921 Rudge Combination, unscratched, for solo combination.—19, Valnay St., Tooting. [75

POPULAR 2-stroke; exchange anything useful; s £12/10.—97, Latchmere Rd., Batterses. [71

EXCHANGE New B.S.A. 4½h.p. and cash for 19 8h.p. Rover.—7, The Vale, Acton, W.3. [72

CYCLE Car, Chater-Lea 8-9h.p., mileage 1,000, l combination.—31, Majendie Rd., S.E.18. [72

LIGHT Humber Van for Sale or exchange mot cycle or combination.—Royal, Brightlingsea. [69

EXCHANGE 3½h.p. Premier for Scott or Dougl or sell £32.—Ketley, Southwell Rd., Mansfield [67

EXCHANGE your present machine for a new or motor cycle at Kays, 8, Bond St., Esling [50

3½h.p. Triumph, 2-speed, clutch, equipped; Lig weight.—Hall, 27, Flaxton Rd., Plumstea [69

EXCHANGE 30-cwt. Daimler lorry for combinati —1, Springfield Park Crescent, Catford, S.E [71

2h.p. Inclined F.N. engine; what offers in excha anything useful?—Reddiug, New Ground. Tri [69

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
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COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).
BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.
MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

Exterior Aids to Speed.

AT the present time at Brooklands there is a great deal of discussion regarding secret fuels and other exterior aids to speed; furthermore, certain successful riders are known to adopt such means to gain a little advantage over their contemporaries. No doubt the practice serves a purpose apart from assistance in winning a race or reducing record figures; it must indirectly further advance developments in engine design and construction. Any extra power obtained must proportionally place increased stresses upon the engine.

The idea is not new, although the nature of the ingredients used to-day may be. Over a decade ago such exterior aids as oxygen, picric acid, ether, and acetylene gas were used by the hill-climbing exponents of that era. In a little while, however, further increased power was obtained by mechanical means, and progress took a long step forward.

During the practising for the last Tourist Trophy races several so-called "dopes" were tried, but it is significant that all the winners used known fuels only.

If there is any advantage accruing from the addition of chemical agencies to the fuel, it is only possible to utilise it for comparatively short distances.

The present revival of the practice shows how history works in cycles, and that at certain irregular intervals there comes a time when no one designer has a monopoly of efficiency. The latter end of 1922 marks perhaps one of those epochs.

History will repeat itself. Before the Brooklands racing season re-opens, increased efficiency will be obtained by design, and until the exponents of speed are once again on level terms, chemical agencies will be laid aside. Either way, the matter is not likely to cause heart-burning among average motor cyclists, because chemical additions to petrol are only advantageous to those to whom even a fifth of a second in a kilometre is important.

Sportsmen All.

IT has been asked if motor cyclists of the North are keener and more capable than their Southern brothers. This seems likely to initiate a controversy which can only lead to invidious comparisons.

At first glance there might be some little justification for the supposition. The designation "sporting rider" has become practically synonymous with one who spends the greater part of his time in the saddle in searching out and attacking freak gradients and forbidding obstacles of every description; when not so engaged he is competing in speed hill-climbs and the like. Now the North-country riders excel in this kind of thing, for the simple reason that the districts in which they live encourage and in many instances even necessitate going over tracks the like of which many riders in the Home Counties never see; should the latter class of riders, however, become transplanted to a more violently sculptured section of the country, it is not to be thought otherwise than that the same British spirit pervading all of us would rapidly make the scaling of precipices an habitual enjoyment to them as it is to the dwellers in the rugged places.

Nor has the North a monopoly of the type of country that breeds sporting riders. In Wales, in the Western Midlands, and in the South-West, too, are hills and tracks to taunt and test the best, the most enthusiastic, and the most skilful riders.

An index to the advertisements in this issue will be found on the page facing the back cover.

Another "Service" Scandal.

THE welfare of the industry is so bound up with prompt and efficient "service" that it is a real kindness alike to maker and user if any slips are exposed. On June 17th a Midland reader discovered that his 1921 cylinder head was cracked, the engine being a proprietary type fitted to many makes of machine. A new one was ordered through the local agent that night. The subsequent history of the job is as follows:

June 28th.—New head received. Piston bumped right up against it.
June 29th.—New head returned to makers.
July 3rd.—Urgent letter from rider, requesting prompt service.
July 18th.—Makers return the same head to local agent, stating that they manufacture no other type. If it did not fit, a packing piece must have been fitted over big-end. This should be removed, when head would fit. (N.B.—Engine had never been dismantled since delivery.) Rider dismantles engine, finds packing piece ¼in. thick, and manages to fit the head. Great loss of power and speed, as the original head was a special high compression pattern.
August 2nd.—Makers write direct to rider, admitting that they had sent out a few high compression heads. None in stock at the moment, but they will make one, and forward.
September 30th.—No further communication from makers, except a bill for £2 18s.

The Service Manager on the Job.

IF I were appointed service manager of this firm I should get very busy indeed. On this one job, urgent letter A remains unanswered for 15 days. Urgent letter B remains unanswered for 14 days. Promise C is left unfulfilled for upwards of 59 days. These are matters of pure office routine, and suggest wholesale dismissals and reorganisation. Then there is the technical side. My firm is manufacturing a special sports engine. Agents and users handle this engine without being aware that it is not standard pattern. Steps should be taken to let users know that standard spares do not fit. All agents should be impressed with the differences between the two types. Above all, my own storekeeping department should be informed that such engines are in customers' hands, should be put on the *qui vive* for identifying replacement orders, and should be provided with an ample reserve of the necessary parts.

To run a business on the lines adopted by this concern is one loud shriek for the services of the Official Receiver.

The Best Mechanical Pump.

SEVERAL correspondents have written to endorse my eulogies on this no-trouble oiler, and agree with my verdict that you just keep oil in your tank, and the pump does the rest. In practice I do not find it necessary to adjust the level on the pump, even with an o.h.v. Triumph, which can be driven as a sucking dove or a road devourer, according to one's caprice. If I used a sidecar, I might have found this lever useful. At any rate, one reader remarks that his sole criticism is the difficulty of operating the tiny locking catch of the pump plunger with a gloved hand, after injecting an extra dose by hand. Personally, I have left my plunger locked all season, and cannot conceive of any circumstances in which a solo-ist need give a hand charge. However, I pass on my correspondent's solution of the difficulty. He fits a rubber ring round the catch, so that it locks itself when the plunger reaches bottom. He suggests that the makers should fit a spring catch.

More About Challenger Tubes.

THE third complaint of the year about Challenger tubes is just to hand, a rider stating that after several thousand miles the inner layer of red rubber split and caved inwards along the tread. The makers reply plausibly enough that this fault is rare and is always due to gross under-inflation. They admit, however, that manufacturing problems occur in the relative curing of the red rubber of the tube and of the black mastic "sealing" insertion; and that in a few tubes the inside rubber may have been the least thought undercured, thus enhancing any evil consequences of riding a tyre too soft. The black mastic is apt to "draw cure" from the red rubber; and to prevent this terrible catastrophe, they now enclose the black mastic in an envelope of quick curing grey rubber, which divorces it from the red rubber of the tube. I have devoted some attention to these tubes, first because they are among the very few specifics which offer some protection against small punctures, and, secondly, because my own sets have never given me any trouble or failed in their work.

273,000 *v.* 50,000.

IT is computed that the existing motor cycle plants of Great Britain could turn out 273,000 machines per annum, working at full pressure. The present annual output is rather under 50,000 machines. More

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Occasional Comments.—

than 150 firms (including many small assemblers of standardised units) are occupied in supplying this rather beggarly total. Some significant facts emerge from a consideration of these figures, which I owe to *The Motor Cycle Trader*. Lumping the factories together, each of them sells 330 machines a year. The Ministry of Transport's taxation figures for Great Britain (dealt with on another page) denote that only 377,000 motor cycles were in commission altogether on August 31st.

From the User's Standpoint.

AS patrons of the industry, we users must confess that its condition is not too unhealthy. We desire from any manufacturer whose wares we buy that he shall sell us a machine at rock-bottom price; back it up with generous service; develop it to the limits of perfection embodied in the design; be financially stable, so that spares shall be available for twenty years to come; and keep his experimental and research departments so hard at work that he can give us something still better presently. It is quite obvious that very few firms can afford such a programme under the conditions outlined above. No wonder that fascinating novelties bob up, and presently disappear, as their sponsors exhaust their capital.

Towards Better Things.

REAL health can never adorn the motor cycle industry until it is running smoothly and working "up to capacity," which implies an annual output of round about 270,000 machines per year (if present conditions are maintained). Alternatively, a number of firms might go out of business, and the present sales of 50,000 continue, emanating from a few factories running at full blast. In this case, the industry might tend to stagnate—we should get less variety in design. One solution probably lies betwixt and between. Unless Britain becomes much wealthier, it can hardly absorb 270,000 machines per annum. Once again I repeat, therefore, that a solution lies in an energetic sales campaign in overseas Dominions. The obstacles to exports which have existed since the war are rapidly becoming things of the past.

NO LONGER DIFFICULT. Two or three years ago productive of many anxious moments, Flagstaff Hill during 1922 has been included in quite a number of Midland Trials without causing many failures. E. Arthur (976 Brough Superior sidecar) climbing it well in the Sutton Coldfield and North Birmingham event this month.

Bad Weather Ahead.

ABOUT this time of year I discard the light summer waterproofs, climb up to the attic with a pitchfork, and stir up a dump of all-weather overalls of all sorts, shapes, and sizes, until I have dug out something likely to keep me warm and dry in the bad weather which can be expected shortly. And here's a hint to the trade. I usually have half a dozen sample suits on test, but my choice invariably falls on the suit which is easiest to put on and take off, provided, of course, that it is moderately warm and rainproof (nothing but oilskin is absolutely drencherproof for many weeks together). The novice might fancy that all "split" leggings were easy to put on. They aren't. I have three or four samples which are most laborious wear.

For Long Rides.

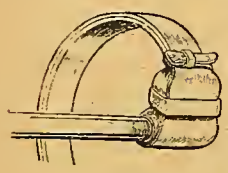
IF one is contemplating a non-stop of 100 miles or so in dubious weather, warmth and what the Cornish villager terms "dryth" are far more important than convenience in dress- and undress- ing. For sheer warmth there is nothing to beat the ex-R.A.F. Sidcot suits, but some of them are made with rather an inferior twill, which doesn't stop persistent rain. For sheer "dryth"—some Cornishman will correct my spelling if faulty—a rubber poncho looks after one's top storey most efficiently, supposing the tearable nature of oilskins deters one.

Head Wear.

THE ideal storm hat for motor cycling has not yet been invented. You need something to shield your face when a twenty-mile wind is added to your own 40 m.p.h., and the resultant gale is tipped with hail or rain; and brimless helmets convert your pink cheeks into a perfect target for such icy arrows. Why is there no helmet with a leather-covered aluminium peak, as long and stiff as those on a jockey's cap. Similarly, unless you are wearing a poncho with a draw-string or an umbrella neck, you need something to stop liquid weather from trickling down your collar. The common dodge of wearing a scarf is most uncomfortable.

AMONG THE ACCESSORIES

Sidecar Shackle Covers.



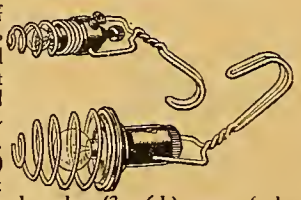
Neglecting to lubricate sidecar shackles leads to annoying squeaks. The Dickens leather cover makes greasing a yearly instead of a weekly task. 5s. per pair. (Dickens & Co., Ltd., Cross Cheaping, Coventry.)

Electric Bulb Adaptors.

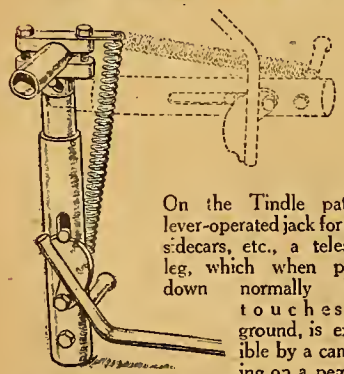
Five fibre disc adaptors for the conversion of double-contact bulbs to single contact, or *vice versa*, and tweezers to facilitate handling are packeted by Andrew Page & Son, 68, Albion St., Leeds, at 1s. 6d. per set.

Useful Inspection Lamp.

Two sizes of inspection lamp are marketed by A. H. Hunt Ltd., Tunstall Rd., East Croydon, Surrey. The larger (6s.) has a bayonet clip bulb and the other (3s. 6d.) one of the screw-in type.

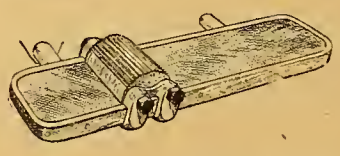


Self-locking Sidecar Jack.



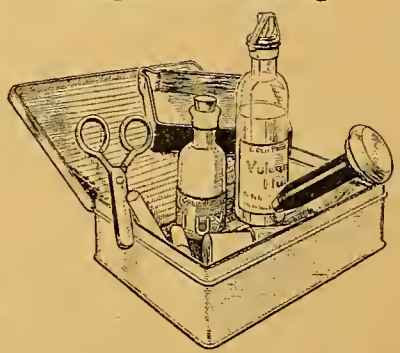
On the Tindle patented lever-operated jack for heavy sidecars, etc., a telescopic leg, which when pushed down normally barely touches the ground, is extensible by a cam acting on a peg protruding from the inner member. A slot in the cam locks it in the fully open position, the upper hinge being self-locking. (A. T. Tindle, Hood Street, St. John's Chapel, County Durham.)

Adjustable Footboard Pads.



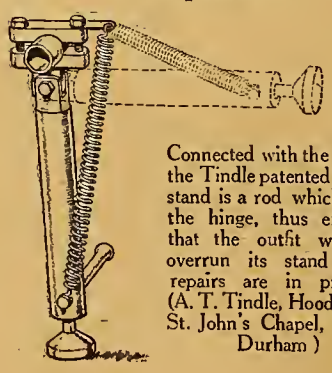
Although originally designed for Douglases, the E.L.I. footboard pads fit a number of other machines, affording an excellent grip for the rider's feet. 7s. 6d. (Eli. Clarke, Cheltenham Road, Bristol.)

Simpler Vulcanising.



It is claimed that the Desmo cold process of vulcanising effects repairs equal in every way to ordinary vulcanising. Anyone can use it; a torn tube takes ten minutes to put in order; and, as far as we can judge, the only drawback is the extremely unpleasant odour of the chemicals! The motor cycle size of outfit, illustrated, is 5s. 6d. (Desmo Ltd., 264-5, Broad St., Birmingham.)

Automatically Locked Sidecar Prop-stand.



Connected with the base of the Tindle patented sidecar stand is a rod which locks the hinge, thus ensuring that the outfit will not overrun its stand while repairs are in progress. (A. T. Tindle, Hood Street, St. John's Chapel, County Durham.)

Convenient Eye Protection.

Fitted with a spring hinge and clipped to the peak of the cap, the "Gleam" non-inflammable celluloid eye shield is a useful substitute for goggles. (Brown Bros., Ltd., Great Eastern Street, London, E.C.)

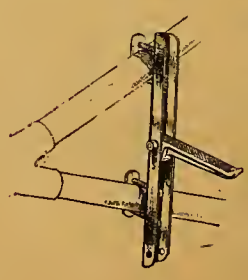
Plug for Hot Engines.

90% nickel electrode and porcelain insulation are said to render this new Hobson motor cycle plug immune from pre-ignition. 5s. (Hobson Manufacturing Co., Ltd., 29, Vauxhall Bridge Road, London, S.W.1.)

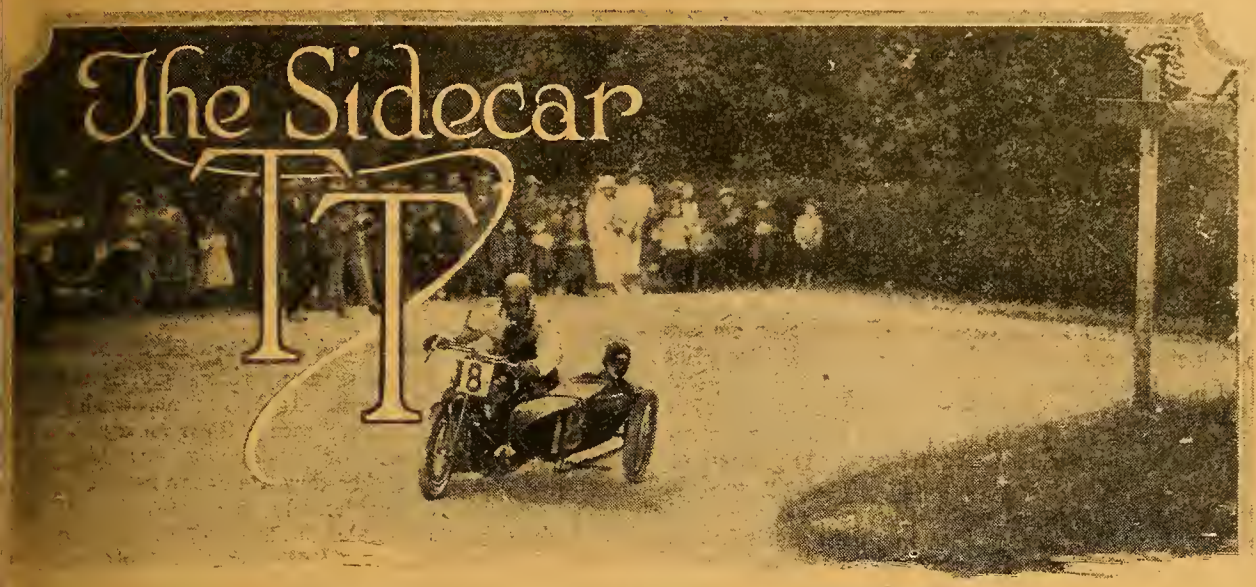
Hollow-cone Valve Cap.

It is claimed that since the Beard & Fitch spirally-finned aluminium valve cap is hollow, it dissipates more heat than is usually possible. It is stocked to fit most engines. (Beard & Fitch, 34, Aylesbury Street, Clerkenwell, London, E.C.1.)

Foot rests for Pillionists.



Pillion riding is made safer, possibly, and more comfortable, certainly, when foot rests such as the Pidco type are fitted. (Norrish & Pidcock, Lonsdale Chambers, 27, Chancery Lane, London, W.C.2.)



Why Exclude Runabouts? A Genuine Passenger Machine Race Suggested.

By B. H. DAVIES.

THE A.C.U. decision to organise a sidecar T.T. in 1923 will act as a charge of high explosive in motor cycle circles.

No proposition could have stirred up so many sleeping dogs and opened such highly-contentious questions. In tackling some of the obvious corollaries I must be understood to vent purely personal opinions. The immediate comments which every knowledgeable rider will make are somewhat as follows:

1. "No amateur race, then?"
2. "There'll be some casualties."
3. "Why are Morgans excluded?"
4. "What's the matter with the four-wheeled cycle car?"

As the Manxmen will not close the roads for a fourth race, a sidecar race implies despair of the possibilities of running an amateur event. I shall shed no tears on that account. It is not difficult to devise a race in which amateur riders, backed to varying degrees by various factories, shall ride against each other. It is absolutely impossible to run an event in which amateurs shall compete on owner-tuned standard machines and let the best man win.

No Reasonable Deterrent.

On the casualty question it is probably easy to be over too timid. The solo races have produced one or two serious accidents in the past, but injury has been conspicuously absent since the advent of the crash helmet. There may be a higher percentage of smashes in sidecar practising and racing. The sidecar machine steers with less docility than a bicycle. Overtaking will be endowed with fresh dangers—dangers more substantial than those of a car race. Structural fractures will occasionally occur. Two men are involved in each entry, of whom the driver may be thrown clear—motor bicycle fashion—in a smash, but the passenger will generally take whatever impact is coming. (Incidentally, I would not be a passenger in such a race for any small fee.) Still, the casualty list might be very considerably greater than recent solo T.T. figures without necessarily ranking as a reasonable deterrent.

My own objections to the proposal in its present form assume shape at this point. The A.C.U., to all intents and purposes, announces dogmatically that the sidecar is the one and only light passenger vehicle of the future, and that it is worth our while to spend thousands of pounds (and possibly a life or two) in developing the sidecar by racing. I deny both propositions flatly. The sidecar is not the only possible light passenger vehicle. Even if it were, I am not convinced that racing is necessarily essential to its development, though I am ready to hear this thesis argued.

500 c.c. Three-wheeled Cycle Cars?

The Morgan runabout certainly sells as freely as most single makes of sidecar outfit. As a direct and promising rival to the sidecar, the three-wheeler has an obvious and incontestable claim to a share in any advertisement and any technical development which may be going. At present there is no famous or even well-known three-wheeler with a small engine of the 500 c.c. or 750 c.c. type. Financial conditions are to blame for this. Technically, there is no reason at all why a 500 c.c. Morgan should not compete as successfully with 500 c.c. sidecars as the 1,000 c.c. Morgan competes with the big sidecars. On the exclusion of the three-wheeler only three opinions are possible. The first is that it has been accidentally overlooked. The second—already widely mooted—is that the Morgan formerly made a habit of winning in any open three-wheeled event, and that sidecar interests are afraid lest history should repeat itself. The third is that no small-engined three-wheelers at present exist, and that the A.C.U. does not want any raw entries. Surely the event ought to be thrown open to

The Sidecar T.T.—

any type of three-wheeler? If the Morgan type is not entered, that will be its makers' funeral, and the A.C.U. will be guiltless.

Fourthly—and here we enter a sea which is full of reefs—a great many authorities believe that the future of light two-passenger work rests with the four-wheeled cycle car, such as the G.N., Tamplin, and Carden. If this race is to be based on a low capacity limit—say 500 c.c.—the R.A.C. would probably consent to the inclusion of four-wheelers. Foreign bodies, if awkward, might be defied or ignored; such a disagreement would not affect any of the major matters for which international amity is so valuable. The point is this. The proposed race may—and under present proposals will—dwindle to rather a parochial affair. A certain number of British sidecars will struggle for individual advertisement and renown. Organised on a broader basis, the race might ultimately lead to new types of passenger machines.

Very probably the 1923 race would be a mere picnic among the sidecars. If somebody produces a good 500 c.c. three- or four-wheeler, and either wins the suggested "Passenger T.T.," or covers himself with glory in it, his market will be assured. France will certainly play a hand in such an event, if we organise it. As engine efficiency increases, and cheap motoring becomes more and more of a slogan, a 500 c.c. Morgan and a 500 c.c. G.N. are possible *débutantes*. In fact, if the times had permitted audacious ventures we should already have seen 500 c.c. cycle cars.

Supposing the powers that be turn down the broad view and irrationally limit their new race to the favoured sidecar, they will miss a screaming opportunity if they limit it to "500 or 600 c.c.," as suggested in their *ballon d'essai*. We have latterly recognised that the big British twin is an essential part of our output. The home market absorbs a certain quantity; the overseas market fairly unanimously turns down our smaller engines and favours—rightly or wrongly—America's big twins.

Arguments for the Big Sidecars.

The Manx course, so many riders say, is unfit for a 1,000 c.c. solo race. It is not necessarily unfit for a 1,000 c.c. sidecar race. Such an event would give us the chance of developing our big twin and of proving whether they are or are not better than the Americans. Incidentally, it is still the big twin which is the backbone of the demand for sidecar work; the 500 c.c. engine is freely used for that purpose but mainly as a *pis aller* by owners who cannot afford more horse-power.

To sum up, I hope that the new race will blossom into a "Passenger T.T." and include light four-wheelers. If it should be restricted to sidecars, there are strong arguments in favour of raising the capacity limit to include "big" twins.

FURTHER OPINIONS ON THE SIDECAR T.T.

Prominent Sidecarists in Favour of the Race. Three-wheelers not Favoured.

IN our last issue the opinions of well-known personalities on the three main points now being discussed in connection with the proposed Sidecar T.T. were given. These three points are:

(1) Would such a race help the further development of the sidecar?

(2) Is the sidecar a suitable vehicle to race on comparatively narrow and tortuous roads?

(3) Should three-wheel runabouts be admitted to the race?

What the Race will Do.

Never has opinion been so unanimous as on the first two questions; not a single dissentient wrote us last week. Below we are able to give extracts from a further batch of letters, and again everyone is of a single mind on the first two and most important points raised.

J. A. Masters (Harley-Davidson).

I certainly think that such a race would assist in the development of the sidecar, as in a contest of this nature the sidecar would be very thoroughly tested out, and sidecar manufacturers no doubt would obtain some very valuable data, particularly with regard to wheel bearings and frame connections.

I do not think that it need be feared that development would be upon wrong lines. A sidecar which would stand up to a strenuous event like the T.T. must be designed more or less upon lines which would make it suitable for hard touring work. To encourage this I should like to see a minimum width of track stipulated in accordance with touring requirements. Furthermore, the race should considerably assist in the development of the sidecar machine, as the latter would be subjected to strains and stresses which the hardest solo riding would not make apparent.

The question of the sidecar outfit being a suitable vehicle for a race on comparatively narrow and tortuous roads is largely a matter of opinion, but I do not think that it would be any more dangerous than a car race on similar roads.

After all it is largely a question of the driver's ability and it is for him to find the limit of safety at which the roads can be negotiated with a sidecar outfit, the same way that it has already more or less been found with solo machines.

I am not in favour of three-wheeled cycle cars competing in the same class as sidecar machines, in any competition. A sidecar machine and a three-wheeled cycle car are two distinct types of vehicle, and whilst it would no doubt be interesting to see them in competition together they should compete amongst themselves in separate classes.

George Grinton.

I think that a sidecar T.T. would undoubtedly help to develop a better sidecar machine.

I consider the Isle of Man roads would make a splendid test for a sidecar machine, and although they are narrow in some parts two machines could easily pass each other in safety on the greater part of the course.

The race should be kept purely a sidecar one, and I am strongly in favour of the sidecar limit being raised to 1,000 c.c. I have tried a 1,000 c.c. machine on the course and I hold it is perfect nonsense to say that this machine is too fast or dangerous for a T.T. race in the Isle of Man.

J. E. Greenwood (Sunbeam).

If the sidecars used are of a fairly normal design, and not freaks, a good purpose will be served. They should be examined by experts before the race to see if they are safe, not only to the rider but to other competitors.

The Isle of Man course is quite suitable if the machines are in the hands of thoroughly capable and experienced men—not otherwise.

I do not agree that three-wheel runabouts should be included.

W. Giles (A.J.S.).

This company has always advocated racing in all its rms as being one of the best and quickest ways of "im- oving the breed." We, therefore, look favourably on the w sidecar race. When one considers the enormous amount knowledge which is gained each year by manufacturers o compete in the solo races, there is little doubt that the ecar outfit will materially benefit by such a race. It is ite possible that the knowledge gained will apply more the machine than the sidecar, but, nevertheless, it will of a useful nature.

It is to be hoped that nothing freakish, and of a nature t applicable to touring conditions, will be introduced, d it might be advisable to make some regulation with ard to weight and width, which should not be cut down absurdities.

There is little doubt but that the drivers would adapt mselves to the course, and that the speed would auto- tically adjust itself in exactly the same way as it does the solo race. One thing, however, is certain, and that that this race would call for great driving skill, and a sonable amount of restraint.

We can see no reason whatever why three-wheeled cycle s should not be allowed to compete.

W. Barnes (Zenith).

A sidecar race would considerably help the development an efficient sidecar. I consider a sidecar is just as safe l suitable a vehicle as a solo machine to race on the .M. roads. It is just as easy to seek trouble on a solo chine as on a sidecar.

By all means, if it is possible, make it a race for three- eeled passenger machines. We might see something new in an appearance.

C. de la Hay (Sunbeam).

A race of this description could not fail to further the elopment of the sidecar, and the result should be to give public a greatly improved machine in the direction of ght, strength, and steering capabilities.

The race should be as safe as the solo race providing very ngent rules are laid down with regard to design and ipment; furthermore, it would be essential to the safety all concerned that experienced drivers only be allowed to pete.

All machines should be passed by competent engineers, and e of our foremost designers and riders should be asked give the benefit of their experience in drawing up the ulations with regard to design, etc., and in examining competing machines.

do not favour admitting three-wheeled cycle cars to the nt; in the first place these may offer difficulties with ard to passing on the more difficult parts of the course, also, if the race is to be a sidecar race, let sidecars only pete.

A. R. Grindlay (Sidecar Manufacturer).

Undoubtedly the suggested race will materially help in the development and improvement of the sidecar, but we consider that the race should be looked upon as an experiment only and not be run for the full length of the T.T. course.

We do not think that, in an experimental race of this nature, three-wheeled cycle cars should be admitted; but there is no reason why it should not be done another year, providing the sidecar event proves to be satisfactory.

John W. Meredith (T.B. Three-wheeler).

Three-wheeled cycle cars should certainly be admitted, as in all competitions in the past three-wheelers have to compete chiefly against motor cycles and sidecars.

Eric Williams (T.T. Winner).

To a certain extent this race would tend to help development of the comparatively lightweight sidecar outfit, as it will give sidecar manufacturers an opportunity of advancing and testing chassis designs.

I do not consider that the I.O.M. course is too narrow or too rough, nor that there is any more danger than in a solo event, but think it should be considered that ballast might be used instead of a passenger.

Three-wheelers might be admitted if they come within the limits of capacity allowed.

W. A. Fell-Smith.

For several years I have been a strong advocate of a sidecar T.T., and it has been a matter of some surprise to me that any suggestions made in your correspondence columns to the effect that a sidecar T.T. should be held have hitherto had cold water poured on them by the A.C.U.

I see no reason whatsoever why sidecars should not be raced on the Isle of Man course just as safely as cars—in fact, I should have thought the sidecar to be by far the safer vehicle, properly driven, on narrow roads.

Three-wheelers, to my mind, can be raced on equal terms with 1,000 c.c. sidecars, but if any restrictions are to be imposed on engine capacity for sidecars I am all in favour of excluding three-wheelers from the race.

Reg. Brown.

I have been looking forward to a sidecar T.T. for years.

I am certain it will help the development of sidecars; also improve the designs. It will also teach the manufacturer where strength is required in both frame and chassis, and will certainly be a more gruelling test for engine and gear box than the solo T.T.

I would just as soon race with a sidecar as solo on the Isle of Man course, and do not think there is any more danger, provided one rides with one's head.

I certainly do not think that cycle cars should be admitted to the race.

ALL ABOUT TWO-STROKES.

HAVING only three moving parts—crankshaft, piston, and connecting rod—the two-stroke is bound to be the most popular type of motor cle with the novice. The number of two-stroke lightights now in use in this country must be over ,000.

But because it only has three moving parts is no ason to suppose that nothing can be done to improve t running; or, if mystifying symptoms appear, that t s within the scope of the tyro to remedy them. this reason "Two-stroke Motor Cycles,"* now ts second edition, has always been a popular handok. Prepared by the staff of *The Motor Cycle*, the ok contains nearly 200 pages and deals with all there is to know about this type of machine, particularly from the owner's viewpoint.

Three very valuable chapters are entitled "Getting the Best Results on the Road," "Tuning Up," and "Tracing Troubles." Another gives special instructions on the detection of faults in the electric lighting systems more often employed on two-stroke machines, and a final chapter, auxiliary to the simple descriptions of how everything works, is devoted to the more technical aspects of two-stroke engine design, regarding which little is known by the general public.

Interesting units are described in detail, and exceptionally clear drawings and photographs are used throughout to supplement the letterpress.

No owner of a two-stroke motor cycle can afford to be without this handbook.

*Iliffe & Sons Ltd., Dorset House, Tudor Street, London, .4; 2s. 6d., by post 2s. 9d.

QUEER MOTOR SPIRIT.

"Dope" on the Track. Racing Men Rubbing up their Knowledge of Chemistry.

REALLY the B.M.C.R.C. will have to consider the question of providing gas masks for spectators at its race meetings if the present craze for "dope" continues. Asphyxiation is risked by the unwary looker-on who gets in the way of many an exhaust. The Paddock begins to smell like a chemist's shop, and talk in the members' tea-room turns on the subject of formulæ.

A Deadly Secret

For "dope" has become the favourite topic of Brooklands *habitués*. They gather in small knots in dark corners and talk of how so-and-so suddenly pushed his speed up five miles an hour, and so upset "Ebby's" handicap calculations. But never was a secret more jealously guarded: "dope" is not spoken of as such, nor are the constituents thereof ever mentioned. There is an uncomfortable silence when the outsider talks of what his nose has told him, until ("only a small one this time—don't drown it"), becoming on more familiar terms, it is confided that somebody first introduced it, and everybody else has had to follow in self-defence.

The funny part is that the liquid (euphoniously dubbed "mixture") always emanates from a petrol can in the same manner as that old-fashioned stuff now termed "straight spirit." True, a certain big tw exponent gave the game away one day by walki across the Paddock with a two-gallon Winchester one hand and a measure glass in the other, but th were very few people about that afternoon. Neverth less, it was generally felt that the action was a tri indiscreet.

Available Anywhere.

What's that?—no, don't ask me: *I* can't tell y what the stuff really is. For all I know it might chloroform or ether and/or alcohol, but I don't thi you need attach any credence to the whisper of "gu powder and picric acid" that I happened to overhe They do say that South Africa is not unconnected w some of the stuff, but I feel I ought to add that c local avers that he buys all the components of mixture in the village.

Of course, there's no rule against using any sort fuel you like. Whether or not there should be is moot point. I suppose the B.M.C.R.C. can put ban on "dope" if it feels it ought to: perhaps will commission the stewards to put their noses ins all tanks before the start of a race. At any rate, so protection should be extended to the spectators.

"GAS."

A TRAFFIC CENSUS.

THE 17th annual *Motor Transport* Edgware Road Traffic Census of nine hours (9 a.m. to 6 p.m.) shows that the number of private motor cars which passed was 1,422, constituting a new record; this is 217 more than the total counted last year. Taxi-cabs, on the other hand, showed a decrease, as of these vehicles 1,229 passed, which is 81 less than the 1921 figure.

Motor 'buses were also fewer, the total number being 2,058, as compared with 2,164 counted at last census.

A new record was established by motor trade vans, which totalled 1,768, beating last year's record of 1,515 by 253.

New records were made by solo motor cycles a motor cycle and sidecar outfits. Together th totalled 348, of which 148 were solo machines, carriers, and 136 had sidecars attached.

Pedal bicycles numbered 2,308, as against 1,691 last year; a record of 2,355 was established in 19 Pedal carriers included in the above count numbe 254, which is a long way below the best figure, althou better than last year's 182.

During the nine hours, the total number of vehic passing both ways amounted to 10,442. This is anot record, showing an increase of 516 over the previ record of 9,926 in 1912.

IRELAND'S PREMIER ROAD RACE.

Further Impressions of the Ulster Grand Prix including those of two Successful English Riders.

As described in *The Motor Cycle* last week, the first Ulster Grand Prix Race was held on Saturday, October 14th, amid scenes of enthusiasm unparalleled in Northern Ireland. H. W. Hassall (o.h.v. Norton) won by the narrow margin of 44⅘ seconds.

This was not the first road race engineered by the sportsmen of the North, but was the culmination of at least two years' hard work and practice in this particular branch of motor cycle activity. To the promoters (the Ulster Motor Cycle Club), to the Royal Ulster Constabulary, and to the residents in proximity to the course, the thanks of thousands of people are due for the spirit of co-operation and goodwill which made the day so successful.

The Northern Parliament has fully realised the importance of fostering motoring in all its branches, and, in accordance with an Act of Parliament passed recently, the Ministry of Home Affairs authorised the closing of the roads from 12.30 p.m. till 5 p.m. The Antrim County Council loyally gave all the support possible.

Seven Twenty-Mile Circuits.

The triangular course touched Crumlin, Muckamore, Aldergrove, and Antrim. The laps were of 20½ miles, and had to be covered seven times, equalling 143½ miles; all the important corners were right-hand ones. The race was on the handicap principle, and was, therefore, very easy to follow, as no man had a starting debit in hand, and the first machine over the line was the winner.

The writer was stationed at Muckamore corner, and saw some very neat exhibitions of riding (ill and some the reverse. Among the lightweight riders, K. McCleery (348 Diamond), H. Palmer (348 Diamond), S. M. Adams (348 Raleigh), and S. A. Dale (349 o.h.v. New Scale) showed considerable skill in negotiating this corner. Easily the best displays on the heavier machines were made by T. Mallon (492 Sunbeam), H. Hassall (490 o.h.v. Norton), J. Hill (494 Douglas), and N. P. Metcalfe (976 Brough Superior).

In the earlier stages of the race, before men began to drop out, some very consistent riding was shown, but, as time went on, gaps began to appear in the ranks, especially among the 250 c.c. and 350 c.c. machines. K. McCleery (348 Diamond) made a record first lap, and in sixteen miles actually jumped five or six places. His brother, H. McCleery (481 Scott) rode steadily throughout, and well deserved the place in which he finished. J. W. Shaw (490 o.h.v. Norton) as usual put up some very fast times, doing the first two laps in 40 minutes, and J. F. Dinsmore, also on a Norton, lapped most consistently. F. Andrews (348 Trump-Jap) made a magnificent ride, and was only beaten by 44⅘ seconds when actually within sight of the judges.

S. A. Dale (349 o.h.v. New Scale) and S. M. Adams (348 Raleigh) rode well and picked up places in the earlier laps. T. Mallon (492 Sunbeam) came round with almost clockwork regularity, which was all the more worthy of praise as he had only had his machine delivered on the previous day and had never been on the course prior to the race

Fastest Lap.

To H. Langman (532 Scott) fell the credit of fastest lap, which he covered at the average speed of 65.77 m.p.h.

H. Hassall deserved his victory, for he put up a splendid performance throughout, giving the limit men no less than 59 minutes allowance. His average for the course was 60.7 m.p.h.

Detailed results are as follow :—

1. H. Hassall (490 o.h.v. Norton). Handicap, 1m. Net time, 142m. 8⅘s.
2. F. Andrews (348 Trump Jap). Handicap, 31½m. Net time, 173m. 53⅕s.
3. J. F. Dinsmore (490 Norton). Handicap, 6m. Net time, 149m. 29⅘s.
4. J. Whitehead (481 Scott Squirrel). Handicap, 11m. Net time, 156m. 42⅖s.
5. F. Hamilton (481 Scott). Handicap, 10½m.
6. W. S. Handley (248 o.h.v. O.K. Junior). Handicap, 15m.
7. J. Hill (494 Douglas). Handicap, 6m.
8. S. Wallace (248 o.h.v. Rex Acme). Handicap, 33½m.
9. W. Murray (348 Francis-Barnett). Handicap, 45m.
10. H. McCleery (481 Scott). Handicap, 5½m.
11. C. A. Sleator (348 Mohawk). Handicap, 35½m.
12. T. Mallon (492 Sunbeam). Handicap, 4½m.
13. N. P. Metcalfe (976 Brough Superior). Scratch.

250 c.c. Class.

1. W. S. Handley (248 o.h.v. O.K. Junior). Handicap, 15m.
2. S. Wallace (248 o.h.v. Rex Acme). Handicap, 33½m.

Unlimited Class.

1. N. P. Metcalfe (976 Brough Superior). Scratch.

H. W. Hassall, the victorious rider of an o.h.v. Norton, being escorted away at the finish of the race.

There were many valuable prizes, the chief being, of course, the Ulster Grand Prix Trophy, which is to be competed for annually. This trophy was presented to the Club by the Anglo-American, Shell-Mex,

Ireland's Premier Road Race.—

and British Petroleum Oil companies. Mr. J. D. Shaw presented a gold medal for the competitor who displayed most pluck and endurance.

The winner's impressions of the event are particularly interesting, for he has this year ridden in the Senior T.T. Race, the French Grand Prix, and the Belgian Grand Prix.

Hassall describes the Clady course, as the Irish circuit is called, as "of triangular shape with, to be Irish, four sides, the apex of the triangle being flat. There are five bad corners of the Signpost or Craig-na-baa type and several bends needing care.

The Winner's Impressions.

"The rest of the course consists of straights, one being seven miles in length, in this instance mounting in a series of undulating steps for five miles, the final two miles being downhill. The filling up depôt and grand stand are situated just where the downhill portion commences. The surface is rather 'pot-holey,' and constitutes a good test of tyres, frame and forks, and the rider's wrists. In the case of the bad corners safety gaps are left in the form of by-roads, so that in the event of a rider approaching a corner too fast he can take the by-road, turn, and regain the course.

"On the Saturday of the race the course was greasy in places beneath the trees owing to heavy rain earlier in the week, and these by-roads were consequently in great demand!

"The Isle of Man course is, in my opinion, still the finest all-round test, but the Irish course compares very favourably indeed with the French courses at Strasbourg and Le Mans, and is about equal in severity to the Belgian course at Spa."

The event was run on the handicap principle, the limit man receiving one hour from scratch. Hassall says that he would like to pay a tribute to the excellence of the handicapping, the second, third, and fourth men finished within two minutes of himself. Further, he states that the organisation was splendid, all corners being marked with warning boards and banners in an identical manner with this year's T.T. This, together with the very sporting attitude of the local riders, made the event a thoroughly enjoyable one. The entry of seventy-five riders shows the measure of local enthusiasm. For next year's event

Triangular 20½-mile course, over which the Ulster Grand Prix was run.

the roads will be specially prepared, and he is confident that the meeting will be second only in importance to the T.T. itself. His own experience can be summed up briefly as enjoyable, and the o.h.v. Norton ran faultlessly throughout.

W. L. Handley, the O.K. Junior rider, who won the 250 c.c. class, only left Birmingham on the Friday afternoon prior to the race on Saturday.

No Severe Climbing.

After travelling overnight, he took a quiet trip round the course on Saturday morning. He considers that it was quite a sporting one, with a few very fast stretches, but that these fast stretches only accentuated the roughness of the roads. It was a top gear course, but quick deceleration and acceleration were required for the four or five bad corners. He praises the marshalling particularly.

"I cannot pretend," states Handley, "that the Ulster race is as important as the T.T., but, taken all round, it is a very sporting event which ought to be perpetuated.

"I am very pleased that I participated; I am more than ever pleased with my machine. I took a bad tumble and bent a rib or two in the second lap taking a corner a bit faster than I ought to have done through lack of knowledge, but, notwithstanding this, I am glad that I went and glad I won my class."

COMPOSITION OF CARBON DEPOSITS.

IT is generally assumed that the carbon deposit formed inside a motor cycle engine consists almost entirely of burnt oil and of soot from incomplete combustion of the fuel. But it is to be expected that there will be present an appreciable amount of mineral matter, derived mainly from ordinary road dust. That this is actually the case is shown by some figures of the writer's. The deposit obtained from the piston head of a big twin when analysed was found to give, on ignition, 12.8% of ash, which means that only 87.8% was actually carbon or burnt oil. The ash, on analysis, gave the following figures:

Silica	43.0%
Iron, as Fe_2O_3	48.1%
Undetermined	8.9%

Thus 43% of the mineral matter present, or 5.5% of the original deposit, was composed of silica, and the whole of this was undoubtedly derived from road dust. It should be noted that the carburetter was an old-type Amac, fitted with a dust trap, but no gauze for filtering the air taken in. The origin of the iron is not quite so clear. Apparently it must have come from the cylinder or piston, most probably from the piston head.

Another curious fact worthy of note is that a small trace of copper was also found, although its source is not at all clear unless some element in the fuel had a solvent action on the petrol pipe.

G. MIDDLETON.

ALT-Y-BADY.

How to Climb It.

By "One Who Knows the Hill."

IF there is a purgatory for trials riders, almost certainly Alt-y-Bady will be included as a non-stop section. No outside assistance will be allowed. . . .

But enough—the prospect is too nightmareish to contemplate.

There is no doubt about it: the "Bady" is a horrible hill. In fair weather or foul it is invariably wet. It is steep. It is long enough to discourage rushing. Its normal surface is of the consistency and viscosity of a 50-50 mixture of Vaseline and Vacuum T.T., this being nicely plastered over huge irregularly-placed slabs of rock. Yet it should not beat the modern motor cycle.

Gear ratios and tyres both are all-important.

A simple formula infallibly gives you a low gear ratio:

$$\frac{W\,M \times W\,R}{C \times K}$$

Where: W M = weight of machine in pounds.
W R = weight of rider in pounds.
C = capacity of engine in cubic cm.
K = a constant of 10.

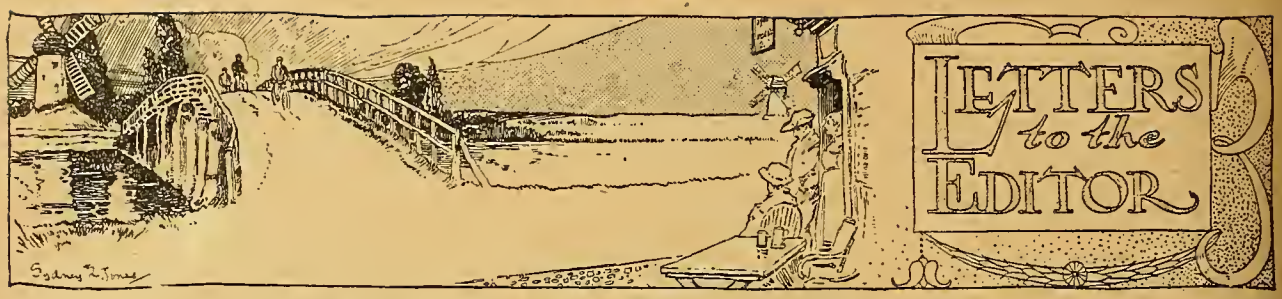
N.B.—Another method substitutes "of rider" for "of engine" under C and requires other modifications, but does not usually apply when the lunch stop is at Llangollen.

I am not so sure as to what (or who) gives you tyres, but they must be of the right pattern. If you have previously failed on the three-ribbed type, try the studded variety, or *vice versa*. These should be brand new at the commencement of the trial, although one of the best ascents I have ever witnessed was made on an old twin with a perfectly smooth rear cover.

The best speed to take the hill at should be decided upon beforehand; it is inadvisable (and sometimes impossible) to touch the throttle lever later on. While it is not much use trying to steer an arrow-like course, it is not considered good practice to try to ease the gradient by zig-zagging.

I am convinced that the man who carries out these instructions faithfully need never fear Alt-y-Bady. Myself, I always start the climb full of confidence—doubt is fatal—and one of these days I hope to make a clean ascent.

Three styles of attempting Alt-y-Bady. Only the middle rider was successful.



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

BEST IN THEIR CLASSES.

Sir,—We think that your correspondent has embarked upon rather a bold enterprise when he tries to classify motor cycles. We suggest that perhaps the Indian might receive a little attention in the 1,000 c.c. class. In the 500 c.c. category the Norton might perhaps be included. As for the 350 c.c. list we note that a machine which has won four consecutive T.Ts. and one senior T.T. is omitted; and also the 250 c.c., the Levis, which has done some very good work, has failed to appear. G.J.S.-O.
Winchester. L.T.L.

Sir,—Though by no means favouring a slow machine myself, I am certain that most motor cyclists put reliability before speed. I do not mean to insinuate that *all* reliable machines are slow, or that a machine cannot be both speedy and reliable. But I think most riders are willing to sacrifice a little speed for greater reliability.

I consider it an impossible feat to make a list of the finest solo machines accurately. For example, I think the 550 c.c. Triumph should be included in the finest 750 c.c. machines, if reliability is to be considered. Yet I am of the opinion that the three machines which are considered best in the 750 c.c. class, are worth their place.

May I also suggest that it would be hard to find much better 350 c.c. machines than the A.J.S., Douglas, and New Imperial? A. HARTLEY.

Sir,—Your correspondent errs somewhat from the accepted meaning of solo machine. His list is apparently that of fast sports models and racing 'buses, and perhaps if he had enquired further than his own select circle he would have probably heard of such motor cycles as the 499 c.c. Triumph and the 349 c.c. A.J.S.

Assembled machines, even if they have overhead valves, are not *always* accepted as the best machine.
Cheshire. XELA.

Sir,—On the whole I agree with the selection of the three best solo machines in each class formulated by a correspondent recently, but in my opinion a few alterations are necessary. Judging by his selection, I should imagine that he was a bit of a speed merchant; let us have a few touring machines on the list as well. The following is my selection:—

1,000 c.c. class:	(1) Super-sports Zenith-Jap.
	(2) S.S. 80 Brough Superior-Jap.
	(3) Super-sports Matchless-Jap.
750 c.c. class:	(1) Humber.
	(2) 650 c.c. Zenith-Jap.
	(3 550 c.c. Triumph.
500 c.c. class:	(1) 499 c.c. Triumph.
	(2) Sunbeam.
	(3) N.U.T.-Jap.
350 c.c. class:	(1) Beardmore-Barr and Stroud.
	(2) Hawker-Blackburne.
	(3) A.J.S. (Model B2).
250 c.c. class:	(1) Holroyd-Jap.
	(2) Levis.
	(3) Velocette.

I can only think of one really bad motor cycle. After all, what is the definition of a bad machine? I should like to hear some of your readers' opinions on the subject.
London, N.W.11. REVS.

Sir,—A correspondent considers that in the 500 c.c. class the first, second, and third best standard machines are:—
Long-stroke Sunbeam.
O.h.v. Douglas.
Scott-Squirrel.
I think that his friends have not heard of any other motor cycle in that class, so may I suggest:—
1. Long-stroke Sunbeam.
2. O.h.v. Triumph.
3. Norton.
Also may I suggest that in the 1,000 c.c. class that the third best is a Sports Indian? RICUMPH.
Worcester.

Sir,—I have attempted to formulate my idea of the three best solo machines in each class. But to quote the Latin saying—*quot homines tot sententiæ!*

1,000 c.c.:	S.S. 80 Brough Superior.
	O.h.v. Trump Anzani.
	Super-sports Zenith.
750 c.c.:	80 m.p.h. Coventry Victor.
	Quick Six Martinsyde.
	75 m.p.h. Trump-Jap.
500 c.c.:	Long-stroke Sunbeam.
	O.h.v. Norton.
	Sports Sunbeam.
350 c.c.:	O.h.v. Massey-Arran.
	O.h.v. Rex Acme.
	O.h.v. New Scale.
270 c.c.:	Francis-Barnett.
	O.h.v. Reyre Newson.
	New Comet Climax.
250 c.c.:	O.h.v. Coventry Eagle-Jap.
	O.h.v. Cotton-Blackburne.
	Grindlay.

RONALD C. H. RUSSELL.

THE ETHICS OF "HANGING-ON."

Sir,—Regarding Mr. Thorpe's reply to my letter, he would do well to remember that sarcasm can never take the place of logic.

He taxes me with "sheer ignorance." What is the tractive resistance (*i.e.*, resistance due to friction) of a vehicle travelling 30 miles per hour as compared with that resistance at 1 mile per hour? It is exactly the same. Tractive resistance is always expressed at the rate of so many pounds per ton, and has no relation to speed. Now what is the resistance of the *air* at 30 miles per hour as compared with 1 m.p.h.? It is roughly 900 *times as great*, as it increases as the square of the speed, approximately. In the case of a bicycle, with its ball bearings, etc., the tractive resistance due to friction is absolutely negligible when compared with the enormous increases of air pressure and air friction at the higher speeds.

If Mr. Thorpe continues to doubt my statement, let him compare the big differences between paced and unpaced cycling records: tractive resistance is the same in both cases: wind resistance is the only cause of the differences.

In spite of assertions to the contrary, there are large numbers of road users who object to being used as pacers, from one reason or another; and the least that would-be "hangers-on" can do is to desist when civilly requested to do so. BENEDICT.
High Wycombe

LARGE TYRES ON SMALL MACHINES.

Sir,—I would like to disagree with Mr. Houlding, who says that the small tyre has had its day on 250 c.c. machines. I took delivery of a Velocette early this year, with 24×2¼in. tyres, and in 3,000 miles' running I have had one puncture in the driving wheel and no bursts over all kinds of roads, mostly bad. TOUCHWOOD.

Seacombe.

DEFICIENCIES OF THE HIGH EFFICIENCY ENGINE

Sir,—The present boom in small "high-efficiency" engines, and the letters recently appearing in *The Motor Cycle* from enthusiastic owners of such machines who have ridden nothing bigger, warrant, I think, a few words from the other point of view. What on earth is the point of this craze for cutting down engine capacity to its utmost limits at all costs, and fitting multitudinous gears to compensate for lack of "pep"? I suppose it is to some extent due to an entirely erroneous popular notion that the smaller the engine the smaller the petrol consumption. The petrol consumption depends on the work done and, all other things being equal, has nothing whatever to do with the size of the engine. More than that, considering oil, tyres, and replacements, a small sidecar outfit is actually *more* expensive to run than a big one—granted, of course, equal and similar usage in in both cases. I am speaking from actual personal experience. *Of course* a 350 c.c. machine can do the "work" of a 500 c.c. one. A 350 c.c. Douglas engine, given adequate cooling and sufficiently low gear, could propel a fully loaded Rolls-Royce up Porlock hill; "work," however, takes no account of time, and most Rolls-Royce owners retain the 50 h.p. unit supplied by the makers.

The spectacle of an unfortunate engine of totally inadequate capacity screaming itself hoarse on a 6-1 top gear simply makes me ill. For serious long distance fast touring, the small high-efficiency machine is an impossible proposition owing to lack of reserve power, in all but the most favourable conditions; and it is unnecessarily complicated for pottering round town or golf links, for which a small two-stroke is far better.

I have in mind two 1911 "8 h.p." Chater-Lea outfits my family owned before the war. With the old type B. and B. carburetter they used to take a passenger and luggage 70 m.p.g. regularly, and at best would take the same load up Red Hill (near Bristol) on top gear (3⅞-1, ye high-rev. merchants!). Experiences with a 595 c.c. Douglas (1920) outfit led me to discard the sidecar, fit a Warner rear spring frame (£1 at Grose's and a gift at the price!), a Brooks' B500 saddle, revised oiling system, and B. and B. carburetter. And I now have an admirable solo 'bus—geared 4¼-1, and a pleasure to drive.

In conclusion I can only repeat what others have said—that no one having *tried* a big, woolly, flexible engine will ever go back to the small high-rev. type. My next mount will be a 976 c.c. (belt) Zenith, solo.

Usual disclaimers. A.E 8675.

London, S.E.1.

GOGGLES FOR THE SPECTACLED RIDER.

Sir,—I would like to thank Mr. Ellis for the suggested form of goggle, and I intend to have one made upon these lines. I trust he will not object. Mr. Ellis has not mentioned one very good point; that is, the optical conditions in the glass are common to both eyes, when the goggle is in any position—a most important point but generally impossible with the ordinary goggle. I hope "Awakawakawa" adopts this suggestion, too, but I hope he does not go for a prescription! Any working optician will work the window plane and parallel and give him perfect satisfaction.

In reference to Mr. Freeman Lee's letter, I think he has not noted that "Awakawakawa" wishes to wear his present spectacles, therefore I think he will agree that many things he has written should have been omitted.

In view of the contents of his second paragraph he must agree with me upon the most obvious fact that lenses cannot be satisfactorily fitted to goggles. Then why advise us to consult a qualified optician?

I therefore reiterate the advice I gave your reader and would add that if the vision is unaided use plane (not plain) windows properly made by an optician. If the vision is aided keep your spectacles in use and again fix plane windows to the goggles.

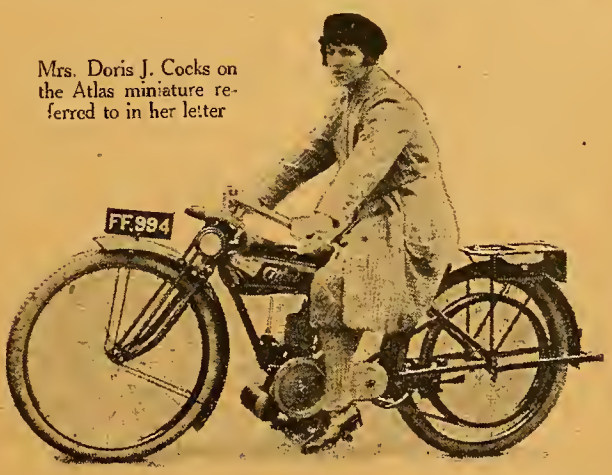
Mr. Lee's experiences are quite interesting, but more details are required for criticism, and the errors of perspective attributed to variation in the refractive index can be dismissed. ROVER.

London, N.W.19.

THE MOTOR CYCLE FOR THE MASSES.

Sir,—I can quite endorse your editorial remarks, but do not think you have put the case of the real miniature motor cycle as distinct from the motorised bicycle strongly enough; from practical experience I have far greater faith in the eventual popularity of the former.

I have for a considerable time been using an Atlas miniature motor cycle, which is fitted with an engine of 142 c.c., and weighs, as originally delivered (a single speed model) to me, 95lb. In this form I ran it for some hundreds of miles in North Wales with every success; later I fitted a plain two-speed gear box supplied by the manufacturers. This fitting has made the machine an absolutely go-anywhere mount, and at a really good average. I have no difficulty whatever in maintaining a speed in excess of the legal limit over long distances, and can do nearly 40 m.p.h. on decent roads when necessary. I have surprised many owners of considerably higher powered machines with the speed my little mount is capable of attaining. Petrol consumption works out at about 150 m.p.g., and the oil consumption is practically negligible as the petroil system is used. I am convinced that there is a large number of people who will welcome a machine of this type as a cheap means of transport for business or pleasure. For my own part, I use it in



Mrs. Doris J. Cocks on the Atlas miniature referred to in her letter

the course of my business as a commercial traveller to cover about 400 miles of road per week, I have done well over 100 miles in a day, making business calls in five towns in this distance. I think your suggestion that the A.C.U. should create a new class for machines under 150 c.c. an excellent one, and hope you will do your best to bring this into existence, when there will be one more milestone in the history of motor cycling, established by the foresight and energy of *The Motor Cycle*.

(Mrs.) DORIS J. COCKS.

THE ROOT CAUSE OF KNOCKING.

Sir,—I was very much interested in the article on "Knocking," by "G.T.C." Whilst appreciating his explanation, I think he has not made himself sufficiently clear and misses the main controlling factor of detonation.

It is the rate of burning of that portion of the charge first ignited upon which detonation primarily depends. No doubt a compression wave of more or less intensity is always present during the first stages of combustion. It is only when this *rate* of burning is abnormal that the expansion,

and in turn: compression, is such as to cause detonation or the instantaneous combustion of the whole of the remaining charge. If detonation is allowed to continue overheating of such insulated parts as the plug points will cause pre-ignition.

Much of the reverberatory action of detonation can be damped out by proper designing of the combustion head. Compactness, freedom from small pockets, no long parallel surfaces will go far towards eliminating heat and sound from being concentrated by reverberatory action. The sparking plug should be so situated as to give the shortest possible flame travel. The A.J.S. 1921 T.T. model is a striking example of what I mean, and the sectional elevation in your July issue of that year will show the main points I have mentioned.

It is a well-known fact that an admixture of benzole or cool exhaust gases to the charge, at the carburetter, will in most cases eliminate altogether this complaint. The thermal efficiency will not be reduced to any extent unless the complaint has become chronic. These, I think, are two immediate remedies that will be found more suitable and effective than those given by "G.T.C." Most of these facts were taken from Mr. Ricardo's latest papers.

Middlesbrough. ANTINOK.

SCHOOLBOYS AND TAXATION.

Sir,—I should like to point out another side of the unfairness of the present system of taxation. I am one member of a rapidly increasing class of motor cyclists—that is, schoolboy motor cyclists. Not being allowed to have my machine at school, I use it, roughly, for fourteen weeks in the year, for which I pay £3 taxation. A. HARTLEY.

T.T. RACES FOR SMALLER MACHINES.

Sir,—Your arguments in favour of T.T. races for smaller machines, presumably excluding the 500 c.c. type, have, I fear, little justification.

It is incorrect to infer that the 500 c.c. machine has reached perfection. Excellent as they may be, all the 500 c.c. machines on the market to-day would benefit by the lessons of many future races.

The public may not want 80 m.p.h. motor cycles in any quantity, but they do want something capable of an occasional 60 m.p.h. The makes that can be relied on to reach that mark without being at the top pitch of their tune can be counted on the fingers of one hand.

Anyhow, manufacturers do not enter the T.T. to improve their designs; they enter for advertisement. Therefore, unless the races are to become like an American trade publicity rally, the element of sport must also be retained. Talk too much about improving the breed and you lose the support of the true enthusiast. That the tourist's machine has been developed is a very incidental result of the T.T. races. It will be time enough to say it has been fully developed when 100 per cent., not 30 per cent., of the starters finish in a T.T. race.

My 499 c.c. Plonk-plonk is a very delightful machine, but if I drive it hard things begin to happen to the valve gear and cylinder head. Three more T.T.'s should put these things right. PIP-SQUEAK.

London, N.W.8

SANS CHAINS, BELTS OR GEARING.

Sir,—It occurs to me that there is a type of transmission which (as far as I am aware) has never been tried upon motor cycles.

I refer to "side rods," such as are used to "couple" the driving wheels of locomotives. Through the medium of crankpins 90° apart, on each pair of wheels, coupled together with "side rods," the driving effort is distributed amongst two or more pairs of wheels.

Normally, of course, they also help to distribute the tractive effort, and thereby to prevent the wheels "spinning" on "greasy" rails. That they do, in fact, keep the wheels in synchronism, is obvious.

An adaptation of the "side rod" principle is used on the 8-cylinder Leyland engine, to drive the overhead camshaft. In this case three "rods" are used, coupling together the driving and the driven eccentrics, which are set 120° from each other.

Obviously, it would be impossible to obtain any reduction of ratio between gear box and back wheel, such as is now available when either belt or chain is used, but this could be overcome by setting the engine with its crankshaft "fore and aft," and providing the necessary reduction by worm gearing, as is already done on the Cleveland two-stroke.

With ball or roller bearings to the eccentrics or cranks, and light I section rods, it seems that a no-trouble transmission could be evolved. With an adaptation of the knock-out type of axle wheel removal ought to present little difficulty. With eccentrics spaced 120° apart there would be little unbalanced stress upon the cycle frame.

A further use of this type of transmission could be found in using it for the magneto drive, thereby eliminating the chain or the train of spur pinions.

Obviously there are also some disadvantages, when used for the "final drive" from gear box to back wheel, such as "lopsidedness," but then, after all, present systems suffer from this to a certain degree.

In the present instance it could be overcome by duplicating the "rods," which could then be made lighter.

Montgomery. SIDEROD.

BRITISH BIG TWINS FOR AUSTRALIA.

Sir,—It may be of interest to Mr. Moule, who wrote the letter entitled "Why?", to know that the Brough Superior Australian Service is already established in Sydney. The model I am producing for this market has an increased ground clearance and several features which are required for colonial purposes; and I am sure when Mr. Moule has seen and tested one of these machines for himself he will not again ask "Why?" GEORGE BROUGH.

HUMIDITY AND POWER OUTPUT.

Sir,—In respect to a letter in *The Motor Cycle* of October 12th on Humidity and Power Output, "M.B.B.H." bases his argument on the fact that the humid atmosphere is more dense than a dry one. I would like to point out that this is not the case, as witness the barometer falling in wet weather. Should his argument hold, we should expect to have the barometer rise on wet evenings. J.H.H.

York.

SUMMARY OF CORRESPONDENCE.

Cadet J. R. Bryans desires a light sporting sidecar suitable for fitting to a 349 c.c. A.J.S., but with a fairly large and comfortable torpedo or Zeppelin-shaped body. We pass the query on to our readers.

Waders at the price of overalls are wanted by "C.A.," who asks if readers know of a firm that supplies these.

"A.J.S." (Worcester) thanks the rider of OK 1323 for assisting him with magneto on the 14th inst.

Pot-holes filled with sods on the Corwen-Bettws road are complained of by Mr. G. W. Pigott.

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CURRENT CHAT

This Week's New Offence.

Examining a reader's machine after a slight street accident, a zealous member of the Metropolitan Police Force discovered that the licence-holder glass had been cracked. A summons is expected.

No Wonder it is Fast.

The eight-valve M.A.G. engine which O. M. Baldwin entered in the 1,000 c.c. championship race last Saturday was hurried over from Geneva by aeroplane by M. Neher, head of the M.A.G. concern. It is said to develop 25 per cent. more power than the previous engine of similar design.

More Furious Calculation—

According to the evidence of a Sheffield policeman in a noise prosecution, the offending machine passed him at 30 m.p.h., making a loud and continuous noise; the exhaust pipe had a perforated fish-tail, with two rows of little holes, 18 in number. He was asked if he had deliberately counted them as the defendant passed at the stated speed; the reply was in the affirmative.

—and Still More.

"Defendant drove his motor cycle round the Wellington road corner at a speed of about 80 miles an hour"—extract from newspaper report of police court proceedings at Newport (Salop). Since the corner is a right-angle bend and the machine was a 1914 Douglas, the witness was no doubt wise to qualify his estimate as approximate; possibly he is a motor cyclist himself!

A French-made Morgan Engine.

It will be news to a number of our readers that the popular Morgan, which is manufactured under licence in France by M. Darmont, is now equipped with an engine built by him at his works in Paris. Hitherto French-made Morgans have been fitted with J.A.P. or M.A.G. engines, but the heavier costs of production in England, the high tariff, and the present rate of exchange has compelled the manufacture of the French engine.

The Amenities of Cambridge.

There are probably more motor cycles in Cambridge than in any other town of the same size in the world. Recently, in an evening paper, a Mr. Jephson heartily condemned their use. In a reply an undergraduate of Magdalene writes: "A learned professor may be seen travelling down King's Parade on a two-stroke any morning aboupt 10 o'clock He seldom averages more than 4 m.p.h., and the machine makes a noise like a railway accident." "Surely," the writer adds, "Mr. Jephson would not deny the old gentleman this modern means of progression?"

Record Breakers Busy.

The Brooklands racing season this year has terminated early, but there will still be intense activity amongst would-be record-breakers right up to show time.

Cowed.

Recounting some of his experiences in *Motor Transport*, an old-time haulage contractor tells how after starting with his first steam waggon a farmer came to see him one day and assured him that since the advent of the lorry his cows were not giving anything like their previous quantity of milk. Instead, their blood curdled.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

Nov. 9th. Lightweights and Accessories.
Nov. 16th. Passenger Machines.
Nov. 23rd. Show Forecast and Guide.
Nov. 30th. Show Report.

Times to Light Lamps.

Oct. 26th	.. ..	5.14 p.m.
„ 28th	.. ..	5.11 „
„ 30th	.. ..	5. 7 „
Nov. 1st	.. ..	5. 3 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Sunday Competitions.

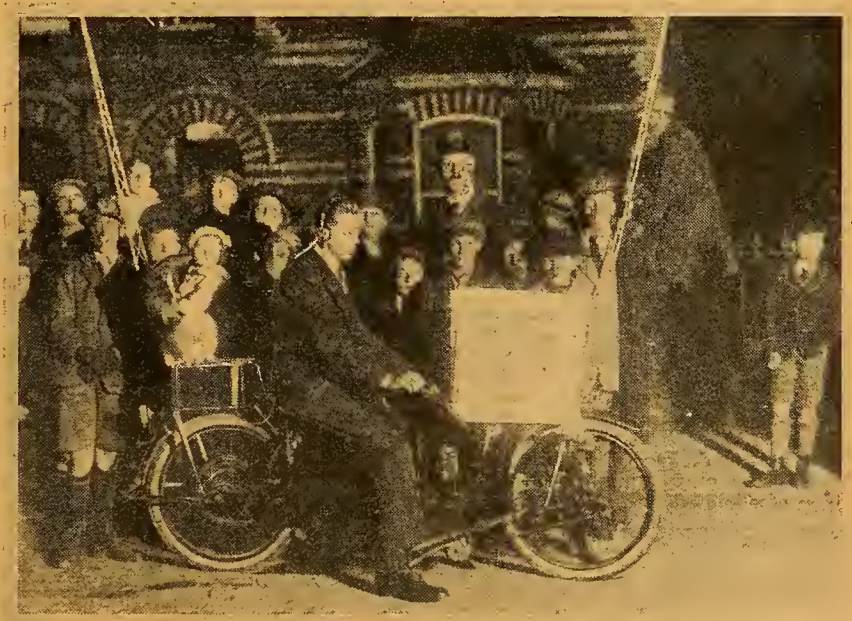
In agreement with *The Motor Cycle*, the A.C.U. has not hitherto encouraged Sunday competitions of any sort. It is a pity, therefore, that the officially observed ascent of Alms Hill by a 292 c.c. O.K. Junior (described in "Club News" last week under Oxford M.C.) could not have been arranged for a Saturday.

Motor Traffic in Guernsey.

In view of the smallness of the island of Guernsey, which has been described as being largely composed of hills and corners, it is an extraordinary fact that there are no less than 1,377 motor vehicles, of which 570 are motor cycles. As there are very few accidents it would seem that Guernsey drivers are particularly careful.

It is never too late——.

Riding on the carrier of a motor bicycle for the first time, James Harding (age 72), of Pyford, Surrey, was summoned at Kingston recently for aiding and abetting the driver in obscuring the rear number plate. The police constable stated that the rear number plate was obscured by Harding's coat. The summons was dismissed on payment of costs.



WIRELESS ON A SOLO MACHINE. A participant in a Basingstoke torchlight fancy dress parade carrying a wireless outfit on his Ner-a-car.

THE MOST POPULAR MACHINES.

Census taking by our Readers in Various Parts of the Country.

ENCOURAGED by glorious late autumn weather, census-taking by our readers has been a popular pastime during the last week or two.

The results to reach this office in response to a recent "Current Chat" paragraph make interesting reading and indicate that although a machine may be comparatively popular in one district it may be almost unknown in another.

ON THE LONDON ROAD, GUILDFORD (1 hour).

Triumph	13	James	3
Douglas	8	Indian	2
Zenith (2 Bradshaws)	8	Connaught	2
Wooler	7	P. and M.	2
A.J.S.	5	Bradbury	2
Enfield	5	Sunbeam	2
Rudge	5	New Imperial	2
Raleigh	4	Royal Ruby	2
Clyno	4	Scott	2
Norton	3	Martinsyde	2
Matchless	3		

B.S.A., Singer, Humber, Ivy, Rex Massey-Arran, Chater-Lea, Alldays Allon, Lea-Francis, A.B.C., Premier, Levis, one each; 2 unknown makes.

N.B.—Six of the Woolers appeared in succession.

ON THE MANCHESTER-WILMSLOW ROAD (2 hours).

Triumph	40	Scale	5
Sunbeam	15	Raleigh	4
A.J.S.	11	Norton	4
B.S.A.	10	Ariel	4
Royal Ruby	7	Harley-Davidson	3
New Imperial	7	Indian	3
Douglas	6	Rudge-Multi	3
Royal Enfield	5	Zenith	3
Scott	5	Excelsior	2
Matchless	5		

Slade, Levis, New Hudson, Quadrant, A.B.C., Federation, Bradbury, Chater-Lea, Connaught, Clyno, and James, one each; 12 unknown makes.

ON THE BRISTOL-BRIDGWATER ROAD (2 hours).

Triumph	9	A.J.S.	4
B.S.A.	8	Royal Enfield	4
Douglas	5	Clyno	2
Rudge	5	James	2
Sunbeam	5	New Hudson	2

Hazelwood, Omega, Massey-Arran, Hobart, New Imperial, O.K., Corona, Levis, Matchless, Premier, Scott, Campion, Rover, Ariel, Coulson-B., one each.

ON THE OXFORD-READING ROAD (1 hour).

Triumph	13	B.S.A.	4
A.J.S.	6	P. and M.	3
Royal Enfield	5	Sunbeam	2
Douglas	5	New Imperial	2

James, Calthorpe, Bat, Rover, Singer, Martinsyde, Matchless, Ivy, Verus, Wolf, Massey-Arran, and unknown, one each.

ON BRISTOL BRIDGE (1 hour).

James	12	Ariel	4
New Imperial	8	Norton	4
Douglas	8	Velocette	4
A.J.S.	6	Rudge	4
Royal Enfield	6	Coventry Eagle	3
B.S.A.	6	Calthorpe	3
Triumph	6	Cotton	3
Levis	5	Matchless	2
Raleigh	5	Harley-Davidson	2
Sunbeam	5	Rover	2

Francis-Barnett and McKenzie, one each; unclassified, 10.

ON THE BRISTOL-BRIDGWATER ROAD (2¼ hours).

Douglas	8	Sunbeam	3
Triumph	7	New Imperial	2
B.S.A.	6	Rudge-Multi	2
Royal Enfield	5	Levis	2
Matchless	3	Snn	2
A.J.S.	3		

Rudge, Martinsyde, Norton, James, New Hudson, Rover, Lea-Francis, P. and M., and Raleigh, one each.

SMALL PLUGS FOR LARGE ENGINES

FROM time to time diminutive sparking plugs have appeared on the market to meet the special needs of designers of very small engines, or for machines with insufficient clearance between cylinder head and frame tubes. Last year the Runbaken firm produced a miniature plug which is in the first category, while a dwarf plug was once catalogued by the Sphinx Co., which was of the latter type.

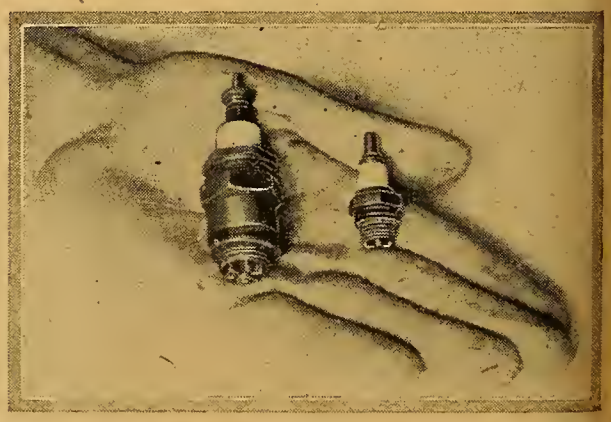
In all such cases, however, these small plugs have not been claimed to be superior to the standard types, and no speed exponent would have considered using them for present day racing.

We cannot recall having heard an opinion expressed that small plugs might be more satisfactory than the large type, until the recent Paris Salon. It was M. Mathis, designer of the popular Mathis car, who, in presenting us with a diminutive Bosch plug, ventured to claim that the small plug is the future type, *because of the decreased mass of metal it embodies*. M. Mathis was so confident regarding this theory that he has designed his latest engines to take the miniature Bosch plug, which is illustrated in company with a plug of standard size.

The respective dimensions of the two plugs are as follows:—

	Miniature.	Standard.
Length overall	1⅝in.	3in.
Diameter of Body	¾in.	1¼in.
Diameter of Threaded Portion	15-32in.	11-16in.

No doubt there is a great deal in the idea that for hot running engines, a small plug with the minimum amount of metal in the body should be superior to one with perhaps 200 per cent. more metal. It may be argued, of course, that the larger plug body has a correspondingly increased area presented to the air. On the other hand, the small plug has very little area exposed to the flame of the ignited gases, and cooling area on the cylinder head may be increased.



On the basis that the larger a plug the more readily will it overheat, the Bosch company has introduced a miniature sparking plug, around which it is said a Continental manufacturer has designed an engine. The new plug compared with a standard article.

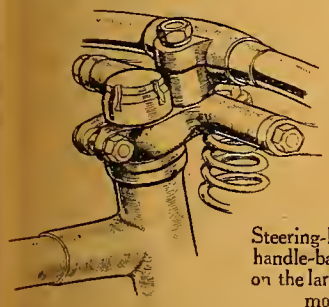
ADVANCE DETAILS OF 1923 MODELS.

NEW B.S.A. SOLO MODELS.

Two Solo Singles and a Light 986 cc. Twin.

QUITE a number of novelties will be staged at the forthcoming Olympia Exhibition on the B.S.A. stand. Of these, two are of considerable interest to solo riders. The first is an entirely new sports model of 80 × 98 mm. (493 c.c.). Outwardly the engine follows B.S.A. lines, but has a specially well-ribbed exhaust port. The long stroke engine has a light cast-iron piston, roller-bearing big end, ball bearings on the driving side of the main shaft, and a plain bearing on the timing side. Separate cams are employed to operate the inlet and exhaust valves, with rockers interposed, and a special screw type oil pump is incorporated in the timing cover, the lubricant being pumped through a sight feed drip and thence to the engine.

The lines of the machine are distinctly sporting and graceful, the frame having a comparatively short wheelbase and a three-speed gear box being housed above the bottom bracket. The drive is by chain throughout, a faced cam type of cush drive being mounted on the engine shaft. Having a rounded nose and tapering slightly to the rear, the tank is pressed from sheet brass and is well rounded at the edges and corners. Below the Brooks



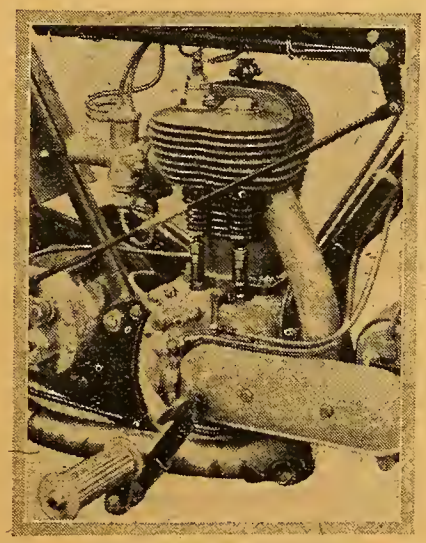
Steering-head and handle-bar fixture on the larger sports model.

short-leaf spring saddle and behind the down tube lies a large armoured tool bag. The rubber-covered foot-rests are adjustable to any position; the adjustment is simple, for the cranked rests are mounted on a hexagon bar which fits through a correspondingly "drifted" lug, so that it is only necessary to remove the rests and slip them on in the desired position.

Mudguards of D section and moderate width are fitted.

There is a small modification from B.S.A. practice incorporated in the gear box, for the main shaft now lies in front of the lay shaft and the box is somewhat neater than in previous models.

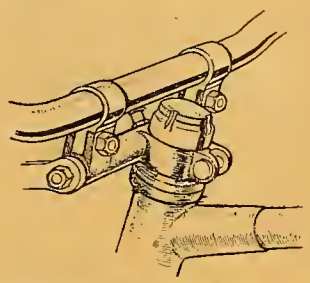
A similar gear box is fitted to the new 349 c.c. B.S.A., the engine of which has a bore and stroke of 72 × 85.5 mm. This, again, is a new model, and is to a certain extent a small edition of the 493 c.c. sports machine just described. The valves are placed side by side, and a similar type of screw mechanical oil pump is employed.



Engine of the new 493 c.c. sports model.

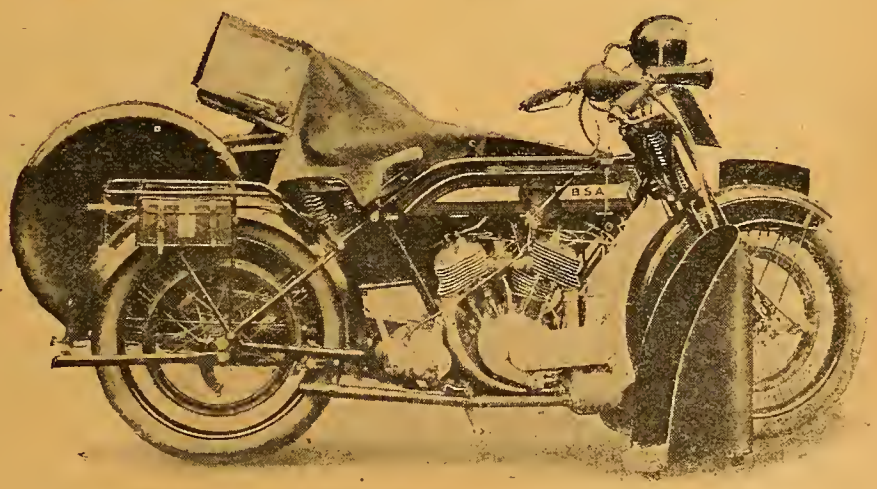
In the smaller model 26 × 2¼ in. tyres are fitted, as compared with 26 × 2½ in. on the larger model. Also the front mudguard is fully valanced, and is fitted with a sensible mud splasher. The chain cases are of pressed aluminium, the front chain being fully protected, while the top run of the rear chain is well covered. Again, the tool bag is behind the saddle tube, and a dummy belt rim brake is fitted to the rear wheel.

The handle-bar fixings are quite a feature of these two B.S.A. models. In the



Handle-bar fixing on the 349 c.c. model.

case of the smaller machine no stem is fitted, but a special type of lug is bolted direct to corresponding lugs on the link bearing of the spring forks. The sports model, however, has an adjustable bar gripped in a split clip which forms the upper part of the head lug.



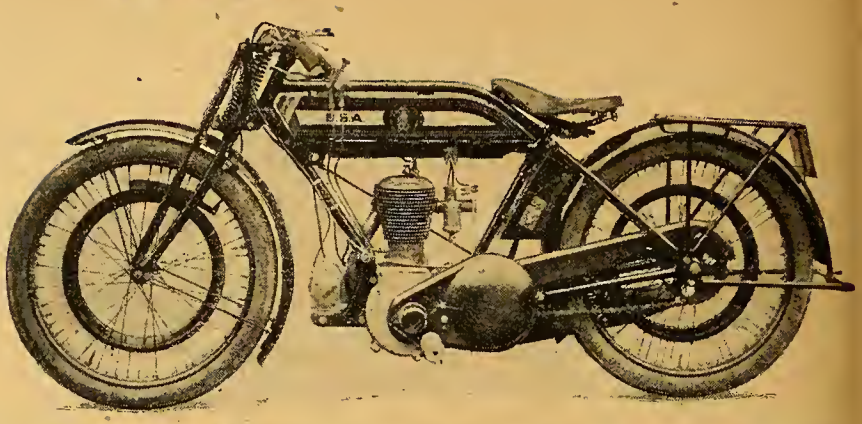
Foot-boards and leg-shields are instantly detachable on the "Light Eight" sidecar outfit.

Advance Details of 1923 Models.—

Another new model is the "Light 8," which has a twin-cylinder engine of 80 × 98 mm. bore and stroke (986 c.c.). This engine is very neatly housed in a slightly modified form of the "Light 6" frame.

For Fast Sidecar Work.

Fitted with 700 × 80 mm. tyres, the machine is a very attractive fast sidecar mount. It incorporates most of the well-known B.S.A. features, including mechanical oil pump, good mudguarding, excellent finish, and mud-proof tappets. The drive is, of course, by chain throughout, a three-speed gear box being employed. The rear wheel is of the quick-detachable type, and a choice of Terry saddle or a normal saddle with B.S.A. spring seat pillar is provided. Both brakes operate in dummy belt rims, and a Mills single-lever carburetter can be fitted as an option to the standard two-lever type.



Mechanical lubrication and effective chain guards are features of the 493 c.c. sports model B.S.A.

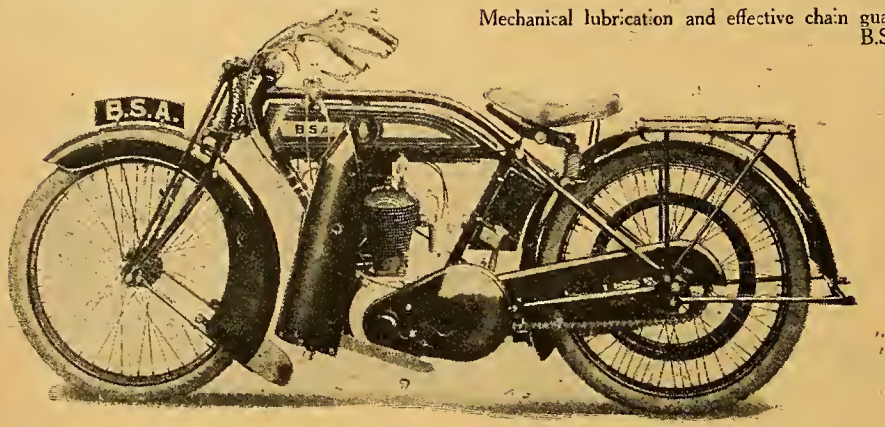
The well-known 557 c.c. single-cylinder B.S.A. remains unaltered, both in all-chain and chain-cum-belt models.

Double Purpose Twin.

The "Light 6" is obtainable as before, or it may be purchased in a modified form with chain guards only as opposed to the cast aluminium chain cases and without the spring seat pillar.

The big twin touring model, with its many refinements, is also unaltered.

Neat detachable foot-boards and leg-shields can be obtained with all touring models.



Protective leg-shields are included in the equipment of the touring 349 c.c. B.S.A.

NEW CONNAUGHT MODELS.

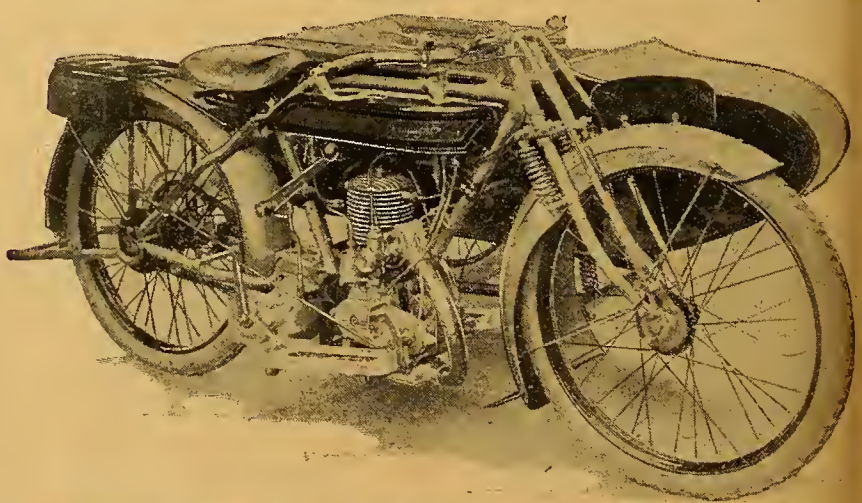
Increasing Popularity of 350 c.c. Two-Stroke Models for Solo and Sidecar Work.

As emanating from one of the earliest constructors of two-stroke motor cycles in this country, any new production from the Connaught factory is bound to create a considerable amount of interest.

At the 1921 Olympia Show a 350 c.c. Connaught was introduced, and the engine of this size has undergone considerable developments during the past year, and in its latest form has become an attractive machine for either solo or sidecar work.

Combined Inlet and Exhaust Manifold.

Having a bore and stroke of 76×77 mm. (348 c.c.), the engine has the combined inlet and exhaust manifold which has so long been a feature of Connaught practice, but this feature has been modified considerably in design. In the case of the sports model, the manifold consists of two aluminium castings bolted together and heavily ribbed in order to dissipate the heat. The castings surround the front down tube, and thus there is no need for complicated bends in the pipe; from this manifold the exhaust pipe leads to a cast aluminium expansion box carried on the chain stay containing a simple and effective baffle, which, however, does not reduce engine power perceptibly. Silencing is a feature of the latest Connaught models, and in the standard 350 c.c. machine a modified form of cast aluminium manifold directs the gas into the exhaust pipe, whence it is led to a flat aluminium silencer directly below the crank case. From this silencer there are two exit pipes, to which the gas finds its way through a series of holes, the noise being very considerably reduced; in fact, as a result of a demonstration we are convinced that no one could take exception to the noise of the

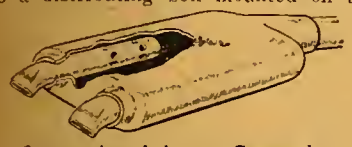


Standard 348 c.c. Connaught with the maker's own sidecar. Note wide splayed mudguards and position of brake pedal.

Advance Details of 1923 Models.—

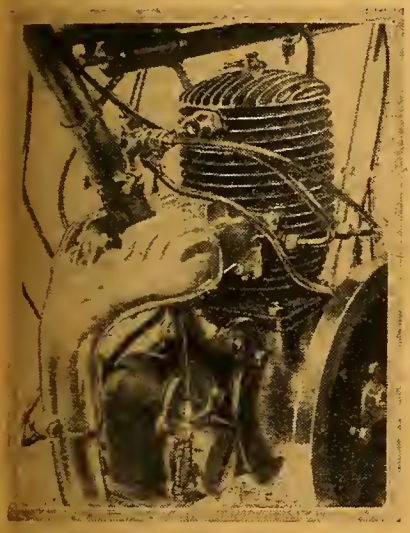
latest Connaught under any circumstances, for even on full throttle all that is audible is a pleasant purr.

In both sports and standard models lubrication is effected by means of a Showell pump driven from the magneto spindle; oil is drawn from the tank and pumped through a sight-feed indicator into a distributing box mounted on the

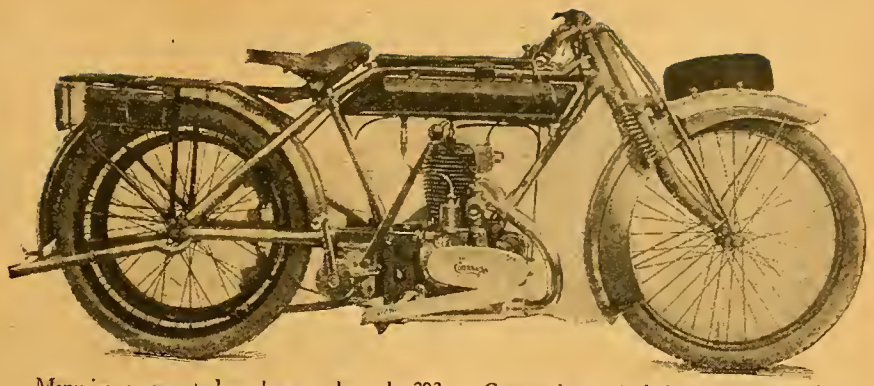


Construction of the new Connaught silencer which lies below the crankcase.

front down tube; from this box a lead is taken to each of the main crankshaft bearings and thence to the big end through the drilled shaft. In addition to this, a lead passes to the cylinder walls and gudgeon pin, and another to that portion of the cylinder wall which



Combined exhaust and inlet manifold on the sports model Connaught.



Many improvements have been made to the 292 c.c. Connaught, particularly in engine details.

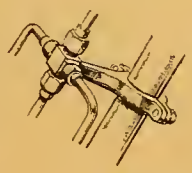
separates the inlet and exhaust ports. It has been found that this last-mentioned lead has a great effect in reducing the possibility of piston rings sticking.

The sports machine is fitted with a two-speed Burman gear, clutch, kick-starter, and all-chain drive, while similar transmission is employed on the standard model with a three-speed box. 26in. × 2½in. extra heavy tyres, internal expanding brakes front and rear, and a simple and neat form of adjustable handle-bars are features of the machine. In addition, the standard model has very neat aluminium footboards, the foot brake pedal passing through the front end of the board and lying in an unusually convenient position. Excellent mudguarding is provided—and the valances of the front guards are splayed outwards at the back, and in addition have a wide mud flap.

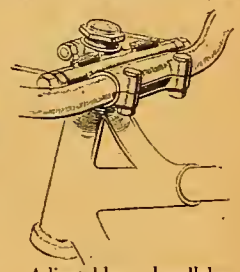
The Connaught tank on the 350 c.c. models is of a new pattern with rounded front, tapering slightly to the rear. Cast aluminium chain guards are fitted, and a further refinement has been effected in the construction of the relief valve, which is now entirely enclosed, while the gases are led through a cast duct into the exhaust port.

In addition to these two types, two 293 c.c. models (73×70 mm. bore and stroke) are manufactured. The first of these has a new exhaust manifold and silencer, a two-speed Burman gear box with clutch and kick-starter, chain and belt drive, two belt rim brakes on the rear wheel, and 24in. × 2¼in. tyres. The second model is a single-geared machine with direct belt drive and an improved frame. These two latter types will be marketed in view of the demand for low-priced motor cycles, and will represent good money value.

A new production will be exhibited at Olympia in the sidecar attached to the



Oil distributing box mounted on the down tube of the Connaught. A Showell pump provides the oil.



Adjustable handlebar and braced head lug of the 348 c.c. model.

350 c.c. standard model. Every part of this sidecar is manufactured by the Connaught firm, so that it is in every way suitable for use with the machine. It has a neat underslung chassis with a three-point attachment, while the body is of comfortable proportions, having a deep back and a sensible locker behind the seat.

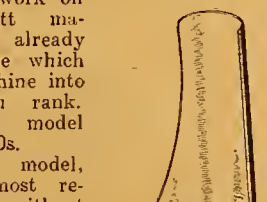
CHAIN DRIVEN FRANCIS-BARNETTS.

292 c.c. and 346 c.c. four-strokes for 1923.

NOT very many modifications have been found necessary to the existing Francis-Barnett models. The chief change, however, will lie in the fact that all-chain drive will be employed throughout. Perhaps the most interesting model, and certainly the most fully equipped, is the standard touring machine, which will have a three-speed Sturmey-Archer gear, clutch, and kick-starter, very wide guards fully valanced in front, and combined footboards and leg-shields, which are quickly detachable by the removal of two nuts. These leg-shields follow the lines of the frame, and are not in any way unsightly, and they are, in addition, most practical fittings. The 346 c.c. J.A.P. engine is, of course, retained, as is the distinctive saddle tank.

The detail work on Francis-Barnett machines has already made a name which lifts the machine into a very high rank. The tourist model sells at £74 10s.

A sports model, similar in most respects, but without leg-shields, etc., is



Combined foot board and leg-shield on the Francis-Barnett.

listed at £72 10s. In addition, the tourist machine can be obtained with a light Grindlay sidecar for £87 10s.; and a special 346 c.c. J.A.P. engined T.T model will be shown at Olympia. This will be stripped, but will have a three-speed all-chain drive with clutch but no kick-starter; it is an attractive mount coloured in grey and mauve. All other Francis-Barnett models are fitted with clutch and kick-starter.

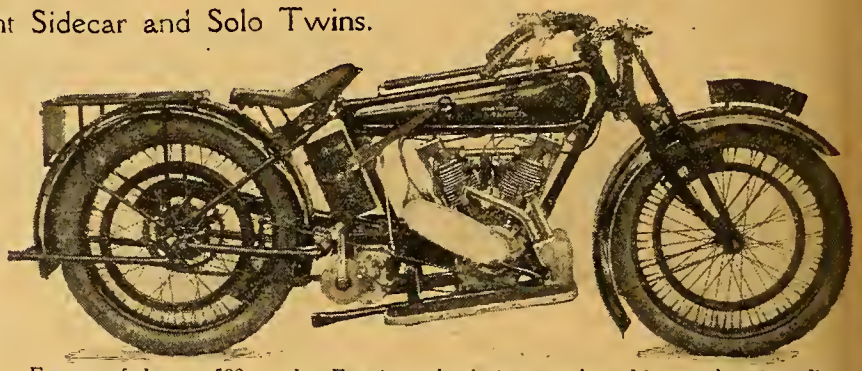
The 292 c.c. J.A.P. engine will be installed in two models, one having a three-speed gear, listed at £65, and one with a two-speed gear at £63 10s.

A small refinement has taken place in the construction of the chain guards, which are now made in two pieces in order to render them more easily detachable.

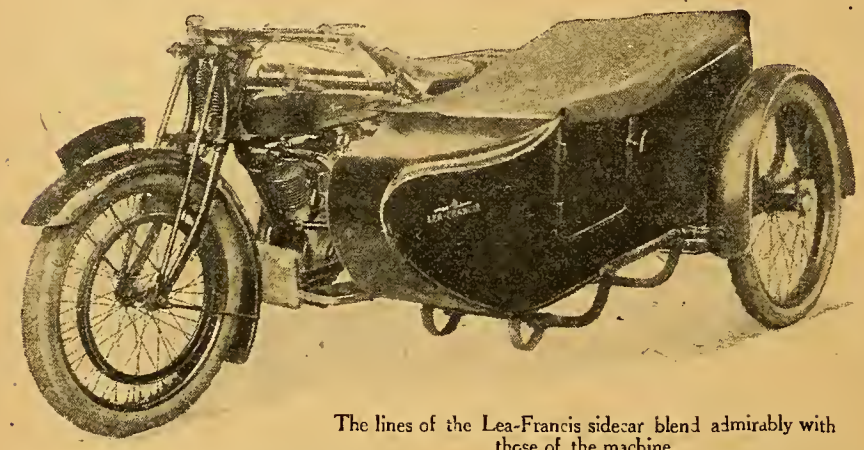
FRAME MODIFICATIONS TO LEA-FRANCIS.

Graceful Medium-Weight Sidecar and Solo Twins.

QUITE an innovation for the Lea-Francis Co. is the fact that in the 592 c.c. model the frame has been modified to the sloping top tube type, thus doing away with the braced head-lug construction hitherto used. The alteration has certainly brought the layout into line with modern ideas, and, enhanced by the admirable finish for which the firm is celebrated, the latest model has a most attractive appearance. The twin M.A.G. engine (64 × 92 mm = 592 c.c.) remains the same, excepting that the magneto is now mounted behind the engine. In addition to this, a three-speed Burman gear box, with clutch and kick-starter, is fitted.



Features of the new 592 c.c. Lea-Francis are the sloping top tube and improved mud guarding



The lines of the Lea-Francis sidecar blend admirably with those of the machine.

It will be remembered that the Burman gear box incorporates a cush drive in the clutch mechanism, but in addition to this an Enfield cush hub is fitted in the rear wheel. Wide D-section guards, without valances, are fitted to both wheels, and a single large armoured tool bag is mounted behind the saddle tube. Fitted with footboards, 26 × 3 in. tyres, and Brampton forks, this machine will be listed at £96 10s.; it is one of the few twin-cylinder models big enough for all sidecar requirements which remains light enough to be handled with comfort as a solo machine.

When a sidecar is supplied, a simple underslung chassis with four-point attachment has been standardised, and the roomy body is suspended on C springs.

The 496 c.c. twin M.A.G.-engined model remains unchanged, except that the head lug has been lowered slightly. Its price is £90.

MOTORISED BICYCLE WITH O.H.V. ENGINE.

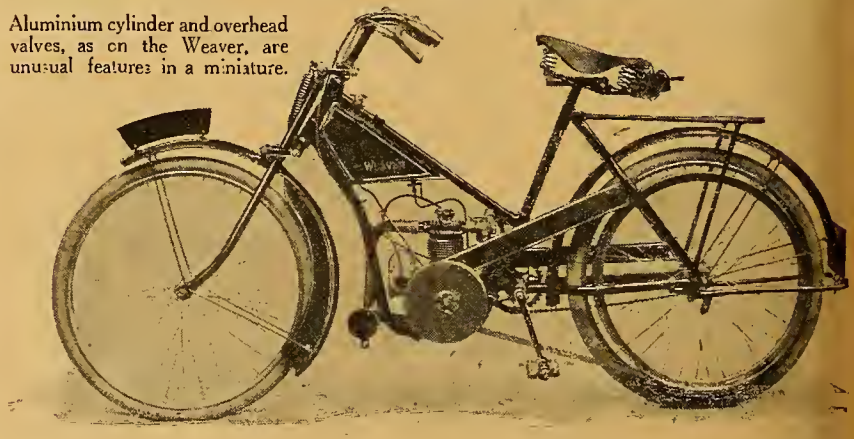
Varied Range of Verus and Sirrah 250 c.c. and 350 c.c. Models and a 150 c.c. Machine with a New Name.

CAREFULLY following the modern tendency in motor-cycle design, the firm of Alfred Wiseman, Ltd., of Glover Street, Birmingham, has decided to market a very complete range of Verus and Sirrah motor cycles, most of which are of the lightweight type.

In addition to these, a pretty little ultra-lightweight will be staged at the forthcoming Olympia Exhibition under the name of the Weaver. This machine will be of the motorised bicycle type, having a sturdy loop frame with sloping top tube, thus providing for riders of both sexes. The engine is a particularly interesting piece of work, having a cylinder of 56 × 61 mm. bore and stroke (150 c.c.). It is of the four-stroke type with cylinder and crank case cast in one piece in aluminium, a steel liner being pressed into the cylinder and a cast iron head being held down by four long studs. Both valves are disposed vertically in the head and are operated by push rods and rockers in the normal manner. A direct belt drive is employed giving a gear ratio of 7½ to 1; a special type of Brampton fork with single central spring provides the front suspension. 26 × 1¾ in. tyres are fitted, and a stand and carrier of sensible proportions are part of the specification. In addition to this, a back pedal coaster brake is fitted. The weight of the complete machine is no more than 70 lbs., and it will be listed at the price of £29 8s.

By careful consideration of production methods, considerable price reductions have been made in the other models of the concern. As an example of this, the 249 c.c. Sirrah may be instanced. This machine is fitted with the latest side-by-side valve 249 c.c. Blackburne engine,

Aluminium cylinder and overhead valves, as on the Weaver, are unusual features in a miniature.

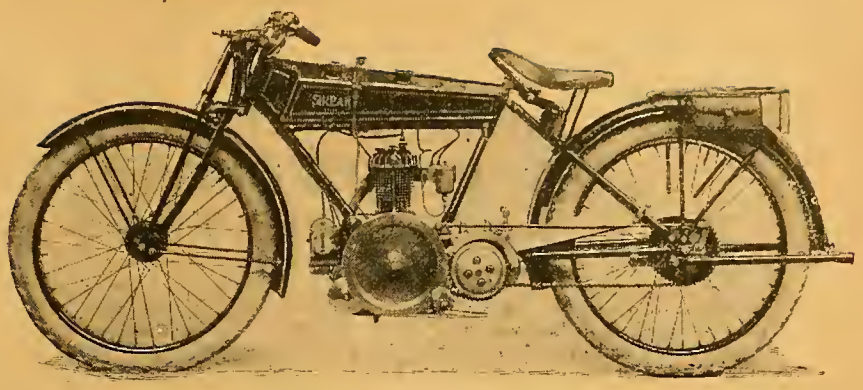


Advance Details of 1923 Models.—

which has a bore and stroke of 60×88 mm.; this unit differs from the former Blackburne patterns in that the cylinder is now a one-piece casting, the head being very well ribbed, especially in the neighbourhood of the exhaust port. With transmission by chain and belt with the latest type Burman two-speed gear box with clutch and kick-starter, complete with direct acting rear brake, disc wheels and Brampton fork, this model will sell at £51 9s. 24×2¼in. tyres are fitted, and the saddle position is extremely low.

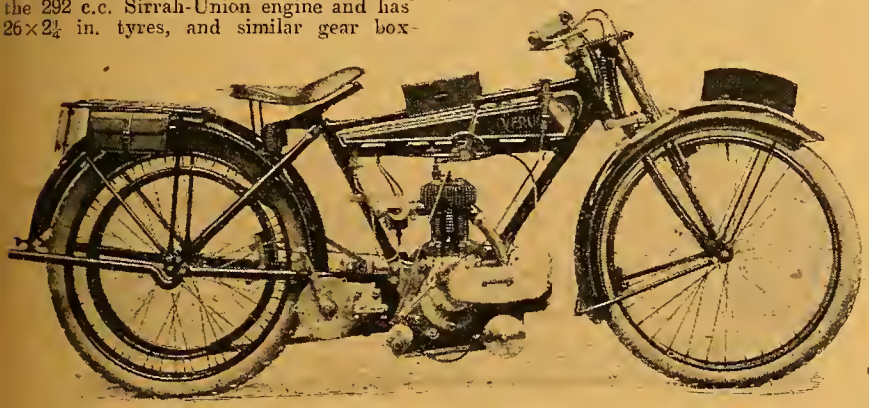
A two-stroke lightweight with 211 c.c. three-port engine will be listed as before, and may be obtained with either single gear or two-speed Burman gear box with chain and belt drive—clutch and kick-starter are retained. In other details this machine resembles the Blackburne-engined model just described.

Another two-stroke model is fitted with the 292 c.c. Sirrah-Union engine and has 26×2¼ in. tyres, and similar gear box-



Seven inches ground clearance and 28 × 3 in. tyres make this 349 c.c. Sirrah particularly suitable for the overseas market.

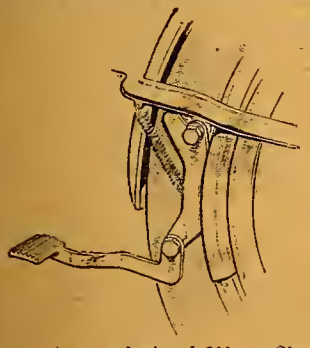
suitable for overseas conditions, and the details are well thought out. 28×3 in. tyres on heavy rims should provide a satisfactory foundation, and these wheels are covered by wide flat-sectioned guards having no valances, but ample clearance for the tyres; the minimum ground clearance is 7 in. A Burman three-speed gear with clutch and kick-starter and all-chain drive are fitted. The chains are protected by cast aluminium guards, but are readily accessible in case attention is needed. Internal expanding brakes are fitted front and rear; a saddle tank provides a neat appearance, and the machine is geared low so as to be capable of heavy plugging.



A symmetrical little solo machine is the 349 c.c. Verus-Blackburne.

Of the Verus models, perhaps the 349 c.c. side-by-side valve Blackburne-engined solo machine is the best example: it may be obtained with either two-speed, clutch and kick-starter and chain and belt drive, or three-speed all-chain drive. In either case both wheels have internal expanding brakes and very wide mudguards are used; the Brampton forks pass through these guards, the holes

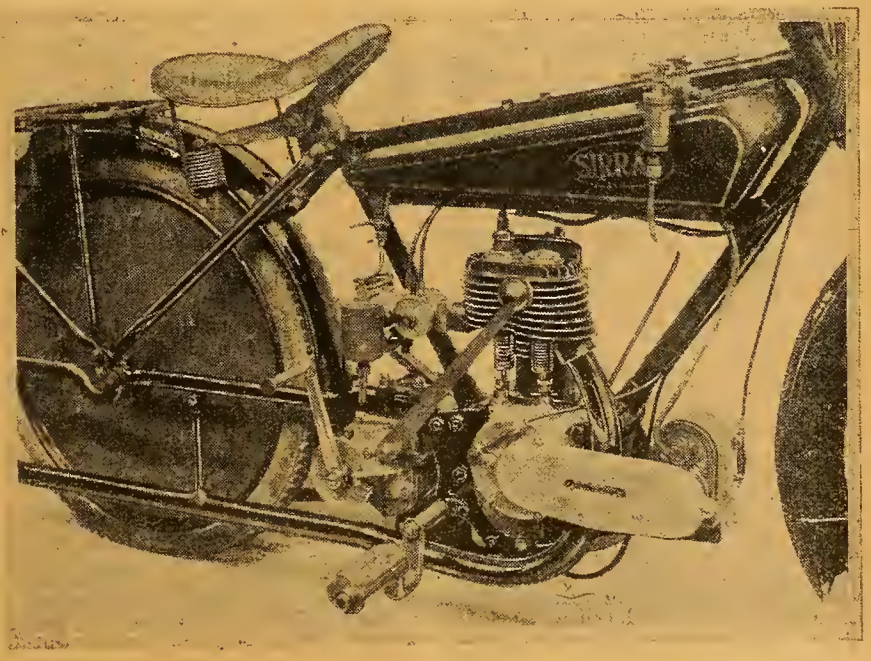
and transmission. Again, this model may be fitted with a three-speed gear and all-chain drive with clutch and kick-starter for passenger work, in which case a light Canoelet sidecar is attached. This model has already distinguished itself in long distance trials on several occasions,



Direct-acting rear brake of 211 c.c. Sirrah.

and is a very practical form of light sidecar outfit capable of taking its rider and passenger over any reasonable country.

Of considerable interest to overseas riders is the 350 c.c. Blackburne-engined model specially designed for solo work in heavy country. Great care has been taken to render this machine thoroughly



New 249 c.c. side-by-side valve Blackburne engine and the latest type Burman two-speed gear are neatly housed in the frame of a very moderately priced Sirrah model.

Advance Details of 1923 Models.—through which they pass being closed by aluminium packing pieces in a particularly neat manner. In addition to the front guards, the magneto is protected by a cast aluminium shield, and a tool box is fitted above the tank on the top tube. This type of machine can also be supplied with a Canoelet sidecar.

In addition to the models already mentioned, "super-sports" machines can be obtained in both Verus and Sirrah ranges; these should make a strong appeal to the solo rider, as they are specially designed to enable the fitting of either J.A.P. or Blackburne engines, in either the overhead or side-by-side valve types of 250 c.c. or 350 c.c.

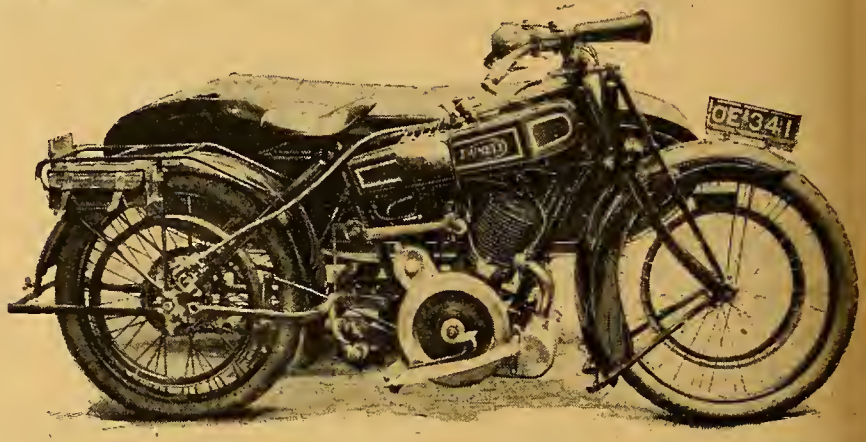
A CHAIN-DRIVEN DUNELT.

Low Priced Big Single Two-Stroke Sidecar Outfits.

MODIFICATIONS of some importance have been made in the latest model two-stroke Dunelt. The principle of the 500 c.c. single-cylinder engine is already well-known and proved; it will be remembered that a double diameter piston is employed, so that an increased charge may be drawn into the engine.

The chief alteration in the new model lies in the fact that all-chain drive is employed, and the wheelbase has been shortened by two inches. In addition to this a great deal of attention has been given to the question of silencing, and a very large cast aluminium chamber is fitted below and in front of the engine. From this chamber a tail pipe extends rearwards past the back spindle, and lying directly over the chain forms a guard therefor

Further modifications consist of more comfortable handle-bars and improved front and rear brakes. The engine itself has undergone slight modifications, the chief of which are that wider rollers are now employed in the big end bearing, while a special type of Amac carburetter has been found to increase the power output and improve the petrol consumption considerably.



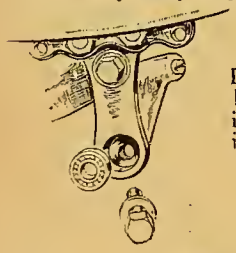
Chain-drive, a shorter wheelbase and silencer improvements are changes in the Dunelt for 1923.

The latest prices are of some interest. Solo models can be obtained with final belt drive at £75, or chain and belt £80. Sidecar models are as follows: all-chain drive £100; with interchangeable front and sidecar wheels, £112; chain and belt model, £95; and chain and belt with interchangeable wheels, £108.

SADDLE IMPROVEMENTS.

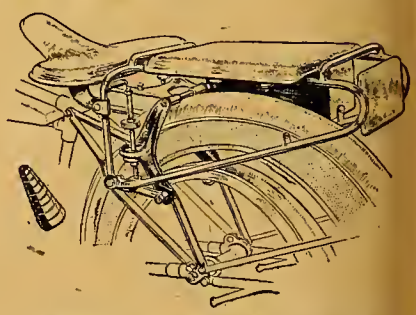
Ball-bearing X.L.-All Saddle and Combined Saddle, Carrier, and Pillion.

AMONGST the very complete range of X.L.-All saddles made by John Leckie & Co., Ltd., of Walsall, is a combined saddle, carrier, and pillion seat. A pair of stays is built into the frame over the existing rear top stays. A curiously shaped pressing forms the centre part of each stay; these pressings form the seats for a pair of involute springs, and also provide anchorage for parallel links controlling the motion of saddle and pillion. The springs may be adjusted to suit the load, and a rubber buffer is provided to prevent the pillion seat from bumping the mudguard. This device is very stoutly constructed, and the fact that both driver and passenger move in unison makes for greater safety and ease of control.



Details of the ball bearings which are inserted in all the joints of the new X.L.-All saddle.

Another innovation is a saddle which, while the suspension follows the well known X.L.-All practice, differs from previous designs in that the joints are provided with ball bearings, giving an action of extreme smoothness in exchange for a slightly increased expenditure.



Combined X.L.-All saddle, carrier, and pillion seat. One pannier bag and spring have been removed to show the construction.

FOUR-STROKE ALLON NEXT YEAR.

THE chief change to be made by Alldays and Onions (makers of the Allon lightweight) for 1923 will be the addition of a four-stroke sports model with a 346 c.c. J.A.P. engine. This machine will be fitted with two-speed Burman or three-speed Sturmey-Archer gear box. In either case clutch and kick-starter will be fitted. A choice is given also of chain and belt or all-chain drive.

The lines of the well-known Allon two-stroke are retained with certain modifications, and improvements have been made in the frame construction, notably in the fact that a special lug on the front down tube replaces engine plates, while the rear engine plates also carry the footrest hangers.

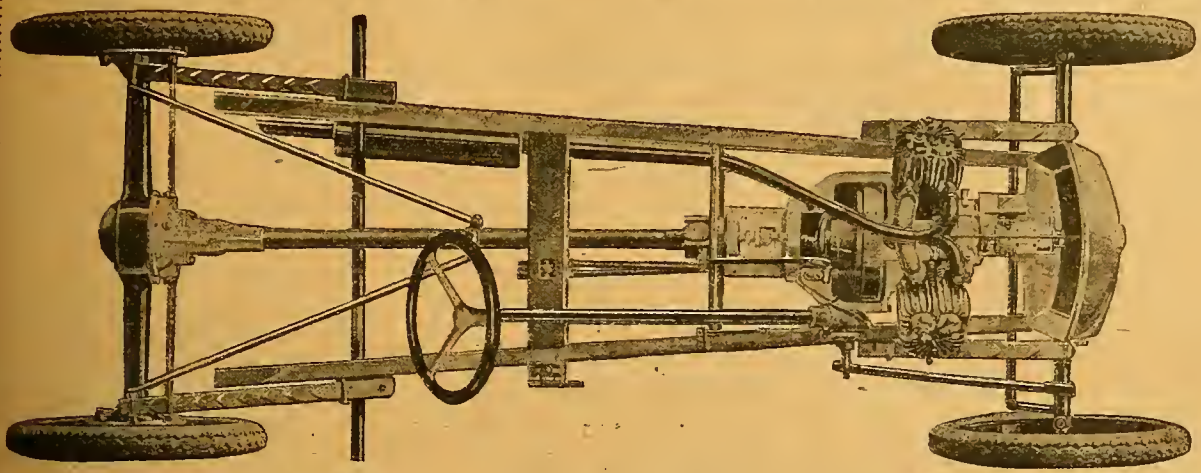
Brampton forks, 26 × 2¼in. tyres, and an E.I.C. magneto complete the specification. It will be recollected that excellent mudguards are fitted to all Allon machines.

The two-stroke, with its 292 c.c. engine and 70 × 76 mm. bore and stroke, will of course be retained, the most noticeable difference to the machine being the absence of the saddle tank.

A new silencer has been devised, consisting of a cast aluminium box bolted direct to the rear chain stays.

The frame improvements mentioned in the four-stroke type are also included in the case of the two-stroke, and in addition the exhaust pipe has been brought across to the near side so as to simplify the brake gear.

Ignition, as before, will be by means of the Villiers flywheel magneto, which has proved exceedingly satisfactory in service, and from which current for lighting may also be obtained.



The indestructible G.N

BEAUTIFUL BODYWORK ON A PERFECT CHASSIS

Representative of the finest automobile practice available, the 1923 G.N. has been built to a standard of quality—and not to a price.

Considerable reduction in cost might have been achieved by the use of plain bearings instead of ball bearings, and ordinary steels in place of such high-grade steels as B.N.D., KE805, and Cobalt-chrome—steels normally used on racing cars and very expensive cars; and sliding gears in place of the G.N. dog-clutch system. Instead, by the use of selected materials throughout, a degree of sturdiness, dependability and long life has been aimed at altogether beyond the general light car standard, while for refinement of design, detail work and finish, the G.N. has no rival at anywhere near its price.

The 1923 G.N. chassis with its powerful yet *silent* engine, *silent* B.N.D. spiral bevels, indestructible always-in-mesh gears, sweet running and fine springing, is a truly wonderful proposition; it is completed by a very roomy body of handsome design, comfortable, and in every detail beautifully finished.

THE FOUR-CYLINDER G.N

The four-cylinder model has a *monobloc* water-cooled engine with overhead valves; it is a fast and lively car of high road performance. Detail work throughout the engine is of a very high standard: all the bearings, including even the camshaft, have forced lubrication. The valve rockers and push rods are totally enclosed, the dynamo is gear-driven and a self-starter can be fitted if desired.

The chassis specification in other respects is similar to that of the air-cooled twin.

PRICES:

TWIN-CYLINDER

WITH EQUIPMENT AS ABOVE.

	GUINEAS
Touring Model - -	205
Three-quarter Coupé -	225

DEFERRED PAYMENTS ARRANGED.

FOUR-CYLINDER

WITH EQUIPMENT AS ABOVE.

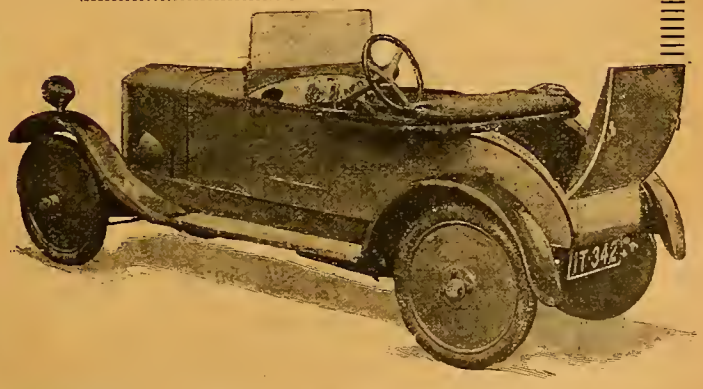
	GUINEAS
Touring Model - -	245
Three-quarter Coupé -	265
Four-seater - - -	265

Self-starter and Speedometer: 15 Guineas extra
DEFERRED PAYMENTS ARRANGED.

Stand No. 193 White City

G.N MOTORS LTD., SHOWROOMS AT 222, GREAT PORTLAND STREET LONDON, W.1

Head Office and Works at East Hill, Wandsworth, London, S.W.18



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FOR MOTORISTS, TRAVELLERS, Etc.

The "Four-in-One"

A RAINCOAT AND OVERCOAT COMBINED

The Finest Coat for motoring, travelling or general wear—smart, comfortable, warm and absolutely waterproof. Worn without the fleece lining, it is a light and stylish raincoat.

WITH DETACHABLE WOOL FLEECE LINING

63/-

WITHOUT FLEECE LINING 50/- CARRIAGE PAID U.K.

"FOUR COATS IN ONE!"

1. **OUTER COAT,** tailored of specially tested, highest grade Egyptian yarn-dyed Gabardine, and triple-proofed. Obtainable in various shades
2. **"YARNSKIN" (Regd.) INTERLINING,** full length of sleeves and body, odourless, non-perishable, windproof and waterproof. Our own exclusive production.
3. **COSY CHECK LINING** of superior quality, in smart designs, also proofed.
4. **WOOL FLEECE LINING,** *full length of sleeves and body.* Warmer and lighter than an overcoat. Can be easily detached in a few seconds.

Do not confuse the "Four-in-One" Raincoats with surplus army goods. They are tailored from the finest, brand-new materials in smart, double-breasted style, with wind and storm-proof cuffs, belt and cuff straps to fasten with leather buckle. **The collar can be worn in three styles—open, semi-open or buttoned to neck as a storm collar.** Ladies' Coats have Raglan sleeves; Men's Coats, set-in sleeves.

EVERY COAT FULLY GUARANTEED. If you are not delighted with the Coat, we will refund your money in full, together with postage. Further, should any defect develop during reasonable wear, we will remedy or replace the Coat.

SEND NO MONEY. We don't ask you to buy before you see what we are offering. Send your name and address, and we will give you the opportunity of testing, in your own home, the remarkable qualities of the "Four-in-One."

FORSYTH & CO. THE ACTUAL MAKERS,
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Branches at—Ashton-under-Lyne, Bradford, Bury, Grimsby, Hull, Harrogate, Leeds, Nottingham, Rotherham, Rochdale, Newcastle-on-Tyne, Warrington.

RAINCOAT
For LADIES & MEN

SUPPLIED IN VARIOUS SHADES.

Evidence

RECORD BREAKERS.
At Brooklands, Oct. 11th: C. F. Temple & F. Allchin (Harley-Davidson & s/car), Class G. 50 and 100 miles and 1 hour records.
R. E. Dicker (Bradbury), Class D. 300 miles record.
Both machines were lubricated with Wakefield CASTROL.

CONCEDING that the leading expert riders know the comparative efficiency of different lubricating oils, there is significance in the regular association of outstanding motorcycling performances with

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MOTOR OIL

IT SELLS BECAUSE IT EXCELS!
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Wakefield House, Cheapside, E.C.2.

For the Highway, the Byway, The Airway and the Fairway.

WHAT THE PRESS SAY
about the famous 26 Guineas 1¾ h.p. Lightweight
McKENZIE

No. 3.—Mr. FITZWATER WRAY. ("KUKLOS")

"I PUT a small schoolboy and a large policeman in turn on the McKenzie, pushed them off with a dozen words of advice, and they were motor-cyclists at once and for the first time. The L.P. was so pleased that the machine has since been in some danger of disappearing.

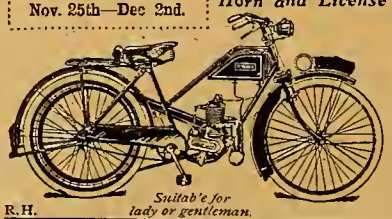
EASY CONTROL.

Knowing, through my letter bag, the class of people most interested in elementary machines of this kind, I was chiefly concerned to discover its ability, first to run slowly, and second to climb. It can be ridden just as slowly as you like in traffic, for when the pace becomes too slow to keep the engine running, you merely use the exhaust lifter and pedal at your own speed until the moment comes to restore the compression. The engine and carburetter are evidently on good terms, for even at very low speed there is less tendency to four stroke than I have found with other two-strokes. In two words, the control is ridiculously easy. Those who know the Great North Road in Hertfordshire can accurately gauge the little machine's climbing power by its performance of carrying myself 10½ stone up the two mile rise from Welwyn to Ayot Green known as the north side of Digswell Hill (Gall-and Inglis, S.E. Route 65), without any pedal assistance. I expected to be pedalling on the steep bit out of Welwyn village, but the machine climbed it unaided with a little in hand."

STAND No. 145 OLYMPIA
Nov. 25th—Dec 2nd.

The McKenzie is fitted with Fellows Magneto, Vici Carburetter, Heavy 5/8" Driving Belt, Clincher Tyres, etc.

Rear Carrier. Front and Rear Acetelene Lamps with Tubing and Generator, Bulb Horn and License Holder. 47/6 extra.



R.H. *Suitable for lady or gentleman.*

Ask your Agent to demonstrate the McKenzie or write to

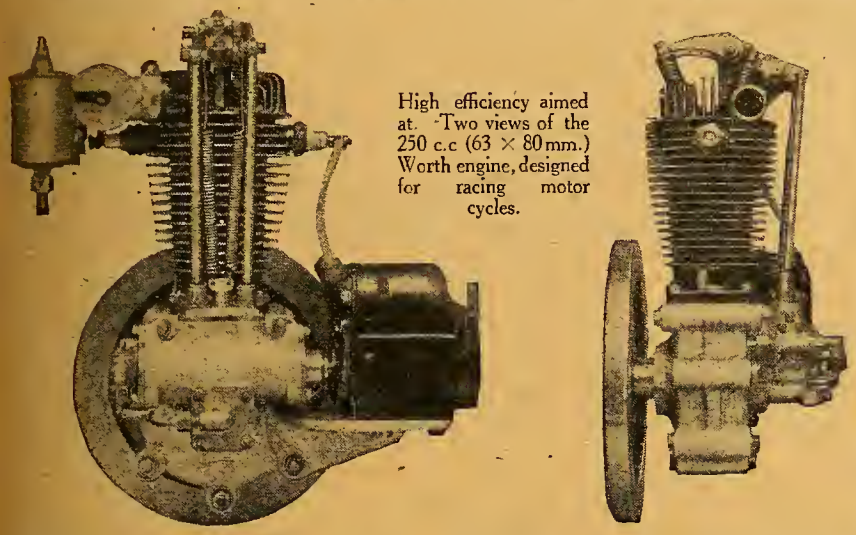
G. A. McKENZIE,
220 Shaftesbury Av.,
LONDON,
W.C. 2.

SEARCHING FOR EFFICIENCY.

A 250 c.c. Four-Valve Engine Designed for a High-Power Output.

TO attain the maximum output for a given capacity and to maintain that output for prolonged periods was the object constantly before the designer of the power unit about to be described.

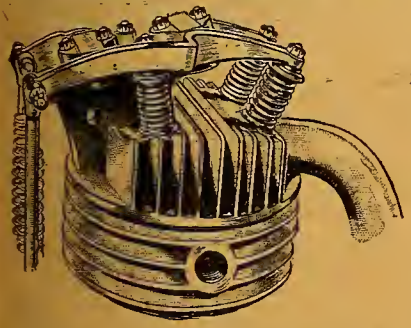
With such an aim naturally cost must be of secondary importance, and an engine designed to the same end must not, of necessity, be in the "produced for the multitude" class; therefore the subject of this article will appeal chiefly to speedmen and those interested in the latest progress of air-cooled engine construction.



High efficiency aimed at. Two views of the 250 c.c (63 × 80 mm.) Worth engine, designed for racing motor cycles.

Four Overhead Valves.

Made by the Keighley Commercial Lorry and Engineering Co. Ltd., South Street, Keighley, to the design of Mr. F. Umpleby, the Worth engine, as it is named, is a single cylinder of 63 × 80 mm. bore and stroke (250 c.c.), having four overhead valves operated by push rods and rockers worked from a transverse camshaft driven by skew gearing.



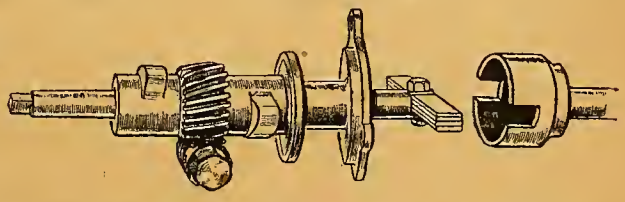
One-piece cylinder with overhead rocker bearing supports cast integrally with the head.

Cast iron is used for the cylinder, which is in one piece; the support for the overhead rocker bearings being integral with the head. Deep radiating fins are a feature, those on the head being placed in the direction of travel. The inlet port faces to the rear and the exhaust out to the left or flywheel side, the exhaust pipe having a flange fixing.

There are two inlet and two exhaust valves arranged in the head, which is of the pent-house variety, the valves being slightly inclined. The valve spring collars are screwed on to the stems and retained by split pins passing through castellations.

Turning to the crank case: the shaft is machined from a solid forging and is carried on two roller bearings on the flywheel side (the outside flywheel is also of steel) and a self-aligning ball bearing on the timing side, the latter taking thrust from the camshaft skew gear. A tubular connecting rod, with split big-end bearing links up the slightly domed aluminium piston. Two rings in one groove and a floating gudgeon pin are carried by the latter.

Worm driven camshaft. At the rear-end is the square for driving the pump, at the other the laminated spring coupling for the magneto.



Worm Driven Camshaft.

Valve operation, as mentioned above, depends upon the agency of a transverse camshaft driven by skew gearing. This shaft is carried in long plain bearings in a cylindrical housing on the side of the crank case. In the centre of the shaft is the pinion, located on each side of which are the cams.

At its rearmost end the camshaft is squared to provide a drive for the small gear pump which is mounted on the end cap of the camshaft housing, while the forward end of the shaft carries a small pack of leaf springs in a fork; these springs engage with notches in a small bell or cup fixed on the magneto spindle, the magneto being mounted on a bracket beside the crank case.

Motion from the cams to the valve rockers is transmitted by large diameter roller-ended tappets working in bronze guides. The hollow tappet rods are secured to the rockers by yoke-ends and bolts, and the rockers are returned by independent tension springs, the valve springs being called upon to close the valves only. The forked rockers are a particularly fine piece of work, machined out of the solid, with their spindles, which rock in bearings formed in the cylinder head extension; they are retained by bronze caps, which complete the split rocker bearing.

Rocker Clearance Adjustment.

Adjustment for clearances in the rocker mechanism is provided by rather minute nuts and set screws in the rocker tips, bearing directly on the valves. This is the only point we should be inclined to criticise in an otherwise excellent design.

Lubrication is effected by pumping the oil to the timing side of the crankshaft, then *via* drilled oilways to the big-end, surplus being flung up to the piston and cylinder walls. The timing gear is connected to the crank chamber by a large breather, which ensures an ample supply of oil reaching the former. Grease cups are provided for the rocker bearings.

The Worth engine was entered by G. Williams in last Saturday's Brooklands championship meeting.

1923 OMEGA MODELS.

APART from the introduction of the new model described last week the Omega range will be considerably reduced in price. The most important modification lies in the fitting of an expanding rear brake to the all-chain driven models. Prices are given below:—

348 c.c two-stroke single gear with variable ignition and two rear brakes, £37; with two-speed, chain and belt, £43.

348 c.c. two-stroke, two-speed, clutch and kick-starter, all-chain drive, with expanding rear brake and dummy belt rim brake in front, £51; three-speed, £55; with sidecar, £72.

292 c.c. J.A.P. engine, two-speed, clutch, kick-starter, all-chain, £62; chain and belt, £55; three-speed all-chain, £65.

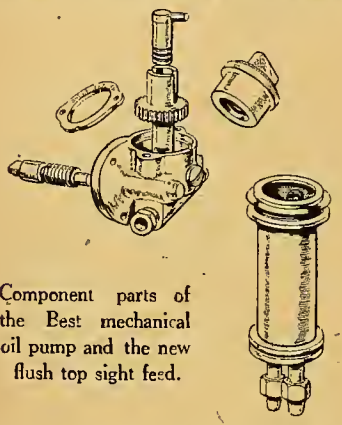
The well-known duplex frame model with two-stroke engine and two-speed all-chain drive, clutch, kick-starter, £65; and three-speed, £69.

THREE PROPRIETARY MECHANICAL LUBRICATORS.

New Departure in Best Pump Design. Lamplugh Vane Pump and Showell Rotary Principle Retained.

THE Best mechanical oil pump in its present form has already earned a name for reliability and accuracy; but the makers, Best and Lloyd, Ltd., Handsworth, Birmingham, are producing an entirely new model which will be exhibited at the forthcoming Olympia Show.

Simplicity is the outstanding detail of this pump. A central sleeve has rotary movement imparted to it by a worm driven off the half-time shaft of the engine, a gear reduction of 35 to 1 being obtained. Inside the sleeve is a plunger on which is formed a lug; the sleeve is



Component parts of the Best mechanical oil pump and the new flush top sight feed.

slotted at the top to receive the lug and give rotary motion to the plunger. Over the sleeve and plunger fits a cap, inside which a cam groove is cut. The lug on the plunger moves in this groove, and by it is made to reciprocate in the sleeve. At the bottom of the sleeve is a port which registers with the supply port on the upward stroke of the plunger and with the delivery port on the downward stroke.

The flow of oil is regulated by turning the cap in which the cam groove is cut; this alters the position of the plunger in the sleeve in relation to the opening and closing of the ports. Thus the supply of oil may be cut off entirely or the maximum flow may be maintained. When once the correct flow has been ascertained, the cap is secured in position by a locking device.

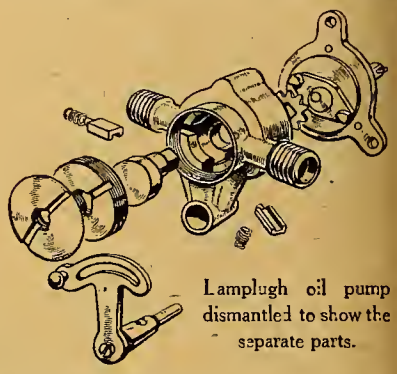
For use in conjunction with this pump is a sight indicator, made to fit flush with the top of the tank. This is for those riders who desire to see that the pump is doing its work, but we are informed that so reliable is the pump that an indicator is really unnecessary.

Lamplugh Pump Improvements.

Since the Lamplugh mechanical pump (S. A. Lamplugh, Ltd., Tyseley, Birmingham) was last described in our pages detail improvements have been effected which have resulted in increased efficiency. The construction of the pump is distinctly unusual, and the action is most interesting. An eccentric member revolving in the pump body is driven from the half-time shaft by a positive trip gear engaging a star gear wheel by an oscillating motion; this provides a reduction of 10 to 1. Bearing on the periphery of the eccentric are two spring loaded rectangular plungers in which oil grooves are cut; these plungers are set 90° apart, and one communicates with the oil inlet and the other with the outlet to the regulating valve.

Oil is sucked between the eccentric and the pump casing, and is carried round by the eccentric motion of the former until it reaches the delivery plunger when it escapes through the oil groove to the regulating valve, and so to the engine (or back to the inlet as determined by the setting of the regulator which controls a by-pass). The pump is positive in action and does not rely on gravity to obtain its supply of oil, but will, we are informed, without priming, lift oil from a tank approximately 3 ft. below its own level and deliver it to the same height above.

We have been enabled to examine the pump performing this operation, and we were informed that it had been running



Lamplugh oil pump dismantled to show the separate parts.

for more than six months, day in and day out, at a speed of 4,500 r.p.m.; this, it is calculated, is equivalent to a road distance of 47,000 miles, and even after this strenuous test there was no apparent wear—a remarkable performance for a device which is less than 1¼ in. in diameter.

Unchanged Showell Pump.

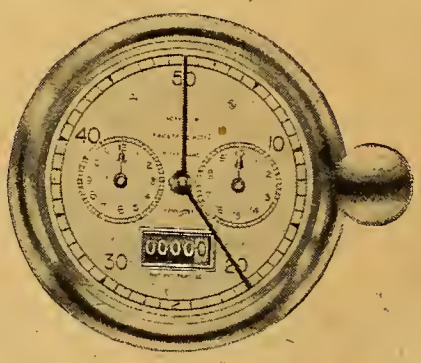
So satisfactory have been the results obtained with the Showell rotary pump that the makers have decided that no change in design is necessary.

For those who wish to fit this pump to existing machines at present equipped with semi-automatic drip feeds, a special bracket to carry the sight feed is provided. This bracket takes the place of the hand pump, and no alteration to the tank is necessary to enable it to be fitted. The price of the pump alone is 16s. 6d. The pump and sight chamber for attachment to existing hand pumps costs 25s. 6d., while the pump, sight chamber, and hand pump is priced at 37s. 6d. The makers are E. Showell and Sons, Ltd., 14, New Street, Birmingham.

MEASURING RUNNING TIME AND SPEED.

ALREADY too well known to require description, the Bonniksen speedometer has undergone yet a further refinement in that it can now be obtained to register running time as well as distance and speed.

It will be remembered that the Bonniksen mechanism is governed by a watch escapement, and by the addition of a train of gear wheels it can be converted into the equivalent of a watch so long as the machine is in motion. This principle has been employed in the manufacture of the latest instrument, on the main face of which are two small dials, each equipped with a couple of hands in a similar fashion to a watch. The right-hand of these two small dials is a normal trip recorder, and it is divided into ten divisions, the long hand covering one division for each mile run, and the



The latest type of Bonniksen speedometer, which registers running time as well as mileage.

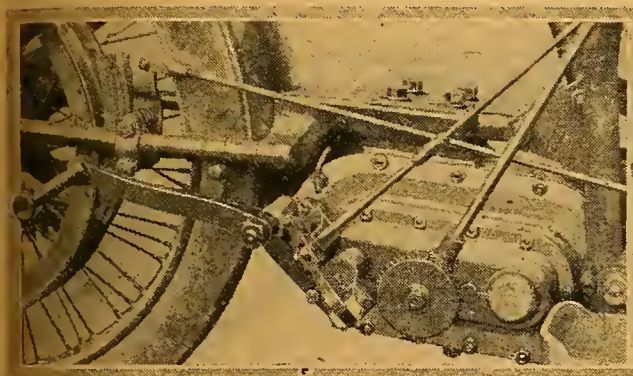
small hand one division for each ten miles. The dial on the left hand is a clock dial pure and simple, and when the machine is in motion it registers time in exactly the same manner as a watch. Both time and trip hands can be set back to zero at any time.

The instrument will be of special interest to competition riders, since the average running speed can be instantly and simply calculated from the readings of the two dials. It should be added that the combined time and speed meter is no larger than the standard Bonniksen speedometer.

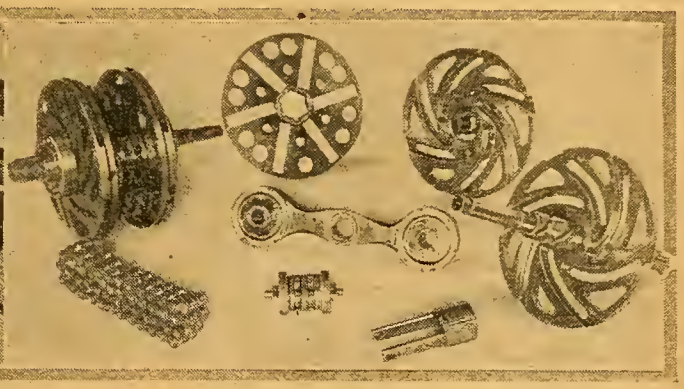
As before, the manufacturers are Rotherham & Sons, Ltd., Coventry, and the cycle type is sold complete with front wheel driving mechanism for £6 10s., or the American type of rear drive 10s. extra.

INFINITELY VARIABLE CHAIN-DRIVE GEAR.

Progressive Change of Ratio by Enclosed Expanding Sprockets. Pitch Variation Difficulties Surmounted.



(Left) External view of the British Universal gear box, showing control mechanism.



(Right) Component parts of the gear and the two chains connecting the two shafts.

DESPITE the comparative inflexibility of internal combustion engines, motor cycles were used for many years with a single gear ratio in the transmission.

Then came the adjustable pulley which developed into the infinitely variable gear, still remembered by many as an "ideal" gear under ideal conditions. But wet weather, hill climbing, and passenger work demanded something more positive, and gears proper, with two definite speeds, came into being. Then followed the intermediate gear between top and bottom ratios, and to-day the three-speed is almost universal and showing a strong tendency towards merging into a four-speed arrangement.

Lack of positive drive under adverse conditions killed the infinitely variable belt transmission, but the desire for the charm of a progressive range of ratios between high and low limits has remained, and from time to time such devices embodying gears or chains have been evolved on paper with little or no success.

Difficulties with Positive Drives.

Naturally, a driving chain with its constant pitch will not accomodate itself to the teeth of a sprocket expanded radially, since the pitch of the latter increase as the sprocket diameter increases. At last, however, a chain gear box, named the British Universal, has been evolved which gives a progressive range of gearing between limits equivalent to 4 to 1 and 16 to 1 on a standard motor cycle.

Primarily the gear consists of two shafts on which are mounted expanding sprockets; one shaft is driven by the engine, and from the other the drive is taken to the back wheel. A chain connects the expanding sprockets, which are made up of six segments each carrying three teeth; in the unexpanded state, therefore, each sprocket has 18 teeth.

The toothed segments are carried by blocks engaged in guide slots formed in one of two side plates keyed on the shaft. Rollers mounted on the blocks engage with cam slots formed in the other side plate, and when motion is applied to a bar connected to sleeves capable of moving these side plates relative to one another, the blocks are caused to move farther from or nearer to the centre.

The slots and guides are determined by plotting the path of the teeth when passing from one pitch diameter to another; consequently the engagement of the teeth with the chain is correct and the drive is quite smooth.

Automatic Pitch Adjustment.

Movement of the sleeves causing the side plates to rotate relatively to one another is effected by means of spiral grooves, and as these latter are oppositely arranged, one chain wheel is caused to expand and the other to contract. The blocks carrying the teeth are centralised by means of light springs, with the result that should the rollers engaging with the slots in the side plates not pass exactly through the required pitch positions, slight but sufficient compensation is allowed. Owing to the fact that no toothed segments can be more than half a pitch out of position, a free segment will enter into proper engagement on meeting the chain.

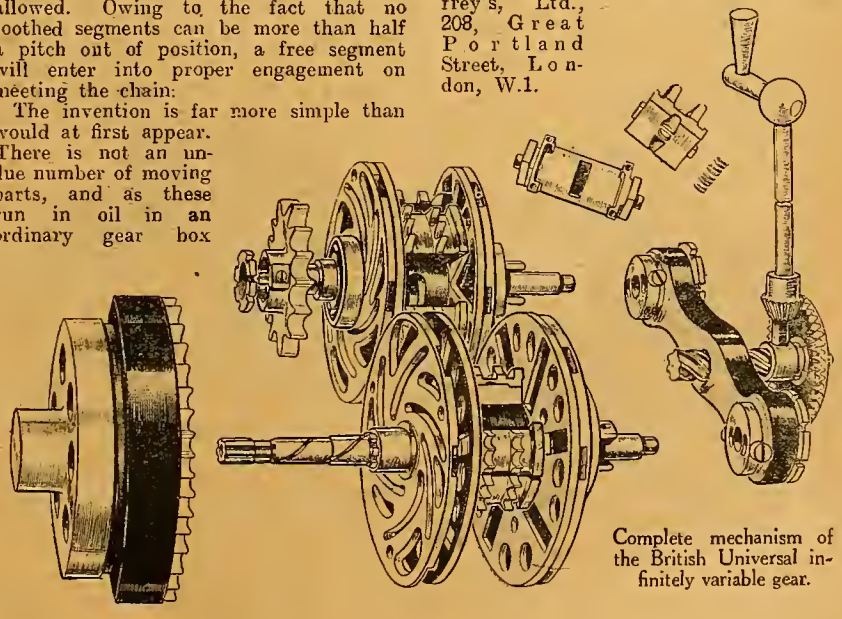
The invention is far more simple than would at first appear. There is not an undue number of moving parts, and as these run in oil in an ordinary gear box complete with kick-starter and clutch of conventional design, excessive wear and noise should be absent.

The first experimental gear box is fitted to a New Imperial sidecar outfit, and is certainly somewhat large, but a new design is being built for Scott machines which is notably smaller and neater in appearance.

In action the gear is worked and behaves in just the same manner as an expanding pulley gear, the clutch being quite independent. Actually, the experimental gear has been in use for about eleven months and has run for approximately 3,000 miles.

The gear is not at present on the market, but it is hoped that it will be some time next year.

The British Universal Variable Gears, Ltd., hold all rights except those affecting motor cycles, which latter are in the hands of Mr. C. F. M. Marks, c/o Godfrey's, Ltd., 208, Great Portland Street, London, W.1.



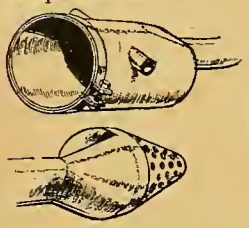
Complete mechanism of the British Universal infinitely variable gear.

SPORTING SOLO NEW HUDSONS.

New 350 c.c. and 500 c.c. of Neat Appearance and Clean Design.

FOR next year the 595 c.c. New Hudson sidecar outfit will be retained, with minor improvements which have been brought about as a result of the firm's experience throughout the year. The price will be still further reduced to the neighbourhood of £118 10s.

Except for certain refinements, the 87 × 100 mm. engine remains unaltered, but a new type of silencer with a simple but efficient baffle and flat tail pipe, and cast aluminium chain guards, will now be fitted. A Terry saddle is now an item of the specification.



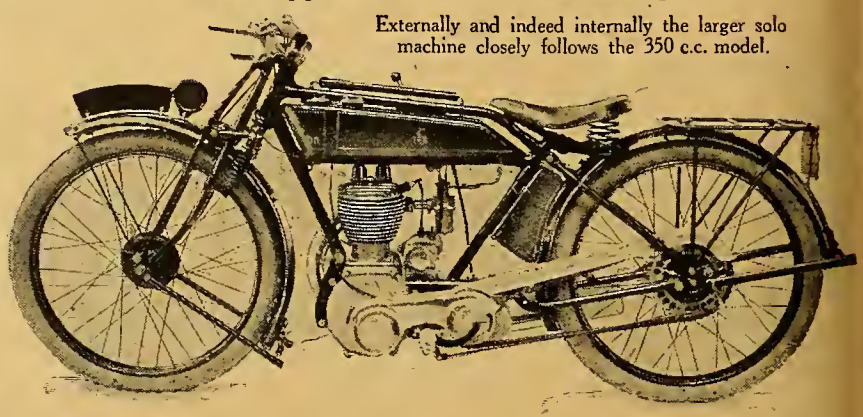
A novel silencer fitted to the 595 c.c. New Hudson.

It will be remembered that salient features of this model, with which we dealt recently after a road trial, include good footboards and legshields, excellent mudguarding (now even further improved), a change-speed lever which passes through the tank in a particularly convenient position; all-chain drive with internal expanding brakes on both front and rear wheels, and a serviceable decompressor.

A further improvement lies in the Druid-pattern forks, which are now provided with an adjustment for taking up side play.

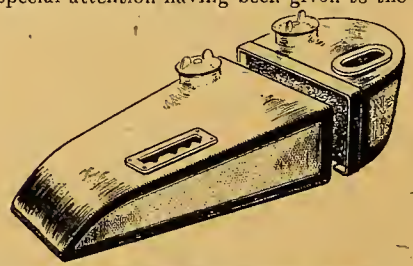
The standard sidecar has a well-built and roomy body with deep upholstery and a big locker. A family sidecar with child's seat in front of the passenger's seat can be obtained for an additional £12, and the outfit, complete with a *de luxe* body having hood, scuttle dash, screen, and side curtains, is priced at £135. All prices are provisional, and subject to slight modification.

In addition, a sports outfit, having a similar specification but plain D section mudguards, and footrests instead of footboards and legshields, complete with a smart aluminium sidecar, is listed at £125.



Externally and indeed internally the larger solo machine closely follows the 350 c.c. model.

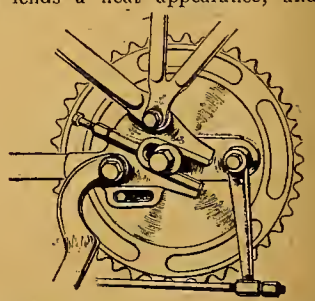
Perhaps the most interesting addition to the New Hudson range is a light solo machine which is equipped with an engine of 70 × 90 mm. (346 c.c.), side by side valves, and plain bearings throughout, special attention having been given to the lubrication of the bushes. A single cam operates both valves through specially designed rockers, and the valves are retained on their seats by double concentric springs.



Petrol and oil tanks are completely separate.

Very deep circumferential cooling ribs with cooling towers in the valve caps and an internal exhaust lifter are features of the design. Chain transmission throughout and a new gear box of New Hudson design are employed. The chief features of the box are that ball bearings are used exclusively, and that the kick-starter operates direct through a lay shaft gear. The standard ratios provided are 5.6 to 1, 9 to 1, and 13 to 1. A dry plate clutch having bonded asbestos inserts provides the frictional connection. Both chains are protected by cast aluminium guards, and to absorb transmission shocks a Renouf type shock absorber is fitted to the engine shaft.

A further feature of some importance lies in the tank construction, the fuel and oil tank being composed of two separate units fitted together with a thick felt pad between. A short over-lap of the oil tank lends a neat appearance, and the advantages in the case of tank leakage are obvious.

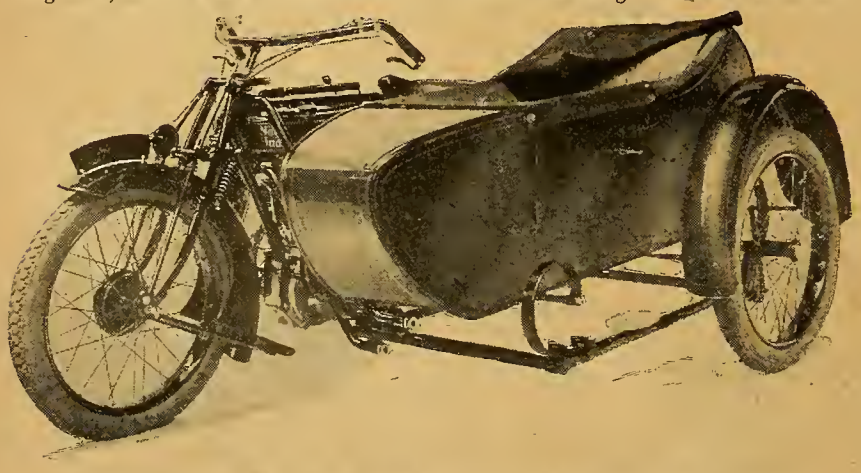


By inclining the grooves for the rear spindle and brake stop at certain angles the necessity for brake adjustment when tightening the rear chain is avoided.

The machine is priced at £70, or a similar machine turned out as a sports model without kick-starter, footboards, or legshields, at £75.

A larger edition similar in almost every detail employs a similar (79.5 × 100 mm.) engine to that used in the last Tourist Trophy races. The machine has 26 × 2⅜ in. tyres, slightly wider guards, and more powerful brakes. Its price is £85.

The three-wheeled light car, which stands at the very top of its class, has undergone no modifications except in price; the sum of £195 now covers the complete vehicle with detachable wheels, spare wheel, electric lighting, etc.



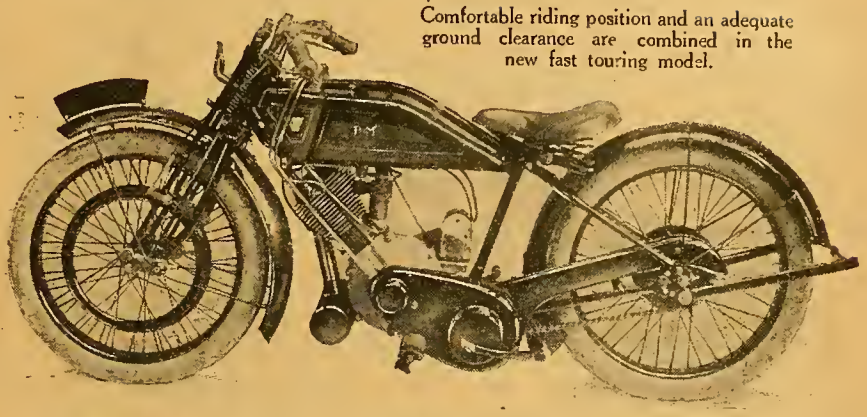
Latest model of the 595 c.c. New Hudson fitted with the standard pattern sidecar.

SPORTING P. & M. FOR 1923.

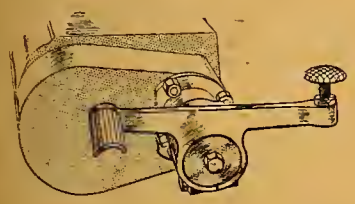
Comfort and High Road Performance aimed at on New Model.

ONE of the oldest makes in Great Britain, the P. and M. has enjoyed a reputation second to none for high-class workmanship and finish as well as reliability. During the last year or two its speed has been increased surprisingly, and now a new sports model has been introduced which will satisfy the keenest enthusiast.

Unlike many sports models, it is not a standard machine fitted with a special engine and with various parts cut down for the sake of lightness, but is specially built as a fast touring mount, pre-eminently comfortable, with a low saddle position (28in. from the ground) and wide flat handle-bars designed to give perfect control without stretching or straining any part of the body.



Comfortable riding position and an adequate ground clearance are combined in the new fast touring model.



Foot control is employed only for the selector clutch portion of the gear.

Owing to the fact that an entirely new frame has been constructed, with the top tube curved in a sweep towards the rear so that the riding position may be as low as possible, both engine and gear box are brought down 3in. without affecting the ground clearance.

Reduction of weight has been effected by eliminating such luxury fittings as the kick-starter and carrier (which, of course, may be had as extras), but the mudguards are wide and efficient. Points about the frame are the elimination of clips, the place of which is taken by lugs, a head bearing of large size, the fixing of the handle-bar not only by means of the ordinary clamp but by an expanding handle-bar stem.

There has been little alteration to the 555 c.c. engine, but a die-cast aluminium piston has now been fitted, while the compression has been raised from 55 lb. to 60 lb. The engine is certainly efficient; free passages are allowed for the mixture and the exhaust gases. The latter pass through a short wide-diameter pipe into a large expansion chamber placed forward of the crank case, while a long exit pipe is provided for their final release.

A single aluminium cover is employed for the protection of the valve stems, and an external exhaust lifter has been fitted.

Two gallons of fuel is the capacity of the tank, which also holds 3¼ pints of oil, while underneath it is fitted a spacious tool bag.

New Gear Control.

Little alteration has been made in the transmission, but a slight change has been brought about in the change speed mechanism, as in the "Panther," as the new machine is called, the dog clutches are actuated by means of a single gear lever of conventional design, while the expanding gears taking the place of clutches are worked by a rocking pedal. Both chain guards are in one piece and are secured by two bolts only.

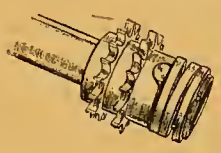
The spring of the transmission shock absorber is now adjustable, an important point, as with a high top gear correct adjustment is necessary to ensure a smooth drive. Gears between 3½ and 11 to 1 are obtainable, but when a sidecar is fitted (sidecar lugs are provided in the frame) the top gear is 4½ to 1.

All the well-known and much appreciated P. and M. features have been retained, such as Best and Lloyd mechanical lubrication through sight feed. The workmanship and material throughout is superb. The rear brake is of the contracting type, actuated by the rider's left heel, and easily accessible from the foot-rest, while the front is of the dummy belt rim pattern, controlled from the handle-bar.

Weight and Price.

The weight is 256 lb. and the price £100.

The chief attraction of the machine is not only its extreme comfort, but the charm provided by the four speeds, which allow the joys of the high top ratio to be appreciated to the full.

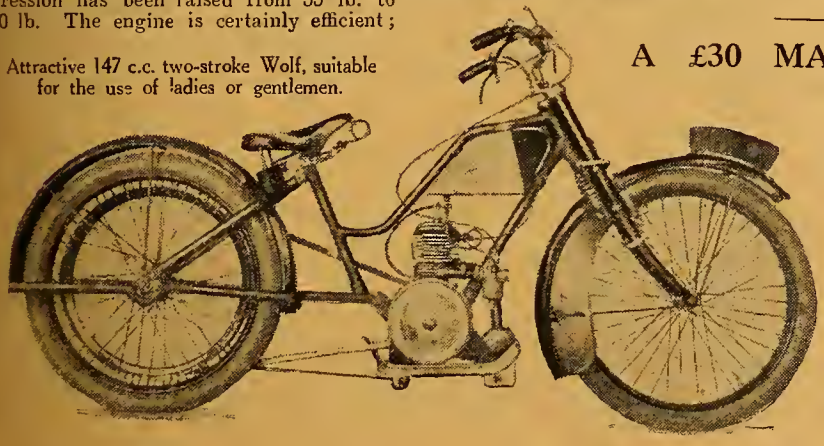


Improved adjustment of the shock absorber is provided.

Standard P. and M. models remain practically unaltered for 1923.

Phelon and Moore, Ltd., Berners Street, London, W.1, are the manufacturers.

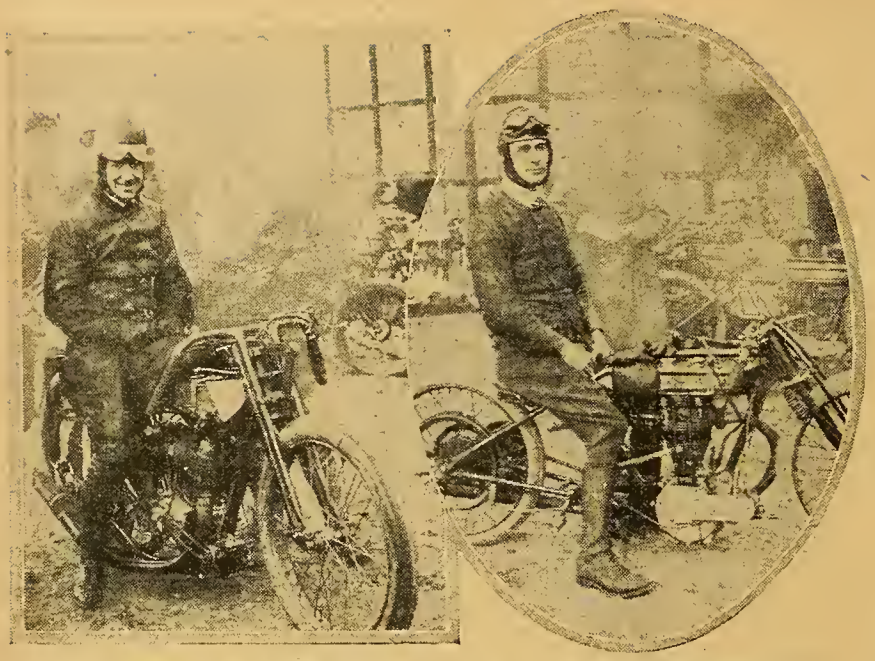
A £30 MACHINE TO SUIT ALL.



Attractive 147 c.c. two-stroke Wolf, suitable for the use of ladies or gentlemen.

TO suit riders of either sex, the Wolfruna Engineering Co., Ltd., Great Brick-kiln Street, Wolverhampton, will introduce a new semi-open framed Wolf model equipped with a 147 c.c. Villiers engine with flywheel magneto. With single gear belt drive the price will be £30, and for an extra £5 a two-speed gear box can be fitted. The saddle position is low and tyres of ample size for such a small machine are included in the specification. Aluminium footboards are used, and the heel-operated belt rim brake pedal is mounted on the near side; the front brake is of the rim variety, controlled by the usual handle-bar lever.

CHAMPIO
AT B



Four championships were won by H. Le Vack—two on the 998 c.c. Zenith-Jap and two on his o.h.v. lightweights.

500 c c solo and 600 c c. sidecar championships were won by V. Horsman (o.h.v. 490 Norton) as well as the all-comers handicap.

ALTHOUGH last Saturday's Championships meeting at Brooklands was probably the most successful of the year, it is not easy to say exactly why. Perhaps it was because the racing was of a uniformly good, if not excellent, standard throughout.

It was not, to use horse-racing parlance, entirely a backer's day; for instance, neither of those popular favourites with the crowd, C. G. Pullin and J. Emerson, succeeded in winning a race, although a championship or two would certainly have been a fitting conclusion to their previous accomplishments and their energetic specialisation in track work during the year. Both of them experienced bad luck.

Four Championships for Le Vack.

H. Le Vack, on the other hand, was in great form and gained four of the chief honours—two with the 998 c.c. Zenith-Jap and two with the smaller o.h.v. New Imperial-Japs—in each case without apparently having to exert himself fully. Even the American twins had to be content with places in the 1,000 c.c. event.

The 600 c.c. sidecar and 500 c.c. solo classes fell comparatively easily to V. Horsman's o.h.v. Norton, and the remaining two—350 c.c sidecar and 750 c.c. solo—provided the only two genuinely surprise winners, in W. D. Marchant (349 O.K.-Blackburne sc.) and F. T. Hatton (746 Douglas).

Easily the largest crowd of this year witnessed the racing, and although there were no thrilling neck-and-neck finishes, there were many exciting incidents to reward the cold vigil of the spectators. Incidentally the weather was very cold indeed, but fortunately dry.

Three handicaps of three laps each concluded the meeting, but the five laps from scratch championships deserve premier mention.

350 c.c. SIDECAR CHAMPIONSHIP.
1. **W. D. Marchant (349 O.K.-Blackburne sc.).**
2. H. Le Vack (346 J.A.P. sc.).
3. V. Baxter (346 Holroyd sc.).
Winner's speed=62.27 m.p.h.

Five started, including C. F. Temple on a Coventry-Eagle. Marchant made an inartistic get-away and was very nearly left at the post, but the way in which he gamely went on to overhaul the field provided a most piquant appetiser to the day's excitement. In winning he broke the five-mile record at 65.51 m.p.h. His sidecar chassis was neatly streamlined and he used a very secret induction system which appeared to be warmed by the heat of the engine.

600 c.c. SIDECAR CHAMPIONSHIP.
1. **V. Horsman (490 Norton sc.).**
2. E. Headlam (496 Zenith-Bradshaw sc.).
3. T. Simister (490 Norton sc.).
Winner's speed=64.79 m.p.h.

Anything might have happened here, but Pullin (Douglas sc.) went out first lap with a burst gear box sprocket, and Emerson's Douglas caught fire when leading on the second circuit. Thereafter Horsman forged ahead, leaving Headlam, Simister, and G. H. Tucker (588 Norton sc.) to do battle for the places. Headlam burst a tyre almost on the finishing line. But he would never have caught Horsman.

1,000 c.c. SIDECAR CHAMPIONSHIP.
1. **H. Le Vack (993 Zenith-Jap sc.).**
2. O. de Lissa (996 Motosacoche-M.A.G. sc.).
3. G. Packman (976 Packman sc.).
Winner's speed=71.31 m.p.h.

At first it seemed as if the big twin sidecars were going to provide a titanic

So many entries were received for the "all-comers"

MEETING LANDS.

struggle. First lap order was: I. P. Riddoch (998 Zenith-Blackburne sc.), G. Packman (976 Packman sc.), and Le Vack. Riddoch's clutch gave out next time round, and Le Vack had overtaken Packman. After one more short circuit the Zenith-Jap had a 300 yards lead, which it held to the finish. The speed would have been higher had Le Vack been in any danger on the final laps.

250 c.c. SOLO CHAMPIONSHIP.
1. **H. Le Vack (249 J.A.P.).**
2. J. V. Prestwich (249 J.A.P.).
3. L. F. Peaty (249 Hawker).
Winner's speed=58.94 m.p.h.

Mrs. Janson was to have ridden here, but withdrew because only her second fastest machine was available. She regretted her decision, for even thus handicapped she might easily have gained a second. The winner got so far ahead that he slowed up for a chat with his depôt after four laps; and the fourth and last man, H. L. Biggs (Sun-Vitesse), finished just as they were lining up for the next race.

350 c.c. SOLO CHAMPIONSHIP.
1. **H. Le Vack (346 J.A.P.).**
2. C. G. Pullin (346 Douglas).
3. T. Eve (346 Douglas).
Winner's speed=76.91 m.p.h.

Le Vack and Pullin were expected to make a fight of it, and for three laps certainly there was not much between them, although the former led each time.

After being delayed at the start W. D. Marchant (349 O.K.-Blackburne) won the 350 c.c. sidecar championship, breaking the 5 mile record in doing so.

Then temporary trouble delayed the Douglas man so long on his fourth lap that it was thought that he had retired. But he got going again and was so far ahead of the others that he remained an easy second. Eve, however, had quite a keen duel with E. Remington (Edmund-Blackburne) for third place.

w3 run off in two heats Lining up for heat one

F. T. Hatton (746 Douglas) won the 750 c.c. championship after a race full of incident but finishing tamely.

500 c.c. SOLO CHAMPIONSHIP.
1. **V. Horsman (490 Norton).**
2. J. Emerson (494 Douglas).
3. F. B. Halford (499 Triumph).
Winner's speed=81.53 m.p.h.

Among the thirteen starters there were at least five possible winners: Halford, on a four-valve Triumph with an experimental water-cooled cylinder head and radiator in forepart of tank, Le Vack on his 346 c.c. machine, but not to be disregarded, Pullin, Emerson and Horsman. Halford, Horsman, Emerson, and Le Vack was the first lap order; Pullin seized his gear box. Emerson moved up two places in lap two, and Horsman changed places with Halford on lap three, and took the lead in lap four. By this time Pullin had begun to move up again, and the order became Horsman, Emerson, Pullin, Halford, and Le Vack. But Pullin's lucky star was in the descendant, and Halford had crept back to third when they hurtled across the finishing line. It was a hardly-fought race.

750 c.c. SOLO CHAMPIONSHIP.
1. **F. T. Hatton (746 Douglas).**
2. V. Horsman (490 Norton).
Winner's speed=76.97 m.p.h.

By wonderful acceleration Hatton gained a useful lead at the start, but at the end of two laps Pullin, on a 746 c.c. Douglas, and Horsman still on the 490 c.c. o.h.v. Norton, were drawing dangerously near. Pullin retired next time round, and Horsman gained the lead, which he increased on the fourth lap. Then, to everyone's surprise, Hatton swept across the line an easy winner, and Horsman, delayed by a petrol stoppage, came in second—and last, for nobody else finished! The comparative speeds in this and the preceding class are illuminating.

1,000 c.c. SOLO CHAMPIONSHIP.
1. **H. Le Vack (998 Zenith-Jap).**
2. C. F. Temple (989 Harley-D.).
3. T. R. Allchin (989 Harley-D.).
Winner's speed=92.65 m.p.h.

Championship Meeting at Brooklands.—All sorts of rumours were prevalent regarding the speeds of the 1,000 c.c. machines; aided by "dope," lap speeds of 105 m.p.h were expected. Therefore the race, in a way, was somewhat disappointing. Le Vack led E. Remington (998 Blackburne), Temple and Allchin at the end of a whirlwind lap, and as they passed the paddock they all signalled frantically that someone had crashed. Later it turned out that the front tyre of George Brough's Brough-Superior had burst at 95 m.p.h., miraculously without damaging the rider. But it was a great pity, for Brough had made a magnificent start and might have proved a worthy opponent for Le Vack, who, as it was, nearly lapped the field, and broke the 10-mile standing start record at 91.54 m.p.h. The winner's machine was fitted with Harley forks and an adjustable shock damping device.

All Comers Handicap.

Three handicaps followed. The "all-comers" attracted 60 entries, and was run in two heats, the first ten in each competing again in a final. First, second and third in the heats were: T. Eve (346 Douglas), at 66.92 m.p.h.; V. Horsman (490 Norton), and F. B. Halford (499 Triumph); and R. Chaplin (496 Douglas), at 73.45 m.p.h.; G. Maund (400 A.B.C.), and R. O. Lowe (490 Norton), respectively. Horsman sent the speed up to 86.28 m.p.h. when he won the final.

Chaplin, on the same machine, won the private owners' event easily, and V. Anstice kept the Douglas flag flying in the passenger race.

PRIVATE OWNERS HANDICAP.

1. **R. Chaplin (496 Douglas).**
2. A. G. Williams (492 Sunbeam).
3. R. O. Lowe (490 Norton).

Winner's speed=72.79 m.p.h.

ALL-COMERS SOLO HANDICAP.

1. **V. Horsman (490 Norton).**
2. R. Chaplin (496 Douglas).
3. R. O. Lowe (490 Norton).

Winner's speed=86.28 m.p.h.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

NOVEMBER 25th to DECEMBER 2nd marks the period when the

MOTOR CYCLE EXHIBITION

at Olympia will be open to the public.

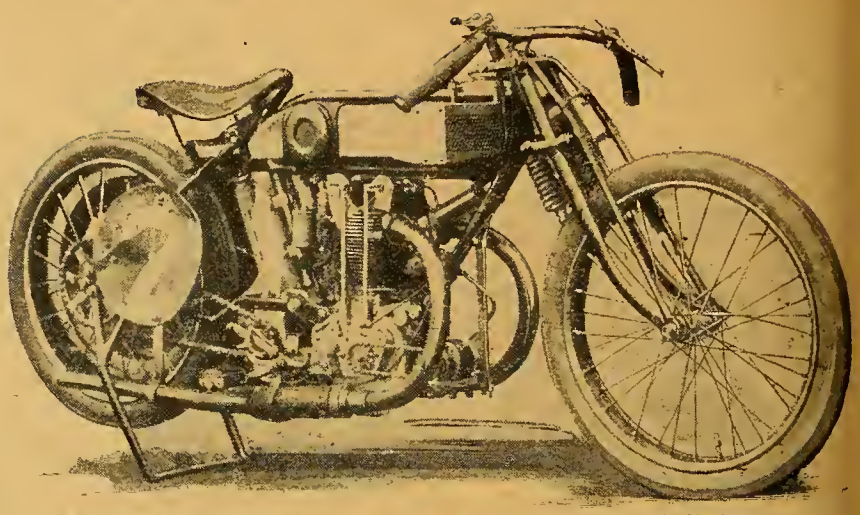
In connection with the Show "The Motor Cycle" will publish Four Special issues as under:

Nov. 9th. Lightweights and Accessories.
Nov. 16th. Passenger Machines.
Nov. 23rd. Show Forecast and Guide.
Nov. 30th. Show Report.

Each of these enlarged issues will embody special features possessing a strong appeal to all who own or who contemplate the purchase of a motor cycle.

To avoid disappointment an order should be placed in advance with the local Newsagent.

EVERY THURSDAY....THREEPENCE.



BACK TO WATER-COOLING? Purely as an experiment, F. B. Halford has had a water-cooled head fitted to his four-valve Triumph. The radiator is situated in the fore part of the tank.

ALL-COMERS PASSENGER HANDICAP.

1. **V. Anstice (733 Douglas sc.).**
2. V. Horsman (490 Norton sc.).
3. S. M. Greening (346 Francis-Barnett sc.).

Winner's speed=69.29 m.p.h.

A. Gaydor-Smith (Norton sc.) finished second, but was disqualified because his passenger did not wear a safety helmet.

In addition to Marchant's and Le Vack's records referred to above, the 500 c.c. solo and 600 c.c. sidecar flying five miles records were broken by V. Horsman (on o.h.v. 490 c.c. and 588 c.c. Nortons) as follows:

CLASS C. (500 c.c. Solo).
FIVE MILES (flying start), 3m. 22.66s.=89.25 m.p.h. (143.63 km.p.h.).

CLASS F. (600 c.c. Sidecars).
FIVE MILES (flying start), 4m. 4.72s.=73.55 m.p.h. (118.38 km.p.h.).

* * * *

Years ago it was affirmed that 70 m.p.h. was the limit speed of a motor bicycle at Brooklands, due to the nature of the track.

It was "dope day" at Brooklands on Saturday, which may or may not account for the excellent speeds attained. There was much speculation as to the nature of the mixture (which varied, of course), but its presence was often certified by the odourous nature of the exhaust!

* * * *

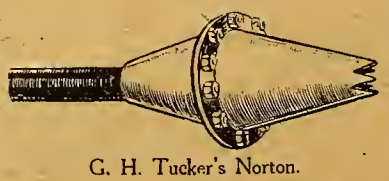
Congratulations to H. Le Vack upon his successes, and particularly his phenomenal speed in the 1,000 c.c. championship event. Actually, Le Vack's Zenith-Jap should be credited with a greater speed than 92 m.p.h., for he had to travel on the outer (car) line, due to the speed of his machine, which means that a car lapping the track in the same time would be credited with an extra two miles per hour.

* * * *

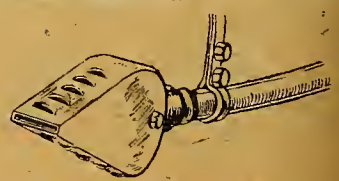
An excited spectator nearly got into serious trouble on Saturday by yelling "Beaver" at the sight of a bearded policeman.

SILENCERS AT BROOKLANDS.

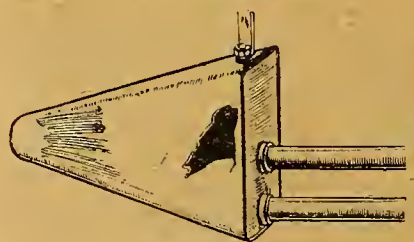
O. de Lissa's Motosacoche.



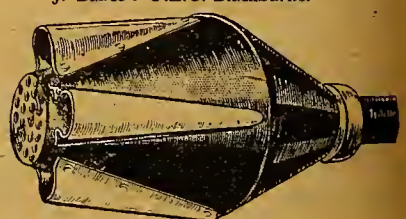
G. H. Tucker's Norton.



J. Bance's O.E.C.-Blackburne.



G. Packman's-Packman.



V. Baxter's Holroyd.

H.P. OR C.C. ?

The Question of Manufacturers' Nominal Horse Power and the More Equitable Method of Designating Power by Capacity.

OUR readers will no doubt have noticed that for months past we have very seldom referred to manufacturers' nominal h.p. in designating a particular model. There have been so many anomalies that it became desirable for us to take the lead and to classify the various motor cycles by the capacity of their engines in cubic centimetres.

The makers' nominal h.p. is not a unit of power; it is not even a rough guess at the power developed—it is merely a habit. For years the 500 c.c. engine has been known as a "3½ h.p.," and a 350 c.c. as 2¾ h.p., 250 c.c. as 2¼ h.p., and so on. If all makers had used the same figure for engines of the same size, it might not have been so desirable to institute a change. But whereas some manufacturers listed 500 c.c. machines as 3½ h.p., others (sometimes fitted with the same engine unit) termed them 4 h.p. The maker of a 633 c.c. machine terms his motor cycle a "big four," another regards a 550 c.c. as a 4 h.p. machine, yet another having an engine of 557 c.c. decides upon 4¼ as the nominal h.p.

Insurance Anomalies.

It is easy to see that not only are these "nominals" confusing, but they convey no meaning. Notwithstanding, the insurance companies fix their schedules on manufacturers' nominal ratings, and, to quote a well-known example, the owner of a 499 c.c. Rover or Blackburne is forced to pay as much as the rider of a 633 c.c. Norton.

Twelve months ago the Auto-Cycle Union instituted what is termed the A.C.U. h.p. rating, which is the rating of power on the decimal system, accepting 100 c.c. as 1 h.p. Thus 250 c.c. became 2.50 h.p.

For certain reasons the trade has not taken to the A.C.U. idea, and we have yet to see a catalogue in which the old figures have been abandoned and A.C.U. rating substituted.

But why use the h.p. unit at all? Because James Watt originated a unit of power is no reason why we should use it to indicate size. It was never intended for this purpose. 500 c.c. or 250 c.c. conveys more to the mind than 5.00 h.p. or 2.50 h.p., because it cannot be confused with *existing nominals*.

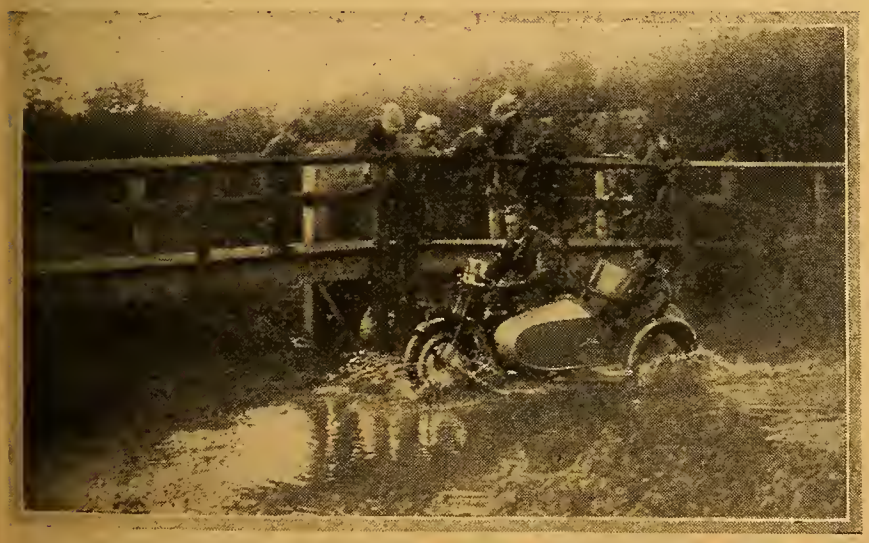
A letter on this wide subject from the Villiers Engineering Company is given below.

> "We would draw your attention to the anomalies existing in the motor cycle manufacturers' h.p. rating of internal combustion engines, and the serious consequences it may have on the development of the lightweight motor cycle.
>
> "Here is a specific case which shows the absurdity of the h.p. rating now in existence. One large firm lists two engines, a 293 c.c. and a 350 c.c.; both are rated at 2¾ h.p., with the result that the insurance premium is exactly the same because the manufacturer's rating is the same.
>
> "At the present moment we are manufacturing three sizes of engines, 150 c.c., 250 c.c., and 350 c.c., and we have rated them on the basis that one horse-power equals 100 cubic centimetres, so they will be 1½ h.p., 2½ h.p., and 3½ h.p. respectively.
>
> "This is undoubtedly the correct method, and was ventilated by the Press at the latter end of last year.
>
> "As the largest manufacturers of two-stroke engines in Great Britain, it is our intention to supply engines so that they may be fitted to motor cycle frames and sold to the public at a reasonable figure, but when the insurance companies base the premium on the maker's present h.p. rating the rider is not receiving the full benefit from his purchase.
>
> "For instance, our 1½ h.p. engine will be rated the same as the J.A.P. 350 c.c., while the 3½ h.p. will be rated the same as the 500 c.c. Sunbeam or Triumph, although of considerably less h.p.
>
> "Numbers of low-priced motor cycles are purchased on the instalment system, and they have to be insured by the purchasers. If the insurance premium of the very small engine is as much as the comparatively large one it is putting a severe handicap on a rider who can ill afford it.
>
> "Several formulæ on h.p. rating exist, all giving different results; the only equitable method is by the cubical contents of the cylinder.
>
> "An alternative method of insurance well worth serious consideration is to assess the premium on the selling price or estimated value of the motor cycle.
>
> "We have already written to the important insurance companies, but so far without any tangible results.—THE VILLIERS ENGINEERING CO., LTD."

Classification by Capacity Only.

It will be noted that this important firm of engine unit manufacturers, while abandoning the common h.p. rating, still intends to rate its engines on a h.p. basis. The only difference between the existing system and the rating which the Villiers Co. propose to use is that the average nominal h.p. has no basis, while the other takes as a basis 100 c.c. =1 h.p.

We reiterate: Why use h.p. at all? *If every manufacturer abandoned h.p., insurance companies would have to consider engine capacity,* and anomalies would eventually disappear.



YET ANOTHER WATER SPLASH. Youthful enthusiasts watch H. S. Perry (B.S.A. sidecar) make light of the Yardley Wood watersplash in the Birmingham M.C.C. trial last Saturday.

£10,000,000 FROM MOTOR TAXES IN NINE MONTHS.

TABULAR statistics of vehicle taxation receipts from December 1st, 1921, to August 31st, 1922, have been issued by the Ministry of Transport.

The total gross receipts amount to £10,835,417, of which motor cyclists contributed £908,069.

The average receipt for each whole year motor cycle licence was £2 13s. 6d., and for each motor car licence £17 12s. On August 31st, 377,000 motor cycles were registered in Great Britain, against 314,000 motor cars—63,000 more.

Quarterly licences are not proving so popular as was anticipated. More than half the country's motor cyclists register for the full period of 12 months.

CURRENT CHAT (continued from p. 579)

THE WILLING HORSE. One of the entrants in last week's gliding competition using his B.S.A. to drag his monoplane to the top of the hill.

Brooklands Meet on Armistice Day.

It has been decided to hold a further Brooklands meeting on Armistice Day, under the combined auspices of the B.M.C.R.C. and the B.A.R.C., when the entire proceeds will be devoted to the Weybridge Remembrance Day Fund. This event, it is stated, has the full approval of many of the local residents, who had previously complained of the noise of the track.

SMALL CARS AND LARGE CARS.

"THE AUTOCAR," THE COMPLETE JOURNAL.

Every phase of automobilism is embraced by "The Autocar," the sister journal of "The Motor Cycle."

Light, medium and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interests of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—The pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

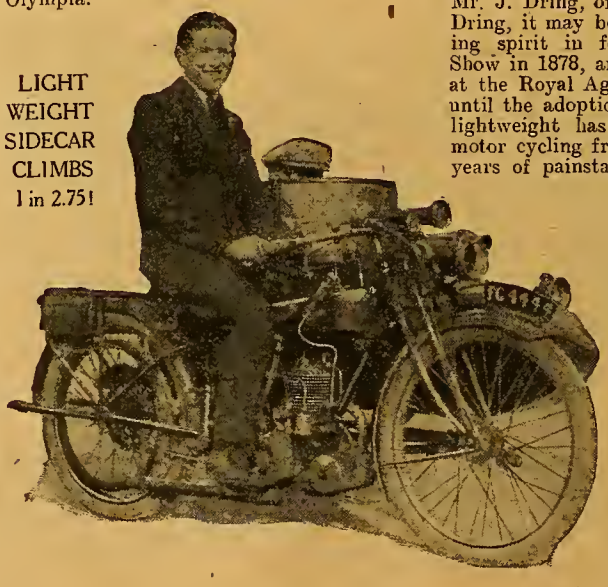
The Ilkley Trial.

Several valuable awards will be competed for in the Ilkley M.C. and L.C.C.'s reliability trial, which is to take place on Saturday next. The trial will start at the club's headquarters, The Lister's Arms Hotel, Ilkley.

"The Motor Cycle" Film.

Following the announcement concerning *The Motor Cycle* film in last week's issue, we again remind club secretaries that application for dates for *The Motor Cycle* film should be sent at once. The film will be put into circulation as soon as possible after the Motor Cycle Show at Olympia.

LIGHT WEIGHT SIDECAR CLIMBS 1 in 2.75!



Another 350 c.c. Solo Single.

The Martinsyde name will appear at the Show on a small single-cylinder machine as well as the big-twins. Its price is not yet fixed, but it will be competitive.

Ulster Grand Prix Course.

The triangular course used for the Ulster Grand Prix evidently permits high speeds, since the record lap (20½ miles) was covered at a speed of 65.77 m.p.h. by H. Langman (532 Scott).

Motor Cycles and Cars.

In August there were 377,943 motor cycle and 314,769 car licences in force. The proportion of motor cycles should be still higher next year with the increasing number of miniature low-priced machines.

Millions!

An obvious German walked into a Great Portland Street dealer's showroom and asked the price of a certain three-wheeler. On being told he made a brief calculation, and said, "Dree million marks—too dear, too dear!"

Raising the Compression.

Little or no extra power is obtainable from any special dope mixture is the opinion of Mr. J. A. Prestwich. Dope simply means that a higher compression ratio may be used without overheating.

The More Sporting Race.

The difference between a Brooklands car and motor cycle race meeting seems to be that one can never bank upon a motor cyclist coming round a second time. There is a more sporting atmosphere about a motor cycle meeting however.

A Lightweight's Name.

The J.D. lightweight described in *The Motor Cycle* of September 28th last, and which has recently been reduced to £35, derives its name from the initials of Mr. J. Dring, of Bowden Wire, Ltd. Mr. Dring, it may be remarked, was the moving spirit in founding the old Stanley Show in 1878, an exhibition held annually at the Royal Agricultural Hall, Islington, until the adoption of Olympia. The J.D. lightweight has been introduced to the motor cycling fraternity after nearly three years of painstaking development.

First ascent of Alms Hill, Henley, by a lightweight sidecar outfit has been made by L. A. Welch on a 292 c.c. O.K.-Junior. The attempt was the result of a wager, but was officially observed and certificated by the A.C.U. The gear ratios used were 6·5, 13·75 and 21 to 1. Welch is a private owner.

Club News

Worcester and District M.C.C. and Worcestershire M.C.

The above clubs will hold jointly their annual dinner on Thursday, December 7th.

West Herts M.C. and L.C.C.

A closed half-day trial will be held on the 29th inst. Full particulars are obtainable from the hon. secretary at 18, Church Street, Rickmansworth, and new members to the club will be welcomed.

Inverness and District M.C.

Held under favourable weather conditions, the club's one-day trial was run off successfully on the 2nd inst. The course embraced three well-known hills—Abriachan, Gleadoe, and Invertarigaig. Results:—

SOLO.—1, K. J. Mackintosh (490 Norton) and W. Grant (557 B.S.A.); 2, W. Walker (498 Ariel) and W. Macdonald (550 Triumph).

SIDECAR.—1, W. Smith (654 Rover sc.); 2, V. Stewart (993 Matchless sc.).

TEAM PRIZE.—Inverness team, consisting of: W. A. Welker (498 Ariel), A. Macdonald (350 Beardmore B. and S.), W. Bullock (349 A.J.S.), J. Mackenzie (293 Connaught).

Dublin Ramblers' M.C. and L.C.C.

Results of the club's reliability trial, described in *The Motor Cycle* of the 12th inst., are as follows:—

CREUSS CHALLENGE CUP.—H. G. Ellerker (349 A.J.S.).

FIRST CLASS AWARDS.—C. H. Pitman (492 Sunbeam), C. Creuss Callaghan (500 N.U.T.), H. W. Nesbitt (490 Norton), J. A. Carville (557 B.S.A.).

SECOND CLASS AWARDS.—R. Treacy (550 Triumph), E. Treacy (596 Indian).

THIRD CLASS AWARDS.—G. Cooke (492 Sunbeam), A. G. Coard (596 Indian), G. Creuss Callaghan (550 Triumph).

SPECIAL AWARDS.—Two-stroke Class, G. I. Kennedy (249 Velocette); 350 c.c. Class, F. C. Hanley (348 Raleigh); Unlimited Class, J. A. Carville (557 B.S.A.).

TEAM PRIZE.—H. G. Ellerker (349 A.J.S.), G. Cruess Callaghan (550 Triumph), C. Cruess Callaghan (500 N.U.T.).

It was previously inadvertently announced that the club had become open to trade members; this is incorrect.

Surrey M.C. and L.C.C.

Saturday, the 28th inst., is the date fixed for the Bateman Cup Trial, to be run on a course of seventy miles, in two non-stop sections. A flexibility test will take place at the commencement of the run. Competitors will leave Puttenham cross-roads on the Hog's Back, near Guildford, at 2.30 p.m.

Surbiton M.C.

The postponed half-day reliability trial for the Ballard's Challenge Cup has now been fixed to take place on the 28th inst., starting from the Angel Hotel, Thames Ditton, at 2.30 p.m. At the conclusion of the trial an impromptu concert and dance will be held at the Talbot Hotel, Ripley.

Slough and District M.C. and L.C.C.

Held over a difficult course of 80 miles, and concluded in darkness, the club's first annual reliability trial was run off on the 7th inst. Results in the motor cycle classes are as follows:—

HARRIS CUP AND GOLD MEDAL.—E. A. Cullum (348 Douglas).

GOLD MEDAL.—B. F. G. Fowke (350 Beardmore B. and S.).

Dublin and District M.C.C.

The club held an open hill-climb on Saturday, the 14th inst., at the Devil's Elbow, near Glencullen, a freak type of hill that is more a test of the skill of the driver than of the power of the cycle. This fact was clearly demonstrated, as while the winner of the under 600 c.c. class, G. C. Callaghan (550 Triumph), won the award for the fastest ascent of the afternoon, he was only a second faster than S. Woods (349 Cotton) and 1⅗ secs. faster than the best of the two-stroke class, R. Humphreys (247 Velocette). The placings in the four classes into which the competitors were divided were as follows:—

300 c.c. CLASS (two-stroke).—1, R. Humphreys (247 Velocette), 27⅗s.; 2, T. F. Slevin (247 Velocette), 27⅘s.; 3, J. A. H. Waters (225 Enfield), 28⅘s.

350 c.c. CLASS (four-stroke).—1, S. Woods (349 Cotton), 27s.; 2, D. Murphy (349 Coventry-Eagle), 32⅕s.; 3, H. B. Evans (348 Excelsior), 32⅖s.

351 to 600 c.c. CLASS.—1, G. C. Callaghan (550 Triumph), 26s.; 2, A. A. Wayte (492 Sunbeam), 27⅗s.; 3, J. A. Carville (557 B.S.A.), 27⅘s.

SIDECAR CLASS.—1, E. F. Ashton (998 Indian), 27⅖s.; 2, D. Allen (633 Norton), 27⅘s.; 3, W. J. Burney (976 Enfield), 30⅕s.

PREVENTING TIES. To find a winner in a modern reliability trial of average difficulty it is almost essential to include some auxiliary timed competition. An acceleration test was used to allocate the cup in the Sutton Coldfield event described last week.

Lune Valley M.C.C.

Official results of speed trials held on the 22nd ult. are now to hand, and are as follows:—

GENERAL. 275 c.c.—1, T. H. Amery (269 New Scale), 38.3s.; 2, G. E. Tottey (249 New Imperial), 38.4s.; 3, J. Whalley (249 Massey Arran), 39.1s.

EXPERT BARRED. 275 c.c.—1, T. H. Amery (269 New Scale), 38s.; 2, G. E. Tottey (249 New Imperial), 38.4s.; 3, A. W. Muirhead (249 D.O.T.), 43.1s.

GENERAL. 350 c.c.—1, J. Cooke (348 Edmund), 33s.; 2, S. A. Marks (348 Hawker), 34.2s.; 3, J. C. Dearden (349 Massey Arran), 35.1s.

EXPERT BARRED. 350 c.c.—1, J. Cooke (348 Edmund), 32s.; 2, S. A. Marks (348 Hawker), 32.3s.; 3, J. C. Dearden (349 Massey Arran), 35.1s.

GENERAL. 600 c.c.—1, J. W. Hollowell (490 Norton), 28.4s.; 2, H. Baxter (490 Norton), 30.3s.; 3, A. Hawkins (490 Norton), 31s.

EXPERT BARRED. 600 c.c.—1, J. W. Hollowell (490 Norton), 28.1s.; 2, H. Baxter (490 Norton), 29.4s.; 3, T. Sinister (490 Norton), 30.1s.

GENERAL (UNLIMITED).—1, J. W. Hollowell (490 Norton), 28.1s.; 2, N. S. Nicholas (976 D.O.T.), 28.2s.; 3, H. Baxter (490 Norton), 29.1s.

EXPERT BARRED (UNLIMITED).—1, A. Tinkler (999.5 American X.), 27.1s.; 2, N. S. Nicholas (976 D.O.T.), 28.3s.; 3, J. W. Hollowell (490 Norton), 28s.

GENERAL (600 c.c. SIDECARS).—1, J. W. Hollowell (490 Norton), 32.3s.; 2, H. Baxter (490 Norton), 35.3s.; 3, C. G. Bullough (490 Norton), 36.2s

EXPERT BARRED (600 c.c. SIDECARS).—1, J. W. Hollowell (490 Norton), 33s.; 2, H. Baxter (490 Norton), 36.1s.; 3, A. Jepson (498 Zenith-Bradshaw), 39.3s.

GENERAL (UNLIMITED SIDECARS).—1, J. W. Hollowell (490 Norton), 33.2s.; 2, P. Platt (749 Bradbury), 34.1s.; 3, E. B. Parkinson (976 Brough-Superior), 37s.

EXPERT BARRED (UNLIMITED SIDECARS).—1, A. Tinkler (999.5 American X.), 32.3s.; 2, J. W. Hollowell (490 Norton), 33.2s.; 3, P. Platt (749 Bradbury), 35.3s.

Fastest time of the day.—A. Tinkler (999.5 American X.), 27.1s.

Brighton and Hove M.C.C.

Results in the motor cycle classes of a successful hill-climb, held on the 7th inst. over a 440 yards course, are as follows:—

SIDECARS UP TO 600 c.c. (GENERAL).
1. C. Volk (494 Douglas sc.), 24⅖s.
1. A. Fraser (498 Sheffield-Henderson sc.), 23⅘s.

UNLIMITED SIDECARS (GENERAL).
1. A. Fraser (Sheffield-Henderson sc.), 23⅘s.
2. C. Volk (494 Douglas sc.), 24⅖s.
2. B. S. Allen (976 Brough-Superior sc.), 24⅖s.
3. J. Bowles (976 Zenith sc.), 30⅘s.

350 c.c. (AMATEUR).
1. W. H. Sheraton (349 Sheffield-Henderson), 21⅕s.
2. A. C. Quick (348 Rex-Acme), 24s.

350 c.c. (GENERAL).
1. W. H. Sheraton (349 Sheffield-Henderson), 20⅕s.
2. S. Duntord (348 Veras), 20⅘s.
3. A. C. Quick (348 Rex-Acme), 21⅕s.

600 c.c. (AMATEUR).
1. W. H. Sheraton (349 Sheffield-Henderson), 19⅖s.
2. A. H. Cox (499 Triumph), 20s.
3. A. C. Quick (348 Rex-Acme), 20⅗s.

600 c.c. (GENERAL).
1. A. Fraser (498 Sheffield-Henderson), 19s.
2. W. H. Sheraton (349 Sheffield-Henderson), 19⅖s.
3. C. Volk (494 Douglas), 19⅗s.

UNLIMITED (AMATEUR).
1. W. H. Sheraton (349 Sheffield-Henderson), 19⅗s.
2. A. H. Cox (499 Triumph), 20⅗s.
3. R. Green (490 Norton), 21⅗s.

UNLIMITED (GENERAL).
1. B. S. Allen (976 Brough-Superior), 18⅗s.
2. A. Fraser (498 Sheffield-Henderson), 18⅘s.
3. A. H. Cox (499 Triumph), 19⅗s.
3. C. Volk (494 Douglas), 19⅗s.

UP TO 600 c.c. (AMATEURS WHO HAVE NOT RECEIVED AN AWARD IN A B. AND H.M.C.C. HILL-CLIMB.)
1. A. H. Cox (499 Triumph), 20⅖s.

OVER 600 c.c.
1. C. C. Bone (976 Dot-Jap), 22⅖s.

FASTEST TIME OF THE DAY.—B. S. Allen (976 Brough-Superior), 18⅗s.

Stourbridge and District M.C.C.

Several stiff hills were included in a reliability trial held on the 7th inst. Starting from the Woodman Hotel, Clent, competitors made two 15-mile circuits over the Clent and Licky Hills, riding to a schedule of 15 m.p.h. An awkward hairpin on New Walton Hill was the cause of many failures, only one solo rider making a clean ascent on both circuits. Two ladies competed.

Redhill, Reigate and District M.C.C.

The results of the secret hill-climb held on the 4th inst., were quite satisfactory despite the enforced alteration of plans at the last minute and a certain amount of rain. Competitors were allowed two attempts on the hill, the fastest time counting in each event.

350 c.c. (GENERAL).—1, A. Livsey (349 Wooler); 2, R. Green (249 Velocette).

600 c.c. (GENERAL).—1, R. Green (490 Norton); 2, A. Livsey (349 Wooler).

1,000 c.c. SIDECARS.—1, V. Long (770 Excelsior sc.); 2, E. Gordon (989 Harley-Davidson sc.); 3, F. Harris (978 J.A.P. sc.).

South Western Centre A.C.U.

Everyone who completed the course in the inter-club reliability trial over Dartmoor on September 30th, is to be heartily congratulated, for not only was the route very rugged, but the competitors' tribulations were made greater by a persistent drizzle, and in the latter stages by heavy fog. Nevertheless it must have been encouraging to the Plymouth and District Motor Cycle and Light Car Club, which organised the trial, to find thirty-four competitors face the starter, among these being entrants from Barnstaple, Tiverton, Okehampton, and London.

There was no great impediment in the first few miles, and even Grenoffen (an observed hill) did not catch many. Within the next three miles the hairpin on the hill leading from Buckland to Denham Bridge was encountered on the downward road, but at this stage the field was making capital progress. The remainder of the first lap did not present very much difficulty, and, after passing through Crapstone, the main road to Tavistock was followed *via* Donsland, Princetown, and Merrivale. So far 47 miles had been covered, and nearly everyone was wet through, while quite a number were late in checking in.

Lunch was provided at the Newmarket Hotel, after which the second lap was entered on. The riders seemed quite undaunted, despite the heavy rain which fell in blinding sheets as the road to Okehampton was taken, after which the course again proved of a strenuous character. The road was principally over open moorland, and ran through Belstone, Skaigh, Sticklepath, Ramsley, Throwleigh, Gidleigh, Minchington (observed hill), and then through Chagford, Drewsteignton, Moretonhampstead, and Postbridge to Two Bridges, where a halt was made for tea. By this time only fifteen competitors remained to finish the course.

On the last section the *pièce de résistance* was Simms' Hill, with a gradient of 1 in 2.5, and this proved a stumbling block to many. Three competitors made capital ascents—P. Pike (Norton), B. D. Richardson (Norton), and a Brough Superior rider—but the remainder either stuck completely or had to receive assistance from onlookers. The greasy lane from the top of this hill to New Inn ended the more tricky part of the journey so far as gradients were concerned, but heavy fog made the last thirty miles treacherous so far as time error counted, and it was not surprising to find that one or two got fog-bound and did not return to Plymouth until the following morning.

Only twelve checked in, as follows: L. Bastin (498 Martinsyde), N. Veasey (532 Scott), O. Brittain (349 Douglas), B. D. Richardson (490 Norton), P. Pike (490 Norton), F. Easterbrook (Martinsyde sc.), J. Hoskin (976 Zenith), T. T. Drew (550 Triumph), J. R. Shobrook (349 A.J.S.), F. B. Millsom (James), and Illingworth (Trump-Anzani sc.).

P. Pike (490 Norton) won the cup.

North Liverpool M.C.C.

The club held its first speed trials on the beach, Birkdale, near Southport, on the 7th inst. Excellent weather favoured the meeting, and some very close finishes were witnessed by over a thousand spectators. Several well-known T.T. and track riders competed. The organisation was exceptionally well carried out by club officials, assisted by R.A.C. guides and local mounted police. Results:

SOLO CLASSES.

300 c.c. (TRADE).—1, T. Amery (249 New Scale).

300 c.c. (EXPERT).—1, T. Amery (249 New Scale); 2, J. N. Roberts (249 New Imperial).

350 c.c. (AMATEURS).—1, C. H. Foster (348 New Scale); 2, T. Amery (249 New Scale); 3, T. Picton (349 A.J.S.).

350 c.c. (TRADE).—1, H. F. Brockbank (348 Brock-Blackburne); 2, P. Baron (348 Hawker); 3, T. Amery (249 New Scale).

350 c.c. (EXPERT).—1, H. F. Brockbank (348 Brock-Blackburne); 2, P. Baron (348 Hawker); 3, F. Collard (349 Sheffield-Henderson).

550 c.c. (AMATEURS).—1, J. W. Hollowell (490 Norton); 2, W. Johnson (492 Sunbeam); 3, S. Ollerhead (494 Douglas).

550 c.c. (TRADE).—1, G. E. Cowley, jun. (490 Norton); 2, W. Johnson (492 Sunbeam); 3, H. Baxter (490 Norton).

550 c.c. (EXPERT).—1, G. E. Cowley, jun. (490 Norton); 2, P. Baron (348 Hawker); 3, W. Lord (492 Sunbeam).

750 c.c. (AMATEURS).—1, W. Johnson (492 Sunbeam); 2, W. Lord (492 Sunbeam); 3, P. Baron (348 Hawker).

750 c.c. (TRADE).—1, G. E. Cowley, jun. (490 Norton); 2, W. Johnson (492 Sunbeam); 3, J. W. Hollowell (490 Norton).

750 c.c. (EXPERT).—1, H. Baxter (490 Norton); 2, J. W. Hollowell (490 Norton); 3, P. Baron (348 Hawker).

1,000 c.c. (AMATEURS).—1, W. Johnson (492 Sunbeam); 2, S. Ollerhead (494 Douglas); 3, D. Swift (492 Sunbeam).

1,000 c.c. (TRADE).—1, G. E. Cowley, jun. (490 Norton); 2, A. Tinkler (995.5 American X); 3, W. Lord (492 Suubeam).

1,000 c.c. (EXPERT).—1, G. E. Cowley, jun. (490 Norton); 2, H. Baxter (490 Norton); 3, J. W. Hollowell (490 Norton).

UNLIMITED (AMATEURS).—1, W. Johnson (492 Sunbeam); 2, D. Swift (492 Sunbeam).

UNLIMITED (TRADE).—1, G. E. Cowley, jun. (490 Norton); 2, H. Baxter (490 Norton); 3, J. W. Hollowell (490 Norton).

UNLIMITED (EXPERT).—1, G. E. Cowley, jun. (490 Norton); 2, H. Baxter (490 Norton); 3, J. W. Hollowell (490 Norton).

SIDECAR CLASSES.

350 c.c. (TRADE).—1, P. Baron (348 Hawker sc.).

350 c.c. (EXPERT).—1, P. Baron (348 Hawker sc.).

550 c.c. (AMATEURS).—1, S. Ollerhead (494 Douglas sc.); 2, H. Meade (496 Lea-Francis sc.).

550 c.c. (TRADE).—1, J. W. Hollowell (490 Norton sc.); 2, G. E. Cowley, jun. (490 Norton sc.); 3, S. Ollerhead (494 Douglas sc.).

550 c.c. (EXPERT).—1, G. E. Cowley, jun. (490 Norton sc.); 2, P. Baron (348 Hawker sc.); 3, J. W. Hollowell (490 Norton sc.).

750 c.c. (AMATEURS).—1, S. Ollerhead (494 Douglas sc.); 2, J. H. Meade (496 Lea-Francis sc.).

750 c.c. (TRADE).—1, G. E. Cowley, jun. (490 Norton sc.); 2, J. W. Hollowell (490 Norton sc.); 3, S. Ollerhead (494 Douglas sc.).

750 c.c. (EXPERT).—1, G. E. Cowley, jun. (490 Norton sc.); 2, J. W. Hollowell (490 Norton sc.); 3, P. Baron (348 Hawker sc.).

1,000 c.c. (AMATEURS).—1, S. Ollerhead (494 Douglas sc.); 2, E. B. Parkinson (976 Brough Superior sc.); 3, W. Garner (998 Indian sc.).

1,000 c.c. (TRADE).—1, A. Tinkler (999.5 American X sc.); 2, G. E. Cowley, jun. (490 Norton sc.); 3, W. Hollowell (490 Norton sc.).

1,000 c.c. (EXPERT).—1, A. Tinkler (999.5 American X sc.); 2, G. E. Cowley, jun. (490 Norton sc.); 3, P. Baron (348 Hawker sc.).

UNLIMITED (AMATEURS).—1, W. Wilkie (1,301 Henderson sc.); 2, W. Garner (998 Indian sc.).

UNLIMITED (TRADE).—1, A. Tinkler (999.5 American X sc.); 2, G. E. Cowley, jun. (490 Norton sc.); 3, J. W. Hollowell (490 Norton sc.).

UNLIMITED (EXPERT).—1, A. Tinkler (999.5 American X sc.); 2, G. E. Cowley, jun. (490 Norton sc.); 3, P. Baron (348 Hawker sc.).

Epsom and District M.C.C.

Three well-known Surrey hills—White Downs, Succombs, and Quarry Hill—were included in the club's one-day trial held on the 8th inst. Competitors had to make two circuits of the course, a total distance of 166 miles, to a 20 m.p.h. schedule. Final results were as follows:—

GOLD MEDALS.—P. C. Pothill (976 Zenith sc.), S. Bucknell (976 Matchless sc.), J. E. Starnes (678 Martinsyde sc.).

SILVER MEDALS.—R. Holt (550 Triumph), H. Garland (550 Triumph), W. H. Steer (499 Sunbeam).

Bradford M.C. and L.C.C.

It was originally intended to run off the handicap speed trials on the 7th inst. in pairs on the knock-out principle, but the surface was found to be too rough; competitors were despatched singly against handicap. Forty riders were entered, and thirty-five started. The distance was one-third mile. Results:

SOLO CLASS.—1, Silver Cup (won outright), T. Bullus, Junr. (555 P. and M.), gross 35.16s., received 12s., net 23.16s.; 2, Silver Medal, H. S. Moorhouse (499 Triumph), gross 27.5s., received 3s., net 24.5s.; 3, Bronze Medal, S. Flintoff (558 Triumph), gross 34.64s., received 10s., net 24.64s. Fastest time, solo, H. S. Moorhouse (499 Triumph), 27.5s.

SIDECAR CLASS.—1, Silver Cup (won outright), E. Flintoff (499 Sunbeam sc.), gross 39.6s., received 8s., net 31.6s.; 2, Silver Medal, H. Graham (490 Norton sc.), gross 38.32s., received 4s., net 34.32s.; 3, Bronze Medal, J. A. Smith (490 Norton sc.), gross 35.12s., scratch, net 35.12s. Fastest time, sidecar class, J. A. Smith (490 Norton sc.), 35.12s.

Ipswich and District M.C.C.

A half-day reliability trial for the Paviour Trophy took place on the 7th inst. Several very loose pieces of going figured in the 60 miles course, and many competitors came to grief. A lady rider, Mrs. Keer, handled her Triumph sidecar outfit very capably. Results:—

350 c.c.—1, J. Pretty (349 A.J.S.); 2, R. A. Devonish (350 Beardmore-Precision); 3, W. J. Coe (249 Velocette).

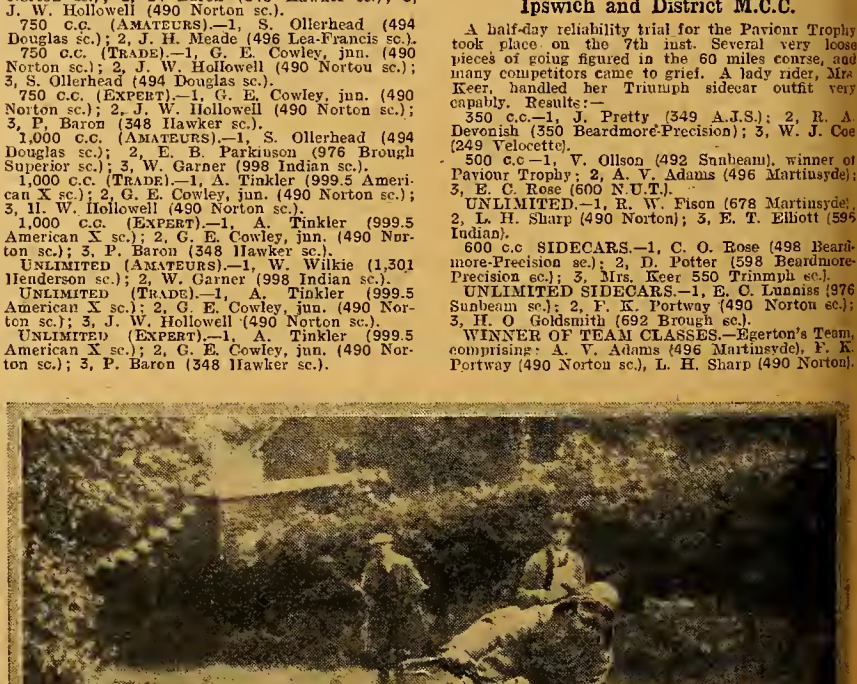
500 c.c.—1, V. Ollson (492 Sunbeam), winner of Paviour Trophy; 2, A. V. Adams (496 Martinsyde); 3, E. C. Rose (600 N.U.T.).

UNLIMITED.—1, R. W. Fison (678 Martinsyde); 2, L. H. Sharp (490 Norton); 3, E. T. Elliott (596 Indian).

600 c.c SIDECARS.—1, C. O. Rose (498 Beardmore-Precision sc.); 2, D. Potter (598 Beardmore-Precision sc.); 3, Mrs. Keer 550 Triumph sc.).

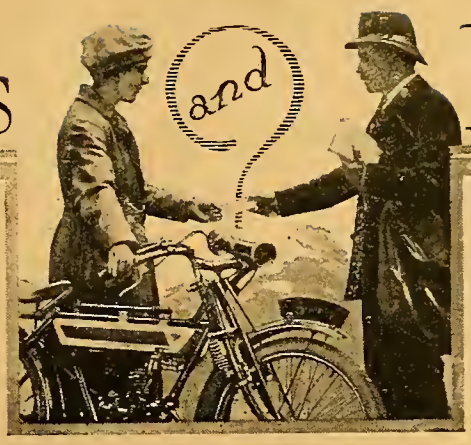
UNLIMITED SIDECARS.—1, E. C. Lunniss (976 Sunbeam sc.); 2, F. K. Portway (490 Norton sc.); 3, H. O Goldsmith (692 Brough sc.).

WINNER OF TEAM CLASSES.—Egerton's Team, comprising: A. V. Adams (496 Martinsyde), F. K. Portway (490 Norton sc.), L. H. Sharp (490 Norton).



BETTER FOOT THAN FALL—evidently the motto of F. R. Dixon (490 Norton) on the greasy hairpin bend of New Walton Hill in a Stourbridge and District M.C.C. trial

Questions and Replies



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

CAPACITY IN RELATION TO POWER.

Q. I have a Scott with many modern parts, but the main frame and engine both are 1912-13. The engine and gears have been thoroughly overhauled and worn parts renewed. Taking the capacity of this engine, which is now as good as a new one, as identical with the capacity of, say, a 1920 engine in similar condition, would I be justified in expecting it to develop the same power. I might say the carburetter is a 1920 three-jet Binks; the magneto a Bosch, of the same age as engine, probably, whilst lubrication is by the 1917 Scott system. Assuming the power of 1920 engine greater, would this be due to crank case or cylinder improvement or what?—W.A.M.

A. As the 1920 Scott engines have several improvements in detail over the pre-war pattern, it is not certain that you will get the same power from your machine; at the same time there will not be much difference if your engine is in really good order. The post-war Scott engines are improved by having a slightly higher crank-case compression, and the casting of the passages in the crank case, transfer ports, and cylinders is much cleaner. The later engines also have machined ports in the cylinders, and the results obtained generally make for greater efficiency.

CHOOSING A SIMPLE SIDECAR.

Q. I am thinking of buying a sidecar outfit, but expense is a consideration. Having no mechanical knowledge and very little time to spend on a machine, it seems to me, from a study of your pages, that a two-stroke would probably be best suited to my purpose. If practicable, I should ride the machine (with empty sidecar) from the suburbs to my office in the City. (1) Is a two-stroke more suitable than a four-stroke for an inexperienced rider? (2) Does an air-cooled two-stroke develop sufficient power to pull a combined weight (passenger and driver) of 20 stone? (3) What is the minimum engine size necessary to do this? (4) Would it be safe to ride a lightweight two-stroke with empty sidecar from the suburbs to the City. I have in mind the possible danger of the outfit turning over when going round corners?—J.G.

A. (1) There is no particular advantage in selecting a two-stroke, even if you are only a beginner, because modern four-stroke engines are so reliable that there need be no alarm at their increased number of working parts as compared with two-strokes. (2) At very low speeds, and especially when pulling a sidecar, a two stroke is slightly more powerful than a four-stroke of the same capacity. (3) For the load which you intend to carry, we do not think it would be advisable to have a machine of less than 500 c.c. (4) A lightweight two-stroke with an empty sidecar would be quite suitable for use in travelling between the suburbs and city, and once you become used to it, and providing you always drive carefully, there would be no particular danger arising from the tendency of the sidecar to lift on left-hand corners. If your sidecar is only to be used for passenger carrying occasionally, or merely for short pleasure trips at moderate speed, it would not be be-

Important Dates.

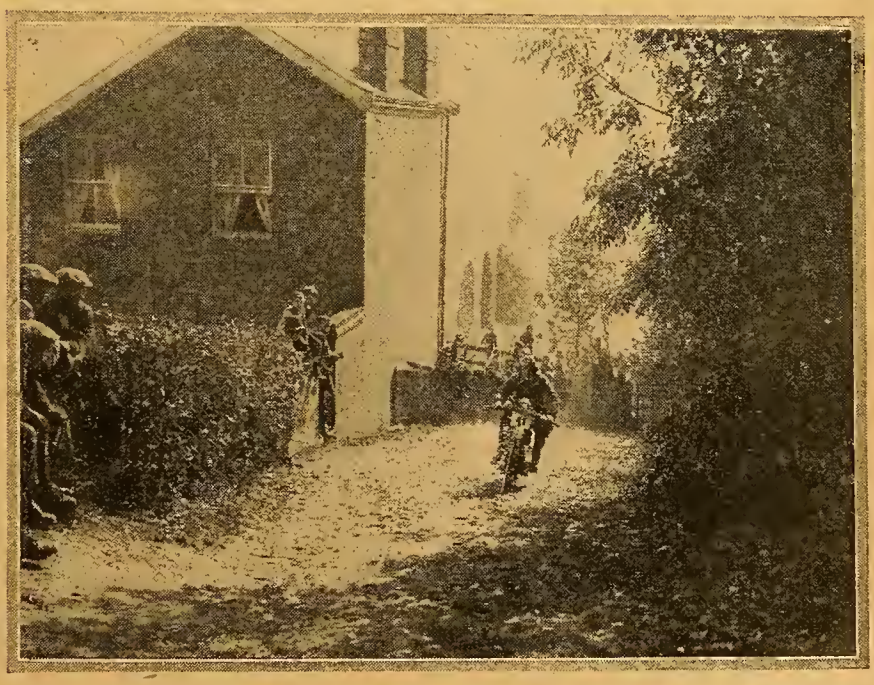
Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.



SUNSHINE IN OCTOBER. L. Randles (498 Sunbeam) on the bend of Ffrith Hill in the Reliance Cup Trial described last week.

yond the power of a two-stroke machine of 350 c.c. capacity to perform your work fairly satisfactorily. Such machines, however, are mostly being driven to the full extent of their power when a passenger is being carried, and consequently they are very liable to be too highly stressed, with resultant trouble and expense in maintenance, unless very considerately handled.

READERS' REPLIES.

TWO-STROKE CONSUMPTION.

With reference to "C.E.B.'s" question (October 12th), a Clyno two-stroke requires a very big advance on the spark for economy. I improved my m.p.g. from 50 to 100 as follows: I adopted the timing advised in the Amac handbook for two-strokes, namely, a full advance of 10 mm. Unless one is prepared to measure this through the sparking plug hole it is best to mark T.D.C. on the flywheel, set ignition at full retard, points just starting on T.D.C., then mark full advance on the flywheel, disconnect again and set full retard, points just opening on a mark halfway between the two marks on the flywheel; the firing point on full advance will be about 10 mm. from the top.

For starting up the lever will have to be about half retarded. Always run on full advance at once after starting up, except on a fairly big hill or in awkward traffic.

The jet should be reduced to No. 20. I am using No. 20 and still have full air and full throttle on the level. I also put a muffler made of an old tin can over the carburetter vaporising chamber, and draw my air from the open bottom of it just over the expansion box of the exhaust.

Aviation spirit gives a greatly improved freedom from four-stroking when running light; the vaporisation is much better. When I next touch my carburetter I intend to put in a No. 19 jet. Of course the extra air inlet wants watching, and unless carefully adjusted at all times there will be popping back in the carburetter. —J. HIPKIN.

DISAPPOINTING PERFORMANCE WITH A SIDECAR.

"J.O.E.'s" machine certainly has plenty to do, but according to my experience of a similar outfit it should be capable of doing it. I have a lighter sidecar than "J.O.E.," but can travel three-up comfortably. 5½ to 1 is rather high for such a load, but before discarding his 2½in. tyres "J.O.E." might try to obtain a belt rim ½in. bigger in diameter. This would make his gear about 5.5 to 1. The clutch should be as easy as the load will permit, there being no shock absorber. Size 36 jet is correct. I found my engine got hotter on smaller sizes: I have not tried 37, but should think it would improve the power (not the m.p.g. though). I have been doing 60 m.p.g. up to a few weeks ago, when it mysteriously improved to 71. An inlet valve air leak preventer helps a lot. Petrol level should be as high as possible. The small gauze in the float chamber cap is a point to watch. Tappet clearances should be as small as possible. I use a thick washer between cylinder and crank case—about ten thicknesses of brown paper, goldsized together. Price's Huile de Luxe, about 1 pumpful every 5 miles, suits the engine well. I am at present using a K.L.G. F12 plug, which the makers recommend, but the K.L.G. H.S.1 gives me equal satisfaction and is considerably cheaper. I suppose "J.O.E.'s" exhaust system is clean: the slotted end of the tail pipe is best cut off, slantwise.—R. A. IRVING.

As I am the owner of a 1920 500 c.c. Ariel outfit a few experiences will perhaps be helpful to "J.O.E.," whose machine appears to be of the same type.

When delivered the machine was not too good in performance, but I fitted a 36 jet to the B. and B. carburetter and adjusted the level to a "bead on the jet." The petrol pipe and filter were choked and required a very thorough clean. I next retarded the ignition one tooth and ground off the end of the decompressor camshaft $\frac{1}{16}$in., as this fouled the inside of the crank case and stuck up the tappet. I also fitted F.E.W. valve attachments and a K.L.G. plug. I also scrapped the tail pipe and fitted a 39in. plain steel pipe over the silencer union. First-class compression is essential on this engine, which must be very carefully run in. I can now stand on the kick-starter for two minutes without it dropping.

After these adjustments, *plus* 500 miles running-in, the results are splendid. The outfit will now climb Westerham on middle gear fully laden and accelerate after the corner. The top gear 5½ to 1 is the best possible. I use Vacuum B oil and Miracle oil in the petrol. The machine has actually more power than three bigger singles I have owned, and on low gear laughs at Porlock. Over-heating is unknown, although the combined weight of passengers is 21 stone.—E. H. LARNER.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"W.McK." (Belfast).—293 c.c. New Imperial: speed, petrol consumption, steering and reliability.

"G.P." (Burnley).—499 c.c. Sunbeam: carburetter other than Amac.

"D.J.O." (Sway).—349 c.c. sports A.J.S. and 490 c.c. Norton: speed, petrol and oil consumption, reliability.

"C.F." (West Bromwich).—1,301 c.c. Henderson sc.: petrol consumption, lubrication system, gear ratios; also Cox Atmos carbnretter.

"G.S.S." (Norwich).—Late model 398 c.c. A.B.C.: general experience after 2,000 miles' running.

"E.J.S." (Muswell Hill).—398 c.c. A.B.C. and 349 c.c. A.J.S.: speed, reliability, cost of upkeep.

"N.T.B." (Watford).—398 c.c. A.B.C. (1922 model): correct handling.

"W.T." (Tewkesbury). — 499 c.c. Dunelt sc.: belt drive, fuel economy.

"M.C." (Woking).—500 c.c. N.U.T. sports model: speed, ease of cornering, acceleration, suitability of Wex or Flexi carburetter.

"H.N." (Croydon).—Scott repair service.

"A.T.D." (Charlton).—499 c.c. I.O.M. Rudge and 348 c.c. Raleigh: speed, reliability, power, and suitability for permanent pillion riding.

"J.J.G. Jnr." (Heswall).—349 c.c. A.J.S. B 1 and 247 c.c. Levis S 2: comparative running expenses, speed, reliability, fuel consumption, comfort.

"R.G.C.C." (Tunbridge Wells).—247 c.c two-speed Levis and 225 c.c. Royal Enfield: reliability, decarbonising periods.

"J.F." (Scarborough).—211 c.c. Ner-a-Car: single lever carburetter, headlight improvements, suitable plugs.

"A.J.D." (Glasgow).—499 c.c. Rudge-Multi: hill-climbing, fuel consumption, belt-slip in wet weather.

"R.J.H." (Southampton).—Old 678 c.c. Indian: suitable carburetter, solo speed, tuning hints.

"A.N.J." (Liverpool).—348 c.c. Cotton: speed, reliability, general economy.

"L.E.L." (Gainsborough).—596 c.c. Indian Scout: performance with sidecar, reliability, solo speed.

"R.H." (Ascort).—McKenzie lightweight: vibration and general behaviour.

SPARKLETS.

Found.

Near Henley, a Lucas motor cycle horn. Ref. No. 211.

Silencer and Power.

J. Emerson's recent 3 hours and 200 miles records at 65 m.p.h. were made with Carb-jector silencers fitted to his Douglas.

One Third Less than Pre-war Prices.

Considerable reductions in price have been made in Stepney Road-Grip motor cycle covers, which are now one-third less than pre-war figures.

Cycle Car Price Reduction.

Up to the end of 1922 the price of the Tamplin will be £150, complete with electric lighting. This machine is guaranteed to climb Alms Hill by its makers, Tamplin Motors, Ltd., Staines, Middlesex.

Pretoria Hill Climb.

Delightful weather favoured the Pretoria Motor Club's hill-climb on Klopper's Kop, over a half-mile course, electrically timed. The Nortons ridden by Downes, Du Toit, and Van Bergen finished first, second, and third respectively; Dr. Du Toit and Van Bergen tied for second place.

British Successes on the Continent.

At the Krachbergrennen hill-climb, near Erbach Odenwald, a 499 c.c. Triumph took first and four places in the 500 c.c. class, while in the 1,000 c.c. event Kleemann and Howie occupied first and second positions on similar machines, making fastest time of the day in all motor cycle and racing car classes. Schloemer, riding a 499 c.c. Triumph, was first in the 500 c.c. class in the recent Siebengebinge races; he covered the course of 210 kilometres in 3h. 4m.

C.A.V. Magnetos

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2 hours, covering 147 miles, 1261 yards - 73.86 M.P.H.

i.e., 2 World's Records Class C
2 „ „ „ D

At Doncaster:

In the Speed Trials Mr. FRANK SISSON gained the following awards in Section B:—

550 c.c. Sidecar	- -	1st
750 c.c. „	- -	1st
Unlimited c.c.	- -	1st
550 c.c. Sidecar	- -	2nd
750 c.c. „	- -	1st

In Italy:

In the overnight race, from MILAN to NAPLES, a distance of 887 Kilometres or 551 Miles, the "Norton" secured First and Second places in the 500 c.c. class, and Second and Third places in the unlimited class, the times being 18 hours 3 mins. 42 secs., and 18 hours 21 mins. 16 secs. respectively.

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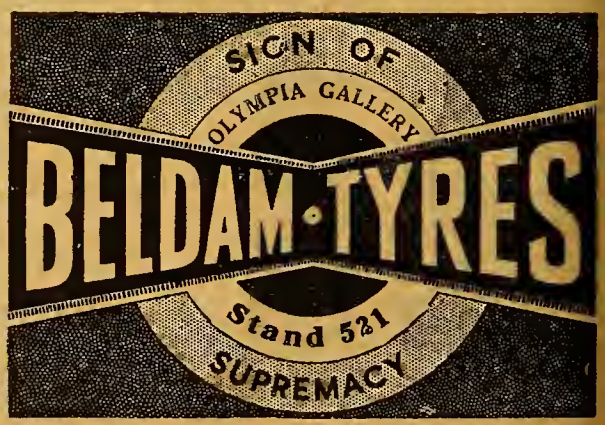

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision, after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C.—Latest models produced by the Sopwith Aviation Co., Ltd.; new standard model, £74; dynamo model, £88; only a few remaining.—Maudes', 100, Great Portland St., London. [8370

THE SIGN OF GOOD SERVICE

THE 1923 *Indian*

Godfrey's Ltd., Sole London Agents for the Indian Motor Cycle since 1910, can give

IMMEDIATE DELIVERIES OF THE 1923 MODELS.

4 h.p. MODEL G.23

Indian Scout - £96 10

Combination - £118 10

Dynamo Lighting and Speedometer (extra) - £16 10

8 h.p. MODEL H.E.23

Indian Chief, Combination, fully equipped £158

7 h.p. MODEL N.E.23

Indian Standard, Combination, spring frame, fully equipped £149

SEE THE 1923 INDIAN BEFORE YOU DECIDE ON YOUR MOUNT FOR THE NEW SEASON.

EASY TERMS ARRANGED IF DESIRED.

GODFREY'S LTD.

208, GT. PORTLAND STREET, LONDON, W.1.

Phone: LANGHAM 1300 (2 lines.)

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., late 1920, good condition, lamps, tax paid; £55 or nearest.—Manley, Bridge St., Chester. [7710

A.B.C. Combination, 1921, perfect condition; £80.—Full particulars of S. Froude, 33, London End, Beaconsfield. [7623

A.B.C. Combination, late 1921, Montgomery sports sidecar, electric light, insurance; £75.—21, Gloucester Rd., Croydon. [8076

A.B.C. latest Model, just overhauled and enamelled lamps and horn, insurance, very fast; £60 or offer.—Taylor, Wordsworth Rd., Birmingham. [7628

A.B.C., 1920, lamps, horn, speedometer, licence paid to end of year, oversize tyres fitted, really fast machine; £48.—Stubbs' Garages, Ltd., Loughborough. [7797

Spare Parts:

A.B.C. Spares, repairs, and special fittings. See advertisement index.—The A.B.C. Service Depot, Jarvis and Sons, Ltd., Victoria Cres., Wimbledon. [8305

Abingdon.

£25.—3½h.p. T.T. Abingdon, hand clutch, £6 overhaul, low frame, perfect.—Particulars, 40, Pretoria Rd., Cambridge. [7715

ABINGDON King Dick 5-6h.p., 2-speed, hand clutch, handle start, speedometer, recently overhauled, enamelled, lined, and plated at cost of £15, take sidecar anywhere; value £35, best offer accepted.—Brown, 86, Walpole Rd., South Woodford, E.18. [7798

Ace.

1921 10h.p. Ace 4-cyl., beautifully fitted with electric lighting, electric horn, speedometer, footboards, little used and new appearance; £105.—Herbert Robinson, Ltd., Green St., Cambridge. [8351

Acme.

ACME, 1921 (May), 8h.p. J.A.P., splendid sidecar, 5 detachable wheels, Terry spring saddle, Speedwell legshields, Lucas electric light, mirror, Orto hood, Bluemel screen, Tan-Sad, horn, muffs, a beautiful outfit, ready to ride away; £150.—Empire Theatre, Rosebank St., Dundee. [7813

A.J.S.

1920 A.J.S. Combination, spare wheel, hood, screen, as new; 73 guineas.—67, Fernlea Rd., Balham. [8449

BRAND new A.J.S. 2¾h.p., and light sidecar, Lucas equipment; offers.—Box 4324, c/o *The Motor Cycle.* [7660

A.J.S. 2¾h.p.-7h.p. Commercial Vehicles.—Write Merrick's Stores, Listerhills Rd., Bradford. 'Phone: 2439. [2704

A.J.S. latest Model, standard sports, brand new, cannot take delivery; nearest offer £85.—Bustin, Red Lion, Bicester. [7631

1922 A.J.S. 2¾h.p., B, mileage 250, horn, licence; £80.—Macphail, Dalintober, Llandovery, Carmarthenshire. [7772

1921 A.J.S. 2¾h.p., clutch, kick-start, lamps, horn, etc., very fast; £60.—Strickland, H.M.S. Vernon, Portsmouth. [7967

A.J.S. 1921 Combination, spare wheel, screen, as new; £95, offer; exchange 2-seater car.—26, Highbridge St. Waltham Abbey. [7637

A.J.S. 1921 7h.p. Combination, with spare wheel, spares and accessories; £120.—Barden, 11, Barcombe Av., Streatham Hill, S.W.2. [8003

1920 A.J.S. Combination, electric light, well equipped; £95; deferred terms with £24 down.—Goad, 122, Maida Vale. Phone: Maida Vale 1353. [8340

F.O.C.H. Invite Inspection, A.J.S.'s and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3862

A.J.S. 6h.p. 3-speed Combination, Gloria sidecar, hood, 2 screens, tax, insurance paid, mechanically sound, any trial; £55.—62n, Highgate Rd., N.W.5. [8074

1922 A.J.S. Combination, as new, very small mileage, completely equipped, tax paid; £150.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [8334

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents.—Jones' Garage, The Broadway, Muswell Hill. [0785

A.J.S. 2¾h.p., new July, 1921, done 3,000 miles, Lucas lamps, cyclorn, Watford trip speedometer, perfect order; £65.—Turner, 14, Great Smith St., S.W.1. [7627

A.J.S. 1920 6h.p. Combination, spare wheel, Tan-Sad, Lucas lamps, fine condition, complete outfit; £100.—Knowles, 63, Rayleigh Rd., Wolverhampton. [7770

A.J.S. 6h.p. 1921, just overhauled, excellent condition, electric lighting, spare wheel, Cowey horn and speedometer, insured, tax paid; £120.—Prosser, Shrubbery, Bentley Heath, Warwickshire. [8107

MOTOR CYCLES FOR SALE.

A.J.S.

6 h.p. 1920 A.J.S. Combination, first run June, 1921, dynamo lighting and every accessory; £100; really good value.—9, Rudall Crescent, Hampstead. [8114

A.J.S. 1922 2¾h.p. Touring, splendid condition and running order, fully insured, licensed, all accessories; £70; write appointment.—Miles, 136, Silvermere Rd., Catford. [8219

A.J.S. Combination, 1920, new condition, mileage 3,700, spare wheel, hood, screen, speedometer, Tan-Sad; £115; cost double.—Thompson, 47, Dyke Rd., Brighton. [8148

A.J.S. 2¾h.p. 1916, excellent order, lamps, speedometer, etc., licensed December; £36; after 7 o'clock.—R. F., 2, Lincoln Rd., East Finchley, N.2. [7875

A.J.S. 1918 6h.p. Combination, lamps, horn, windscreen, etc., 3-speed, clutch and K.S., excellent condition, tyres almost new; £60.—Hubbard, 8a, Park St., Loughborough. [7796

A.J.S. Combination, 1920, dynamo model, hood, screen, spare wheel, hardly used and absolutely as new; 95 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [6564

A.J.S. 1921 7h.p. Combination, with Lucas battery lighting set, speedometer, etc., very small mileage; £120.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7417

A.J.S. 6h.p. Combination, complete with lamps, speedometer, spare wheel, windscreen, hood, discs, Tan-Sad, horns, condition as new, only wants seeing; £105.—364, Lillie Rd., Fulham, London, S.W.6. [7657

A.J.S. 1922 7h.p. 3-speed Combination, Magdyno lighting, hood, screen, spare wheel not used, complete tools, insurance and tax paid, new August; cost £212, not soiled; 140 guineas cash.—Hallam, Rosedale, Dove Holes, Stockport, [8159

A.J.S. Combination, 1915, 6h.p., 3-speed, countershaft, K.S., nearly new coach sidecar, luggage grid, hood, all tyres nearly new, lamps, horn, taxed, insured, perfect; bargain, £67/10 or offers.—Turley, 32, High St., Rusthall, Tunbridge Wells, Kent. [8062

A.J.S. 1920 5-6h.p. Combination purchased new in 1921, complete with lighting set, speedometer, etc., in splendid condition; genuine bargain, £85; extended terms can be arranged if desired.—J. Smith and Co., Motor Agents, Ltd., 52-54, Hampstead Rd., N.W.1. Tel.: Museum 5938. [7818

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

1922 Allon 2-speed, kick, licensed, unscratched, cost £67; what offers?—4, Gaywood Rd., Walthamstow. [7970

28 Guineas.—Allon, 1921, 2-speed, clutch, K.S., lamps, horn, tax, new tyres and belt, excellent condition.—13a, Worple St., Mortlake. (No. 9 'buses.) [8056

ALLON Combination, 1921, good condition, only done 2,100 miles, speedometer, lamps, cost about £100; sacrifice, 40 guineas.—Ernest Woodcock, Kettering. [7784

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £36.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6661

ALLDAYS Allon, 2-stroke, 2-speed, clutch, new condition, original tyres unpunctured, left works 7/10/1919, not used till March, 1921; £35, or nearest —153, Manor Rd., West Ham, London, E.15. [7789

American X.

AMERICAN X, 2-speed, running, £30; sidecar, £10. —Johnson, 172, Avenue Rd., Acton. [7848

AMERICAN X 1918 8h.p., £35 for quick sale; offers wanted for 1921 B.S.A. combination.—Peacock and Brown, Kew Bridge, Brentford. [7647

AMERICAN X, 7-9h.p., 3-speed, clutch and K.S., very fast, perfect; £38, a real snip.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [7575

ROBERTSON'S Motors, Ltd.—1921 American X with Henderson Elite sidecar, accessories, tax paid, in beautiful condition; £90.—157b, Gt. Portland St., W.1. [2349

Antoine.

£8.—3½h.p. Antoine, m.o.v., magneto ignition, good running order.—King, Egrove, Oxford. [8181

Ariel.

£15.—Ariel 2½h.p., good order, ride away; after 5 p.m.—26, Callow St., Chelsea, S.W. [7754

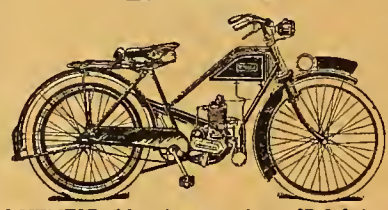
SOUTHPORT.—1920 3½h.p. Ariel combination, fully equipped; 59 guineas; exchanges.—Kents, 417, Lord St., Southport. [8160

ARIEL 1920 3½h.p. Combination, countershaft, 3-speed, new condition; photograph; £52.—49, South Lambeth Rd., S.W.8. [7553

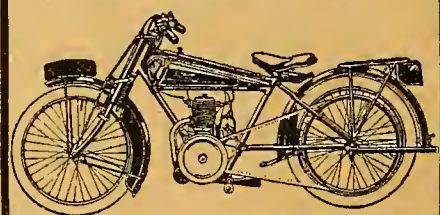
£78.—1922 Sports Ariel and Haslam Sports Sidecar, fully insured, Tan-Sad, mileage under 300, any trial.—Shaw, Magdalene College, Cambridge. [7924

AT Edwards'.—1920 6-7h.p. Ariel combination, lamps, horn, speedometer, screen, perfect order; 75 guineas.—101, Great Portland St., W.1. [6617

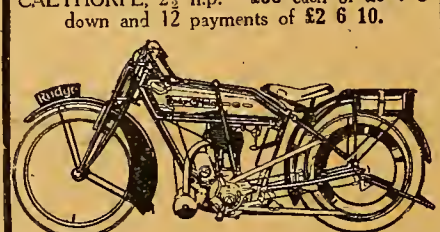
WE SUPPLY EVERY MAKE
OF MOTOR CYCLE OR CAR.



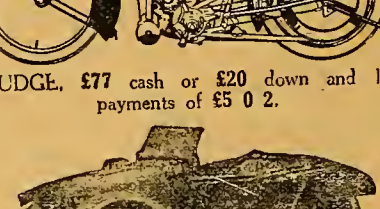
McKENZIE, 26 guineas cash, or £7 0 0 down and 12 payments of £1 17 0.



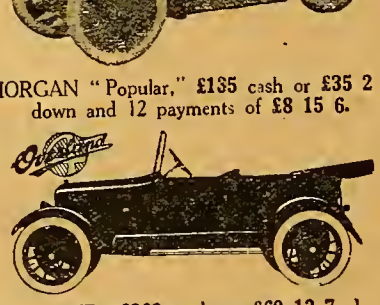
CALTHORPE, 2½ h.p. £36 cash or £9 7 3 down and 12 payments of £2 6 10.



RUDGE, £77 cash or £20 down and 12 payments of £5 0 2.



MORGAN "Popular," £135 cash or £35 2 0 down and 12 payments of £8 15 6.



OVERLAND, £268 cash or £69 13 7 down and 12 payments of £17 8 5.

Deferred payments with option of discount.

New CAR HIRE Dept.

LAMB'S Ltd

WOOD GREEN, LONDON N. 30, High Road. Phone Hornsey 1956.

WALTHAMSTOW, LONDON N.E. 151 High Street. 'Phone: Walthamstow 160 (2 lines).

GT PORTLAND STREET, LONDON, N.W. (Opposite Met. Station.) 'Phone: Museum 4978.

MOTOR CYCLES FOR SALE.

Ariel.

1920 3½h.p. Ariel, 3 speeds, clutch, kick-start lamps, Binks, perfect; nearest £55.—Coates Hairdresser, Blackwell St., Kidderminster. [773

BARGAIN.—Ariel 1920 3½h.p., countershaft, 3 speed; 53 guineas; exchanges.—Peter Gordon Ltd., 110, Upper Richmond Rd., East Sheen. [8245

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency Wincycle Co., Ltd., 236, High Holborn, W.C.1. [070

ARIEL 1920 3½h.p. 3-speed, special piston, etc. blue tank, accessories, numerous spares, perfect condition; 52 guineas.—A.H.T., 2, The Broadway, West Ealing. [796

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage Broadway, Muswell Hill, N.10. [080

Bat.

OLD Bat Combination; been stored; £7 to clear.—King, Egrove Farm, Oxford. [818

Beardmore.

BEARDMORE-PRECISION 3½h.p. Sports Solo, late 1921, Sturmey-Archer wide ratio gear box, many extras and spares; £45.—Chirney's Garage, Harpenden [846

3½h.p. Beardmore, 1921, had little use, in perfect condition, 2-speed, kick-start, double spring, all accessories; £40, or nearest.—Apply Woodyatt, Grocer Bideford, Devon. [764

Blackburne

39 Guineas.—1920-21 2¾h.p. Blackburne-Verus electric lighting, clutch, kick-starter, discs long exhaust, almost as new, licensed; exchanges.—122, Lower Mortlake Rd., Richmond. [811

BLACKBURNE Combination 1922, 8h.p., complete with lighting set, horn, Easting screen, tax paid, absolutely as new and unscratched, cost over £200 in June; will sacrifice at 120 guineas.—Barker's Motors, 194, Balham High Rd., S.W.12. [774

Spare Parts:

ALL Blackburne engine spares from stock; list on application; trade supplied.—Maudes', 100 Great Portland St., W.1. [837

Bradbury

£11.—Bradbury 3½h.p., tax paid, powerful machine —Robins, 97, Latchmere Rd., Battersea. [807

BRADBURY 1914 4h.p. Combination, 2-speed, excellent condition; £25.—7, Exhibition Rd., S.W.7. [230

BRADBURY 4h.p., clutch, pedal-start, good running order; bargain, £12.—W. Potter, Park Farm Ansley, near Nuneaton. [818

1922 7h.p. Bradbury Combination, beautifully equipped, taxed, as new, must sell; best offer. —89, East Hill, Wandsworth. [8092

SOUTHPORT.—1921 Bradbury combination, all chain, 3-speed, kick-starter; 50 guineas; exchanges.—Kents, 417, Lord St., Southport. [8161

AT Edwards.—1922 2¾h.p. Bradbury, 2-speed, clutch, K.S., equipped, tax paid, indistinguishable from new; 47 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8401

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £70; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

Brough.

BROUGH 3½h.p. Special Model, 1922 Jardine, 4 speed, Lucas and Cowey accessories, only done 250 miles; seen London; £90.—Box 4388, c/o *The Motor Cycle.* [784

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

SOLE Agents for London and thirty miles radius.

THE Sporting Rider's Ideal. Immediate delivery of Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination, £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h., £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended payments and exchanges.—9, 10, 11, Royal Parade, West Croydon. 'Phone: 2450-1. 'Grams: Track, Croydon. [0733

BROUGH SUPERIOR 1922 Mark 2 Combination, Bonniksen, Easting, fully equipped, tax paid; £100.—146, Widmore Rd., Bromley. [7980

1922 Brough Superior super sports, side valve J.A.P., nickel cylinders, Bonniksen, Montgomery sidecar, screen, fir cone valve caps, magnificent outfit, original tyres, small mileage, as new; £135.—51, Upper Richmond Rd., East Putney. [848

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas

1917 2¾h.p. Douglas, 2-speed, equipped with lamps and disc wheels, exceptionally fine condition; 25 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [8413

43 Guineas.—1918-19 4h.p. Douglas Combination, electric lighting, discs, hand clutch, sound and handsome outfit; exchanges.—1a, Hearne Rd., Kew Bridge, Chiswick. [8131

PRACTICALLY brand new Douglas, 2¾h.p., 3-speed, clutch, kick-start, full equipment, 1920 model, scarcely used; £48.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [8421

1920 Douglas Combination, recently overhauled, speedometer, electric light, windscreen, leg-shields, luggage grid, spares, etc.; £75.—Ingham, 7, Geneva Rd., Brixton. [7744

1922 2¾h.p. Douglas, clutch, kick-starter, and 3-speed gear, mileage 250, guaranteed as new; cost £90; fully equipped and tax paid; £62/10.—Kays, 8, Bond St., Ealing. [6951

TOO Cheap!—4h.p. Douglas Combination, 1918, excellent appearance, lamps, etc.; £40; lightweight part exchange.—40, Linhope St., Upper Park Place, Baker St., N.W.1. Paddington 2854. [7640

2¾h.p. Douglas, 1916, 2-speed, recently overhauled, stove enamelled and plated, 1922 tank, knee grips, copper exhaust, licensed, electric lighting; £29.—69, Kingston Rd., New Malden. [8018

1914 Douglas 2¾h.p., red, not W.D., equipped, disc wheels, fine condition, exceptionally fast machine of nice appearance; £28 for quick sale: photos.—Godolphin, Burford, Oxon. [7729

1921-22 Douglas, 2¾h.p., 3-speed, speedometer, fully equipped, as new, £38; another, 1921, 2-speed, clutch, kick start, as new, £44.—Ward and Co., 51, Upper Richmond Rd., Putney. [8482

DOUGLAS 1920 2¾h.p., 3-speed, clutch, kick-starter, electric lighting, fast, mechanically perfect, excellent condition, tax; £55, or reasonable offer.—Brick, 19, Chesterfield Grove, East Dulwich. [8147

1920-21 4h.p. Douglas Combination, exceptionally fine condition, mileage under 2,000, owner purchased new, fully equipped, guaranteed; £70.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [8152

BARGAINS.—Three 2¾h.p. 2-speed Douglases, 1914, 22 guineas; 1916, 24 guineas; 1920, 33 guineas; all equipped, taxed, guaranteed; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8246

4h.p. Douglas Combination, 1919, recently overhauled throughout; fully equipped, new tyres, Lucas electric lighting outfit, new handle-bars and carburetter, perfect condition; £70.—G. Perkins, Sunnyside, Colerd, Bath. [8218

MOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill! [0786

4h.p. Douglas Combination, makers' blue, looks and goes like new, grand order, guaranteed, £65; other nearly as good, £60. Both are quite exceptional bargains; cash or deferred.—Marlborough Motor House), 20, Finchley Rd., N.W.8. [6559

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones' Garage, Broadway, Muswell Hill, N.10. [0806

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W. [0927

Economic.

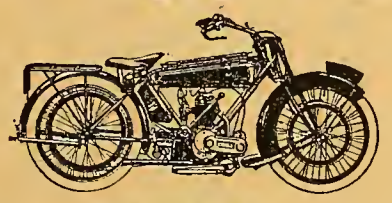
1922 2h.p. Economic Twin, 2-stroke, shop-soiled; £28/10.—Morriss and Co. Ltd., 139, Finchley Rd., Swiss Cottage, N.W.3. [7827

£4.—Economic, 6-speed, clutch, vibrationless twin motor cycles, heavy tyree, Druid forks, for ladies or gentlemen; see it climb Muswell Hill!—North London agents; Jones' Garage, Muswell Hill, N.10. [0903

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

LATEST 1922 2½h.p. Economic, flat twin, 2-stroke, friction drive, 8 speeds, electric lighting, heavy tyres, suit lady or gent, list price £34; slightly shop-soiled and reduced to £27; a snip.—South Eastern Garage, 1-7, Norwood Rd., Herne Hill, S.E.24. [8277

MAUDES' SPECIAL BARGAIN OFFERS



RALEIGH.

3 H.P. 3-speed Solo - - £72
3 H.P. Combination - - £92

SHOP-SOILED MODELS.

HAZLEWOOD, 5-6 h.p. combination £105
NORTON, 4 h.p. combination £130
SUN-VITESSE combination £75

SECOND-HAND.

SOLO.

RUDGE, 1911, 3½ h.p., tax paid £25
RUDGE, 1921, 3½ h.p., I.O.M. model, as new £48
TRIUMPH, 1919, 4 h.p., single speed £42
ZENITH, 1920, J.A.P. sports model, as new £80
G. THORPE-J.A.P., 1921, 2¾ h.p., 2-speed £28
DIAMOND, 1920, 2¾ h.p., 2-speed £29
ZENITH, 1920, 8 h.p., clutch model £64
A.B.C., 1920, 3 h.p., dyno lighting £55
ENFIELD, 3 h.p., 2 speed, clutch, kick-starter £28
COULSON B, 4 h.p., Philipson pulley £42
NEW HUDSON, 2½ h.p., 2 speed, tax paid £28
P. & M., W.D., 3½ h.p., R.A.F. model, good condition £55
A.J.S., 1922, 2¾ h.p., 3-speed £80
DOUGLAS, 2¾ h.p., 2-speed, tax paid £30
WATNEY-BLACKBURNE, 2¾ h.p., O.H.V., 3-speed, very fast £75

COMBINATIONS.

MATCHLESS, 1922, M.A.G., dyno., single-seater .. £140
QUADRANT, 1922, 4 h.p., all-chain and sidecar ... £85
HARLEY-DAVIDSON, W.D., 7-9 h.p. Comb. £75
COULSON B, 1921, 4 h.p., sports, sidecar £68
DOUGLAS, 1922, 6 h.p., single-seater, sidecar £120
L.M.C., 1920, 5-6 h.p., twin, with sidecar £70
MATCHLESS, 1921, M.A.G., dyno. ltg., 2-str., sc... £135
TRIUMPH, 1922, 4 h.p., Mills Fulford skiff sidecar.. £112
B.S.A., 1919, 4½ h.p., with sidecar £53
TRIUMPH, 1920, 4 h.p., Gloria sidecar £90
BROUGH, 1920, 5 h.p., Brough sidecar £70
A.J.S., 1913, 5-6 h.p., coachbuilt sidecar £50
N.U.T., 1921, 3½ h.p., magdyno ltg., Watsonian sc... £100
P. & M., 1917, 3½ h.p., Whitley-sidecar £50

DEFERRED PAYMENTS or EXCHANGES ARRANGED.

MAUDES' MOTOR MART

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Edmund.

1921 Edmund-Jap 2¾h.p., Burman 2-speed, h.b. clutch, shop-soiled only; to clear £65.—AK Garage, Idle Rd., Bradford. 'Phone: 4415. [8007

EDMUND, 1921, Olympia Show model, 2¾h.p. J.A.P., 2 speeds, clutch, spring frame, chain drive, equipped, new condition; £50; exchanges.—63, Solon Rd., Brixton. [8467

Elswick.

ELSWICK-PRECISION 2¾h.p., perfect condition; £18; exchange 4-cyl F.N.—Box 4350, c/o *The Motor Cycle.* [7700

Enfield.

1921 Enfield Lightweight, 2-speed, clutch, as new; 29 guineas.—87, Fernlea Rd., Balham. [8451

1922 Enfield Combination, delivered June, all on; what offers?—Box 4284, c/o *The Motor Cycle.* [7606

ENFIELD Sports 1922 2¼h.p., 2-stroke, smart little machine, fast and economical, brand new; £44.—The Morris Garages, Oxford. [8280

1921 Enfield 2¼h.p., 2-speed, K.S., clutch, Lucas lamps, nearly new; cost £60, accept £45; approval.—27, Flaxton Rd., Plumstead. [7873

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [5600

1922 2¼h.p. Royal Enfield, brand new, £49/10; also ditto, with kick-starter, £51/10.—Shepherd, Enfield Highway. Tel.: Waltham X 31. [8491

PRACTICALLY New Dynamo Enfield Combination, every possible accessory, run few miles; £100; exchanges.—24, Balliol Rd., North Kensington. [7932

ENFIELD 6h.p., family sidecar, electric lights, speedometer, new condition, any trial; exchange considered.—1, Pembury Rd. Mews, Tottenham. [8417

1921 6h.p. Enfield, fitted with dynamo lighting set and sidecar, combination in new condition; £90.—H. Dix, Arcady, Highworth Av., Cambridge. [8393

1922 8h.p. Enfield Combination, brand new, list £140; our price £114; also new 1921 model, £104.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [8232

1921 Enfield Combination, splendid condition, Easting, spares; £95, or exchange Douglas 2¾h.p. or lightweight and cash.—Stephens, 339, Chingford Rd., Walthamstow. [7938

ROYAL ENFIELD Combination, 7.8h.p., hood, screen, speedometer, fully equipped, in good condition; £50.—Rickards Bros., 325, Caledonian Rd., N.1. Tel.: North 482. [8021

1922 8h.p. Royal Enfield Combination, new, slightly shop-soiled; £130; Magdyno model; cash or deferred.—Morriss and Co., Ltd., 139, Finchley Rd., Swiss Cottage, N.W.3. [7821

1921-22 Enfield 8h.p. Magdyno Combination, Bonniksen, Royal Easting, and every accessory, mileage 2,000; quick sale £110, bought car.—Dalbeattie, 2, Argyle St., King's Cross. Museum 5357. [0950

LATE 1921 Enfield Combination, 8h.p., Vickers' engine, fully equipped, windscreen, used week-ends only, mileage 1,000, exceptionally smart machine; sacrifice £110.—148, Henwick Rd., Worcester. [7968

£108.—Enfield, 1922, 8h.p. Vickers engine, Enfield 2-seater sidecar, Magdyno, Terry's spring seat saddle, hood, 2 screens, etc., practically brand new, tax paid.—Delancey St. Garage, Camden Town, N.W.1. [7984

1921 Enfield Combination 8h.p., Lucas dynamo, hood, screen, speedometer, etc., absolutely unscratched, guaranteed; £115; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone Dalston 2408. [8314

LATE 1921 Enfield Combination, 8h.p. Vickers engine, hood, screen and side curtains, luggage carrier, all lamps and accessories, excellent condition; £82.—164, Revelstoke Rd., Southfields, S.W.18. 'Phone: Wimbledon 1185. [8125

1922 Enfield Combination 8h.p., Lucas acetylene lamps throughout, horn, Easting screen, only 8 weeks old, mileage under 500, guaranteed perfect; £100; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [8313

1920 Royal Enfield 6h.p. Combination, with coach-built, dash, Triplex windscreen, Tan-Sad, Stewart speedometer, electric light, J.A.P. engine, splendid condition, new, mileage 1,000 reason disposal moved to seaside, spare tyre, originals as new, no punctures, enamel as new; bargain, cash £130; cost over £200; licensed, insured April.—Eldridge, Westmeads, Whitstable. [7959

ENFIELD 1917 6h.p. Combination, all-chain, fully equipped with all accessories, including P. and H. lamp set, separate sidecar generator, mechanical horn, spare chains, 4 spare valves, tools, etc., tax paid, sidecar is a special "Dinky" model, as fitted to Sunbeams; the outfit has been very carefully used and privately owned throughout, appearance almost as new, recently overhauled and fitted with new chains and tyres, open to any examination and trial; will accept 55 guineas for quick sale.—Allen, Jeweller, Aldeburgh, Suffolk. [8099

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ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

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EXCELSIOR 1921 8h.p. Combination, little used, Easting screen, licensed to end of year; only £65.—Blake, 4, Park Crescent Mews, Great Portland St., W.1. [7923

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F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

Francis-Barnett.

FRANCIS-BARNETT, 1920, 2¾h.p. J.A.P., Sturmey 2-speed, clutch, kick-starter, equipped, new condition; £45; exchanges.—63, Solon Rd., Brixton. [8468

Harley-Davidson.

HARLEY Combination, 7-9h.p., electric model; any trial; £75.—30, Lady Somerset Rd., Kentish Town. [7690

HARLEY Combination, 1915, perfect condition, acetylene, tax paid; £65.—2, Castlebar Mews, Ealing, W.5. [7861

HARLEY-DAVIDSON 1919 Electric Combination, speedometer, horn, all accessories, taxed; £60.—145, Widmore Rd., Bromley. [7978

1921 7-9h.p. Harley Combination, dynamo lighting, new condition; £75.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [7942

HARLEY Combination, Watsonian sidecar, late 1918, excellent condition, spares, any trial; £85, or near offer.—44, Gerda Rd., S.E.9. [7667

1921 Harley-Davidson, flat twin, speedometer, Klaxon, lamps, etc., licensed December; 53 guineas.—Fersfield, Westbury Rd., New Malden. [7954

1921 Harley-Davidson Coupette Combination, electric model, fine lot, guaranteed; £110; exchanges, deferred terms with £27/10 down.—Goad, 122, Maida Vale. 'Phone; Maida Vale 1353. [8359

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [5943

£78.—1920-21 Harley-Davidson 7-9h.p. Combination, electric model, speedometer, Grindlay spring wheel sidecar, overhauled, guaranteed; exchange lighter machine and cash.—D. Barlow, Ramsey, Huntingdonshire. [7625

1920 Harley-Davidson Combination, 4h.p. flat twin, 3 speeds, clutch and K.S., all lamps, horn, speedometer, absolutely as new, guaranteed; £75; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [8316

SPECIAL Speed Model Harley, 1916, K, guaranteed to lap Brooklands at 80; equipped for the road, absolutely perfect condition; an opportunity seldom offered; £68; any evening after seven or appointment.—Bullock, 124, Holland Rd., W. [7683

HARLEY-DAVIDSON Combination, luxurious sidecar, Bedford cord, Easting, luggage carrier, new chains, tyres, electric, gas lighting, quantity spares; £80, any trial; seen appointment only.—Ashton, 123, Dunster House, Mincing Lane, London, E.C.3. [7964

HARLEY late 1919 7-9h.p. 2-seater Combination, Tan-Sad, speedometer, generators, lamps, windscreen, hood, apron, splendid condition throughout, mileage only 4,000; any trial; illness only the reason for sale; 80 guineas.—47, St. Augustine's Av., South Croydon. [8306

100 Guineas.—Late 1921 7-9h.p. Harley-Davidson Combination, dynamo lighting, hood, screen, complete tools, pump, numerous spares, unscratched; this machine has done just over 3,000 miles, and is perfect in every respect, trial willingly, after 4.30.—4, Elm Gardens, Hammersmith. [8408

HARLEY-DAVIDSON 7-9h.p. Combination, late 1918, in perfect condition, little used, luxurious £56 sidecar, convertible to double-seater, electric lighting, Cowey, screen, hood and side valances, tax paid and insured to April; any trial; price £85.—Leete, 129, Goswell Rd., London, E.C. [7963

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Hobart.

HOBART 1921 2½h.p., 2-speed, excellent condition bargain, £25.—P. J. Evans, John Bright St., Birmingham. [806

1920 2¾h.p. Hobart, good running order; £19.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [805

1921 Hobart-Villiers, brand new, shop-soiled £33.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [092

Humber.

HUMBER 4h.p., 2-speed, free, excellent order; £16—17, Heaton Rd., Mitcham. [812

HUMBER 2¼h.p., 3 speeds, excellent condition £12.—Maynard, 161, Bowes Rd., Bowes Park N.11. [803

1922 4½h.p. Humber Sports Model, brand new, shop soiled; £93.— Shepherd, Enfield Highway. Tel.: Waltham X 31. [849

LATE 1919 Humber Combination, 3-speed, clutch tax and insurance paid, just overhauled; any trial; offer.—300, Hither Green Lane, Lewisham. [796

HUMBER 1920 3½h.p., 3-speed, twin, electric lighting, perfect, as new; £38, or best offer, must sell appointment only.—145, Leander Rd., Brixton Hill S.W.2. [842

4h.p. Test Model Humber Combination, all on; price £45.—Apply any evening after 6.30 p.m. to E. Herbert, 119, Shardeloes Rd., New Cross, S.E.14. [808

HUMBER, 1919, 3½h.p. flat twin, 3-speed, clutch, hand-starter, Henderson sidecar, hood, screen, Lucas lamps, Klaxon, spares; £52/10.—Shearmur's Garage, Weston-super-Mare. [792

19 Guineas, Bargain, Exchanges.—Humber 1913 3½h.p., 2 speeds, starter, dropped back frame, Druid forks, coach sidecar, lamps, good appearance, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [4686

Indian.

INDIAN 1915, clutch, good conditon, accessories; £30.—197, Croydon Rd., Anerley. [7869

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1922 Indian Combination, perfect condition, licensed; £110 or near offer.—23, Hamilton Rd., Reading. [7849

5-6h.p. Indian, 3-gear and starter, clutch, in new condition; £38.—64A, Highbury Grove, Highbury Barn, N.5. [7855

INDIAN, 1921, Scout, original tyres, perfect, tax paid; £58.—A., 30, Thornsett Rd., Earlsfield, London, S.W. [7240

MOTOR CYCLES FOR SALE.

New Imperial.

NEW IMPERIAL, 1922 (July), all-chain, 3-speed, clutch, K.S., fully equipped, as new; 47 guineas.—145, Widmore Rd., Bromley. [7979

NEW IMPERIAL 1914 2¾h.p., countershaft, 2-speed gear box, tax paid; cash, £15.—Lovetts, Ltd., 418, Romford Rd., Forest Gate, E. [5780

2¾h.p. New Imperial, Model 2, 3-speed and clutch. November, 1921, as new, 1,100 miles; £50.—Vineyard Motor Co., Richmond, S.W. [7759

£27.—2¾h.p. 1917 New Imperial-Jap, 2-speed, fully equipped, taxed, and perfect throughout; any trial; offers.—Barnes, 83c, Trinity Rd., Balham, S.W. [8017

AT Edwards.—1922 2¾h.p. New Imperial, Model 3, all-chain drive, clutch and kick-starter, Magdita dynamo set, tax paid, new condition; 55 guineas. —Below.

1920 2¾h.p. 2-speed New Imperial, fully equipped, good condition; 29 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8404

NEW IMPERIAL 1918 2¾h.p., 2-speed, free engine, excellent condition; exchange good push bike and cash, or sell £25.—Oldroyd, 145, Underhill Rd., East Dulwich. [7671

BROOKLANDS.—We have a lovely little racer, 2¾h.p. New Imperial-Jap 1922, selected engine, 2-speed gear, lamps, horn, etc., in new condition, already won several firsts; £50.—Bunting's Exchange, Wealdstone. [8223

1922 New Imperial Special Super Sports, with Grindlay sports sidecar, as new, with dynamo lighting outfit, does 65 m.p.h., cost £205; accept £135, or exchange light car or fast solo.—198, King St., Hammersmith. [8178

Spare Parts:

NEW IMPERIAL Spare Parts.—London stockist's, Rey, 173, Gt. Portland St. 'Phone: Langham 257. Open till 6 p.m., 1 o'clock Saturdays. [0855

Norton.

N.T. Norton, fast, good order; £45.—Stewart, Denmark St., Wokingham, Berks. [8117

£90.—Brand new 1922 shop-soiled Norton 16H, with silencer, list price £115.—Gibb, Northgate, Gloucester. [8275

1922 Norton 3½h.p., 3-speed, chain drive, T.T. bars, unridden; £75.—Box 4406, c/o *The Motor Cycle.* [8392

1921 T.T. Norton, 3½h.p., as new, tax paid; £45. —28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [7939

1922 Norton 3½h.p., T.T., speedometer, horn, etc., condition as new; what offers?—Braemar Cottage, Surbiton Hill. [8004

1922 3½h.p. Norton, Model 16H, brand new, list £115; our price £85.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [8228

HALIFAX.—Norton brand new 1922 models; special exchange allowances to clear.—Halifax Motor Exchange, Horton St., Halifax. [8297

1921 3½h.p. 16H Norton, Lucas lamps, Smith speedometer, spares, etc., condition perfect; £80 or nearest.—Rotherford, 189, Chapeltown Rd., Leeds. [7618

1921 Norton 16H, as new, close ratio gears, Lucas lighting, Klaxon, write particulars; gift, £85; owner having to give up through illness.—Box 4370, *The Motor Cycle.* [7738

NORTON 1921 3½h.p. Combination, special aluminium sports sidecar, Lucas Magdyno lighting, splendid condition; bargain, £80.—P. J. Evans, John Bright St., Birmingham. [8066

1921 3½h.p. Norton, single speed, lamps, horn, licensed, plated tank, very fast machine, recently overhauled by makers, guaranteed in perfect condition throughout; £62/10.—Herbert Robinson, Ltd., Green Cambridge. [8352

1921 Norton Big 4 Combination De Luxe, 3-speed, clutch, like new, screen, mechanical horn, lamps, disks, oversize tyres, leather coat; cost over £200, £110; exchange 1922 A.J.S. and £50 cash.—7, Zoar Street, Morley, Leeds. [7808

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3½h.p. N.S.U., 2-speed, clutch, m.o.v. magneto ignition.—King, Egrove Farm, Oxford. [8185

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N.U.T. and Swan Sporting Sidecar, 1920-21, dynamo, discs, etc., as new; £78 or exchange Morgan.—, Laurel St., Dalston, E.8. [8431

1920 3½h.p. N.U.T., Lucas Magdyno lighting, just decarbonised, excellent mechanical condition and appearance, buying car; £65.—Captain Rice, Artillery Mess, Woolwich. [7711

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O.K., 2 speeds, perfect, appearance as new; £32.—9, Spencer Hill Rd., Wimbledon. [7868

2½h.p. O.K.-Villiers, 1920, single speed, just overhauled, fully equipped; £25, or near offer.—All Saints' Vicarage, Bromsgrove. [7674

1920 O.K.-Villiers, all on, tax paid, 2-speed, perfect, engine just overhauled; £30.—Prentice, Midland Railway, Finchley Rd., N.W. [8304

J.A.P. 2¾h.p. 1921 engined O.K. Motor Cycle, new B.B. pilot jet carburetter and C.A.V. magneto, 2-speed, excellent condition, lamps; £29/10 quick sale.—Elliott, Cross St., Lyston. [8217

Omega.

£25.—1919-20 2¾h.p. Omega-Jap, 2 speeds, perfect running order.—King, Egrove, Oxford. [8186

OMEGA, 1922 model, special J.A.P. engine, just overhauled, splendid condition; bargain, £42/10.—Apply, J. Richardson, Rosslyn Hill Mews (under 42, Rosslyn Hill), Hampstead, N.W.3. [8454

P and M.

£26.—1918 W.D. 3½h.p. P. and M., 2-speed, clutch, K.S., fine order.—King, Egrove, Oxford. [8187

P. and M. Combination, 2-speed, K.S., 1917, fine order; £26.—1, Springfield Park Cres., Catford, S.E.6. [8206

1922 New Phelon and Moore Motor Cycle, fully equipped; £75/10, bargain.—Abson, 49, Kirkgate, Wakefield. [7929

1920 P. and M., R.A.F. model; £55; exchange with cash good lightweight.—61, Commercial Rd., Stamford St., S.E. [8429

1918 P. and M. Combination, just renovated throughout, smart lot; £40.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [8343

P. and M. 4h.p., late model, fine condition, sidecar fitting, lamps, etc.; £38 or offer.—Seen 2, Hogarth Rd., Earls Court. [7725

1912 P. and M., wants assembling. 2 speeds, K.S., Bosch; bargain, £10, or near offer; London.—Box 4394, c/o *The Motor Cycle.* [8197

P. and M. 1919 Combination, all accessories, tax paid, in splendid condition; £38.—30, Thornsett Rd., Earlsfield, London, S.W. [8385

P. and M. Combination, late 1919, splendid condition, new tyres, tax paid; £55, or near offer.—Mordaunt, The Garth, Kenley, Surrey. [7757

1922 4½h.p. Phelon and Moore Combination, 4-speed, brand new, list £130; our price £111.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [8231

1922 P. and M. Combination, 4½h.p., 4 speeds, new, shop-soiled only; will take £113, which is much less than 1923 prices.—Middleton, Elvet Bridge, Durham. [7780

P. and M. Sidecar Combination, R.A.F. model, engine 1916, sidecar new, recently overhauled and recommended, full kit, lamps, etc.; price £50.—Parkside Garage, Ltd., Parkside, Coventry. [7635

1919 P. and M. Combination, bulbous Camber sidecar, Easting screen, lamps, horn, and spares, in splendid condition; £45, or offer; after 6.—Barington, 105, Tynemouth Rd., Tooting Junction. [8427

P. and M. 1918 Combination, 2-speed, kick-starter, 1922 gears and B. and B. carburetter, lamps, horn, licence paid, trial by appointment; £38, or offer. —Flint Bungalow, Croydon Rd., Warlingham. [5861

RENOVATED 1918-19 P. and M.'s, guaranteed 3 months, £42; instalments taken; incomplete machines, £17/10.—Inman and Co., Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [8168

P. and M., Bargain.—Aluminium chain cases, tank newly enamelled, bars, etc., new plated, special built strong rear wheel, solo sprocket, speedster; £36/10; after 3 p.m.—Mitchell, 43a, Tennyson Rd., Kilburn. [7642

1918 P. and M., fast, 3½h.p., 2 speeds, K.S., lamp, etc., excellent condition, £32/10; Precision 2¼h.p., o.h.v., 2 speeds, lamp, etc., good condition, £12; both seen Sunday.—2, Whitehead's Grove, Chelsea. [7902

BARGAIN.—1918 P. and M., renovated, guaranteed, 29 guineas; also nearly new P. and M. combination, mileage 4,000, hood, screen, electric lighting, 55 guineas; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8250

Spare Parts:

P. and M.—We have a large stock of second-hand parts.—Maudes', 100, Great Portland St., W.1. [8376

P. and M. Spares Specialists.—All parts stocked. Stamp brings list.—Inman and Co., Durham Rd., Seaford, Liverpool. 'Phone: Waterloo 296. [8169

ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

MOTOR CYCLES FOR SALE.

P. and S.

1920 Pearson-Sopwith, sell cheap, cash, for 4h.p. solo or combination.—Thompson, 32, Clarence Rd., Kentish Town. [7755

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£14.—3½h.p. Precision, Mabon countershaft gears, splendid condition.—King, Egrove Farm, Oxford. [5558

1914 4h.p. Precision, Bosch, B. and B., K.S., Grado gear, Dunlops, good running order; £23.—Stevens, "Oak Tree," Crawley. [7760

Premier.

COMBINATION Premier, 3-speed, coachbuilt sidecar, good; £17; any time.—Green Man Hotel, Whetstone, London. [7702

PREMIER Combination, 3-speed countershaft, kick-start, splendid condition; 40 guineas; take solo part.—57, Kenbury St., Camberwell, London. [7946

Spare Parts:

PREMIER.—All parts in stock. By Return Service.—All. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [8237

PREMIER Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Forfield Motors, Forfield Place, Leamington Spa. 'Phone: 631. [8369

Priory.

PRIORY-J.A.P., brand new; £48.—Clark, 7, Exhibition Rd., S.W.7. [2305

AT Edwards.—2¾h.p. Priory 2-stroke, 2-speed, brand new; £38.—101, Gt. Portland St., W. [7503

PRIORY, end of season, 2¾h.p. J.A.P., 2-speed, clutch, and kick-start, listed at 52 guineas; our price, £50; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4532

Quadrant.

£95.—Brand new 1922 Quadrant all-chain combination.

£75.—1922 Quadrant combination, electric lighting, speedometer, accessories.

£85.—1921 brand new Quadrant with folding sidecar.

£60.—1921 Quadrant chain drive solo, brand new.

£55.—1921 Quadrant chain drive combination, accessories, tax.

£30.—1914 Quadrant combination, electric lighting, hood, speedometer, accessories.

CLIFFORD WILSON Mfg. Co. are prepared to accept reasonable offers for any of the above on a cash basis only.—177, Westminster Bridge Rd., London, S.E.1. [7516

CLIFFORD WILSON Company, 16 years' experience with Quadrants. [9925

£8.—3h.p. Quadrant, dropped frame, good running order.—King, Egrove Farm, Oxford. [8188

£65.—1922 Quadrant Chain-drive Combination, accessories, insurance.—The Clifford Wilson (Mfg.) Co., 177, Westminster Bridge Rd., S.E.1. [8410

£75.—1922 Quadrant Combination, with negligible mileage, accessories.—The Clifford Wilson (Mfg.) Co., 177, Westminster Bridge Rd., S.E.1. [8411

Spare Parts:

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Radco.

RADCO, about 1918, in sound condition, guaranteed; £15.—51, Upper Richmond Rd., Putney. [8483

Raleigh.

RALEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £62.—7, Exhibition Rd., S.W.7. [3588

RALEIGH 1922 3h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £66/15.—Stubbs' Garages, Ltd., Loughborough. [7793

RALEIGH 1922 2¾h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £62/10. — Stubbs' Garages, Ltd., Loughborough. [7792

£105.—Brand new 1922 5-6h.p. Raleigh, not unsealed, very slightly shop-soiled, special clearance price.—Gurry, Ditton, Cambridge. [7722

1922 Raleigh 2¾h.p., chain-cum-belt, shop-soild; £60; cash or deferred.—Morriss and Co., Ltd., 139, Finchley Rd., Swiss Cottage, N.W.3. [7825

1922 2¾h.p. Raleigh, 3-speed, clutch and kick-starter, fully equipped with lamps and speedometer, very small mileage; 58 guineas.—Longman Bros., 17, Bond St., Ealing 'Phone: Ealing 689. [8414

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MOTOR CYCLES FOR SALE.

Raleigh.

RALEIGH 1921, spring frame machine, with Grinlay Club model sidecar, perfect throughout; £98 exchange lightweight and cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [741

Rex

REX 3½h.p., C.A.V. magneto, good condition, tax paid; ride away; £17.—55, Churchfields Rd., Beckenham. [790

5-6h.p. Twin Rex and Sidecar, clutch, handle-starting lamps, taxed; £12.—Fisher, Springwell Rd., Heston, Hounslow. [795

29 Guineas, genuine bargain, exchanges.—1914 Rex 6h.p., 2 speeds, handle start, roomy coach-built car, hood, screen, lamps, overhauled by engineer; good appearance, any examination, trial.—Seabridge, 35, Hansler Rd., East Dulwich. 'Phone: Sydenham 2452. [488

Rover.

ROVER 1922 4h.p., 3-speed, clutch and K.S., unused, shop-soiled only; £85.—Stubbs' Garages, Ltd., Loughborough. [779

ROVER 1914 3½h.p., 3-speed, overhauled, mechanically perfect; £28.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [562

1920 6h.p. Rover Combination, electric lights, hood, screen, etc., mileage 500, unsoiled; £80.—120, Sutherland Rd., W. Croydon. [817

1921 T.T. 3½h.p. Rover, Philipson pulley, as new, fully equipped; £45.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [794

ROVER Combination 1920, 5-6h.p., dynamo lighting, windscreen, speedometer, excellent order, £70.—Montpelier Motor Works, Blackheath, S.E.3. [767

ROVER 1920 6h.p. Combination, thoroughly overhauled recently, new Auto windscreen and hood, perfect condition; £90.—Shuff, Norton Rd., Leagrave, Beds. [815

1920 Rover Combination, 3-speed, clutch, kick-start, speedometer, windscreen, lighting set, equipped, taxed, new condition, guaranteed sound; 49 guineas.—186, St. James Rd., Croydon. [775

1921-22 3½h.p. Sports Rover, 3-speed, clutch and K.S., Lucas lamps, Cowey speedometer, condition as new, mileage 2,500; exchanges; after 4 p.m.—4, Elm Gardens, Hammersmith. [824

BARGAINS.—Rover 1920 3½h.p., 3-speed countershaft, 52 guineas; also Rover coachbuilt combination, 3-speed, perfect, 38 guineas; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [825

ROVER 5-6h.p. 1922 Combination, Lucas electric lighting with dimmer, trip speedometer, clock, horn, spare spring chain, valves, new tyres, spare tubes, sidecar carrier, aluminium mudshield, tax and insurance paid, with numerous spares; no offers; £125; appointment.—90, Cranley Gardens, N.10. [777

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [5081

Royal Ruby.

1921 3h.p. Royal Ruby Sports, spring frame model, clutch, kick start, as new; 37 guineas.—67, Fernlea Rd., Balham. [8446

1921 Royal Ruby 2¾h.p., 2-speed, clutch, K.S., fully equipped, tax, insurance, new condition; £45.—Wood, 108, Breck Rd., Liverpool. [7612

1922 2¾h.p. Royal Ruby, 3-speed, brand new, list £75; our price £55, with sidecar £72.—J. Hebden and Sons, 71, Scotland Rd., Nelson, Lancs. [8224

1922 8h.p. Ruby spring frame Combination, one only at a special end of season bargain price.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [7529

BARGAIN.—Royal Ruby 8h.p. countershaft combination, 3 speeds, gears require attention; 34 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8252

Rudge

1921 Rudge-Multi; £45; as new, equipped.—Cheek, 60, Rectory Lane, Tooting. [7734

32 Guineas.—Rudge-Multi, 1920, fully equipped; exchanges.—13a, Worple St., Mortlake. [8057

1915 Rudge-Multi, clutch, equipped, taxed, new condition; £25.—103, Moore Park Rd., Fulham. [8081

1921 Rudge-Multi, starter, clutch, been 868 miles; £39.—"Cranleigh," College Slip, Bromley, Kent. (P) [7879

RUDGE-MULTI, late 1921, perfect condition, fast, tax paid; £46; offers.—Rudgit, Inverteign, Teignmouth. [7767

1921 Rudge-Multi, fully equipped, as new, any trial, bargain; £42 guineas.—67, Fernlea Rd., Balham. [8446

1916 3½h.p. Rudge-Multi, excellent condition throughout; £30.—75, Woodside Rd., Wood Green, N. [7658

RUDGE-MULTI 1914, fine order, licensed, £22.10; good sidecar, £3/10.—Saunders, Nutley, Ipswich Rd., Woodbridge. [8116

MOTOR CYCLES FOR SALE.

Triumph.

1922 4h.p. Triumph, new this month, perfect, with complete equipment and tax; £85 or offer.—4, Chalk Farm Rd., Chalk Farm, London. [8145

1921 4h.p. Triumph, all-chain, Sports sidecar, perfect condition, electric side lights, etc., all spares, overalls, etc.; £85.—Hardy, Hotel Metropole, W.C.2. [7737

TRIUMPH 4h.p. 3-speed Countershaft Combination, with good accessories, £57; another, ditto, £53; another, £50.—Newnham Motor Co., 223, Hammersmith Rd. W.6. [7421

TRIUMPH, 1918, countershaft, lamps, horn, etc., appearance and condition as new, licensed; £45. Rose, Eton Place, Adelaide Rd., N.W. 'Phone: Hampstead 1883. [7914

1919 Triumph-Gloria Combination, all lamps, Ace discs, Easting, luggage grid, numerous spares, insured, perfect condition; nearest £85.—Turner, 177, Brixton Hill, S.W. [7866

3½h.p. Clutch Triumph-Grade, new piston, tappets, rebushed, good tyres, excellent condition, licensed (50/-); nearest £20.—Carter, Fownes Rd., Alcombe, Minehead. [8141

TRIUMPH-RICARDO, 1922, Best-Lloyd mechanical pump, Challenger tubes, all accessories and spares, perfect, cost £130, accept £100.—Jakins, 247, High Rd., Lee, S.E. [6794

4h.p. Type H Triumph, with discs, lamps, horn, etc., and first-class coachbuilt sidecar, perfect condition throughout; £72/10.—Herbert Robinson, Ltd., Green St., Cambridge. [8358

TRIUMPH-MILLFORD 1920, Easting, all lamps and horn, indistinguishable from new; exceptional bargain; £62/10.—M. Hillier, 216, Portobello Rd., North Kensington. [8108

NEW 1922 Triumph, all-chain drive and Junior Models; special bargain prices to clear; write, call, or 'phone Greenwich 751.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6599

SOUTHPORT.—1921 Triumph, 3-speed, sports, specially tuned, lovely condition, Ricardo bars, long exhaust, very fast; 69 guineas; exchanges.—Kents, 417, Lord St., Southport. [8162

YOUR Motor Cycle or Combination taken in part payment for a Triumph, any model; deferred payments.—Barker's Motors, 194, Balham High Road, S.W.12. 'Phone: 4441 Latchmere. [5944

1922 4h.p. Triumph Combination, good lamps, horn, speedometer, screen, licence, new condition, any trial and examination, guaranteed; £105.—Herbert Robinson, Ltd., Green St., Cambridge. [8356

TRIUMPH, late 1921, 3 speeds, clutch, kick-start, Tan-Sad, all on, recently overhauled, ready to ride; £70, or nearest offer, first cheque secures.—W. Sampson, Tuckingmill Farm, Tisbury. [7785

4h.p. Triumph, disc wheels, and sidecar, with luggage carrier, S.A. 3-speed countershaft gear with clutch, speedometer, horn, lamps; £40.—Blake, 4, Park Crescent Mews, Great Portland St., W.1. [7922

TRIUMPH-GLORIA All-chain Combination, April, 1922, S.D. model, Lucas lamps, Easting, condition as new, only done 1,000 miles, unpunctured; £120.—Frost, Lower St., Middlewich, Cheshire. [7897

1922 4h.p. all-chain Triumph Combination, fully equipped, lamps, horn, luggage carrier, petrol carrier, Easting screen, small mileage; £98/10.—Perrin's Motor Garages, Marsh Lane, Southampton. [7633

1922 Triumph-Ricardo, brand new, shop-soiled, £105 to clear; also 4h.p., all-chain, clearing at £100; exchanges and deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [8318

1916 Triumph 4h.p. Combination, exceptionally good condition throughout, and in perfect order; speedometer, all accessories; £47.—Write Smith, Flat 5, 29, Langham St., W.1. Museum 2731. [7696

TRIUMPH 1920 Combination, guaranteed complete with horn, lighting set, etc., ready for the road, tax paid, a bargain; will sacrifice at 65 guineas.—Barker's Motors, 194, Balham High Rd., S.W.12. [7749

1921 4h.p. Triumph, Model H, lamps, horn, hand and foot clutch, tools, special 2½-gallon tank, long nickel exhaust, pillion seat, all in perfect condition, seen any time; £75.—Olley, Roden, Falcon Rd., Guildford. [7720

THE HACKFORD ENG. CO. have 4 more renovated countershaft Triumphs at £45. Cash or extended payments. Do not miss this opportunity. Call, write, or 'phone Brixton 3062.—33, Hackford Rd., Brixton, S.W.9.

TRIUMPH Combination 1918, sidecar repainted, tax paid; £50.—33, Hackford Rd., Brixton. [8440

1920 Triumph 4h.p. Combination, Milford sidecar, Easting windscreen, D.A. lighting, Miller lamps, luggage carrier, Cowey speedometer and horn, Tan-Sad, tools and spares, everything in excellent condition; £90.—Chatenay, New Rd., Windsor. [7889

65 Guineas.—1919 Countershaft Triumph, and 1922 spring wheel Middleton sidecar, screen, Tan-Sad, electric throughout, oversize tyres, perfect, taxed and insured; privately owned.—Broadway House, Northolme Rd., Highbury, N.5. [8307

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1922 Triumphs, brand new, S.D. (all-chain), several in stock, roadster and T.T. bars, exceptional offer, secure new; cost £115; clearing at £89; makers' full guarantee.—Harry Nash, Contracting Agent, 391, King St., Hammersmith. 'Phone: Hammersmith 2837. [7282

1921 Triumph, all-chain model, coachbuilt sidecar, Easting, luggage grid, lamps, horn, tools, spring footboards, latest front mudguard, mechanically perfect; £75 for quick sale; no offers; buying higher power.—Burrowes, 71, Nightingale Lane, S.W.12. [7705

1922 All-chain Triumph, Model S.D., brand new; £88, list price £105; come and inspect our demonstration machine, no obligation to buy.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (½ minute from Brixton Skating Rink.) Look for the golden arrow. [8335

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

TRIUMPH Spares.—All parts, all models, in stock; second-hand or new. Goods sent per Return Service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [8238

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

TRIUMPH Specialists.—All parts in stock, end of season reductions. Write for catalogue.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton. 'Phone: Brixton 1292. (½ minute from Brixton Skating Rink.) Look for the golden arrow. [8336

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa [7361

Trump.

TRUMP-J.A.P. 2¾h.p. 1922, good condition, cost £70; accept £40; part instalments if required.—68, Riverway, Palmer's Green. [7847

Unibus.

UNIBUS 2¼h.p. Cycle, as new, bargain; accept offer nearest £30; viewed.—Lannowe, 40, High St., Rickmansworth. [7736

Wilkin

1922 Wilkin-Blackburne 4h.p., Sturmey-Archer 3-speed and clutch, Brampton Biflex forks, all-chain drive, absolutely as new, registered June; £60.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [7573

Wolf.

1922 Wolf-Villiers, 2-speed, as new; sell cheap or exchange for higher power.—19, Valnay St., Tooting. [8442

Wooler.

BARGAIN.—1921 Wooler, semi-T.T. bars, equipped, taxed; 32 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8254

Zenith.

THE Zenith Specialists.

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75 m.p.h. from a standing start inside ¼ mile on a Zenith-Bradshaw, the result of a little tuning by the Specialists.

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1920 Zenith Sports Model; bargain, £50.—9, Church Rd., Harlesden. [7886

6h.p. Sports Zenith, condition and appearance as new; £37.—44, Brandram Rd., Lee. [7619

ZENITH 6h.p., Gradua gear, new tyre and tube, perfect; £35.—203, Carlton Rd., Worksop. [7956

ZENITH Combination 1916, 4h.p. J.A.P., Bosch; £50; write appointment.—Owner, 48, Barmeston Rd., Catford. [7907

ZENITH-GRADUA, 1921 model, 6-8h.p., in first class order, including tyres, etc.; £47/10.—Attwood's Garage, Stafford. [7848

MOTOR CYCLES FOR SALE.

Zenith.

F.O.C.H. Invite Inspection. Zeniths and other makes far below any anticipated price reduction. —5, Heath St., Hampstead (near Tube). [3861

ZENITH. Sports 8-10h.p., Canoelet sidecar, lamps, horn, complete, perfect; £62.—50, Haverstock Hill, N.W.3. 'Phone: Hampstead 6609. [7953

45 Guineas.—8h.p. Sports Zenith, as new in and out, electric Lucas, new tyres, belt, mudguards; or exchanges.—Green, 54, Minit Av., Harlesden, N.W. [8012

1922 Zenith 2¾h.p. Flat Twin, fully equipped, tax paid, mileage 200, as new; £55, or exchange late combination and cash.—198, King St., Hammersmith. [8177

1922 shop-soiled 5-6h.p. countershaft Zenith, £75 to clear; 1922 shop-soiled 3½h.p. Zenith-Bradshaw, £70.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W.1. [7845

8h.p. Zenith, 1914, K.S., clutch, lamps, horn, speedometer, not run since 1916, just finished overhaul; bargain, £48.—AK Garage, Idle Rd., Bradford. 'Phone: 4415. [8008

ZENITH-BRADSHAW, 1922, August, all chain, lamps, horn, tax, speedometer, 650×65 tyres and rims, wide ratio gear box, red and black; 65 guineas. —2, Madrid Rd., Barnes. [8058

ZENITHS (any model) Converted to all-chain countershaft, with 3- or 4-speed gear box; satisfaction guaranteed.—Illustrations and particulars, Henry V. Smith, Osmondthorpe, Leeds. [8105

ZENITH-BRADSHAW April 1922, Gradua, tuned by Gruzelier, racing Acme, equipped, perfect, done 800 miles; sell or exchange lightweight or combination. —85, Wiverton Rd., Sydenham. 8221

YOUR Motor Cycle or Combination taken in part payment for a Zenith, any model; deferred payments.—Barker's Motors, 194, Balham High Road, S.W.12. 'Phone: 4441 Latchmere. [5945

ZENITH 1921 8h.p. Countershaft Combination, electric lamps, speedometer, absolutely first-class condition throughout; £85.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7422

ZENITH 8h.p. Countershaft Combination, good mechanical condition, but appearance rough; great bargain to clear; £49.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7423

SOUTHPORT.—Snips: 1922 (June) super sports 8 h.p. Zenith, countershaft, indistinguishable brand new, cost £150, gift, 85 guineas; 1922 all-chain Zenith-Bradshaw sports, extra hot, cup winner, best Lucas accessories; 72 guineas; exchanges.—Kents, 417, Lord St., Southport. [8163

Spare Parts:

ZENITH Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5078

Ladies' Motor Cycles.

DOUGLAS (Lady's Model) 2¾h.p. 2-speed, licensed, just overhauled; £37/10.—Herbert Robinson, Ltd., Green St., Cambridge. [8354

Miscellaneous.

NAYLOR and Kirk.

1922 Matchless Combination, H model, Lucas lighting, only ridden 20 miles, as new; £110; cost £195.—Below.

1920 New Imperial, 2¾h.p. J.A.P., 2-speed, kick-start, hand clutch, nearly new tyres, fully equipped; £23.—Below.

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2½h.p. Hobart-Villiers 1919, 2-speed, fast machine and has been carefully used; £25.—Below.

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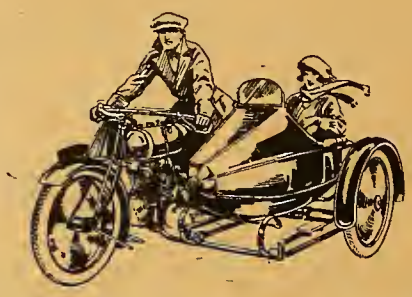

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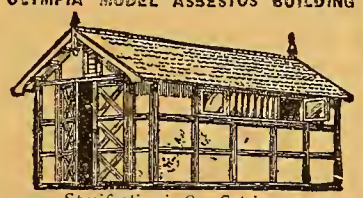

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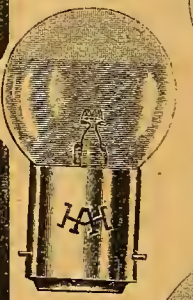

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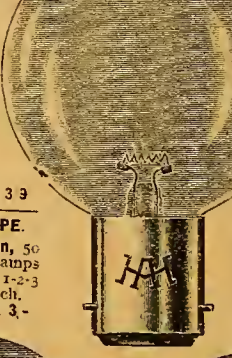

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PALMER'S Garage, Tooting.—15.9h.p. Arrol-Johnston, very late model, dynamo lighting, self starting, extra smart; £145.

PALMER'S Garage, Tooting.—30h.p. Sheffield Simplex full Landaulet, 6 cyls., 3 speeds; £95.

PALMER'S Garage, Tooting.—22h.p. Scat 10 seate waggonette, good running order; £35.

PALMER'S Garage, Tooting.—11.9h.p. Belsize torpedo 4-seater, Monobloc, excellent running order; £55

PALMER'S Garage, Tooting.—12-15h.p. Panhard Cab Landaulet, 4 cyls., Monobloc, just overhauled; £50.

PALMER'S Garage, Tooting.—20h.p. Metallurgique very smart 2-seater, dickey, dynamo lighting splendid car; £125.

PALMER'S Garage, Tooting.—10h.p. Alcyon torpedo 2-seater, dickey, 4 cyls., runs well, hood, screen £65.

PALMER'S Garage, Tooting.—16-20h.p. Argyll Limousine, 4 cyls., runs well; £47/10.

PALMER'S Garage, Tooting.—14-16h.p. Darracq Cab Landaulet, Monobloc, suitable station work; £40

PALMER'S Garage, Tooting.—15-18h.p. Maxwell light 2-seater, hood, screen; £47/10.

PALMER'S Garage, Tooting.—Any above cars supplied on easy payments. We shall be pleased to quote special terms to meet clients' requirements. All are in running order. [8325

ROVER Eight 1923 models from £180; motor cycle exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7517

SINGER 10h.p. Phaeton, starter and lighting, as new; £165.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [8034

ROVER 6h.p. 2-seater, 3-speed, excellent condition, nice appearance; £30; exchange combination.—17, Heaton Rd., Mitcham. [8123

1921 2-seater Carden, dynamo lighting, speedometer, £60; exchange motor cycle and cash.—F. Vowles, Highbridge, Somerset. [7878

BRAND New 1922 8h.p. Rover Car, run few miles, taxed, complete equipment; £145; exchanges.—24, Balliol Rd., North Kensington. [7956

CLYDE 8h.p. 2-seater Car, White-Poppe engine, dickey, thoroughly overhauled, guaranteed, accessories; photo; £65.—Beaumont, Dentist, Market Deeping. [8257

CARS FOR SALE.

1922 (July) Eric Campbell, dynamo, licensed, as new, cost £315; our price 175 guineas; exchanges or deferred.—Edwards, 101, Gt. Portland St., W.1. [8405

ROVER 8h.p., 1922, scarcely used, condition as new throughout; £160, or exchange combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [8032

1920 8-10h.p. Richardson Light Car, 4-speed and reverse, dickey seat, complete equipment; any trial; sacrifice, £65; exchanges.—24, Balliol Rd., North Keosington. [7935

WHAT offers, or exchange, or instalments for a Salmson car, positively guaranteed, faultless and perfect in every way?—Graff, Hayes, Kent. 'Phone: Bromley 532. [0951

CLYDE 10h.p. 3-seater, 4-cyl. engine, detachable traveller's sample box, overhauled, guaranteed, handy, silent, reliable car; photo; £85.—Wait and Co., Ltd., Leicester. [8258

ROVER 8h.p. Standard model, £180; 8h.p. 4-seater model, £190; 4-seater model De Luxe, £210; 2-seater De Luxe, £200.—Ratcliffe Bros., 200, Gt. Portland St., W. [0729

FORD 1920 4-seater, self-starter and lighting, detachable wheels, faultless condition; rare bargain, £89; motor cycle part payment.—88, Gloucester Place Mews, Portman Sq., W. [8423

NEW HUDSON Light Car, brand new, just delivered, Bonniksen, speedometer, taxed; cost £243; bargain, £192; or exchange.—Ward and Co., 51, Upper Richmond Rd., Putney. [8488

189 Guineas, Exchange.—Really ultra-smart 1920 Sports Singer, 2-seater lighting, starter spare wheel, lovely condition.—Seabridge, 35, Hansler Rd., East Dulwich. (Sydenham 2452.) [2400

HALIFAX.—1923 Lagonda, Calthorpe, Coventry Premier, Deemster, and Singer light cars; Rover, Morgan, or combination taken in exchange.—Halifax Motor Exchange, Horton St., Halifax. [8300

REALLY handsome Singer Coupe, dickey, handsome body, painted primrose, dynamo lighting, 5 detachable wheels; £180, cash or deferred.—Marlborough Motor House), 20-22, Finchley Rd., N.W.8. [6565

JUST Arrived.—Braud new 1923 8h.p. Rover car, with latest 4-seater body, dynamo lighting, side curtains open with door; best value to-day for £190.—Valbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [8291

HORSTMANN 8-9h.p. 2-seater, 4-cyl., water-cooled, 3-speed and reverse, perfect condition, 60 m.p.g., tyres good, tax paid; £145; or exchange for motor cycle and cash.—Spencer Bros., Weston Garage, Bath. [7724

ROVER.—Godfrey's are authorised agents for the 8h.p. model; early deliveries of 1923 models: 2-seater, £180; 4-seater, £190; exchanges; gradual payments.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

BABY PEUGEOT, 5-8h.p. single cylinder, easy starter, good order, £50; Humber front axle steering gear and springs, £5; Star radiator, £3; Morgan hub, 10/-.—Wilson, Engineer, Wednesbury Rd., Pleck, Walsall. [8133

CRUMBULL 2-seater, double dickey, 4-cyl., w.c. model, spare wheel, electric lighting, 38 m.p.g., 55 m.p.h., silent, condition new, completely equipped, taxed; 80 guineas; exchange G.N. 3-wheeler.—186, St. James Rd., Croydon. [7752

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ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W.3. [0761

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26 × 2¼	Elite, super n-skid, exhvy	28/-	—
"	Palmer, cord, heavy	30/-	47/9
"	Palmer, cord	25/-	43/4
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"	Bates, spec. hvy. wired-on	26/9	—
"	Clincher de Luxe, ex. hvy.	18/9	28/3
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"	Clincher de Luxe, ex. hvy.	23/3	34/9
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"	Ajax, Road King.....	35/-	—
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4-CYL. F.N., complete unit, Bosch magneto, carburetter, silencer; £8/10.—Derrington.

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6h.p. Twin New Hudson Engine and Magneto, perfect condition; £12.—Gill, 51, Nassington Rd., Hampstead, N.W.3. [6895

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3½h.p. Lincoln Elk Engine, cost £30; lightweight frame complete, kit tools, bargain, lot £8/10.—60, High St., King's Lynn. [7691

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GOOD Second-hand T.D.C. 2-stroke Engine, complete: £5/15. Other bargains and leading lines see Miscellaneous columns.—Hockley Motor Co., 38a, Cecil St., Newtown Row, Birmingham. [8367

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75/-.—2h.p. 2-stroke engine unit, complete with magneto, carburetter, free engine clutch.—97, Latchmere Rd., Battersea. [7764

5-6h.p. Twin Rex, A.I.V., Bosch magneto, B.B. carburetter, good running order; what offers?—Gibbs, 74, Piccotts End, Hemel Hempstead. [7805

5h.p. Twin J.A.P. engine, brand new, with magneto and carburetter; £10.—South Eastern Motor Works, Solomon's Passage, Peckham Rye. [7909

8h.p. A.C. J.A.P. engine, new, £23; 5h.p. J.A.P. twin, new, fitted in Edmund frame, almost complete. £26, offers.—26, Highbridge St., Waltham Abbey. [7638

J.A.P. 6h.p., brand new in crate, £22; B.S.A. 4¼h.p., new and unused, £13; Precision 3h.p., 2-stroke, brand new, complete with Thomson-Bennett magneto and Cox Atmos carburetter, £14; Union 2½h.p., new and complete with magneto, £9.—Marble Arch Motor Exchange, 135, Edgware Rd., London, W.2. [7571

HEPPELTHWAITE'S.—2¾h.p. J.A.P., complete unit, £9; 3½h.p. Triumph, £6/10; 3½ h.p. Precision, £4/10; 5-6h.p. N.S.U., £5; 3½h.p. Peugeot, £3/10; 3¼h.p. Kelecom, m.o.v., £4; 3½h.p. Murphy 2-stroke, £2/10; 2¾h.p. Minerva, m.o.v., £3; vertical twin Beeston Humber 3h.p., £2/10; 3½h.p. L.M.C., m.o.v., £8; Auto-Wheel complete, £6. Largest stock of J.A.P. spares in London. See old man Hep. in Spare Parts column. Stamp please.—19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [8383

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ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch XA2 magneto now, price only £5, carriage 1/6.

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A

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YOUNG, well-set-up Engineer, age 22, well versed in theory and practice, 4 years' excellent references, large firms, in desperation, is open to accept anything; expert tuner, proved good rider on famous machines; office work acceptable; frightened of nothing; final plea.—Box 4325, c/o *The Motor Cycle.* [7661

RATCLIFFE BROS.

200, GT. PORTLAND ST., W

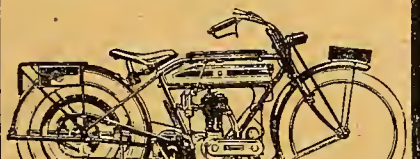
'Phone—Langham 1791.

SPECIAL OFFER OF SHOP-SOILED AND SECOND-HAND MACHINES TO BE CLEARED AT BARGAIN PRICES TO MAKE ROOM FOR 1923 MODELS.

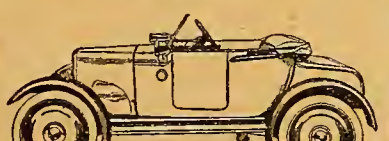
	List Price.	Special Price.
1922 **Raleigh,** 5-6 h.p.	£130 0	**£110**
1922 **Sunbeam,** 4¼ h.p.	£141 15	**£115**
1922 **B.S.A.,** model K2, 4¼ h.p...	£107 0	**£80**
1922 **B.S.A.,** model K.2, 4¼ h.p., No. 3 sidecar	£139 0	**£100**
1922 **Raleigh,** 2-speed, 2¾ h.p.....	£68 0	**£62**
1922 **Raleigh,** 3-speed, 2¾ h.p.....	£73 0	**£65**
1922 **Omega,** No. 3, 3-speed.....	£66 0	**£51**
1922 **Omega,** No. 2b, 3-speed....	£65 0	**£50**
1922 **James,** 7 h.p., model No. 10 combination	£160 0	**£136**
1922 **James,** 2¾ h.p., model No. 8..	£60 0	**£51**
1922 **Alton,** electric lighting model	£65 0	**£58**

SECOND-HAND MACHINES.

1920 **Harley,** combination, fully equipped, as new	**£95**
1920 **Triumph,** 4 h.p., combination, fully equipped	**£70**
1922 **Rudge,** I.O.M., fully equipped.....	**£55**
1922 **Norton,** model 16H., fully equipped .	**£80**
1921 **Triumph,** S.D., fully equipped.....	**£75**
1922 **Martinsyde,** and Sports sidecar, fully equipped, mileage negligible	**£105**
1922 **Douglas,** 2¾ h.p., as new, fully equipped	**£45**

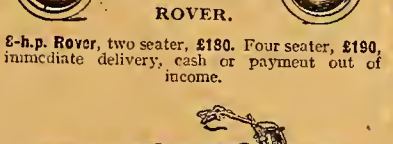


Triumph chain-drive 1922 models to clear at **£85.** Fully guaranteed.



ROVER.

8-h.p. Rover, two seater, **£180.** Four seater, **£190,** immediate delivery, cash or payment out of income.



RALEIGH.

Raleigh 1923, 2¾ h.p., all chain, **£75.** All models sold on the condition that, should the price be reduced, credit for difference will be given.

TRADE SUPPLIED

TUITION.

HOUSE and Estate Agency, Auctioneering, etc.—Train by post for this paying profession. Start a business of your own. Prospectus free.—Agricultural Correspondence College (Dept. T), Ripon. [0389

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

FOR Sale, as a Going Concern, near Manchester, Business lately carried on by Roberts and Hibbs, as makers of New Scale Motor Cycles; machinery, plant, etc.—Apply Arthur T. Eaves, Chartered Accountant, 15, Fountain St., Manchester. [7704

MOTOR Cycle Business.—Sound concern required to suit capital about £800 to £1,000; South Coast preferred; must have house attached.—Send full details in confidence to Drake and Nutter, Specific Valuers to the Motor and Cycle Trades, 19-21, Farringdon St., E.C. 'Phone: City 6025. [0954

FREEHOLD Motor Agency Premises, light cars, cycles. Splendid position London suburban main road. No serious opposition; all sales, repairs; no garage; £2,500 freehold; no goodwill. Substantial mortgage procurable. Stock optional. Unique opportunity.—Box 4268, c/o *The Motor Cycle.* [7363

GARAGES.

FOR Sale.—All steel garages for motor cycles and combinations; cheap prices.—T. C. Jones and Co., Ltd., 95, Wood Lane, London, W.12. [7856

GENERAL TRADE.

FOR Frame and Spring Fork Lugs, try Autocap, Ltd., Belvedere. List, stamp. [7741

UNDERSIGNED having started a Motor Cycle and Bicycle Manufacturing Business, invites communications from makers of parts, fittings, tools, accessories; terms cash on delivery in London; first-rate references. —Address, Kyat Tong, 640, Avenue Haig, Shanghai, China. [7666

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole address, Palmer's Garage, Tooting, London. [8329

WANTED.

WANTED, Clyno old type back cylinder and piston. —Glover, 66, Bridge St., Chester. [7685

3½-4h.p. J.A.P. or Blackburne Engine, in good condition.—18, Farm Av., S.W.16. [7779

WANTED, crank case, left-hand or whole, for Harley-Davidson.—King, Egrove, Oxford. [8193

WANTED, 4h.p. Douglas Engine and Tank.—Reliance Garage, 361, Green Lanes, N.4. [7852

WANTED, Druid forks for 3½h.p. Sunbeam.—Hubbard, 32, Belgrave Rd., Slough. [7972

LIGHTWEIGHT Sidecar complete, or chassis only; cheap.—13, School Lane, Addlestone, Surrey. [7906

WANTED, Old Motor Cycle Frames, tanks, wheels, etc.; cheap.—Tonge, Holmesfield, Sheffield. [7877

STURMEY-ARCHER 3-speed Gear Box and water-cooled Morgan, cheap.—63, Solon Rd., Brixton. [8471

WANTED, Gear Box, suit 3½h.p. Ariel; cheap; full particulars.—85, Woolwich Rd., Greenwich. [7904

MORGAN, recent, condition immaterial if cheap; Yorkshire district preferred.—Box 4400, c/o *The Motor Cycle.* [8203

P. and M. Rear Wheel, complete with drum and solo sprocket, or less rim, no rubbish.—Petty, Tailor, Haworth. [7771

LIGHTWEIGHT Machine and Auto-Wheel wanted, condition immaterial; state lowest price.—97, Latchmere Rd., Battersea. [6013

AERO Windscreens, Triplex round top, 12×6in., in large quantities.—Swallow Sidecar Co., Bloomfield Rd., Blackpool. [7989

WANTED, half crank case, timing side, for 2¾h.p. V twin Centaur; would take complete.—Maidment, Methilhill, Windygates, N.B. [7805

PREMIER and Triumph Parts, or complete machines in or out of repair.—Jack Ward, 11, Radford Rd., Leamington Spa. [8100

WANTED, for countershaft Triumph, S.A. 3-speed box, incomplete, back stand, driving side flywheel, or pair complete.—Hole, 129, Park Lane, Wallington. [6241

MOTOR Cycles, light cars, spares, and accessories, new or S.H.; prompt cash paid for above.—McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [7019

OLD Man Hep will purchase gear boxes, engines, spring forks, carburetters, magnetos, and dynamos, also other parts; please state price.—19, Wilcox Rd., South Lambeth, London, S.W.8. [4537

WANTED for 1922 8h.p. Vickers-Enfield, wheels, stands, mudguards, brakes, footboards and bars, tank with all fittings, gear and chain covers, exhaust pipes, silencer, starting handle, magneto, saddle-pillar, Terry's saddle.—Seaview House, Killough, Co. Down. [7630

EXCHANGE.

WARD and Co. for exchanges.—Below.

ROVER and A.B.C. and C.N. Light Cars at new reduced prices. £180 and £255, completely equipped, in exchange for your solo or combination and cash.—Below.

HAVE you realised how little cash may be necessary with your outfit? Deferred payments if required. Distance no object. Send full particulars of your machine, we do the rest.—Below.

WARD and Co., 51, Upper Richmond Rd., East Putney. 'Phone: Putney 2754. [6836

CLERGET Aero Engine for good motor cycle.—Write, Sands, West Parade, Lincoln. [7686

DYNAMO, 6-volt, perfect, for lightweight gear box, or offer.—110, South St., Perth. [7834

4-CYL. Delage 10h.p. 2-seater for good combination.—Sheldon, Wheatley, Oxford. [8001

EXCHANGE Ford Tourer for Combination, cash either way.—19, Valnay St., Tooting. [8445

TWO good 2¾h.p. Douglases offered for good combination.—29, Keat Sq., Gt. Yarmouth. [8085

BRITON 10h.p. 2-seater, dickey, 3-speed, for good combination.—17, Heaton Rd., Mitcham. [8123

4h.p. Sporting Douglas solo, fast, for higher power twin sports.—11, Parkstone Rd., Coventry. [7917

1921 B.S.A. 4½h.p. Combination, perfect; higher power B.S.A.—40, Avonwick Rd., Hounslow. [7903

HENDERSON Sporting Combination; exchange solo, cash.—4a, St. John's Wood Rd., London, N. [8420

EXCHANGE 3½h.p. Zenith-Jap and £5 for combination.—27, Lower Grove, Wandsworth. [8063

EXCHANGE your present machine for a new car or motor cycle at Kays, 8, Bond St., Ealing. [5076

EXCHANGE Gamage Lightweight Lathe, 3½ centres, for Scott 16.—Tower Buildings, Methil, Fifeshire. [7692

EXCHANGE Douglas 4h.p. Combination for 3½h.p. solo, speeds and £35.—75, Edridge Rd., Croydon. [8158

EXCHANGE 4h.p. Countershaft Triumph, all on, tax paid, for good Douglas.—F. Wilderspin, Chatteris. [7815

4-SEATER 12h.p. Alldays Touring Car for 2-seater, motor cycle, or Morgan.—63, Solon Rd., Brixton. [8472

PHILIPSON Pulley, 30/-; will take anything useful part exchange.—Box 4396, c/o *The Motor Cycle*. [8199

EXCHANGE 8-cyl. magneto and 4 A.B.C. crankshafts, new, for light sports sidecar.—82, Caledonian Rd., N. [7860

EXCHANGE Enfield 1919 Combination for Morgan, cash adjustment.—129, Chatham St., Reading. [7899

RUDGE-MULTI 3½h.p.; sell £32; exchange for flat twin lightweight.—Johnson, Parson Drove, Wisbech. [7712

1919 Triumph, fully equipped; exchange for 3½h.p. Douglas.—Riverdene, Petersham Rd., Richmond. [7714

8h.p. J.A.P. Combination, very fast, exchange for 2-stroke or offer.—62, Lower Kennington Lane, S.E.11. [7668

13.9h.p. Metallurgique 2-seater and dickey, detachable rims, splendid condition, any trial; exchange.

10h.p. Crouch 2-seater, detachable wheels, splendid condition, any trial; exchange combination.—Ward, South Western Garage, New Malden, Surrey. [8495

EXCHANGE 1920 5-6h.p. Brough 3-speed, clutch, K.S., for other make and little cash.—King, Egrove, Oxford. [8194

1921 3½h.p. 3-speed Norton Competition Combination; or separate. See Motor Cycles Wanted column. [7830

EXCHANGE superior Rosewood Pianoforte, splendid condition, for late Ford van.—4, Railway St., Aylesbury. [7645

EXCHANGE 7-9h.p. Indian Sports, clutch, lower power; Douglas preferred.—Jones, Stallard St., Trowbridge. [8166

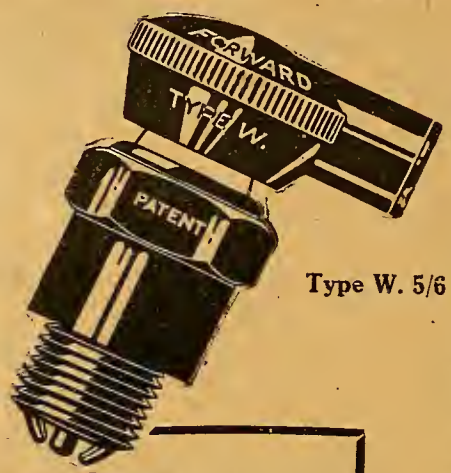
4h.p. Twin Motor Cycle, exchange single-cylinder or sell best offer.—Sales, Oakleigh Villas, New Rd., Ascot. [7997

SEE Ariel, Bradbury, Miscellaneous, Triumph, and Zenith columns.—Kents, 417, Lord St., Southport. Tel.: 1273. [8165

TRIUMPH, countershaft, excellent condition; exchange lightweight, little cash.—17, Sussex Rd., New Malden. [8019

4h.p. Sports Harley, fully equipped, for Sunbeam, Triumph; cash adjustment.—Streeter, 51, South St., Reading. [8045

EXCHANGE 4h.p. magneto Motor Cycle and coach-built sidecar, for 2-speed lightweight.—Box 4399, c/o *The Motor Cycle*. [8202



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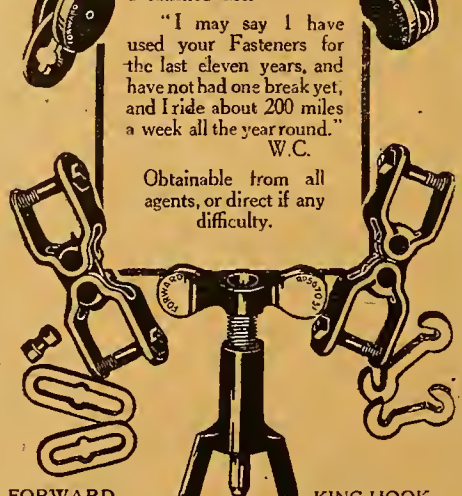
FORWARD WEATHER-PROOF PLUGS ensure perfect protection from damp, rain and mud, and should be used by all riders in winter. The cap can be instantly detached for testing the spark.

Forward Fasteners give greatest satisfaction. Read this unsolicited letter from a satisfied user—

"I may say I have used your Fasteners for the last eleven years, and have not had one break yet, and I ride about 200 miles a week all the year round." W.C.

Obtainable from all agents, or direct if any difficulty.



FORWARD. Adjustable Fastener 1/9, Leather Links - 1/6, Belt Punch- - 2/6

KING HOOK Detachable Fastener 1/6, Adjustable „ - 1/6, Leather Links- 1/-

Forward Plug Co., Summer Row, B'ham.

Preserve your Cylinder.

Withstands heat, petrol, and oil.

Tins 1/2 and 2/- post free

OWEN BROS. & Co. Ltd., HULL, England.

EXCHANGE.

WANTED, Ford Covered Van or Taxi; exchange Humber combination; sell £40.—Ball, 80, Caterill Rd., Surbiton. [7707

1920 4h.p. Douglas, in splendid condition, speedometer, Easting; exchange for P. and M. and cash.—Ostler, Witney. [8156

1922 F.N. 2¼h.p., W.S.R. jet, excellent condition for higher powered solo, suitable for sidecar.—8 Church Av., Harrogate. [7790

F.O.C.H., the exchange specialists; best price allowed; easy payments arranged.—5, Heath St., Hampstead (near Tube). [3867

1918 6h.p. Enfield Combination, fully equipped value £80, for solo and cash.—73, Victoria Rd., Stroud Green, N.4. [7836

8h.p. Sunbeam Combination, 1919, splendid condition; exchange Morgan, solo, cash, offers.—7 Cowdrey Rd., Wimbledon. [8217

EXCHANGE Wolseley Landaulet, 20h.p., Bosch magneto, Zenith carburetter. What offers.—Box 4398, c/o *The Motor Cycle*. [8207

R.M.C. 4-seater Touring Car, 6 Warland rims, good running order, exchange good 6h.p. combination.—Gore, Wickfield, Hungerford. [7695

WANTED, Henderson Combination for Clyno, steering wheel, winscreen, speedometer, lamps, etc.—10 Stockwell Park Rd., S.W.9. [8435

DARRACQ 2-seater, £28 overhaul, to clear, £45 or exchange solo or combination.—Marks, 121 Acton Lane, Chiswick, W.4. [8073

EXCHANGE 3½h.p. Douglas, new frame, 1914 engine, for 11 M.V. Cabinet Grand gramophone.—Box 4391, c/o *The Motor Cycle*. [7906

EXCHANGE 4½h.p. Harley, 2-speed, clutch, K.S. fast, equipped, £42, Lightweight, cash.—48 Hopedale Rd., Charlton, S.E.7. [7647

1920-21 4h.p. Blackburne and Sidecar, 3-speed gear box; exchange for solo and cash about £30.—Snow, Laurel St., Dalston, E.8. [8435

EXCHANGE 1919 Harley, 50 guinea sidecar, splendid outfit; £85; lower power part.—The Haven 120, Sutherland Rd., Croydon. [8172

EXCHANGE B.S.A. 1916 Combination, Easting lamps, horn, tax paid, for 10h.p. Singer or 8h.p. Rover.—F. Wilderspin, Chatteris. [7814

MORGAN, Grand Prix, hood, screen, etc., tax paid beautiful condition, for exchange.—Jeweller, 605 Garratt Lane, Earlsfield, S.W.18. [8150

1921 Coventry Victor Combination, 5-7h.p., flat twin, perfect condition, all on, for lightweight and cash.—Abbey, Watton, Norfolk. [7743

1919 Powerplus Indian Sporting Combination £80; exchange Triumph or Levis and cash.—55, Wootton Bassett Rd., Swindon. [7938

1921 B.S.A. Combination, disc wheels, chain-cum-belt all on, as new, for late Ford Van; or sell £85 o.n.o.—Wright, Grocer, Port St., Evesham. [7677

EXCHANGE 1920 8h.p. Royal Ruby Combination with cash for good 8h.p. Rover car.—Newnham Motor Co., 223, Hammersmith Rd., W.6. [7425

EXCHANGE New Hudson 2-stroke, 2-speed, perfect for about 6in. gap-bed power lathe.—Lewington Enfield Wash. 'Phone: Waltham Cross 329. [7805

WARD and Co. will exchange any of the following. See separate adverts.

MORGAN, New Hudson, Bedelia, B.S.A., Douglas Brough Superior, or anything you have.—Ward and Co., 51, Upper Richmond Rd., Putney. [8485

DOUGLAS Combination, excellent condition, special sidecar, Easting, electric lighting, discs; for 2 stroke and cash.—83, Hampark Rd., Stratford. [8117

1915 Bradbury Combination, countershaft, C. and K.S., all chain, equipped, taxed, and cash for higher power.—103, Moore Park Rd., Fulham. [8082

2½h.p. Villiers 2-stroke, perfect, equipped, taxed take 2, for lower power, or McKenzie.—Wood 2d, Vicarage Mansions, Abbotsford Av., N.15. [7865

RUDGE-MULTI 3½h.p. 1916 I.O.M. Pattern, splendid condition, for 3½h.p. or 5-6h.p. 3-speed Indian—14, Ecclesbourne Rd., Islington, N.1. [7992

HARLEY Combination, 1918, mechanically perfect, appearance as new, exchange lower power or sell.—24, St. Peter's Grove, Hammersmith. [8010

EXCHANGE Warren-Lambert 2-seater, sports body electric lighting, speedometer, for late combination; or sell.—116, Creek Rd., Deptford, S.E.8. [7722

EXCHANGE 5h.p. twin magneto motor cycle and little cash, for Triumph combination, hub gear not objected to.—Box 4397, c/o *The Motor Cycle*. [8200

EXCHANGE 1917 Grand Prix Water-cooled Morgan for motor cycle and cash, or sell £75.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [7943

TRIUMPH Combination, 1919, first registered Jan., 1921, electric, Easting, perfect; exchange with cash, Morgan.—"Bungalow," Edge Hill, Banbury. [7733

ROVER Eight, single-cyl., 3-speed, reverse, 2-seater, double dickey, perfect; £25; exchange piano, motor cycle.—120, Argyle St., St. Helens. [7898

EXCHANGE.

AMES 4¼h.p. Combination, value £50, and cash to £70, for higher power combination, 1921-22 dels only.—Smith, 35, Kensington Place, W.8. [7892

ERRY 2-seater Dickey, dynamo lighting, 5 detachable wheels, beautiful condition, for Matchless bination or similar.—67, Fernlea Rd., Balham. [8444

XCHANGE Acetylene Welding Plant and Generator, complete, for lightweight motor cycle, Royal ield preferred.—Mackay, Plains, Airdrie, Scotland. [7778

XCHANGE 1915 G.W.K., hood, lamps, etc., economical, go anywhere, for combination, Henson preferred; after 6.30.—Long, 92, Fentiman Rd., .8. [7804

922 7h.p. Bradbury Combination, fully equipped, absolutely like new, for Morgan or Coventry-ier; sell.—89, East Hill, Wandsworth. Batter- 443. [8096

RIUMPH Combination, 1920, Gloria sidecar, windscreen, lamps, mileage 2,000, equal to new, and adjustment for Morgan.—Hall, 91, St. Peter's St., Albans. [8345

ARRACQ Van, specially built by us and fitted with fish frying range by Mabbott Co.; £235; bination part considered.—Downing, 77, St. John's ., Ryde. [8176

1h.p. James Twin, 1915, 3-speed clutch, K.S., all-2 chain, excellent condition, complete; exchange Triumph or Rover; sell £42/10.—25, Cranley ens., N.10. [8214

h.p. Darracq, 2-seater, dickey, 4-cyl., gate change, low, modern, fast, powerful; exchange combation, cash either way.—Ewers, Newton Rd., Bur-on-Trent. [7611A

XCHANGE late model Studebaker 5-seater Tourg Car, in perfect condition, for motor cycle bination and cash; or sell £150.—R. Lear, Grocer, rrisealead, Staffs. [7706

1h.p. 2-speed Triumph; tax paid, lamps, for 2 B.S.A. 4¼h.p., Ariel countershaft solo, cash justment either way; sell offer.—Garner, 174, nue Rd., Acton. [7920

ATE Model Empire Touring 4-seater, fully equipped, lighting, starting, for late Harley, trie, 2-seater preferred; Cambs. district.—Box 4326, *The Motor Cycle*. [7662

XCHANGE 1921 Carden 2-seater, hood, screen, electric lamps, tyres perfect, tax paid, for solo cash.—Homac's, 243, Lower Clapton Rd., N.E. one: Dalston 2408. [8319

RIUMPH 1913, clutch, fast, recent overhaul cost £10, good tyres, belt, new Lucas, perfect ed; lightweight wanted; sell £24.—22, Grand ve, Wimbledon, S.W. [7971

ARDEN 1921 2-seater, 2-stroke, primrose and black, electric lighting, new tyres, excellent dition, for 2-stroke and cash; sell £65.—92, ford Rd., Stratford. [8078

.p. Sizaire-Naudin, new body, new tyres, electric lighting, posh little sports car; take good solo combination level exchange.—J., 389, Green Lane, illheath, Birmingham. [7643

921 8h.p. Tamplin, hood, 2 windscreens, electric lights, 2 new back tyres, discs, perfect throughout; sell £70; exchange 3½h.p. solo countershaft.—ay, Rothwell, Kettering. [7675

XCHANGE Douglas 2¾h.p., 1918, 3-speed, clutch, K.S., and Quadrant combination 4¼h.p., 1915, eed, clutch K.S., all chain, for small 2-seater.—6 Grand Parade, Harringay. [8086

XCHANGE Swift 2-seater, new Zenith carburetter, gears and magneto good condition, appearance, for ty solo or combination, or sell £75; Triumph pre-ed.—Barrell, The Cabin, Staines. [8216

XCHANGES a speciality.—Good second-hand 2- and 4-seaters at bargain prices. I also supply new bikless solos and combinations.—Seabridge, Hansler , East Dulwich. Sydenham 2452. [6942

922, August, 10h.p. A.V., 2-seater, aluminium, electric, registered mileage negligible, perfect every respect; exchange good combination; after 0.—4, Elm Gardens, Hammersmith. [8409

ALIFAX.—We are quoting very special exchange allowances against brand new (not shop-soiled) h.p. 16H and Big Four Nortons.—Write, Halifax otor Exchange, Horton St., Halifax. [8301

ENDERSON Sporting Combination, November, 1920, dynamo, just overhauled, too fast for owner, lower power combination; Sunbeam preferred.—2 St. John's Park, Upper Holloway. [7615

LIGHT Cars, latest models, awaiting exchange for any motor cycle; deferred payments; list ab pleasure.—Marlborough (Motor House), 20-22, chley Rd., N.W.8. Hampstead 7355. [6567

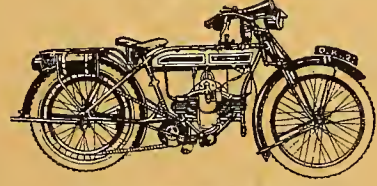
ORTON 1921 3½h.p., 16H Model, lamps, speedometer, indistinguishable from new, for e Sunbeam, appearance immaterial.—Cottingham, mble Villas, Haywards Heath, Sussex. [7916

XCHANGE for Morgan or 2-seater (suitable for lady), 1920 electric Harley De Luxe, luxuriously ipped; see under Harley, *The Motor Cycle*, October h.—41, Dassett Rd., West Norwood, S.E.27. [8107

"Beaver"y Careful—

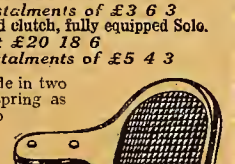
and make sure it's a Burlington—you are then assured of "Luxury Products at Economy Prices." For workmanship and finish, Burlington sidecars are unequalled. Write for our fully illustrated catalogue showing our nine different models. One of them will just meet your requirements.

2¾ h.p. 2-speed model, fully equipped.



Deposit £13 5 0
12 Monthly Instalments of £3 6 3
4 h.p. 3-speed K.-S. and clutch, fully equipped Solo.
Deposit £20 18 6
12 Monthly Instalments of £5 4 3

Sidecar Foot Rest. Made in two models, for fixing to spring as illustrated or fixing to chassis frame.
5/3
Carriage free.



P. & H. Sidecar Lamp, No. 129. Ebony, with N.P. mounts. Complete with special strong bracket. List price 27/-.
Special clearance price **18/9**
Carriage paid.

If it's a motor cycle you require—we have it. Spares—if it's for a Douglas, we have it.
TRADE SUPPLIED.

BURLINGTON
MOTOR CYCLE CO., Ltd.,
7, South Side, CLAPHAM COMMON, S.W.4.
Phone: Brixton 2417. Wires: Burlington Motors, Clapham.
Just by Clapham Common Underground Station.

EXCHANGE.

HERBERT ROBINSON, Ltd., Green St., Cambridge, will take your old motor cycle or light car in exchange for a new model; any make supplied from stock; we will give you a fair deal for cash or easy terms. [8349

2-SEATERS, Avro 1920, Bleriot Whippet 1920, Morgan G.P. 1917, Douglas 1920, several other; motor cycles taken and cash or balance can be paid by instalments.—Railton, Cobham and Co., Water St., Salford, Manchester. [8363

EXCHANGE.—We have a number of excellent light cars to exchange for really good combinations with cash adjustment either way; full list post free on request.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7426

G.N., Sequin Model, 1921, dynamo lighting, disc wheels, spare, nearly new tyres, very fast and in perfect condition, winner of numerous gold medals, 2-seater and dickey; bargain £110, or exchange.—Regina Motor Mart, 115, High St., Tooting, S.W.18. [8455

WHY Not Exchange Your Car for any make new one with the people who make a speciality of exchanges and are notable for their liberal allowances? Also any exchange treated as cash payment, balance deferred, suit yourself.—Marlborough (Motor House), 20-22, Finchley Rd., N.W.8. [8390

HORSTMAN 10h.p., purchased 1921, self-starter, dynamo lighting, 4-seater, very comfortable body with armchair seats, 5 detachable wheels and tyres, as new in every way, unscratched, smartest Horstman car in London; £150, or motor cycle combination in part exchange.—69, St. Paul's Avenue, Willesden Green, London. [7955

EXCHANGE.—We have a large number of combinations and solo motor cycles which we are willing to exchange for other models with cash adjustment either way. Good reliable outfits offered at absolute knock-out prices for cash; full list post free on request.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7427

REPAIRERS.

ANY

ARMSTRONG or Sturmey-Archer Gears Repaired promptly and efficiently.—County Engineering Co., Hounslow. [0517

BAT Repair Specialists.

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machining of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Royal Bunting Engineering Co., 5, Palace Mews, Enfield, London, N. [8109

C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from 25/-.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd. [0003

FRAME Repairs.—New tubes, forks, heads, etc. We are specialists.—Below.

CONVERSIONS to countershaft, gear boxes fitted, drop top tubes; workmanship guaranteed; immediate attention; reasonable charges.—Henry V. Smith, Osmondthorpe, Leeds. [5175

EXPERIENCE Counts; over 20 years is at your service in repairs.—Below.

FRAMES Repaired and Altered; the pioneers of cutting down to low riding position.—Below.

ENGINES Overhauled, rebushed, etc., cylinders rebored and new pistons fitted, aluminium pistons, engine sprockets, etc., made to pattern or sketch.—Below.

CONVERSIONS.—Sturmey-Archer, Jardine, or Burman gear boxes fitted to any hub or fixed gear machines. Particulars and quotations upon request. First-class workmanship guaranteed.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [3859

WHITTALL.—Pistons, cheapest, promptest; crankshafts reground, accuracy guaranteed.

WHITTALL.—Cylinders reground and new complete pistons, perfection guaranteed. Welding experts.—Whittall Machinists' Co., Whittall St., Birmingham. [0017

REPAIRS done for the Trade.—Mohawk Cycle Co., Ltd., 502, Alexandra Rd., Hornsey, N.8. [5971

ENGINES Rebushed, overhauled, rings fitted, compression guaranteed; singles 30/-, twins 40/-.—Below.

CYLINDERS Reground, fitted with new pistons, complete cast iron or aluminium; 20/- to 35/-; all work guaranteed and returned in 3 days.

TURNER BROS., Motor Engineers, Summerseat, Manchester. [8047

INDIAN Owners.—If you have trouble with your machine, send to Indian repair specialists, Dennis, 89, Brixton Rd., London. [3655

REPAIRERS.

WELDING Aluminium Crank Case, gear boxes by experts; immediate attention; reasonable prices.—Below.

WELDING Broken Cylinders, flanges, combustion experts of 11 years' experience.—Below.

CYLINDER Grinding on latest machinery, installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [3797

ARMSTRONG and Sturmey-Archer gear repairs, and replacements from stock at competitive prices.—Tavistock.

ARMSTRONG Parts.—Main axle, £1/2/6; small Sun, 3/9; large Sun, 6/9.—Tavistock.

ARMSTRONG Parts.—Clutch cups, 5/6; Planet pinions, 1/3; send for latest price list.—Tavistock.

STURMEY-ARCHER Countershaft and hub gear repairs; parts from stock; please write.—Tavistock.

GEARS.—Any type of gear boxes or gear replacements made to pattern or drawing; send gears passenger train.—Tavistock Engineering Co., Johnson St., Notting Hill Gate, London. 'Phone: Park 3447. [0917

PISTONS, any make, complete with rings and pin; £1 each; satisfaction guaranteed.—Hatherton Eng. Works, Hednesford, Staffs. [8290

MOTOR Frames made to trade, reconstructions and repairs; good workmanship guaranteed.—J. Engineering Co., Potter St., Birmingham. [7682

FRAME, Fork and Chassis Repairs; tubes and lugs replaced as new by experts; discount to trade.—Langham and Co., Fitzroy St., Leicester. [5146

WELDING, every description executed, shortest notice, aluminium specialist.—Black Lion Welding Works, 24, St. Peter's Grove, Hammersmith. [8011

WELDING.—Broken cylinders, crank cases, etc., made like new; work guaranteed; quick return.—Tonge Welding Co., Morton St., Middleton, Manchester. [6608

SPEEDOMETERS.—Repairs to all makes, Stewart and Corbin a speciality, second-hand sets supplied.—The London Speedometer Co., 78, Tamworth St., Fulham, S.W.6. [4868

ENAMELLING, Plating.—Tanks enamelled as before; handle-bars, etc., plated.—Send to Murray's Plating Works, Union St., Coventry. Platers and enamellers to the trade. [0024

WELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve seatings, welded and machined; scored bores filled in and ground to existing pistons.—Below.

CYLINDERS reground, new pistons fitted complete.—West London Welding Co., Essex Place, Chiswick. 'Phone: Chiswick 536. [0415

CYLINDER Regrinding and fitting of new pistons is our speciality. We also supply pistons, rings, gudgeons, valves, guides, bushes, etc., for any make of engine.—C.M.D.

PISTONS complete for all standard makes from 12/- to 21/-; despatched return post.—C.M.D.

CYLINDERS Reground and fitted with new pistons, rings, and gudgeons complete; 2¾h.p. Douglas, 20/- each; 2¾h.p. Enfield, 25/-; 2¾h.p. J.A.P., 32/-; 3½h.p. and 4h.p. Triumph, Rover, J.A.P., B.S.A., Sunbeam, Rudge, etc., 35/-.—C.M.D.

2-STROKES.—Levis, Villiers, Velocette, Alldays, New Hudson, etc., 35/- complete; all returned in 48 hours.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [2613

BAT Repairs.—You cannot do better than send your machine to the makers, who possess the necessary tools and jigs for alignment, thereby assuring a satisfactory job.

BAT Gear Box Parts.—We can supply all parts from stock.—BAT Motor Manufactory Co., Penge, London, S.E. [3654

TRIUMPH Cylinders Reground and fitted with genuine Triumph piston complete with rings and gudgeon; 35/6; returned in 24 hours; J.A.P., B.S.A., Rover, etc., same price.—Below.

WE Specialise on Engines, complete overhauls; any part made to pattern or drawing, accurate work only.—Harvey and Co., 47, South Lambeth Rd., S.W.8 (150 yards from Vauxhall Station). 'Phone: 3289 Brixton. [0793

STURMEY-ARCHER Hub and countershaft gears repaired and overhauled. Officially appointed by Sturmey-Archer Co. Lightning delivery.—Forfield Motors, Forfield Place, Leamington Spa. [6629

CYLINDERS Reground, accurate finish, compression guaranteed; Triumph, Rover, Premier, 35/-; 2¾h.p. Douglas, 25/-; 70 mm. bores, 30/-; rings and gudgeons complete, twins, low price.—Below.

PISTONS, all patterns, oversize specialists, low price.—Below.

PISTON Rings, oversize or step-cut, 2/-; standard, 1/6; return post; none better. Thousands of testimonials.—Patent Rings, 30, Wigan Rd., Atherton. [5136

Re-conditioning of Cylinders—

The functions of a cylinder, piston and piston rings are inseparable from each other. Inaccuracy in any one of them promptly negatives the good qualities of the others. When your engine is losing compression and efficiency, send the cylinder to us to be re-conditioned. We will re-grind it to within .001 of an inch accuracy, and send it back complete with new piston and rings.

Our work is guaranteed, and our charges will appeal to you as a keen buyer.

WILLIAMS & JAMES

Phone GLOUCESTER 608 W&J

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THE REPAIR OF HUB GEARS.

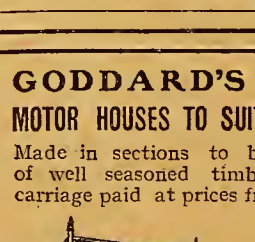
On many occasions we are asked where parts and replacements for Armstrong and Sturmey-Archer hub gears can be procured. We recently paid a visit to the works of the Cromwell Engineering Co., 327, Putney Bridge Road, London, S.W.15, and were extremely well satisfied with the way repairs are carried out to epicyclic and other types of motor cycle gears. All parts are made on the company's premises, and all repairs are skilfully executed. It is interesting to note that during the war the Cromwell Engineering Co. were doing very accurate gauge work. They have special machinery for making gear wheels and for cutting the internally toothed rings used in the two hub gears mentioned. Repairs are also executed to countershaft gear boxes.

TRY— CROMWELL ENGINEERING Co.
Works: 327, Putney Bridge Road, S.W.15.
'Phone: PUTNEY 1601
FOR SOUND GEAR REPAIRS.

GODDARD'S LTD.

MOTOR HOUSES TO SUIT EVERYBODY

Made in sections to bolt together of well seasoned timber, and sent carriage paid at prices from **£6 10s.**



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SPROCKETS AND GEARS
of every description, Single orders and quantity production.
Immediate deliveries.
Trade Enquiries Solicited.
COUNTY ENGINEERING CO. STAINES ROAD. HOUNSLOW.

REPAIRERS.

PLATING and Stove Enamelling, all colours; motor cycle parts and tanks as new; discount to trade.—Langham and Co., Fitzroy St., Leicester. [51

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts the makers' own depot, 57, Holborn Viaduct, E.C. Competent and satisfactory service assured. [08

SCORED CYLINDERS repaired in 48 hours, pri 11/- per cylinder; engines overhauled and bushed, 35/-; twins, 40/-; aluminium repairs of kinds.—Godwin's Garage, Sunbury-on-Thames. [77

HARLEY-DAVIDSON Repairs and Overhauls.—W are now able to put work in hand without dela skilled staff under careful supervision.—Harley-Davids Motor Co., Ltd., 74, Newman St., London, W.1. [00

ROC 2-speed Overhauls, Humber, Rex, V.S., A days, Humber, Triumph, and Rex engines, Coventry experts; Sturmey-Archer countershafts, spares in stock.—J. Connolly and Co., Mfg. Engineers, Lower Ford St., Coventry. [83

WELDING. Welding.—Welding done experts: cylinders, crank cases, gear box pistons, cranks, flanges, etc.; aluminium a speciali No cure no pay, and all work returned in 6 days.—Heap, 105, Bissell St., Birmingham. [00

ROOKE BROS., Motor and General Engineers, New Cross Rd., S.E.14. Tel.: New Cross 90. Cylinder grinding, complete overhauls, spare parts ma for any type of motor cycle or cars, age immateri Let us quote you; terms very moderate. [84

WELDING (Autogenous).—A successful weld m be made by a metallurgist. Cast-iron aluminium specialists. All work guaranteed. Mon back principle.—Rogers and Son, Welding Scientist 21a, Circus St., Liverpool. 'Phone: North 1516. [38

MAUDES' have now laid out all their depot wor shops for end of season repairs. Estimates giv for complete or part overhauls. Motor cycle work speciality.—100, Great Portland St., London; 10 Paris St., Exeter; Walsall Garage, Walsall; and N wich Garage, Norwich. [09

CRITERION, the cylinder-grinding specialists. W expect you know the name. 85mm., 34/ 2¾h.p. Douglas, 24/-; 2-strokes from 36/-, with pi tons complete.—Criterion Motor Works, Citeri Mews, Fairbridge Rd., Upper Holloway, London, N. 'Phone: Hornsey 1147. [61

HUB Geared machines converted to countershaft conversion sets supplied for all makes. All mak of gear boxes supplied from stock at the new reduce prices. Trade supplied. Recommended by the leadi manufacturers. Stamp please.—Sheldon Engineering C Bayley Lane, Coventry. 'Phone: 634. [46

CYLINDERS Re-ground, pistons fitted; backed wit 15 years' experience; Heald and Brown an Sharpe cylinder grinders used exclusively. We, lik our customers, are proud of every job we handl From 32/-.—Andrews Crankshaft and Cylinder C 221, Chester St., Aston, Birmingham. [47

GODFREY'S, Ltd., 208, Gt. Portland St., London W.1., specialists in motor cycle repairs of a descriptions. Completely equipped workshops at 1 Miller St., Camden Town, N.W. ('Phone: Museu 2434), which afford exceptional facilities for overhaul and repairs at moderate prices. Estimates given. [06

TRIUMPHS.—All chain drive conversions. Ac model H Triumph (with shock absorber) co verted to all-chain drive, £12/10, or parts supplied Specifications, quotations for earlier models, and phot of converted Triumph post free.—Dalby, Triumph Specialist, Baker St., Sparkhill, Birmingham. [68

NOTICE.—Cylinder grinding and piston experts Cheapness with guaranteed efficiency. We special ise in work; all makes of pistons from 8/- each cylinders ground with pistons complete from 20/-; 1 years' experience in the motor industry at your ser vice.—Kendall and Co., Engineers, Stoney Stanto Rd., Coventry. [68

CYLINDER Grinders.—We regrind cylinders and f oversize pistons. Douglas 2¾h.p., 18/9 per cylin der and piston complete; J.A.P. or any other 70mm bore, 30/- complete; Triumph or any 85mm. bore 35/- complete. All work done on Heald and Churchill machines. A first-class job and quick delivery guaran teed.—The Edwards Engineering Co., 225, Acton Lane Chiswick, W.4. 'Phone: Chiswick 1383. [09

ACETYLENE and Electric Welding.—Broken flange cracked water jackets, scored bores, cracked o worn valve seatings, aluminium casings, any broke motor parts welded and machined and returned in days; cylinder re-ground, new piston fitted; pistons valves, guides, all makes in stock; repairs to an engines or guns.—Lincoln Jeffries, Jun., Gun and Motor Makers, 120, Steelhouse, Birmingham. [96

IF Only the Best will satisfy you, then the Tennant Engineering Co., 238, Bristol St., Birmingham, alone can please you. Super-critical you may be, but their work will pass your inspection down to the last detail. No firm has more experience, no firm has keener workmen, no firm has greater or better facilities for turning out perfect work, and no firm will strive more to give you satisfaction. Cylinders rebored and fitted new pistons. Rebushing of every description. Engines completely overhauled and returned full of vigour and vim. Frames altered and repaired. Everything fully guaranteed and at competitive prices. Official repairers to A.C.U. and R.A.C. —'Phone: Mid. 1928. [00

REPAIRERS.

FORFIELD Motors, Forfield Place, Leamington Spa, for repairs and overhauls to any engine or motor cycle; special department for Premier and Triumph pairs; work carried out by mechanics late with Triumph and Premier works. [9143

WHITE and Watson, 80, Belvedere Rd., London, S.E.1, Engineers.—We have again reduced our prices for cylinder regrinding. By careful organisation we have arranged a 24-hour service. Cylinders ground and fitted with new pistons complete in 24 hours from time of receipt to dispatch. To facilitate this it is advisable to post remittance and return carriage when dispatching according to our schedule below:

3½h.p., 3½h.p., and 4h.p. Douglas cylinders re-bored ground and fitted with 2 new pistons complete, 35/- 38/- and 40/- respectively. Other flat twins from 38/- to 40/- per pair. Other cylinders at the following rates: Up to 65mm. 22/6, 70mm. 27/6, 75mm. 30/-, 85mm. 34/-, and over 37/6; 2-strokes up to 70mm., 34/6. Knowing the difficulty motorcyclists have in getting reasonable price and good complete overhauls, we are prepared to overhaul machines at the following prices: 2¾h.p. Douglas, £6; 3½h.p. Douglas, £6/10; 3½h.p. and 4h.p. singles, £7/16; 8h.p. and 6h.p. twins, £7/16; 2¾h.p. single 2-strokes, £5/10; 2¾h.p. 2-strokes, £5. This overhaul to include regrinding cylinders, fitting new pistons complete, rebushing, refacing valves, overhauling gear box, testing and tuning. Machines can be collected and delivered within a 20 miles radius of London. Bring the old 'bus to us and we will return as new. Brico rings fitted to our rebores as standard. First-class workmanship. Aluminium welding, no distortion. Replacements machined. [7867

PARTS AND ACCESSORIES.

NOTE: In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."

EDWARDS Engineering Co. for Douglas Spares; all satisfaction guaranteed or money returned; all orders despatched same day.

DOUGLAS 2¾h.p. Engine Spares. — Flywheel sprockets, 2/6; valve caps, 1/9; pistons, bare, 5/-; rings, 1/-; gudgeons, 1/-; connecting rods, big-end, 14/-; big end bearings, 1/6; small end, 1/-; valves, 2/-; valves complete with spring, collar, and cotter, 2/9; valve guides, 1/6; crank case, timing side, 5/6; flywheel half, 20/-; crankshafts, 40/-; flywheels, 5/-; cam wheels, 14/6; crank pinions, 4/6; rockers, 3/-; magneto wheels, 5/-; intermediate wheels, 5/-; tappets, 2/-; guides, 1/3; carburetter controls, 5/6; magneto controls, 4/6.—Edwards.

CYLINDERS.—Genuine new 2¾h.p. Douglas cylinders, in perfect condition, back and front, 32/6 pair.—Edwards.

DOUGLAS 2¾h.p. Gear Box Spares.—Layshafts, 13/6; mainshafts, 8/-; pulleys, 5/-; chain wheels, 5/-; screwed sleeve pinions, 8/-; plain, 6/-; sliding pinions, 9/-; pulley side, 10/-.—Edwards.

DOUGLAS 2¾h.p. Gear Boxes, complete, £5.—Edwards.

DOUGLAS 2¾h.p.—Frames, new, £5; S.H., £2/15; carriers, 10/6; rear guards, 7/6; footboards, 8/6; rear stands, 8/-; chain guards, 4/6; silencers, 12/6; exhaust pipes, 18/-.—Edwards.

DOUGLAS 2¾h.p.—Forks, complete, £2/5; fork spindles, long 1/6, short 1/-; brake blocks, 1/6; Amac carburetters, 30/-; tool bags, 6/6; spanners, 6 each.—Edwards.

DOUGLAS 4h.p. Spares.—Frames, £7; valve guides, 1/9; pistons, 9/-; rings, 1/6; gudgeons, 1/-; small end bushes, 1/6; sleeve nuts, 5/6; draw bolts, complete, 2/6; tappets, 3/6; guides, 3/6; bottom stay bolt, 1/6; top, 1/4; fork spindles, 3/-.—Edwards.

CYLINDERS.—Genuine new 4h.p. Douglas cylinders, in perfect condition, back or front, 32/6 each.—Edwards.

DOUGLAS 4h.p. Gear Boxes, complete with pulley, clutch, and kick-starter, £9.—Edwards.

DOUGLAS 2¾h.p. Cylinders Reground and fitted with oversize pistons, rings, and gudgeons, 37/6 per pair; 4h.p., 47/6 per pair; first-class work guaranteed.—Edwards.

A. and M.—Nickel-steel valves, 3/-; nickel-plated inlet valve caps, 2/9.—Edwards.

PISTONS.—Best quality, complete with rings and gudgeon pins, suitable for Triumph, any year, 14; 2¾h.p. J.A.P., 16/-; 4h.p., 6h.p., and 8h.p. J.P., 20/-; 2½h.p. and 3½h.p. Premier, 21/-; B.A., 19/-; 3h.p. Rover, 19/-; Harley-Davidson, 2; 3½h.p. and 3½h.p. Sunbeam, 24/-; 2¾h.p. Douglas, 10/6; 4h.p., 13/-; Singer, 25/-; Rudge, 29; piston rings for all makes, 1/3 each. All goods despatched per return, on approval; carriage extra.

EDWARDS Engineering Co., 225, Acton Lane, Chiswick, W.4. 'Phone: Chiswick 1383. [0928

J.A.P. Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5080

EMANUEL'S
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All Goods sent on 7 Days Approval.

CLEARANCE AND NEW GOODS.

24×2	**Hutchinson,** Rubber Studded	18/9
	Palmer Cord	12/6
24×2½	**Clincher de Luxe,** Extra Heavy...	22/3
26×2	**Hutchinson,** Rubber Studded	20/-
	Continental, Basket Pattern	20/-
26×2¼	**Dunlop,** Heavy	22/6
	Wood-Milne, Rub. and Steel Stud.	22/6
	Rom, Rubber and Steel Studded .	22/6
	Avon, Rubber and Steel Studded .	22/6
	Macintosh, Chain Tread	20/-
	Bates, Special Heavy	23/9
26×2½	**Dunlop** Retread	19/6
	Dunlop Heavy	25/-
	Dunlop Extra Heavy	30/-
	Hutchinson Rubber Studded T.T..	25/-
	Hutchinson Three-Ribbed	25/-
	Palmer Cord Heavy.....	27/6
26×2¾	**Wood-Milne** Key Grip	16/6
	Hutchinson Three-Ribbed	25/-
	Hutchinson T.T.....	25/-
	Rom Rubber and Steel Studded .	30/-
	Clincher de Luxe	25/-
	Dunlop Heavy	30/-
26×2¼ to fit 2¾ Rims.	**Continental** 4-Ply Rubber Stud. ..	30/-
	Balgrade Cord	25/-
	Hutchinson Rubber Studded	25/-
	Clincher de Luxe, Extra Heavy, Rubber Non-Skid	34/9
28×3 for English or American rims.	**Macintosh,** Chain Tread	27/6
	Firestone Rubber Non-Skid	35/-
	Goodyear, Diamond Tread	37/6
	Bates Special Heavy	40/-
	John Bull Special Heavy	40/-
	Dunlop Magnums, Extra Heavy (guaranteed new)	45/-
29×3½ to fit 28×3 rim.	**Bates** Rubber Non-Skid (clearance)	45/-
700×80	**Dunlop Magnum**	43/3
	Emanuel's Anti-Skid	32/6
650×65	**Hutchinson** Small Car	30/-
	Palmer Cord	30/-

New Tubes, all sizes, **6/-**; Clearance, **5/-** each. Prepared patches, **1/3** a dozen.
Royal Naval Air Service Gauntlet Gloves, with one finger lined separate. Lined with wool, **7/6** a pair. Motor Cycle Files, Sheffield steel, assorted sets. The ideal for Motor Cycle Kits, **3/9** per box of 12. Carriage Tyres, **1/-** extra. Gloves, etc., **9d.** a pair.

H. EMANUEL & Co.

37a, Balls Pond Road, Dalston, London, N.1.
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We make a speciality of *prompt* and *efficient* **REPAIRS,** and **GUARANTEE** that when a Gear leaves our works it is in perfect order.

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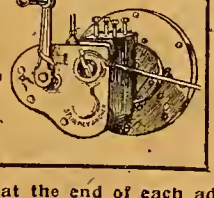


County Engineering Co.,
Staines Road, HOUNSLOW.
Railway: L. & S. W.
Wires: "Threespeed, Hounslow."
'Phone: Hounslow 322.

PARTS AND ACCESSORIES.

AMAUDE'S.—P. and M. second-hand spare parts, all sent on approval.

P. and M. Crank Case with flywheels, connecting rod, timing case, studs; 97/-.

P. and M. Crank Case with timing wheel studs, 55/-; hall crank case, timing side, 27/-; cylinders, 48/-.

P. and M. Pistons, 9/-; timing cases, 15/-; magneto chain cases cover, 3/-; back, 1/-.

P. and M. Exhaust valve lifters, 2/-; exhaust cam and gear bushes; 2/6.

P. and M. Inlet Tappet Lever, 5/-; timing wheel studs, 2/-; exhaust valve tappets, 2/-.

P. and M. Inlet Valve Tappets, 1/9; connecting rods, less bushes, 7/-; valve springs, 6d.

P. and M. Crank Case Base Plates, 1/9; engine rod, 1/-; bottom engine lugs, 3/6.

P. and M. Top Engine Lugs, 3/-; silencer outer case, 1/6; silencer end plates, 2/6; exhaust pipe clips, 3/-.

P. and M. Engine Sprockets, 4/6; wide distance washers, 1/6; low gear distance washers, 6d.

P. and M. Locking Adjuster Rings, 6d.; gear complete, less operating box lock nuts, 117/-.

P. and M. Bronze Segments; 17/6 per set.—Below.

MAUDES' offer of clearance and ex W.D. goods, post paid, all sent on approval against cash; Maudes' aluminium fishtails, 9/-; Angus silencers, 21/-; gas head lamp set, front glass 4in., worth 35/-, our price 25/-; Apollo box spanners, complete set, 2/9; dumbbell pattern spanners, 2/-; cycle tyre oil-cans, 6d.; engineer's type, 1/9; screwdrivers, 4in. 1/-, 6in. 1/9; tyre levers, 3d. each; 9in. W.D. torches, complete, less battery, 2/-; flag sticks for handle-bars, 6d.

MAUDES' Cycle Pumps, 15in., 1/- each; 2¾h.p. Douglas front brakes, complete, 13/6; also for P. and M., 24/6; Sturmey foot control clutch pedals, 2/6; Triplex pattern goggles, plain or tinted, 9/6; rubber type, with Triplex glass, 5/-; Patchquick repair outfits, 3/6; 18in. Stonehouse pumps, 4/6; tool rolls only, 1/6; Lodge Aero plugs, 3/6; Renolds chain for 2¾h.p. Douglas up to 1920, 7/6; Coventry chain for P. and M. low gear, 10/6, high 10/-, driving 20/-, set 38/-.

MAUDES' Leather Gloves, 4/6; gauntlets, 10/6; spare petrol cans for attachment to carrier, 10/-; Cowey non-trip speedometers, 80/-; overcoats, blanket cloth, belt at back, 20/-; Bosch ZEV, 50° or 45°, 140/-.—Maudes' Motor Mart, 100, Gt. Portland St., W.1. [8381

PRIDE and Clarke for new W.D. Douglas Spares.—Below.

DOUGLAS 2¾h.p. Engine Spares.—Cylinders, 30/-; crankshafts, 37/6; races, 8/6 and 7/6; pistons, 6/6, complete 9/-; gudgeons, rings, small end bushes, oil glasses, 1/- each; connecting rods, 12/6; big-end bushes, 1/6; valves, 2/-; valves complete, 2/9; valve springs, 4d.; valve guides, 1/6.—Below.

DOUGLAS 2¾h.p. flywheels, 20/-; sprockets, 2/6; tappets, 2/-; guides, 1/-; timing wheels, 4/6; cam wheels, 12/6; studs, 1/6; timing frames, 2/-; rockers, 2/6; silencers, 10/6; magneto controls, 5/6.—Below.

DOUGLAS 2¾h.p. Gear Box Spares.—Layshafts, 12/6; mainshafts, 7/-; plain sleeves, 5/-; screwed sleeves, 6/-; sliding dogs, 5/-; pulleys, 4/6; adjustable pulleys, 12/6; Coventry chains, 6/-; Renolds chains for 4h.p. Douglas, 8/6.—Below.

DOUGLAS 2¾h.p. Frame Spares.—Frames, £3/10; forks, 17/6; springs, 2/-; links, 1/-; spindles, short, 1/-, long, 1/3; steering columns, 8/-; head clips, 6/-; chain guards, 4/-; rear stands, 8/-; front stands, 2/6.—Below.

DOUGLAS 2¾h.p. front brakes, 10/6; brake blocks, 10d.; mudguards, front, 7/6, rear with transfer and stand clip, 7/6; carriers, 11/6; wheel spindles, 2/6; hubs complete, 7/6; belts, Clincher and Pedley, 6ft. 6in., 5/6.—Below.

27/6.—Amac Carburetters, new, complete with controls and cable for 2¾h.p. and 4h.p. Douglas; jets, 3d.; floats, 1/-; needles, 1/-; throttle slides, 5/-; control complete with wires, 6/-.—Below.

LAMP Brackets, unnsed, genuine P. and H., handle-bar fittings for lamp and generator, 6/- pair; Mangin mirrors for P. and H.127, and Miller lamps, 5/- each.—Below.

25/6.—P. and H. lamp set No. 125, 4½in. glass, complete with brackets and latest 1922 generator, ebony finish.—Below.

27/6.—Largest size P. and H. lamp set, No. 127, complete with brackets and latest 1922 generator, ebony finish; large quantity of other ex-W.D. lamps at bargain prices.—Below.

CARRIAGE Extra. All spares despatched per return on our approval system. Stamp for reply or list of spares.—Below.

PRIDE and Clarke, 156, Stockwell Rd., Brixton, S.W.9. 'Phone: Brixton 898 (garage entrance, Garden Row). [8026

NEW Grade K.S. gear, never fitted, 70/-.—87, Lordsmell St., Chesterfield. [8046

PARTS AND ACCESSORIES.

A

CLYNO Spares.

MARBLE Arch Motor Exchange.

CLYNO.—5-6h.p. and 8h.p. spare parts; enormous stock; undoubtedly we hold the largest stock of these spares, all brand new at the lowest prices.

CLYNO.—Another huge purchase; we have just secured another £3,000 worth of these spares, which enables us to offer them at a ridiculous figure.

CLYNO.—Never make a purchase till you get our price, then we are sure of your custom.—Below.

CLYNO.—All goods by post despatched same day as ordered.—Below.

CLYNO.—All parts sent by us are new and undamaged, and sent on approval against cash.—Below.

CLYNO.—We have now practically every part in stock.—Below.

CLYNO.—Wheels, complete, 30/- each; hubs, 15/-; hub shell, 3/-; cups, 9d. each; cones, 1/9 each; hollow spindles, 2/9 each; spindle nuts, 1/2 each; Hoffman's 5-16 balls, 4d. doz.; felt washers, 2d. each; spindles, front or sidecar, 1/- each; rear, 1/9 each.—Below.

CLYNO.—Cylinders, 50/-; valve guides, 2/-; valves, 3/-; valve cap inlet, 1/10; exhaust, 1/6; pistons, 12/-; rings, 10d.; gudgeon pin, 1/10; bush, 1/4; hollow crank pin, 3/-; inside washer for crank pin, 3d.; outside, 3d.; rollers, 1½d. each; exhaust nuts, 1/-; exhaust tappet, 2/3; inlet, 1/6; cap for tappet, 6d.; tappet guides, 2/-.—Below.

CLYNO.—Clutch centres, 12/-; clutch plates, bronze 10d., steel 4d.; small cone nut 1/10, large 2/4; screwed centre sleeve, 2/4; outer clutch dome, 8/6; push rod, 1/3; thrust block, 9d.; striking fork, 6/6; starter pinion, 18-tooth, 2/6; ratchet sleeve, 2/-; pinion sleeve, 1/-; kick-start spring, 6d.—Below.

CLYNO.—Tool and spare part boxes, 15in. long, 9½in. wide, by 5½in. deep, fitted with 3 trays; these are really fine boxes; no Clyno rider should be without one at this price, 7/6.—Below.

CLYNO.—Metal tool boxes, to fit on top tube; special offer to clear; 4/- each; suit any machine.—Below.

CLYNO.—Brampton or Coventry Chain, ¾×5-16, 5ft.; 12/6.—Below.

CLYNO.—A postcard will bring you a quotation by return for any Clyno part you require.—Below.

CLYNO.—Tyres; brand new Stepney rib stud, 26×2½, to fit 650×65, for Clynos; 22/- each.

BRAMPTON heavyweight spring forks, 8in. or 10in. stem, for 1in. bars, brand new ex-W.D.; 45/-; Druid, 35/-.—Below.

DOUGLAS 4b.p. Spares, all brand new, genuine.—Below.

PISTONS, oversize, 5/-; piston rings, 7d.; valves, 1/9; tappets, 1/9; tappet guides, 1/9; small-end bushes, 10d.; big-end bushes, 1/3; gear change quadrants, 2/6; rear hubs, complete, 8/-; spindles, 1/9; cups, 7d.; rear brakes, complete, 10/-; rear stands, 6/-; tanks, complete with sight-feed lubricator, etc., 1915 type, new, 35/-; carburetter control wires, complete, 3/- pair; only parts as above in stock.—Below.

WILLIAMSON and Douglas 8h.p. Engine Spares; enormous stock of engine parts from 50 per cent. to 75 per cent. under list price, all brand new and genuine; let us know your requirements.—Below.

J.A.P. Spares.—Brand new crank cases, 35/-; double cam gear wheels, 7/6; crank pins, timing side shafts, 3/- each; main shaft timing pinions, 1/9; piston rings, 9d. each; gudgeon pin bushes, 1/6 each; all above brand new.—Below.

P. and M. cylinders, brand new, 1909 to 1913; 40/- each.—Below.

NEW IMPERIAL 8h.p. spindles, complete with cones, nuts and dust caps, 7/6 pair; also suitable for 8h.p. Royal Ruby.—Below.

CHAIN, ⅜×¼ Coventry, 2lt. 7in. lengths, 8/6; 22½in. lengths ½×⅛ Coventry magneto chain, 1/6 each; all above brand new.—Below.

RENOLDS chain rivet extractors, 2/6 each; listed 5/6; very useful tool.—Below.

LEATHER helmets, soft tan leather, lined chamois; special offer to clear, 4/- each.—Below.

SIDECAR C springs (Terry), 4-leaf, bushed; 17/6 pair.—Below.

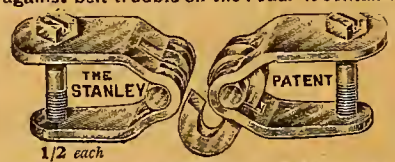
ELECTRIC soldering irons, brand new, by G.E.C., 200-220 volt, listed 50/-; our price 12/-; a bargain.—Below.

(This advertisement continued in third column.)

STANLEY BELTS AND FASTENERS.

MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

A BOX OF STANLEY SPARES is a complete belt equipment outfit—the best and cheapest insurance you can effect against belt trouble on the road. It contains



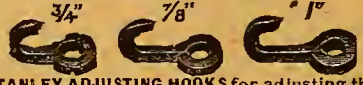
1/2 *each*

The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins

1/1

The STANLEY SPARE LINK which is the best belt length adjuster yet invented. Saves time, trouble & money. Saves the cost of a new belt

The STANLEY SHIELD which protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. 9d.



STANLEY ADJUSTING HOOKS for adjusting the length of your belt in one second. Set of 3, 6d.

"Never be without a box of Stanley Spares."

Price 3/6 post free. Send size of belt when ordering.

The LION FASTENER, guaranteed for 6,000 miles—11d.

Our goods are World-renowned for their Reliability. A STANLEY FASTENER free with each belt.

BeltPunches 1/6	
Adjustable Punches 2/- Per ft.	
⅝"	1/2
¾"	1/5
⅞"	1/6
1"	2/-
1⅛"	2/9

Stanley Motor Belts & Fasteners
BRITISH THROUGHOUT
(STANLEY WEBB, inventor of the original Hook Belt Fastener and other Practical Belt Aids.)
32, London Road.
BROMLEY, KENT. 'Phone, Bromley 846.

I SELL BEAUTIFUL LEATHER

in 20 different colours, only 11d. per sq. ft. SALE PRICE.

You can cover your own Chairs, or make your own Gloves, Cushions, Dorothy Bags and Stylish Hats in any colour.

Send 2d. stamp for full set of lovely patterns. I give away quite FREE to purchasers of leather, paper patterns and instructions, showing how to make Hats, Bags, Cushions and Gloves.

A. E. CATT, Leather Merchant, NORTHAMPTON

PARTS AND ACCESSORIES.

SPROCKETS.—J.A.P. 6h.p. or 8h.p., ⅝×⅜, 16-to 3/6, 14-tooth 2/6; 12-tooth magneto sprock 1/6 each.—Below.

ACETYLENE headlamp sets, black or nickel, c prising 5in. lamp, generator, H.B. brackets tubing; 16/-; usual price 30/.—Below.

MUDGUARDS, front, 4in., beavily valanced complete with stays for 26in. wheels, spe clearance offer; 5/- each; worth treble.—Below.

AUTOKRAT mechanical horns, handle-bar or tube fitting, 400 to be cleared at 9/6 ea usual price, 27/6.—Below.

KLAXONS, genuine M.C., top tube fitting; 1 each.—Below.

WE have a few motor cycle dynamo lighting se these are really magnificent outfits, and w manufactured to retail at 16 guineas; we have few sets left; our price £7/10; come and see o or write for particulars; all brand new.—Below.

ELECTRIC headlamps, 7in., complete with H brackets and box to take accumulator, a bargain; 35/-; these are honestly worth £3/1 Below.

WELL-MADE metal accumulator boxes, 6in. d by 5½in. by 3½in., with hinged lid and bra lugs; 2/- each; ordinary retail price, 10/6.—Bel

CYCLE Car wheels, brand new; 24×2¼, with 2 car hub, as fitted to the Grahame-Wh cycle car, 10/- each; usual price 30/-.—Below.

STEEL Tubing, 1⅛×14 gauge, finest quality M.C. work; 7d. per ft.; any length ca Below.

TYRE Gaiters, 26×2½, useful spare; 1/- ea usual price 2/6.—Below.

TUBES, 28×3, made by Dunlop, 6/6; 26×2½, fit 2¼ rim, 5/9 each; 28×3 St. Helens, h ended, 5/-; all above brand new and in perfect c dition.—Below.

BELTS.—200 brand new surplus belts, ⅜in. 6ft. 6in., made by Palmer; 5/9 each; c dition guaranteed; postage 9d.—Below.

BELT Punches, King Dick (genuine), 1in., bra new; our price 1/9; listed 3/6.—Below.

WATTALITE Sets.—Owners of these sets sho not miss this opportunity to secure a sp driving cable complete at 17/6; only a few l don't wait till the one in use breaks; it will be late then.—Below.

C.A.V. contact-breakers, brand new, anti-cl 11/-; brush holders, 1/9 each; brushes, each.—Below.

BOWDEN Controls.—Brand new plated single-l (heavy type) magneto control, complete w inner and outer cable, 5/-; double throttle con levers (black), 5/- pair.—Below.

BEST and Lloyd sight-feed lubricators, pumps, brand new; 6/- each.—Below.

ACETYLENE burners, standard motor cycle taper thread, 10-litre; 4d. each, 2/6 doz.—Belo

PLUGS.—K.L.G. R.1, 2/9; Apollo No. 1, 2/9; t plugs are the goods, not aircraft surplus, wh are, for motor cycles, useless.—Below.

PLEASE note, carriage on all above goods ex —Below.

ALL goods sent on approval against cash; cheq and P.O.'s should be made payable to Ma Arch Motor Exchange, 135, Edgware Rd., Lond W.2. 'Phone: Padd. 789. 'Grams: Archmo Padd., London. Hours of business 9 a.m. to 7 p. Saturdays 4 p.m. [7

INDIAN.—Spare Parts, 1909-22.

INDIAN.—Save money by fitting perfect second-h parts; approval against cash; quotations by turn.

INDIAN.—Right-hand kick-start sets for 1913 to 1 models, £4. Send your gear box to us and we fit and return for £4/10; carriage free. Satisfac guaranteed.

INDIAN.—Frames, £5; crank cases, £5; rear wh 50/-; front, 30/-; magnetos, 30/-; saddles, 1 touring bars, 35/-; all other parts in stock.—Langfo 37, Oricklewood Broadway, N.W.2. [7

MUDGUARDS! Mudguards! Mudguards!

TRIUMPH, extra wide front 22/6, rear 14/6; 4 Douglas guards, 27/6 pair; 2¾h.p. Dou guards, 11/- pair; sidecar guards from 9/-; all brand new, complete with stays; write for catalogu Robini Manfc. Co., 1 and 3, Tulse Hill, Brix S.W. [7

PILLION Seats! Pillion Seats! Pillion Seats!

BEAUTIFULLY finished, well sprung, etc.; 14/ Robini Manfc. Co., 1 and 3, Tulse Hill, Brix S.W.2. 'Phone: Brixton 1585. [7

SPRING Fork, first-class make, brand new, 4 3/41, Fisher St., Birmingham. [7

BROOKS B170 saddle, 15/-; B.S.A. carburet 15/-.—Rock Mill, Leamington. [7

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (6 lines).
BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.
MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

Spare Parts.

THERE is scarcely a week that we do not receive complaints from motor cyclists regarding the cost of replacement parts. Without doubt the majority of riders consider that the prices of spares are, and always have been, too high, and they express their disapproval of the present policy of the manufacturers in maintaining the prices of parts while reducing those of complete motor cycles.

Among car manufacturers it has become the rule to reduce all the prices of products of their factories (parts and complete machines) simultaneously.

The spare part problem has been with us ever since motor cycles have been produced, and since overseas goodwill depends so much upon it we are constrained to wonder why greater appreciation of its importance has not been shown by British manufacturers. The question of spare parts service abroad is one which calls for immediate and serious action in order to encourage the return of overseas sales which are so necessary for the future prosperity of the industry.

Pillion Riding.

WHILE we have never wholeheartedly agreed with the practice of pillion riding on solo machines, we cannot understand why the daily press should be so obviously biased concerning its dangers. We mention the daily press first because undoubtedly it has helped to shape the unreasonable prejudice displayed on the part of certain sections of the public.

Whenever there is an accident and a pillion passenger is involved, the practice is blamed; this was particularly noticeable at a recent inquest, where the Coroner made statements which had no foundation whatsoever in fact.

This outcry against a popular form of motor cycling is absurd, but nevertheless it must tend to cause harm to the motor cycle industry generally. It is a matter which the British Motor Cycle Manufacturers' Union should investigate, and while we do not suggest propaganda to make pillion riding more popular, there should be ways and means to remove the ignorance and prejudice of newspaper headline writers and those gentlemen whose duty at an inquest is to consider facts and not to comment on matters quite irrelevant to the case concerned.

It does not seem to be sufficiently well known that the Ministry of Transport has investigated the so-called dangers of pillion riding, and in a report issued this year implied that there was insufficient evidence to show that pillion riding was dangerous.

Unappreciated Club Officials.

THE club secretary is seldom valued at his true worth. Usually he is an unselfish enthusiast who toils long and hard in the interests of others. Virtue may be its own reward, and undoubtedly he gains much pleasure from the pleasure of others; but whether he desires it or not, he deserves greater recognition. He seldom gets it; indeed, too often his very existence is only recalled to revile him.

Often it is mere thoughtlessness. Motor cyclists in general and club men in particular rightly pride themselves on being good sportsmen. Let them retain this trait in their relations with their club officials as well as with their fellow members. Let them remember that in nine cases out of ten the secretary would infinitely prefer to be a competitor, but he recognises that somebody must take up the organising duties and being very keen he accepts the task himself.

An index to the advertisements in this issue will be found on the page facing the back cover.

The Three-speed Scott.

WHISPER it not in Coventry or Wolverhampton, but not the least of my Olympia anxieties is a haunting doubt whether the Scott people are really going to standardise their three-speed gear for 1923 or not. Admittedly, the Scott can fulfil all ordinary needs on a two-speed gear, as its competition record demonstrates. But the sports fraternity in general, not excluding, one hopes, us people of the pen, are set fearsome tasks by trials organisers nowadays. When Park Rash has to be climbed on a wet day one knows that over 90% of the travellers will be using bottom gears approaching 20 to 1; and it requires much audacity to join them on a bottom gear of 8 or thereabouts, and eke much skill to clamber up the shale precipices on such a ratio. Permanently lower gears imply some sacrifice of speed on those rare occasions when we get a real flutter over level tar. Changing gears once or twice a week is a nuisance. So I hope the three-speed Scott is really coming out at last; and if it does, the popular Yorkshire make should enjoy a record season in 1923. Many ardent Scott enthusiasts who are advancing in years will welcome a "go slow" bottom gear.

Thick Coats for Cold Weather.

SEVERAL riders wrote to me at the approach of the cold weather in quest of a rig which should be both rain and cold proof, like a good Sidcot suit. I have made enquiries amongst the firms who cater specifically for motor cyclists, and most of them take the very sensible line that the market for really heavy coats is too limited, since the ordinary rider prefers to utilise leather vests and the like to retain heat, adding a lightish jacket to keep out rain. The heaviest waterproof reefer I have yet encountered scales 6 lb., and is made by Irvine Smith, of Bradford, several other coats with lighter linings coming within a pound or so of it. I agree with the sporting tailors. One can get all the warmth that is possible from leather underwear and the like. Waterproofing should be added in the form of overalls; and the only difference which I make in overalls for June and overalls for December is that my summer rainproof jacket weighs 3½ lb. and my winter reefer 6 lb. This difference is not in itself enough to cope with the contrast in the two temperatures, but the heavier coat is more fully rainproof, and will serve—without other extra garments—for a brief run in winter, when I go out to dinner, or cards, or a club evening.

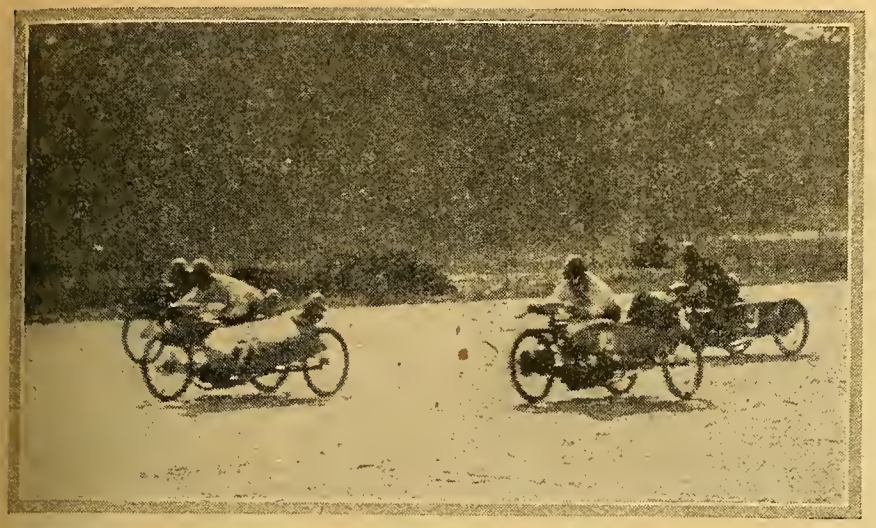
"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Waterproof Gloves.

A BRITISH glove-making firm has asked for the loan of the worn-out imported waterproof gloves which I described on October 19th as the best article of the kind ever provided for motor cycle purposes. I have sent half the pair to the applicant. The other half is still at the service of any glove-making firm with the brains and capital to open up an empty and hungry market.

Disappointing Sports Models.

ONE or two complaints reach me every season from disgruntled owners of sports models, who have failed to secure the expected 60 or 70 m.p.h. Pity me. What can I do when a man writes and states that he has made every possible experiment and adjustment, but still only gets a beggarly 50 m.p.h.? Where the machine is the product of a reputable firm the proper course is to take the matter up with the factory concerned. I have never known this simple course to fail, as firms with a reputation for speed are very sensitive about their name in that respect. On the other hand, it is only fair to warn users that when excessive speeds are guaranteed from rather small engines, only a very clever owner will be able to maintain the speed. At the Brooklands



SIDECARS BATTLING FOR POSITION. In the Brooklands Championships. From left to right: P. S. Kennedy (496 Zenith-Bradshaw), L. F. Peaty (498 Hawker), T. Simister (490 Norton), and V. Horsman (490 Norton).

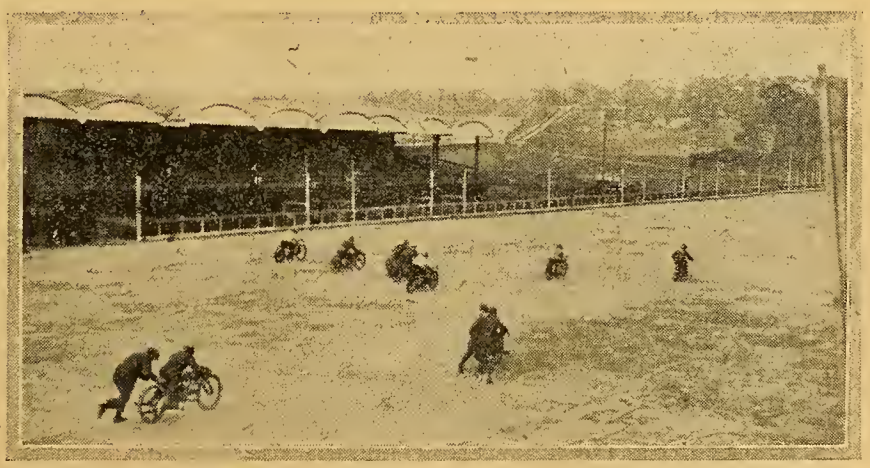
championships the other week ten started in the 750 c.c. event, and only two finished. The reason was that several of the entrants had already pushed the same machines hard in the 500 c.c. event. So the man who buys a 350 c.c. to do 70 m.p.h. must be content if he can get his 70 m.p.h. for the first week. Whether he can still get it in the second week, or, indeed, whether he will have much engine left at the end of three months depends entirely upon himself. If a 500 c.c. sports model will touch a mile a minute at any time through the season in the hands of a tolerably clever owner, he has had what one might fairly call an honest deal; such a speed is more than any smaller engine can reasonably be expected to produce on demand without semi-professional maintenance.

The Ultra-Lightweight.

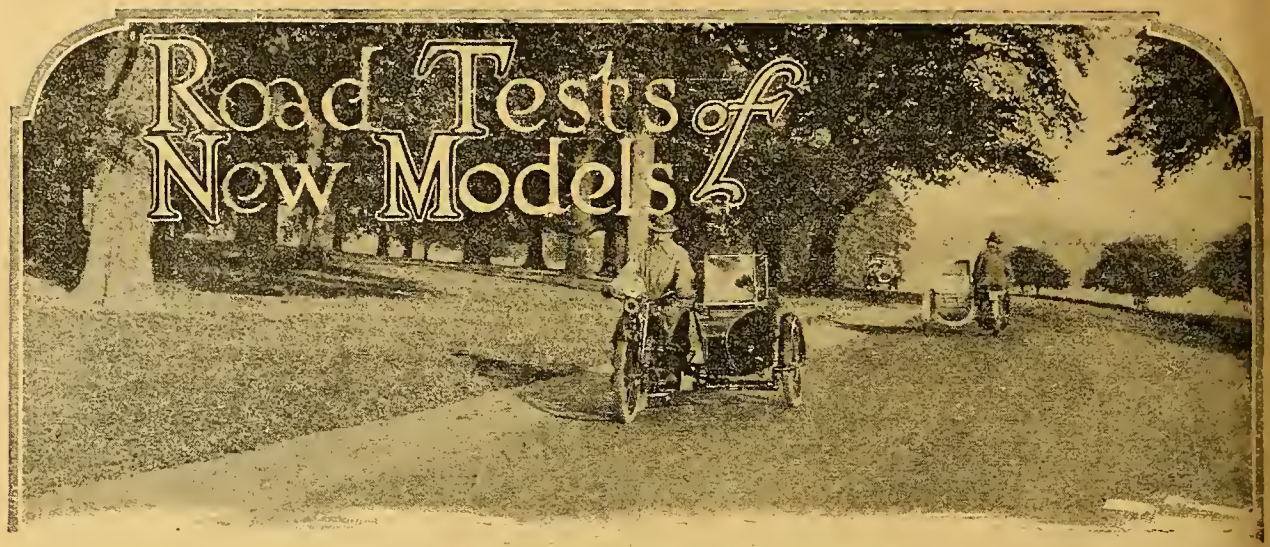
LIKE many other people, I am watching with intense interest the sudden revival of the ultra-lightweight motor bicycle. There are tendencies to strangle it at birth in some quarters, but the grounds are not logical. Quite obviously it does not fulfil all needs, and in its present versions it will not satisfy Elderly Auntie, who cannot afford a car, is too pursy to pedal a tricycle, and lives several miles from the shops and her afternoon tea circle. Auntie cannot mend punctures or shorten a belt, and her roads are hilly. But the single-geared lightweight with tyres which must be repaired there and then if a puncture occurs is not to be ruled off the road because it won't suit Auntie any better than a scooter did. In the early morning and towards 5 p.m. thousands of miles of British road are covered by impecunious cyclists, who loathe pedalling, and some of them have quite a few pounds in the bank. These men are quite capable of looking after a belt, or even an engine; 2in. tyres would not puncture too often under a gross load of perhaps 120 lb. per wheel. The objections to pedalling would not extend to a few turns up occasional hills. Then this country contains a vast horde of canvassers, who daily pedal over long rounds taking orders for fish and meat and groceries and insurance and what not. I believe there may be a really excellent market for a 100 lb. ultra-lightweight on two conditions. First, it must be genuinely cheap. Second, its quality in materials and workmanship must be just about as high as that of the most posh £100 machine. Those two factors being conceded, roadside stops with non-essentials and a deficiency from our normal standard of climbing power might prove comparatively unimportant. Auntie must wait for something much more elaborate, *e.g.*, a cheaper edition of the Harper.

Real Sports.

HEIGHO! If I could be twenty again and A1, I would dodge the Geddes axe somehow, and worm my way into H.M. Navy. I have met many full-blooded motor cycling enthusiasts, but I award the palm to those young officers who pay a callous Government tax for the full year, and get their legs over the saddle about once in a twelvemonth. Such a merry youth takes me gently to task for using the 16in. turret as the apotheosis of noise. Apparently it is where the Admiral resorts for a nap during gun practice, it being impossible to tell when the gun has fired but for its stealthy motion aft on the recoil. His brother officers run a small road club, which organises trips when in port at a speed with which I shall not sully this page. The writer's four-valve Triumph is the despair of the mess, but two A.B.C.'s and a 1921 Sunbeam do their best to keep up.



ACCELERATION. Well away at the start means quite a useful gain, even in a five-lap race. Start of the 500 c.c. event at the last Brooklands meeting.



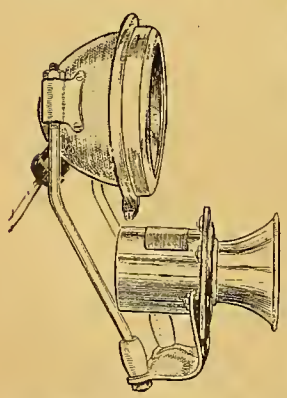
The 989 c.c. Harley-Davidson Sidecar.

SPECIFICATION.

ENGINE: 84·1 × 88·9 (989 c.c.).	*CARBURETTER: Schebler.*	*GEAR BOX: Three-speed.*
IGNITION: Remy dynamo lighting and ignition.	*TRANSMISSION: Chain.*	*PRICE: £147 10s. Solo. £175 with Sidecar.*
	WEIGHT: 330 lb.	

ONE of the things the novice cannot understand is the joy of the sense of power. He reads that a 350 c.c. machine will take a sidecar at 20 m.p.h. anywhere within reason; he thinks that as he will never exceed the legal limit he will have all the power he needs.

Power gives the greatest zest to riding, but only if it is used discreetly. In driving the 989 c.c. Harley-Davidson sidecar there is power and to spare; it is not often needed all at once, but it is there when it is. The speed on the level and uphill are all that can be wished for, and, what is just as important, the Harley-Davidson is as pleasant to drive in narrow winding lanes as when swallowing miles on the open highway. It has an excellent clutch, and if this is allowed to slip just the least shade there is absolutely no snatch, and the engine runs at a mere tick-over as smoothly as can be desired.



Head lamp and electric horn are supported on the same bracket and a quickly detachable lamp glass is fitted.

Engine Flexibility.

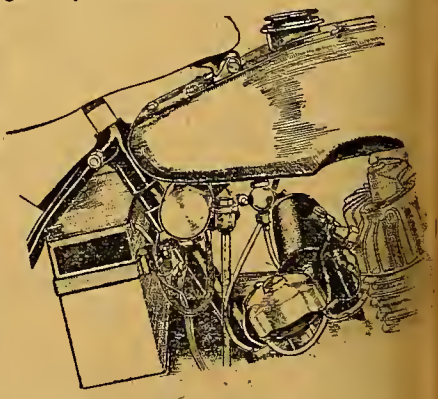
Much of this flexibility is due to the carburetter, and our American cousins have shown their wisdom in supplying and fitting to their motor cycles a carburetter which will give even firing at slow speeds, is controlled by one lever, and yet is capable of adjustment to suit varying atmospheric conditions.

Forks and saddle give as much comfort as if the frame were sprung; the steering is excellent, and the acceleration is also very fine. Both brakes possess immense power, and either will stop the machine with equal efficiency. The two brake pedals are on the off side, one being actuated by the toe, the other by the heel.

Top-gear Capabilities.

Used in narrow country lanes, in dense traffic, on good main roads and by night as well as day, the outfit acquitted itself remarkably well. Changes of gear were seldom necessary, and when they were second nearly always sufficed. Low gear is in the nature of an emergency ratio.

Driving by night anywhere near London is none too pleasant nowadays, as there is a great deal of lorry traffic and many cars with blazing head lamps; but it loses much of its terrors thanks to the Harley's excellent electric equipment. By means of the little switch placed just where the



Electrical equipment and distributer which shields the H.T. wires from rain. The disposition of the fuse box and accumulators is also shown.

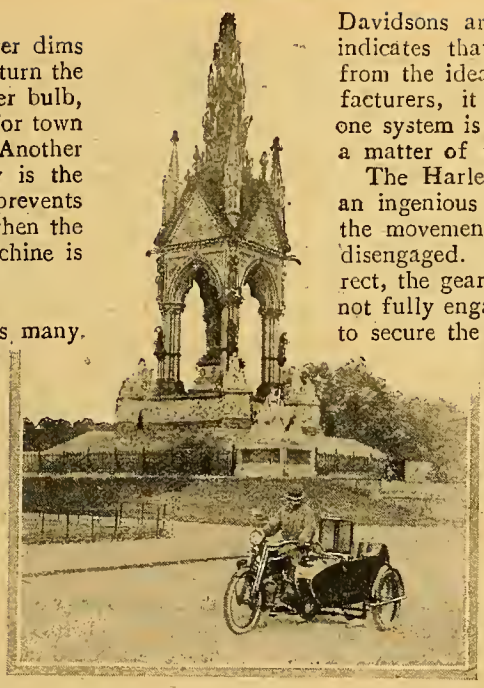
Road Tests of New Models.—

cable enters the lamp, if a car driver dims his lamps, the Harley driver can return the courtesy by switching on the dimmer bulb, which also gives just enough light for town driving and is quite useful in fog. Another good feature of the latest Harley is the automatic charging switch which prevents the discharge of the accumulator when the engine is running slowly or the machine is at rest.

Unfamiliar Controls.

It is difficult for one who drives many different makes of motor cycles to criticise the methods of control, for any system is easy when one is used to it. For this reason no criticism of the twist grip throttle control is made, for habitual riders of American machines appreciate it to the full.

On one point of the control mechanism we may comment, however; frankly, we do not like the method of controlling the clutch. Its hand lever is not convenient and its pedal is of the rocking variety, the movement of which neither blends with the twisting of the handle-bar grip nor agrees with the natural push forward action of the brake pedal. It is not natural to stamp on the brake pedal with the right foot and employ a totally different movement with the left; the hand clutch control would be infinitely preferable if it were a simply pull-up lever on the handle-bar and not a lever placed somewhere beneath the left thigh at the side of the machine.



One of London's roads to the West Country with the Albert Memorial in the back ground.

Requires Learning.

One who has become accustomed to foot operation of the clutch or to the handle-bar lever finds the alternative disconcerting at first. The same remark applies to twist grip throttle control, but the dexterous manner with which Harley-Davidsons are handled, both solo and sidecar, indicates that, while the controls are different from the ideas of the majority of British manufacturers, it does not necessarily follow that one system is superior to the other. It is merely a matter of what one is accustomed to use.

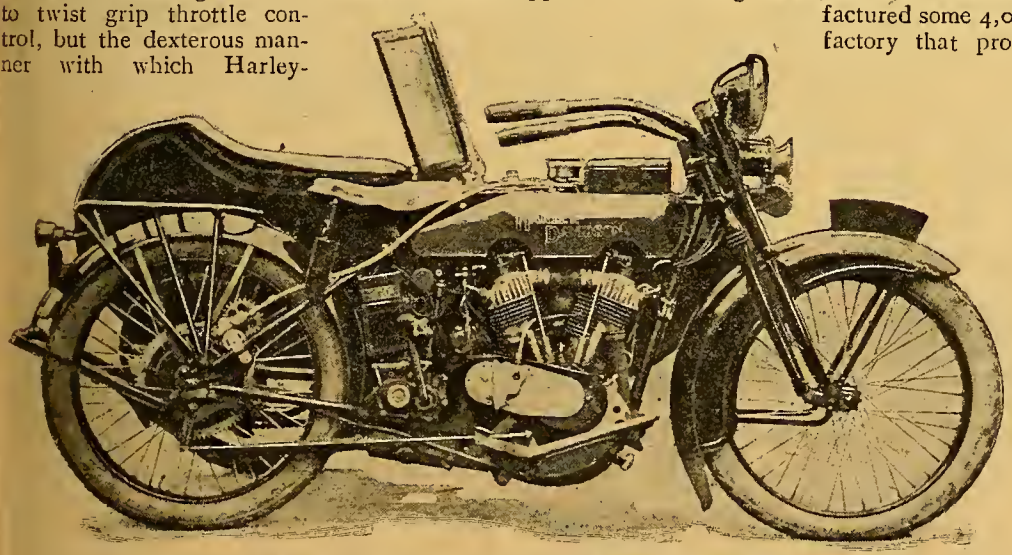
The Harley, like other American makes, has an ingenious interlocking device which prevents the movement of the gears unless the clutch is disengaged. Should the adjustment be incorrect, the gear can be changed, but the clutch will not fully engage. It would be no great difficulty to secure the correct adjustment were the necessary spanners supplied, but the tool-kit is inadequate. This is a small item, but one which the makers could easily rectify.

Apart from these details, the Harley-Davidson sidecar outfit is a splendid machine. Besides the flexibility and power of the engine, its steering is excellent; and, provided the clutch is judiciously used when travelling slowly, smooth running can be obtained throughout a wide range of speed.

Our general impression of the outfit was distinctly favourable. Its power and acceleration are superior to many machines of similar price or capacity, and it must particularly appeal to the sporting rider. In fact, it is one of the first favourites with that fraternity, although as sold it is essentially a comfortable touring outfit.

Attractive Bodywork.

The sidecar itself manages to combine a reasonably symmetrical appearance with ample roominess—not at all so common an attainment as one might imagine. Finished in the same rich shade of olive-green as the machine, it forms a very attractive-looking whole, which gives no indication that the attachment is manufactured some 4,000 miles away from the factory that produced the cycle.

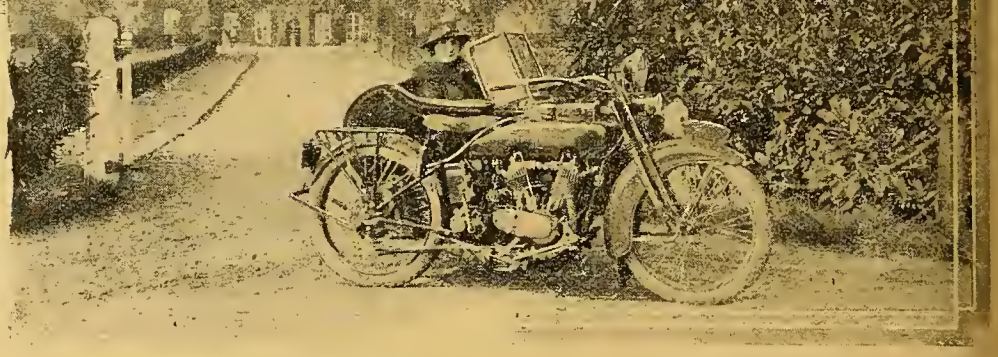


Typical of the best American motor cycle practice, the 989 c.c. electrically equipped Harley-Davidson sidecar outfit.

This year the Harley - Davidson has been exceptionally successful on the road in this country and also on the Continent. Four gold medals were won in the A.C.U. Six Days Trials with an entry of four riders, three of whom tied for the team prize; one special gold medal in the International Six Days Trials, and two ordinary gold medals; while many successes have been gained in Italy.

Passenger Machine Topics

By FRIAR JOHN



The Small Car Bogey; Exit of the big Sidecar not in sight; Sidecar Manufacturers' Experiments and the Lessons Learned

THE old topic, sidecar *versus* three-wheeler, runabout, or what you will is ever cropping up. Of course, the ardent Morganite and his like know no compassion on delivery of his spick-and-span runabout; his old love is forgotten, and cast off with the relief one casts off winter clothing—but usually he is at heart a motor cyclist, and we still embrace the runabout man, for he has not departed from the fold completely.

We will not take the question of protection, however: we will concede that one big drawback of the sidecar.

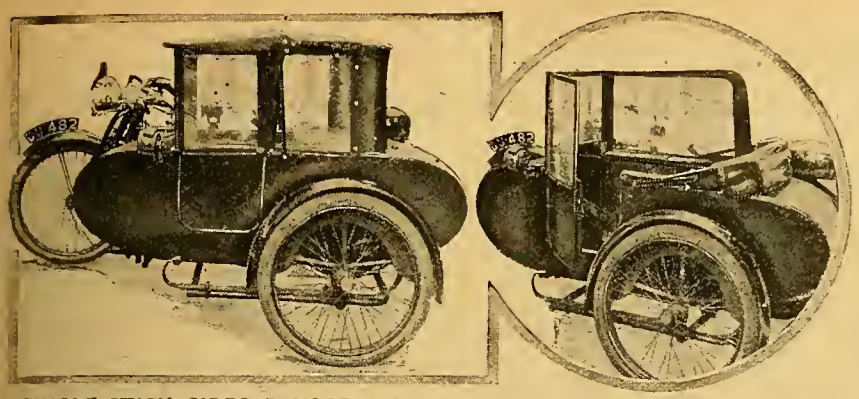
The man I would break a lance with is he who predicts that a little car of orthodox appearance and silent—let us repeat that—of orthodox appearance and silent, will soon be produced as cheaply as a sidecar outfit, and eventually drive the latter off the road.

Now for the first thing I would like to know *why* the four-wheeler runabout or little car is likely to be produced cheaper in future and at the same time sidecar prices are to remain unaltered; for that is what will have to happen for the prices of both to become level in this wonderful future. Unless some great firm with millions behind it turns a little car out in the sausage machine manner, this cannot happen; and if it did it would go smash in six months, for we could never absorb sufficient of its products in this country to make that firm pay its way. It could never be a world-wide proposition like the wonderful Ford.

Shall we ever see sidecars hurtling round the bends of the "T.T." course in this manner? An extraordinary impression taken on the dirt track at Mansfield, Ohio, U.S.A., exemplifying the use of the flexible sidecar.

THE production of this phantom car has to be considered in conjunction with the production methods at present in vogue, and not by methods we would like firms to adopt. It is not likely then that the production methods for little cars will ever differ fundamentally from those adopted by sidecar manufacturers, so that it obviously follows that this price gap must always exist. Granted, it will grow proportionately less as prices lower, but everything up to the present has proved—manufacturers' costs sheets and balance sheets—that a car cannot, no matter how simply made, ever compete in price with the powerful sidecar.

TEN years ago I thought the cycle car would eventually usurp the place of the powerful sidecar. But the calm stream of sidecar progress was not even ruffled in those experimental days. In 1918 again, I fancied the sidecar was being over-developed, and would give way to some other type of vehicle, probably the simple three-wheeler. Again, this year, when the prices of



SINGLE STICK SIDECAR HOOD. This neat and simple hood has been devised by Mr. J. P. Thomas, of 40, Kingsland Avenue, Coventry. Made of blue twill, it can be erected or lowered in a few seconds and is mounted on one hood stick per side, the front of the hood locking to the top of the wind screen. Celluloid side screens are fitted, and, after detaching one side screen only, the hood can be instantly lowered with the remainder of the side curtains in position.

several small cars made by big manufacturers were announced, I asked, with others, whether this new competition would mean the exit of the well proved family sidecar, the vehicle which willingly fulfils the purpose of a small four-seater car, and takes the entire family out without a murmur, at half the cost. The answer in actual practice is that an inevitable price gap must always exist, *if the quality of both vehicles be comparable*. That alone is sufficient to maintain for the powerful sidecar its popular place among motor vehicles of to-day.

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PROFITS from big sidecars may not have swollen dividends much this year, as much even as was desired and expected, but possibly that may be accounted for. Remember, the man who buys a family sidecar is not usually wealthy, and looks further ahead than the youth who buys a sporting model or a two-stroke. Many men hesitated to buy this year because they knew that horrible phantom depreciation would be stalking abroad if prices tumbled to an unprecedented depth. But youth cares little about that—he usually ignores second-hand values. Next year depreciation may be much nearer normal, and the family man who hesitated to buy this year may place his order for a next year's model with reasonable security. I do not think for a moment that the moderate trade done this year in heavy sidecars was due to any waning popularity, but, as I have suggested, to the ca' canny policy of the family man who counted his pennies twice before spending.

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RECENT experiments, too, which have been carried out by many manufacturers of big sidecars, have not, to my knowledge, produced a satisfactory four-wheeled vehicle marketable at the price of their outfits. The Carden, A.V., and Tamplin stand in a class quite apart and in a class which will surely grow. The G.N. is abandoning chain drive for shaft, maintaining its prices, and also introducing a water-cooled four-seater. The Coventry-Premier, starting out as a three-wheeled twin-cylinder, has now developed into a four-cylinder car proper at a small car price. All these happenings point to one thing, and that is, inability to make a quality vehicle following car practice on four wheels at the price of a sidecar. The Shows may reveal something astonishing, but I shall be amazed to find four-wheel cars as *refined in detail as the best outfits offered at equivalent prices*.

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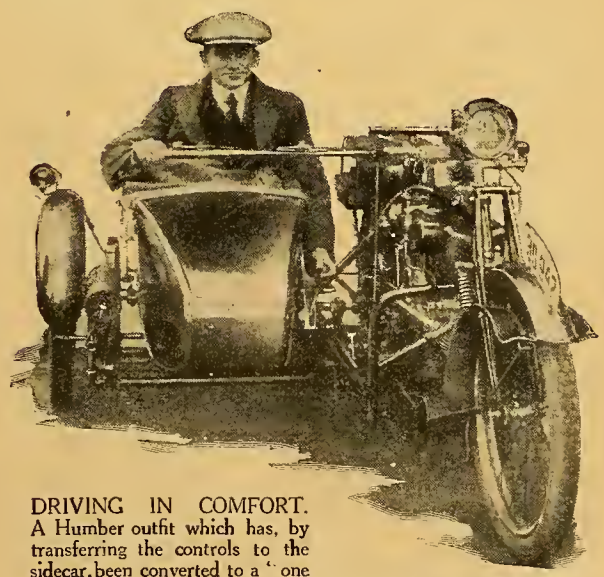
I HAVE heard astonishingly few adverse opinions on the holding of a sidecar T.T. Nearly everyone is of the idea that the race will ultimately benefit sidecar design. It may. But I shall be surprised if the lessons learned will help very greatly in improving the rigid touring type chassis, for, in all probability, competitors will turn to the flexible chassis. Sidecar connections, the chassis itself, sidecar wheel bearings and spindle, the forks and front wheel spindle of the machine will be tested to the utmost on the abrupt bends, and weaknesses will most certainly be revealed before many laps are covered. It goes without saying, too, that engines, gear boxes, and transmissions will be subjected to strains that they have never yet undergone, and that is saying a good deal. Brooklands tells us a lot, so does the "Six Days," but up to now there has been no opportunity of running an outfit at the speed of 50 m.p.h. uphill and down, round acute bends and over humped-backed bridges for hours on end, and that is why the Isle of Man course will reveal more weaknesses than track racing ever does. It will be a nightmare ride for many.

On the question of danger, I am emphatically with Mr. Norton, and many other experienced racing motor cyclists, including F. W. Barnes, T. C. de la Hay, and J. E. Greenwood, who agree that the greatest restraint will have to be exercised, and that none but the most skilful and capable should be allowed to compete.

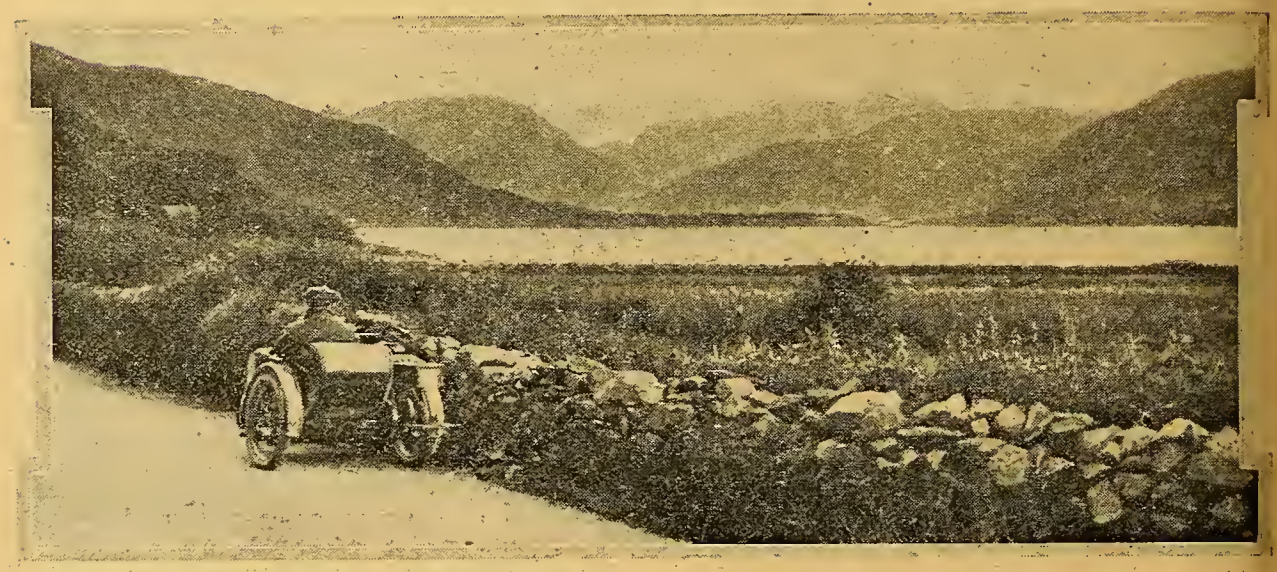


DRIVING IN COMFORT. A Humber outfit which has, by transferring the controls to the sidecar, been converted to a "one man" three-wheeler. Tiller steering replaces the handle-bars.

A FAMOUS FERRY DOOMED.

Good News for the Motor Cycle Tourist in the West of Scotland.

By E. M. WRIGHT.



Loch Leven from the north side, looking south-east. Glencoe goes through the heart of the magnificent mountains in the background, which are all from 3,300 to 3,700 feet high.

THE English tourist who knows his Scotland wisely lays aside a certain substantial sum for ferry charges whenever he crosses the Border. Particularly does he do so when he is including the magnificent north-west coast, without visiting which no tour in Scotland is complete.

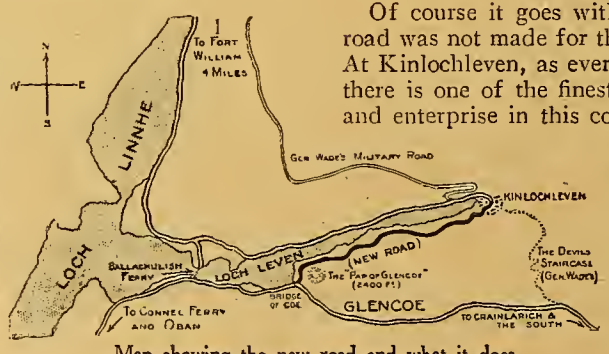
Scotland would not be Scotland without its piled-up mountain ranges, which make roads scare, and its long fingers, stretching inland, of sea, loch or wide estuary, which make ferries numerous.

Unavoidable.

Of all those ferries, perhaps the one most universally known is that at Ballachulish. I hear someone murmur "Queensferry." But a glance at the map will show that Ballachulish, though serving much less populous districts, lies at a bottle neck which cannot be avoided unless the traveller goes away miles inland to another part of the country altogether. The next road north and south is some 80 miles to the east—the Great North Road itself.

Ballachulish ferry itself spans Loch Leven at a point where it is only a couple of hundred yards or so in width, and the charges are out of all proportion to the actual work done for them. (Of course the same holds true of most ferries where motor traffic is concerned!)

Disregarding for the moment the tourist from other countries, consider the motor cyclist from Glasgow and the west of Scotland. To him Fort William and the glens around should be one of the finest fields for a week-end tour. But the distance by road alone is prohibitive, taking him round by Aberfeldy to Newtonmore and down to Spean Bridge, practically three sides of a square. On the other hand the Ballachulish ferry charges for a sidecar machine (10s. odd for the passage out and home) add far too much to the cost of such an economical week-end as the sidecar machine can provide for one or more persons. It discourages the ordinary tourist.



Map showing the new road and what it does.

Hence the importance to all classes of motor cyclists of the new road which has just been completed between Bridge of Coe and Kinlochleven. As our map shows, this connects the main road from Glasgow and the South to the existing road on the north of Loch Leven. Thus by a detour of not more than ten miles or so the traveller can make Fort William without crossing the ferry.

At Kinlochleven.

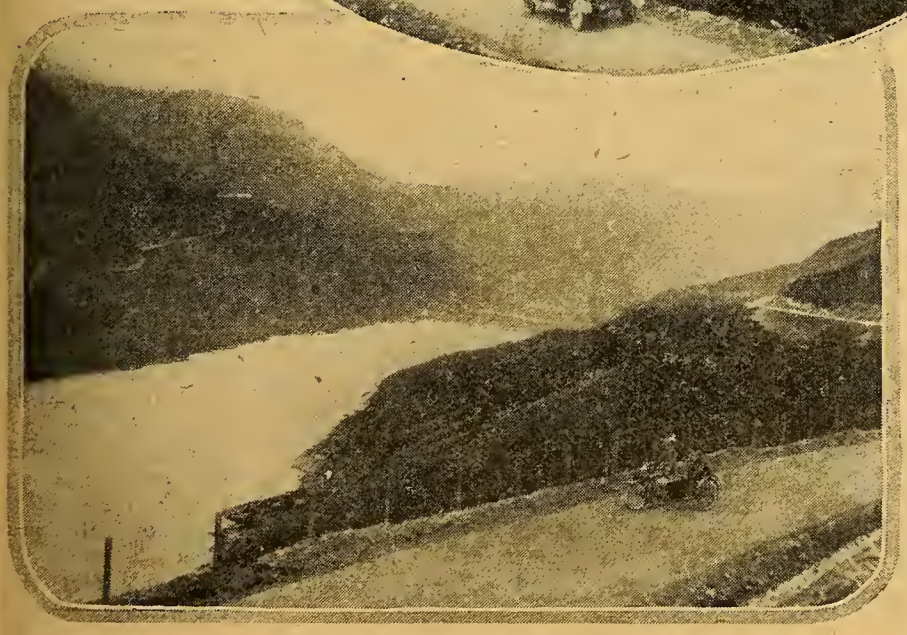
Of course it goes without saying that this fine new road was not made for the convenience of the motorist. At Kinlochleven, as every good Britisher should know, there is one of the finest examples of British industry and enterprise in this country, namely, the great aluminium works of the British Aluminium Co., Ltd., laid down twenty years ago. These works make use of the tremendous store of water lying at great heights (from 1,000 to 1,800 ft.) in the hollows of the mountains to the east.

A Famous Ferry Doomed.— Hitherto access to Kinlochleven has been practically entirely by water, as small steamers can get right up the loch to the village. Such strides have been made in recent years, however, particularly during the war, that Kinlochleven is now a fine modern township of about 2,500 souls, boasting electric light in all its delightful little modern houses and its quaint little streets.

It was to connect this industrial community with the Argyllshire road system that the new road was started during the war. The labour at first employed was that of conscientious objectors. Then German prisoners were concentrated here and performed yeoman service with true Hun thoroughness. Since the war the road has been slowly completed by the usual civilian labour.

Loch Leven looking inland from Ballachulish. In the left centre the long arm of the loch is seen stretching away up into the mountains round Kinlochleven.

The new road looking towards Ballachulish. This view was taken half-way between Kinlochleven and Bridge of Coe, and shows the "Pap of Glencoe."



On the new road looking east about a mile out of Kinlochleven. General Wade's road to Fort William can be seen on the opposite side of the loch.

It is a platitude to say that fresh road development is urgently needed in this part of the country; for is it not so all over Scotland?

Our map shows that there is a sort of path or pack-horse track leading from the eastern entrance of Glencoe over the shoulder of the mountains to Kinlochleven. This was General Wade's original road, and it would be no great task to reconstruct it.

Then on the north side of Loch Leven the present road from Kinlochleven to North Ballachulish is very narrow and full of blind corners and dangerous portions. For a large car with a high top is quite out of the question, as in places the rock through which it is cut converges at the top almost like a tunnel, and a very low one at that.

Across Burmese Hills and Vales

With a Motor Cycle in the Shan States. Fine Scenery but Limited Number of Roads.

By ULRIC NISBET.

MOTOR cycling in the Shan States of Burma requires first and foremost a reliable machine, and secondly an optimistic outlook on life. These are essential, as repair shops are few and far between, and sooner or later one's optimism is likely to be tested under all sorts of conditions. But if one is prepared to brave everything, there is no country in the world more beautiful or more suitable for testing the power and reliability of one's motor cycle.

Just over 300 miles north of Rangoon on the main line to Mandalay there lies the little town of Thazi. Burma is so far behind the times that there is as yet no road constructed to carry motor traffic up to Thazi and Mandalay. It is necessary, therefore, to take the train from Rangoon to Thazi (a fifteen-hour crawl by the night mail), whence the road may be followed up to Kalaw, hidden far beyond the distant hills; but perhaps it is more advisable to go up by the little branch line train. It is a long journey—six hours to cover sixty miles—but the magnificence of the hills up to which it climbs and the wonderful and ever-changing panorama compensates fully for the apparent waste of time.

4,300 Feet Up.

Kalaw lies in an open valley, 4,300 feet above sea level. All round the hills rise thickly wooded so that it seems that there is no way through them. During the last few years, however, the road has been opened up over 100 miles beyond; and this road, though by no means perfect, is quite good enough for the needs of the not over particular motorist or motor cyclist. Kalaw village itself is just a collection of tin-roofed huts, and amongst these there are some twenty small ruined pagodas which present a quaint but most dilapidated appearance. Though it is considered a worthy accomplishment to build a pagoda to Buddha's memory, no kudos would be attached to the man who repaired one already standing. In consequence, Burma is full of these bell-shaped shrines in all stages of decay.

There are dusty roads in all parts of the world, but this one must surely hold its place with any; and in five miles motor cycle and rider are covered with a thick coating, so that the make of machine and the number are absolutely unrecognisable. As policemen are conspicuous by their absence, this need not worry anyone, however.

Like Devon.

Outside the village the road at first passes along a valley shut in on either side by high hills. The ground is laid out in gardens and in small terraces for paddy growing. Trees line the way, and the scenery is very similar to that of Devon, for the soil has a reddish tinge. Loi-An is the next place through which one passes. A mine shaft has been sunk in the hillside overlooking the village, by no means adding to the beauty of the scene. Just above the road at the base of a steep wooded hill are two enormous white "chinthes" or dragons—the mythical creatures of Burma; from them rough steps are cut up the slopes of the hill to a "phoongyichoung" (monastery).

Eight miles from Kalaw lies the village of Aungban, a rather picturesque collection of rush-roofed huts on the bare hillside. The scenery here begins to change. The hills become bare of trees, and beyond the next rise is a vast stretch of open country with the road winding and switchbacking along into the distance. Far away on each side rocky hills rise up in all shades of brown, fading to blue. Dotted about on the peaks are many little white pagodas which catch the light of the sun, and here and there small columns of smoke rise up, though there is no sign of life near them.

The sleeping drivers of bullock teams do not heed motor cycle horns.

On his first visit the writer came to an obstruction placed across the road at this

Across Burmese Hills and Vales.—

point. The bridge spanning a stream had collapsed, and a native pointed to a cart track, leading off from the main road. This proved to be a bumpy passage, with deep thick dust before it led up on the road again. Ascending again still more steeply the summit is reached, and beyond lies a scene of wonderful beauty—the Heho Valley.

A Common Obstruction.

Away in the distance and on each side range beyond range of hills towers up, and far below lies a great plain at a rough estimate fifteen miles long and five wide.

This plain is in parts dotted with small bushy trees from which little pagodas peep out, but for the most part it is bare of vegetation, and the descent down the twisting road is lined with great black boulders, and there are two hairpin bends which require careful negotiation, for the dust is thick and there are many stones to be avoided. The road along this vast plain is open, and time can be made up. There is, however, one trap which is always to be met with, even on the best roads of Burma—the bullock cart. When attempting to pass this type of vehicle it is as well to reduce speed to its lowest.

Over the plain brings the traveller into Heho village, which is the terminus of the Southern Shan States Railway. Here, if necessary, it is possible to replenish with petrol and oil at one of the three or four small shops which the village boasts.

Beyond Heho is a gentle slope of two miles, leading over into the Valley of Sinhe, which is covered with small bushy trees, pretty orchards, and, here and there, stretches of open country quite bare of vegetation. In front, fully twelve miles away, a wonderful range of wooded hills rises up, and beyond that more ranges and high peaks. Far away on the right a sheet of water flashes in the sunlight, the famous Inhle Lake.

A snake across the path is frequently encountered.

Caution Required.

The descent requires much care, for it seems to be all corners, hairpins, and S and Z bends, thick with dust and stones. The valley once reached, the view is obscured by the jungles which line the road, and a snake across the path is frequently encountered. The road opens out once more, however, and runs dead straight across the valley for several miles. On this road there are many bullock carts, the drivers of which sleep soundly; they take no notice of our hooting. Sometimes a bevy of laughing girls goes by—a vision of brilliant silks and gay sunshades. On the right a road runs off parallel to the line of hills. This leads to Yaunghwe, called "the beautiful" by the writer, who spent a few delightful hours there once; called, alas! something very different by those who are compelled to live amongst its myriad mosquitoes. From Yaunghwe a native boat may be obtained with the Sawbwa's (Shan Chief's) permission, and an hour's poling along the old canal will bring one to the Inhle Lake, a very fine sheet of water in the midst of which a bungalow is built on piles.

Hill-climbing Difficulties.

Away to the left the country is famous for its oranges, and two miles from the main road lies the White Crow Lake, constructed by the Sawbwa on the spot where a white crow, now in his possession, was found. Straight ahead more climbing is encountered, but a speedy start is of no avail, for the ascent is scarcely begun before a Z bend has to be tackled, and so it continues, the only difference being that some of the bends are more outrageous than others. Often the road surface is uneven, the dust lies thick at the turns, and odd boulders are to be met. Meanwhile, on one side the hill drops sheer down; a night climb up this hill would provide a real thrill even for the most experienced rider.

From the summit there is a magnificent view over miles and miles of hills and plains, villages and jungles, as far as the eye can see; and another two miles further is the village of Taunggyi, 4,675 feet above the sea. Taunggyi is a very delightful spot with its little lake in which are reflected the grass-roofed huts and the hills which tower up behind.

An attempt to fill up with petrol here is likely to be frustrated, as the Chinese agent refuses to part with less than two gallons at a time. In vain to point out that one gallon is as much as the tank will hold; he is adamant, and unperturbed by one's candid opinion.

Feminine Fashions.

The Shan people met on the road are mostly women, dressed in dark blue trousers and loose-fitting smocks of the same colour. Some wear five or six silver rings just below their knees, possibly as a mark of respectability.

At Heho and such places one naturally makes for the dak bungalow (the rest house for Europeans in nearly all the larger villages), and an aged darwän provides a welcome cup of tea. Sugar is brought in an English newspaper anything up to two years old, which nevertheless proves interesting reading, for even the possession of a motor cycle with all its convenience as a time-saver does not give the feeling that one is still closely in touch with "home" in this secluded country.

OBTAINING SLOW RUNNING.

Adjusting Carburetter Controls to Gain Comfort and Tractability.

By H. MORTIMER BATTEN.

MANY riders do not appear to realise how much can be added to the comfort and tractability of a machine by devoting a little time to the adjustment of the carburetter controls. Seldom is a new machine delivered which is perfect in this respect, for the tastes of riders vary so much that it would not be worth the while of the factory tester to devote the time and pains necessary for that exact nicety of adjustment which seems to me so desirable. Moreover, it needs to be done after the initial stretching of the wires.

Friends' machines which I have borrowed are usually hopeless as regards delicacy of adjustment, while it is rarely that one hears a machine on the road which will throttle down to that slow tick which a little skill on the rider's part can obtain.

"Tick-Over" Desirable.

As already stated, tastes vary; but the usual and, in my opinion, the most comfortable way to set the controls is so that the engine ticks at its very slowest, but does not actually stop, with both the air and the throttle fully retarded. When waiting in traffic, both levers are moved back to the dead stop position, and even though the engine cannot be heard, one knows that it is turning over at a safe and proper speed. There is no need for those obnoxious and violent accelerations to which many riders subject their engines when thus held up, indicating that they have no tick-over position, and must run the engine pretty well red-hot to make sure that it is going.

With proper adjustment a machine should run with perfect economy in traffic, keeping as cool—indeed, often cooler—than on a country road. Turning idly over on the right mixture a present-day engine should never overheat, even though left running for hours, and it will use a negligible amount of petrol. If, on the other hand, the engine is alternately raced and almost stopped, up goes the petrol and oil consumption to an astounding point, and naturally the engine suffers by such treatment.

In order to get this nicety of control it is in the first place necessary to make sure that there are no leaks in the induction system. It is assumed, of course, that otherwise the unit is sound and gas-tight.

The safest plan to adopt is to presume that the induction system is a mass of leaks. Heat up the engine, remove the carburetter from the cylinder, smear the inside of the socket and also the cylinder stump which receives it with Seccotine, gold-size, or a good proprietary jointing paste. Use plenty of the stuff so that it is squeezed into and seals the saw-cuts which permit the tightening of the pipe, and, having refitted the carburetter and pulled it tightly up, give the outside of the joint another doping to fill up external cracks, then leave it for a little while to set. Subsequently test for leaks by dripping oil over the joint with the engine running slowly, the disappearance of the oil at once indicating a leak. A little insulation tape if necessary will make things sure.

Now, with ignition fully advanced, move the carburetter levers till the desired tick-over is obtained—slow but sure. Note that there is no black smoke from the exhaust, as this indicates too rich a mixture, and when the engine is really hot it will be very much too rich. The "tick-over" mixture should, therefore, be as weak as the engine will accept when practically cold; and when the ignition is suddenly retarded the running should be so slow that the engine is likely to stop at any gasp.

Having attained this desired point, leave the controls where they are, and stop the engine by lifting the exhaust. Remove the gauze from the air intake, and mark the exact positions of the petrol and air slides by scratching the brass with the point of a knife (alternatively they can be propped so as to retain their positions). With this guide move both handle-bar levers to the closed positions, then adjust the cables by the provision made till the wires are taut with the slides in their marked places. Thus the slow running point, to which you can return positively at any time, is definitely fixed, and all "groping in the dark" is avoided. With an injection of petrol the engine should start at this setting, or at any rate with the throttle slightly opened.

Attention to Petrol Level.

Just as riders have individual tastes, so have engines. Carburetters are turned out with a fixed setting, and are seldom altered by the makers who fit them. Thus it often happens that a certain engine will profit in every way by a slightly lower petrol level—it is seldom safe to raise the petrol level. In testing for the slow running point, if it is found that the engine stutters and becomes uncertain ere the revolutions are as low as they might be, it may be due to (1) air leak round the inlet valve or elsewhere, or (2)—more commonly—unsuitable petrol level. It is generally possible to adjust the petrol level without losing the original setting, for it may probably be lowered by fitting a fibre washer under the collar on the needle, and the experiment is worth trying when testing for extreme slow running.

All these experiments are to be commended in that they help very considerably to make the rider *au fait* with his engine, for if he never tries to improve it, certain it is that it will deteriorate steadily, and he will, sooner or later, have to foot the bill in the way of depreciation.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4., and must be accompanied by the writer's name and address.

HIDDEN PRICE LISTS.

Sir,—Why do not the various manufacturers of fuels and oils insist that their price lists be displayed in a *prominent* place by their stockists? "REAL SCOTCH."
West Calder.

SILENCE.

Sir,—Undoubtedly, we have to thank a minority of drain-pipe merchants for the unwelcome police attention of the moment; it is surely up to the more reasonable majority to put our house in order, *before it is done for us.*

Is it not possible, with the co-operation of the motor press, to convince the few that untimely and unseemly noise is the worst possible advertisement for the sport, comes under the general heading of bad form, and that "it is not done in the best circles"? TWENTY YEARS' RIDER.
Retford.

INFALLIBLE SPEED LIMITS.

Sir,—As a frequenter of Sutton, Surrey, I was interested to read of the suggestion of "hummocked surfaces" to reduce the speed of motors there. I wonder if it has occurred to the Sutton authorities that riding over 9in. undulations is likely to break things, and that, in the event of this happening, claims will probably be made on them. This suggestion is the result of three fatal accidents in a week, and in every case, I understand, a lorry was the offender. Now lorries will not be greatly affected by undulations, but motor cycles and cars will be very much shaken about and springs, etc., may easily break. N. E. HEARD.

STILL LESS EASY PAYMENTS.

Sir,—"Shylock" quotes the case of the motor cyclist being charged 17% for easy payments. A firm recently gave me the following quotation for a pedal cycle:

Cash Price	£13	9	6
Deposit	£1	7	5
12 payments of (monthly) ...	£1	7	5

Thus, you pay back in instalments £16 9s. Taking deposit from cash price, you pay back £3 16s. 11d. for the loan of £12 2s. 1d., which gives, roughly, 36%. The motor cyclist is apparently not hard done by. ZENITH.
London, S.W.1.

THOUGHTLESS LADY MOTORISTS.

Sir,—I was glad to read your correspondent's letter on "Thoughtless Lady Motorists," which I can confirm from experience.

Your heading is a correct one, for I would suggest that the cause is rarely intentional discourtesy. The fair sex, as pedestrians, have been so accustomed for generations to men giving way to them on the roads and footpaths that they forget they cannot expect the same privileges when they are behind the steering wheel of a car.

Motors have no sex. Lady drivers must learn to expect no more consideration when travelling than is given to men—for one is rarely able to distinguish the driver until level with the car—and they must also learn, and learn quickly, that they must give the same consideration and courtesy on the road as is given by men to men.
Ilkley. A WORM TURNED OVER.

A NON-MOTORIST'S WANTS.

Sir,—As a non-motorist through choice, I was much interested by "Ixion's" remarks on "More Sales." I think, however, that I and a large number of my friends fall into yet another group.

What we want is a medium-weight machine, price about £60, which, with the exception of tyres and sparking plugs, *will not go wrong.* It must also afford protection from the weather and be reasonably silent. G. S. P.
London, S.W.

THE TRUTH ABOUT TUNING.

Sir,—"Bemsist's" letter, whereby with two apparently simple alterations to a standard Rudge-Multi, he claims additional 13 or 14 m.p.h. to the maximum speed, is most difficult to digest with belief.

The maximum speed of a Rudge-Multi in good standard tune, fitted with a 17½in. belt rim, lies between 55 and 58 m.p.h. "60," that elusive figure, can sometimes be attained, with a following wind, or in calm conditions on a good road.

Taking 58 m.p.h., plus "Bemsist's" extra 14 m.p.h., gives 72 m.p.h., a road speed many big twins would find hard to equal, and this with a single-cylinder engine and a frame and fitments heavy for the size of the power unit.

Admittedly, for sheer pleasurable touring, the Rudge is hard to beat; it will maintain 30 m.p.h. indefinitely, and it also possesses admirable qualities in a fine riding position, easy steering, and a delightful gear.

"Rumgo's" letter is also of interest, as I, too, owned a 1911 Triumph, and was very proud of it, but whilst in agreement with him, that engine cleanliness does not play an important part in increasing "revs.," I would gladly take an omnibus to Canons Park to see a 1911 Triumph climbing Brockley Hill at 48 m.p.h., and naturally would be interested to see this same machine travelling at 63 m.p.h. for a half-mile on the level. My old Triumph in the days gone by, although tuned in every way according to theory and practice, with many tips by the exponents of the game thrown in, would never exceed 57 m.p.h. except downhill.

The "Truth about Tuning," in my opinion, mainly lies in:

1. Design.
2. Perfect alignment of flywheels and shafts.
3. Elimination of friction.
4. Lightness of reciprocating parts, with the relative importance of good balance.
5. Quick ingress and egress of gases.
6. Cam design and valve timing.
7. Compression.
8. Carburation.
9. Magneto timing and strength of spark.
10. Valve springs.
11. Intelligence and a natural aptitude for mechanics.

Last, but decidedly not least, weight of machine, gear ratios, tyre size, wind resistance of various fittings, quality of petrol and oil, atmospheric conditions affecting carburation—all these points merge into the words tuning and speed.

It is a long, long trail of hard, thorough, persistent work, with attention to detail the main factor, carrying disappointments often disheartening. The one great asset is money, and plenty of it. R. LANDON.

ACCORDING TO EXPECTATION!

Sir,—Should I ever chance to meet "Zenooth" (who averaged nearly 50 m.p.h from Barnet to Cambridge) on a blind corner when he is riding a really *fast* machine, I hope to be driving something on four wheels—a road-roller for preference. "BUNSEAM."
Staffs.

Sir,—Since his sports Zenith received scarcely any tuning *up*, may I ask "Zenooth" if his watch received any de-tuning so as to give such results? SQUIRREL.
Manchester. N.Y. 1722.

Sir,—I agree with "Zenooth" when he states that Mr. William's Scott, upon which he can only *average* a mere 35 m.p.h., requires tuning. Certainly I don't know much about Scotts (although I have frequently taken their Emulsion), but I can picture the utter disgust of hundreds of people—prospective motor cyclists possibly—who would shudder to see such a machine "pottering" along the High Street or "loitering" about dangerous cross-roads at an average of *only* 35 m.p.h. SEAPLANE.
Wembley.

Sir,—We have shown "Zenooth's" statements to several of our customers, who expressed surprise that he has been unable to exceed 50 m.p.h. over such a good road as the Barnet-Cambridge.

One of them rides a super-sports Triumph Junior, and on a recent occasion he completely wiped up another gentleman on a Wall Auto-wheel. This exciting event was over a course from Chatham to Maidstone, and the average speed of the winner was just over 60 m.p.h., time taken by alarm clock strapped to the handle-bars, and distance by standard tape measure. ANANIAS BROS.
Rainham.

Sir,—Were it not the constant reiteration of the phrase "I consider these by no means extraordinary speeds," one might have been led to suppose "Zenooth" a mere stripling of such limited experiences to consider any average above 40 or so m.p.h. in some way wonderful. But the roads on which he made these little jaunts are nearly all perfect speedways, with suitably disposed villages and cross roads to lend interest and excitement. In fact, I and my friends have often advocated in the local courts (having been summoned thither for loitering on the highways) that the roads between Cambridge and Barnet be closed to such slow traffic as "Zenooth." How often have I found my way blocked by some be-helmeted, green-goggled apparition plodding nervously along the middle of the road at a bare eighty-five!
Cambridge. MUNCHAUSEN JUNIOR.

Sir,—Your correspondent "Zenooth" has surprised me greatly by his letter. I can only assume that it refers to a criticism I made some weeks ago of a rider who claimed to *average* 35 m.p.h. with a 350 c.c. sidecar outfit. This speedy scribe had the good grace to modify his statements, and I thought the whole incident was closed.

It is only fair to myself to mention that I am quite a peaceable individual, with no desire to quarrel with anyone, but statements of the kind now made by "Zenooth" cannot be allowed to pass. It is with genuine regret that I feel forced to say quite frankly that I do not believe him, and that no experienced motor cyclist will accept his claims.

It should be distinctly understood that in my original letter I did not single out the Scott-Squirrel for special praise. I mentioned it merely incidentally, feeling strongly that if an average of 35 m.p.h. was difficult even on such an exceptionally fast solo machine as the Squirrel, it was totally impossible on a standard 350 c.c. sidecar outfit. What I said of the Squirrel applies, of course, to any fast machine, and I maintain most emphatically that a 35 m.p.h. average, riding solo, is excellent even for a Brough-Superior or Henderson. As a matter of fact, I do consider the Squirrel to be capable of a higher *average road* speed than any other mount, irrespective of horse power. Mine, like any other Squirrel, will attain speeds of from 63 to 67 m.p.h. where road conditions permit, and that is seldom. It will hum round corners where "Zenooth" would be climbing the hedge. So that his advice that it needs tuning is hardly required. But all this is beside the point.

"Zenooth" has the audacity to claim averages of from 40 to 50 m.p.h. on quite lengthy journeys (including the little village of London), and this on a machine which I have never heard spoken of as particularly fast. Next to his audacity I am charmed most by his modesty, for he does not consider his speed as at all abnormally good. I hesitate to think what will happen when he really does open out a bit. For the speeds he could attain if he would only take the trouble may I suggest that a watch in his overcoat-pocket is hardly good enough? What about a grandfather's clock on the handle-bars? N. WILLIAMS.

Sir,—If "Zenooth" can only average 50 m.p.h. on his Zenith I should advise him to tune it up, because I am as certain as he is that he is next year's T.T. winner.

I myself ride a 999 c.c. Halt-Dropdedd, which is an excellent 'bus where many stops are required, and the only thing that has been done in the way of tuning is that the cylinders and pistons have been drilled. I do not consider my averages excessive or abnormally good, but any motor cycle which is meant for speed ought to do likewise if it has got a rider like me or "Zenooth." I am, like "Zenooth," very modest, and so I must tell you that the best of these in my opinion is from Barnet to Mudspot-in-Pottole (including London, of course), where I put up at "Zenooth's" favourite inn, "The High Flyer." The distance, which is 80 miles, I covered in 79 minutes, a trifle over 60 m.p.h. The time was taken by a grandfather clock strapped on to the carrier, and the mileage reckoned by counting the telegraph posts.

I may mention that, as a short cut to speed, I used the new hot-air fuel "Bemsist Gas," discovered by *The Motor Cycle* last week, and was disappointed with it. It takes up valuable space, and is of no practical use.
Green Field. IMA NUTHER.

TAPPET CLEARANCES AND NOISE.

Sir,—The insertion of a 15-1,000 in. feeler between tappet and valve stem would not have a decompressor effect unless the clearance was less than 15-1,000 in.

Suppose that the clearance was 16-1,000 in.—the insertion of a 15-1,000 in. feeler would alter the valve timing very considerably.

The amount would depend on the cam contour.

In the case of a more or less "constant acceleration" cam, (*i.e.*, a standard cam), the insertion of a 15-1,000 in. feeler would alter the valve timing approx. as follows:—In case of exhaust valve, the valve would open 15 or 20° before it would do if there was 15-1,000 in. clearance.

The exhaust valve would close about 20° *after* it would do if clearance of 15-1,000 in. existed. So that even with a standard cam you would get at least 35° difference in the length of time for which the exhaust valve remained open.

In the case of a quick lift high efficiency cam the difference would, of course, be very much greater. And, therefore, be much more noticeable.

Supposing practically no clearance was given on the exhaust valve tappet.

This would have the effect (as stated previously) of causing the exhaust valve to close about 20° later than it should do. (I believe 12-1,000 to 15-1,000 in. is standard clearance on a 500 c.c., or thereabouts, single.)—[6-1,000 to 12-1,000 in. is probably nearer.—ED.]

This would allow a proportion—a large proportion—of the incoming gas to be swept out of the cylinder *via* the exhaust port, causing loss of power at slow speeds and poor petrol consumption. ALBERT W. BRITTAIN, Capt.

ENTHUSIASTIC CLUBMEN.

Sir,—"One swallow does not make a summer," I know, but if the West Kent M.C.'s experience this season is any criterion, there is far less apathy towards competitions among Kentish riders than in the club of which "Fed-up" is a member. Our last fixture, a reliability trial, on October 15th, brought an entry of more than double that for similar competitions earlier in the year, and the course was, perhaps, the severest yet used by the club. Our membership is less than seventy, yet the entry list numbered forty-seven. Most of the remainder were out on various "jobs" connected with the competition. A. E. JESSOP.
Hon. Competitions Secretary.

THE ETHICS OF "HANGING ON."

Sir,—While out for training spins on the Coventry road I often "hang on," and have never yet found anyone objecting; in one case, in fact, a couple in a sidecar outfit seemed highly amused to watch me furiously pedalling and perspiring profusely, and paced me from about one mile out of Coventry to Dunchurch, where I turned off.

A thing I should like to point out to "Benedict" is that, when furiously pedalling, one does not usually listen carefully to the conversation of the couple in the sidecar. And again, a racing machine used for training on the road is usually in perfect condition, and therefore capable of being pulled up, in the case of the pacing outfit stopping, without any risk of a collision. D. BOROVIKOVSKY.

TOO EXPENSIVE SIDECAR OUTFITS.

Sir,—I should like, if I may, to draw the attention of your readers to the high prices at present being asked for high-powered sidecar outfits. On glancing through the advertisements in a recent issue of *The Motor Cycle*, I noticed that the average price, new, of a big twin sidecar outfit was somewhere in the region of £147, and I must admit that this seems to me to be somewhat excessive, having regard to the fact that a well-known three-wheeler of the runabout type may now be bought for £135.

To the majority of would-be motorists this must seem particularly strange, as the latter type of vehicle possesses several undeniable advantages over the sidecar outfit, namely :—

1. The driver, in addition to his passenger, is provided with adequate protection against the weather.
2. Much greater comfort to its occupants
3. Better facilities for conversation.
4. Less physical effort to drive; and
5. A more uniform and compact appearance.

These features, with the possible exception of the last, all add to the pleasures of motoring, and if the runabout is as efficient, mechanically, as the sidecar outfit of equal power as regards ordinary, everyday uses, why cannot the latter be bought for something like £110 or £115?

Having in view the big reductions in prices of many light and medium powered cars, I see no reason why this should not be possible. £ s. d

Birmingham.

RACE TRACKS OF LIMITED USE.

Sir,—It is splendid news to hear that attention is being turned to the building of tracks in various parts of the country. I fail to see, however, what use the Derby one is going to be.

We are told that speeds up to 80 m.p.h. can be attained with reasonable safety. Now there are few racing machines these days in the 500 c.c. classes and above that cannot lap Brooklands at a minimum of 74 m.p.h., which means a maximum speed of over 80 m.p.h. Result—exit 500-1,000 c.c. racing machines. This leaves the 250 and 350 c.c. classes, whose speeds, however, are rapidly approaching the danger mark, and in some cases far exceed it already.

In other words, the only likely users will be private owners' "sports" models, and badly tuned or broken-winded big twins.

It is stated that if these tracks are well run and good viewing accommodation is provided, "football gates" might be expected as at American tracks. But will the crowds be attracted by a third-rate show, which it surely will be since the cracks will be absent for the reasons stated above?

When building a track, why on earth not produce something consistent with modern speed progress. Not to do so literally hinders efforts in the latter direction. Although it is not intended to compete with Brooklands, it certainly seems unwise to start behind the times. A similar track would have been the very thing ten years ago.

Perhaps there is a reason, but it appears to me to be like mounting a large gun in a flimsy ship, with a risk of it jumping overboard when fired. In ship construction you build the ship to take the gun. Therefore, where is the flaw in my statement when I say build the track to take the bike? There probably is a flaw. I'm only asking.

NORTICAL.

FOUR-CYLINDER AS SPORTING MOUNT.

Sir,—It would appear from your road test report of the 748 c.c. F.N. sidecar that you do not consider it fast enough to be classed as a sporting machine; perhaps my experience of this model, used with a *light* sidecar, may be of interest.

The following speeds were obtained on the level :—Over 30 m.p.h. on first, 44 m.p.h. on second, and 53 m.p.h. on top gear. W. F.

Leytonstone.

ORGANISATION OF AN A.C.U. OPEN TRIAL.

Sir,—Since the A.C.U. grant a limited number only of permits for open events, surely it is up to that body to see that these events are properly organised, and do not develop into such a fiasco as was the Cheshire Centre Open Trial on October 21st.

The trial should originally have been held on the 22nd July, but was postponed until the 2nd September, and again postponed until the 21st October, by which time forty competitors had entered.

The idea of a petrol consumption test on A.C.U. formula was abandoned at the last minute, and competitors were instructed to have their watches sealed.

The first sixteen miles of the route consisted entirely of good main road, which was profusely decorated with gallons of blue dye. However, on leaving the main road, and making our way towards Mow Cop, not the slightest trace of dye, or marking of any description, was encountered until we arrived at Leek, the lunch stop.

On arriving at the official garage, we were surprised to find that the checker had not arrived, so no one checked us in. Eventually the checker arrived in time to take the times of the last twenty competitors, but it was afterwards decided to wash the check out altogether.

After lunch the majority of the competitors decided to retire as a protest against the way in which the trial was carried out, but on being assured by one of the marshals that the remainder of the course would be well marked, agreed to carry on.

At first the marking was good, but gave out again near Ford. We carried on like this for about twenty miles, when red dye was encountered near Litton Slack.

On making enquiries from the marshal there, we were told that the course would be marked with red dye, and to follow that. This we did, with the result that when we should have been in Macclesfield, about twenty of us found ourselves within a mile of Leek, and discovered that the trail which we were following was being laid for a trial the next day! Of course, we checked in at Knutsford about thirty minutes late, thus losing any chance of an award.

H. A. LEACH.

[We understand that the Auto Cycle Union is investigating this matter.—ED.]

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CLUB NEWS

Lee, Lewisham and District M.C. and L.C.C.

Solo machines, sidecars and light cars will compete for the Phillip's Challenge Cup over a sporting non-stop course on the 12th inst.

Middlesbrough and District M.C.C.

Remarkable results were recorded in a fuel consumption trial held on the 14th ult., as shown by the 201.9 m.p.g. achieved by the winner of the premier award. Results, which show ton-miles per gallon in addition to miles per gallon, are as follows:—

1, G. W. Dawson (492 Sunbeam), 39.12 t.m.g. and 201.9 m.p.g., winner of Sadler Bowl; 2, A. Young (976 Morgan), 34.79 t.m.g. and 72.3 m.p.g.; 3 G. Gilchrist (799 A.J.S.), 33.32 t.m.g. and 75.1 m.p.g.; 4, A. Buttress (595 Douglas), 32.13 t.m.g. and 163.2 m.p.g.; 5, E. Price (A.B.C. car), 31.8 t.m.g. and 40.5 m.p.g.; 6, L. B. Dickenson (350 Diamond), 22.91 t.m.g. and 159.4 m.p.g.; 7, J. Withington (481 Scott), 21.35 t.m.g. and 72.7 m.p.g.

Stalybridge and District M.C.

Under almost ideal conditions the club recently held its last speed trials for this year. Owing to defective working of the electrical timing apparatus, the telephone was resorted to, but, in spite of this fact, the event was run off to a satisfactory conclusion within three and a half hours. Times and results over the course of one third mile are as follows:—

350 c.c. (STANDING START).—1, B. Watts (342 D.O.T.), 25⅘s.; 2, Dean (349 o.h.v. New Scale), 35s.; 3, S. Dawson (348 Metro-Jap), 39s.

550 c.c. (STANDING START).—1, T. Simister (490 o.h.v. Norton), 22⅖s.; 2, C. Dodson (492 Sunbeam), 22⅘s.; 3, E. W. Wilkinson (492 Sunbeam), 24s.

750 c.c. (STANDING START).—1, T. Simister (490 o.h.v. Norton), 22⅖s.; 2, C. Dodson (492 Sunbeam), 23s.; 3, E. W. Wilkinson (492 Sunbeam), 24s.

1,000 c.c. (STANDING START).—1, T. Simister (490 o.h.v. Norton), 22⅕s.; 2, C. Dodson (492 Sunbeam), 22⅘s.; 3, T. Spann (492 Sunbeam), 22⅗s.

UNLIMITED C.C. (STANDING START).—1, C. Dodson (492 Sunbeam), 22⅘s.; 2, T. Simister (490 o.h.v. Norton), 22⅕s.; 3, T. Spann (492 Sunbeam), 23⅛s.

350 C.C. (FLYING START).—1, B. Watts (342 D.O.T.), 19⅖s.; 2, A. Margrave (349 Dean), 25s.

550 C.C. (FLYING START).—1, T. Simister (490 o.h.v. Norton), 18⅖s.; 2, G. E. Cowley (490 Norton), 19s.; 3, B. Watts (342 D.O.T.), and T. Spann (492 Sunbeam), 19⅗s. (tie).

750 C.C. (FLYING START).—1, T. Simister (490 o.h.v. Norton), 18s.; 2, T. Spann (492 Sunbeam), 19s.; 3, C. Dodson (492 Sunbeam), 19⅗s.

1,000 C.C. (FLYING START).—1, T. Simister (490 o.h.v. Norton), 19s.; 2, C. Dodson (492 Sunbeam), 19⅗s.; 3, G. E. Cowley (490 Norton), 19⅘s.

UNLIMITED (FLYING START).—1, C. Dodson (492 Sunbeam), 18s.; 2, T. Simister (490 o.h.v. Norton), 19s.; 3, T. Spann (492 Sunbeam), 19⅛s.

550 C.C. SIDECARS, STANDING START.—1, C. G. Bullough (490 Norton sc.), 27⅛s.; 2, T. Simister (490 o.h.v. Norton sc.), 28s.

750 C.C. SIDECARS, STANDING START.—1, T. Simister (490 o.h.v. Norton sc.), 27⅗s.; 2, C. G. Bullough (490 Norton sc.), 28⅗s.

1,000 C.C. SIDECARS, STANDING START.—1, T. Simister (490 Norton sc.), 28⅛s.; 2, C. C. Bullough (490 Norton sc.), 31⅖s.

UNLIMITED C.C. SIDECARS, STANDING START.—1, T. Simister (490 o.h.v. Norton sc.), 28⅖s.; 2, C. G. Bullough (490 Norton sc.), 28⅘s.

550 C.C., FLYING START.—1, T. Simister (490 o.h.v. Norton), 23⅘s.; 2, P. Platt (490 Norton), 35s.

750 C.C. SIDECARS, FLYING START.—1, T. Simister (490 o.h.v. Norton), 23s.; 2, P. Platt (750 Bradbury), 25⅛s.

1,000 C.C. SIDECARS, FLYING START.—1, T. Simister (490 o.h.v. Norton), 23⅛s.; 2, C. G. Bullough (490 Norton), 25⅛s.

UNLIMITED SIDECARS, FLYING START.—1, T. Simister (490 o.h.v. Norton), 28⅖s.; 2, C. G. Bullough (490 Norton), 28⅗s.

SPECIAL AWARDS FOR FASTEST AMATEUR TIME OF THE DAY.—1, T. Spann (492 Sunbeam), 18⅘s.; 2, E. Barnes (492 Sunbeam), 20⅖s.; 3, F. Cheetham (490 Norton), 21s.; 3, S. Buckley (490 Norton), 21s.; 3, E. W. Wilkinson (492 Sunbeam), 21s.

GOLD MEDAL FOR FASTEST TIME OF DAY.—T. Simister, 18s., after re-run for tie with C. Dodson.

Woolwich M.C.

A novel after-dark trial has been suggested, and it is honed to arrange final details at the next committee meeting.

South Midland Centre A.C.U.

The North London M.C.C. won by one point the inter-club contest at the Kop Hill-climb, not the North-West London M.C.C. as previously stated.

Wallington M.C.

A Cinderella Dance will be held at the Public Hall, Carshalton, on the 17th inst., at 7.30 p.m. Tickets are obtainable from the hon. secretary, Mr. Clifford Bowen, The Chalet, Woodcote Avenue, Wallington.

West Kent M.C.

Forty-seven competitors engaged in keen rivalry for the Prof. Wilson Silver Challenge Cup on the 15th ult. The course consisted of two circuits of 26 miles each, and embraced a newly-discovered freak hill, "christened" Beacny Head, which proved to be a narrow and steep bridle path, succeeded by three fields and two gates. Awards were made as follows:—

PROF. WILSON SILVER CHALLENGE CUP.—A. C. Ward (550 Triumph sc.).

SILVER AWARDS.—A. E. Jessop (348 Francis-Barnett), F. Logan (348 Francis-Barnett), E. C. Gordon (499 Triumph), D. F. C. Fitzgerald (490 Norton), V. F. Long (976 Excelsior sc.), T. Haynes (796 Ariel sc.), P. Polhill (976 Zenith sc.), J. L. Boxhall (678 N.U.T. sc.), R. V. Crawford (1,301 Henderson sc.).

BRONZE AWARDS.—L. Williams (348 Massey-Arran), A. Chinnery (292 Allon), C. R. Peerless (550 Triumph), P. G. Peerless (550 Triumph), E. W. Tyler (499 Sunbeam), W. H. D. Steer (499 Sunbeam), C. S. Pearce (348 Coventry-Eagle), F. J. Griffen (348 Coventry-Eagle), W. G. Pierce (998 Harley-Davidson), B. F. G. Fowke (Beardmore-B. and S.).

The next and last fixture for the present season is a hill-climb, to be held at Vigo Hill, near Wrotham, on the 29th inst.

Stourbridge and District M.C.C.

Provisional results of the club's annual sporting trial for the Wallace Cup and other awards, held recently, are as follows:

WALLACE CUP.—W. Worral (492 Sunbeam).

STOUR VALLEY CUP, for best performance by machine under 275 c.c.—Mrs. H. Gale (249 Velocette).

TEAM PRIZE.—Worcester and District M.C.C. team, consisting of: A. W. Carr (976 Morgan), H. F. S. Morgan (976 Morgan), J. A. Chadwick (249 Velocette).

CLUB SILVER MEDALS.—W. Worral (492 Sunbeam); E. Hipkins (349 A.J.S.); A. W. Carr (976 Morgan); H. F. S. Morgan (976 Morgan).

CLUB BRONZE MEDALS.—F. S. Barnes (492 Sunbeam); E. Elt (349 A.J.S.); J. Dosher (225 Royal Enfield); E. Donnisthorpe (348 New Imperial); J. Gething (633 Norton sc.); H. Graves (976 Enfield sc.); F. Ferriday (348 Omega); E. Griffiths (490 Norton); J. Chadwick (249 Velocette); W. E. Smith (490 Norton); P. H. Cranmore (481 Scott); W. L. Mattey (557-B.S.A.); E. Dumbleton (348 Rex-Acme).

The next outdoor fixture is the annual "Heroes' Cup" one-day trial on Boxing Day, December 26th, when it is hoped that the usual muster of sportsmen will be present.

Croydon and District M.C.C.

A one-day reliability trial has been organised by the above club, and will take place on the 5th inst. The premier award is a silver trophy—the president's cup, while there will be a team prize and the usual medal awards. Entries close last post Saturday, the 28th inst.

North London M.C.C.

Thanks to the St. Albans and District M.C.C., the club was enabled to hold its annual speed trials on the 14th ult. at Bedwell Park, near Essenden. An excellent half-mile course was provided, and the event was run off without a hitch. Awards were made in the motor cycle classes as follows:—

350 c.c.—F. J. Youngs (348 O.K.-Blackburne), 26⅕s., silver medal.

500 c.c.—E. Richardson (490 Norton), 25s., silver medal.

600 c.c.—R. R. T. Bowen (550 Coventry-Eagle), 30⅖s., silver medal.

750 c.c.—C. C. Labin (678 Martinsyde), 29⅗s., bronze medal.

1,000 c.c.—C. C. Labin (678 Martinsyde), 27⅖s., bronze medal.

600 c.c. SIDECARS.—E. C. Gordon (499 Triumph sc.), 37⅕s., bronze medal.

1,000 c.c. SIDECARS.—R. W. Greaves (976 Brough Superior sc.), 31⅘s., bronze medal.

500 c.c., ANY MACHINE.—E. Richardson (490 Norton), 25⅘s., silver medal.

1,000 c.c., ANY MACHINE.—E. C. Gordon (499 Triumph), 27⅕s., tied with C. C. Labin (678 Martinsyde), 27⅘s. Re-run: 1, C. C. Labin, 27⅖s., silver medal; 2, E. C. Gordon, 27⅘s., bronze medal.

GOLD MEDAL FOR FASTEST TIME OF DAY.—E. Richardson (490 Norton), 25s.

Worthing M.C.C.

Results of successful speed trials held at Amberley on the 15th ult. are as follows:—

MR. CECIL VOLK'S PRIZE for fastest time made by a competitor who has not won an award in a speed trial or hill-climb. 350 c.c.—1, W. H. Sheraton (349 Sheffield Henderson), 12⅗s.; 2, B. Packham (348 Douglas), 15⅗s.; 3, E. Brookman (348 Raleigh), 16⅛s. The first competitor having won a prize before, the award was given to B. Packham (348 Douglas).

MR. ALEC FRASER'S PRIZE for fastest time made by a competitor who has not won an award in a speed trial or hill-climb. 600 c.c.—1, A. Fraser (499 Sheffield Henderson), 10⅛s.; 2, C. Volk (494 Douglas), 11⅜s.; 3, E. A. L. Parker (494 Douglas), 12⅝s. The first and second competitors having won prizes before, the award was given to E. A. L. Parker (494 Douglas).

MR. W. H SHERATON'S PRIZE for fastest time made by a competitor who has not won an award at a speed trial or hill-climb. 600 c.c.—1, B. S. Allen (976 Brough Superior), 10⅝s.; 2, J. A. Bowles (976 Zenith), 12⅛s.; 3, C. V. Rice (650 Zenith), 13⅗s., or 66.176 m.p.h. average. The first competitor having won a prize before, the award was given to J. A. Bowles (976 Zenith).

SIDECARS.—1, A. Fraser (499 Sheffield Henderson sc.), 13s.; 2, F. D. Winslow (550 XL sc.), 17½s.; 3, J. W. Coombes (770 Hawk sc.), 22⅝s.

FASTEST TIME OF THE DAY was made by B. S. Allen (976 Brough Superior), who covered the course in 10⅝s.

ADVANCE DETAILS OF 1923 MODELS.

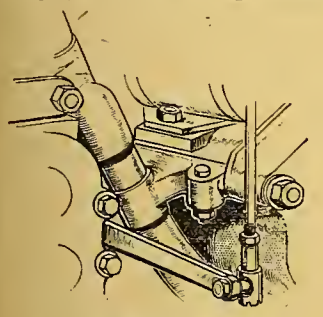
VELOCETTE IMPROVED BY RACING PRACTICE.

Modifications Giving Increased Efficiency and Greater Silencer.

FEW small two-strokes have so good a reputation in the minds of the public as the Velocette.

It is not surprising, therefore, to find that the general lines of the machine remain very much as before; nevertheless quite considerable changes have been made in the engine design.

The latest engine has a bore and stroke of 63×80 mm. (249 c.c.) and is a development of the racing Velocette engine which has broken many records on Brooklands. Instead of the loose aluminium head employed on the racing machine, a



Cotters are used to fix the rear engine bolt on the latest Velocette.

combined casting in iron is now employed and the ports are most interesting in shape.

Following the lines of the racing engine, two separate exhaust ports, spaced widely apart, protrude from the main cylinder casting, thus allowing a draught of air to impinge on a considerable area of cylinder wall between the ports to cool what is normally the hottest point of a two-stroke engine.

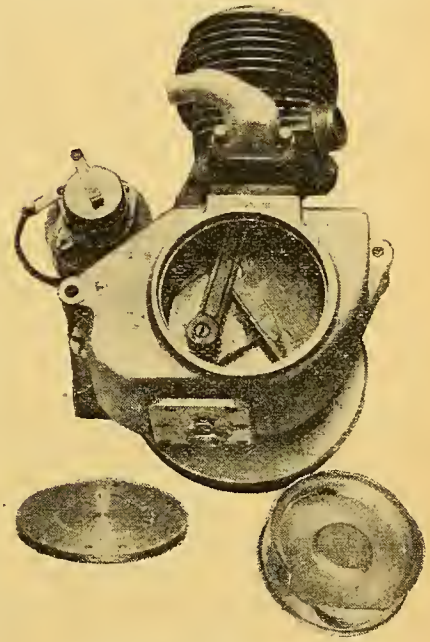
In shape the actual ports in the cylinder wall are unusual, for instead of being rectangular slots, they are curved upwards at the outer edge, thus allowing a small percentage of gas to escape early, which has been found to produce a quieter exhaust without detracting from power or petrol consumption.

Careful Exhaust Box Construction.

Considerable attention has been paid to the silencing question, and the pipes which lead to the silencer are flattened out as they reach the main expansion box, which they join tangentially. Actually this large expansion box is divided in the middle, forming two separate compartments, a tail pipe, of course, extending from each side. In addition, the joints between the pipe and cylinder and expansion box are very carefully made so as to avoid leakage.

A B. and B. carburetter supplies the gas, through a triangular shaped inlet port. The cast-iron piston carries two narrow rings at the top. Modifications to the baffle plate on the piston head have considerably reduced any tendency to knock. Slight modifications have been made to the crank case and a larger balance weight is now fitted.

In attaching the unit to the frame it has been found that the rear engine bolt is apt to work loose in its housing, and this trouble has been got over by cottering the bolt to its lug on each side of the main frame. Apart from this point and the fact that the top tube is now curved downwards towards the rear in addition to its initial slope, there is little change in the frame. It has, however,

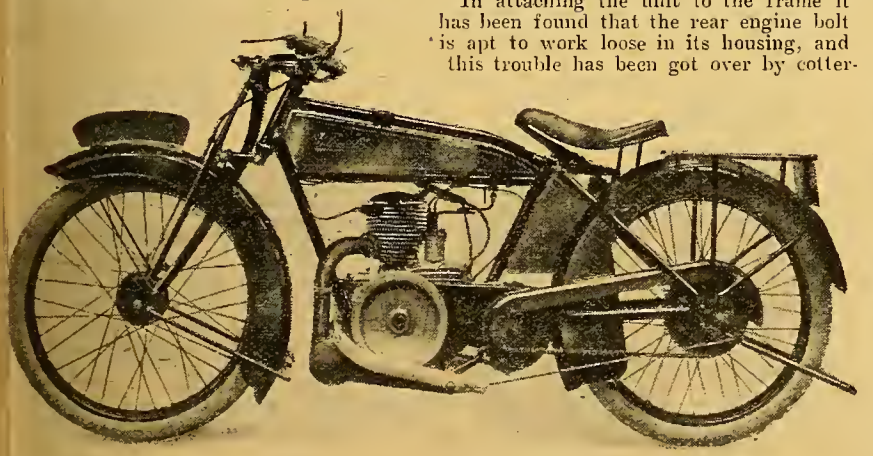


Coverplate to crank case removed to show overhung crank.

been found desirable to employ a lower tank rail, to which the gear lever is attached.

Aluminium footboards are supplied on the standard machines, and these are constructed specially to enable leg shields to be neatly fitted if required. It will be remembered that internal expanding brakes are fitted to both front and rear wheels, while all-chain drive is employed on each model. Provision is made for lubricating the front chain by means of three holes drilled through the flywheel boss to the sides of the engine sprocket, so that any overflow of oil from the single main bearing is led direct to the chain. The Velocette system of mechanical pump lubrication is, of course, retained.

Mudguarding has been somewhat improved, and on the three-speed models 24in. × 2½in. tyres are fitted.



In addition to a new engine and a curved top frame tube, the 1923 Velocette is remarkable for its extensive mudguarding, particularly of the rear wheel.

Advance Details of 1923 Models.—
The following machines will be listed for the forthcoming year: standard or sports model, with two-speed gear, £62; standard or sports model, with three-speed gear, £65, or with sidecar, £85. A lady's model to which the existing 220 c.c. engine will be fitted in conjunction with a two-speed gear and leg shields, is listed at £63.

An important point is that the manufacturers are prepared to guarantee a mileage of 120 to 130 to the gallon, and with a machine in good condition this figure can be comfortably exceeded.

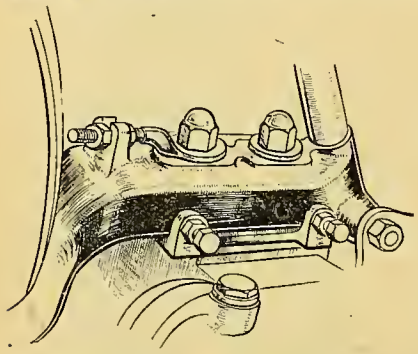
VARIED RANGE OF O.K. LIGHTWEIGHTS.

250 c.c. and 350 c.c. Four-stroke and 292 c.c. Two-stroke Models.

ONE of the first firms to realise the importance of moderate selling prices in post-war days was Humphries and Dawes, Ltd., the manufacturers of the well-known O.K.-Junior motor cycles.

In spite of the fact that this firm has always made a strenuous effort to keep its prices as low as circumstances permitted, the quality of the productions has not suffered.

For 1923 the most obvious change in design is the modification of the frame top tube, which is now curved backwards from the head, giving a very racy and pleasing outline. This, however, is by



Positive chain adjustment and bracket for lining up gear box on O.K. Junior.

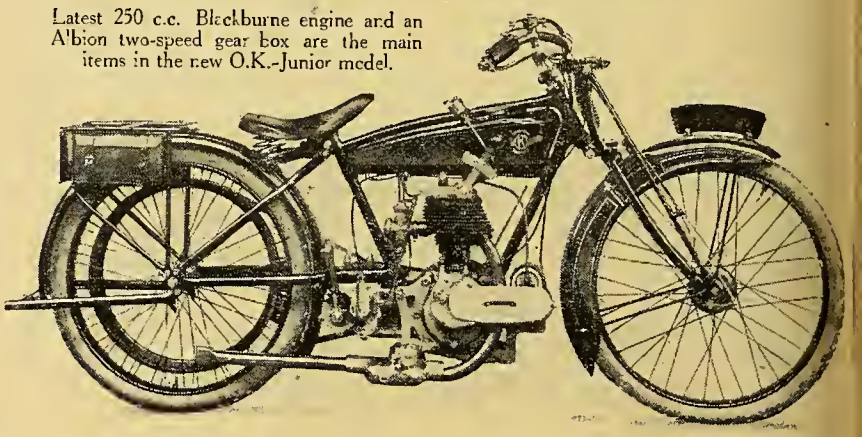
no means the most important of the detail alterations. Larger steering head races are fitted, ¼in. balls being employed; the saddle pillar lug is made in one piece, to which are brazed the saddle tube and two tank tubes; solid eyes are brazed into the back stays in place of flattened ends.

Chain Adjustment Facilitated.

A new bottom bracket lug has been designed, and the gear box is mounted on a special cradle, by means of which the chain line can be adjusted by set screws, and once adjusted it is impossible to upset the setting when tightening the front chain.

The gear box is moved longitudinally by means of a draw bolt, so that the chain may be tightened to the correct degree without undue trouble.

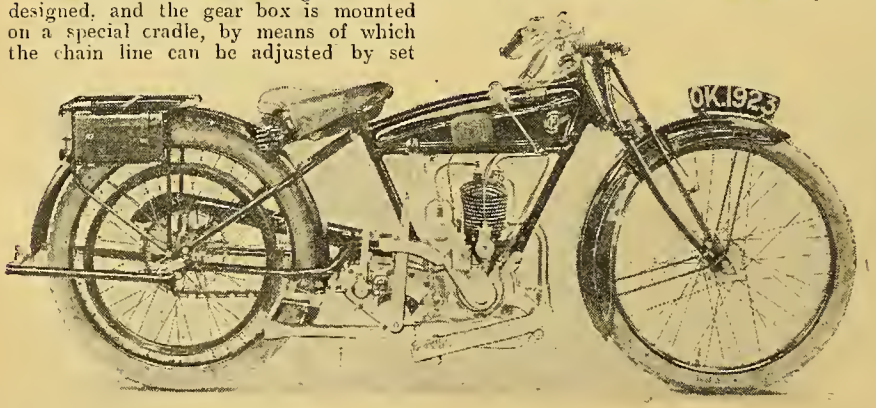
Latest 250 c.c. Blackburne engine and an Albion two-speed gear box are the main items in the new O.K.-Junior model.



Two-stroke Models.

A single-geared machine is listed with the O.K. two-stroke engine (70 × 76 mm. = 292 c.c.), and will be sold at a strictly moderate price. Next comes a two-speed, clutch, and kick-starter model with chain and belt drive. This may be fitted with either the O.K. engine or the new 250 c.c. side-by-side valve Blackburne. In either case, an Albion gear is used, and Brampton forks, specially widened to accommodate flat-sectioned guards with full valances, are employed.

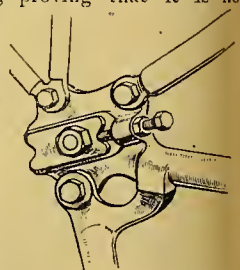
The wheels are shod with 26 × 2¼in. tyres, the O.K. compensated belt rim brake being applied to the rear wheel, while the front wheel is checked by an internal expanding brake, which is particularly easy to dismantle should replacements be necessary. Great care has also been taken in the design of the anchorage, the anchor plate being in direct tension.



O.K.-Junior chain-driven two-stroke model which is now fitted with Brampton forks.

For Light Sidecar Work.

Having a somewhat similar specification, a three-speed machine may be obtained with the O.K. two-stroke or 350 c.c. side-by-side valve Blackburne engine. In this case the Moss gear has been selected, and 26 × 2½in. tyres are fitted, chain drive being employed throughout; brakes are as above, but a Terry spring saddle is fitted. This machine may be obtained with a light sidecar, and, thus equipped, has earned an exceedingly good name in long-distance reliability trials, proving that it is no toy but a thoroughly practical and serviceable article. Rubber knee grips are screwed direct to the tank, thus doing away with unsightly straps, and the rear mudguard is perfectly clean in appearance, since the steel strapping is inside the dome of the guard.



A reversible plate on the rear spindle enables a short adjusting screw to be employed

As may be expected, the 250 c.c. overhead valve Blackburne engine is listed in the sports model. Briefly, the specification is similar to that of the touring models except that a racing Brampton fork is used and the machine is minus such accessories as aluminium footboards, while lighter guards both to the wheels and chains are employed.

DUPLEX FRAME LIGHTWEIGHTS.

Three Grigg Solo Models and a Light Sidecar for 1923.

FOR next season there will be three models of the Grigg motor cycle, together with a sidecar suitable for attachment to the largest. These models range from a miniature to a 350 c.c. two-stroke capable of taking a sidecar.

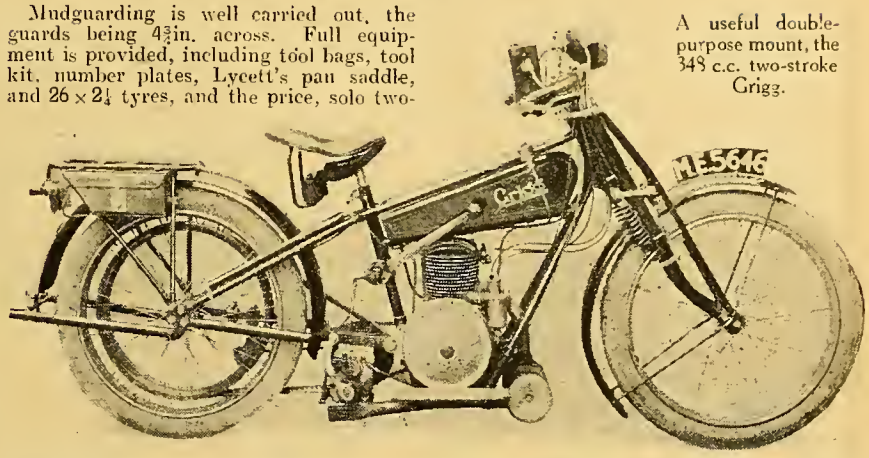
One of the most attractive features of the Grigg is its duplex frame design, to which favourable reference was made in our pages at the time of last show. This frame is utilised for the two larger models, of which the most powerful is fitted with a 348 c.c. Villiers two-stroke engine with flywheel magneto and lighting equipment. It is practically a double-purpose machine, but the solo model has only two speeds—6¼ and 11 to 1, while the sidecar machine has three speeds: a Sturmey-Archer box is used in both cases, drive being by chain and belt.

A noteworthy feature of the machine is its exceptionally large expansion chamber, which, with an extension pipe with drilled and flattened end, should render the engine quiet, yet free from back pressure.

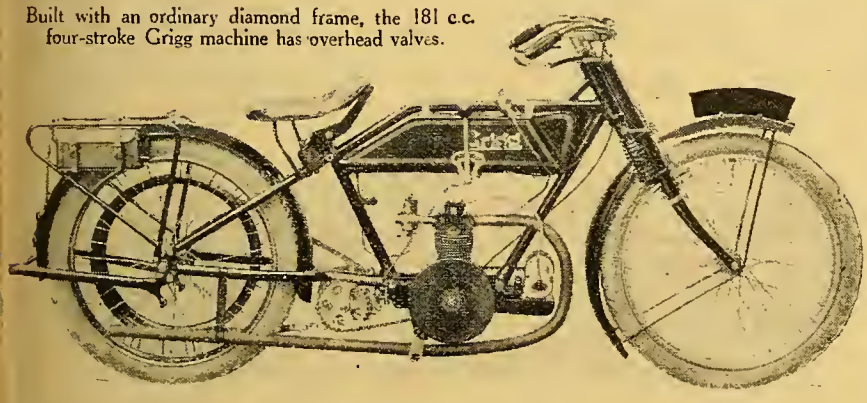
Mudguarding is well carried out, the guards being 4¾in. across. Full equipment is provided, including tool bags, tool kit, number plates, Lycett's pan saddle, and 26 × 2¼ tyres, and the price, solo two-speed, is £60 and the weight 195 lb.; three-speed, £63, and sidecar oufit, £75.

This model may be had with a B. and S. sleeve valve engine for £9 extra.

A useful double-purpose mount, the 348 c.c. two-stroke Grigg.



Built with an ordinary diamond frame, the 181 c.c. four-stroke Grigg machine has overhead valves.



For lighter solo riding the Grigg Engineering Co., Ltd., supplies a 211 c.c. (62 × 64 mm.) two-stroke engine of the three-port type of its own make. Gear box, frame, transmission, Amac carburetter, and Druid spring forks are similar to those of the preceding model. Price £45, weight 168 lb.

Lastly, for novices and elderly riders, a 181 c.c. miniature has been introduced. The engine, which is a four-stroke with overhead valves, has an aluminium cylinder, forming part of the crank case casting, a steel liner is inserted and the head, of cast iron, is detachable.

This little machine is provided with a Chater-Lea two-speed gear box, 24 × 2¼in. Dunlop tyres, and Amac single lever carburetter. The price £37 16s.

It will be thus seen that the Grigg Motor and Engineering Co., Ltd., Winchester Road, Twickenham, provides a full range of models to suit the requirements of various types of riders.

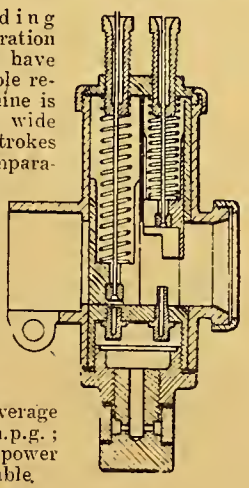
SIMPLIFIED BINKS CARBURETTER.

Moderately Priced Two-Jet Instrument Suitable for Average Machines.

QUITE apart from the range of carburetters which are already marketed by C. Binks (1920), Ltd., is an interesting two-jet model on which experimental work has been proceeding for a very considerable period.

The manufacturers are anxious to point out that this new model does not supersede the Binks three-jet carburetter, but is an instrument designed to be sold at a competitive price and to be suitable for 90 per cent. of the machines which are at present on the market. In this connection we may add that we have had some highly satisfactory experiences with the two-jet Binks in daily use. The manufacturers do not claim any very wonderful results, but have endeavoured to produce a moderately priced article which is as good as anything which can be obtained in the normal way. The latter part of this claim we can bear out, for attached to a Scott-Squirrel (by no means a type of machine lending itself to carburation experiments) we have obtained admirable results. The machine is flexible over a wide range and two-strokes well down to comparatively low speeds. The consumption is good, and it may safely be stated that the machine will average well over 80 m.p.g.; moreover, a full power output is obtainable.

Section of the new Binks 2-jet carburetter.



In construction the carburetter is particularly simple, and it has several practical features, amongst which must be noted the inclusion of a very large diameter fine mesh filter directly below the jets. A pilot jet of extremely small dimensions lies on the engine side of the main body and directly below the D-shaped throttle barrel, the main jet being situated on the intake side and being shrouded by an extension tube of peculiar formation. In action the carburetter is, to all intents and purposes, automatic, for once the engine has been started the air control may be opened almost fully, and the machine driven on the throttle alone. At the same time the air lever is convenient for finding the absolute best mixture when the throttle is wide open, or it may be closed down when very slow running is required so providing an enriched mixture giving good acceleration

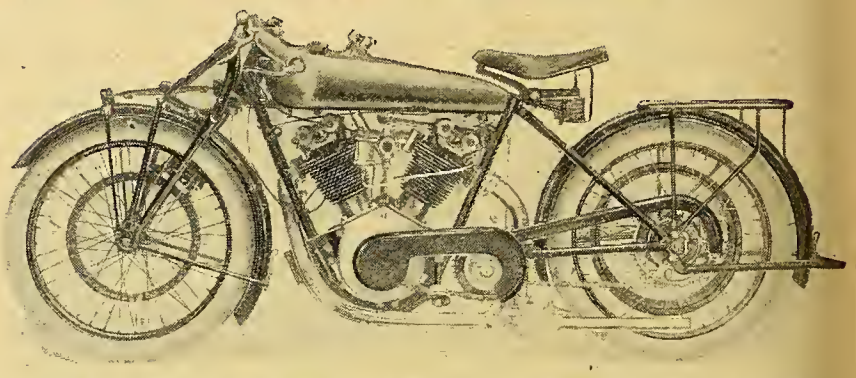
ANOTHER SOLO BIG TWIN.

Anzani-engined Sports Model. Four Overhead Valves per Cylinder.

OF recent times the market for the big twin enthusiast has received more attention from British manufacturers. The latest addition to the steadily growing list of machines in this class is to be known as the Croft-Anzani Super Eight. As may be gathered from the name, the engine fitted is the latest type of Anzani twin with four overhead valves per cylinder.

The engine is housed in a duplex loop frame of sturdy construction, the duplex tubes allowing the exhaust pipes a straight flow between the tubes, the rear pipe passing also through a hole in the bottom bracket casting; the exhaust gases are then led to a large flat cast aluminium silencer, from which the exit is by a tail pipe on either side of the rear wheel.

Transmission is by chain throughout, a close-ratio Sturmey-Archer box being employed, with a shock absorber in the clutch and an Enfield cush hub in the rear wheel. A saddle tank covers the straight top tube, and has a capacity of 3 gallons of fuel and ½ gallon of oil.



One of the few big twins available with four valves per cylinder—the new Croft-Anzani.

Montgomery forks are fitted, and both brakes are of the dummy belt rim type—one on each wheel. Lubrication is by Best mechanical pump.

Since the machine is designed to be of the sporting type the mudguards are somewhat narrow in section, but special wide guards may be fitted to order.

It is expected that the price will be in the neighbourhood of £145, and the makers are the Croft-Anzani Super Eight, St. Michael's Road, Coventry.

SHOCK ABSORBERS FOR SPRING FORKS.

Friction-damping Principle Embodied in B. & D. Stabilizer.

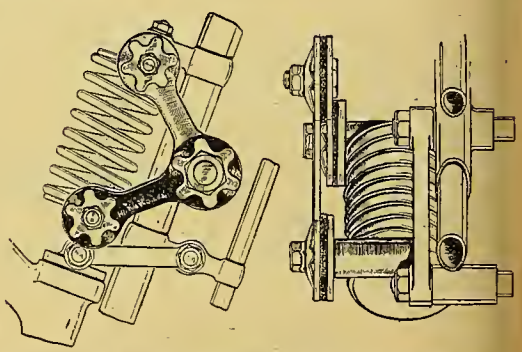
FOR some time now racing cars have invariably included shock absorbers in their equipment; touring cars are rapidly following suit; and the natural sequence would seem to be the application of this device to a motor cycle.

It is not surprising, therefore, to learn that in the B. and D. stabilizer the principle has been applied to the two-wheeler and the sidecar outfit with considerable success. It consists simply of a friction shock absorber, and was evolved on the theory that a spring in itself cannot dissipate or absorb energy; it merely stores it. The reaction or rebound causes a shock just as surely as the initial jar.

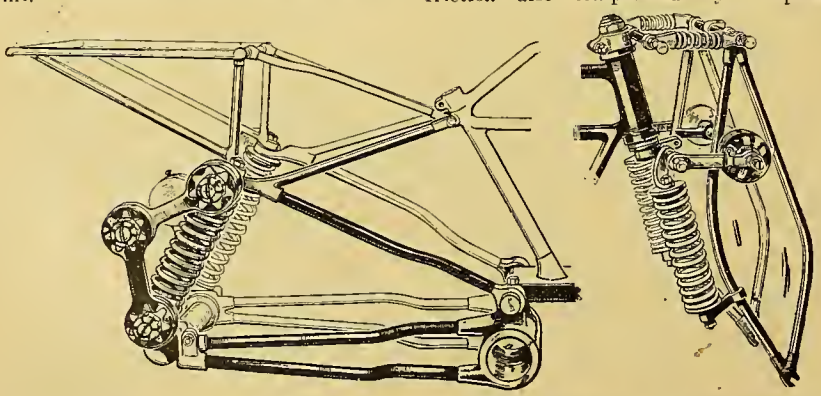
The stabilizer, which is patented, enables very much weaker springs to be used. These naturally give a wider range of action, but since they are damped, there is no possibility of them bottoming or being over-worked to the breaking point.

The system is the result of many years' experiment on Mr. A. D. Draper's (the inventor's) Matchless, which is fitted with his suspension front and rear. A run on this machine convinces us that his claims for greater comfort without any adverse effect on road-holding qualities are not based on theory alone. Even a brick or a three-inch pot-hole may safely be crossed without feeling any real jar, and, what is more important, without setting up a series of oscillations in the unsprung member, perhaps better described as dither.

The damping device is quite simple. It consists of a floating friction disc compressed by a spring washer between any two relatively moving surfaces at a pivoting point in the suspension. Pressure on the spring washer is controlled by a nut, locked by a corrugated washer, which is prevented from rotating by two flats on the main bolt.



B. and D. stabilizer fitted in place of the existing spring on a Druid pattern fork.



Front and rear portions of the Draper spring frame which makes use of frictional dampers on the same principle.

Several forms of the invention have now reached the marketable stage. Perhaps the most interesting is a complete set of springs and dampers, retailing at £2 8s., to replace the existing springs on a Druid type fork. Since weaker, and therefore larger, springs are used, special brackets are supplied to carry them clear of mudguards, etc. The fixtures are thoroughly well made and well finished.

Another set is made for controlling sidecar body suspension. In this case, the existing springs usually have a sufficiently wide and flexible range of action, and only a pair of friction arms is required, for which £1 19s. is charged.

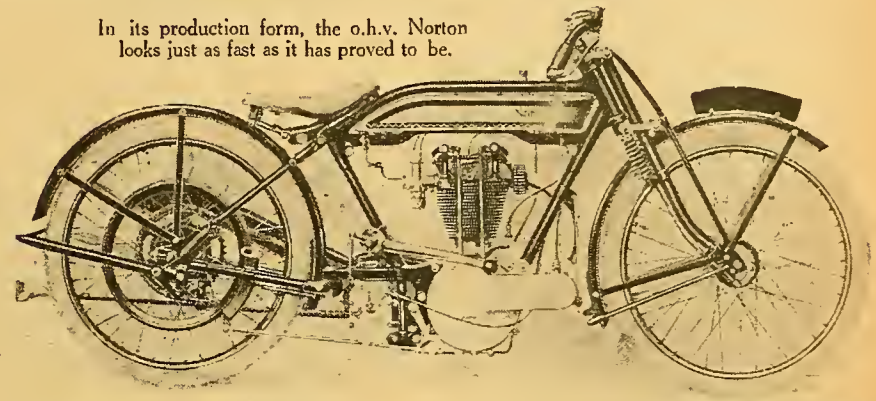
The makers are Bentley and Draper, Ltd., 4, Fenchurch Avenue, London.

OVERHEAD VALVE NORTON MODIFICATIONS.

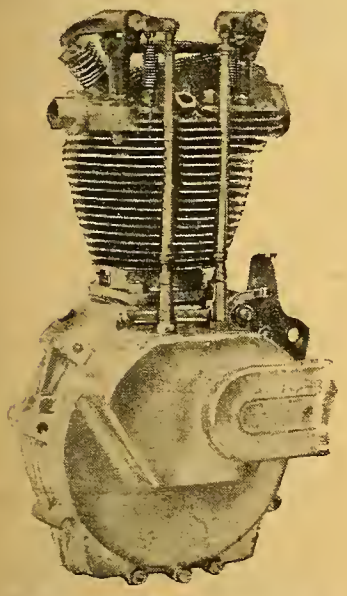
Over-all Height of Engine Reduced. Improved Frame Design.

THOUGH the overhead valve Norton has now been with us for a considerable time it is not generally realised that this type has already been standardised and is obtainable by the buying public.

Since the early machines have proved satisfactory, the modifications which will appear at the forthcoming Olympia Exhibition are comparatively slight, but it has been found to be possible to lower the over-all dimensions of the o.h.v. engine; besides this, the cylinder head ribs have been modified to provide increased cooling area, and several details have undergone minor alterations.



In its production form, the o.h.v. Norton looks just as fast as it has proved to be.



Clean, sturdy design and construction are followed in the o.h.v. engine.

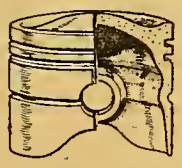
Forged steel rocker standards have now replaced the bronze castings, the rockers themselves being carried on double row roller bearings. The push rods have separate return springs, and the valves are held in their seats by double concentric springs. Special care has been taken to provide cooling for the exhaust valve stem and guide. The upper spring cup is locked by split taper collars, the cup being drilled so as to permit a passage of air which flows owing to the pumping action of the valve. At the base these springs rest on a cleverly-designed washer which is corrugated in such a manner as to allow of a direct draught of air to the valve guide.

Internally the engine has undergone but little change, but a new piston of the semi-slipper variety has been designed. The head of this piston is of a somewhat peculiar shape, in order to allow the use of high compression and yet permit ample valve clearance; it has a thick head and two narrow piston rings at the top, the lower of these rings acts as a scraper and returns oil direct to the gudgeon pin bearings, a shallow groove being machined round the piston on the gudgeon pin centre. Below the gudgeon pin boss the sides of the piston are cut away.

Split cone fixing employed for the spring cups on the o.h.v. Norton.

For this model a new frame has been designed, and though it follows the lines usually adhered to by the firm, the saddle position is both lower and slightly further forward than previously. In addition, adjustable footrests have been fitted and large head races. In order to comply with the law a large tubular expansion chamber is combined with the run of the exhaust pipe, the pipe being attached to the cylinder by a ribbed nut.

Other details include an internal expanding front brake mounted on a very stout hub with ⅜in. balls. Lubrication will be by a spring-fed hand pump without sight drip feed, 26×2¼in. tyres have been standardised, and the D-section mudguards are supported by flat stays.



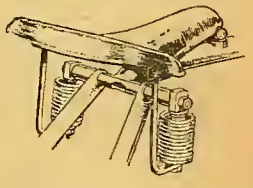
A semi-slipper alloy piston of unusual design is fitted to the latest o.h.v. Nortons.

On the side-by-side valve 490 c.c. model the most important changes are, to all intents and purposes, unnoticeable externally, since they affect the shape of the combustion chamber and ports, and have been made with the idea of increasing turbulence. The exhaust port and pipe, however, are somewhat larger and the valve stems are now parallel throughout their length, instead of having a shoulder as before. In addition, the popular 16H model will be supplied with wide flat mudguards, footboards and leg-shields as a full touring machine.

The "Big Four" is but little altered, but all Norton models, with the exception of the overhead valve type, will be fitted with a large expansion chamber under the magneto bracket and a long tail pipe passing rearwards.

NEW SINGLE GEARED COULSON.

FOR 1923 a light single geared model, engined with the 70×70 mm. Liberty two-stroke, will be a feature of the Coulson 1923 productions. It will follow standard Coulson lines in general lay-ont, but will not have the spring frame. 26in. wheels are fitted, and a direct-acting brake will operate in the rear belt rim. A Mills carburetter will be standardised.



On the 349 c.c. Coulson the saddle is attached direct to the frame.

Other Coulson models will be engined with the 349 c.c. side-by-side valve and the 548 c.c. Blackburne engines, and a 349 c.c. overhead-valve Blackburne sports model will also be listed. The specification of the two touring models will be very much alike, and will include, in addition to the well-known Coulson spring frame, a three-speed Burman gear with clutch and kick-starter and all-chain drive.

The frame has been shortened and cleaned up considerably, while the bearing surfaces for the links of the rear spring frame have been very much increased in proportions, and each pivot pin is now provided with a lubricator. In addition, the central stand has been dropped for a more normal type carried on the rear fork extension. Adjustable footrests are now used, and provision has been made for the fitting of a Magdyno without alteration to the normal magneto bracket.

The saddle, of course, remains as before, being attached direct to the frame members without the use of the saddle frame.

FRICTION-DRIVEN MINIATURE.

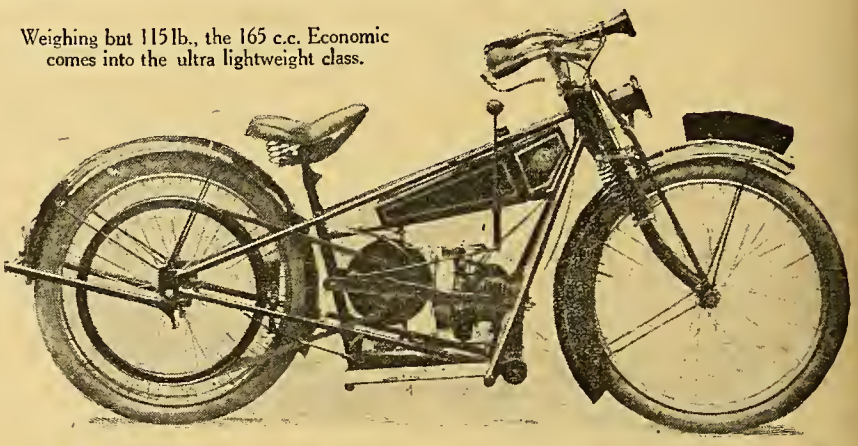
165 c.c. Economic Flat-twin Two-stroke; No Important Alterations.

WHEN it first made its appearance at Olympia last year the lightweight 165 c.c. Economic received considerable attention on account of its departures from standard practice. Its two-stroke flat-twin engine, friction drive, duplex frame, and really light weight, coupled with a very reasonable price, placed it in a class of its own.

Unfortunately, the 1923 price has not been settled, but it is to be expected that it will be well below the £34 charged last season.

Equipped with friction drive (having nine speeds ranging from 6 to 1 to 9 to 1) which incorporates a pedal actuated free engine, the control of the machine in traffic and on the open road is all that can be desired.

The petroil system is employed for lubrication purposes. Quite good performances have been made by the machine in 1922, one of the most noteworthy being a run from London to Edinburgh under A.C.U. observation in the running time of 22 hours 27 minutes, at an average speed of 17.02 m.p.h. The weight of the machine equipped for the journey was 115 lb.



Weighing but 115 lb., the 165 c.c. Economic comes into the ultra lightweight class.

It is not surprising, in view of the design of the Economic miniature, that few alterations have been made in next season's model. The finish, which for 1923 will be black and gold and improved in quality, and the fitting of the Capac single lever carburetter in future as a standard, will be the sole modification for next year. The flywheel magneto is provided with a separate lighting coil; giving an ever-ready source of current for the lamps when the engine is running.

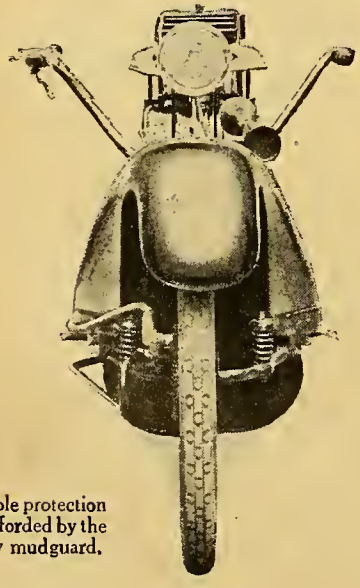
Economic motor cycles are made by The Eynsford Engineering Co., Ltd., Primrose Works, Eynsford, Kent.

ENGINE CAPACITY OF NER-A-CAR INCREASED.

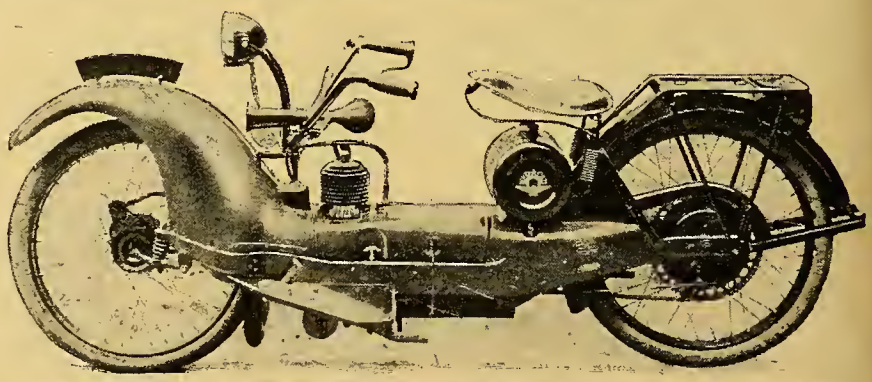
Many Detail Improvements to Wheels, Brakes and Control Mechanism.

WHILE there have been no radical alterations in the unique design of the Ner-a-Car there have been many detail changes tending to simplify the design which bring about real improvements not only in the production of the machine but in the provision of increased comfort for the rider.

To the average person, one of the greatest charms of the Ner-a-Car is the exceedingly neat way in which all the working parts are enclosed so that it may be used with the usual outdoor garments, overalls merely being necessary when overtaken by a drenching shower of rain.



Ample protection is afforded by the new mudguard.



Besides being fitted with a larger engine the new model Ner-a-Car has a neat chain guard, a switch adjacent to the engine for controlling the lights, a new headlamp mounting, and a conveniently disposed tool case at the rear of the carrier.

Further improvement has been made in the design of the front guard, which is composed of a single smooth sheet of beaten metal, has no visible stays, is so designed as to offer less wind resistance than the older type, and is so constructed that drops from the edges instead of being blown back on to the rider are carried away to the rear of the guard.

The engine has been considerably increased in size, being now 285 c.c. as against the 211 c.c. of last year's model (bore and stroke 70×74 mm.), but it remains of the standard three-port two-stroke type, with a finned exhaust port and a piston having three rings.

A Lodge plug with waterproof terminal has been fitted and from this the high-tension wire is carried to a special waterproof terminal situated in an accessible position forward of the flywheel magneto. In last year's model this terminal was exceedingly difficult to reach. The ignition apparatus itself has been considerably improved and strengthened.

Special care in silencing the machine has been taken, the silencer being redesigned and a long extension pipe has been fitted.

In order to withstand the roughest wear, the kick-starter on the 1923 model has been strengthened; its quadrant is

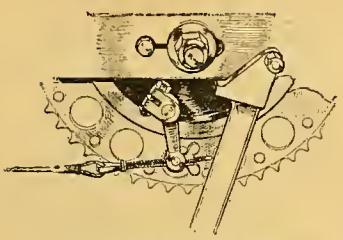
Advance Details of 1923 Models.—

mounted on an eccentric pin secured by a cotter pin, so that the meshing of the pinions can be adjusted.

An important improvement in the transmission is the fact that the friction disc is now made reversible, so that if one side becomes scored or worn the other side can be brought into use, while owing to the introduction of an ingenious spring-loaded plunger the change-speed lever is now self-locking and self-releasing in its quadrant.

Instead of two lamps fixed one each side of the mudguard a neat Powell & Hanmer head light is attached to the handle-bar stem; it derives its current from the flywheel magneto, while a dry battery carried underneath the saddle is provided for use while the machine is at rest.

Ball bearings are now employed at the top and bottom of the steering head, while the steering connections are now



A wing nut gives quick adjustment to the rear brake cable.

spring loaded. The front hub, also, has ball bearings on both sides, and a long swivel pin and a heavier housing are provided.

Formerly the front of the machine was suspended on springs and counter-springs, but the latter have been eliminated as the single springs fitted have proved to be adequate in every respect.

Improvement has also been brought about in the braking. There are now two internal expanding brakes of which the shoes are of aluminium, situated one each side of the rear wheel, one of these being actuated by the driver's left foot, while the other is controlled from the handle-bars.

A withdrawable spindle is fitted to the back hub, which incidentally has been strengthened and runs on two caged ball bearings.

So as further to strengthen and stiffen the pressed steel frame the cross member adjacent to the saddle has been fitted with large flanges.

A new tubular carrier, provided with eyelets for straps, will be fitted to the 1923 models. Front and back stands are provided, and 26×2¼in. tyres are fitted.

The weight is 190 lb. and the price £65.

The manufacturers of the Ner-a-Car are The Inter-Continental Engineering Co., Ltd., 20, Conduit Street, London

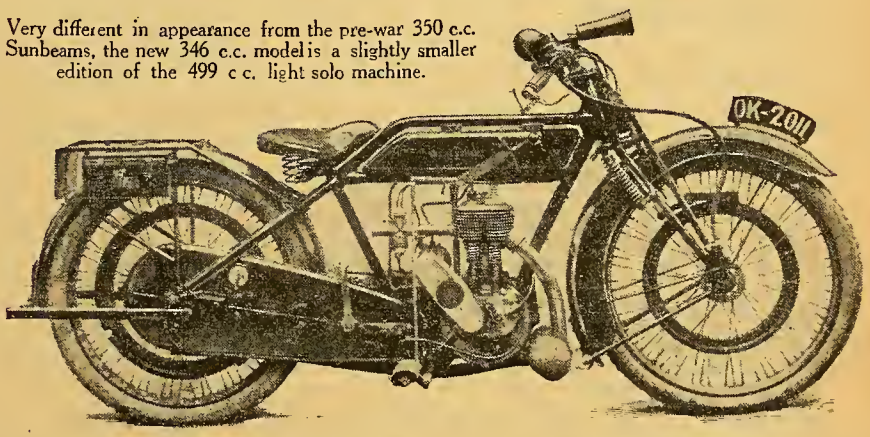
SUNBEAM LIGHTWEIGHT ONCE MORE.

Long-stroke 346 c.c. Model on Lines of the Popular 500 c.c. Machines.

GREAT interest will be centred in an important addition to the Sunbeam range. This takes the form of a 70×90 mm. (346 c.c.) machine. It will be remembered that in pre-war days the makers of the Sunbeam produced a most admirable 350 c.c. machine, and the re-introduction of an up-to-date representative in that class will be welcomed by a large number of riders.

Sunbeam lines are followed throughout in the new model, in fact, it is almost an exact replica of the 499 c.c. Sunbeam in miniature. So perfect are the proportions that one might easily mistake the new machine for the 499 c.c. light solo model if it were seen alone and not in company with the larger one. Not only are the lines similar, but many of the actual parts of the bigger machine are used. The gear box, for instance, is identical, parts of the timing gear are the same, and almost every detail which is altered has been modified only as regards weight.

Very different in appearance from the pre-war 350 c.c. Sunbeams, the new 346 c.c. model is a slightly smaller edition of the 499 c.c. light solo machine.



Iron or Aluminium Pistons.

A cast-iron piston having two top rings is fitted in the touring model, but the sports model will be provided with an aluminium piston.

A roller-bearing big end and ball-bearing main shaft are employed, the driving side having a double row race. The flywheels are steel stampings machined all over, and every detail is carried out in the well-known Sunbeam manner. It is probable, therefore, that (although the price is not yet available) the 346 c.c. Sunbeam will not be a cheap machine. In spite of this it should be very well worth the attention of those who are content with nothing less than the very best.

Large valves having inch and a half clear ports are used, and the cylinder, which is in one piece with the head, is on the same lines as its larger brothers.

The Sunbeam oil bath front chain case is, of course, a feature, while the rear chain is thoroughly enclosed and is lubricated by an oil release from the crank case.

A top gear ratio of 5.6 to 1 is supplied, and the tyre size is 26×2⅜in.

Following the lines of standard Sunbeam productions both wheels are fitted with internal V brake blocks working on dummy belt rims.

To comply with the law a large expansion box is fitted in front of the engine, though it is possible that modifications in this may be provided on the sports model. The magneto is carried behind the cylinder and adjustable foot-rests are fitted.

Modifications to Larger Machines.

With regard to the existing Sunbeam models, these remain to all intents and purposes unchanged. The 596 c.c. single has slightly improved cylinder head cooling, while an option of 3in. tyres is provided. In addition to this the carrier has been strengthened in order to take the Brooks B600 saddle if so specified.

The standard 499 c.c. model may also be obtained with 3in. tyres, and increased mudguard clearance has been provided to enable over-size tyres to be fitted.

In the case of the 499 c.c. light solo model, a large expansion box is an option, and again 3in. tyres may be fitted. In addition to this a compensating rear brake shoe is now used. The 492 c.c. T.T. single also has this compensating rear brake, while 26×2½in. tyres are fitted and an expansion box may be supplied to comply with the law.

THE LEVIS PROGRAMME.

THE makers of the justly popular Levis two-stroke machines have now announced their 1923 prices and list of models, which are as under:

	£
Popular model (211 c.c.), single gear, with sloping top tube	38
Model S. (211 c.c.), with 2-speed gear, clutch, and kick-starter	48
Model T. (211 c.c.), similar to model S., only with sloping top tube	49
Model H. (247 c.c.), 3-speed, all-chain, clutch, and kick-starter, sloping top tube	65

OVERHEAD VALVE A.J.S. AVAILABLE.

New 349 c.c. Model based on Famous T.T. Winning Type.

MORE than once criticisms have been heard owing to the fact that the makers of the A.J.S have repeatedly won the Tourist Trophy Race with an overhead valve model which was not available on the open market.

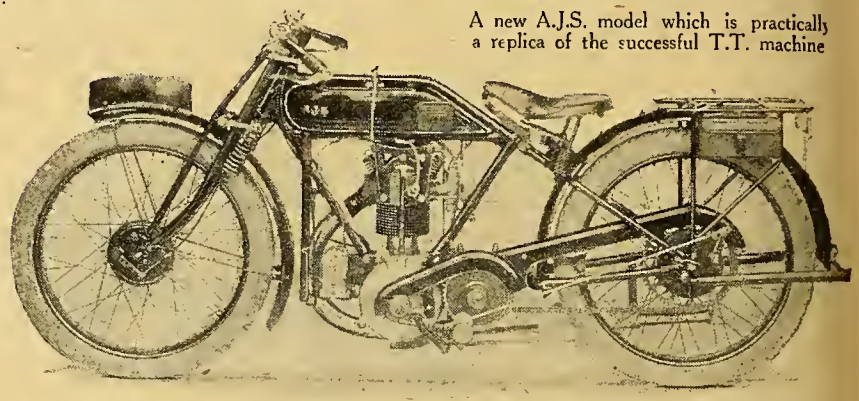
Nevertheless the manufacturers acted wisely, for they felt that until the experimental machines had been reduced to a form in which they were safe in the hands of the public it was better not to sell them broadcast. Now, however, the latest developments render the o.h.v. model as available as the popular side valve type.

At the forthcoming Olympia Show there will be staged a super sports model with an engine based on the T.T. A.J.S. machine. The overhead valve mechanism will be almost exactly similar, except for the fact that somewhat longer valve guides are employed so as to reduce wear at this vital point. These valves give a clear port opening equivalent to $1\frac{9}{16}$in. and a lift of $\frac{5}{16}$in. They are operated through hollow push rods with an independent return spring for the rocker gear. Recent modifications include an increased head cooling area with vertical fins arranged to lie in the same direction as the main air current. The detachable head is held down by a round section steel strap semi-circular in form. As might be expected, the head and cylinder joint are formed on the patented A.J.S. lines

Four-ringed aluminium piston.

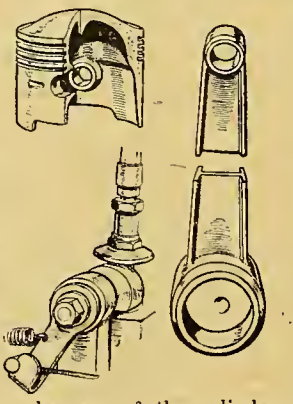
Another innovation since the Tourist Trophy races takes the form of an aluminium piston, though the four very narrow rings above the gudgeon pin are retained. A hollow gudgeon pin is fixed in the piston bosses by means of a split pin, a bronze bush being fitted to the small end of the connecting rod; the connecting rod itself is a nickel chrome forging, heat treated and machined all over. The section of the road is extraordinarily light, being no more than $\frac{1}{16}$in. thick in the web; in spite of this, no trouble has ever been experienced with it. Two rows of $\frac{5}{16}$in. rollers are employed for the big end, an outer race being pressed into the rod. The bore and stroke remain as before, 74 × 81 mm. (349 c.c.).

Plain splash lubrication is relied upon for the bronze main bearings. On the driving side of the crankshaft a standard spring loaded cam type of shock absorber is fitted, transmission following standard A.J.S. lines through a close ratio gear box, the ratios supplied being 5 to 1, 6.1 to 1, and 9.4 to 1.



A new A.J.S. model which is practically a replica of the successful T.T. machine

For the benefit of sporting riders who desire to enter speed events and hill-climbs, the rear mudguard and carrier have been made in a quickly detachable form. There is also a stay from the saddle tube to the rear of the cylinder head.



Top: Aluminium piston in the o.h.v. engine.

Left: Near external valve lifter cam.

Right: The roller bearing in the big end of the light connecting rod is carried in a pressed-in bush.

This overhead valve model does not replace the standard side-by-side valve machine, which will be listed as before, but with 650 × 65 mm. tyres, modified handle-bars and a much improved front mudguard which, in addition to being splayed at the rear, is formed with mud-trapping channels round the edge of the valances, and a shield at the front to prevent the ingress of air, which usually blows back mud spray on to the rider.

An aluminium piston is also fitted to this model.

Such features as the adjustable foot-rests, neat knee grips fixed direct to the tank, the spring loaded hand oil pump, are of conrse retained, and the machine is finished as well as ever.

Modifications to the 799 c.c. A.J.S. passenger outfit consist of aluminium pistons, a similar but enlarged type of mudguard to that employed on the standard 349 c.c. model, the fitting of Lucas Magdyno and lamps as standard, and the arrangement of the change speed lever and switchbox further forward on the tank, so that they clear the rider's knee with comfort.

1,234 c.c. INDIAN NEXT YEAR.

SO many British motor cycle manufacturers are introducing new lightweight models that this may be said to be one of the chief tendencies for 1923. Not so in America, however, where no new lightweights are being considered, but instead even larger machines than the big twins so familiar on our roads.

For 1923 the Indian range will be increased by the introduction in this country of a new model of 1,234 c.c., which will be known as the "Super-Chief." While new to the British market, this model has been very popular in the U.S.A. and overseas Dominions for the past year, and is intended for heavy duty and family sidecar work.

With a double seated sidecar of the Princess type, the price is £167, but if any big twin soloist desires an engine over 1,200 c.c., it will be available without the attachment at £137, with, like the sidecar outfit, full electrical equipment and speedometer.

Other Indian models retained for next year are: 998 c.c. Indian Chief, electrically equipped, £132; 998 c.c. Standard, spring frame, £107; electrically equipped, £123; 596 c.c. Scout, £96 10s.; electrically equipped, £113.

NEXT THURSDAY! THE MOTOR CYCLE **FIRST SPECIAL SHOW NUMBER.**

LIGHTWEIGHTS AND ACCESSORIES.

In addition to the well-known regular features which have made "The Motor Cycle" so popular with its 120,000 readers, many special articles are in course of preparation which will interest every motor cyclist and possess a strong appeal to all contemplating the purchase of a solo machine.

CURRENT CHAT

Times to Light Lamps.

Nov. 2nd	.. ..	5.1 p.m.
„ 4th	.. ..	4.57 „
„ 6th	.. ..	4.54 „
„ 8th	.. ..	4.51 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Sunday at Brooklands.

Brooklands will be open on Sundays, free as usual, all through winter.

Armistice Day Brooklands Meeting.

Three motor cycle handicaps and three for cars will comprise the programme of the Armistice Day Brooklands Meeting. Entries are limited and close positively this morning.

Congratulations.

To H. Le Vack on his 5-mile record at over 100 m.p.h. we offer our congratulations, which are extended to the Zenith firm, the makers of the J.A.P. engine, and everyone concerned in the production of the first motor cycle to lap Brooklands at over 100 m.p.h.

A.C.U. Haven at Olympia.

Exclusive use of the Princes Rooms in Olympia has again been secured by the A.C.U. for the benefit of its members during the forthcoming Motor Cycle Show. As in former years, the Union will provide a special refreshment service, writing and cloakroom accommodation, and the use of a lounge.

Oil from Norfolk?

A petroleum drilling licence has been issued to a syndicate about to operate at Narborough, Norfolk.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

NOVEMBER 25th to DECEMBER 2nd marks the period when the

MOTOR CYCLE EXHIBITION

at Olympia will be open to the public.

In connection with the Show "The Motor Cycle" will publish four special issues as under:

Nov. 9th. Lightweights and Accessories.
Nov. 16th. Passenger Machines.
Nov. 23rd. Show Forecast and Guide.
Nov. 30th. Show Report.

Each of these enlarged issues will embody special features possessing a strong appeal to all who own or who contemplate the purchase of a motor cycle.

To avoid disappointment an order should be placed in advance with the local Newsagent.

EVERY THURSDAY....THREEPENCE

Special Features.

SPEED AND THE 10 FT. LINE.
MANY NEW MODELS.
OVER THE BURMESE HILLS.

Traps Again.

A police trap was in operation on a recent Saturday afternoon over a stretch of the Portsmouth Road between Kingston and Esher.

International Trials in Sweden.

The Swiss M.C.U. has definitely relinquished its right to organise the International Six Days Trials in Switzerland next year, and the Swedish M.C.C. has applied for permission to run the event in Sweden.

Club Dinner Novelty.

Most club dinners are much of a muchness. The Ealing Club, however, is considering a suggestion made by Prof. Low that its function should be a *diner-dansant*, with the tablts set around the dancing floor.

End-to-End on a Motorised Bicycle.

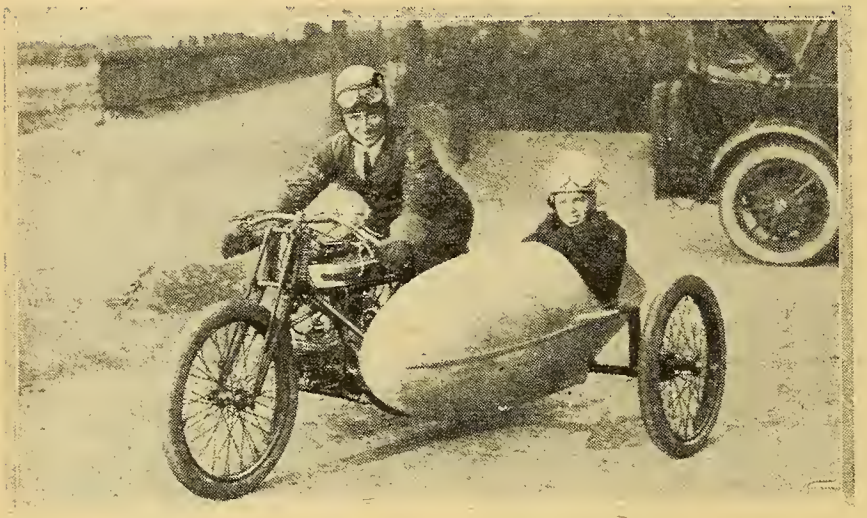
Under A.C.U. observation a standard stock McKenzie miniature has accomplished a run from Land's End to John o' Groats. The run is reported to have been highly successful. All hills except two in Scotland were climbed, and the rider finished in fresh condition, the only replacement during the whole journey being a sparking plug, which failed on Berriedale Hill. There were no tyre troubles, despite the bad conditions of the roads.

FROM END TO END. G. A. Cade and the little 169 c.c. McKenzie, on which he recently accomplished the run from John o' Groats to Lands End at an average speed of 18 m.p.h.

BIG ROAD IMPROVEMENT. Congestion on the London and Portsmouth Road will be considerably relieved by the new section between Portsbridge and Wymering, which was officially opened on Thursday last. The length is one mile and the width 40 feet. Nearly £40,000 has been expended on this improvement

ACTIVITY AT BROOKLANDS.

Short Distance Records by Two-stroke and Flat-twin.



C. G. Pullin and his various racing Douglas machines figure repeatedly in the record lists. His latest achievement, with the 496 c.c. outfit shown, is the breaking of international 500 c.c. mile and kilometre sidecar records at 75·74 and 78·34 m.p.h. respectively.

R. N. Judd (249 Velocette) proves from time to time that the two-stroke is capable of beating four-stroke times. 58·83 m.p.h. (standing kilometre) and 62·91 m.p.h (standing mile) are his latest figures.

IN addition to the five-mile record at over 100 m.p.h. secured by H. Le Vack on a Zenith-Jap, referred to on page 627, there were other activities at Brooklands on Friday last, not the least important being R. N. Judd's (249 Velocette) successful attack on the standing start kilometre and mile records.

Judd's new figures are :

Standing kilometre:			
38.02s.	58.83 m.p.h.	94.68 km.p.h.	
Standing mile:			
57.32s.	62.91 m.p.h.	101.24 km.p.h.	

These are British records, and the time for the standing kilometre also secures this record in class B, which had previously been established by C. Pullin on his 350 c.c. Douglas.

Cyril Pullin's attacks were on the international mean speed records. With a 57×68 mm. (350 c.c.) Douglas he established the following :

Standing kilometre:			
Normal 39.64s.	56.43 m.p.h.	90.82 km.p.h.	
Mean 40.00s.	55.92 m.p.h.	90.00 km.p.h.	
Standing mile:			
Normal 56.92s.	63.24 m.p.h.	101.77 km.p.h.	
Mean 57.77s.	62.53 m.p.h.	100.63 km.p.h.	

With a 68×68 mm. (496 c.c.) Douglas and sidecar Pullin's speeds were :

Flying kilometre:			
Normal 28.45s.	78.63 m.p.h.	126.54 km.p.h.	
Mean 28.55s.	78.34 m.p.h.	126.07 km.p.h.	
Flying mile:			
Normal 45.76s.	78.66 m.p.h.	126.58 km.p.h.	
Mean 47.52s.	75.74 m.p.h.	121.89 km.p.h.	

From the above standing start figures it will be seen that Judd's Velocette evidently scored above Pullin's 350 c.c. Douglas by its superior acceleration, for while it was 2 m.p.h. faster than the Douglas for a kilometre, the latter's speed for the mile was 0.33 m.p.h. greater.

Equipment.

Judd's equipment included Dunlop tyres, Speedwell oil, Binks carburetter, and Shell spirit, while Pullin used a Wex carburetter, Castrol oil, K.L.G. plugs, Hutchinson tyres, E.I.C. magneto, Renold chains, John Bull knee grips, Toronda sidecar, and Pratt's spirit.

"TRIPLE-EIGHT" RECORD BY RUDGE.

61·72 m.p.h. for Twenty-four Hours in Three Eight-Hour Periods.

OWING to the shortness of late October days it is not possible now to attempt a double-twelve record. Therefore J. H. Mathers and R. E. Dicker, riding a 998 c.c. Rudge, have done the next best thing by completing what may be called a triple-eight hours' run at an average of 61.72 m.p.h.

It is expected that the A.C.U. will recognise their attempt as a twenty-four-hour record breaking the double-twelve. A start was made on Wednesday of last week, when 525 miles 381 yards were covered in eight hours, an average speed of 65.51 m.p.h. The next day was too foggy to continue, and although the ride was commenced again on Friday the weather conditions were still unfavourable, reducing the distance to 423 miles 1,684 yards (52.97 m.p.h.).

Saturday was better, and 525 miles 381 yards were covered, equalling 65.65 m.p.h.

The total distance thus was 1,481 miles 459 yards, an average speed of 61.72 m.p.h., which, if recognised, just beats the existing Norton double-twelve figures.

A photograph of Dicker starting one of his spells of riding appears on p. 632.

FIVE AND TEN MILES SIDECAR RECORDS.

ON Saturday last, H. Le Vack, riding the identical Zenith-Jap machine on which he had performed so successfully the previous day, broke the flying five-mile and the standing ten-mile sidecar records. The weather was fine but exceedingly cold, and another rider who made an attempt on records was stopped by a frozen carburetter. Le Vack, however, had an exhaust-heated muffle on his induction pipe, and was not troubled. His standing lap was covered at the rate of 72.24 m.p.h., in spite of an excess of oil causing misfiring. Lap speeds improved consistently, and the last lap was the fastest. The same equipment as on the previous day was used, namely, Hutchinson tyres, Castrol R., Lodge plugs, M.L. magneto, and Perry chains.

Flying Five Miles: 3m. 40.24s. = 81.72 m.p.h.
Standing Ten Miles: 7m. 36.40s. = 78.88 m.p.h.

OVER 100 M.P.H. FOR FIVE MILES.

Le Vack and his Zenith-Jap First to Lap Brooklands at Over the Century Mark.

AT last a motor cycle has lapped Brooklands at over 100 m.p.h. On Friday of last week H. Le Vack enhanced his reputation as a leading British speedman by covering the flying five miles in 2m. 59.48s., which is officially recorded as 100.29 m.p.h.

A fine achievement. H. Le Vack and his 988 c.c. Zenith-Jap, on which he attained over a hundred miles an hour for five miles.

Le Vack's mount was a Zenith fitted with a J.A.P. engine of 988 c.c. (80×99 mm.), and was the same machine with which he secured the 1,000 c.c. championship on the previous Saturday.

This is the first occasion on which a British motor cycle has established a record at over 100 m.p.h., and the first time *any* motor cycle has lapped Brooklands at a figure over the century mark.

Le Vack was riding on the 50ft. line, while his speed was calculated on the 10ft. line, which means that his actual speed was about 102 m.p.h. Further, the weather was far from favourable, as a drizzling rain was falling.

Added interest lies in the fact that no "dope" was used, Le Vack's fuel being a half-and-half mixture of B.P. petrol and Anglo benzole.

When D. H. Davidson on a 998 c.c. Harley-Davidson attained the speed of 100 m.p.h. in April, 1921, the whole motor cycle world was surprised that what had hitherto been considered impossible had been accomplished. Then Le Vack on a 998 c.c. Indian raised this to 107.55 m.p.h.

The fact that the first motor cycle to accomplish 100 m.p.h. in this country was of American manufacture was a source of dissatisfaction among motor cyclists in general, for, as much as they may admire the American machines so well known in this country, they would naturally have preferred that the honour should have been won by a home production.

For long the Americans had held the reputation as the fastest machines on British roads for the reason that our manufacturers had not set themselves the task of improving the big twins to the same extent as the 500 c.c. and 350 c.c. types. Whether it was Davidson's and Le Vack's 100 m.p.h. records or not, the fact remains that, since they secured them, greater effort has been made to produce a really fast British big twin, with the eminently satisfactory result recorded above.

It was not many years ago when 60 m.p.h. was considered to be approaching the limits both of the track and the motor cycle, and only men with experiences of speeds between 80 and 90 m.p.h. can fully appreciate what 100 m.p.h. really means for man, machine, and equipment.

We understand that Le Vack's equipment included Lodge plugs, Castrol oil, Hutchinson tyres, and Perry chains.

What it Felt Like.

It is of interest to remark that Le Vack's own opinion is that he was never within an 80ft. line on this occasion.

Questioned afterwards as to what it felt like to lap at such a pace (which meant that the machine must have been doing fully 108 m.p.h. down the railway straight), Le Vack indicated that it was not the easiest thing in the world to hold the machine on a course. The surface of the track in places does not resemble a billiard table, particularly behind the aeroplane sheds, where a series of bumps set the machine bouncing alarmingly.

Down the railway straight the machine more or less steered itself, due in no small manner to the device for tightening the steering head at will which Le Vack has fitted. This eliminates the tendency for the front wheel to wobble when crossing inequalities in the track. (It is, of course, impracticable to have a permanently tight head, but the device referred to makes it possible to regulate the degree of stiffness by a touch of the finger while the machine is in motion.) Along the railway straight, in fact, Le Vack was able to remove one hand from the bars to alter the carburetter adjustment.

Banking Taken "Slowly."

The most "nervy" section of the track was the bend which commences by the kilometre box. The banking there, according to Le Vack, is too low to permit of it being taken without slowing after the tremendous speed attained down the straight. The machine simply would not keep down the banking at this point, and it was quite an effort to hold it on to what banking there is, even at a slightly reduced pace. Across the fork Le Vack steered his customary course, which brings him well under the lee of the Vickers shed, but there is a nasty bump higher up, and a detour had to be made in order to avoid hitting it.

Approaching the Members' Bridge the wind seemed to pile up, as from a funnel, and its force was sufficient to make the rider's eyes stream beneath his goggles, and to blur his vision dangerously. Passing under the bridge, Le Vack was within twenty feet of the top of the banking, and several hardened Brooklands habitués who watched him at this place said that the sight gave them "quite a turn." However, success crowned the J.A.P. exponent's efforts, and no one will grudge him his reward, for, together with his faithful mechanic Moran, he has worked early and late on his beloved engines. Possibly by the time these lines appear he will have lowered the kilometre speed record of 107.55 m.p.h. which he set up nearly a year ago. On his own statement, a limit of speed need not be discussed until 115 m.p.h. has been attained over the kilometre.

M.C.C. DECLINES A.C.U. AFFILIATION.

AT an Ordinary General Meeting of the Motor Cycling Club, held at Pagani's Restaurant last week, under the chairmanship of Mr. L. A. Baddeley, called to discuss affiliation with the governing body, an adverse decision was reached.

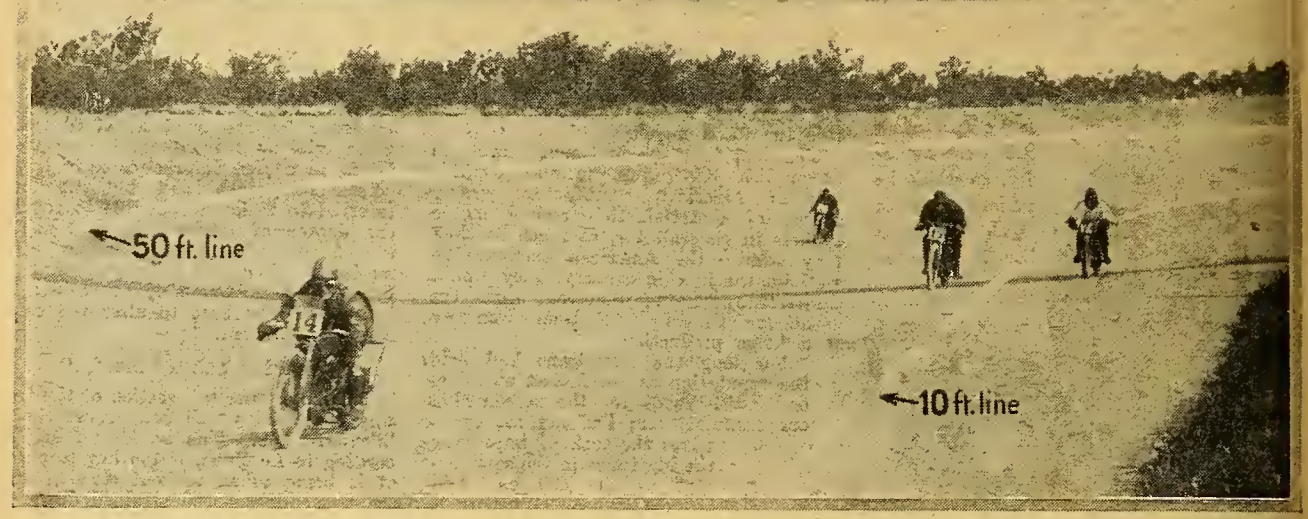
Next it was proposed that the club should give the Union its moral and financial support, but after a lengthy discussion it was finally decided to defer the matter until the M.C.C. Annual General Meeting in January.

Previous to the meeting last week, the members had been circularised, and asked to say whether they drove cars or motor cycles, whether they were interested in both vehicles, or whether they were affiliated to the Auto-Cycle Union. Some interesting figures resulted, and it was shown from the number of replies received, which clearly did not represent the full membership, that out of 95 car members practically half were affiliated; out of 199 motor cycle members only 50 were not affiliated; while out of 196 members interested in both cars and motor cycles only 60 were not affiliated. The final result of the referendum showed that 73 per cent. of the M.C.C. members were actually affiliated members of the Auto-Cycle Union.

Despite these figures the general feeling of the meeting was shown clearly at an early stage, and it was seen at once that the proposal to affiliate would be lost; it was quite easy to gather, however, from the views expressed by the majority, that no animosity was felt towards the A.C.U.

C O

Speed on the 10ft. Line



Why Car Speeds at Brooklands are More Favourably Calculated than Motor Cycle Speeds.

A MATTER that is agitating the minds of certain Brooklands riders at the present time concerns the rule decreeing that motor cycle lap times shall be converted into m.p.h. on the assumption that a motor cycle, no matter what its speed, adheres to a course within the ten-foot line, *i.e.*, within ten feet of the inner edge of the track. Speeds have, however, increased so tremendously of late that it is no uncommon occurrence for laps to be accomplished at an average of 90 m.p.h., and even 100 m.p.h.

Fast Machines Follow Car Tracks.

Now, it is held by many racing men—including Le Vack—that, when lapping at any speed in excess of 90 m.p.h., or with sidecar, at over 75 m.p.h., it is impossible to steer a course that is nearer to the inside of the track than the 50ft. line, on which all car speeds are calculated as a matter of course. Above a certain lap speed, these riders maintain, motor cycle speeds should be calculated on the same basis.

That this is not an idle contention will be admitted by most people who have witnessed a motor cyclist lapping at a really high speed. He must go fairly high up the banking—not only under the Members' Bridge, where the bend is most acute, but on the far end of the finishing straight, by the aeroplane sheds. When lap speeds approach the hundred mark, a considerable divergence is apparent between the speed credited for the 10ft. line and that for the 50ft. line.

The following figures show the differences when the lap times are around 100 seconds:

Seconds per lap.	Speed, m.p.h. 10 foot line.	50 foot line.
108	90.59	92.23
104	94.07	95.78
100	97.83	99.61
97	100.65	102.69

It will be seen that from 1½ m.p.h. to 2 m.p.h. is lost by the motor cyclist on account of the archaic insistence upon the 10ft. line calculation—a ruling made, be it noted, when a motor cycle that could lap at 60 m.p.h. was considered really fast.

To realise fully the absurdity of the present system, say the advocates of reform, consider the case of a match between a motor cycle and a car, both of which could lap in, for the sake of argument, 99 secs. According to the critics, both vehicles would of necessity have to follow approximately the same course, and so cover the same distance, yet the car would be credited with a speed of 100.61 m.p.h., while the unfortunate motor cyclist would have his lap speed worked out at but 98.82 m.p.h.

Matter to be Considered.

Already the B.M.C.R.C. has considered the problem, and a request has been made that certain trustworthy riders should take their machines, equipped with speedometer, round the course which they customarily follow when lapping at their highest speeds. It was intended that the distance so recorded should be compared with the 2.71767 miles which the official table gives as being the circumference of the track on the 10ft. line. Unfortunately, at speeds slow enough to obtain accurate speedometer readings, it is difficult to follow the course of a 90 m.p.h. racer.

Evidently, however, something should be done in the matter, and that soon, for all records of more than one mile distance are affected. A suggestion is that solo speeds over 90 m.p.h., and sidecar speeds over 75 m.p.h., should be calculated on the 50ft. line basis. It is certain, however, that if the 50ft. concession is allowed, future records will only be credited if they break the previous *time* and not merely the speed only.

CAMBRIDGE RAG ON ALMS HILL.

Chilterns Route followed in Cambridge University M.C.C. Sporting Trial. Record Entry.

DESPITE bitterly cold weather, no less than 46 competitors foregathered near Baldock on the morning of the 29th ult. for the Cambridge University M.C.C. sporting trial.

Considerably less than half that number returned to the finish at Hitchin with clean sheets, but, neglecting the ten non-starters, it was a record entry, and the event as a whole was a striking tribute to the enthusiasm of Cambridge for motor cycling; for every man was an absolute amateur.

There is very little scope for a sporting trial in Cambridgeshire, and consequently the course made a bee-line for the west and Alms Hill, embracing three minor climbs in the Chilterns *en route*.

Mixed Hill Climbing.

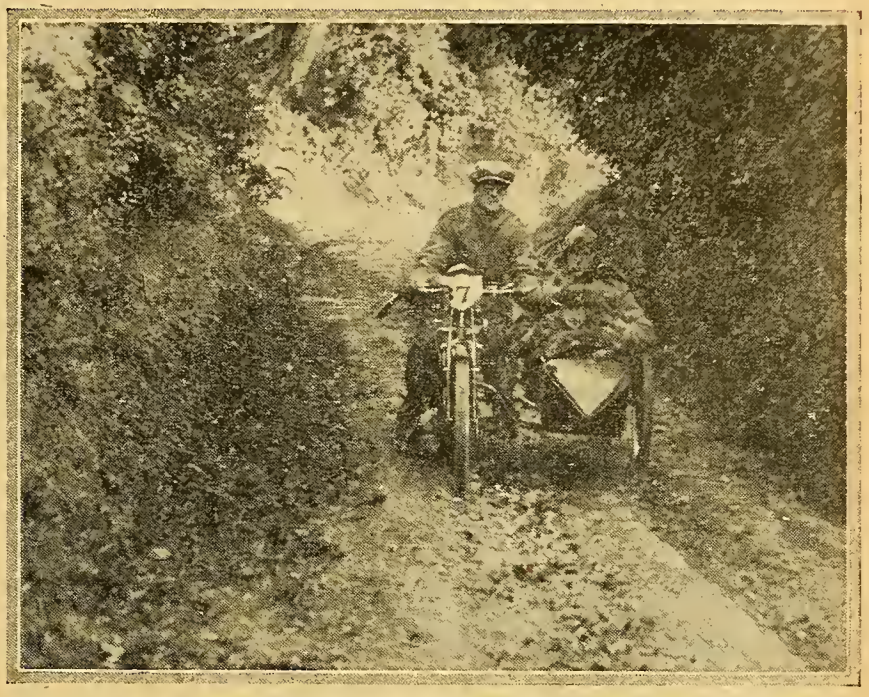
The worst of these, Nettleden, is in the ordinary course of events a second gear climb, but not all the entry had three-speed boxes, nor were all the machines in perfect tune and of modern design. Two 349 c.c. Douglas riders, V. N. Malcolm and R. C. Jebb, failed and pushed to the top, and A. H. Wheeler on a single-geared Peugeot stopped half-way up and turned back. E. W. T. Howard (492 Sunbeam) made possibly the best solo ascent, although two Scott riders might have eclipsed him had they not foolishly bunched themselves with some plodding singles.

A 20 m.p.h. timed climb of Waterworks Hill, near Tring, was relieved from dullness by a surprise acute hairpin bend a few yards from the start, and S. P. Patel (550 Triumph sc.) was reported to have failed altogether here.

Alms came after lunch at Henley, and, although it was optional, almost everybody had a shot at it. About half of them got up non-stop.

The hill was bone-dry, and a good many of the failures were obviously caused by sheer fear of finding it in its notorious state of "impossible" wetness.

Easily the four best solo climbs were made by E. W. T. Howard (492 Sunbeam), D. McLeod (490 Norton), O. C. H. Giddy (349 A.J.S.), who coolly came back half-way down to see the fun for five minutes, and G. E. Kann (698 Raleigh).



One of the best performances in the trial was made by O. G. Smart (490 Norton sidecar). Smart climbing the first and easiest hill at Gaddesdon.

Not very far behind, but some of them looking rather worried, were: G. W. Warner (349 Massey-Arran), E. R. Hill (490 Norton), R. H. Bury (490 Norton), J. A. Orr (499 Sunbeam), H. M. Chalmers (498 Zenith-Bradshaw) — a Gradua gear model with limited low gear—A. J. Morris (Sunbeam), and W. A. Charnock (Coventry Victor).

The smallest engined sidecar, O. G. Smart's 490 c.c. Norton outfit, was also the only successful one, but it was noticeable that five out of eight four-wheelers failed completely.

L. A. Humphreys (557 B.S.A.) slogged vigorously on the steepest part, and D. S. Redman (481 Scott Squirrel) shot up the worst portion to come to a sudden stop near the top.

The unsuccessful solo machines were: Trump-Jap, 550 c.c. Triumph, 348 c.c. Raleigh, 349 c.c. Douglas, 492 c.c. Sunbeam, Rudge-Multi (very poor attempt), and Scott (ditto); and the sidecars: 770 c.c. B.S.A., 800 c.c. A.J.S., and 499 c.c. Sunbeam.

The trial ended here as far as hills were concerned—there were four more observed climbs, but none of them worthy of the compliment—but the weather now took a hand. Biting sleet began to fall, and with the approach of darkness the return 60-mile journey was anything but pleasant.

The later members were particularly unfortunate, for the start in the morning had been delayed to 10.15 a.m., and they had nearly two hours of route finding in the dark—not easy work, despite the very excellent arrowing arrangements.

OPEN HILL CLIMB IN THE NORTH.

FINE weather, good organisation, and high speeds all combined to make the North-Western Centre A.C.U. open hill-climb held last Saturday a great success. The course selected was a perfectly straight and well-surfaced hill, 680 yards in length, known as Stricken's Lane, situated between Garstang Station and Oakenclough.

Among the best performances were those of R. T. Cawthorne (490 Norton) and P. Baron (348 Hawker). The latter rider secured a large number of firsts, his performance being the more remarkable in view of the fact that he is a heavily-built man. Results (unconfirmed):

250 c.c.—1, B. Kershaw (249 New Imperial), 28⅕s.; 2, J. Bennett (244 Dalton), 32⅘.

250 c.c. (EXPERT BARRED).—1, B. Parkinson (249 Diamond), 33⅕s.

350 c.c.—1, P. Baron (348 Hawker), 23⅘s.; 2, R. Watts (348 Dot), 25⅖s.

350 c.c. (EXPERT BARRED).—1, P. Baron (348 Hawker), 24⅖s.; 2, B. Watts (348 Dot), 25⅖s.

500 c.c.—1, R. T. Cawthorne (490 Norton), 21⅗s.; 2, W. Johnson (492 Sunbeam) and C. Dodson (492 Sunbeam), 24⅕.

500 c.c. (EXPERT BARRED).—1, C. Dodson (492 Sunbeam), 24s.; 2, S. Buckley (490 Norton), 24⅘.

750 c.c.—1, R. T. Cawthorne (490 Norton), 22⅕s.; 2, C. Dodson (492 Sunbeam), 24⅗s.

750 c.c. (EXPERT BARRED).—1, T. Spann (492 Sunbeam), 24⅕s.; 2, C. Dodson (492 Sunbeam), 24⅖s.

1,000 c.c.—1, R. T. Cawthorne (490 Norton), 22s.; 2, W. Lord (492 Sunbeam), 24⅘s.

1,000 c.c. (EXPERT BARRED).—1, C. Dodson (492 Sunbeam), 24s.; 2, A. Tinkler (999.5 American X), 24⅕s.

UNLIMITED.—1, R. T. Cawthorne (490 Norton), 22⅖s.; 2, C. Dodson (492 Sunbeam), 24s.

UNLIMITED (EXPERT BARRED).—1, C. Dodson (492 Sunbeam), 23⅕s.; 2, A. Tinkler (999.5 American X), 23⅘s.

500 c.c. SIDECARS.—1, R. T. Cawthorne (490 Norton sc.), 25⅘s.

500 c.c. SIDECARS (EXPERT BARRED).—1, C. G. Bullough (490 Norton sc.), 27s.

750 c.c. SIDECARS.—1, R. T. Cawthorne (490 Norton sc.), 25⅘s.

750 c.c. SIDECARS (EXPERT BARRED).—1, C. G. Bullough (490 Norton sc.), 27s.

1,000 c.c. SIDECARS.—1, R. T. Cawthorne (490 Norton sc.), 25⅕s.

1,000 c.c. SIDECARS (EXPERT BARRED).—1, C. G. Bullough (490 Norton sc.), 27s.

UNLIMITED SIDECARS.—1, R. T. Cawthorne (490 Norton sc.), 25⅘s.

UNLIMITED SIDECARS (EXPERT BARRED).—1, C. G. Bullough (490 Norton sc.), 27s.

Fastest time of the day was made by Cawthorne, who covered the course in 21⅗s.

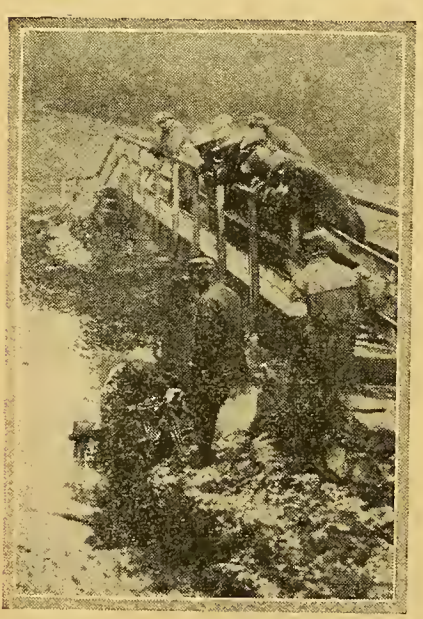
"BOGEY PERFORMANCES."

New System of Marking Introduced in Yorkshire Centre A.C.U. Reliability Trial.

ORGANISED by the Ilkley M.C. and L.C.C. the trial held last Saturday received very indifferent support from the clubs forming the Centre, only 16 competitors starting, seven of whom rode Scott machines.

Why this trial did not appeal to the ordinary rider is a problem difficult to solve. Quite a goodly array of trophies (five in all), along with the usual medals, were offered for competition. The route was only 120 odd miles in length and did not include any freak hills.

It may be that the new system of finding a winner by the inclusion of "bogey times" in place of the usual observer and his marks acted as a veritable bogey. If so it was very unfortunate, for this new system appears to work very well. The idea is really a system of handicapping, different classes of machines having to cover short difficult sections of the course in times which are known and which may be less or slightly more than the schedule speed of the event; such sections are not non-stop, in fact a rider may fail or fall off on a hill or stop for a swim in a watersplash without any penalty whatsoever provided he completes the section at or within his bogey time, marks of course being lost for being late.



W. Clough endeavours to take his 532 c.c. Scott under the bridge at Mogington.

E. Eggers (right), winner of the Ilkley Trophy and prize for the best performance of the day, crossing Mogington watersplash on his 349 c.c. A.J.S. in company with a Sunbeam rider.

Snow was on the ground in the morning, but brilliant sunshine was overhead; soon, however, the weather changed, and snow and sleet showers, accompanied by a cold north-easterly wind, faced the riders for the rest of the day.

Mogington watersplash proved of some interest and amusement. W. Moore (532 Scott) came off in the mud before entering the water. W. Clough, also on a Scott, and W. Smith (492 Sunbeam) both tried to go down stream, but were saved by a friendly mud bank, and L. A. Runton (998 Indian) hit the bank and stuck. E. L. Boston on a Scott undoubtedly made the best solo performance and W. Lister (Scott sc.) proved the best passenger machine driver.

Next came West End Bank, which was approached by a gate at the extreme bottom, but even this added trouble caused no anxiety on this once dreaded hill. Unfortunately both private owner passenger machines which continued running after the lunch stop had trouble. Lister with punctures and J. W. Wilkinson (496 Douglas sc.) ran off the course and finished late. The results are as follows:—

Ilkley Trophy (best performance, trade or amateur): E. Eggers (349 A.J.S.).
Scott Trophy (best amateur solo): H. S. Moorhouse (550 Triumph).
Triumph Trophy (best trade solo): H. Langman (532 Scott).
Palmer Trophy (best trade passenger): W. F. Scott (532 Scott sc.).
Olai Trophy (best amateur passenger): not awarded.

CHESHIRE GOES TO DERBYSHIRE.

ONLY formed recently, the Cheshire Centre A.C.U. held its first open reliability trial on Saturday, the 21st October, for the Walker Silver Cup.

It was decided before the start to abandon the idea of holding a petrol consumption test owing to a considerable number of the competitors having no means of sealing their tanks.

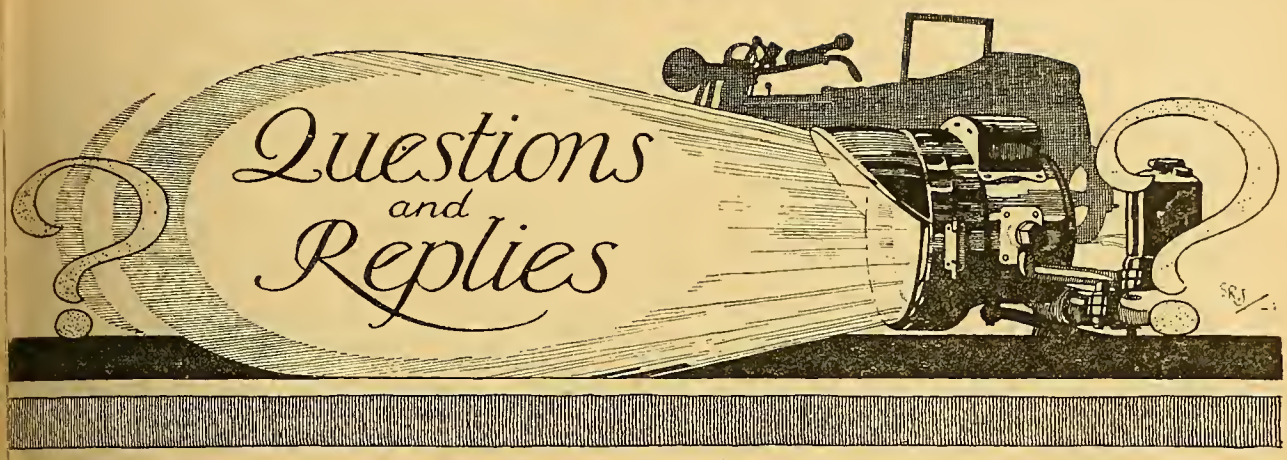
Mow Cop was the first hill, but it was in very good condition and so accounted for but few failures, the unfortunates being Z. Gilmour (Connaught) and J. Hopwood (B.S.A.); several, however, were guilty of using their feet.

With these exceptions the performances were uniformly good, and it was difficult to distinguish the most meritorious climbs. S. A. Crabtree, who was riding his T.T. Sunbeam, was fast, as also were A. Greenwood's Brough Superior, L. Randle's Sunbeam, B. F. G. Fowke's Beardmore and Graham Oates' 249 c.c. Grindlay. J. W. Moxon (Monopole) climbed very steadily.

After travelling a short colonial section following Mow Cop, some considerable difficulty was experienced in following the course, but most of the competitors checked in to time at the lunch stop at Leek.

The famous Litton Slack was very kind to the competitors, for the surface was in fine condition. Nevertheless a number failed. Crabtree (Sunbeam) was hopelessly over-geared, and was prevented from rushing it by a stationary sidecar. Other failures were C. A. Clarke (Sunbeam), whose engine seized when he learn wanted it to, S. B. Clegg (Morgan), C. Kirkham (Rudge), and H. Jacques (Harley-Davidson).

The best climbs were made by R. I. Devonport (G.N.), J. W. Moxon (Monopole), L. Randle (Sunbeam), C. Guthrie (Raleigh), R. C. Bennett (Federation), Graham Oates (Grindlay), and Miss M. Cottle (Powell).



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

DIFFICULTY WITH A REPLACEMENT PISTON.

A new piston which is heavier than the old one has been fitted to my 1911 Triumph and now the machine knocks when running, becoming very bad at 20 miles an hour. The bearings are in order. Is this caused by the heavier piston?—H.P.

The increased weight of the piston could not cause knocking; probably what has happened is that the compression ratio has been increased owing to the new piston being higher from the gudgeon pin to the top, thus diminishing combustion space, or even, maybe, at the bottom of its stroke the new piston is pulling the top of the crank case, if it is a shade too long; this trouble might not make itself apparent until a fairly high speed is reached.

STARTING A SCOTT.

The machine I ride is a 1921 Scott and it has never been an easy starter. Recently, however, I have experienced more than the usual difficulty in getting the engine to start from cold. I have fitted a Cox-Atmos carburetter, in the hope of an improvement in starting, and I have carefully checked the ignition timing and changed the plugs, all without avail. Quite good sparks can be produced (in air) by working the kick-starter, and I believe the ignition is quite in order. I have looked for air leaks in the induction system, but cannot trace any. The machine is in new condition, having done about 1,000 miles.—A.J.

If you are quite sure that all the joints are tight (note specially that the induction pipe is really firm on the crank case stump), starting should be a matter of ease. It is advisable, however, to fit compression taps in the cylinder heads, or in one of them at any rate, and start up as follows:—Inject a small quantity of petrol into the heads, well flood the carburetter, close the starting shutter, half lift the half compression valve lever on the left handle-bar, very slightly open the throttle, advance the spark almost fully. Use the kick-starter very gently indeed, just turning the engine over once or twice to free the pistons, then give one sharp dig with the starter, and the engine should fire immediately. Perhaps the easiest method of starting the Scott is to place the machine on its stand, and stand with one's back to the front of the machine, placing the right hand on the half compression lever, the right foot on the pedal, and the left hand on the saddle of the machine or the carrier for steadying purposes. Do not kick the starter; feel that the ratchet teeth have properly engaged, and feel the resistance of the engine before depressing the starter pedal fully; kicking the starter will inevitably break the ratchets.

TWO-STROKE CARBURATION.

Although my 269 c.c. two-speed Chater-Lea two stroke Villiers engined machine runs fairly well, I do not think I am getting full power or sufficient m.p.g. The carburetter is an Amac; the engine does not get sufficient air, as with the throttle almost shut and the engine just ticking over, it takes full air. I have tried it with the air cap removed, but it makes no difference. I am using a 26 jet. I have tried a 24 jet, but it popped back in the carburetter. I have tested the valve slides and they are working all right. Will you advise?—W.T.

As you do not tell us the consumption which you are getting with your machine, we are unable to advise you whether it is normal or not. At any rate, you should

Important Dates.

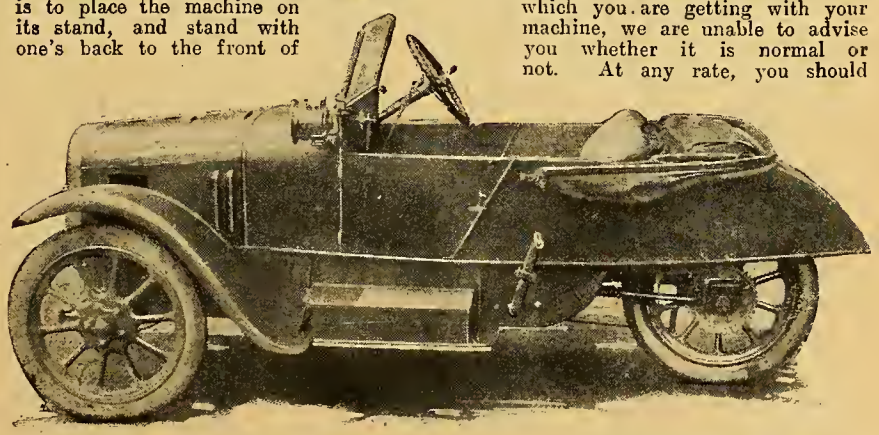
Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.



Detail improvements in chassis and bodywork will be found in the 1923 L.S.D. three-wheelers. This, the Family model, has a dickey seat for two children.

be able to get at least 80 m.p.g. with your machine. Make quite sure that the level in the carburetter is not too high; it should be set so that there is barely 1/16in. of up and down play between the float and the split pin on the float needle. If you get popping back with a 24 jet it indicates clearly that with this size the mixture is too weak. A variable jet adapter would facilitate carburetter tuning. The Amac carburetter is intended to work almost automatically, and on many machines the best setting is arrived at when full air can be given at all throttle openings once the engine has started. An extra air inlet on the induction pipe might help matters.

IMPULSE STARTERS.

[?] Not long ago I read in one of your issues a description of an impulse starter which, so far as the magneto is concerned, seems to assure a good spark at the correct time. However, it takes more than the spark to make the engine go, and what I would like to know is whether the one slow pull of the starting handle creates sufficient vacuum in the induction pipe to draw into the combustion chamber the gas required to start the engine. I am told that this is where impulse starters fail.—D.W.

Providing the engine is in good order, *i.e.*, that the piston rings are in good condition, that there is no leakage at the valves and valve guides, and that the induction pipe joints are tight, one or two of the slow pulls of the starting handle should induce a good starting mixture. Even if this were not so, easy starting could always be effected by giving a small injection of petrol into each cylinder. The idea of the impulse starter, of course, is to give a powerful spark at the plug irrespective of the speed at which the engine is being rotated. Moreover, the device causes the spark to occur after the piston has passed top dead centre, thus eliminating altogether the dangers of a back fire.

MECHANICAL NOISE.

[?] My 293 c.c. single-cylinder machine has lately developed rather an annoying rattle, which appears to come from the valves. I have had the cylinder off and decarbonised it. There is no up-and-down play in the big end, but a little side play. It is fitted with ball bearings to the big end; are they adjustable? I have also had the timing gear cover off, and there does not appear to be any wear in the mechanism. I might add that I have only had the machine four months, and have run about 1,000, so there should be no wear yet. I have been particularly careful about lubrication, and if anything have over-oiled. Can you enlighten me on the matter?—A.L.F.

Ball bearings are not used for motor cycle big-end bearings, and yours, no doubt, has a roller bearing; these are not adjustable. In all probability the noise is due to an excessive amount of play in the teeth of the timing gear wheels (backlash) or to excessive tappet clearance. Small four-stroke engines are apt to be mechanically noisy. Some advantage may be gained by enclosing the valves and tappets in covers, but you might have to devise these yourself, as, although such fittings have been made from time to time, it is not certain that you would get the correct thing to suit your particular engine.

TWENTY-FOUR HOURS SPEED TEST. During the middle of last week R. E. Dicker, riding a 998 c.c. Rudge, carried out a prolonged speed test under A.C.U. control. His object was to complete three eight-hour periods of riding at the highest speed his machine would maintain. Throughout the three days involved the machine was under official observation.

EXPERIENCES WANTED

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"R.H." (Ascot).—McKenzie Light weight: vibration, reliability.

"W.A.M." (Kidderminster).—Det crank case breather on 348 c.c. Douglas.

"R.T.S." (Rushden).—Carden, 1921 a 1922 models: speed, hill-climbing, te dency to two-stroke, lubrication.

"J.D." (Peebles).—749 c.c. James sid car: silence, smooth running fuel co sumption, hill climbing.

"J.P." (Stretford).—348 c.c. Dougl 1913 model: speed with and without p lion passenger, petrol consumption, pric of welding damaged cylinder for t machine.

"H.W.M." (Thornton Heath).—348 c two-speed Douglas and light sidec climbing.

"H.K.R." (Manchester). — 499 c Triumph: tractability in traffic, val noise, climbing, speed.

SPARKLETS.

Selling J.D. Lightweights.

Mr. H. U. Smytheman, formerly w the Ivy Co. and later with Maude's Mo Mart, is to handle the sales branch of t J.D. lightweight.

Wrong Number.

Owing to confusion in numbers on observer's part, Graham Oates (Gru ley) was reported as having failed Bodfari Station Hill in the Reliance C Trial. Actually he did not even to with his feet.

Manufacturer's Clearance Sale.

New 1922 Rudges are being sold by manufacturers at considerably redu prices, ranging from £60 for the mo gear model to £93 10s. for the three-sp big twin.

What's in a Name?

By a curious coincidence a Camp sidecar outfit, driven by I. Cohen, v the Campion Cup, awarded by the N tingham Club in the recent East Midl Centre trial.

Youthful Speedman.

Aged only 16, W. Johnson, jun., a s cessful Southport rider of a Sunbeam, gained fourteen first or second pl during the last three months.

Continental Success.

To the many Triumph successes on Continent this season must now be ad the championship of France in the c.c. touring class. This has just b gained by Mons. G. Pinney on a 499 Triumph.

Autumn Trial Echo.

A. R. Edwards (247 Levis) is s stated to have made a clean ascent Flagstaff Hill in the Sutton Coldfi and North Birmingham A.C. trial h on the 14th ult.

OSMOND JUNIOR

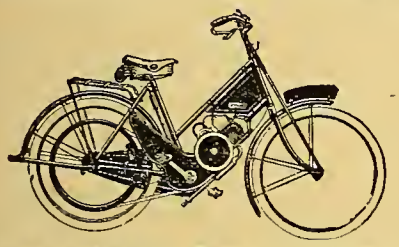
THE PERFECT MOTOR ASSISTED CYCLE.

26 GUINEAS.

Power Unit 1½ h.p.
Approximate Weight 70 lbs.

"Sirs,
I have been using my machine since last summer, and find it most useful. I have been a cyclist all my life—am now 70—and thought that on account of these hills my cycling days were past, but with the "Simplex" Engine that difficulty is overcome, as I can negotiate most of these hills."
The Right Rev. BISHOP ANDREWS, D.D.

IMMEDIATE DELIVERY.



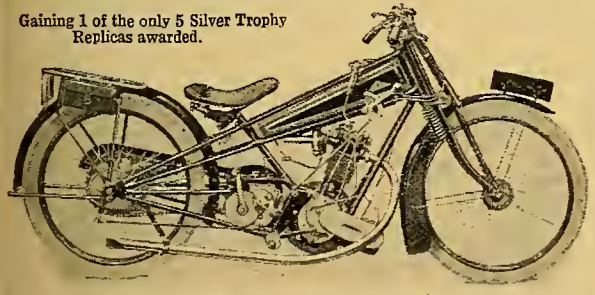
OSMONDS (1911) LIMITED,
THE TOWER, TOMEY RD., GREET, BIRMINGHAM.
WRITE FOR CATALOGUE.

1923 COTTON MODELS

IMITATED BUT UNEQUALLED — PATENT No 17434/1914

Over 160 Cups, Gold Medals, etc., during 12 months for Speed, Hill-Climbing and Reliability.
The ONLY Team with 100% Finish in Junior T.T. Race, I.O.M., 1922.

Gaining 1 of the only 5 Silver Trophy Replicas awarded.



We have pleasure in announcing **1923** *Prices and Models (immediately available)*, as follows:

Model 1	2¼ h.p. BLACKBURNE, 2-speed, clutch and k.s.	£57
Model 3	2½ h.p. VILLIERS, 2-speed, clutch and k.s.	£49
Model 5	2¾ h.p. BLACKBURNE, 2-speed, clutch and k.s.	£60
Model 6	2¾ h.p. Blackburne, 3 speed, clutch and k.s.	£62
Model 7	2¾ h.p. BLACKBURNE, 3-speed, clutch and kick-starter, chain drive, expanding hub brakes	£67
Model 9	2¾ h.p. BLACKBURNE, O.H.V., 3 speed clutch and kick-starter, chain drive, expanding hub brakes	£72
Model 11	2¼ h.p. BLACKBURNE, O.H.V., 3-speed clutch and kick-starter, chain drive, expanding hub brakes	£70

Book 1923 Agency early.
1923 Catalogue with full Specifications, Competition Records, etc., from Agents or Manufacturers:—
The COTTON MOTOR CO., Bristol Rd., GLOUCESTER.

"Scott"

RELIABILITY & SPEED

AGAIN

PROVED

ULSTER GRAND PRIX

RECORD LAP obtained by a

SCOTT

SPEED 66 MILES PER HOUR.

ALSO 3 GOLD MEDALS.

Out of 75 entrants only 13 obtained Gold Medals, and 3 of the 13 were Scotts.

RELIANCE CUP TRIAL

SCOTTS obtain BURNS CUP, also BUTTERWORTH TROPHY.

2 of the 3 machines in the

WINNING CLUB TEAM

and

NOMINATED TEAM

were

SCOTTS

THE SCOTT MOTOR CYCLE CO., LIMITED — SALTAIRE — YORKS.

London Showrooms:
192, GREAT PORTLAND STREET, W.1.
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£1 19s. 3d.

MOSELEY CANVAS. Extra Heavy, 4-ply. Large Studded and Three-ribbed.

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CUSHIONS FOR MOTOR BICYCLE SADDLES. The greatest comfort, make all roads feel smooth. Cannot leak, patented. Made in two styles—No. 1, Normal. No. 3, Inflated Peak. Also for pillion seats and side-car seats. Various sizes.
Send for fully illustrated Price List.

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Branches: LONDON: 19-20, Holborn Viaduct, E.C.1; BIRMINGHAM: 4, Lancaster Street; GLASGOW: 126, Ingram Street; NEWCASTLE-ON-TYNE: 44-6, High Bridge; DUBLIN: 16, William Street; LIVERPOOL: 9, Commutation Row.

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BALL AND ROLLER

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FOR DURABILITY, SILENT RUNNING & HEAVY DUTY

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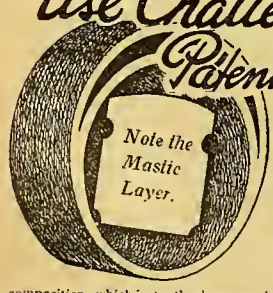
TELEGRAMS—Bearings, Newark
TELEPHONES—Newark 170 & 171. **Newark-on-Trent**

Use Challenger Patent Puncture Sealing Tubes



For Pugnacity, no other Tube can compare with the famous Challenger. It will knock out the Puncture Fiend in the first round and relieves the rider of all puncture worries.

They are absolutely pneumatic throughout and contain no messy or sticky substances, nor is there any solid filling, nor anything which will collect in a lump in the tyre while the car is standing.

The only difference from an ordinary tube is that the tread portion is very slightly thicker and is built of three layers so adjusted as to be self-sealing; the centre layer being composed of the patent hole-proof composition, which instantly closes up when the nail or article causing the puncture is withdrawn.

Price List:	24 x 2 14/3	26 x 2½ x 2¼	18/0	28 x 3	20/3
	24 x 2¼ 15/0	26 x 2½	18/0	650 x 65	20/9
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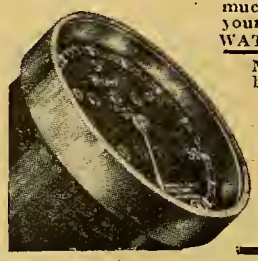
Write for sample section and put it to a practical test before purchasing.

Sole London Agents: **GODFREYS LTD., 208, Gt. Portland St., London, W. 1.**

—and a WATFORD Speedometer . . . . .



A Watford Speedometer just gives the much-desired finishing touch that makes your outfit complete—but be sure it is a WATFORD.

Model 42—Black finish. Nickel-plated bezel. Indicates speeds to 60 miles per hour. Total mileage counter to 10,000 and repeats. Quickly reset trip-counter. Price **£5 5 0**

Model 40—Without trip **£4 15 0.**

Back wheel drive for Triumph, **5s.**, for Indian, **10s.** extra.

Manufactured by

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And at 14, Soho Sq., London, W.1.

THE 2½ h.p.

CALTHORPE

LIGHTWEIGHT

The most reliable and economical Two-Stroke in the world.

So devoid is this 2½ h.p. Calthorpe model of unnecessary complications that there is nothing which can become deranged beyond the powers of rectifying by the merest novice. Its engine is the simplest of two-strokes, properly lubricated by a patented system, and although no gears or clutch are fitted it will climb any ordinary hill with ease. Petrol averages 135 m.p.g.

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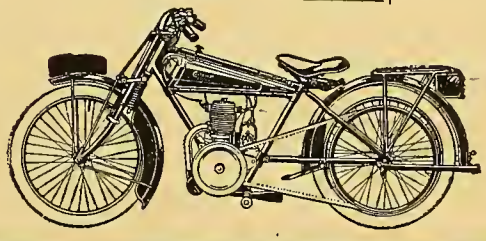

CALTHORPE MOTOR CYCLE CO.,
Lion Works, Barn Street, BIRMINGHAM.

"GOOD-SERVICE"
ARMY TRENCH COATS
AT **52/6** EACH.

Made from GUARANTEED Materials by a former War-time Contractor.

New Triple-proof Gabardine, smart check lining, interlined throughout with OILSKIN.

For SPRING — SUMMER — AUTUMN — and WINTER wear.

These coats are offered in the usual civilian style. Guaranteed materials, combined with the knowledge of work-hands who know from war-time experience "what is required" in

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are embodied in the manufacture of the "GOOD-SERVICE" Coat.
With ALL-WOOL camel fleece detachable lining.

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IF YOU CANNOT CALL take advantage of our SATISFACTION GUARANTEE OFFER, which gives you an opportunity of COMPARING the value offered in the "GOOD-SERVICE" Coat against INFERIOR garments now on the market.

OUR GUARANTEE. Should the garment purchased fail in any way to come up to expectations, WE GUARANTEE to refund remittance IN FULL without further question, provided the garment is undamaged and returned in seven days.

Don't miss this Unique Opportunity—Call or Mail To-day. State chest (over coat) and height measurements when ordering.

In Stock—Chest 34, 36, 38, 40, 42, 44.
Other Sizes 7 days.

Astounding Glove Value

Best Quality HORSEHIDE Driving Gloves. (as illustrated).

TRADE SUPPLIED.

Made from Best Quality Hide, one-stud fastener at wrist.
SOFT and PLIABLE, STRONG & DURABLE. In Willow Tan, or Grey.

To-day's value, 6/6 a pair.

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Made from Stout Fawn Twill Mackintosh.
Absolutely Waterproof.

All sizes for LADIES' Wear

GENTS & YOUTHS in 12-in. to 14-in. calf sizes. For use with breeches **2/6**
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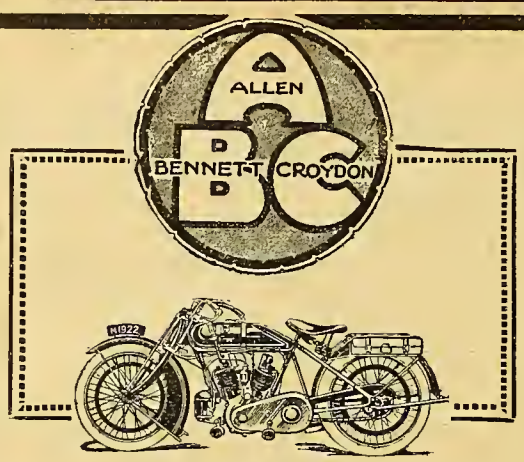

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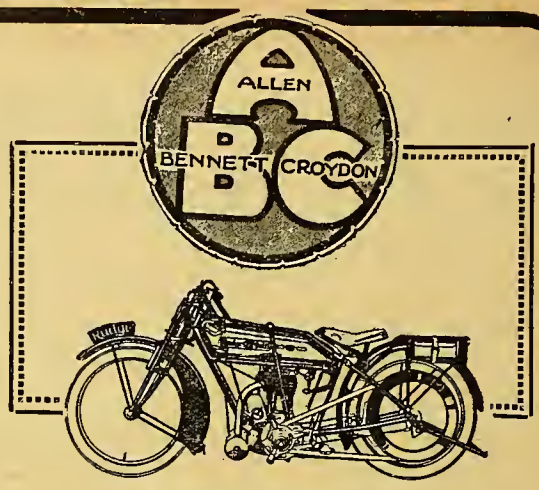
3½ h.p. Twin, all-chain drive, 3-speed clutch and k/s., M-L mag., Dunlop 650×65, Brooks saddle, sidecar to match. Touring or Sports.

£90 or £22.10.0 down and 12 payments of £6.0.0



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3½ h.p. I.O.M. or Touring, multi-gear clutch, pedal starter, 650×65 tyres.

£60 or £15.0.0 down and 12 payments of £3.18.9

Open Saturday until 7 p.m
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Three-Speed with Clutch and Kick Starter..	£12 0 0
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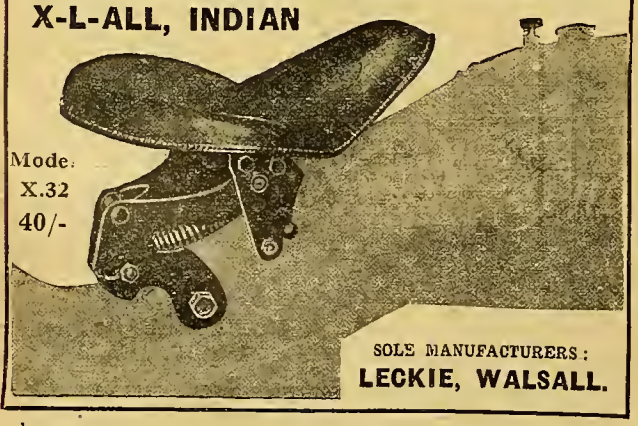
X-L-ALL, INDIAN



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40/-

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FLEECE-LINED
GUARANTEED
PERFECT.
Made for the American Army.

8/6
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Cost 25/- per pair to make.

Money refunded if dissatisfied.

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MOTOR CYCLES FOR SALE.

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BRADBURY 6h.p. Twin, with sidecar, July, 1920, model, in excellent condition throughout; offered for quick sale, £55; a really genuine outfit.—Fryer, Leominster. [8697

AT Edwards.—1922 2¾h.p. Bradbury, 2-speed, clutch, K.S., equipped, tax paid, indistinguishable from new; 47 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8401

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £70; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

BRADBURY 4h.p. 3-speed (hub), clutch, excellent mechanical condition, 3 F.R.S. electric lamps, electric hooter, speedometer, nearly new large luxurious sidecar, bulbous back, front locker with mirror, etc.; very cheap, £55.—Eltenton, 83, Sussex Rd., Lowestoft. [8530

£38.—1921 Bradbury, 4h.p., 3-speed, clutch, kick-starter, all-chain drive, black and gold; the machine has done very little running and has been most carefully used; fully equipped with lamps, horn, tools, etc., and tax paid, tyres as new; any trial and examination.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [9107

Brough.

£55.—1920 5-6h.p. Brough, horizontal twin, 3-speed, clutch, K.S., perfect.—Box 4484, c/o *The Motor Cycle.* [8865

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

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THE Sporting Rider's Ideal. Immediate delivery Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination, £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h.. £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended payments and exchanges.—9, 10, 11, Royal Parade, West Croydon. 'Phone: 2450-1. 'Grams: Track, Croydon. [0733

1922 Brough Superior Combination, Mark II., small mileage, absolutely as new; £108.—51, Upper Richmond Rd., Putney. [8719

BROUGH-SUPERIOR 1922 Mark II. Combination, Bonniksen, Easting, condition as new, taxed; £80.—145, Widmore Rd., Bromley. [8834

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

Brown.

£22.—Brown 3½h.p., low, fast, sporty; take push cycle part.—57, Kenbury St., Camberwell, London. [9032

B.S.A.

ABNORMAL Bargains in shop-soiled models.—The B.S.A. Specialists.

COUNTY Cycle and Motor Co., Ltd., Broad St., Birmingham. [7010

B.S.A. 4¼h.p., June, 1922, practically new; £80.—Williams, Brightview, Hadley Rd., New Barnet. [8728

B.S.A. new 1922 4¼h.p., all-chain, and No. 3 sidecar, list £142; to clear, £100.—Brockbank, 58, Lord St., Southport. [9227

B.S.A. 4¼h.p., 1922, shop-soiled; list price £107; special price £80.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9130

B.S.A. 1920 4¼h.p. Chain Combination, taxed, all accessories; £75.—Will, 769, Romford Rd., Manor Park, London, E.12. [9005

B.S.A. 6-7h.p. 1922 Combination, Easting, Lucas lamps, perfect order; £140.—Williamson, 3, Montpellier Terrace, Scarborough. [8997

B.S.A. 4h.p., Mills-Fulford sidecar, complete with lamps and licence, excellent condition throughout; £60.—Saint, Regent St., Cambridge. [9149

B.S.A. 4¼h.p., 1922, with No. 3 sidecar, shop-soiled; list price £139; special price £100.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9131

B.S.A. Sidecar Combination, 6-7h.p. twin cylinder, June, 1921, in very good condition; price £125.—Parkside Garage, Ltd., Parkside, Coventry. [7634

B.S.A. 1921 6-7h.p., large Montgomery sidecar, hood, screen, lamps, spare wheel, any trial; £115.—Joe Stockdale, Confectioner, Stanhope, Co. Durham. [8504

B.S.A. 4¼h.p. 1922, H.2, all-chain, 3 speeds, brand new, slightly soiled; £85; deferred payments.—Eagles and Co., 275, High St., Acton, London. [8778

B.S.A. (June, 1922) 8h.p., Model F, No. 3A sidecar, spare wheel tyred, elaborately equipped, insured, mileage 300, cost £225, Lucas Magdyno lighting; sell £180.—76, St. James Rd., Rounds Green, Oldbury, Birmingham. [8669

A POSTCARD

will bring you our latest list of New, Second-hand, and Shop-soiled Machines. Don't delay.

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A few of this week's S.H. Bargains.

Deposit		Instalments of	Cash Price
	SCOTT. 1919, 3¾ h.p. Comb., lamps, horn, speedometer, Easting, taxed, like new		£65
£15	**ROYAL-ENFIELD** 6 h.p. Combination, equipped, good condition	£2 13 9	£45
£20	**ROVER.** 1920 3½ h.p., 3-speed, K.S. clutch T.T. equipped, tax paid	£4 9 8	£65
	HUMBER. 1914, 3½ h.p., water-cooled, 3-speed, K.S., clutch, equipped		£25
£25	**JAMES.** 1919, 5-6 h.p., Combination, fully equipped, Cameo screen	£4 9 7	£75
£35	**SUNBEAM.** 3½ h.p., 3-speed, Henderson sidecar, fully equipped, screen, taxed	£5 7 6	£95
£25	**INDIAN.** 1920, 7-9 h.p., electrically equipped, speedometer, excellent condition	£4 0 8	£70
£15	**LEVIS.** 2¾ h.p., 2-speed, fully equipped, tax paid, as new	£1 15 10	£35
	PRECISION. 3½ h.p., Combination, 3-speed, equipped, taxed		£26
£15	**DIAMOND-J.A.P.** 1921, 2¾ h.p., 3-speed, clutch, and kick-start, fully equipped, taxed	£3 13 9	£45
£20	**RUDGE.** 1920, 3½ h.p. I.O.M. model, fully equipped, tax paid	£3 2 9	£55
£35	**MATCHLESS.** 1920, 8 h.p., M.A.G., dynamo lighting, spare wheel, screen, l-grid, taxed	£7 3 4	£115
£15	**HOBART.** 1920, 2½ h.p. 2-speed, fully equipped	£1 12 3	£33
£15	**ALLDAYS-ALLON.** 1920, 2¾ h.p., 2-speed, clutch and K.S., fully equipped, tax paid	£2 4 10	£40
£15	**ENFIELD.** 1920, 2¾ h.p., model, 2-speed, clutch, fully equipped, tax paid	£2 1 3	£38
£15	**RUDGE.** 1919, 3½ h.p. multi, equipped, tax paid, good condition	£2 4 10	£40
£25	**RUDGE.** 1922, I. O. M. model, fully equipped, tax paid, unscratched	£3 19 8	£69

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DEPOTS.

BOLTON & **MANCHESTER**

BRADSHAWGATE. Tel. 1348. **246-52 DEANSGATE.** Tel. 864 Cen.

MOTOR CYCLES FOR SALE.

B.S.A.

£52.—B.S.A., late 1919, all on, Tan-Sad, tax paid, insurance, excellent condition.—Apply, Hudson, 606, Old Ford Rd., Bow, London, E.3. 'Phone: East 1937. [8660

AT Edwards.—1922 4¼h.p. B.S.A., all-chain drive, B.S.A. No. 4 sidecar, fully equipped, windscreen, licensed, and tax paid, almost new; 80 guineas.—Below.

1920 B.S.A., fully equipped, B.S.A. No. 2 sidecar, Easting windscreen, good order; 58 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8403

B.S.A. 4¼h.p., 1917, countershaft, 3-speed, clutch, kick-starter, Montgomery Sports 1921 sidecar, tax paid; £39.—Webster, c/o Eagles and Co., 275, High St., Acton, London. [8780

1921 B.S.A. 7h.p. Twin, Magdyno, grid, spare wheel, mat, 2 horns, Bonniksen, Tan-Sad, Bluemel adjustable, splendid condition; cost £228, offers.—29, Southgate, Gloucester. [8771

£32/10.—B.S.A. 4h.p., countershaft, 3-speed, all-chain drive, clutch, kick-starter, coachbuilt torpedo sidecar, hood, screen, lamps, etc.—Delancey St. Garage, Camden Town, N.W.1. [8751

B.S.A. 4¼h.p., July, 1920, mileage 5,000, 3-speed, H.C.C., Cox-Atmos, semi T.T. bars, Lucas lamps and horn, spares; any examination; £70.—Hull, 43, George Rd., Farncombe, Surrey. [8710

1922 B.S.A. Light 6-7h.p. and No. 4 sidecar, shop-soiled demonstration model, maker's guarantee; 119 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5454

B.S.A. 1921 4¼h.p., all-chain, lamps, speedometer, Tan-Sad, tax paid, in splendid condition; £75 or near offer.—Call, after 7 p.m. or Saturday afternoon, 24, St. Nicholas Rd., Upper Tooting. [9301

B.S.A. 4¼h.p. Combination, 3-speed, kick-starter, genuine B.S.A. sidecar, fitted up complete with all accessories; price £65.—Walter Wragg, Stanley Works, Wellington St., Sheffield. [7697

1919-20 B.S.A. Combination, splendidly equipped, electric light throughout, Millford sidecar, Easting windscreen, licensed; £49.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [9041

B.S.A. 4¼h.p. Combination, H.2 model, done 900 miles, Easting windscreen, new, Tan-Sad, splendid condition, insurance July, licensed, spares; £120.—Bayly, 7, Rutland Park, Catford, S.E. [9268

B.S.A. 6-7h.p. Twin Combination, 3-speed, hand-controlled clutch, very roomy sidecar, fitted up complete, including spare wheel; price £95.—Walter Wragg, Stanley Works, Wellington St., Sheffield. [7698

B.S.A. 8h.p. 1922 (May), with No. 1 large sidecar, luxuriously equipped, all accessories, perfect condition throughout, any examination, trial; £120.—Willow Bank, London Rd., Bromley, Kent. 'Phone: Bromley 1041. [8802

BRAND New 4¼h.p. Model H.2, B.S.A., all-chain, with latest Langford De Luxe full touring spring wheel sidecar, double bulbous back, complete with picnic basket and utensils, extensive locker capacity, etc., fully equipped to special order; an exceptionally luxurious outfit; unused and unregistered; £115.—Jones, 4, Woodside Parade, North Finchley. [8915

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B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4805

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CAMPION 2-stroke 2-speed, tyres and tubes good as new, going order, belt nearly new; £15.—Gelder, Newton-on-Trent. [8852

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1923 8h.p. Spring Frame Clyno Combination, in stock; £145.—Kays, 8-10, Bond St., Ealing. [9248

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CLYNO 1921 (November), specially tuned, T.T. bars, 2¾h.p. 2-speed clutch, 80 m.p.g., lamps, etc.; £39, or exchange more power (late model).—Box 9144, c/o Blacks, 51, New Oxford St., London, W.C.1. [8624

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1922 Connaught, 2 speeds, C. and K.S., brand new; reduced to £50; exchanges or extended terms. Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [9161

1922 Connaught, 2-speed, clutch, K.S., brand new; List price £57/10; accept £49, or nearest cash offer.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9333

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COTTON new 1922 2¾h.p., all-chain drive, list £76; to clear, £57.—Brockbank, 58, Lord St., Southport. [9226

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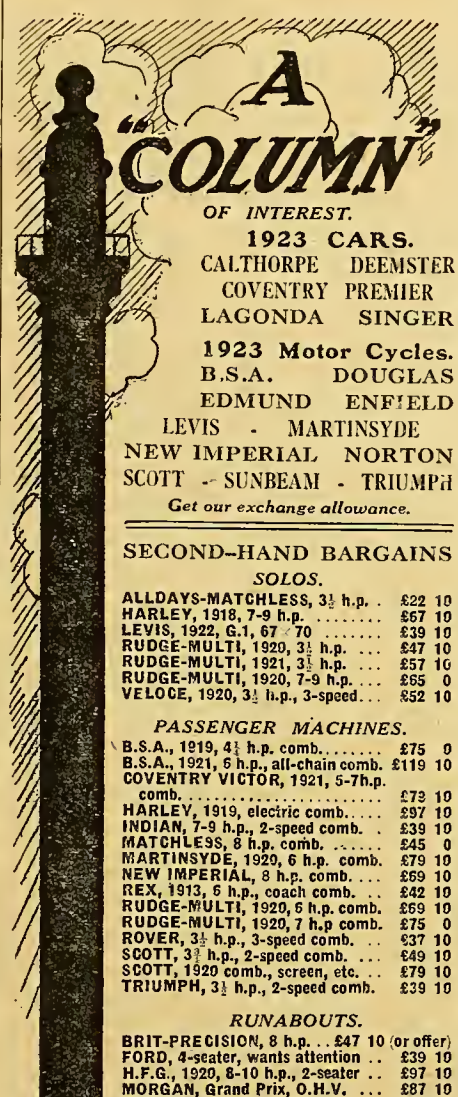
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1921 Martinsyde 6h.p. Combination, in splendid condition, bargain; £75.—Bartlett's, 93, Great Portland St. [9346

MARTINSYDE 6h.p., with Montgomery Sports sidecar, Lucas accessories, speedometer, licence paid, mileage negligible; £105.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9123

ROBERTSONS Motors, Ltd., are the London Martinsyde Service Agents; trial runs arranged; 1922 models now being offered at tempting prices; spares stocked.—157a, Gt. Portland St., W.1 [7522

1922 Martinsyde 6h.p. Combination, complete with Milford sidecar, cost £160, has only been used a few times; a gift at £130; cash or deferred.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6560

THE late Sales Manager of Martinsyde, Ltd., wishes to dispose of his 1922 Combination, complete with accessories, everything in perfect condition.—Appointment and offers to Woollen, Kurlydene, Mayford, Woking. [9146

Spare Parts:

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Massey-Arran.

42 Guineas.—Massey-Arran, 1922 (June), Sports model, 2¾h.p. Blackburne, 3-speed, clutch, K.S., chain drive, speedometer, Klaxon, tools, licensed; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [8984

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Matchless.

MODEL H Matchless Combination, Magdyno, excellent condition; £80.—Rackham, Charlton House, Old Charlton. [7617

1919 Matchless Combination, beautiful condition; 65 guineas; owner bought car.—71, Saltoun Rd., Brixton, S.W. [8632

1921 Model H Matchless Combination, every accessory, including hood and screen; £90.—24, Balliol Rd., North Kensington. [8825

1923 Matchless, the world's best, at revised prices to suit all; cash, exchange, easy terms.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [7528

MATCHLESS Touring Model J Combination at 1923 price (£130); exchanges, deferred; finest value on market.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [9167

MATCHLESS 1921 Model H Combination, M.A.G. engine, spare wheel, hood, screen, all accessories, tax paid, splendid condition; 79 guineas.—A., 30, Thornsett Rd., Earlsfield, London, S.W. [9260

JULY, 1921, Matchless, J.A.P. engine, spring frame, hood, screen, speedometer, spare wheel, Rotax dynamo lighting, perfect condition; owner abroad; £100.—Wonham's Garage, Coombe Rd., Croydon. [8891

SACRIFICE, £95.—1921 Matchless Model H combination, M.A.G. engine, hood, windscreen, speedometer, etc., lavishly equipped, mileage 4,000, guaranteed as new.—143, Ravensbury Rd., Earlsfield, S.W. [9079

YOUR Motor Cycle or Combination taken in part payment for a Matchless Solo or Combination; the famous spring frame machines; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [5941

MATCHLESS Model H, M.A.G., late 1920, mileage 5,000, all 1921 improvements, and accessories, front band brake and electric lighting, spare wheel, splendid condition; £100, or nearest offer.—33, Bridge Lane, Golders Green, N.W. [8591

MATCHLESS-M.A.G. Model H Combination, Feb., 1922, Magdyno lighting, every conceivable accessory, small mileage, unpunctured, indistinguishable from new; cost £205; accept £157, or nearest; reason selling buying car.—106, Elm Rd., New Malden, Surrey. [8944

MATCHLESS-J.A.P., 8h.p., 2-speed, all chain drive, clutch, kick-starter, Milford C.B. sidecar, screen, lamps, horn, tax paid, excellent tyres, exceptional condition throughout; any trial; no reasonable offer refused; exchange.—Merrall Brown, 28, Chorley Old Rd., Bolton. [9147

MATCHLESS Combination, Model H, 1921 (August), ran 2,300 miles, Magdyno lighting, Binks carburetter, speedometer, ammeter, voltmeter, speedometer lamp, electric and bulb horns, hood, spare wheel, windscreen, tools, cost £230, perfect condition; cash offer wanted.—9, Foxley Parade, Purley. [9011

FAMILY Model Matchless 8h.p., July, 1921, M.A.G. engine, Magdyno lighting, electric and bulb horns, mechanical pump, speedometer, front band brake, spare wheel and tyre, side wings to rear screen, hood, cover and side curtains, done 4,600 miles, fully insured, perfect condition; £127.—Ferris, 33, Museum St., W.C.1. [6711

MATCHLESS 1922 Spring Frame Combination, Magdyno, speedometer, spare wheel, windscreen, legshields, front band brake, electric horn, special M.A.G. engine, cost over £215 at Easter; must clear to make room for 1923 models; 105 guineas; greatest bargain ever offered.—H. Julian, 84, Broad St., Reading. [8912

MATCHLESS Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

Spare Parts:

MATCHLESS Spares. Immediate delivery.—Kays, 8, Bond St., Ealing. [5075

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones' Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

MCKENZIE Lightweight, shop-soiled only, 1922; £25.—Mobility, Ltd., Andover. [9222

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1920 Metro-Tyler Sports Model excellent or £25; exchanges.—Homac's, 243, Lower Cla Rd., N.E. 'Phone: Dalston 2408. [

BARGAIN.—Metro-Tyler 1922 sports model, 2 s soiled only; 38 guineas; photograph.—I Gordon, Ltd., 110, Upper Richmond Rd., East Sh [

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NER-A-CAR, 1922, shop-soiled only; £55.—Mob Ltd., Andover. [

1922 Ner-a-Car, the popular all-weather all pu machine, ready for the road, slightly shop-so £57.—South Eastern Garage, Herne Hill, S.E.24. [

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1922 New Gerrard Sports 2¾h.p. o.h.v. Blackb special racing machine, 4 firsts in open s events, aluminium piston, racing cams, also cast piston and touring cams, insured, tax paid; £ Walker, Foxley, Mt. Vernon, Glasgow. [

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1913 3½h.p. New Hudson Combination, 3-s £50; good condition.—14, Cross St., Hove [

NEW HUDSON 2-stroke, any trial; £25; take cycle part.—57, Kenbury St., Camberwell, don. [

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NEW IMPERIAL 2¾h.p., 1917, 2-speed, s machine; £18.—24, South St., Newport, W (D) [

1922 2¾h.p. New Imperial, shop-soiled only; £ Rey, 173, Gt. Portland St. 'Phone: Lan 1257. [

1922 3-speed 2¾h.p. New Imperial, used t condition brand new; £45.—24, Balliol North Kensington. [

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NEW IMPERIAL 2¼h.p., 2-speed sports m beautiful condition; £30; appointment. Temple Sheen Rd., East Sheen, S.W.14. [

NEW IMPERIAL, August, 1922, with insu and accessories to £10, all-chain 3-speed m done 300 miles; £60.—Wood Lane Garage, W. [

AT Edwards.—1920 2¾h.p. 2-speed New Imp fully equipped, good condition; 29 guineas changes or deferred.—101, Gt. Portland St., W. [

NEW IMPERIAL 1917 2¾h.p. J.A.P., 2 speed accessories, tax paid, splendid condition; £ A., 136, Ravensbury Rd., Earlsfield, London, S. [

NEW IMPERIAL 8h.p. J.A.P. (1921) Combia lamps, horn, screen, etc., tax paid, first mechanical condition; £62.—Mobility, Ltd., An [

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SPECIAL Offer of a few brand new 1922 No at astounding reduction; Model 16H 3½h.p. speed, list price £115, reduced to £80; Model Big 4, 3-speed, list price £120, reduced to £85 ferred payments 4% extra; free delivery.—Pr Motor Co., Aston Rd., Birmingham. [

MOTOR CYCLES FOR SALE.

Rudge.

19 Rudge-Multi Combination, recently overhauled and enamelled, tyres like new, spare belt, lamps, rn and licence; first cheque £43 secures.—Minshall, rewsbury St., Prees, Salop. [8585

.6h.p. Rudge-Multi Combination, 1919, lamps, tools and accessories, engine, tyres (1 new), and lt (new), all in good condition.—Geo. Angus and ., Ltd., Angus Building, Old Hall St., Liverpool. [8686

BRAND new 1922 Rudges, all models, carriage paid to any address from works. 3½h.p. Multi, 50; 3½h.p., 3-speed, £80; 7-9h.p., 3-speed, £93/10, ht sidecar, £15; touring, £25; cycles, £9/18; lers in rotation.—Bishop Bros., Roman Rd., Bow. [9112

48.—1921 (June) Rudge-Multi, 3½h.p., with dark grey Millford sidecar, electric lamps, large tool x on tank, excellent tyres, any trial; owner going dia.—Shelswell, Cricket Green, Mitcham. Tel.: tcham 822. Terminus 88 'bus. Would ride rea- able distance to purchaser. [8976

39. — 1920 Rudge-Multi 7-9h.p. Twin, fully equipped with P. and H. lamp set, horn, all ls, tax paid for year; the machine is in perfect dition throughout, and has done very small mile- tyres and belt very good, an exceptionally fast chine, will pass anything; any trial with pleasure. t. Watson, Victoria Rd., Aldeburgh, Suffolk. [9106

32.—Late 1920 I.O.M. T.T. Rudge-Multi, com- pletely equipped with Lucas King's Own lamp Lucas horn, practically brand new tyres, over- Dunlop Magnum just fitted on rear wheel, tax d for year; the machine has run about 2,500 es only, and is in practically new condition; open any examination and trial.—R. Watson, Victoria , Aldeburgh, Suffolk. [9105

Spare Parts:

UDGE Spares.—Immediate delivery.—Shepherd, En- field Highway, N. [0901

HE Promptest Firm for Rudge Spares.—Illustrated list free.—Forfield Motors, Forfield Place, Leam- ton Spa [3163

Scott.

COTT Standard, 1922, shop-soiled, list price £110; will accept £91.—Gibb, Northgate, Gloucester. [8274

COTT, lamps, horn, licensed, overhauled throughout; £40.—Herbert Robinson, Ltd., Green St., Cam- ge. [8360

COTT Squirrel, brand new, 1922, shop-soiled, list price £105; will accept £90.—Gibb, North- , Gloucester. [8273

Edwards'.—1921 3¾h.p. Scott, perfect condition; 49 guineas. Exchanges or deferred.—101, Great land St., W.1. [9324

COTT Squirrel, 1922, lamps, licensed, horn, small mileage, beautiful condition; great bargain; 65 gns.—H. Julian, 84, Broad St., Reading. [8913

COTT Squirrel Motor cycle, lateat model, not used; advertiser unable to use same; bargain .—Seen at 84, Fore St., E.C.2 (First Floor). [8635

DUCED Prices for 1923.—Scott Squirrel, £89; Scott Sociable, 168 guineas. Don't wait until St. Order now and secure early delivery of new la. Send for 1923 catalogues from Ball, Scott Specialist and Service Agent, 6, Wheeley's Rd., Edgbaston. Stockist for D.A. cylinder exchange. [8617

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Singer.

GER 3h.p., 3-speed, clutch, kick-start, lamps, speedometer, pillion, very good condition; £27/10 Epsom Rd., Croydon. [8554

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UINE Singer Parts.—Let me quote you.—Alf. olland, Hearsall Lane Corner, Coventry. : 1945. [3814

Sparkbrook.

—Sparkbrook-Villiers, 2-stroke, 2-speed gear, per- ect order throughout, all accessories, tax paid, only ants seeing.—130, Norwood Rd., West Norwood. [8267

BARGAIN.—Sparkbrook, 1917, 6-8h.p. J.A.P., coun- tershaft gears, coach sidecar, 42 guineas; photo- graph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., Putney. [8253

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Sunbeam.

SUNBEAM, late 1920, all on, perfect; £85.—All-wood, 62, Eastfield Rd., Peterboro. [8565

1918 3½h.p. Sunbeam, splendid condition, accessories, tax.—E. Purchase, 29, South St., Chichester. [9046

SUNBEAM 1916 6h.p. Combination, splendid order; £65 lowest.—41 St. Edmunds Rd. Northampton. [8796

SUNBEAM 4½h.p., shop-soiled; list price £141/15; special price £115.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9129

SUNBEAM 1921 3½h.p., new condition, Lucas acetylene, speedometer, taxed, 26×3; £85.—7, Exhibition Rd., S.W.7. [5618

SUNBEAM 1922 3½h.p., shop-soiled, light solo, complete to standard specification; £122/18.—The Morris Garages, Oxford. [9183

SUNBEAM 1922 4¼h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £128.—7, Exhibition Rd., S.W.7. [5619

SUNBEAM 1919 8h.p. Combination, dynamo lighting, splendid condition; £75.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9127

1921 Sunbeam 8h.p. Combination, every accessory, cost £270, as new, sell at great sacrifice.—Rev. Wanstall, Milford Vicarage, Surrey. [9049

1920 Sunbeam 8h.p. Combination, Lucas lamps, horn, in splendid condition, tyres good; £120; any trial.—Foxwell, Clothier, Ross. [8670

SUNBEAM Super Sports, only registered in September, run a few miles only, special bargain, condition absolutely as new; £110.—The Morris Garages, Oxford. [9188

3½h.p. Sunbeam Combination, 1916-7, almost new sidecar, good condition; £68; or exchange modern solo, cash either way.—Prescott Farm, Gt. Warford, Knutsford. [8509

SUNBEAM 1921 3½h.p., complete with D.A. cylinder, Lucas lighting set, speedometer, horn, in splendid condition; price £75, or near offer.—Sunningdale Motors, Sunningdale. [6788

SUNBEAM, 1922 (July), 3½h.p., Bonniksen, all accessories, mileage negligible, guaranteed as new, perfect, faultless and unscratched, taxed; £80.—145, Widmore Rd., Bromley. [8836

ROBERTSONS Motors, Ltd.—1921 3½h.p. Sunbeam Combination, spare wheel, screen, Lucas electric and gas lighting, speedometer, fine condition; £135.—157b, Great Portland St., London, W.1. [8416

1920 Sunbeam 3½h.p., and new Sandum Sunbeam sidecar and screen, interchangeable wheels, original tyres, all accessories, taxed, beautiful condition; gift, £87/10.—391, King St., Hammersmith. [9059

1921 8h.p. Sunbeam Combination, as new in every respect, many special and luxurious fittings, dynamo, spare wheel, hood, etc., tyres as new; £130.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9189

1920 3½h.p. Sunbeam, in perfect condition, beautifully equipped with best Cowey and Lucas accessories; 6,000 miles; 75 guineas, or near offer. Seen by appointment.—Box 4220, c/o *The Motor Cycle.* [6780

3½h.p. Sunbeam Combination, 1920, just overhauled, splendid condition, interchangeable wheels, electric lighting, speedometer, mileage under 5,000; cost £205; owner bought car; any trial; £110.—84, Bonchurch Rd., Brighton. [8656

SUNBEAM 1920 3½h.p., with Henderson Elite sidecar, recently overhauled and re-enamelled, complete with Lucas lamps, speedometer, horn, etc., guaranteed as new throughout, privately owned; £100.—Eadington and Sons, Alderley Edge. [8597

1922 3½h.p. Super-Sports Sunbeam, in perfect condition, guaranteed over 75 m.p.h., winner of many club events, special back oil tank and Showell mechanical pump, Bonniksen speedometer and Bowden extra air; £100.—Herbert Robinson, Ltd., Green St., Cambridge. [8361

EXCEPTIONAL Bargain.—Sunbeam 1922 4¼h.p. and Watsonian sidecar, Dunlops, Easting screen, Klaxon, tax paid, only done about 300 miles, absolutely like new; £119/10; just cost £172; inspection invited. Opposite the Motor Show.—Wilkins, Simpson, opposite Olympia, London. [9225

1920 Sunbeam 3½h.p. 3-speed Combination, interchangeable wheels, fine condition, ready to ride away, lamps, and speedometer, tax paid; in 1920 cost 212 guineas, sacrifice, £112, or nearest offer; can be seen and tried at York on appointment being made; good reason for selling.—Waterson, Allerthorpe, York. [8808

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SWIFT (Ariel) 3½h.p., 1913-14, variable gear, pedal start and clutch, good tyres, licensed, insured till May; any trial; £20.—E. D. Dowell, Pyrford, Woking (1 mile Byfleet Station). [8818

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1916 De Luxe T.D.C., 2-stroke, take 2; £15.—38, Hemans St., Wandsworth Rd. [8761

T.D.C., 1914, 4-stroke, single-speed, in good condition, complete with horn, acetylene lights, pump, etc., tax paid to December; price £20, or nearest offer.—The Lancaster Motor Co., Norwood Rd., West Norwood, S.E.27. [8692

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£15.—2½h.p. Torpedo, equipped, fine running condition; evenings.—4, Elm Gardens, Hammersmith. [8935

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1922, Type H, 4h.p. Triumph, shop-soiled; bargain, £85.—Mitson's, Newmarket. [8943

1921 Triumph Combination, as new; £60.—24, Balliol Rd., North Kensington. [8823

TRIUMPH 1914, 3-speed, £22; 1912 model, variable gear, £15.—17, Heaton Rd., Mitcham. [8947

1918 Triumph Countershaft Combination, lamps, etc., perfect; £45.—9, Church Rd., Harlesden. [8978

TRIUMPH Combination, 1920, taxed, as new, all on, any trial; 58 guineas.—1, Priory Rd., Kew. [9266

1918 Countershaft Trinmph, as new, £45; ditto 1919, £50.—24, Balliol Rd., North Kensington. [8822

1920 Model H Triumph, perfect, only wants seeing; £80, nearest.—Burrows, College Av., Maidenhead. [8556

TRIUMPH, 1922, brand new, all chain drive, usual guarantee; list price £115, our price £85.—Below.

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TRIUMPH, 1919, and sidecar, lamps, horn, speedometer, etc.; £59.—Owen, 94B, High Rd., East Finchley. [9051

£38.—Triumph Combination, gears, speedometer, all-on, excellent condition.—Brookes, 82, High St., Teddington. [9040

4h.p. Triumph Combination, renovated, ex-Irish M.T. stores, nice condition; £50.—120, Sutherland Rd., W. Croydon. [9048

T.T. Triumph, Philipson, lamps, taxed, black-gold, smart, 60 m.p.h.; snip, £27/10.—89, East Hill, Wandsworth. [8878

1914 Triumph Cancelet Combination, 3-speed, clutch; £40.—Glynne, 39, St. Paul's Av., Willesden Green. [8953

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TRIUMPH 1918, sporting sidecar, all accessories, excellent condition; £60.—21, Ullswater Rd., West Norwood. [8894

TRIUMPH, brand new, maker's guarantee; S.D., £87; Model H, £85; Model R, £100.—Parker's Garage, Derby. [8798

1916 4h.p. Triumph Countershaft, renovated, good tyres, perfect order, insured; £40.—Cherry, Cobham, Surrey. [8850

TRIUMPH-PRECISION, just overhauled, new tyres, very fast; £28/10.—88, Cannon Hill Lane, Merton Park, S.W.19. [8742

4h.p. Triumph, countershalt, November, 1918, accessories, splendid condition; £52; instalments.—65, Solon Rd., Brixton. [9155

TRIUMPH, all-chain drive, shop-soiled; list price, £115; special price, £85.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [9135

1920 Triumph 4h.p Sandum sidecar, hood, screen, speedometer, Tan-Sad, many spares; £80.—26, Wellesley Rd., Chiswick. [9299

1918 Countershaft Triumph, lamps, etc., in splendid condition; £40.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9190

59 Guineas.—1921 Triumph, chain drive, Lucas electric lighting, horn, speedometer, in perfect condition, exceptionally fast; evenings.—4, Elm Gardens, Hammersmith. [8934

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TRIUMPH 1918 coachbuilt Combination, equipped, excellent condition; £62.—R. B. and Co., 7, Exhibition Rd., S.W.7.

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ROBERTSON'S Motors, Ltd.—1922 chaio Triumph combination, tax paid, all acces £105.—157b, Gt. Portland St., W.1.

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CROYDON Agents Triumph, all new models large range of second-hand in stock.—M Presto Motor Works, North End, Croydon.

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TRIUMPH 1922 4h.p., Model H, the old fav brand new, shop-soiled, with or without si price, solo, £84.—The Morris Garages, Oxford.

TRIUMPH, Model H, brand new and unused, at £105; our price, £90; exchanges or def —Edwards, 50, Harrington Rd., South Kensingt

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TRIUMPH-GLORIA Combination, 1921-22, chain, almost brand new, fully equipped perfect; £95.—3, Stamford Brook Rd., Hammers

£85.—Triumph H, 1920, complete with lamps, den extra air, licence paid, only done 600 as new.—Barton, 41, St. Mathews Parade, Nortl ton.

TRIUMPH 4h.p., 1922, model H, brand n speeds; end of season price, £85; deferred ments.—Eagles and Co., 275, High St., Acton, don.

24 Guineas.—Offers, 3½h.p. Triumph, Zenith Bosch, Tan-Sad, lamps, accessories, etc., goo dition, 30/- tax paid.—25, Poppleton Rd., Leyton E.11.

4h.p. Triumph, late 1920, Millford sidecar, carefully used, small mileage, Tan-Sad, series, spares; private owner; £87.—Hendry, N York.

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4h.p. Type H Triumph, with discs, lamps, horn and first-class conchhuilt sidecar, perfect tion throughout; £72/10.—Herbert Robinson, Green St., Cambridge.

TRIUMPH Combination, 1918, speedometer, han foot clutch, Henderson sidecar, lamps, etc., been used, owner bought car; £70 or offer.—Orto Co., Mill Hill, N.W.7.

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NEW 1922 Triumphs, all-chain drive, and Junior models; cash offers invited to clear. Write, call, or 'phone Greenwich 751.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9331

RICARDO-TRIUMPH, 1922, special machine, guaranteed 78 m.p.h., winner over 30 events since May; 85 guineas; exchanges.—Peter Gordon. Ltd., 110, Upper Richmond Rd., East Sheen. [9314

TRIUMPH 1922 4h.p., model H, Lucas head, tail, 2 generators, horn, speedometer, watch, less than 1,000 miles; bought car; £90; cost £120.—Green, Packway, Bailey's Hill, Sevenoaks. (D) [8974

JUNIOR Triumph, 1920, 3,000 miles only, lamp, Bonniksen speedometer (new), electric horn, licence paid, in splendid condition, carefully used; £45.—27, Benlah Rd. East, Thornton Heath. [8605

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1930.—Triumph, 3½h.p., single speed, 1913, rebored oversize piston, thoroughly overhauled 1922, magnac, Bosch, fast, powerful hill climber, reliable and sporting machine; trial.—Elkins, Waingroves, Ricksansworth Rd., Watford. [8570

TRIUMPH, chain drive, 1922 model, Gloria sidecar, unused, shop-soiled only, catalogue price £155; our price £127/10; will pay tax to 1923; belt-driven model, 1922, £90, unused, slightly soiled.—Bunting's Motor Exchange, Wealdstone, Middlesex. [9172

1922 Triumphs, brand new, S.D. (all-chain), several in stock, roadster and T.T. bars, exceptional offer, secure now; cost £115; clearing at £89; makers' full guarantee.—Harry Nash, Contracting Agent, 391, King St., Hammersmith. 'Phone: Hammersmith 337. [7282

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VINDEC 5-6h.p., damaged rear cylinder, otherwise sound, £7/10; sidecar, 50/-.—Austin, Bungalows, Cheswardine, Market Drayton. [8962

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4h.p. Sports Zenith, 1916, full equipment, fast; £25.—17, Sussex Rd., New Malden. 'Phone: Malden 138. [8756

1921 5h.p. Sports Zenith, perfect, fast, fully equipped, tax paid, insured; £75, or offer.—Write Thomas, Otford, Kent. [8932

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4h.p. Triumph, Type H, list £105; our price £

4½h.p. New Hudson Combination, list £125; price £102/10.

4½h.p. P. and M. Combination, 4-speed, list £ our price £111.

8h.p. Matchless Combination, Magdyno, spare w etc., list £206; our price £174.

8h.p. Enfield Combination, list £140; our £114; also new 1921 model, £104.

J. Hebden and Sons, 71, Scotland Rd., Ne Lancs. Tel.: 91. [

1919 Rudge-Multi, in excellent condition; a gain, £47.

1921 Brooklands Road Special Norton, very £39.

1921 Shop-soiled New Imperial-Jap, never bee the road; £60.—Malden Garages, Ltd., Malden, Surrey. [

F.N. 4-cyl., £12; Enfield Twin, £10; Kerry 2-speed, £10.—Collins, 35, Vicarage Rd., Sun

JONES' Garage, The Broadway, Muswell Hill, Open all Saturday; London's lowest prices motor cycles guaranteed 3 months.

JONES' Garage.—2¾h.p. New Imperial-Jap, 2-s all accessories, excellent condition; any given; our special cash bargain of the week, £2

JONES' Garage.—4h.p. Douglas Combination, exceptional condition and fast; £55.

JONES' Garage.—2¾h.p. Hobart-Villiers, brand Brampton forks, large Dunlop tyres; list £48; reduced to £35. Gear box to suit, £5 extr

JONES' Garage.—Indian Sidecar, to suit s frame model, coachbuilt, perfect condition; only, £12/10.

JONES' Garage.—1919 B.S.A. 4½h.p. Combin very fully equipped, very smart and in fa condition throughout; £59.

JONES' Garage.—Heaps of bargains from £20; exceptional reductions in brand new 1922 n of all makes; large comprehensive list free fo asking. All machines guaranteed. 'Buses from gate and Finsbury Park pass the door. Tel.: Ho 2917.—Broadway, Muswell Hill, N.10.

F.O.C.H. for New and Second-hand Cycles, cars, bargains; cash or easy payments; exch arranged.—5, Heath St., Hampstead (near Tube)

NAYLOR and Kirk.—8h.p. Enfield combinatio speed, fully equipped, lamps, horn, winds exceptionally smart and mechanically good; Below.

1916 2¾h.p. Douglas, 2-speed, fully equippe cently overhauled, enamel like new; Below.

1918 Harley, 7-9h.p., 3-speed, clutch, kick- tyres almost new, guaranteed in first-class dition, all ready for fitting to sidecar, fully equi lamps, speedometer, etc.; £45.—Below.

1918 Harley 7-9h.p. Combination, as above, with large bulbous back sidecar, hood, beautifully upholstered; £59.—Below.

P. and M. 3½h.p., 2-speed, fully equipped, fast and good sidecar machine; £28.—Below.

1919 8h.p. New Imperial Combination, the fully equipped outfit possible, and in first condition; a trial will convince; £55.—Below.

1916 4h.p. Precision, 2-speed, fully equipped guaranteed sound and reliable, really up to and yet going for £18.—Below.

3½h.p. B.S.A., late model, free engine, fully equi enamel like new, fast and reliable; £22.

NAYLOR and Kirk, 406, Garratt Lane, Earl S.W. 'Phone: Wimbledon 2041.

1920 6h.p. J.A.P. Combination, spare w dynamo lighting, 3-speed clutch and starter, every fitment; £45.—24, Balliol Rd., Kensington.

2¾h.p. o.h.v. J.A.P., in excellent condition, w of cup and numerous medals in 1921 com tions, used very little since; £30.—J. M. Heath, Sheaf Hotel, Chesterfield.

MOTOR CYCLES FOR SALE.
Miscellaneous

INDIAN Combination 1914, splendid condition, £30, or offer; also 2¾h.p. New Imperial 1917, thoroughly overhauled throughout, offers. Apply after 6, J. H., 14, Netherbury Rd., South Ealing, W.5. [8723

4 5h.p. J.A.P., Twin engine, including long cone exhaust pipes, silencer, sprocket, adjustable belt pulley and engine plates, mileage 600; £16/10, carriage paid.—75, Stanley St., Derby. [8609

SEVERAL Second-hand 2¾h.p. Models in stock, completely overhauled and in perfect condition throughout; prices from £30-£40; write for particulars.—Herbert Robinson, Ltd., Green St., Cambridge. [8355

BOOTHS Motories, Blackpool.—Shop soiled 1922 models: £185 Ruby combination, £159/10; £70 Ruby lightweight, £57/10; £150 Rudge combination, £125/10; £60 Bradbury lightweight, £49/19/6.

BOOTHS Motories, Blackpool.—Four 2-speed P. and M.'s; £17/10/6, £29/10/6, £32/10/6, £39/10/6.

BOOTHS Motories, Blackpool.—3½h.p. Triumph, Phillipson engine, £18/10/6 Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; Sun, 3-speed, £25/10/6.

BOOTHS Motories, Blackpool.—Lady's 3-speed motor cycle, £16/10/6; 6h.p. Rex combination, £17/10/6; 3½h.p. Humber, £19/10/6.

BOOTHS Motories, Blackpool.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 5½h.p. Premier, £22/10/6; 5h.p. Rudge, 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.

BOOTHS Motories, Blackpool.—Singer, 2-speed countershaft, £24/10/6; 2h.p. lightweight, magneto, £11/10/6; 2-speed Douglas, £24/10/6.

BOOTHS Motories, Blackpool.—1921 Rudge-Multi, dynamo lighting, £52/10/6; 4h.p. Douglas, £55/10/6; 1920 Douglas, 3-speed, clutch, £52/10/6; 5h.p. Indian, 2-speed, £29/10/6; 7h.p. Indian, £29/10/6; 3h.p twin Enfield, £34/10/6.

BOOTHS Motories, Blackpool.—1920 Martinsyde combination, £85/10/6; 1919 Indian, aluminium sporting sidecar, dynamo lighting, £85/10/6; 1920 Hatchless combination, £85/10/6; 3½h.p. New Hudson combination, £39/10/6; 8h.p. Premier combination, £39/10/6; Enfield combination, £39/10/6.

BOOTHS Motories, Blackpool, 1921 New Hudson, 2 speeds, kick-starter, £39/10/6; 1920 Douglas combination, £59/10/6; £90 Ruby spring frame lightweight, fully equipped, £55/10/6.

BOOTHS Motories, Blackpool.—8h.p. Carden Cycle Car, £32/10/6 Zebre light car, 4-cyl., electric lighting and starting, detachable wheels, £175/10, cost £345. Several others, cheap. Push cycles taken in exchange.—Booths Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [8294

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ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157B, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

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EDWARDS and Co.,

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ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London address minus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London, Museum 1. [0332

MOTOR Cycle 2-stroke Wanted; must be cheap.—97, Elsenham St., Southfields, S.W.18. [8893

2-STROKE; also 3½h.p. single; must be cheap, modern.—10, Baronsmead Rd., Barnes. [8976

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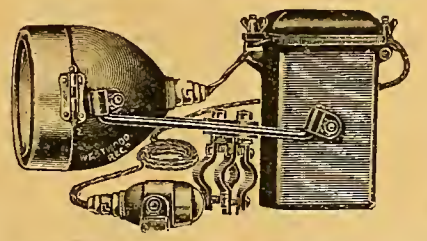

The Headlamp supplied with this set is our 5in Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

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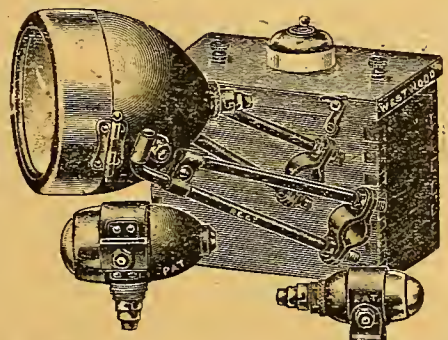

The set comprises Daybeam 7in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickle-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

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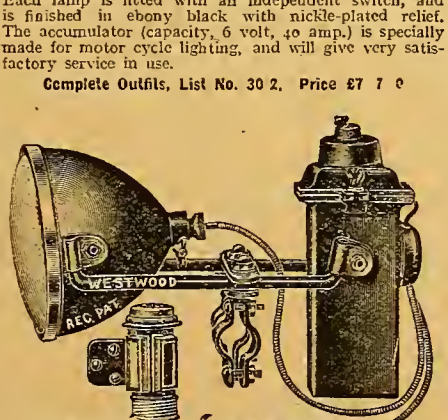

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CHEAP Motor Cycles, any quantity, cash on the spot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0947

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DOUGLAS or Triumph, not earlier than 1918, condition immaterial, cash waiting.—33, Richmond Rd., W.14. [8538

WANTED, good countershaft solo, Sunbeam, Norton, similar, not earlier 1920; cheap.—107, Toronto Rd., Portsmouth. [8543

PEUGEOT 7-9h.p., or other pre-war twin, wanted, single gear, fast, reasonable condition; under £20.—Box 4420, c/o *The Motor Cycle*. [8528

HIGH Powered Combination, modern, A.J.S. preferred. Full particulars, lowest cash price.—311, Canterbury St., Gillingham, Kent. [8611

HARLEY Combination, electric, 1921, exchange 1918 Harley Combination with chest of carpenter's tools, valued £25.—82, Caledonian Rd., N.1. [8743

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

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ANY modern make of motor cycle in exchange for letters patent, full rights, One-Man hood for char-a-bancs and cars; late illness reason of exchange.—V. Thompson, Bower Hinton, Martock, Somerset. [8573

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CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £20; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

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AUTO-WHEELS from £5/5, overhauled; any trial.—J. W. Robins, 97, Latchmere Rd., Battersea. [7170

1¾h.p. Shaw Attachment, fitted bicycle; bargain. £10.—Fisher, Springwell Rd., Heston, Hounslow. [8791

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GRAFTON Hoods, single, 39/-; 2-seater, 47/8; side curtains, 8/6 and 12/6 extra.—Derrington.

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BOOTHS Motories, Blackpool.—Canoelet chassis, like new, £5/19/6; shop-soiled £25 sidecars to suit Triumph, B.S.A., £16/10/6; second-hand sidecars, cheap; springs, mudguards, hubs, lugs, fittings; state requirements.—Booths Motories, 294, Waterloo Rd., Blackpool. [8293

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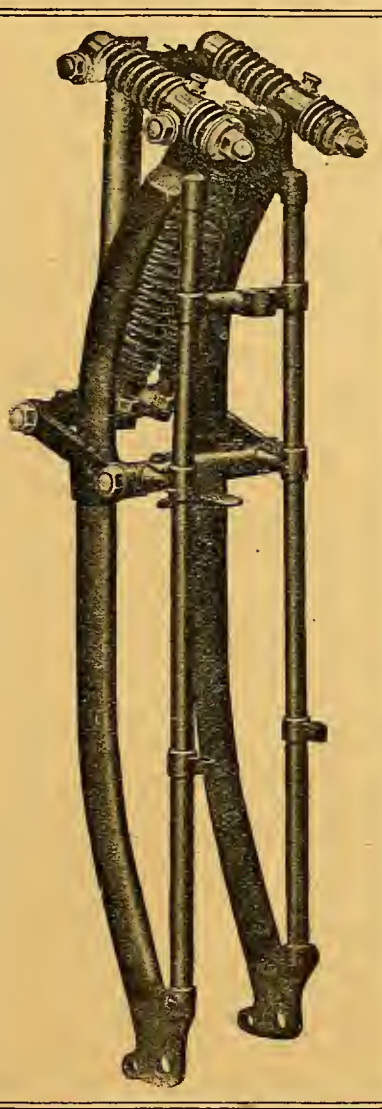

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G.N. 1920, electric lighting, five interchangeable wheels, excellent condition; £80.—Below.

1921 Aero Morgan, dynamo lighting, five lamps, special equipment, excellent condition, M.A.G. engine; £137/10; cash, exchange, instalments.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, E.C.3. 'Phone Avenue 5548. [0069

G.N., May, 1922, under 5,000, many extras, cost £250; sell £150.—The Morris Garages, Oxford. [9179

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1921 Legere G.N., all aluminium, 60 m.p.h., as new; £110.—24, Balliol Rd., North Kensington. [8329

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A.V. Monocar 1920 8h.p., excellent running order; quick sale, £60; or exchange solo.—12, Crescent Rd., Wimbledon. [8520

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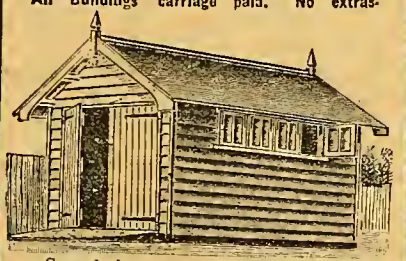

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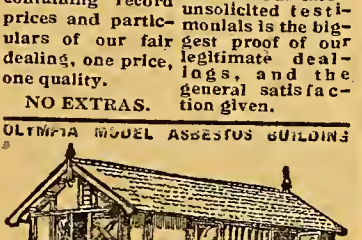

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TUBES.—26×2½, to fit 2¼, 5/9; 28×3, 6/6, made by Dunlop; postage on all above extra.—Below.

MARBLE Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. 'Grams: Archmotex, Padd, London. [7569

AMAUDES' reduced prices in clearance covers; carriage paid. 24×2¼ Hutchinson T.T., 19/6; 26×2 Hutchinson Brooklands, 15/6; 26×2¼ Avon Duro-lith, 21/-; 26×2¼ Hutchinson T.T. 3-rib 20/-; 26×2¾ Hutchinson T.T., 21/-; 26×2½ to fit 2¼ Belgrave cable cord, 20/-; 26×2½ to fit 2¼ Hutchinson passenger, 30/-; 26×2½ Hutchinson passenger R.N.S., 27/6; 26×3 Hutchinson T.T., 27/6; 28×3 Goodyear, 45/-; 700×75 to fit 650×65 Hutchinson 3-rib, 25/-; 700×80 Burnett 3-rib, 35/-; 700×80 Avon Durolith, 37/6; 700×80 Stepney Roadgrip B type, 52/6; tubes, strong red rubber, 24×28×3 4/6, 700×80 6/-.—Maudes', 100, Gt. Portland St., W.1. [9196

BASTONE'S for Covers and Tubes. No better or cheaper house.

BASTONES.—26×1¾ Clincher De Lux · 10/6.

BASTONES.—24×2 Dunlop rubber-stud, 16/3; Clincher De Luxe Junior, 14/6; ditto extra heavy, 19/9.

BASTONES.—24×2¼ Hutchinson T.T., rubber-stud, 21/-; Dunlop rubber-stud heavy, 26/-.

BASTONES.—26×2¼ Hutchinson T.T. 18/6; Dunlop rubber-stud heavy, 26/9; Michelin Semille, 20/-; Goodrich safety tread, 27/-; Clincher De Luxe, extra heavy, 24/-; Spencer-Moulton steel-stud, 24/-.

BASTONES.—26×2⅜ Hutchinson T.T., rubber-stud, 19/6; Clincher De Luxe heavy, 23/-; Bergougnan rubber non-skid, 23/-; Palmer cord heavy, 28/-.

BASTONES.—26×2½×2¼ Goodrich Safety tread, 36/-; Clincher Dreadnought extra heavy, 36/-; Dunlop rubber-stud heavy, 33/-; Dunlop rubber stud extra heavy, 39/9; Hutchinson Pass rubber-stud, 36/-; Dominion Usco rubber non-skid heavy, 23/-.

BASTONES.—26×2½ Michelin fine ribbed, 15/-; Hutchinson T.T. rubber-stud 24/-; Goodrich Safety tread, 35/-; Spencer-Moulton steel-stud, 25/-.

BASTONES.—650×65 Goodrich Safety, 38/6; Clincher Dreadnought, 34/-; Dunlop cord, 44/9.

BASTONES.—700×80 Dunlop Magnum, 41/3; Goodrich Safety tread, 40/-; Clincher 3-ribbed, 38/-.

BASTONES.—28×3 Dunlop Magnum, 42/6 Goodyear all-weather tread, extra heavy, 37/6; Goodrich Safety tread, 37/6; Firestone rubber non-skid extra heavy, 42/-; Clincher De Luxe, extra heavy, 35/-; Clincher Dreadnought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson and Red-Fox tubes: 24×2 and 24×2¼, 3/9; 26×2¼ and 26×2½, 5/6; 700×80 and 28×3, 7/3.

ALL the above new and clearance covers and tubes are sent on approval against remittance.

BASTONES, 228, Pentonville Rd King's Cross, London, N.1. Tel.: 2481 North. [8394

TYRES.

3/-.—Palmer and Capon Heaton, 26×2¼, new endless tubes.—Below.

25/-.—Dunlop extra heavy, 26×2¾, brand new tyres. Goods sent on 3 days' approval against cash; reduction on quantities.—Pride and Clarke, 156, Stockwell Rd., Brixton, S.W.9. [8876

26×2¼ Dunlop Heavy, new, 19/ each; 26×2⅜, £1/2 each.—35, Citizen Rd., Holloway, London, N.7. [6857

25 Per Cent. Reduction.—26in. tyres now cost only 15/- to retread. 3-ribbed or cross-grooved, 3,000 miles wear.

BURST tyres and broken away beads remoulded like new, best work in the country; send for list.—Melton Rubber Works, Melton Mowbray. [0347

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [5836

BULL'S have your size in bargain covers and tubes. A call on us will convince you, or 'phone, Gerrard 1347.—See Below.

26×2¼.—Palmer cord, 32/6; Beldam all-rubber, 25/-; Wood-Milne 3-ply, 22/6; Clincher de Luxe, 17/6; extra heavy, 30/-; tubes, 5/6.—Below.

26×2½.—Avon Stonehenge, 27/6; Tricar, 30/-; Clincher rubber non-skid sidecar, 27/6; Goodyear cord 5-ribbed, 40/-; tubes, 5/9.—Below.

26×2½×2¼.—Palmer cord, 36/-; Beldam 3-ply, 30/-; 4-ply, 35/-; Wood-Milne 4-ply, 25/-; Clincher Dreadnought, 35/-; tubes, 6/3.—Below.

26×2⅜.—Palmer cord, 34/3; Wood-Milne key-grip 3-ply, 22/6; 4-ply, 27/6; Beldam all-rubber 3-ply, 25/-; 4-ply, 30/-; tubes, 6/-.—Below.

26×3.—Wood-Milne key-grip 4-ply, 35/-; Beldam all-rubber 3-ply, 32/6; 4-ply, 35/-; tubes, 7/6.—Below.

28×3.—Clincher rubber-studded sidecar, 30/-; Clincher de Luxe extra heavy, 45/-; Beldam 3-ply, 30/-; Wood-Milne key-grip 4-ply, 37/6; tubes, 8/-.—Below.

650×65.—Palmer cord heavy, 42/6; Wood-Milne 4-ply, 37/6; 3-ply, 30/-; Goodyear cord 5-ribbed, 42/6; tubes, 8/-.—Below.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, London, W.C.2 (next door to Aldridge's). 'Phone: Gerrard 1347. [0869

REAL Good reliable second-hand motor cycle tyres, all sizes and makes; 10/- each, plus 1s. carriage. See displayed advertisement.—H. Emanuel and Co. [0832

ECONOMIC Tyre Co.—The following new blemished and clearance covers and tubes sent on seven days' approval against remittance, per passenger train, carriage paid.

ECONOMIC.—24×2 Clipper Ideal, 14/6; tubes, 4/6; 24×2¼ (also fit 2in. rims) Dunlop heavy, 26/-; Clincher Junior, 16/9.

ECONOMIC.—26×2¼ Dunlop heavy, 26/9; Firestone extra heavy, 22/6; tubes, 4/9; 26×2⅜ Dunlop heavy, 30/-; extra heavy, 35/9.

ECONOMIC.—26×2½×2¼ Goodyear Diamond, 30/-; Avon extra heavy, rubber stud, 25/-; Palmer tubes, 5/6.

ECONOMIC.—26×2½ old standard Clipper extra heavy, 27/6; Redfern, rubber stud, 25/-; tubes, 5/-.

ECONOMIC.—28×3 Goodyear Diamond, 42/6; Goodrich Safety, 39/6; Firestone non-skid, 39/6; tubes, 6/6.

ECONOMIC.—650×65 Goodrich Safety, 34/6; Stepney road grip, 34/6; Clipper extra heavy, 27/6; tubes, 5/9.

ECONOMIC.—700×80 Goodrich Safety, 39/6; Beldam extra heavy, 44/3; Goodyear, 44/3; Goodyear cord, 58/-.

ECONOMIC.—Dunlop rubber stud, fully warranted, 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26×2¼, 18/6.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [7428

500 NEW Beldam Covers, 26×3, 2½, 2⅜, 2¼ and 2, 15/- each to clear, postage 1/6 extra.—Homerton Rubber Works, 11, Upper St. Martin's Lane, W.C.2; and Brooksby's Walk, Homerton, E.9. [0331

MASONS.—Tyres are down, and the following offers beat all:—Wood-Milne Key-grip, 4-ply covers, 26×2¼, 24/6; 26×2⅜, 26/-; 26×2¼, 23/6; 26×2½×2¼, 25/-; 650×65, 26/-; 3-ply covers, 24×2¼, 18/-; 700×80, 28/6; 28×3 (American), 27/6; 28×2½ (American), 24/6.—Below.

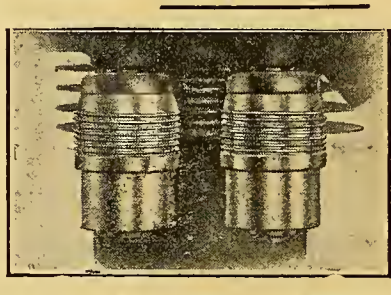
MASONS.—26×2½ Dunlop Heavy Fluted, 21/6; 26×2¼ ditto, 18/6; 26×2¼ Dunlop extra heavy ribbed, 31/-; 650×65 ditto, 30/-; perfect stock, maker's guarantee.—Below.

MASONS.—Great Offer Moseley Heavy, large studded, perfect stock:—24×2¼, 19/9; 26×2¼, 22/6; 26×2⅜, 23/6; 26×2½×2¼, 25/-; 26×2½, 26/-. Approval against remittance, carriage paid.—Masons, The Tyre House, Ipswich. [0916

F.E.W. VALVE ATTACHMENTS

SPECIAL PRICE OFFER

20% OFF IF ATTACHMENTS ARE PURCHASED FROM US before NOV. 24th.



TOTALLY ENCLOSED—GRITPROOF—LUBRICATED—AIRTIGHT—AND SILENT WORKING VALVES ARE GIVEN BY THIS PERFECT DEVICE STEAM ENGINE FLEXIBILITY—GREAT ECONOMY — HANDSOME APPEARANCE—HIGH EFFICIENCY—EXTREME SIMPLICITY.

Please write us for further particulars.

F.E.W. PATENTS CO., 217, GORDON ROAD LONDON, S.E.15.

To Rider, Agent, and Manufacturer.

The "Presto" Multi-Gear Box

for two or four strokes of 2-4 h.p., with Variable Pulley Gear, Free Engine & Kickstarter. Absolutely ideal for single geared machines. No complications, no belt slips, no cogs, no grind. Can be fitted by an amateur in two hours.

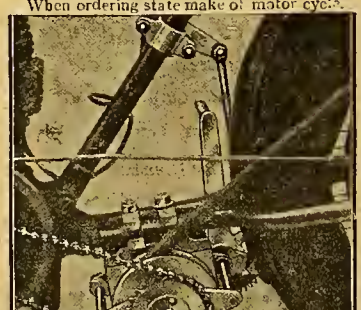
Not ONE, TWO, or THREE but MANY SPEEDS. Adjustable belt and chain line. Can easily be fitted where other gear boxes cannot.

As an Advertisement a few more only, complete with all fittings, chain and chainwheel, etc.,

£7 : 7 : 0 CASH WITH ORDER.

Carriage 5/- Extra

When ordering state make of motor cycle.



Order now, or write for details

THE PRESTO COMPANY, 26, Cross Street, Hatton Garden, London, E.C.1

TYRES.

DUNLOP Heavy Studded, 26×2¾×2¼, 25/-; extra heavy, 28/6; Wood-Milne, 650×65, 21/-; 700×80 Avon, 3 rib E.H., 34/6; tubes, 4/6; all guaranteed brand new.—Harvey and Co., 47, South Lambeth Rd., London, S.W.8. [1919

FREE to every purchaser of one of our tyres; we are presenting absolutely free a beautiful 12/6 fountain pen, self-filling, and with genuine 14ct gold nib, well-known make; write for list, which includes nearly every make herein advertised and a similar prices, or order tyre right away; all goods fully guaranteed and sent on approval against cash.—Maude Rubber Co., 58, Praed St., Paddington, W.2. [9231

CENTRAL Garage offer the following lines in tyres: 26×2¼ Goodrich, 28/-; Hutchinson, 22/6; Wood-Milne Combination, 22/-; Firestone, 27/6; 26×2½ Goodrich, 32/-; Palmer, 33/-; 26×2½×2¼ Palmer 33/-; Rubber Standard, 27/6; Hutchinson, 25/-; 650×65 Goodrich, 33/-; Hutchinson, 30/-; 700×80 Goodyear, 42/6; Collier, 50/-; 28×3 Goodyear, 37/6; Goodrich, 37/6; Firestone, 35/-; tubes, all sizes, 6/-.—Central Garage, 302, London Rd., Thornton Heath. [9081

MANUFACTURERS' Surplus Stock.—24×2¼ Moseley heavy ribbed, 23/6; 26×2¼ Clipper, 21/6; Moseley, 25/6; 26×2½×2¼ Clipper, 35/-; Clincher, 34/9; John Bull, 27/6; 26×3⅜ Moseley, 28/6; John Bull rib stud, 27/6; 26×2½ John Bull, 27/6; Bates, 30/-; 650×65 Bates, 30/-; 700×80 Bates, 37/6; 28×3 Bates' heavy car tread, 37/6; 29×3½ Bates' with car tread, 37/6. Best make inner tubes guaranteed—26×2¼, 5/6; 26×2⅜, 6/-; 26×2½, 6/-; 26×2½×2¼, 6/6; 26×3, 6/6; 28×3, 7/6.—Herbert Robinson, Ltd., Green St., Cambridge. [8347

TANKS.

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9240

TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9239

TANKS for Humber, 1921 pattern, to fit 1910-19; 35/-.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9241

I SPECIALISE in Repairs, re-builds, and tanks to measure. Enamelling to any pattern. Quick delivery.—Below.

DOUGLAS Pattern Tanks, new and enamelled complete with all fittings and B. and L. pump; 55/-; folder with photo on request.—G. Day, 85, Cheapside, Birmingham. [6602

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [9238

TANKS Made or Repaired, re-enamelled, lined, transferred, handle-bars, etc., plated. Established 30 years.—Attwood's, 86, Rosebery Av., London, E.C.1. [7073

LING'S, London, are past masters at all repairs; new tanks in stock to fit leading makes; specials to order; enamelling, plating; cut prices.—14, Eccles-bourne Rd., Islington, N.1. [8931

TANKS re-enamelled to pattern, high-class work only; 16/6; special terms to trade.—Jenkins and Sons, Richard St., Atkinson St., Deansgate, Manchester. Established 25 years. [6557

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry 'Phone: 1774. [0896

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

TANKS, any make supplied from stock, new or second-hand, from 30/-; old tank in part payment. Partition leakage and every repair undertaken. Re-enamelling makers' colours, designs, and transfers guaranteed.—Park Tank Works, 1A, Paradise Rd., Highbury, N.5. [9074

BELTS.

SPECIAL Clearance Belts, 6ft. 6in. by ⅝in., all guaranteed perfect; 7/6.—Herbert Robinson, Ltd., Green St., Cambridge. [8346

BELTS.—John Bull, 7ft. 6in.×⅞in., 12/6; 7ft. 6in. ×1⅛in., 16/-; Dunlop, Avon and Pedley cut to order, 1⅛in. 2/-, 1in. 1/9, ⅞in. 1/6, ¾in. 1/4 per foot; all brand new and guaranteed. Sent on approval against cash.—Maude Rubber Co., 58, Praed St., W. [9234

BALATA and Chrome Belts.—A client writes to say the advantages of these belts are absence of slip in wet weather, indestructibility of its wearing surfaces, where rubber would peel off in shreds; price per foot, ¾in. 1/4, ⅞in. 1/6, 1in. 1/9, 1⅛in. 2/-; fasteners 9d. each, postage 1/-.—Sole manufacturers, Pollin and Son, Hollington, St. Leonards-on-Sea. [4877

BELTS.—Clincher clearance, not W.D., ¾in., 6ft. 6in., 8/2; 7ft. 6in., 9/5; ⅞in., 7ft. 6in., 9/5; 8ft. 10/1; 8ft. 6in., 10/9; 1in., 7ft. 8in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1⅛in., 8ft., 16/-; Bates' short lengths, ¾in., 5ft. 6in., 6/-; ⅞in., 5ft., 6/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).
BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.
MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

Automatic Road Signals.

ON another page in this issue is described a system whereby a vehicle approaching cross-roads, by passing over contact strips, will uncover a red danger signal on the other road.

While the scheme is ingenious there appear to be certain objections which make the suggestion of doubtful practicability. In the first instance, there would be no compulsion (without further legislation, from which save us!) to make drivers go on to the contact strips; omission to do so therefore would not be a legal offence, so that the signal could not be relied upon to determine the onus of responsibility in the event of an accident.

Should a vehicle be following another at close quarters, the leader might easily re-set the signal to "clear" after the second had crossed the first or setting strip, so allowing the latter to run out into an unwarned traffic stream.

Vehicles travelling in the opposite direction also might get on to the strip and so leave the signal at "danger" (thus slowing up traffic) until the next one came up on the other side.

On the railways, where drivers charge into the blackness of night at 70 m.p.h., depending on the signals operated by responsible officials, automatic signalling has only met with limited success. When a signal fails, the engine driver's very dependence on its message results in the calamitous accidents which from time to time occur.

Since road traffic is not of necessity controlled by so precise and scheduled an organisation as railway working, the possibilities of automatic signalling with safety and success appear to be remote. Wider roads, unobstructed corners, and the driver's vigilance and dependence on himself are the surest specifics for safety.

The Solo Motor Cycle.

AT this time of the year there are always many young men eagerly awaiting the opening of the Olympia Motor Cycle Exhibition to choose finally their first machines. This year, however, the number is augmented by a new class composed of people who hitherto have not been seriously interested in the motor cycle proper, but require a bicycle with an engine to propel it.

In addition, there are perhaps two hundred thousand existing motor cyclists whose interest lies chiefly in the solo machine and whose requirements are fully as varied as their bank balances.

With solo motor cycles ranging in size from 42 c.c. to over 1,300 c.c., the man who prefers the single-track machine cannot complain that he has been neglected! That so many types are produced is proof of the popularity of the motor cycle and of the industry's confidence in future demand.

Compared with any other form of travel, the most extravagant of solo motor cycles is so remarkably economical that there should never be any diminution in the annual demand for these machines. Further, thousands of school boys only await the day when they will attain the age demanded by the law before they join the ranks of motor cyclists. Understanding parents appreciate the real value of the modern motor cycle from both an educative and health-giving point of view.

While the sidecar outfit may ultimately be threatened by the light car, and the small car itself by the large, cheap American car, there is nothing as yet to replace the solo motor cycle. Not only is this so, but the pleasurable sensation of travelling on a self-propelled two-wheeler is quite unique in the world of wheels or wings.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY IXION

North and South.

THE leaderettes in technical papers are usually statesmanlike. That is to say, they are apt to prove dull to bobby-defying barloafers like myself. But I make an exception on behalf of our issue of October 26th (No, I didn't write them—never saw 'em till in type). That one on the relative merits of northern and southern riders got me where the hair is short; am I not a Lancashire lad, exiled in a southron county? On this subject I will be perfectly frank. I believe in the old maxim "South for manners and North for (I am quoting) 'guts'!" If a club secretary in, say, Bradford, tries to beat up his men for a big club muster, he will hear some very straight talk. He will be told bluntly what a washout the last muster was, how rottenly he managed it, and what unpleasant company half the members are. But every man who promises to attend will be there, even if it snows Gillette blades. (The northerner calls himself "straightforrard," by which he really means "abominably rude"; but he is a man of his word, and isn't frightened of a cageful of leopards.) The secretary of a southern club, similarly engaged, will never hear what his members thought of his last stunt. Honied speaking and smooth promises will greet him at every call. But if an attractive fixture is blest with gorgeous weather some of the men who said they were coming will not be there; and if it snows . . . ! ! !

Into the Hornets' Nest.

I KNOW I am buying trouble, but natheless I proceed. The courtly editor who wrote our leaderette of October 26th obviously *knew* that there is no real comparison between the southrons and the northerners, but, editor like, saved himself by heading the paragraph "Sportsmen All" (true enough, that!), and throwing a few incidental bouquets in the direction of Wales, the Midlands, and the South-West. I have lived in all these localities. I believe that if our southern riders had the misfortune to reside in the manufacturing districts of Lancashire or Yorkshire they would never motor at all until they could afford a 40 h.p., six-cylinder car. Why, even with the benefits of their southern residence most of them take jolly good care to get home before it is dark, and lay up their machines for most of the winter. Up north I know innumerable grey beavers who flounder over pot-holed setts and petrified kidneys for most of their summer mileage, and maintain the good work merrily right through their bitter winter. And when week-ends arrive, instead of sitting at home or in a bar by a glowing fire and applying vaseline to the callosities on their anatomies, they go off and look for half-frozen water splashes or the kind of hill that resembles a well-treacled ladder. My advice to posterity is as follows: Be born right up north of good north-country stock. Stay there till you've imbibed a "reet" northern spirit; and then come south and enjoy the rest of your natural life.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

A Solo Screen.

MR. EASTING'S original solo screen appeared, I think, in the Isle of Man in the dimensions of a geisha's fan. His latest edition just to hand is a far more lordly fitting. The celluloid panel measures about 21in. high × 16in wide, is well framed, and carried in two brackets easily fixed to the steering bar if any gaps are available between the existing decorations of that misnamed and overloaded article. The new screen weighs no more than 4 lb. complete, and really gives very welcome protection. Quite a useful waterproof apron, weighing 1½ lb., may be fixed to the lower rung of the screen, so as to protect the rider's knees and tummy. With these Easting fitments and a pair of John Bull muffs, motor cycling in Arctic weather is really almost cosy.

Will History Repeat Itself?

JUST at the moment the 150 c.c. 100 lb. machine stands pretty much where the first Douglas stood at its original introduction. Its makers believe in it; but most sellers are unconvinced, and the public are inclined to be sceptical. I have only one real

Occasional Comments.—

"if", to urge against the 150 c.c. The 350 c.c. never made good till it got hold of a sound transmission, *i.e.*, something which would stand rain and take hills.

I remember being given a trade loan of a Douglas umpteen years ago, and refusing to write it up because its single-geared belt drive reduced me to an average speed of 10 m.p.h. *plus* 48s. spent on new belts between London and Edinburgh late one autumn. Its engine was right long before its transmission was right. So I wait to be convinced that the new 100 lb. machines are endowed with transmissions that will satisfy the public. Belt drive off a small pulley can be a really heartbreaking job on a cold wet day.

But . . . . .

I REMEMBER spending a joyous and trouble-free season at the request of the Triumph Co. on an experimental machine of theirs which was simply fitted with an ordinary push-bike two-speed hub. I do not remember whether, in those days, the engine was rated at 3 h.p. or 3½ h.p.—probably the former; but the hub was a standard pedal hub, and it never let me down. The firm dropped the idea because some of their testers managed to shear the hubs by lurid gear changes. But I see no reason why the 100 lb. featherweight should not be quite content with a two-speed hub of push-bike type—what matter if strengthening it up added 2 lb. or so? With such a hub, beset by no fiercer stresses than those of a low-geared fast-running 150 c.c. flat twin, on which each power stroke is more like a jilted maiden's sigh than anything else, a primary chain, and a final belt, the featherweight would enjoy an efficient, dreadnought drive. Give it that, and I am prepared to gamble on its success.

The Triumphant 350 c.c.

SOME of us can still recall the amusement with which the "boys" greeted the first trio of Douglas lightweights to appear at the start of an A.C.U. Six Days. None of them completed the course, for their hastily improvised frames cracked up; but the engines had done more than enough for glory before the frames collapsed; and some of us murmured: "Why, with a two-speed gear that engine would . . !" And so it has. It is by this time a patriarch with an innumerable progeny. It is sober sense to say that no soloist *needs* anything bigger than a 350 c.c. If he chooses to lug about with him 1,000 c.c. mounted in a specification weighing upwards of 3 cwt., that is his funeral. But 350 c.c. will give him as much climb as anything else, as much speed as a rational man can utilise on British roads, as much comfort as any rival type, and the top notch standard of reliability. So the last two years have seen 350 c.c. admitted to the ranks of the full touring solo machines; and I suppose that ere long the plucky little engines will be accepted as useful sidecar pullers—many are so used already.

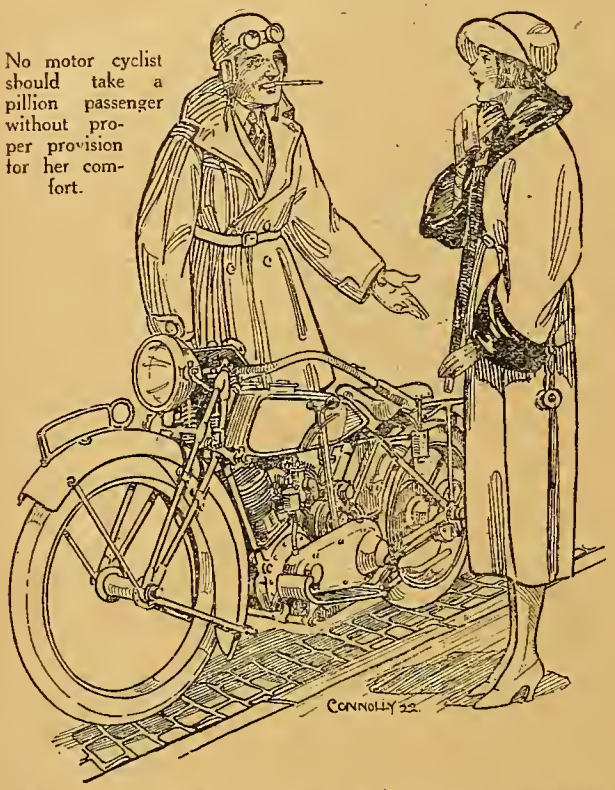
A I

WHERE THE CIDER APPLES GROW.

In the county of narrow and picturesque lanes. A scene near Tiverton, Devonshire. Tortuous by-ways, richly cultivated land, mellow sunshine glowing on homely thatched cottages—will such summer memories come to the minds of the London–Exeter competitors in the cold grey dawn of December 27th?

PILLION RIDING.

Points to Observe for the Safety of Rider and Passenger.



No motor cyclist should take a pillion passenger without proper provision for her comfort.

AT some period or other of his motor cycle career almost every rider finds occasion to carry a passenger on the carrier of his machine.

Unfortunately, it cannot be denied that a certain proportion of the accidents to motor cyclists which have occurred during the present year have involved two persons—the rider and the pillion passenger. Very seldom, however, has it actually been proved that the mere fact of the carrier being occupied by a second person has been the cause of the mishap.

Pillion Riding Not Necessarily Dangerous.

Properly practised, pillion riding is not necessarily dangerous. By itself, the mere fact of there being a passenger behind the driver is not sufficient to warrant the condemnation of the practice. Many a motor cyclist will testify to having regularly carried a pillion passenger without the slightest mishap, and will aver that the extra weight over the back wheel in no way detracts from his control of the machine.

Usually, however, one will hear it emphasised that there is a right and a wrong way of carrying a passenger, and, of the two, it is generally agreed that the side-saddle attitude does not give the driver such a comforting sense of security as the astride position. The reason is obvious: the side-saddle position does not afford the passenger any support for the upper part of the body, and in a sudden swerve, or when rounding a corner, the passenger may lurch, and considerably embarrass the driver.

Side-saddle Preferred, but—

It is only natural that the majority of lady passengers should prefer the side-saddle attitude. The motor cyclist will, however, be well advised to attempt methods of peaceful persuasion in an endeavour to bring about the adoption of the astride position when a really long run is under consideration.

If a passenger is to be carried with any frequency, a proper pillion seat attachment for the carrier is a *sine quâ non*. Such a fitment should incorporate a handrail and footrests if the prospective passenger firmly refuses to sit astride. A loose cushion on the carrier should be eschewed, save, perhaps, as a purely temporary expedient, for it may shift its position with, possibly, disastrous results. It is as well, also, to warn the passenger that, if the back number plate be obscured, he or she may be held liable for "aiding and abetting" within the meaning of the law should some constable chance to observe the "crime."

The privilege of being able to carry a passenger on a solo machine is valuable, and one hopes that motor cyclists generally, by observing a little common sense in the matter of seating the passenger securely, and by not deliberately taking risks in attempting to negotiate impossible surfaces, will counter the prejudice against pillion riding which exists in the public mind to-day. One might, perhaps, label the following points as the golden rules:—

1. Seat the passenger astride.
2. Fit a proper pillion attachment, with footrests, securely to the carrier.
3. Keep off tramlines and take no risks in traffic.

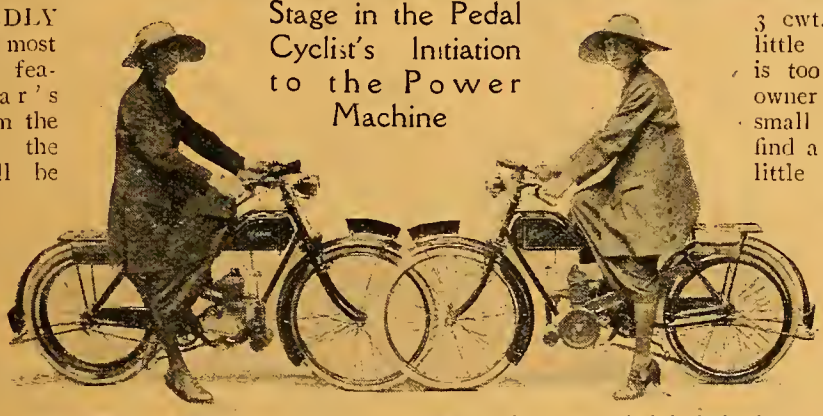
Although very popular, the side-saddle attitude does not give the driver such a sense of security as the astride position.

The Stepping-stone to Serious Motoring

Motorised and Motor-assisted Bicycles and Miniature Runabouts as a First Stage in the Pedal Cyclist's Initiation to the Power Machine

UNDOUBTEDLY one of the most interesting features of this year's Olympia Show, from the point of view of the general public, will be the number of ultra lightweights on exhibition.

The motor cyclist who goes to Kensington to decide finally whether his 1923 mount is to be a Brough Superior, an overhead valve Triumph, or a Sunbeam, will, of course, look upon these miniatures as toys, and veterans who retain memories of the motorised bicycle of a decade or more ago may regard them with suspicion. But the man-in-the-street and his lady who are looking for a power-propelled machine to take the place of their pedal cycles will be interested. It is now generally realised that there need be little fear of breakdown, and that technical knowledge of internal combustion engines is not essential in order to run a motor cycle.

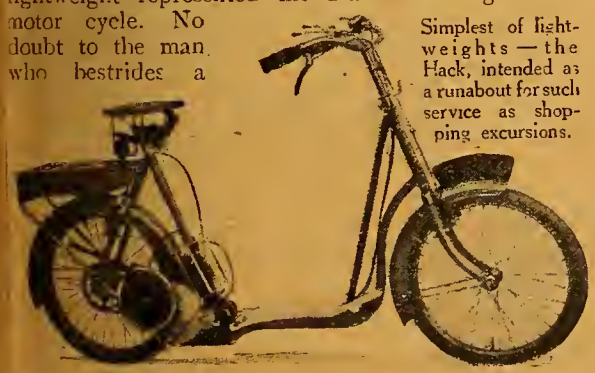


The McKenzie is made with frames to suit short or tall riders. The lady depicted, on the left, is shown seated on the smaller model and, on the right, on the larger type. Observe that in the latter case she is not able to place her foot firmly on the ground.

Motor Cyclist Friends.

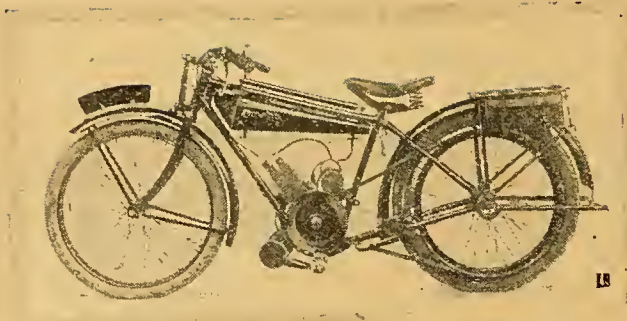
Such visitors to Olympia may have motor cyclist friends who perhaps will tell them that these new miniatures are too light, that they are under-powered, and that they have no speed. At the Show last year an enthusiast was overheard to tell an elderly relative that she wanted plenty of power, a clutch and kick-starter, and a two-speed gear. To this motor cyclist, who probably used a heavy big twin solo, a 180 lb. lightweight represented the minimum weight for a motor cycle. No doubt to the man who bestrides a 3 cwt. monster even the little Levis or Velocette is too light, just as the owner of one of these small motor cycles may find a 75 lb. McKenzie a little strange to ride. To all experienced motor cyclists the ultra lightweights of the type represented by such machines as the McKenzie and J.E.S. will appear ridiculously light, yet the pedal cyclist on joining the ranks of motorists by means of a motorised bicycle or an ultra lightweight may, at first, find the new 75 lb. machine somewhat heavy.

This question of viewpoint as regards weight is a very important one, for while the first essential of a machine for the masses is low weight, there are critics who say that lightness means discomfort *because they*



Simplest of lightweights — the Hack, intended as a runabout for such service as shopping excursions.

This J.E.S. of 169 c.c. capacity survived the A.C.U. Six Days Trials and demonstrated the capabilities of the small engine when used in conjunction with a four-speed gear.

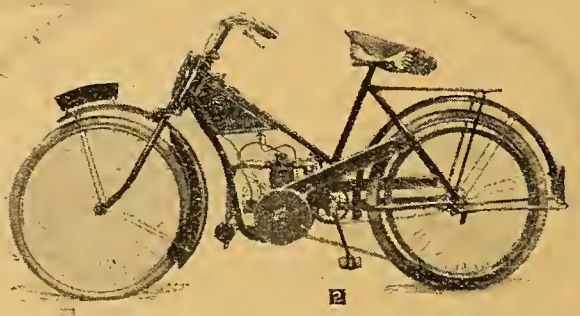


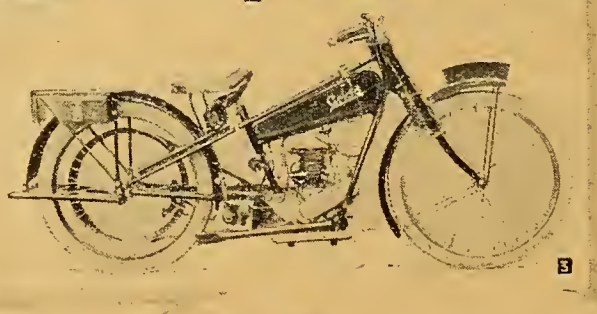
judge the requirements of the newcomer from their own.

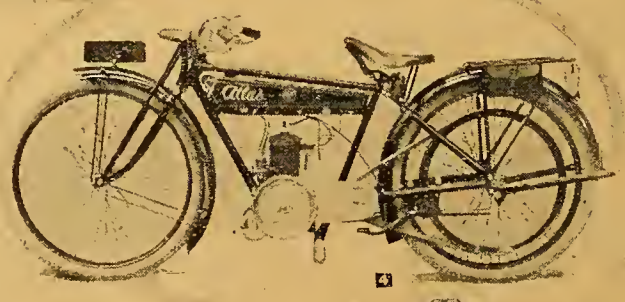
It is all a matter of relativity. The owner of a Rolls-Royce car would probably prefer to walk rather than drive a small car. He would say that the latter is too light and shakes him up too much, yet the owner of the light car thinks he is riding on the wheels of luxury.

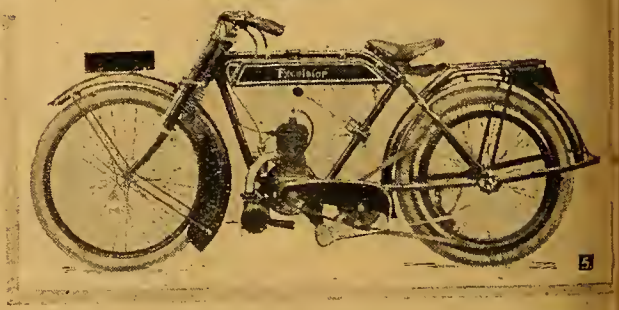
The new ultra lightweights are not intended to give the same service as a motor cycle of the orthodox type. They are intended to provide a little more comfort and a little more speed than the pedal cycle, without the effort of pedalling.

So long as an owner realises this he or she will obtain the greatest satisfaction and service from an ultra lightweight, which has a definite place in the world of wheels just as has the motor dinghy in the world of boats. Unfortunately, perhaps, the majority of these motorised bicycles—if such they can be called—are capable of really high speeds. Mr. McKenzie has a document in the form of a summons which officially states that a McKenzie on a certain occasion exceeded 34 miles per hour.









Engines Too Large, Not Too Small.

Small as these little engines are, it is the writer's opinion that they should be still smaller, so that they are incapable of exceeding the speeds for which the machines have been designed. With an engine of, say, 100 c.c. and a diminutive three- or four-speed gear, an ultra lightweight should be capable of going almost anywhere and yet have a low maximum speed. What a 169 c.c. engine and four-speed gear in a light machine will do is exemplified in the performance of the J.E.S. in the A.C.U. Six Days Trials. This little machine deserves to secure its maker a fortune if only for the fact that for many years he has marketed and developed the one type. Every year a number has been sold, but this year, by the aid of a four-speed gear, it has made quite a reputation in really severe trials, including the Six Days event.

But the average man-in-the-streeet does not require a machine to scale mountain tracks. A few may live on the top of the Cotswolds and may require to make frequent calls in the valleys. For them there is the J.E.S. and other machines of like capacity and equipped with gear boxes. The majority of those who need a motor-propelled bicycle require it for main road use, and a smaller engine with a three-speed gear would give the same service as the *single-geared* machines of 160 c.c. now offered to the public.

It is in order to provide ample reserve of power to climb hills on a single gear that engines are even as large as they are—and speeds around 30 m.p.h. are thus rendered possible.

From the foregoing it will be seen that the purchaser of an ultra lightweight such as will be exhibited at Olympia need have no fear that the machine will not live up to its designers claims. If such machines err it is in being capable of much more than the ex-pedal cyclist requires, who having mo

TYPES OF MINIATURES WHICH WILL BE AT OLYMPIA.

1. 170 c.c. Omega. 2. 150 c.c. Weaver.
3. 161 c.c. Grigg. 4. 142 c.c. Atlas.
5. 147 c.c. Excelsior.

ıe Stepping-Stone to Serious Motoring.—

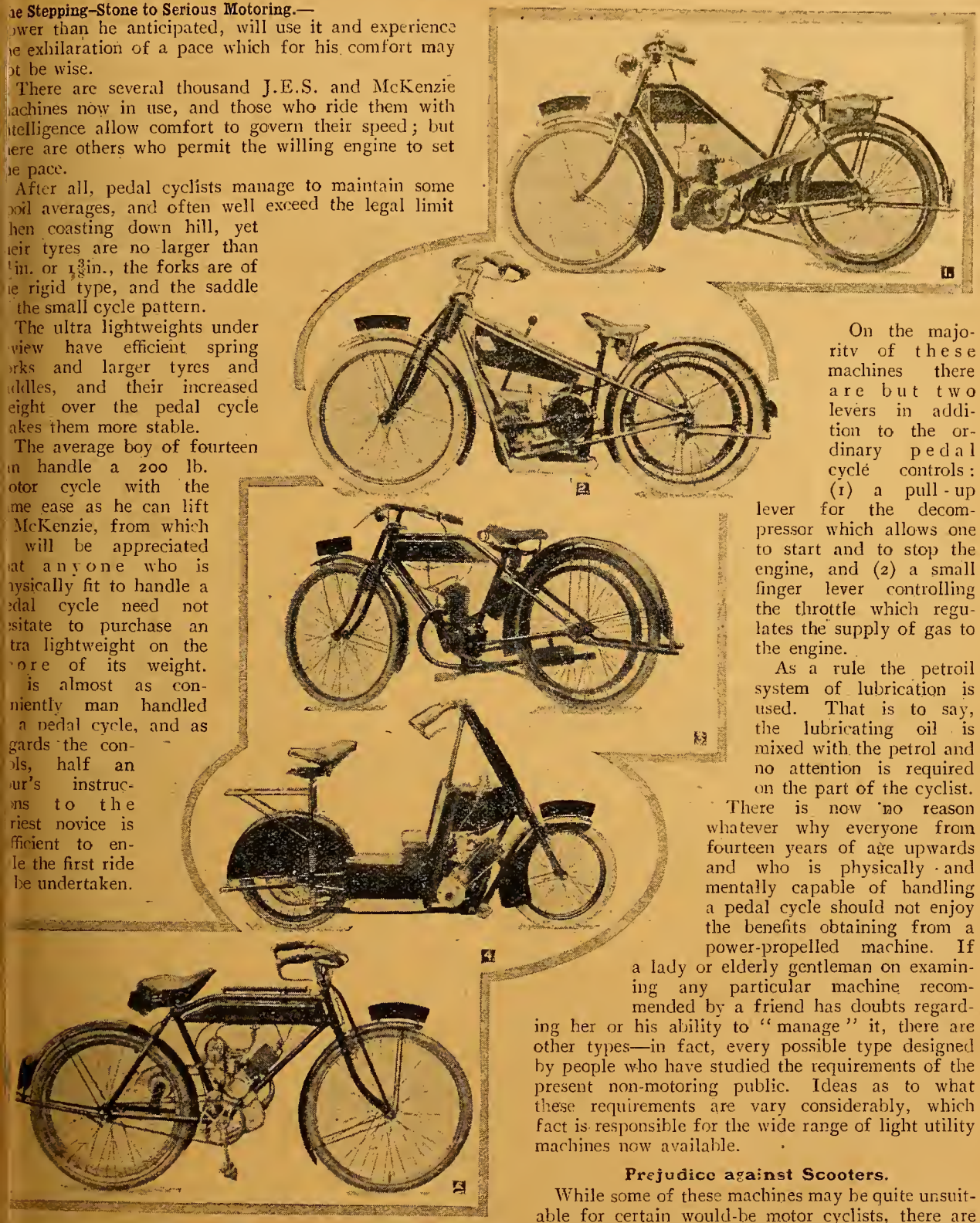
)wer than he anticipated, will use it and experience ıe exhilaration of a pace which for his comfort may)t be wise.

There are several thousand J.E.S. and McKenzie ıachines now in use, and those who ride them with ıtelligence allow comfort to govern their speed; but ıere are others who permit the willing engine to set ıe pace.

After all, pedal cyclists manage to maintain some)ol averages, and often well exceed the legal limit hen coasting down hill, yet ıeir tyres are no larger than in. or 1¾in., the forks are of ıe rigid type, and the saddle the small cycle pattern.

The ultra lightweights under view have efficient spring)rks and larger tyres and ıddles, and their increased eight over the pedal cycle akes them more stable.

The average boy of fourteen ın handle a 200 lb. otor cycle with the me ease as he can lift McKenzie, from which will be appreciated at anyone who is ıysically fit to handle a edal cycle need not sitate to purchase an tra lightweight on the ore of its weight. is almost as con- niently man handled a pedal cycle, and as gards the con- ols, half an ur's instruc- ns to the riest novice is fficient to en- le the first ride be undertaken.



MODERN MOTORISED BICYCLES AND ULTRA LIGHTWEIGHTS

1. 169 c.c. McKenzie.
2. 165 c.c. Economic.
3. 150 c.c. Sun.
4. 142 c.c. Kenilworth.
5. 116 c.c. J.D.

On the majority of these machines there are but two levers in addition to the ordinary pedal cycle controls: (1) a pull-up lever for the decompressor which allows one to start and to stop the engine, and (2) a small finger lever controlling the throttle which regulates the supply of gas to the engine.

As a rule the petroil system of lubrication is used. That is to say, the lubricating oil is mixed with the petrol and no attention is required on the part of the cyclist.

There is now no reason whatever why everyone from fourteen years of age upwards and who is physically and mentally capable of handling a pedal cycle should not enjoy the benefits obtaining from a power-propelled machine. If a lady or elderly gentleman on examining any particular machine recommended by a friend has doubts regarding her or his ability to "manage" it, there are other types—in fact, every possible type designed by people who have studied the requirements of the present non-motoring public. Ideas as to what these requirements are vary considerably, which fact is responsible for the wide range of light utility machines now available.

Prejudice against Scooters.

While some of these machines may be quite unsuitable for certain would-be motor cyclists, there are others which would in every way fulfil their needs.

It is perhaps surprising that the little Kenilworth has not caught the public fancy as much as it deserves to do. Probably its similarity to the

The Stepping Stone to Serious Motoring.—

"scooter" is responsible, although there is nothing of the scooter about the Kenilworth either on the point of efficiency or comfort. True, it is small, but that should be an advantage to many would-be motorists, although perhaps it is just a little too small, and tall persons may *appear* a little cramped to the passer-by. No machine could be easier to start than the Kenilworth. It starts at walking pace, and the most nervous of riders finds no difficulty in mounting it.

In the same category as the Kenilworth is the Hack —another scooter-like machine intended purely for runabout purposes.

Auxiliary or Motorised Bicycle.

The "next size larger" type is often termed the motorised bicycle because it resembles a pedal cycle with an engine to drive it. It is very easy to confuse this type of machine with the auxiliary-powered bicycle which is actually an ordinary pedal cycle with a small engine attached. Such a machine has its place perhaps, but it is not suitable for use on bad roads or *pavé*, neither is it wise to exceed the speeds at which an ordinary pedal cycle usually travels, for the reason that the average cycle is not built sufficiently strong to withstand the extra weight and the mechanical power propelling it. The motorised bicycle proper is one that has been designed throughout for power propulsion. It is, in fact, a light motor cycle with pedalling gear. At the head of this class are the McKenzie and J.E.S., both of which have spring forks and follow orthodox motor cycle practice where necessary.

There have been very few of this kind of motor cycle on the market during 1922, excepting the two makes mentioned, which may be said to have awakened the rest of the industry to possibilities of the type with the result that the numbers representing it will form one of the chief features of the forthcoming Olympia Show.

With all motor cycles which form a stepping-stone to more serious motoring, the would-be purchaser has to satisfy herself or himself on two points. First, is the preference for a machine like a bicycle or like a motor cycle? Second, whether the chosen machine is easy to mount.

It may interest the tyro to know that the weights of the respective types are approximately as follows:

Racing bicycle	25 lb.
Tourist bicycle	42 lb.
100 c.c. auxiliary motor on bicycle	65 lb.
150 c.c. motorised bicycle	75 lb.
150 c.c. ultra-lightweight motor cycle	100 lb.
211 c.c. lightweight	140 lb.
250 c.c. lightweight	160 lb.
350 c.c. junior machine	190 lb.
500 c.c. senior motor cycle	260 lb.
600 c.c. motor cycle	290 lb.
750 c.c. motor cycle	320 lb.
1,000 c.c. motor cycle	340 lb.

As is well known, the majority of motor cycles are made irrespective of the fact that they may be used by a short person or one well over six feet. Except for the slightly cramped position for a tall man on a small machine, it does not matter to an inch or so what distance it is from saddle to handle-bar, but often the short-legged rider is made to feel less confident because he cannot place both feet firmly on the ground.

Riding Position and Saddle Height.

The correct riding position on a motorised bicycle is more important for the reason that with a single geared machine it is necessary to start by means of the pedals. Mr. McKenzie has realised this important point and now wisely offers two models with different saddle heights.

In the next class there are the little Atlas, Economic and Grigg machines, all successful during the past year, and now representative of a type to which such new models as the Sun, Omega, and Excelsior are newcomers.

They usually resemble the orthodox motor cycle in their design—in fact, they are just miniatures of the types which have taken very many years to develop.

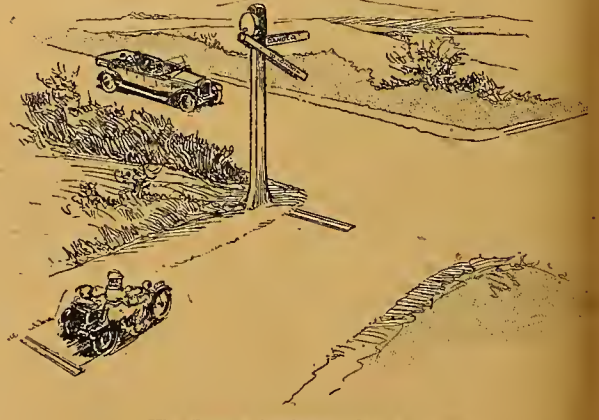
Thus, to summarise, motor cycles at Olympia will cater for every known requirement.

AUTOMATIC WARNINGS AT CROSS ROADS.

INTENDED to eliminate cross road dangers a device has been evolved for automatic signalling by approaching cars themselves. The device consists of two bars occupying one-third the width of the roadway, one placed at some distance from the corner and the other actually at the road junction. These bars are connected to a signalling arrangement composed of one fixed arm, on which is indicated the word "danger," and which is provided with a red reflector for use by night. A movable arm bears the usual signpost directions, and also serves to cover the danger arm.

When a vehicle touches the first of the two movable bars, the cover of the danger sign is dropped clear and a gong rings, thus giving warning to any machine approaching the cross road that another is coming-up. On the vehicle reaching the cross road it touches the second bar and the signal is returned to its normal position.

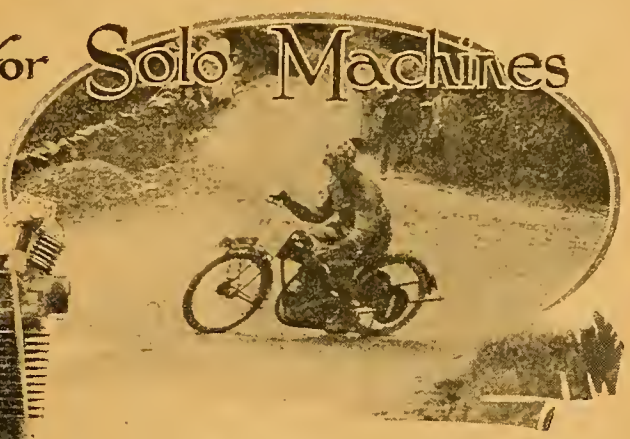
The inventors are J. W. Proctor, 24, Margarets Road, and J. Burlinson, 81, Jesmond Terrace, both of Whitley Bay, Northumberland.



The Proctor-Burlinson device in use.

Small Engines for Solo Machines

IN RELIABILITY TRIALS. The 250 c.c. solo mount has competed on an equality with bigger machines—and succeeded.



BY RACING. Development of small engines has been fostered by racing on both road and track.

TWENTY years ago motor cycles were just emerging from the experimental state, and the early power units, evolved from the stationary gas and oil engines of the period, were of comparatively small capacity.

Designed on "gas-engine" lines, they were harsh, slow-pulling affairs running on high gear ratios. They were soon found to be inadequate for the work they had to do, and "monsters" (as they were then regarded) were brought into use, and later came 500 c.c. and 600 c.c. engines, all embodying the same low-efficiency, high-geared, slow-pulling characteristics.

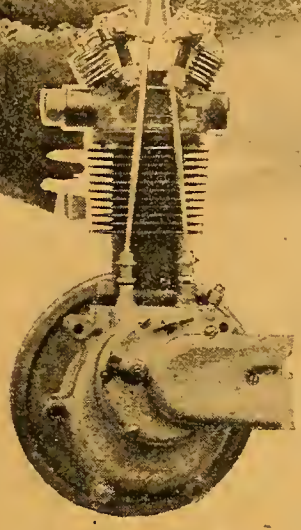
It was not seen, or, if seen, it was not thought possible to take advantage of the fact that the small engine would produce all the power needed providing it could be run at a high rate of revolutions when suitably arranged to transmit its power through a considerable gear reduction.

Slow Development.

Through the earlier history of the motor cycle movement, speed and power were sought by increasing the size of the slow-running engines until a limit was reached, then twin-cylinder engines—virtually two single-cylinder engines with a common crankshaft—were developed; but truly high-speed power units were tardy in their evolution, even after the limit of the slow-speed big engine was realised.

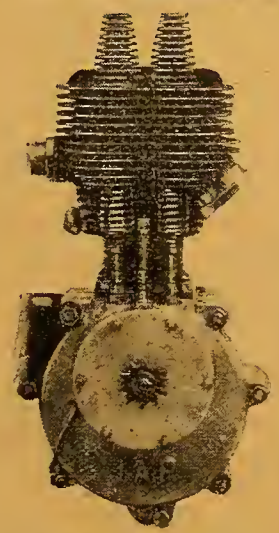
Finally, two types of power unit came under consideration, which markedly affected motor cycle design; these were the flat-twin four-stroke and the single-cylinder two-stroke.

Curiously enough, these engines represented two distinct schools of design—the first, progressive, seeking power from a small capacity by the high revolutions permitted by the almost perfect balance of the flat-twin; the second conservative, be-



Typical of highly efficient overhead valve design; the 250 c.c. Blackburne engine which, in a Sheffield Henderson machine, attained a speed of 72·89 m.p.h.

Development of the 250 c.c. Motor Cycle as a Capable Touring Model. Notable Achievements on Road and Track.



A clean and straightforward design, the 250 c.c. side-by-side valve J.A.P. unit, embodied in many successful small machines.

cause the small two-stroke, with its excellent low-speed pulling, discovered at last the secret of a successful small high-geared (which is synonymous with single-geared) engine.

The Promise of the Small Engine.

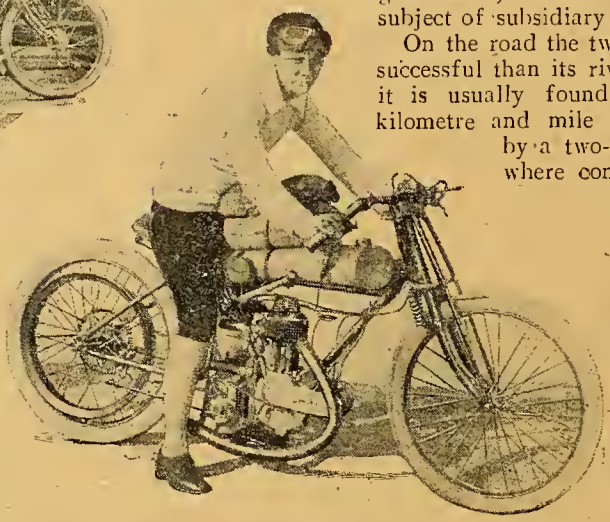
For many years *The Motor Cycle* had foreseen and predicted the ultimate success of a miniature type of machine suitable for universal use; a solo motor bicycle, which, while capable of going anywhere, would, by virtue of its small, light and even running power unit, be in itself light in weight, easy on tyres and transmission, and economical in upkeep. This belief, so frequently expressed, was given practical support by the offer of cups for the best performance of a machine of 250 c.c. capacity or less in the Junior T.T. races of 1920 and 1921, after it was felt that the 350 c.c. machines had become well-nigh equal to the once universally popular 500 c.c. solo mount.

Perhaps more than any other type of power unit the flat-twin showed what could be done with medium- and small-cylinder capacities and extremely high engine speeds in conjunction with suitable gearing. Directly, however, the flat-twin had no part in the evolution of machines under 350 c.c. capacity, but this was chiefly on account of mechanical considerations.

Having established the possibilities of small high-speed engines, manufacturers were not slow to return to the miniature unit of something under 250 c.c., and the efficiency of this size has been so highly developed in certain instances that it seems unlikely that the better examples can be much further improved in respect of power output; at the same time, it does not seem likely that anything smaller than 200 c.c. can offer all that is required in a touring machine for some time to come.

Perhaps the most successful two-stroke exponent of the day, G. S. Davidson and his 247 c.c. Levis have occupied the winning position in this year's 250 c.c. T.T. and the French and Belgian Grand Prix Races.

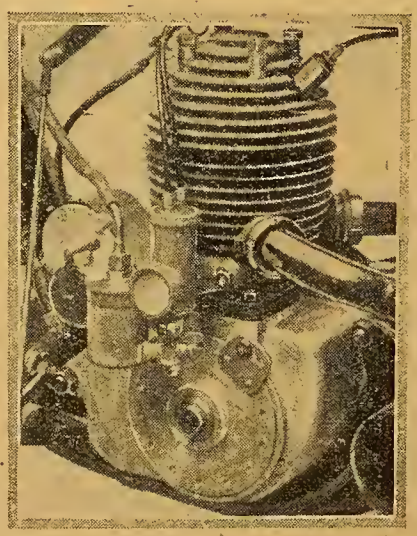
Developments in steels have made diminutive valve mechanisms very reliable, but something still needs to be done in this sphere, and more workmanlike oiling systems may be needed in order to maintain small engines at the full pitch of their power. These things alone delay the entry of the 250 c.c. solo mount into a period in which it may well have a vogue as great as that enjoyed by the 500 c.c. type a few years ago. Naturally, so small an engine requires a wide range of gearing, and the introduction of a small, compact four-speed gear box designed primarily for machines with a cylinder capacity not greater than 250 c.c. would be an immense boon to the industry; such a gear box is by no means impossible when the torque impulses to be dealt with are delivered with such rapid frequency and are themselves comparatively small. Indeed, one lightweight maker has produced his own four-speed box.



Twenty-four hours' riding at an almost unvarying speed of 45 m.p.h. is a wonderful physical feat, therefore Mrs. Janson's achievement on the 250 c.c. Trump-Jap tends to overshadow the remarkable maintenance of power which the tiny engine displayed.

Four-stroke Progress in the 250 c.c. Class.

Since 1919 the 250 c.c. four-stroke has shone conspicuously in many of the leading competitions, having provided the winning type in the 1921 T.T. race (250 c.c. class) and in the 500 Miles Race at Brooklands in the same year. Besides gaining a full proportion of premier awards in reliability trials, a machine of the 250 c.c. four-stroke type covered 1,071 miles 1,180 yards in 24 hours (44.65 m.p.h.) at Brooklands. Another covered 400 miles at a speed of 56.67 m.p.h., and two others were first and second in the recent Ulster Grand Prix.



An increasing development has characterised the evolution of the Velocette engine and the lessons learnt in racing are, one by one, applied to the touring machines. This is the 1922 T.T Velocette engine—prototype of the 1923 touring model.

Although not running on absolutely parallel lines, the development of the 250 c.c. two-stroke has been pursued concurrently and equally energetically.

While the four-stroke adherents have had to strive to attain reliability under the searching requirements of super-efficiency and abnormally high speeds, the two-stroke school, favoured by an inherent simplicity, has sought all along for increased power from the given size; reduced fuel consumption has been the subject of subsidiary research.

On the road the two-stroke type has been even more successful than its rival; for sheer speed on the track it is usually found wanting (although the present kilometre and mile standing start records are held by a two-stroke in the 250 c.c. class), but where continuous acceleration and deceleration are needed, where long gradients are encountered, and where unquestioned reliability is of prime importance, the simple, light two-stroke with its even torque delivery is pre-eminent.

The 250 c.c. class in the 1920 T.T. was won by a two-stroke, which again repeated the performance in 1922; this year also a two-stroke won the 250 c.c. classes in the French and Belgian Grand Prix. The same machine also was the only one to gain full marks in the British team in the strenuous International Six Days Trials in the Alps.

Probably the foremost exponent of the 250 c.c. four-stroke in the country, B. Kershaw has taken the premier award in many open trials in competition with all types and sizes of machines.

250 c.c. Models in Official Tests.

In the last A.C.U. Six Days Trials the proportion of retirements to starters in the 250 c.c. class was less than in any other section. Thirteen started, eight being two-strokes (one of but 169 c.c. capa-

Small Engines for Solo Machines.—

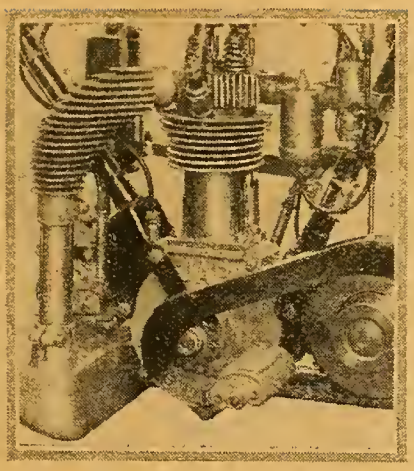
city), and five four-strokes. Of the former six gained gold medals and two qualified for certificates; of the latter four received gold medals and one retired.

After the 800 miles of strenuous road testing involved in the Six Days Trial, it is noteworthy that the first four machines were able to cover some sixty odd miles on Brooklands at over 42 m.p.h., the best two-stroke averaging 43.5 m.p.h. and the best four-stroke 43 m.p.h.

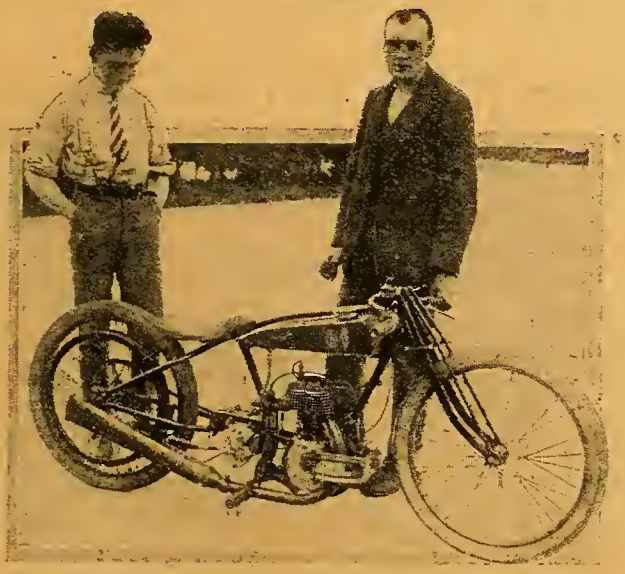
Perhaps the T.T. races show how closely the two types vie with each other. For example, the 1920 250 c.c. class was won by a two-stroke at 38.31 m.p.h., no four-strokes being entered in the small capacity category.

In 1921 a four-stroke annexed *The Motor Cycle* Cup for the 250 c.c. machines at a speed of 44.9 m.p.h., beating the previous year's speed handsomely; two-strokes occupied the next four places.

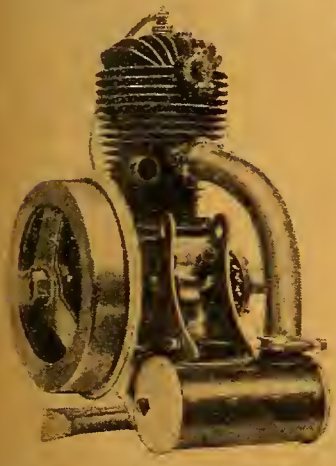
This year a separate 250 c.c. Tourist Trophy was offered, and it was gained by a two-stroke at the amazing average speed of 49.89 m.p.h. for the course of 188¾ miles; the second 250 c.c. machine (four-stroke) averaged 47.12 m.p.h.; and the third, again a two-stroke, had a speed of 46.90 m.p.h. Honours may therefore be said to be fairly even, although the two-stroke shows strongly ascendant tendencies.



Overhead valves are not yet fully popular on touring models but on sports machines they invariably find a place when maximum efficiency is sought. The o.h.v 250 c.c. Coventry Eagle.



After prolonged experience with the overhead valve type for racing work the Blackburne designers returned to the side valve pattern this year. The new 250 c.c. O.K.-Blackburne signalised its first appearance at Brooklands by covering 400 miles at 56·67 m.p.h. in the hands of W. Handley and W. D. Marchant.



Pioneers of a utility two-stroke engine for moderate priced machines, the makers of the Villiers will introduce two models of less than 250 c.c. capacity next year.

It must be borne in mind that practically all the performances mentioned have been achieved on specially prepared machines in the hands of a comparatively small number of expert riders; the small machine no doubt demands more than a usual amount of nursing in these strenuous events, but it must not be forgotten that the special production of to-day becomes the touring model of to-morrow.

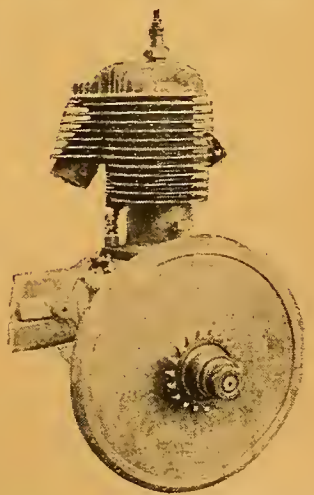
When machines of just under 250 c.c. capacity have proved themselves capable of surviving the International, the Scottish and the English Six Days Trials with credit and honours, when five different makes can average more than 45 m.p.h. over the mountainous T.T. course, when one can average over 44 m.p.h. for twenty-four hours at Brooklands and another maintain 52½ m.p.h. for 166 miles in the French Grand Prix, can the ultimate reliability and suitability of the type for ordinary purposes be doubted?

Surely the 250 c.c. engine promises the solution to the problem of providing a cheap, light and economical motor cycle to fulfill all reasonable needs.

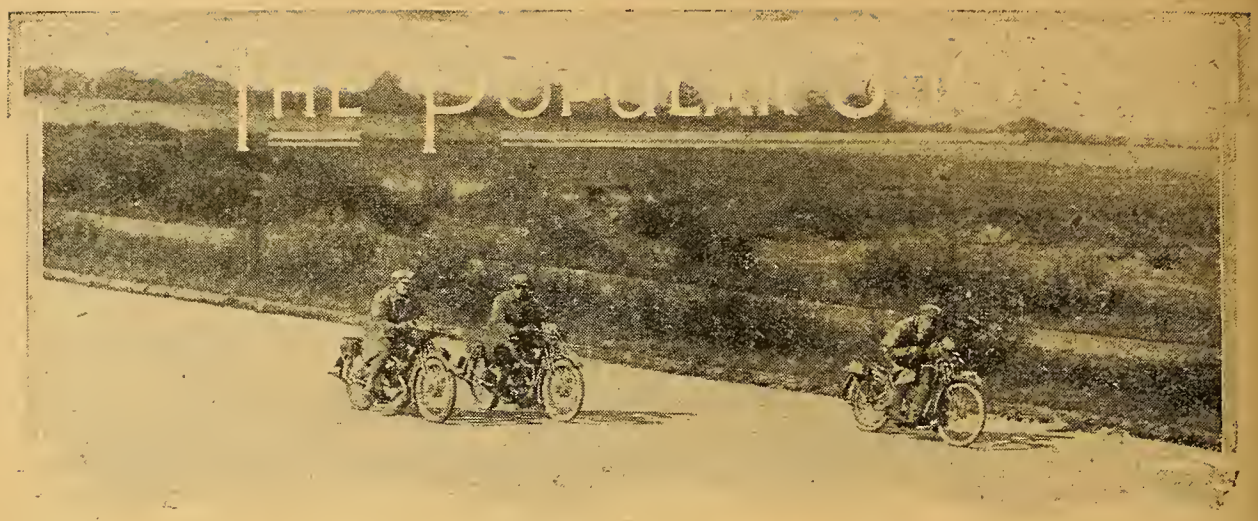
Choice Available.

Those riders who now realise that the 250 c.c. mount will meet all reasonable requirements have a wide and varied choice of machines before them. These will be fully dealt with in our Show forecast and report issues, and will include such well-tried two-strokes as the Levis, Velocette, Sun-Vitesse, New Hudson, Triumph Enfield, Cedos, Ivy, Verus, James, Radco, and the many Villiers engined models as the Wolf, Hobart, Sparkbrook, and Excelsior.

The four-stroke range is even wider, most, however, having proprietary engines such as Blackburne or J.A.P. These include: New Imperial, Rex-Acme, Sirrah, Coventry Eagle, Sheffield-Henderson, Weatherell, Diamond, Invicta, Trump, Ariel, Ivy, and Dot.



Enormous cooling fin area on the cylinder is a special feature of the 250 c.c. Blackburne unit.



A Class with an Increasing Number of Representatives. Tendency of 350 c.c. Machines to Replace the once Universal 500 c.c. Utility Mount.

IN spite of the enormous popularity of the 500 c.c. single, which as a type has probably had a longer vogue than any other form of motor cycle engine, the 350 c.c. engine has shouldered its way to the front.

As is usually the case, practical developments along smaller lines were foreshadowed by Brooklands records until, finally, the 1920 Senior Tourist Trophy was won by a 350 c.c. machine—a performance such as had never been accomplished previously, and, we may risk the prophecy, will never be accomplished again.

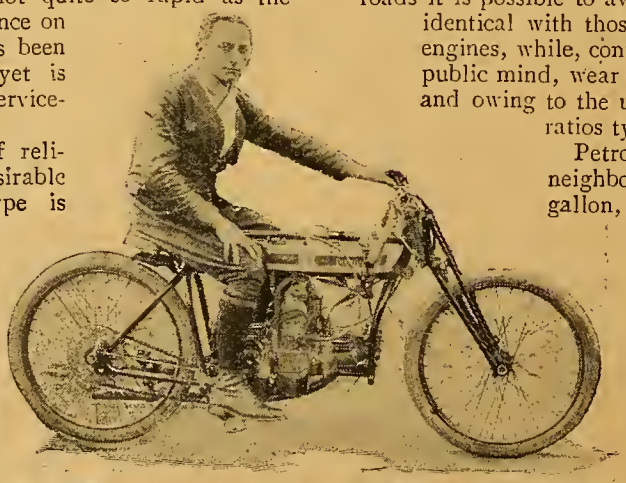
Early Propaganda.

When a new type comes to the front, it is usually brought into prominence by some apparently miraculous performance in a speed trial. To begin with, the public are sceptical, pointing out that the miniature engine has features which are not likely to appeal to the private owner. Developments and modifications of the racing machine bring the later models within the scope of practical politics, until finally a machine is evolved which, though not quite so rapid as the racing type, is a great advance on anything of its size that has been produced previously, and yet is perfectly roadworthy and serviceable.

Finally a long course of reliability trials weeds out undesirable features until the new type is capable of performances as good as those of a larger type of only a few years ago. Such has been the history of the 350 c.c. machine of to-day.

It is almost impossible to give the credit to any particular firm for developing the 350 c.c. engine, for progress has been so gradual that many well-known names are concerned. Nevertheless, it is only fair to remember the wonderful performances of the early flat-twin Douglas, which has done so much to popularise the light machine.

In spite of the good work of the pioneers, the majority of modern "350's" are of the single cylinder type, but include variations from the simple three port two-stroke through the normal side-by-side valve engine, to the highly efficient overhead valve racing machine—the Douglas and the Wooler being the only twins still obtainable in the 350 c.c. class.



C. G. Pullin, who has attained a speed of 94·79 m.p.h. on a 350 c.c. Douglas.

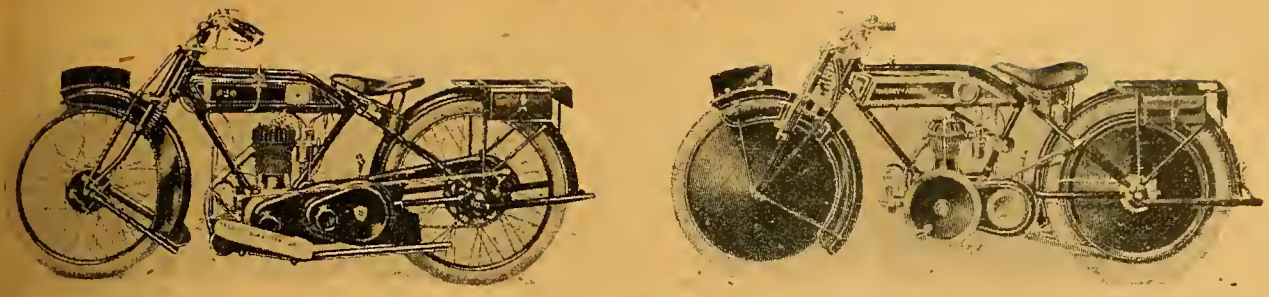
Qualities of Medium Size Machines.

In power and reliability 350 c.c. machines have proved themselves in all the big reliability trials, and long and steep hills can be ascended with consummate ease, without the faintest symptoms of overheating or loss of power.

Handiness is another feature in which these comparatively light machines score heavily, and over twisty roads it is possible to average speeds which are almost identical with those obtainable with much larger engines, while, contrary to a common belief in the public mind, wear and tear is not unduly heavy, and owing to the use of comparatively low gear ratios tyre wear is far from great.

Petrol consumption should be in the neighbourhood of 100 miles to the gallon, and oil consumption is reasonable, though if high speeds are to be maintained plenty of oil of a first-class brand is an economy rather than otherwise.

Public performances count for much, and the growth of the speeds in the Junior T.T. Races shows the remarkable development of sustained power which has taken place



Two 350 c.c. machines which, in the overhead valve form, have made reputations in the Tourist Trophy Races. (Left) The A.J.S. (Right) The Massey Arran with Blackburne engine.

during the past few years. On two occasions it will be noticed that a considerable drop in speed took place. In 1911 the late P. J. Evans's performance was so wonderful that the 1912 winner was unable to equal it, and the drop in 1920 may be credited to the unpreparedness of manufacturers, and works dislocation, caused by the war and subsequent events.

Past T.T. Speeds.

In 1911 the late P. J. Evans, riding a 340 c.c. twin Humber of 60 × 60 mm. bore and stroke, averaged the wonderful speed of 41½ m.p.h., and over the same course in the next year W. H. Bashall on a 348 c.c. Douglas of 60.7 × 60 mm. bore and stroke failed to maintain the previous year's record, and averaged only 39.65 m.p.h.

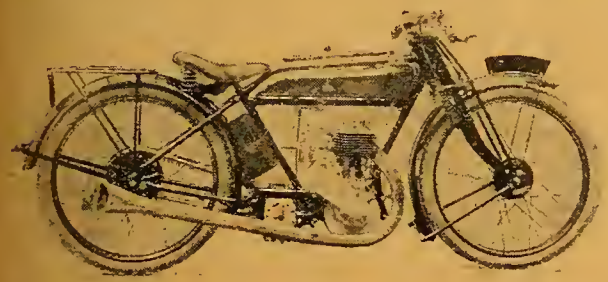
In 1913 the length of the course was increased, but in spite of this Hugh Mason (344 N.U.T.) increased the average speed to 43.73 m.p.h.; and in 1914 Eric Williams on a single-cylinder 349 c.c. A.J.S. of 74 × 81 mm. bore and stroke again raised the figure to 45.6 m.p.h.

The next race was held in 1920, and the average speed again dropped considerably. On this occasion the race was one of the most extraordinary that ever occurred, for the winner, Cyril Williams, mounted on a 349 c.c. A.J.S., finished the last two or three miles by pushing, yet succeeded in coming home first at an average speed of 40.74 m.p.h.

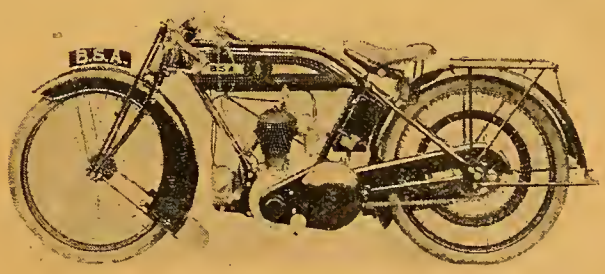
During the subsequent year lessons learned owing to experimental work during the war had had time to take a practical form, and in 1921 Eric Williams (349 A.J.S.) achieved a wonderful average of 52.1 m.p.h. It should be noted that the machine on which this race was won was very similar to that used in the previous year, though in 1920 the power developed by the cylinder was such that various other portions of the engine and transmission were not sufficiently sturdy to withstand the strain.

Winner of the Senior Race.

In 1921 also H. R. Davies on an exactly similar machine accomplished the truly marvellous performance of winning the Senior event at a speed of 54.49 m.p.h., a speed which was slightly bettered in the Junior Race in 1922 by T. M. Sheard, again mounted on a 349 c.c A.J.S., the average working out at 54.75 m.p.h.

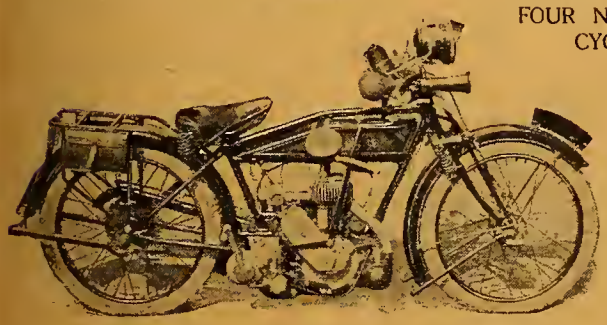


New Hudson

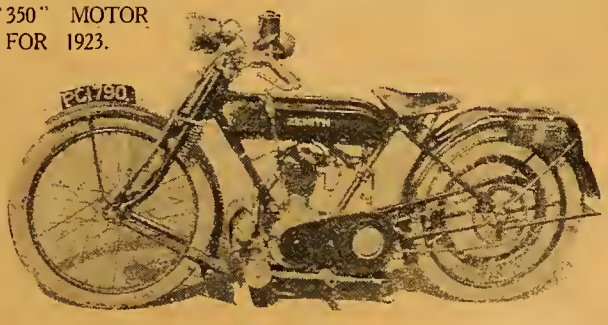


B.S.A

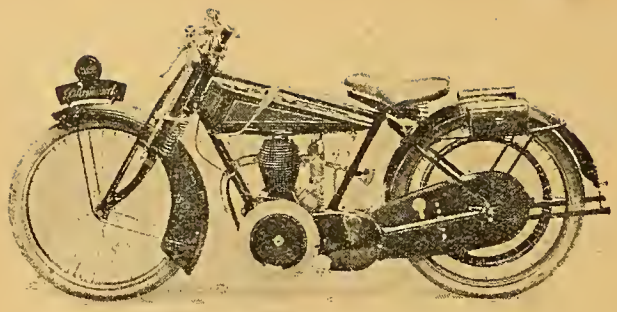
FOUR NEW "350" MOTOR CYCLES FOR 1923.



James.



Zenith-Jap



A Diamond with a Barr & Stroud sleeve valve engine.

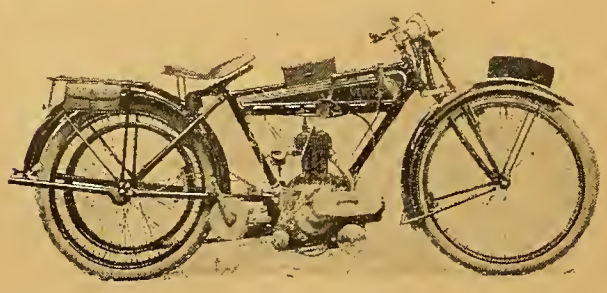
In the meantime one must not lose sight of two-stroke developments, for by 1922 the average speed of P. A. Newman's 349 c.c. Ivy had reached 46.08 m.p.h., or sufficient to win any T.T. previous to 1921.

It will be noticed that the A.J.S. firm has had an extraordinary run of victories in the Tourist Trophy Races, yet they are by no means alone in being able to manufacture fast and reliable 350 c.c. machines. Such well-known engines as the 346 c.c. J.A.P. and 348 c.c. Blackburne have done wonders in developing the modern tendency towards smaller engines. More than once the A.J.S. has been hunted home, and such machines as the Massey-Arran, Sheffield Henderson, New Imperial, Blackburne, Coulson, Cotton, Edmund, Dot, in addition to our old friend the Douglas in its sporting form with overhead valves, have made performances sufficient to cause the winner to put forth his best efforts.

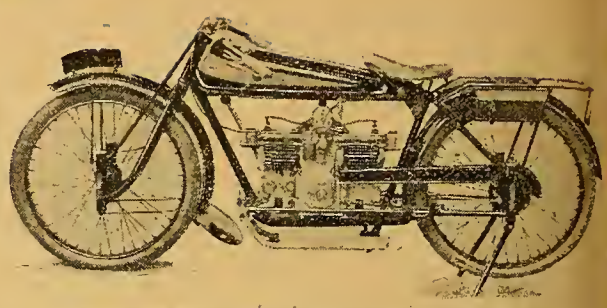
In the 500 Miles Race at Brooklands two-stroke enthusiasts were rewarded by seeing Norris's Ivy top the list in the 350 c.c. class—a performance which shows the sturdy reliability of the modern high-speed two-stroke. Nevertheless, until recent times the Ivy has remained one of the few two-strokes having so large a capacity. Other competitors in this department, however, are the Beardmore-Precision, Connaught, Alecto and, more recently, the Villiers.

Brooklands again gives ample proof of the phenomenal capabilities of the modern 350 c.c. machine. Below we give the existing figures for long and short distance records :—

Kilometre	C. G. Pullin	Douglas	94.79 m.p.h.
Mile	H. Le Vack	New Imperial-Jap.	91.88 ,,
5 Miles	H. Le Vack	New Imperial-Jap.	83.49 ,,
10 Miles	H. Le Vack	New Imperial-Jap.	73.52 ,,
50 Miles	H. Le Vack	New Imperial-Jap.	74.00 ,,
100 Miles	H. Le Vack	New Imperial-Jap.	72.81 ,,
200 Miles	Tudor Thompson	Douglas	62.29 ,,
300 Miles	Tudor Thompson	Douglas	61.00 ,,
400 Miles	Tudor Thompson	Douglas	60.44 ,,
500 Miles	N. Norris	Ivy	51.69 ,,
600 Miles	J. S. Holroyd	Blackburne	50.20 ,,



350 c.c. Verus with Blackburne engine.



A flat twin on unusual lines and embodying a spring frame—the Wooler.

1 Hour	H. Le Vack	New Imperial-Jap.	74.16 m.p.h.
2 Hours	H. R. Davies	A.J.S.	65.30 ,,
3 Hours	Tudor Thompson	Douglas	62.28 ,,
4 Hours	Tudor Thompson	Douglas	61.48 ,,
5 Hours	Tudor Thompson	Douglas	61.02 ,,
6 Hours	Tudor Thompson	Douglas	60.45 ,,
12 Hours	J. S. Holroyd	Blackburne	50.20 ,,

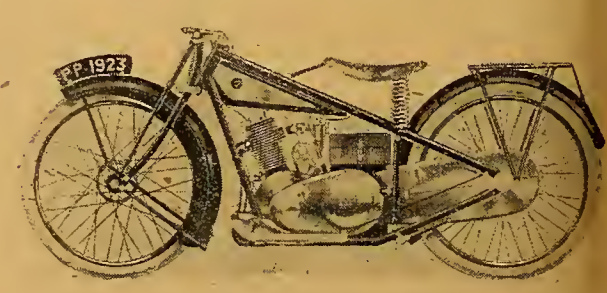
Apart from high-speed records, which (though of the utmost importance in the development of a type, especially when accomplished over long and difficult courses such as that employed in the case of the Tourist Trophy Races) are not always followed with such attention as they deserve by the touring rider, it must be obvious from the number of well-known firms specialising in 350 c.c. models, or which at least have added a machine of this size to their range, that the smaller type has found a very definite place in the market.

The latest additions from works which produce an entire machine are the Raleigh, James and New Hudson and Beardmore-Precision, while other famous names are whispered. The makers of the Sunbeam, who before the war used to produce a most admirable 350 c.c. model, have again decided to enter the lists, which will come as no great surprise to those who have watched with interest the 350 c.c. Sunbeam with overhead valves, which, under the able pilotage of George Dance, has made itself dreaded by all speed men.

Two Newcomers.

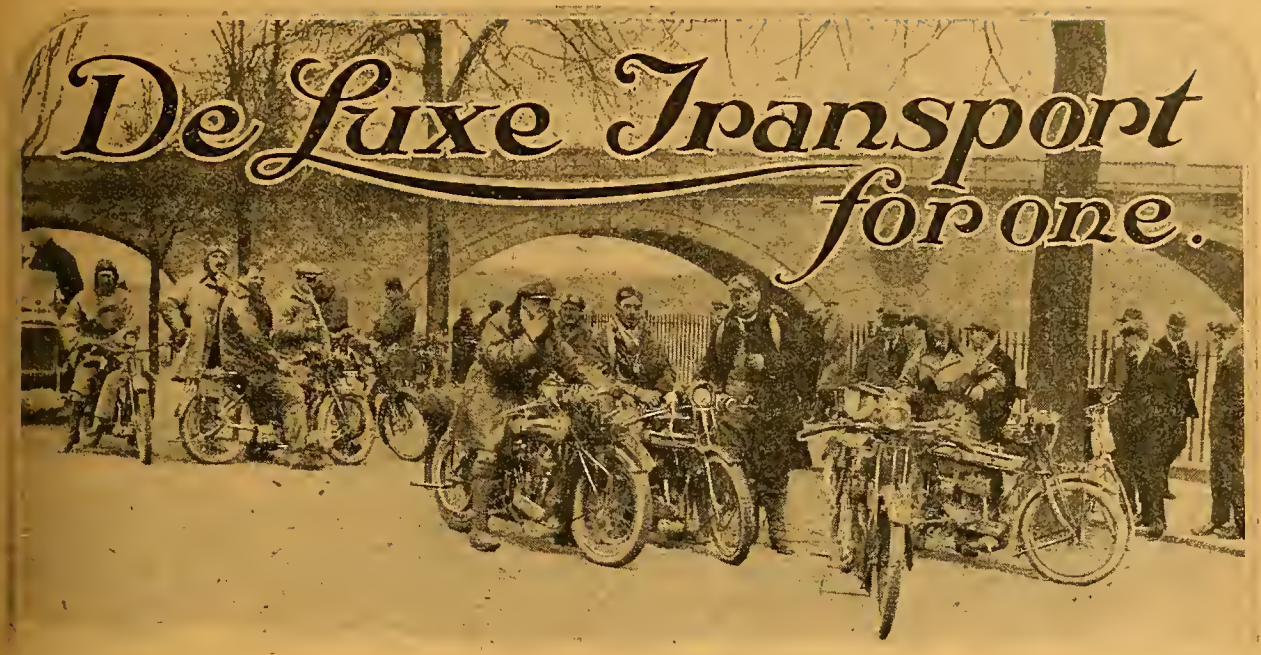
An important development, likely to affect all sizes of engines, was the introduction of the 350 c.c. Barr and Stroud engine, with its single sleeve valve and its silent operation. This engine is growing in popularity and is gaining even further laurels for its class engine, while the 350 c.c. o.h.v. Bradshaw oil-cooled engine is also making steady headway.

Amongst the normal side valve 350 c.c. engines which are fitted to many excellent machines must be mentioned the Blackburne and J.A.P.



The P & P., to be known as "The Silent Three."

De Luxe Transport for one.



Why the Larger Type of Solo Machine persists. Its Undeniable Charm. The Choice Available. Representative Machines Illustrated.

IN view of the rapid developments in small air-cooled engines during the past year or two and the success of the "lightweight" in all its forms as a capable roadworthy touring machine it may well be asked if there is any justification for a solo motor cycle with an engine larger than 350 c.c.

As a matter of fact the question is frequently raised in our Correspondence columns—and would crop up more frequently still but for a watchful sub-editor. But just as often is a complete answer supplied by enthusiastic riders of the larger machines.

Experience Counts.

This recurrent controversy among our readers in itself indicates very clearly how the whole matter stands. Not only is one man's meat another man's poison; one man often *imagines* that another man's meat would poison him. Would he but sample it his views might alter considerably.

The 250-350 c.c. enthusiast knows that he has a wonderfully efficient machine which he very seldom dares "open out" fully, which climbs every hill he puts it to without faltering, and which gives him day in and day out service at a very minimum of trouble and expense. Why, he asks, should anyone desire anything more powerful?

He does not realise, however, that the same argument applies to motor cars—Fords at £175 against Rolls-Royces at £3,000; to houses—two-roomed bungalows at £300 against "desirable villas" at £3,000; to cigarettes, to drinks, to anything. The more one pays the greater the refinement obtained.

In the motor cycle world, however, one gets more than mere refinement by buying from among the larger machines.

By Comparison.

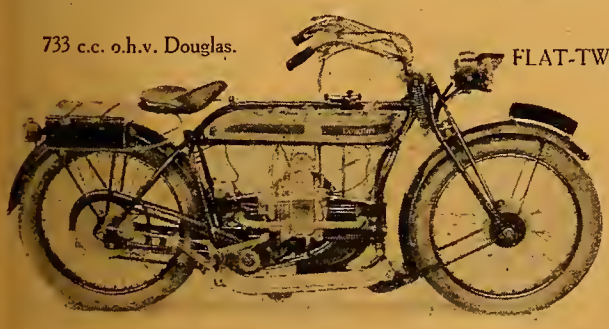
As has been pointed out in our columns, the 250-350 c.c. machine gains much of its efficiency at the expense of fussiness, a defect only noticeable by comparison.

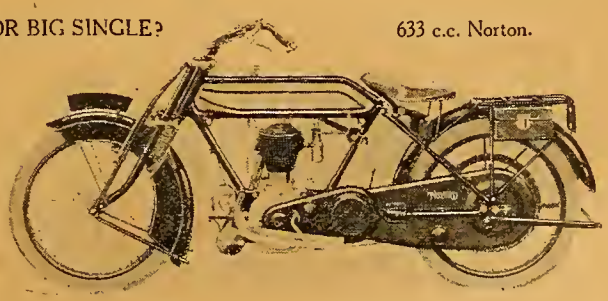
Fussiness; as exemplified by a screaming engine, is most unpleasant to a great many riders. Additionally it is a symbol of more rapid wear than the

733 c.c. o.h.v. Douglas.

FLAT-TWIN OR BIG SINGLE?

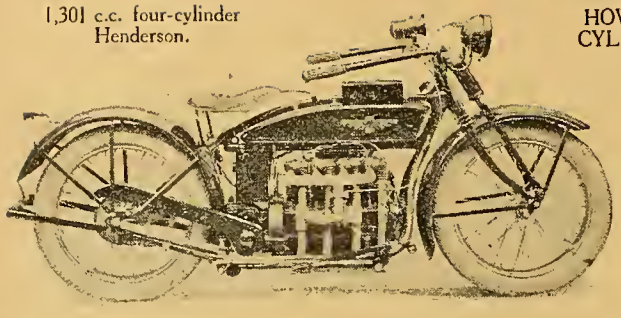
633 c.c. Norton.



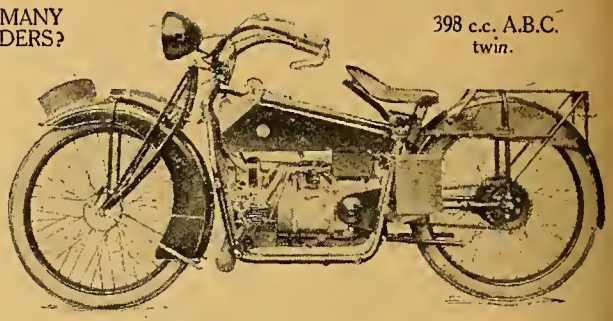


HOW MANY CYLINDERS?

1,301 c.c. four-cylinder Henderson.



398 c.c. A.B.C. twin.



effortless gait of a big single or twin moving at an identical road speed. Engine depreciation, therefore, is often less on the larger machine.

Lightness, too, is not an unmixed blessing; at certain speeds it may be synonymous with discomfort, again comparatively speaking, be it understood. The larger solo mount is (usually) fitted with larger tyres. Large tyres are easily the next best thing to a spring frame; many even prefer them. Or if a spring frame is desired there is more scope for its incorporation on the bigger machine. It also functions more ably therein.

Running costs, however, are by no means proportionately greater. Indeed, the economy of the lightweight is occasionally not so real as the figures of a freak fuel consumption test might indicate. In ordinary use the average 250-350 c.c. two-stroke runs 80-90 miles to the gallon of fuel; under similar conditions most 500 c.c. singles do 100 m.p.g. Tyres cost more in the latter case; but they wear longer. Wear and tear items should be less. Only tax and insurance are definitely greater.

Reserve of Power.

Then, a very real charm of the sturdy 500-1,000 c.c. heavyweight is that it will do more. True, it may not often be asked to exert itself, but the reserve of speed and power is there. Even if this reserve is only tapped twenty times in a year's running, the feeling of satisfaction because it is there is worth an extra pound or two.

Of course, for the type of rider known as a hard driver there is really no choice in the matter. He must have the big machine. Judging from the machines seen on the road the class is quite an important one.

Sixty m.p.h. 350 c.c. machines *are* obtainable, but if one really desires a 60 m.p.h. machine—and in capable hands it is a most fascinating possession—a 500 c.c. single is not much more expensive to buy; and a 1,000 c.c. twin does not cost double! Either of the latter types may be relied on to reach express train speeds after 1,000 miles neglect, or 5,000 miles with but perfunctory attention. The 350 c.c. mount might, but its maintenance of tune cannot be relied on over the same distance.

But enough—to use another homely saying—"the proof of the pudding is in the eating." Thousands of keen motor cyclists will again visit Olympia and choose solo machines of double or quadruple the bare minimum engine capacity necessary for the effective transportation of one person. Their choice will still be unlimited.

Varied Choice of Makes.

Those to whom sturdy simplicity appeals will certainly consider such famous singles as the B.S.A. (either the new sporting model or the old 557 c.c. machine), P. and M. (perhaps the new Panther), Powell, Norton (75 m.p.h. B.R.S., or even the dual-purpose "Big Four"), New Hudson (available in an attractive sports guise). Dunelt (the only big single two-stroke), Ariel, Coventry Eagle (with a very lively 499 c.c. J.A.P. engine), Quadrant (another new departure to attract the soloist), Beardmore (ditto), Rover, Sheffield-Henderson (specially attractive to the speed man), Triumph (four-valve or 550 c.c.; according to taste), 548 c.c. Wolf or 550 c.c. X.L.

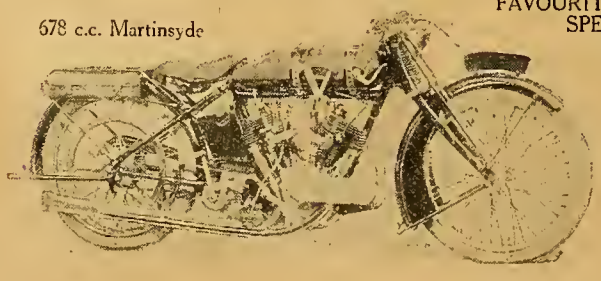
In the neighbourhood of 400 c.c. there are the 398 c.c. A.B.C. flat-twin, the 370 c.c. two-stroke Connaught, the 375 c.c. Royal Ruby, and the 398 c.c. Raleigh.

Twins of 500 c.c. capacity are not so numerous, but he would be indeed hard to please who could not find one suitable among such a varied range as the 494 c.c. Douglas, 496 c.c. Brough, and 498 c.c. Zenith-Bradshaw flat-twins, or the 500 c.c. N.U.T., 498 c.c. Martinsyde, and 496 c.c. P.V. V-twins, or the water-cooled 481 c.c. Scott Squirrel two-stroke twin.

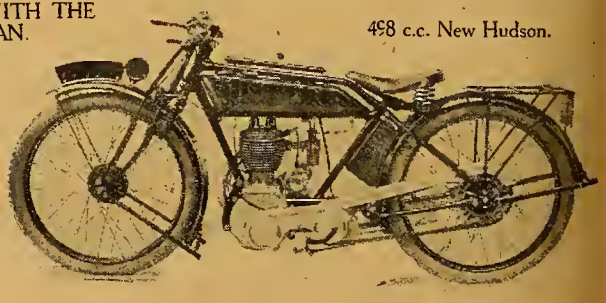
V and flat-twins with engine capacities in the region of 750 c.c. are available from many factories in several

FAVOURITES WITH THE SPEEDMAN.

678 c.c. Martinsyde

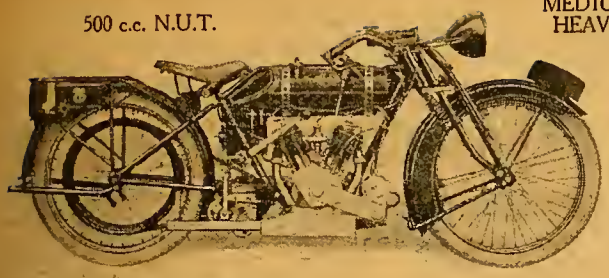


498 c.c. New Hudson.

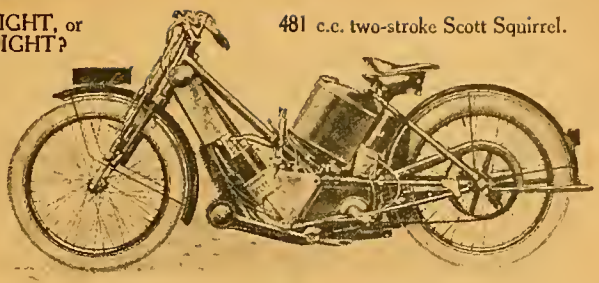


MEDIUM, LIGHT, or HEAVY WEIGHT?

500 c.c. N.U.T.

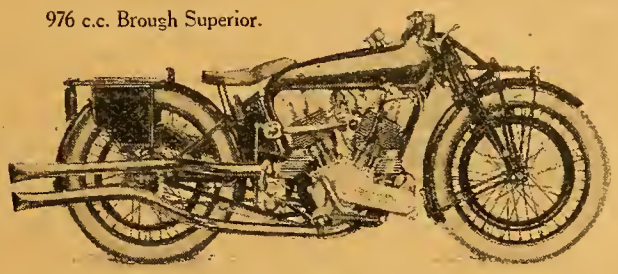


481 c.c. two-stroke Scott Squirrel.



forms. For example, there are the 600 c.c. Humber, 698 c.c. Raleigh, 688 c.c. Coventry Victor, 733 c.c. Douglas, 688 c.c. McKechnie, 692 c.c. Brough, and 584 c.c. Harley-Davidson flat-twins, and the 749 c.c. Bradbury, 596 c.c. Indian, 592 c.c. Lea-Francis, 678 c.c. Martinsyde (or "Quick Six"), 678 c.c. N.U.T., 680 c.c. Omega, 770 c.c. B.S.A., 654 c.c. Zenith (such as "Zenooth" writes about), and 550 c.c. Coventry Eagle V-twins, and the larger Scott and the V-twin two-stroke Stanger.

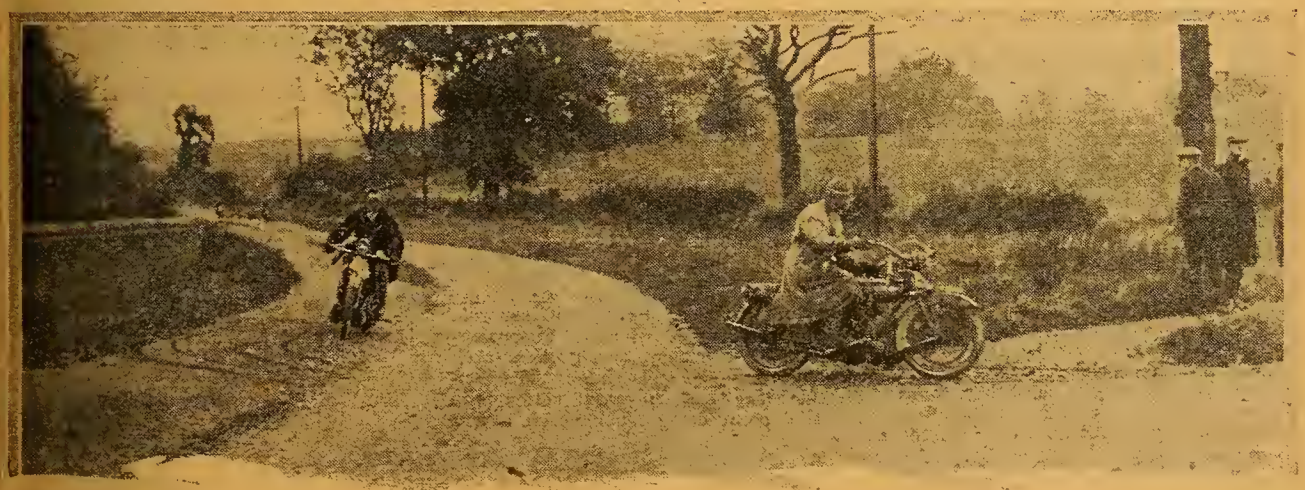
976 c.c. Brough Superior.



Full-size, full-blooded big twins are available in greater variety than ever. (What better argument could there be against the alleged uselessness of the type?) There is, in fact, a marked tendency in many quarters for makers to concentrate on a tiny lightweight and a full-grown model of sports type.

Britain, a few years late, has stepped into an arena held mainly by America. But no comment is required upon such desirable productions as the "S.S.80" Brough-Superior, the 976 c.c. solo Matchless, the belt or chain-driven big Zenith, the New Imperial, the belt or chain-driven Rudge, the D.O.T., the Packman or the Trump-Anzani. America, however, will always hold a strong position on this market so long as she is represented by the Indian, the Harley-Davidson, the American X and the Reading-Standard. All of them are imposing solo mounts.

For a four-cylinder we must go abroad, not literally, of course, to Belgium for the F.N., to America for the Ace or the Henderson. Those who have ridden these two last-mentioned rightly claim that the experience is a memorable one.



KEEN UNDERGRADUATES. Great enthusiasm was shown at the Cambridge University M.C.C. trial, described last week, which attracted 46 starters. Two of the earlier competitors near Markyate.

THIS YEAR'S LONDON-EXETER RUN.

SEVERAL innovations will be made in the M.C.C. London-Exeter run this year. The route has been somewhat stiffened.

The start will be from the Bridge House Hotel, Staines, on Tuesday evening, December 26th. The outward journey will be *via* Staines, Bagshot, Basingstoke, Salisbury, Shaftesbury, Yeovil, Chard, Honiton, Sidmouth, Peak Hill, to Exeter, the return being *via* Salcombe Hill, Lyme Regis, *Bridport, Beaminster, White Street, Maiden Newton*, Dorchester, and Blandford, to Salisbury, and then by the outward route in the reverse direction to Staines. The italicised portion is a change from last year.

The conditions have also been made more difficult, and any competitor found to be more than ten minutes ahead of time at any point on the route will be disqualified.

There is a stringent rule regarding silencers.

ELECTRICITY & THE MOTOR CYCLE.

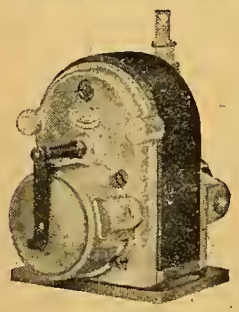
Electrical Apparatus for Lighting and Ignition.
Recent Developments in Magneto Design.

ELECTRICITY is an indispensable servant of the motor cyclist.

It is largely owing to electricity that internal combustion engines became a practical possibility. Tube ignition had a short and merry life, catalytic ignition has been tried and found wanting, ignitions have even been made to work with the pyrophoric metal, or "flint," we use in our cigarette lighters, but electricity has won through and reigns supreme.

Ignition Systems.

First, therefore, must we deal with magnetos and other electric ignition systems, then electric lighting, and finally electrical accessories.



C.A.V. magneto for single cylinder engines.

The old battery and coil system was a failure; sometimes it worked well, often it worked indifferently, and sometimes it did not work at all. Current was derived from an accumulator which rarely held its charge; then there was the contact breaker, which demanded frequent attention, and lastly a multiplicity of terminals, of which one or more often came loose.

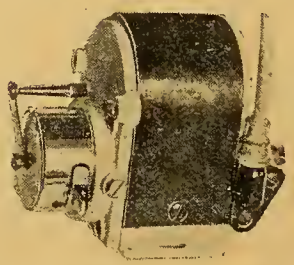
It is no wonder, therefore, that the magneto revolutionised motor cycling, once it proved itself. At its introduction the magneto had much prejudice to overcome, for many thought that they could put the old system right if it failed, but if a magneto gave out . . . ? But the magneto survived the test; it showed itself to be the most reliable part of the machine. A really wonderful triumph, converting the most unreliable part of the machine into the most dependable: it did more—it saved the motor cycle at the most critical period of its history.

Before the war one make of magneto was almost universal; it was a superb piece of work, the father of all magnetos, consisting of permanent horse-shoe magnets, an armature wound with low and high tension windings, a collector or distributer, a condenser, and a contact breaker.

Since the war most British-made magnetos followed the accepted principles, and there are many excellent examples, modified and improved in detail, but following the lines of their prototypes such as the Fellows, E.I.C., B.T.H., C.A.V., and others.

Progress of Magneto Design.

The more enterprising firms, however, have improved the magneto almost out of recognition, both mechanically and electrically. The latest M-L pattern, for example, although having armatures of standard type, have two separate cobalt steel magnets of small dimensions but of high efficiency, separated at each end by laminated pole shoes. The contact breaker has an axial action, the movable point being mounted on a leaf spring forced outwards for the break by a tappet actuated by a face cam.

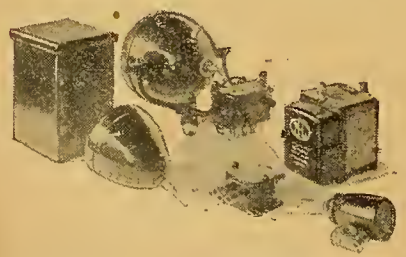


Reliability and good finish are to be found in the Fellows magneto for twin-cylinder engines.

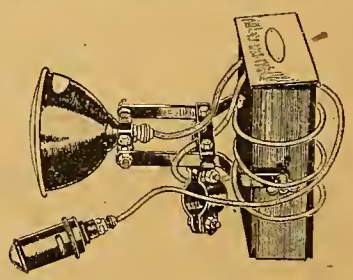
Further improvements for 1923 are a new method of attachment of the contact breaker cover, so as to render the magneto more thoroughly dust and waterproof, while the laminations forming the pole shoes are now punched accurately to size, so that it is no longer necessary to machine the bore of the tunnel. A new pattern M-L magneto has now been produced which has staggered pole shoes and is suitable for 90° engines.

Sectional view of the M-L C.M. type, magneto, showing laminated pole shoes, collector ring, and contact breaker.

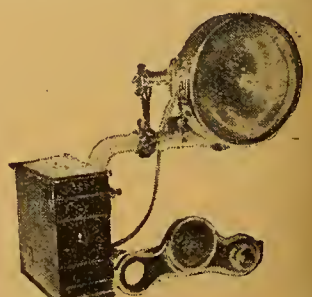
Quite a different principle is found in the B.L.I.C., in which the armature is stationary and the magnet rotates. Again, a great saving in weight results from the use of cobalt steel for the magnet, and the model for single-cylinder engines only weighs 3½ lb. Amongst the advantages of this construction are fewer working parts, a stationary contact breaker, freedom from centrifugal stresses on the armature at the high engine speeds now obtaining, and excellent sparking at low r.p.m.



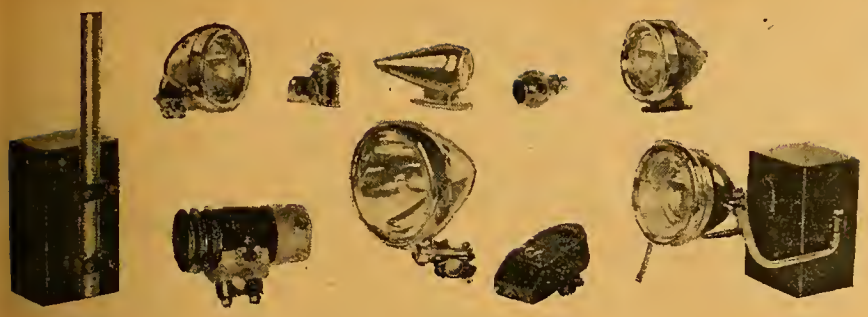
Ready for fitting to a sidecar outfit. The M-L Maglita lighting and ignition installation. Note the accessible position of the switch box on the lamp bracket.



Astra accumulator lighting set sold complete with adapter switches, armoured cable and battery case.



A well-finished battery lighting set, complete with head and tail lights, and battery case. A. H. Hunt, Ltd., H.A.H. Works, Tunstall Road, East Croydon.



C.A.V. dynamo and electric lighting fittings.

There is yet another type of magneto, that contained in the flywheel. The best known is the Villiers. Apart from giving a reliable current for ignition purposes, a supplemetary coil for lighting the lamps may be incorporated.

For ignition purposes the flywheel magneto consists of two portions; the inner an aluminium plate, frictionally held on an extension of the mainshaft bush, while the outer is a bronze flywheel keyed to the engine shaft and carrying two semi-circular permanent magnets, held in place by laminated pole shoes. On the aluminium plate are the armature, its coil, and the stationary contact breaker, which is actuated by a cam on the flywheel boss.

Lastly, there is yet another system of ignition, by dynamo battery and coil, which, although popular in America, especially in the car world, has not yet taken hold of the British motor cycle market. Rotax, Ltd., however, construct a lighting and ignition set of this pattern for motor cycle use. In principle it is the same as the old system of years ago, but improved in detail and with the important difference that a current is always passing through the accumulator from the dynamo, thus keeping the former always up to the mark. Naturally the current derived is also used for lighting the lamps.

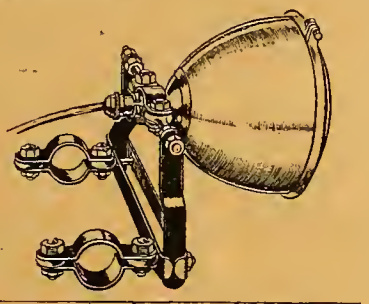
Sparking Plugs.

A most important part of the ignition system is the sparking plug—how important few motor cyclists realise. Many engine troubles which are experienced are due to pre-ignition caused by bad plugs. Engines which fail under heavy loads, as when driven hard on the level or run at high speeds on low gear, almost always fail through the plug points becoming incandescent.

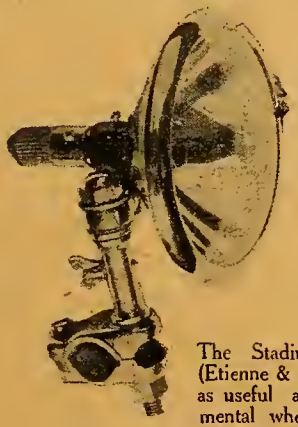
Fortunately, manufacturers of sparking plugs are giving this important matter their attention, and many of the more reputable sparking plug makers produce articles which will stand the abnormal conditions produced by modern high-efficiency engines. Other important features of a desirable plug are detachability for cleaning, soundness of insulation, and waterproofness.

Insulating Materials.

In modern sparking plugs the most popular insulators are steatite and mica. Among the more noteworthy of these important ignition accessories are the K.L.G., mica-insulated H.1 pattern, which is detachable, and specially constructed for hot-running engines; the Binks, which has a steatite insulator and is detachable for cleaning; and the Forward, in the case of which the user may have the choice of either type of insulating material or both, as in the case of the new model B. An excellent feature in this plug is its waterproof terminal, which is safe from short circuits in wet weather, so likely to occur in the case of an engine which carries the plug or plugs in an exposed position. Bluemels have produced a sparking plug (model S.), equipped with pure nickel electrodes and designed specially for two-stroke and other engines which run hot, while the Hobson Manufacturing Co. has placed on the market two types of plugs. Nos. 328 and 331, specially designed to give absolute freedom from pre-ignition. These have hemispherical central electrodes of pure nickel, while the mica insulator is compressed under two tons pressure. These plugs are detachable, and are claimed to remain gastight under all conditions. Other excellent plugs which are extremely popular among motor cyclists, the Lodge and Sphinx, are highly suitable for modern efficient engines.



Universal lamp bracket marketed by the Astra Dynamo Co. Below are the various positions which it enables the lamp to assume.

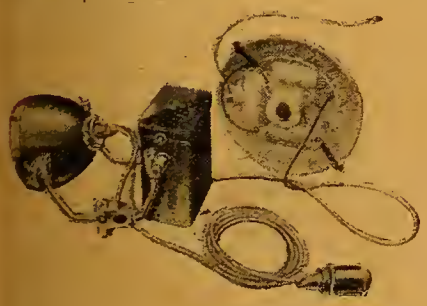


The Stadium spotlight (Etienne & Co.) which is as useful as it is ornamental when fitted to a motor cycle handlebar.

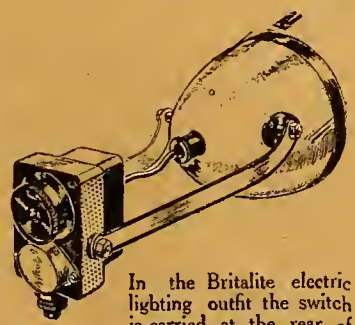
Lighting Systems.

Electric current for illuminating lamps is obtained from dry batteries, accumulators, a dynamo, or more usually from a dynamo *via* an accumulator.

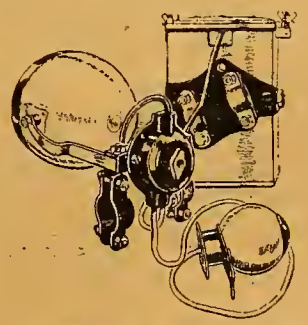
Dry battery lighting is very convenient, especially in the case of those who ride in well-lighted areas for short distances, as this source of current behaves at its best when on intermittent work, since it



Villiers lighting installation with lamps, dry battery and flywheel magneto-generator.



In the Britalite electric lighting outfit the switch is carried at the rear of the head lamp bracket.



Few lighting switch positions could be more convenient than that adopted in the Miller accumulator lighting.

Electricity and the Motor Cycle—

recuperates slightly after a rest. If suitable bulbs are used and the lamps are not kept alight for too lengthy periods, excellent service may be obtained.

Few firms have given this system of lighting more careful thought than A. H. Hunt, Ltd., whose Hellesen batteries give splendid service, and whose catalogue possesses some capital wiring diagrams which the buyer would do well to study.

Usually dry batteries or accumulators are carried in cases which occupy the same position as an acetylene generator, but when a sidecar is attached, larger batteries are required, and the sidecar locker is generally utilised.

When it is necessary to obtain an especially good light for lengthy periods an accumulator gives the better service. But accumulators need constant attention, and if not changed regularly once a month they are apt to deteriorate, consequently this system is not advocated for the rider who has not charging facilities near at hand.

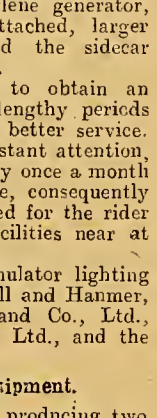
Good examples of accumulator lighting sets are produced by Powell and Hanmer, Ltd., C. A. Vandervell and Co., Ltd., A. H. Hunt, Ltd., Dekla, Ltd., and the Astra Dynamo Co.

Self-generating Equipment.

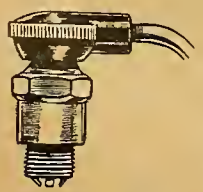
Dynamos are capable of producing two different kinds of current according to their construction—alternating or continuous. The former is used for lighting direct from the dynamo and will not charge an accumulator, while with the continuous current machine the accumulator is nearly always being charged so long as the machine is running and the lamps are lit from the accumulator.

Most of the smaller sets driven off one or other of the motor cycle wheels are of the alternating variety, and so is Villiers' flywheel generator. In cases of this kind a dry battery is included, which is brought into use when the machine is at rest.

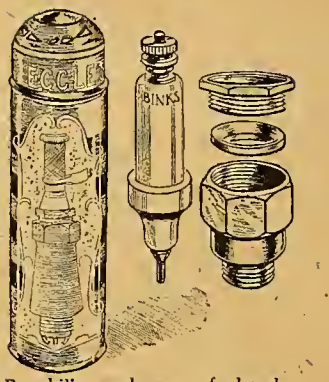
With the Villiers (V.E.C.) the voltage is constant at speeds of over 25 m.p.h., so there is no danger of burning out the bulbs. Two lighting coils, which have no electrical connection with the ignition coil, are added to the flywheel magneto. They are connected in series with each other, the end of one coil being "earthed" to the armature plate, while the free end of the other is led to the lighting terminal. As the magneto rotates the magnetic flux passing through the iron of the armature is constantly varying. The circumference of the armature is broken by four gaps, each equal to the length of the pole shoe. When the pole shoe passes over one of these gaps the flux variation is very rapid and generates current in one or other of the coils; by arranging that no two of the gaps are diametrically opposite, one current impulse occurs before the other, so that no interference results.



In cases where the fitting of a compression tap is inconvenient the Lodge priming plug will be found to be a real boon; it enables petrol to be injected through the central electrode.



Complete weather protection for the plug is given by the Forward waterproof terminal.



Portability and ease of detachability for cleaning are desirable features of the Binks plug.

Another magneto lighting system is embodied in the B.T.H. Sparklight set, which is suitable for single-cylinder two-strokes. Surplus current is taken from the magneto at the maximum position of the armature which is not used for ignition. This is done by means of an extension of the contact breaker casing containing an insulated segmental track and a centrifugally controlled brush connected to the primary winding. The segment is so placed that the circuit is only complete during the building up of the idle voltage wave, and consequently the ignition is not affected. By this system it is possible to put a small charge through the accumulator which is always on charge by day; but when the lamps are in use there is a small discharge through the battery of .25 amp. A later model has been brought out to work with four-stroke engines, also a mag-generator and a flywheel magneto have been introduced by this firm.

Combined Ignition and Lighting.

No article on electricity for the motor cycle would be complete without a reference to the M.L. Maglita. This machine has only one rotating member, and that is an H-section armature with a low tension winding and a two-part commutator which rectifies the alternating current first generated into a charging current for lighting the lamps and charging the accumulator. The ignition system is quite independent of the battery, so that if the latter is run down the engine can be started and run normally and efficient lighting obtained so long as the engine is running. Current for the ignition is generated in the low tension and high tension windings wound round the stationary laminated iron core, forming a bridge between the upper ends of the two pole shoes of the machine. The ignition windings are brought into the magnetic circuit by the rotation of the lighting armature, which acts in a similar way to the rotor of a polar inductor type of magneto. The ignition system, including the contact breaker, is stationary, the face cam for the latter being mounted on the armature.

A new model specially adapted for sidecar use has been introduced, in which the battery is carried in the sidecar and not on the handle-bars. Improvements consist of a freshly designed contact breaker of which the points are visible and accessible at practically all positions. The face cam has been replaced by a radial one and the push rod is of square section, giving long life and a square lift to the contact breaker blade in any position of advance or retard. A dimming device has now been added to the 7in. head-lamp. A junction box is provided which is fitted to the motor cycle on the sidecar side, two permanently attached wires coming from the top of the box and two detachable wires from the bottom, one for the sidecar lamp and the other for the battery. These plugs are further locked inside the box with set screws. With this arrangement there are no loose wires on the motor cycle when the sidecar is detached. This set can be used for solo work by running the lights directly off the generator, which is self-regulating. The light can only be obtained when the engine is running and the dimming switch must not be used, but for normal solo riding the standard set, with the battery on the handle-bars, is recommended.

Dynamo Lighting.

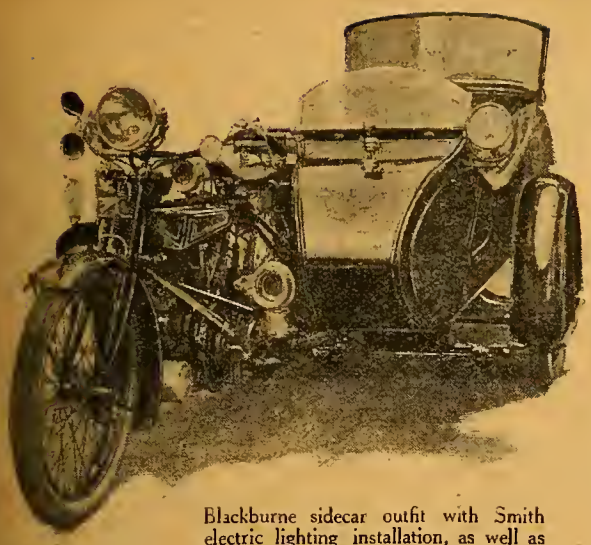
We now come to the more conventional dynamo installations, in which a dynamo giving a continuous current charges an accumulator from which current to the lamps and horn is taken. A cut-out, usually magnetic, is supplied for the purpose of breaking the dynamo circuit at low engine speeds so that the latter cannot discharge through the dynamo. There is little danger of over-charging, which, if not excessive, merely results in "gassing" of the accumulator; precautions against too rapid charging are always taken to the design of the set.

One of the most popular equipments is that made by the Lucas Electrical Co., Ltd., of super-excellent finish and design. In the case of the Lucas either a separate dynamo, driven off any suitable rotating portion of the engine or transmission, or the Lucas Magdyno may be used.

With this latter the lighting dynamo is still a separate unit, but it is driven off the magneto, being housed within the bend of magnet above the magneto armature housing.

Pioneers in the dynamo system of lighting on motor cars, C. A. Vandervell and Co., Ltd., have only lately issued a lighting set for motor cycles. Needless to say, it holds a first-class position as regards finish and reliability. The 6-volt

The V.E.C. (Villiers) lamp, complete with focussing arrangements.



Blackburne sidecar outfit with Smith electric lighting installation, as well as with every other motor cycle accessory of the same make.

dynamo is neat and small, but efficient, while the lamps are of graceful design. There are two alternatives for carrying the battery—behind the head lamp or in a case clipped to a convenient frame tube. The new switch box, which is intended to be attached to the top tube and includes the fuse, is a very neat piece of work.

Considerable thought has been devoted by those old-established lamp makers—Powell and Hanmer, Ltd.—to their motor cycle electric lighting set. Two patterns of motor cycle dynamos are sold by this firm, the D. type, 6 volt, 6 amps. (36 watts), and the D.S. for smaller machines, 6 volt, 4 amps. (24 watts). Too great an output is obviated by means of the firm's patent clutch contained in the driving pulley, which slips when the armature speed becomes too high. The

The H.H. garage hand lamp lit by the almost inexhaustible Hellesen dry battery.

latest P. and H. electric head lamp is a beautiful piece of work, having an absolutely smooth exterior, a 6in. diameter front and a substantial bracket. Particularly neat is the handle-bar switch, which is circular and surrounds the ammeter. It includes a dimming device.

A rather more simple installation than the foregoing; especially as regards the drive, is that made by the Britannic Electrical Co., Ltd., and known as the Britalite. In this case the dynamo may be driven by friction off an outside flywheel, and an adjustable bracket is provided with a spring device for regulating the tension. Or if ordinary belt drive is desired, another and more suitable bracket is supplied. The battery box is of aluminium, is carried in the same manner as an acetylene generator, and to it are attached the switch and automatic cut-out. When a sidecar is attached the accumulator is carried in the sidecar body and the switchboard is attached to the rearward extension of the lamp bracket. When full light is required a 12-watt bulb is put into the circuit, while there is also a dimmer bulb. The dynamo is a simple shunt-wound machine weighing under 5 lb. with the bracket. A resistance is employed so as to avoid excessive output. The standard output is 5 volt, 5 amps., but a 6-volt machine may be had if desired.

Careful design, excellent finish, and cool running are features of the Miller motor cycle dynamo. The output regulation of the generator, which is of the normal shunt-wound type, is effected magnetically, with the result that it is practically constant throughout the normal speed range. The Miller lamps and switchboard are as equally well finished and efficient as the dynamo.

Mechanical Cut-in Switch.

S. Smith and Sons, Ltd., were quite early in the field with their motor cycle lighting set. There is a slight difference in the cut-out control of the Smith generator from those used in several other dynamos. As mentioned earlier in this article, cut-out regulation is usually by means of a solenoid or electro-magnet energised by the current from the dynamo. When the voltage falls below a certain amount the magnet ceases to act and the current is cut off from the dynamo and is derived from the accumulator only. Now Smith and Sons prefer to use a mechanical cut-out as being more certain in its action. Their device is a ring type governor similar to those used on speedometers. The ring is kept at an angle by a spring, against which the ring assumes a vertical position when normal speeds are attained, and by means of suitable connections makes contact with the dynamo circuit, but when the speed falls below 950 r.p.m. the ring flattens out and the contact is broken. Smith's outfit is well finished and complete in every detail, even to the inclusion of a dimmer switch.

Quite a different system is employed in the Astra dynamo, as its makers, the Astra Dynamo Co., make use of a permanent magnet machine, which consists of a die cast housing supporting one or more tungsten steel magnets, between the pole shoes of which is a laminated armature complete with commutator and windings rotating on ball bearings. The output is controlled by armature re-action, which means that the armature as it revolves generates a reverse field in opposition to that of the permanent magnets, which increases according to the speed. Consequently, a point is eventually

For testing the plug gap, the Lodge Plug Co. has introduced this handy little accessory, which includes two gauges of different thickness.

reached when the armature field equals that of the field magnets, thus preventing the voltage rising to a dangerous degree, with the result that too rapid charging cannot take place. An electro-magnetic cut-out is employed. An interesting fitment sold by this firm is a dimmer switch incorporated in the head light lead connection. Astra dynamo electric lighting outfits are simple, well made, and moderate in price. Another permanent magnet dynamo is the E.H.C., which has a simple weighted leaf spring centrifugal cut-out.

Electric Horns.

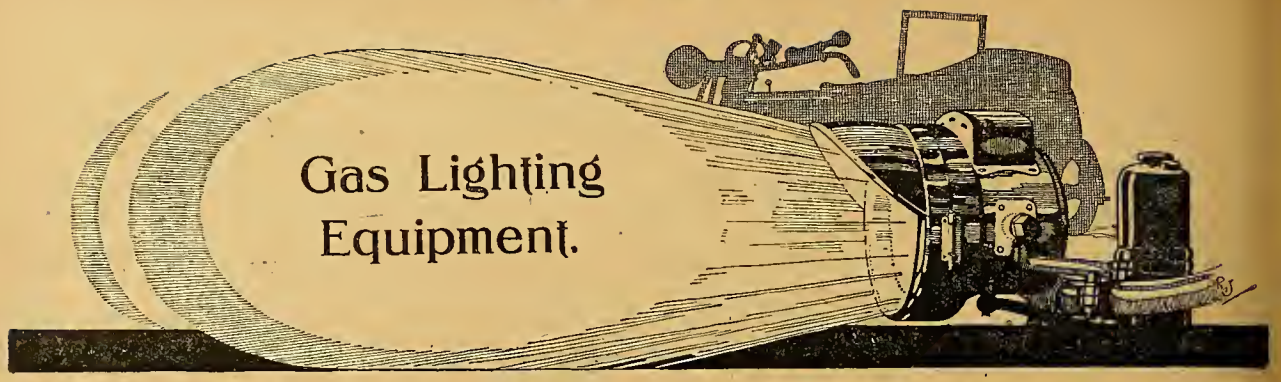
When a motor cycle is equipped with a dynamo lighting installation an electric horn is an altogether desirable adjunct, but when either a dry battery or accumulator only is carried the horn is somewhat wasteful of current, and consequently not advisable. When, however, the accumulator is always under charge from the dynamo the few ampères discharge does not matter in the slightest.

Electric horns may be divided into two classes, the Klaxon type, which consists of a motor driving a ratchet against a pin in the centre of a diaphragm, or the more common or buzzer pattern, which works on the same principle as an electric

Method of fitting the Astra permanent magnet dynamo to a Douglas.

bell, namely, the vibration of a trembler against a diaphragm brought about by the alternate magnetisation and demagnetisation of an armature.

Excellent buzzer type electric horns are made by Dekla, Ltd., The Fellows Magneto Co., Ltd., The Graham Electric Co., and The Lucas Electrical Co.

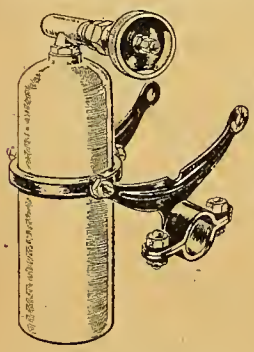


Gas Lighting Equipment.

Acetylene as an Illuminant.

ACETYLENE gas, on account of its ease of production, the cheapness of the calcium carbide from which it is generated, and the clear bright light it gives is most suitable for illuminating a motor cycle lamp.

Two forms of acetylene apparatus are available, one in which the gas is produced in a portable generator attached to the machine and the other in which ready-made gas is carried in a cylinder in a compressed and dissolved state.



No larger than and weighing about the same as an acetylene generator, the new A.L. acetylene cylinder should fill a much needed requirement.

At the present time practically all motor cycle generators work on the same principle, and there is little or no variation to those produced by the best lamp makers.

The gas is produced by allowing water to drip through a controllable needle valve on to the carbide, and the gas generated passes through a fibrous filter to the burner, usually *via* a rubber pipe.

Scrupulous cleanliness is necessary to ensure a steady and reliable light; in fact, it is advisable to clean the container and its various parts on every occasion after use.

Low's System of Generating Gas.

One of the disadvantages of the ordinary acetylene lamp is its wastefulness. The flame is usually extinguished after use by pinching the rubber supply tube (the light should not be allowed to burn out after the water is turned off if carbonisation of the burner is to be avoided), but gas continues to generate for a considerable time, that is, until all moisture has evaporated. This waste is largely obviated in the Low generator, which is designed to store the gas safely and effectively under pressure. It is much the same size as an ordinary generator, but is, of course, more strongly constructed, while the container is lined with an absorbent material which renders the compressed gas quite safe. With this generator the gas may be stored for days, and on opening the valve even after a long period a light may be had at once. When the pressure in the container reaches a certain degree the water is automatically cut off by means of a special valve.

Generating the Gas.

Dissolved Acetylene.

Quite the most satisfactory and economical method of obtaining acetylene gas is to buy it dissolved and compressed in steel cylinders. By this means the gas obtained is pure and dry, is absolutely reliable, and gives a clear, steady light. Dissolved acetylene saves all trouble in cleaning, so essential in the ordinary type of generator, as the cylinder remains in use until empty,

An A.L. dissolved acetylene cylinder in section, showing how tightly it is rammed with kapok.

when it is exchanged for a new one at a small cost. Naturally, the success of this system depends upon an efficient exchange organisation, and once this is assured more use will be made of it.

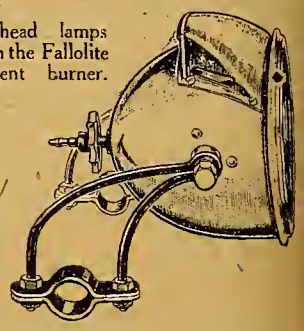
Dissolved acetylene has another advantage in that it allows a still better light to be obtained from a special burner, known as the Fallolite, which will only work with gas under pressure.

Advantages of Dissolved Acetylene.

The Fallolite lamp consists of a tiny burner of the Bunsen type, which is passed through the centre of a Mangin mirror, and its flame impinges on a pastile composed of rare earths, which becomes incandescent in the same manner as an ordinary household gas mantle.

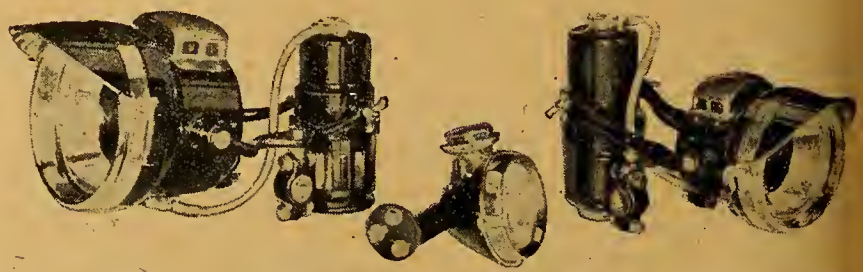
Need for Wide Distributing Service.

Hitherto neither the makers of dissolved acetylene nor the users of motor cycles have yet fully realised its possibilities, and until a few weeks ago no effort had been made to adapt the cylinders to various types of motor bicycles, but this state of affairs is being changed for the better.



A. L. head lamps fitted with the Fallolite incandescent burner.

Allen-Liversidge, Ltd., the producers of D.A. equipment, have now given the system the attention it deserves and are using every endeavour to render it suitable for all types of motor cycles. A new type of motor cycle cylinder is being introduced which is no larger and weighs little more than a motor cycle generator. It is designed to fit a standard lamp bracket. This new cylinder will certainly be a real

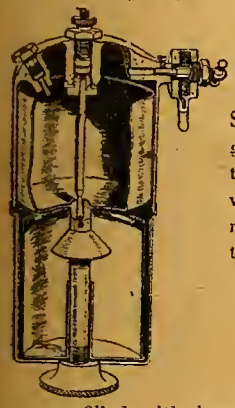


Two types of P. & H. acetylene lamps, of which that on the left is suitable for heavy, and that on the right, for medium and lightweight machines. Between these is the P. & H. sidecar lamp.

Gas Lighting Equipment.—

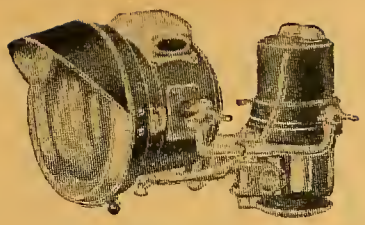
boon to all who have to travel regularly by night, and who do not care to meet the heavy initial expense of an electric lighting outfit.

The cylinders in which dissolved acetylene is sold are of solid drawn steel and are wonderfully light for their size.



Section of the Low generator showing the water valve which is automatically closed as the gas pressure increases.

They are filled with kapok, a vegetable fibre, so tightly rammed in as to be practically solid. A certain quantity of acetone is then poured in and all is ready for charging. The gas, made in huge



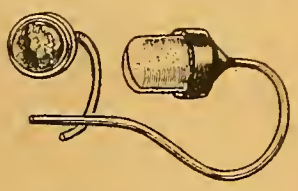
Lucas "King of the Road" acetylene lighting set.

generators, is purified and dried, then pumped into the cylinders, where it is dissolved by the acetone.

A gauge is supplied with the cylinders as an extra, but they are all equipped with a slow opening valve, which allows the flame to be regulated to a nicety. Holding four to five cubic feet of gas the new A.L. cylinder will light head and tail lamp from 7 to 8 hours, while for a sidecar outfit the old six-foot cylinder will still be retained. Special heavy tubing is supplied for dissolved acetylene installations.

Makers of Generator Sets.

Amongst the principal makers of acetylene lighting equipment in which a generator is included are J. Lucas, Ltd., Powell and Hanmer, Ltd., H. Miller and Co., Ltd., and F.R.S. Lamps. These firms produce some extremely efficient and well-made apparatus and in all cases the lamps are suitable for use either with generated



The right hand sketch shows the new Fallolite pastille; that on left has been used for 10,000 miles and is still capable of service.

acetylene gas or with the dissolved variety.

Although rubber tubing is usually used for conveying gas, brass tubing is frequently employed, and on the Low generator and head-lamp set metallic connecting tubes are used throughout. There are a great variety of accessories for use in acetylene lighting, such as dimmers, rubber regulating and distributing bags for use in the supply pipes, and many types of burners.

NEW SPORTING SIDECARS.

Aluminium Zeppelin-shaped Bodies for Lightweights or Heavyweights..

OWNERS of sporting sidecar outfits have long been regarded as a somewhat selfish class, thinking more of the light weight of their sidecars than the comfort of their passengers. But it has frequently been pointed out in these columns that a sidecar body in keeping with the "sporting" character of the machine and its driver need not necessarily be uncomfortable.

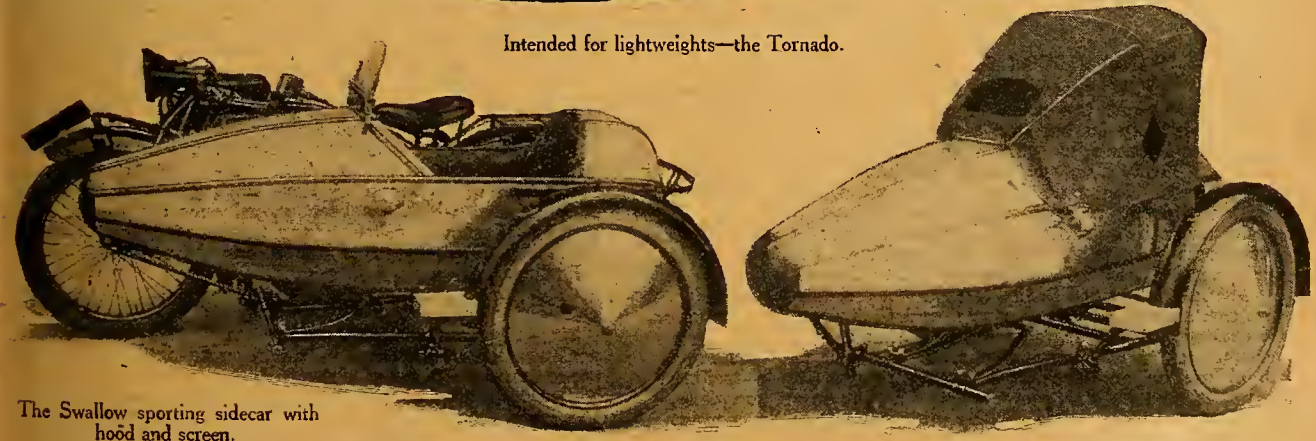
Sidecar manufacturers are beginning to realise this, and at least two comparatively little known sidecars will in 1923 be all that is required by the passengers.

The first of these is the Swallow, which is produced in Blackpool by the Swallow Sidecar Co., Bloomfield Road, and will be at the Olympia Show. From the illustration it will be seen that, while retaining the favoured Zeppelin outlines, the Swallow has the roominess and equipment of the popular touring types.

Constructed of polished aluminium, it permits the seating accommodation to be in the form of a cock-pit, having a high back rest which supports the passenger's shoulders, while a coupé hood is provided for those occasions when the driver be-best of it." This coupé hood is detachable, and is supported on a single stick which normally lies horizontally behind the bulbous back. The chassis is sufficiently strong for use with the largest machines or the popular 500 c.c. types, and the equipment includes a cover-all apron, lamp, polished aluminium disc and step.

Intended for lightweights—the Tornado.

The other sidecar referred to is the Tornado, also a northern production, intended chiefly for such machines as the 349 c.c. A.J.S. It is also of the Zeppelin type. The weight is 65lb., and one of its principal features is the "self-controlled" air cushions used for upholstery. It is manufactured by Hudson and Matthews, of 21, Market Street, Altrincham, Cheshire.



The Swallow sporting sidecar with hood and screen.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

DOPE AT BROOKLANDS.

Sir,—Three separate references in *The Motor Cycle* on the subject of "dope" struck me as calculated to produce unfavourable impressions among your readers.

Alcohol has, to my knowledge, been used at Brooklands for at least two years, and for longer still by the London General Omnibus Company on the road.

It is possible to buy in London and Liverpool a fuel consisting of 50 per cent. alcohol and 50 per cent. benzol, known as "Discol," which gives excellent results for touring purposes. Though the consumption may not be so good as with petrol, the engine should give more power and run much cooler. Discol is sold at 1s. 4d. per gallon.

So far as racing is concerned, it would be absurd to bar alcohol; let the B.M.C.R.C. rather encourage its use in order that our knowledge of its usefulness and limitations may be augmented.

I beg to contradict the statement that chemical agencies cannot be used for long-distance work and that they are only of use to those to whom even a fifth of a second is important over a kilometre.

I am pained by the apparent ignorance of a well-known manufacturer on the subject of "dope." His remarks are hard to reconcile with either the performance or smell of his machines. Moreover, I do not believe that more than one championship winner at Brooklands could honestly claim to have used less than 20 per cent. alcohol in his fuel. I. P. R.

Reigate.

WIRELESS FOR MOTOR CYCLES.

Sir,—"A.P.'s" comment on the above subject appears to have overlooked the main issue. An ordinary telephone would certainly be best for communication merely between driver and passenger (pillion or sidecar). Communication between them, however, is not absolutely impossible, even at present. The main issue, to my mind, is conversation with the driver of another machine, perhaps as far as five miles away. The modern radio-set, which can be packed into very small compass, makes this possible. Incidentally, it can also be used between passenger and driver.

Though not versed in the technicalities of wireless, I think an earth return is *not* necessary, and that reproduction (concentrated) of the engine-noise has been satisfactorily overcome. Is "A.P." aware that radio has been put to a practical use on aeroplanes? An earth return (say a trailing wire) is possible on a motor cycle, but not on an aeroplane, and an aeroplane makes slightly more noise than the average motor cycle. A.J. 2¼.

London, E.C.4.

H.P. OR FUEL TAX?

Sir,—Surely motorists who are being deluded to support a petrol tax are walking into a trap. I believe the h.p. method is as fair a one as any, but it is too heavy, and should be reduced. The petrol method will mean a heavy burden on the commercial users, and they will certainly press for a rebate. R. COLLYER.

ALT-Y-BADY.

Sir,—I was very much interested in the article "Allt-y-Bady" by "One who Knows the Hill"; but personally I think that the writer gives one the impression that the hill is far worse than is actually the case. I have seen many, many men failing to climb this hill, but I have come to the conclusion that, at least, 90 per cent. of the failures were due to either

(i) Hopelessly bad driving;
(ii) Unsuitable gear ratios; or
(iii) Getting the machine out of control *through taking the hill too fast.* I have seen very few failures indeed ascribable to lack of power or wheel slip. (This, of course, does not apply to sidecar outfits.) In August, 1921, you published a letter from Mr. J. W. Wills in which he proposed having a sweepstake, the winner to be the man who got furthest up the hill on second gear in the Reliance Cup trial of that year. A few days afterwards I attempted to get up on the second gear of 9.5 to 1 of a 500 c.c. single, but failed nine times out of ten owing to the machine getting broadside on to the gradient due to taking the hill at too high a speed; but climbed easily on the bottom gear of 17.5 to 1, which enabled me to take the gradient at a crawling pace. I fail to see any reason why any man should fail to make ninety-nine clean climbs of Allt-y-Bady out of a hundred provided he takes the hill slowly on a low gear ratio.

The same can be said to apply to Wech hill, Harlech (included in the M.C. and A.C. trial of 1920 as "Urry's Pet"), and which has lately been much improved by a layer of hard marl which has been spread over the rough, stony surface. I should consider any club secretary perfectly justified in including this hill in any future trial.

Dudley. J.W.B.

CLASHING OF TRIALS ROUTES.

Sir,—May we suggest that it would be both a convenience and a courtesy if clubs would interchange their programmes with other clubs within a radius of 40 miles? This would prevent two or more clubs running trials over the same course with the same dye and direction signs at the same time. AFFILIATED A.C.U. CLUB

Matlock.

CASTOR OIL IN ENGINE LUBRICATION.

Sir,—I was extremely interested in the article you published recently about castor oil as an engine lubricant. Some of the statements made by Mr. Evans are, however, somewhat startling, and one statement is, indeed, utterly false.

He says that oils are chemical combinations of fatty acids and glycerol. I presume he means vegetable and animal oils only, because the bulk of oils used to-day—mineral oils—do not contain either fatty acids or glycerol, but are merely hydrocarbon oils, *i.e.*, they are compounds of carbon and hydrogen only. Moreover, these oils are extremely stable, *i.e.*, they are difficult to break up into other chemical compounds, and because of this fact they have been termed "paraffins" (Parum, little; affinis, affinity)

The fact that castor oil is insoluble in petrol is a most valuable characteristic, and were it not that this oil possesses grave disadvantages it would undoubtedly be one of the best oils for engine lubrication. Unfortunately, however, when it is heated it is not nearly so stable as are the mineral oils, and it is consequently split up with the formation of free fatty acids. These acids, together with those already present in the oil, are detrimental to any engine, as they tend to corrode all metals with which they come in contact. Mr. Evans states that the corrosion is visible with copper, but it is much more easily visible with certain copper alloys, which are used as bearing metals, whilst the corrosion of steel and iron components is also clearly apparent when the steel is examined under a microscope.

Mr. Evans states that corrosion can take place both with used castor oil and mineral oil if free fatty acids be present; but if a pure mineral oil be used, then fatty acids cannot be formed, and so corrosion does not occur.

Mineral oils of suitable viscosity can be obtained for any type of engine. They are quite as good lubricants as is castor oil, whilst they do not form carbon deposit to any greater extent than does castor oil. Moreover, they are cheaper oils, and finally they do not cause corrosion, so it would appear that the one advantage of castor oil—its insolubility in petrol—is considerably overruled by its many disadvantages.

Newcastle-on-Tyne. KEMIST.

[We have submitted "Kemist's" letter to Mr. Evans, who replies as follows:—

The article I wrote was not inteuded to be sensational, but, of course, new facts are always liable to be regarded as startling. No doubt it would have prevented a perquisition for criticism had I commenced the second paragraph with the redundant word "fatty"—redundant because the article deals *almost* exclusively with fatty oils.

If the term "paraffin" be applied without distinction to mineral oils it is incompatible with scientific practice, and should therefore be discouraged.

The production or alleged production of corrosive acids from castor oil was discussed at length by correspondents in the June issues of *The Motor Cycle*. If I judge correctly, the whole suggestion was ridiculed by those competent to judge.

The statement that pure mineral oils cannot give rise to fatty acids is unfortunate, as it indicates that the writer is not familiar with the chemistry of lubrication.

If mineral oils are as good lubricants as is castor oil, why do racing men prefer blends of castor oil?]

MIDLAND RACE TRACKS.

Sir,—Mr. W. H. Wells is quite right. Motor cycle and motor racing ought to be more of a national sport than it is at present, just let a *real* speedway be built at Birmingham, and there would be "football" attendances.

As I am not the fortunate owner of a motor cycle at present, but follow the sport in the pages of *The Motor Cycle*, as do many others. A Midland Brooklands would be a boon and a blessing to more than one born motor cyclist unfortunately born without a motor cycle. S.S. 80.

Birmingham.

[A race track near Birmingham is shortly to be built.—ED.]

SILENT MACHINES OF LONG AGO.

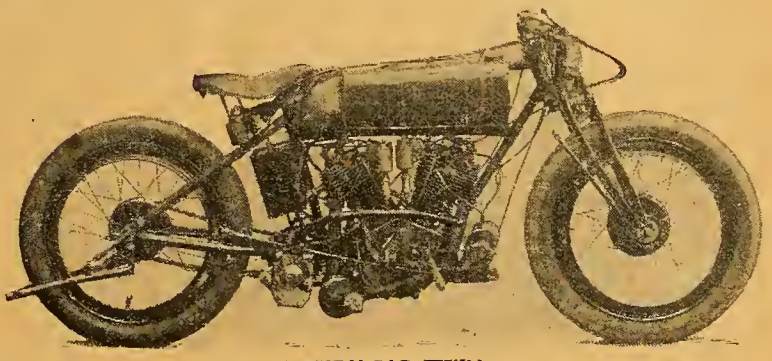
Sir,—I was delighted to see "M.D.'s." letter of Oct. 19th. I quite agree with him on all the points he raises. The modern motor-cycle is without doubt more noisy than its beginning-of-the-century predecessor. I remember that my first machine, a "2 3-16" Beardless-Decision, was absolutely inaudible during most of its time on the road. In fact, any noise that it made was completely drowned by the sound of my footsteps.

Although a gear box was "stuck on," I found that the machine (and I) ran far more easily, and the drive was much more silky, with the gear wheels removed. So much for the advantages of a gear box!

Again, how true is "M.D.'s" accusation of personal uncleanliness. In my young days motor cyclists had some excuse; but with the advent of the modern dustless, mudless, and bumpless road, and the exodus of the necessity for lubrication, this disgusting practice should have ceased. I can only suppose that, in a misguided effort to combat the vicissitudes of the English climate, the culprits deliberately coat their hands and faces with dirt.

In conclusion I must thank "M.D." for confirming my long-held conviction that designers have only discarded the earliest form of silencer to enable themselves to keep their lucrative and easy jobs. A SILENCER.

Croydon.



SPEEDY BIG TWIN.

Another British big twin to do well on the track is the 998 c.c. Rudge, which has set up "triple-eight" record figures. This is the actual machine.

EXTRACTOR ACTION OF LONG EXHAUST PIPE.

Sir,—It appears to me to be quite the wrong idea to put the silencer on the end of a long pipe, as is done in many machines. I think the silencer should be as near to the engine as possible, and I note the A.C.U. judges' comments after the Six Days Trials express the same opinion.

In addition to my own two motor cycles, I have to look after a small four-cylinder light car, which has no silencer at all, but simply a plain pipe running to the rear of the car. Nevertheless, the exhaust is inaudible at slow speeds, and not at all noisy even when all out. When tuning up for slow running the other day, I went to the rear of the car to feel with my hand if the exhaust were regular, and found that every time the engine mis-fired, my hand was sucked violently against the end of the pipe. At first I thought this might be due to a sticking valve, but the valves and springs were found to be all right. It would therefore appear that the rapid flow of the gases, along the straight pipe, even at such low speeds, set up a partial vacuum in the pipe, which, when the engine misfired and produced no exhaust pressure to fill the vacuum, sucked back from the outlet end of the pipe. This suction was strong enough to drag a wooden plug so tightly into the end of the pipe that the exhaust pressure was not strong enough to dislodge it.

I should imagine from this that at high speeds the vacuum set up in the pipe must be very high, and is bound to have a very considerable effect on complete extraction of the exhaust gases. The car is an old Mathis, with valves about as big as a shilling, and it is capable of very high revolutions. It has always been a marvel to me how the gases got away in the short time allowed, but I begin to understand now.

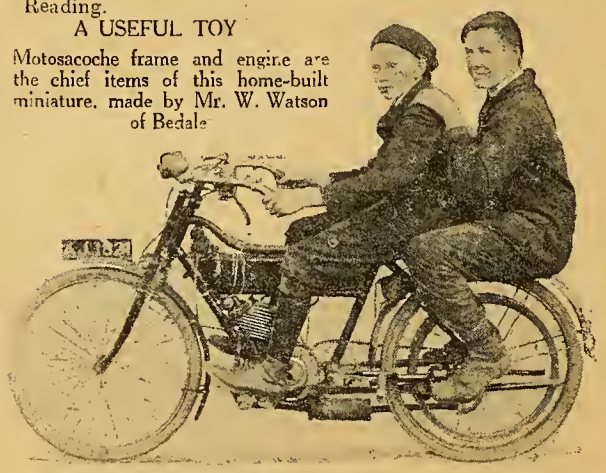
Of course, this is doubtless ancient history to expert speed

men, but the demonstration on this car, at low speeds (about 300 r.p.m., I should think) proves that the principle is of service on touring machines. I should also think that it is quite possible to have too large an exhaust pipe, which would not give sufficient gas velocity to attain this extracting action. ELDON.

Reading.

A USEFUL TOY

Motosacoche frame and engine are the chief items of this home-built miniature, made by Mr. W. Watson of Bedale



HUMIDITY AND POWER OUTPUT.

Sir,—After numerous experiments I succeeded in designing an efficient humidifier, and have been running for four months with this attachment on a 595 c.c. Douglas sidecar. I find it impossible to overheat the engine under any condition. The improvement in hill-climbing ability is exceptional. No difference is noticeable when starting up.

The cylinders show no internal effects of rust, and carbonisation is noticeably decreased. The amount of water that is consumed in 100 miles is approximately 1½ pint. Misfiring does not occur. An Amac carburetter with 24 jet is used, and no alteration to the petrol level has been made, but an extra air attachment, which I had formerly fitted on the induction pipe, has been discarded to give greater efficiency to the air velocity through the humidifier. While not venturing to commit myself by saying that the horse-power is increased, the impossibility of overheating naturally gives the highest efficiency all the time. While I cannot classify myself as a novice in the theoretical working of the internal combustion engine, there is one point which I cannot understand, namely: Why does misfiring not occur in a charge mottled with water spray, no matter how fine? Perhaps some of your scientific readers will give me the solution. EXPERIMENTOR.

London, S.E.15.

Sir,—As a meteorologist, albeit a young one, I feel I must draw attention to the somewhat loose statements made by "J.H.H." and "M.B.B.H." on "Humidity and Power Output."

"M.B.B.H." states that "the atmosphere tends to become humid and so heavier." May I point out that although during the night hours relative humidity of the atmosphere generally continues high (80%-100% varying with locality), this has but the slightest effect on barometric readings. The comparatively enormous difference of pressure occasioned by the passage of an "anticyclone" should therefore endow a baby two-stroke with the "kick" of a Brough Superior. Alas! the age of miracles is past.

"J.H.H." should watch his barometer very closely; he may then observe the not unusual spectacle of rain and a rising barometer occurring simultaneously.

I find that my own old big single evinces a tendency to "super-Rudge" in an alarming fashion when travelling at night through mist-filled valleys. True, the cold air here must be slightly heavier than the warmer air on the hill-tops, but may not the extra "pep" communicated to the engine be due to (a) humidity of the air (witness various patent humidifiers appearing on the market from time to time), and (b) more efficient cooling of the engine?

The theory of heavier air appears feeble, considering the minute differences encountered. P. F. JARROLD.

SOLDERING FOR AMATEURS.

Sir,—I should like to amplify "Road Rider's" paragraph on this subject, as I feel that he leaves too much to be taken for granted. First I would say to the amateur do not hold a union in a vice. Ten to one it will be squeezed out of shape or marked so that it will leak.

My method is as follows:—

(1) Clean the pipe end and the inside of the union till shiny copper or brass is showing.

(2) "Tin" both with solder. Coat with flux, then apply the hot iron with solder to the pipe all round for ¾in. from the end. Tin the union by coating the interior with flux, put a small piece of solder inside and heat over the domestic gas ring in the absence of a blow-lamp. Rub the solder round with a wooden match stalk dipped in flux until there is a coating everywhere inside. Hold the union by its shank with an old pair of cone pliers.

(3) Slip the union nut on the pipe and tie it up out of the way if possible.

(4) Coat both pipe and union with flux; heat up, and resting the union on something solid, press the pipe home. Blow through the pipe to ensure a clear passage.

(5) Remove the heat and allow solder to set. Examine again for a clear passage, and touch up junction of union and pipe with soldering iron if necessary to make a neat joint. J. STUART WHITE.

EYE PROTECTION FOR THE SPECTACLED RIDER.

Sir,—I would like to thank those who have replied to my letter. I very much appreciate the suggestions and advice they have put forward, but, with the exception of the smashing of the old goggles I have not acted on any of them.

I have instead purchased a Pidko cap. Heading off with the usual disclaimer, I may say that this most excellent piece of headgear has positively surprised me with its efficiency as a windscreen. As comfortable as an ordinary cap and in appearance the same, the screen being almost invisible to the casual observer, this goggle substitute enables me to speed forth on the windiest day without the smallest discomfort to the eyes, and, what is further ("Ixion's" please note), the screen does *not* make the countryside appear as though it had jaundice, and vision is unhindered.

I do not, however, recommend it for night riding, as the vision is decidedly obscured in this case. Why this should be I do not pretend to say, but it is so.

Bideford. AWAHAWAHAWOO.

SUMMARY OF CORRESPONDENCE.

We thank the many correspondents who have definitely proved for "Ixion's" benefit that the upper spokes of a travelling wheel move faster than the lower ones, but regret that no one has suggested a satisfactory answer to his further silly-season query: What would Queen Elizabeth have done with or to Lloyd George?

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CURRENT CHAT

Times to Light Lamps.

Nov. 9th	.. ..	4.49 p.m.
„ 11th	.. ..	4.46 „
„ 13th	.. ..	4.43 „
„ 15th	.. ..	4.40 „

One number plate must be illuminated as above ...r Road Vehicles Registration and Licensing ...der (1921). According to the Lights on ...ehicles Regulations (1905) the lamps ordinarily ...quired by law may be lit half an hour later.

...fty Miles for 6d.

Two hundred miles to the gallon is ...laimed by the maker of the little Cle...ent motorised bicycle on which he ...ourneys from London to Brighton for 6d.

...ightweights Indeed!

A special racing model is produced by ...ne maker of motorised bicycles which ...eighs 38 lb., has an engine one-quarter ...he size of the 169 c.c. McKenzie, and is ...aid to be capable of a speed exceeding ...0 m.p.h.

...ew Swiss Cycle Car.

The Motosacoche firm of Geneva, manu...acturers of the popular M.A.G. engine, ...tend producing a cycle car which will ...ke part in the principal sporting events ...f 1923.

...iminutive Ignition Apparatus.

During the last two years magnetos ...ave been gradually reduced in size and ...eight to about half pre-war proportions; ...ow miniature plugs for full-size engines ...e being talked about. This is all in ...vour of lighter and neater motor cycles.

...opular Attachments.

On the main roads south of London ...ndem cycles assisted by Auto-wheel ...tachments are a very common sight, ...d, helped by a little pedalling, are ...ite speedy—surely the cheapest motor-...g for two.

...trol Imports.

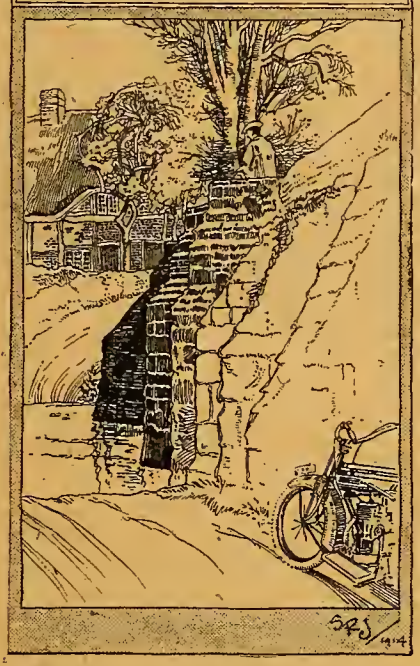
Seventeen and three-quarter million ...llons of petrol were imported into Great ...itain in September; in the same month ...st year twenty million gallons were ...ought in. Total imports for the first ...ne months were (1922) 246,762,382 ...llons, (1921) 195,027,793 gallons.

...lecars and Light Cars.

Ever since the advent of the cycle car ...decade or more ago would-be prophets ...ve seen in the cheap four-wheeler the ...ecutioner of the sidecar. We still have ...th us these false prophets who make ...e mistake of comparing the prices of ...23 light cars with the 1922 figures con...rning sidecars.

...C.C. Annual Dinner.

Arrangements are well in hand for the ...otor Cycling Club annual dinner, at ...hich the club's twenty-first anniversary ...ll be celebrated, on Thursday, Decem...er 7th, at the Wharnecliffe Rooms, ...reat Central Hotel, Marylebone, Lon...on, N.W.1, at 6.30 for 7 p.m. Tickets, ...cluding the buffet during the dance, ...ill be 10s. 6d.



Put-tut!

"Phut-phut-phut" = single cylinder four-stroke. "Phutta-phutta-phutta" = V twin four-stroke. "B-r-r-r-r-r-r-r" = single cylinder two-stroke.—A child's guide to motor cycles.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

NOVEMBER 25th to DECEMBER 2nd marks the period when the

MOTOR CYCLE EXHIBITION

at Olympia will be open to the public.

In connection with the Show "The Motor Cycle" will publish three more special issues as under:

Nov. 16th. Passenger Machines.
Nov. 23rd. Show Forecast and Guide.
Nov. 30th. Show Report.

Each of these enlarged issues will embody special features possessing a strong appeal to all who own or who contemplate the purchase of a motor cycle.

To avoid disappointment an order should be placed in advance with the local Newsagent.

EVERY THURSDAY....THREEPENCE.

Prepare for Fog.

The season of fogs is upon us. An ordinary headlamp is practically useless in a fog, but if a piece of yellow material capable of being slipped over the front glass of the lamp be carried on the machine, night driving in foggy weather can be made much easier.

New Use for Official Boots.

An exhaust pipe kicking campaign is the latest form of police activity to be practised. Edmonton is the danger area, and motor cyclists, passing through, are advised to be sure that there is no slackness in their silencer joints, etc.

To Amuse the Baby.

For several miles last week-end we travelled in the wake of a family sidecar the driver of which continually bounced in his saddle, although the road was in good condition. The only explanation is that he was performing to amuse the baby.

D.R.'s Reunion in Leeds.

It is proposed to hold the fourth annual re-union dinner of 31st Divisional D.R.'s in Leeds on November 17th. All communications should be addressed to Mr. J. A. Tetlow, 53, Markham Avenue, Harehills, Leeds. As previously all expenses will be pooled.

More Horse Accidents.

According to statistics carefully tabulated by the Automobile Club de l'Ouest on road traffic during the months of July, August, and September, 1922, in the department of La Sarthe (W. France), there were 54 horse accidents, against 28 car and 36 bicycle road mishaps.

Preparations, Compounds and Solutions.

The modern motor cyclist's garage is rapidly becoming like a beauty parlour with the varied assortment of pastes and creams in tins, jars, and tubes now marketed for jointing flanges, smearing bolt threads, stopping leaks, cleaning aluminium, making belts grip, getting tar and stains off, cleaning the hands (dry), cleaning the hands (wet), gingering up the petrol, oiling up the petrol, filling the inner tubes, keeping wet off windscreens, polishing enamel, preserving hoods, etc.

Now We Know!

"Cut-out:—A ballyhoo for tin horn drivers.

"Flywheel:—A round piece of metal that goes around and around, but never gets anywhere. There are no flies on it, contrary to expectation.

"Magneto:—A peculiar shaped box filled with broken bits of lightning.

"Miles-per-gallon:—An exaggeration.

"Miles-per-hour:—See above.

"Tail light:—An electrical device with whims."—Extracts from an amusing dictionary of motor cycle terms in an American trade paper.

Club News

Bradford M.C. and L.C.C.

Rain caused the curtailment of the solo classes in the club's handicap speed trials held on the 22nd ult., and the sidecar results only are available:—

1. R. T. Cawthorne (490 Norton sc.), handicap 70 m.p.h., actual 75 m.p.h., Silver Cup.
2. E. P. Dodd (492 Sunbeam sc.), handicap 58 m.p.h., actual 60.2 m.p.h., Silver Medal.
3. E. Flintoff (492 Sunbeam sc.), handicap 57 m.p.h., actual 58.63 m.p.h., Bronze Medal.

Fastest time in sidecar class:—R. T. Cawthorne (490 Norton sc.), Silver Cup.

Reigate, Redhill and District M.C.C.

Results of the night trial, held on the 21st ult., are as follows:—

GOLD MEDAL.—R. Alderton (Albert car).

BRONZE MEDALS.—E. C. Gordon (499 Triumph), V. F. Long (976 Excelsior sc.), A. B. Lavy (499 Sunbeam).

The annual dinner will be held at Laker's Hotel on December 13th. Further particulars are obtainable from the hon. secretary, E. L. Bewers.

S.E. Centre and A.C.U.

Through a misunderstanding, official results of the Open Trial held on July 8th last are only now to hand. The awards have been made as follows:—

GOLD MEDALS.—H. Jepson (976 Zenith sc.), Hardy Mason (Amilcar).

SILVER MEDALS.—T. G. Meeten (598 Indian), E. C. Gordon (499 Triumph), P. L. Mayo (293 Coventry-Eagle), P. Cunningham (555 P. and M.), F. A. McNab (650 Trump).

BRONZE MEDALS.—A. R. Wood (596 Indian), W. Bucknell (976 Matchless sc.), T. G. Ross (976 Matchless sc.).

SPECIAL BRONZE.—Mrs. G. M. Janson (211 Levis), E. F. Chidley (555 P. and M.), A. H. Cox (499 Triumph).

No team finished complete, but a special award for meritorious performance was made to the P. and M. team.

Sutton Coldfield and North Birmingham A.C.

Official results of the Autumn Trial, held on the 14th ult., are as follows:—

SOLO MOTOR CYCLES.

SUTTON CUP AND GOLD MEDAL, for Best Performance.—B. Kershaw (249 New Imperial), 64.5 fig. of merit.

GOLD MEDALS.—P. Mosedale (349 A.J.S.), 65.8 fig. of merit; A. R. Edwards (247 Levis), 72.2; D. B. Calder (249 New Imperial), 72.6; A. W. Thrush (492 Sunbeam), 73.8; Stretton Ward (499 Triumph), 78.7; E. R. Jacobs (499 Beardmore-Precision), 81.2; F. H. Jones (247 Levis), 89.5; C. F. Holyoak (249 Federation), 105.2; R. C. Bennett (249 Federation), 110.0.

SILVER (GILT CENTRE) MEDALS.—J. G. Orford (349 Henley), 151.7 fig. of merit; H. V. Collins (733 Brough Superior), 159.0; P. Platts (688 Coventry-Victor), 161.1; J. L. Handley (348 Ivy), 201.7; T. H. Richards (986 Brough Superior), 215.5.

SILVER MEDALS.—L. V. Bowen (247 Radco), 1 mark lost; N. W. Busby (494 Douglas), 1 mark lost; E. E. Radnall (247 Radco), 3 marks lost; B. H. Cunningworth (211 Levis), 10 marks lost; C. W. Anderson (247 Sun-Vitesse), 13 marks lost.

BRONZE MEDAL.—T. M. Eastwood (349 A.J.S.), 21 marks lost.

SIDECARS AND THREE-WHEELED CYCLE CARS.

HOOPER ROSE BOWL AND GOLD MEDAL, for Best Performance.—R. G. G. Beesley (599 Sunbeam sc.), 85.6 fig. of merit.

GOLD MEDALS.—F. A. Watson (599 Sunbeam sc.), 86.0 fig. of merit; H. F. S. Morgan (978 Morgan), 87.2; F. W. Giles (799 A.J.S. sc.), 91.4; G. H. Goodall (1,093 Morgan), 101.0; E. Arthur (733 Brough Superior sc.), 108.0; F. S. Spouse (980 T.B.), 117.0; F. H. Brown (539 Rex-Acme sc.), 121.3; J. Adamson (980 T.B.), 146.0; J. W. Meredith (980 T.B.), 167.6.

SILVER (GILT CENTRE) MEDAL.—J. H. Pedley (1,097 T.B.), 174.7 fig. of merit.

It is hoped that members will make an effort to be present at the annual dinner, which has been provisionally fixed for Friday, December 15th, when all trophies and medals will be presented.

Colchester and District M.C.

Results of the one-day trial for the Worthington Evans Challenge Cup are now to hand, and are as follows:—Winner, E. C. Rose (500 N.U.T.); 2, R. W. Tracey (225 Royal Enfield); 3, C. Broomah (596 Indian).

West Birmingham M.C.C.

At a general meeting held on the 20th ult., a resumé of the past season's events and a winter programme formed the agenda. A satisfactory treasurer's report was also received, and it was announced that a handsome challenge cup had been presented for a winter trial by Mr. H. Turner, a club member.

Plymouth M.C.C.

At the final general meeting of members of the Plymouth and District Motor Cycle and Light Car Club on Thursday (October 12th) considerable discussion took place concerning the question of whether the club was wanted or not, reference being made to the lack of interest shown by riders in some of the events held during the season.

It was pointed out that the weather had been all against riding, and eventually it was decided to carry on the club.

A number of officers were elected and the cups and medals won during the season were presented to the winners by Mr. Baker.

Mansfield and District M.C. and L.C.C.

Winnats Pass proved to be a stumbling-block for many competitors in a trial for the Captain's Cup, held over an 88-mile course in Derbyshire on the 22nd ult. In the afternoon section only seven solo riders surmounted the hill with clean sheets. Seventeen of the 25 competitors checked in at the finish. Results:—

CAPTAIN'S CUP.—V. Hancock (492 Snubeam).

MEDALS.—C. Spearing (349 A.J.S.), E. Blythe (532 Scott), W. Pike (211 New Hudson).

BEST PASSENGER PERFORMANCE.—H. L. Stevens (770 B.S.A.).

BEST PERFORMANCE BY WORKSOP CLUB MEMBER.—G. Parker (596 Indian).

Luton and South Beds. A.C.

Results of the hill-climb held on the 14th ult. are now to hand, and are as follows:—

TIME.

275 c.c.—R. Dickinson (225 Royal Enfield).
350 c.c.—G. L. Werts (350 Curtis-B. and S.).
550 c.c.—C. Dunham (490 Norton).
750 c.c.—C. Dunham (490 Norton).
UNLIMITED.—C. Dunham (490 Norton).
550 c.c. SIDECARS.—K. Driscoll (490 Norton sc.).
750 c.c. SIDECARS.—R. Driscoll (490 Norton sc.).
UNLIMITED SIDECARS.—E. C. Baragwanath (Matchless-M.A.G.).
550 c.c., AMATEUR.—R. Driscoll (490 Norton).
UNLIMITED, AMATEUR.—P. Girling (494 Douglas)

FORMULA.

350 c.c.—G. L. Werts (350 Curtis-B. and S.).
550 c.c.—G. L. Werts (350 Curtis-B. and S.).
750 c.c.—A. Borders (490 Norton).
UNLIMITED.—G. L. Werts (350 Curtis-B. and S.).
550 c.c. SIDECARS.—R. Driscoll (490 Norton sc.).
750 c.c. SIDECARS.—L. Hilt (494 Douglas sc.).
550 c.c., AMATEUR.—P. Girling (494 Douglas).

Cumberland County M.C.C.

Results in the recent South of Scotland reliability trial are as follows:

LIGHTWEIGHT.—R. Pape (249 Velocette). C. W. Lowther Cup and gold medal, J. Edmonto (348 Massey-Arran): J. Hanna (349 A.J.S.).

HEAVYWEIGHT.—L. Harrison (492 Sunbeam F. Rollands (550 Triumph); A. D. Reid (555 P. an M.).

SIDECARS.—R. Drinkall (550 Triumph sc.); Shields (976 Sunbeam sc.).

CARS.—J. Bowness (Coventry-Premier), rose bo for best performance in passenger class and silv medal.

NOVICE AWARD.—J. Hanna (349 A.J.S.)

The club's winter series of lectures is now con mencing, to which all interested in motoring a heartily welcome.

Lewis and District M.C.C.

An inter-club sporting trial was held on the 15 ult. over a secret course in Surrey. Competitor started from Godstone and made two non-stop ci cuits of 27 miles each without the aid of speed meters. Four clubs were represented—the Bright and Hove M.C.C., the Eastbourne M.C.C., and t Preston (Brighton) M.C.C., and the Lewes Clu Results:—

LEWES CLUB.

SOLO.—1, R. G. Martin (349 Excelsior); 2, Green (490 Norton); 3, E. G. Brooke (250 Verus).

SIDECAR.—1, A. A. Jempson (998 Blackburn sc.); 2, E. Chandler (490 Norton sc.).

INTER-CLUB.

AWARDS WON BY MEMBERS OF THE BRIGHTON AN HOVE CLUB.—1, H. Hampton (976 Brough-Superi sc.), gold medal; 2, A. H. Cox (499 Triumph), silv medal; 3, L. G. Watts (494 Douglas), bronze medal

Mid-Bucks M.C.C.

Some excellent times were made at speed tria held recently near Chesterton, but the event wa poorly supported. Fastest time of the day was mad by a new member, R. Newitt, riding a 494 c. Douglas, who covered the course at 74 m.p.h. Results on formula were as follows—1, G. H. Steve (490 Norton), silver cup to be held for one year an gold medal; 2, Miss Bates (499 Triumph), silv medal; 3, W. O. Boldock (346 Hobart).

The final event for the Club Trophy was run o on the 21st ult. under extremely unfavourabl weather conditions. The winner's (H. Little's) pe formance is especially commendable in view of th fact that his 211 c.c. Levis was the only bel driven machine in the trial. Results:—

CLUB TROPHY (TO BE HELD FOR ONE YEAR) AN GOLD MEDAL.—H. Little (211 Levis).

SILVER MEDAL.—J. Parrott (998 Harley-Davi son sc.).

BRONZE MEDAL.—H. F. Eborn (496 Martin syde).

The annual dinner and presentation of prizes wi be held at the Bull's Head Hotel on Tuesday, th 14th inst., at 7 p.m. Tickets are obtainable fro the secretary or any member of the committee, an should be purchased not later than the 11th inst.

ITEMS OF EQUIPMENT.

The Fascination of Extras.

No falling off in the motor cyclist's interest in Accessories.

THERE must be something very fascinating to most motor cyclists in buying extra equipment for their machines.

Nowadays the tendency is (or should be) all toward delivering motor cycles absolutely fully equipped and ready for the road. True, a good deal remains to be done in this respect, but the position in the car world, where equipment is much more lavishly and completely distributed with a new purchase, proves that the gadget fiend (what else is he to be called?) refuses to be exterminated by mere thoughtfulness on the part of the manufacturer of his car.

Therefore, much more so will the lure of the accessory continue to appeal to the motor cyclist, who is a far greater enthusiast at heart than the car owner.

A Very Elastic Term.

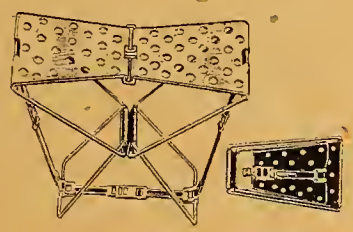
Accessory is a very elastic term. Articles coming under the heading may be broadly divided into two categories: (1) Those that interest the manufacturer, *i.e.*, chains, roller bearings, plugs, etc.; and (2) those that appeal to the private owner, *i.e.*, items which may be fitted to his machine *as extras*, and tools for use on the road or in the garage. It is with the examples of the latter class to be seen at Olympia that this article deals.

In passing, it may be mentioned that, although the Gallery of that building will be a veritable treasure house to the equipment searchers, it will be by no means as representative of the industry as the ground-floor will be of the motor cycles themselves.

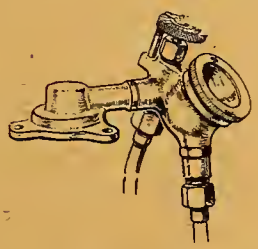
Horns and Hooters.

Since the law requires every motor cycle to be equipped with an audible warning of approach, a horn or hooter should be affixed to every machine before delivery. This is seldom done. Therefore, having placed his order for a 1923 mount, the reader may reasonably be expected to search out the warning signal exhibits. Four types are available—the ever-popular bulb horn of standard dimensions, as exemplified by Clayrite, Dekla, F.R.S., or Lucas products; the mechanically-operated device such as Cowey, Stewart or Pennant; the Clayrite, Dekla, Lucas, or other electric; or the useful and inexpensive "pip-squeak," as shown by several cycle factors.

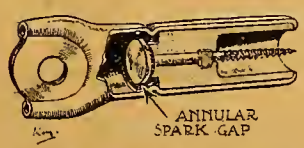
Next to the horn (on the handle-bar anyhow) comes the speedometer, an instrument that all of us want, but comparatvely few of us decide to buy before an unknown early mileage robs much interest from the purchase. Bonniksen (with the new time element), Cowey, Smith (perhaps with a watch case embodied as an integral part, a system which it is claimed "balances" the fitment admirably), Stewart, and Watford are among the well-tried and best-known makes.



Even solo riders might find a use for the very compact Grigg folding seat.

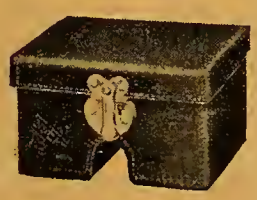


Showell mechanical oiler sight chamber to replace existing drip feed pumps.



Lodge high tension terminal with enclosed spark gap.

Black F.R.S. horn of neat contour.



Tank rail tool bag by Brooks.

Mechanical Lubricators.

It is not such a big jump from speedometers to mechanical oil pumps as one might imagine at first. The pump is an extra that undoubtedly repays its first cost very early in its life; it is also one of the things of which we all tend to delay the purchase until we decide it "isn't worth while now this year." Already proved in the hands of the public are the Best and Lloyd, Lamplugh and Showell fitments, and the name on the new Rotherham grooved spindle tyre pump ensures its efficiency.

Items for Comfort.

Rubber handle-bar grips and knee grips are more and more forming the standard equipment of representative solo machines, but there are still many first-class makes supplied without these fully worth-while extras. John Bull and Pedley are perhaps the best-known names in this connection. An excellent handle-bar muff also bears the first-mentioned *marque*.

Windscreens for solo machines are claiming some attention nowadays, and the latest Easting and T.O.M. products are certain to draw a critical crowd, with sharply divided views on the practicability and usefulness of the scheme.

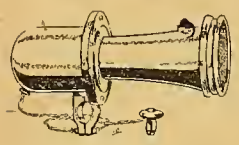
For Pillion Riders.

Pillion riding, too, grows no less popular, and those who indulge in the practice seriously—incidentally, not the people who provide the material for scare headlines in the daily Press—will give careful attention to the relative merits of Saxelby and Tan-Sad seats and the recently introduced XL-All combined pillion seat or spring carrier and ordinary saddle.

Still in the realms of the truly useful, are extra tool-bags and luggage cases. Brooks' range of both, an XL-All combined top rail tool-box and knee grips, and T.O.M. Wearprufe cases with the "Cantslip" fastening straps are among others available.

There will be an infinite variety of tools to fill any additional case. Chain rivet extractors are most important; for

Items of Equipment.—
some obscure reason they are less frequently supplied with a chain-driven machine than the belt punch used to be in the old days or, for that matter, to-day. Of course the chain tool is not required



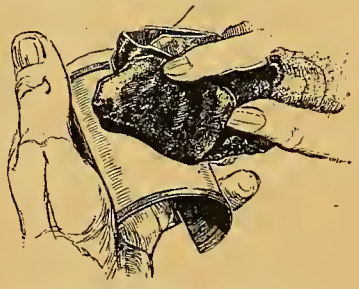
Dekla electric horn.

so often—but when it is needed, it is usually needed badly. The makers of Coventry and Renolds chains both market very serviceable articles; and the Saxessories and Pennant ranges also include neat and well-made devices.

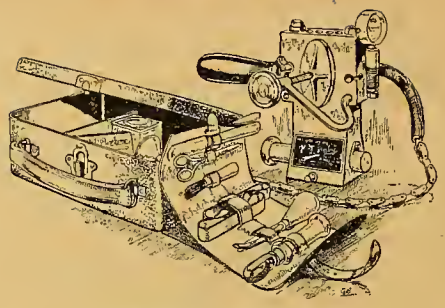
Small Tools.

Spanners should be unnecessary, but a great many motor cyclists make a rule of carrying an additional miniature "adjustable" of the Lucas or King Dick type in the waistcoat pocket.

Anxiliary spark-gaps have been proved to be of considerable use on engines which tend to oil-up sparking plugs. Lodge, Runbaken, and Sparxekas immediately occur in this connection.

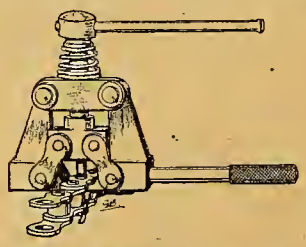


Preparing a Rubbermax patch—a new method of tyre repair



Vulcanising by the owner is facilitated by H.F. Baby outfit.

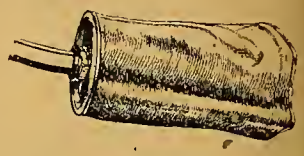
From plugs to valves is a short step. The Flexekas and the F.E.W. air leak preventers are admirable fitments even on a new machine, for prevention is better than cure. Air admitted at the right time and place, however, is beneficial and tends to economy; the Bowden



Rivet extractor made by the manufacturers of the Coventry chain.

extra inlet is an excellent example of a device to do this.

Unclassified and unclassifiable sundries are legion. Specially prepared tyre patches will be shown on the Chemico, Patchquick, Surridge, and Cuthbie (new Rubbermax method) stands, as well as by all the tyre manufacturers themselves. Jacksons of Impervo fame will introduce a new inner tube, sold ready filled with their puncture-sealing compound. Terry's will stage springs and then more springs,

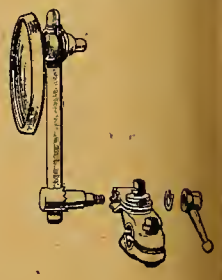


Real weather protectors—John Bull handle-bar muffs.

along with their valve lifter and range of flat spanners. The County Chemical Co., among forty other things, will show a new fuel economiser or "dope," and the Elephant Chemical Co. a new method of packeting carbide refills said to ensure an absence of clogging in the generator. An Enots grease gun system of lubrication specially applicable to motor cycles deserves an enthusiastic welcome.

From Mascots to Bigger Things.

Finally, the big wholesale accessory agents' stands—Brown Bros., Dunhills, the East London Rubber Co., the Manufacturers' Accessories Co., S. Smith and Sons, etc.—will simply be a maze of alluring fitments, from mascots to vulcanising outfits, from handle-bar mirrors to tyre paint.



Clayrite handle-bar mirror showing universal clip.

TO POPULARISE A HILL-CLIMB.

Novel Handicap Method adopted by Bristol Club brings in the Novices.

ONE of the chief troubles of organising club hill-climbs and speed events is to attract the less expert members as competitors; often a long list of classes is but a procession of the same riders on special machines, sometimes with trade backing, if not actually in the pay of one or other of the manufacturers.

In face of this, many ordinary club men, who own standard mounts, play the role of spectators on these occasions, and it was with the idea of persuading them to enter that the Bristol Club experimented with a handicap climb a few weeks ago. The result was so successful that it may pay other clubs to adopt the idea.

Whereas in an ordinary Bristol closed hill-climb an entry of a dozen separate riders is considered satisfactory, in this case there were no less than forty actual competitors, and of these there were only six or seven who could be styled trade men.

First, an ordinary timed climb was run off in the usual classes, and as medals were to be won in this section, naturally all rode to win. Then everyone was given one run on the hill (all in one class) to attempt to beat his previous best time, awards going to those who showed the greatest improvement. A limit of three seconds improvement (the distance was half a mile) was imposed, it being assumed that everyone showing three or more seconds better time had "pulled" his mount in the first section to gain an advantage in the handicap, or for some other reason did not clock a good time. Actually this limit was only exceeded by one rider, and disqualification was well merited, as he was fifteen seconds faster.

The winner of the premier award proved to be an absolute novice riding in his first event, his improvement being $2\frac{1}{5}$ secs.; two other riders tied for second place with $1\frac{3}{5}$ secs. off their previous best, these also being ordinary club men on standard mounts, and it was not until third and fourth places that any of the trade experts came in, with $\frac{4}{5}$ sec. difference.

The chief merit of the scheme is that both classes of rider are satisfied.

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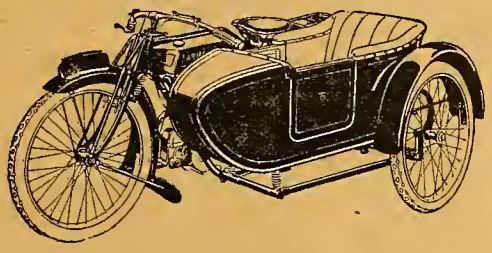

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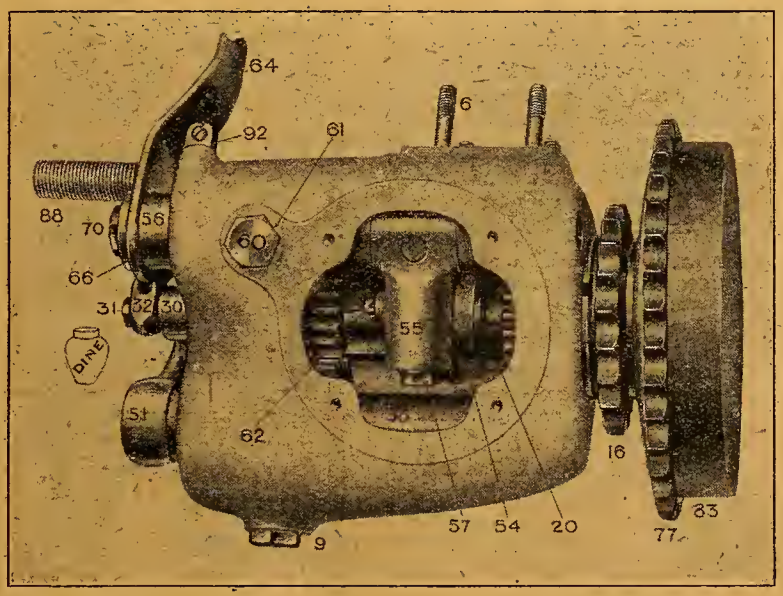

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ENGINE :—5-6 h.p. Scott, rotary valve, two-stroke, twin-cylinder, water cooled.
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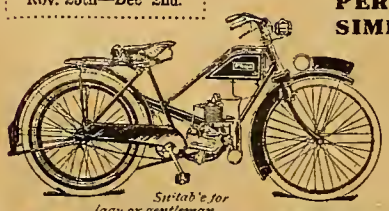

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ADVANCE DETAILS OF 1923 MODELS.

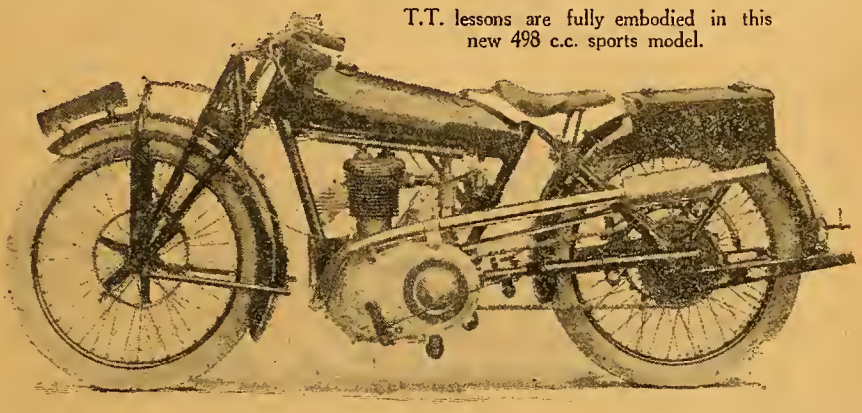
NEW 350 c.c. BEARDMORE-PRECISION.

Four-stroke Singles in Three Popular Sizes. Sporting Model based on T.T. Type.

PRESSED steel construction has been a feature of the Beardmore-Precision machines since 1919, and it is even urther developed for 1923, even the back tays being of steel pressings in the latest nodels.

Of course, the welded steel tank which orms the main frame member is retained. n this tank now are welded lugs for the uspension of the front end of the saddle, hile part of the mudguards form integral embers of the frame.

An addition to the Beardmore range is side-by-side valve outside flywheel achine, having a bore and stroke of 0 × 90 mm. (346 c.c.). This little engine sturdily built throughout, having a carefully designed one-piece cylinder; ample ooling area is provided, and the cylinder held down by a base flange.



T.T. lessons are fully embodied in this new 498 c.c. sports model.

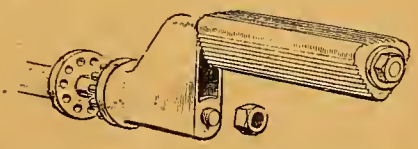
Spring contracted end pieces retain the gudgeon pin—a clever piece of detail design.

Floating in a cast-iron piston suitably lined with bronze bearings is a very large diameter hollow gudgeon pin, and the fixing employed for this part is one of the most ingenious features we have yet encountered. End pieces which pass into the gudgeon pin and lock in suitable recesses in the piston bushes are formed of phosphor bronze and have an internal thread; screwing into these threads is a tightly coiled tension spring. In order to erect the gudgeon pin and the piston, one end piece is screwed tightly on to the spring and the other end piece screwed down as far as possible; the next step is to pass a wire spoke through the first end piece until it presses against the further piece, thus stretching the spring, the further end piece is then fully screwed home and the spring released so that the locking device takes up its position in the slot and firmly holds the gudgeon pin in place.

The H.-section connecting rod has a double row roller bearing, the crankshaft being of the built up type carried in a double row ball bearing on the flywheel side and a single row on the timing side. Both valves are operated by a single cam through a rocker gear. On the outside a cap nut is fitted, which also operates as a flywheel drawer.

The primary chain runs at the outside of the flywheel and it is enclosed in an aluminium pressing, while the rear chain is protected by a light steel guard, a three-speed Sturmey-Archer box with shock absorber in the clutch being employed. The bracket for the gear-operating level is brazed to the frame, thus doing away with unsightly and heavy clip joints.

Behind the engine lies a magneto mounted on a separate aluminium bracket so as to be easily adjustable.

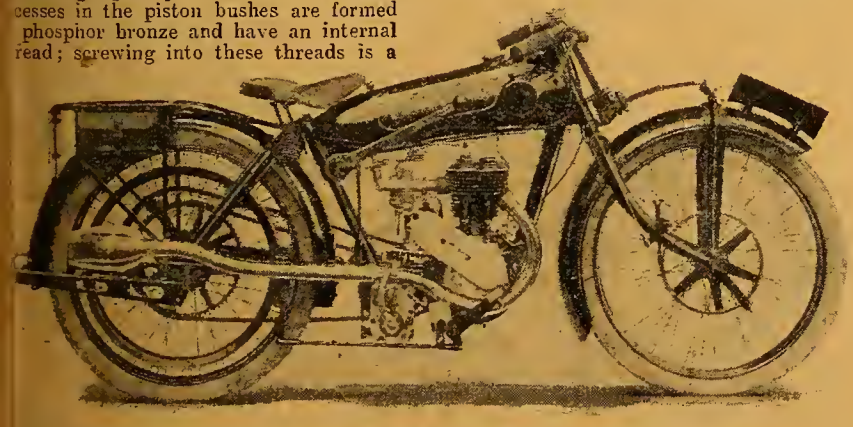


Beside being adjustable, the three-sided pad of the footrest gives it triple lease of life.

A modification of the Beardmore Tourist Trophy fork having a horizontal leaf spring and vertical pressed steel member is fitted. This fork, of course, is pivoted at the crown.

A large diameter band brake is fitted to the front wheel, and an internal V brake is employed with a dummy belt rim on the rear wheel. 26in. × 2¼in. tyres are standardised, the rim and mudguards permitting the use of 2½in. tyres for sidecar work, if so desired.

A simple petrol filter is part of the design, and the wheelbase is only 50in.



Among the many new 350 c.c. four-stroke singles being introduced, the side-valve Beardmore-Precision should fill a worthy place.

Advance Details of 1923 Models.— With the standard compression ratio of 4.25 to 1, the little Beardmore-Precision is a fast and handy mount.

A modification of the T.T. engine has enabled the firm to list a sturdy machine in the 500 c.c. class which is suitable for both solo and sidecar purposes. This engine follows the lines of the well-known 598 c.c. Precision, being formed as a unit with the three-speed gear box. A method of adjusting the front chain has, however, been added. The bore and stroke are 81.1×96 (498 c.c.), and the engine may be obtained with compression ratios of 4½, 5, or 5.7 to 1, according to the uses to which it is to be put.

Detail modifications include a modified cylinder head, a finned exhaust valve cap, a short ribbed aluminium exhaust branch, and a folding kick-starter.

A considerable alteration has taken place in the forks, which are now of the link type instead of being pivoted, though the usual Beardmore type of leaf spring is employed.

The remarkably sensible type of combined tool case and carrier which is a feature of the makers' machines is incorporated at the rear, and the whole of this unit, together with the mudguard, can be detached in the neighbourhood of the back stays to facilitate tyre repairs.

No decompressor it fitted to the 498 c.c. engine, but flexible feed tubes and a very easily detachable filter are refinements of some importance. Two gallons of petrol may be carried in the pressed steel tank, and the saddle peak is attached to the top of this unit. Tyre size is 700×80 mm.

The 598 c.c. big single machine remains largely unaltered, but, as is the case with other Beardmore-Precision models, it is fitted with front hubs of the makers' own manufacture, carrying ⅜in. balls.

The list price of the 346 c.c. machine is £75. £80 is the figure for the 498 c.c. model (£100 with sidecar), while the 598 c.c. sidecar outfit is £110, or £85 in solo form.

FOUR-SPEED 247 c.c. J.E.S.

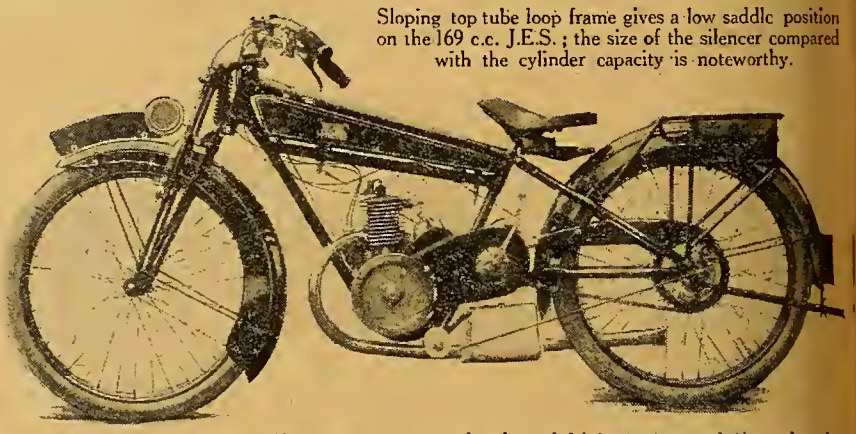
Single-gear Belt-drive and Three-speed Chain-drive 169 c.c. Lightweights and New Larger Model.

FOR many years Mr. J. E. Smith, of Gloucester, ploughed rather a lonely furrow with his excellently designed and constructed miniature engines and motorised bicycles.

His business is now styled the J.E.S. Motor Co. (Gloucester), Ltd., and next year will produce a range of machines extended by a 247 c.c. two-stroke equipped with a four-speed gear.

The engine of this machine is of the three-port type with a roller bearing big end, lubrication being automatic by pressure and suction; the carburetter is an Amac.

Saddle height of 28in. is obtained by a sloping top tube frame and the transmission is by chain throughout, through the J.E.S. four-speed box, which is mounted above the bottom bracket. The gears are of the constant mesh type, changes being effected by a sliding key, on the lines of machine-tool practice. The ratios are 5, 8, 12 and 15 to 1, and there is a shock absorber in the rear hub; the main brake is of the expanding type in the rear hub. The tyres are 26×2¼in.



Sloping top tube loop frame gives a low saddle position on the 169 c.c. J.E.S.; the size of the silencer compared with the cylinder capacity is noteworthy.

The 169 c.c. models have two-stroke engines of the type which distinguished itself in the A.C.U. Six Days Trials, but one has a three-speed gear box with clutch and kick-starter and the other has direct belt drive.

J.E.S. machines are priced as follows: 169 c.c. single-speed, £30 9s.; 169 c.c. three-speed, all-chain, £47 5s.; and 247 c.c four-speed, all-chain, £59 17s.

MODERATELY PRICED BIG TWINS.

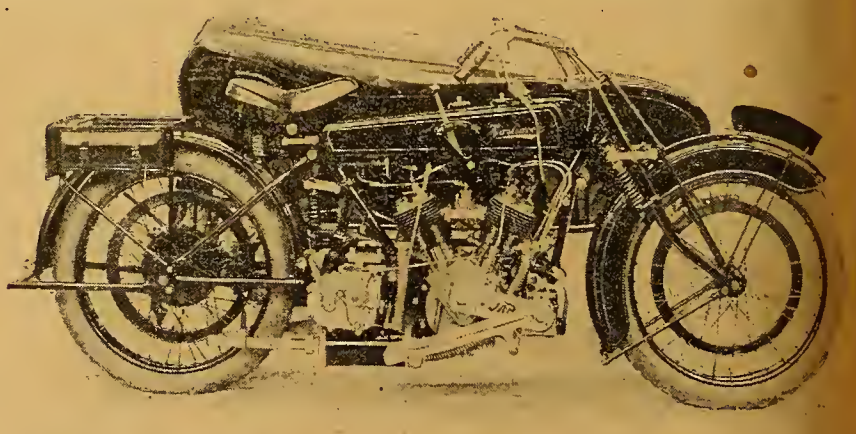
Hazlewood Sidecar Outfits and Solo Machines for 1923. J.A.P. Engines throughout.

LOW-PRICED big twin sidecar outfits are the most important items on the Hazlewood programme for 1923.

With a 976 c.c. J.A.P. engine and Hazlewood gear box and final belt drive one model with a commodious and well-made sidecar is priced at £115. The same outfit with a 770 c.c. J.A.P. engine costs £5 less; 650 × 65 mm. tyres are fitted in both cases.

A more elaborate outfit with 750 × 80 mm. tyres and internal expanding brakes, front and rear, is priced at £118 (with the 770 c.c. engine). A hand-controlled clutch is fitted in this case, instead of the foot type of the two first-mentioned models.

Right at the top of the scale is a 976 c.c. J.A.P. engined outfit, to a *de luxe* specification, and with final chain drive, at £126, and in between are 770 c.c. sports and tradesman's carrier outfits, both at £112. Hazlewood spring seat

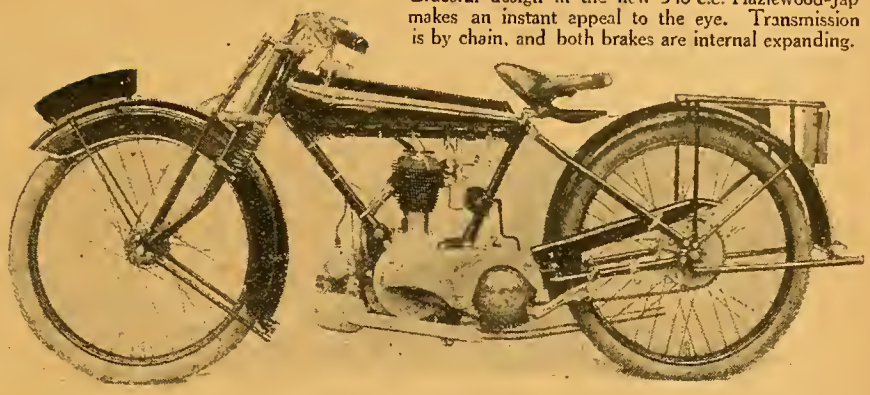


With chain and belt drive the complete Hazlewood sidecar outfit is to be sold at £110 or £115 according to the choice of the 770 c.c. or 976 c.c. J.A.P. engine.

Advance Details of 1923 Models.—

pillars are fitted in every case. 350 c.c. and 292 c.c. J.A.P. engined solo machines complete the list. The most costly of these, with the larger engine, a three-speed Sturmey gear box and internal expanding brakes front and rear, is only £75; and final chain and belt-driven models with the 292 c.c. engine and a similar two-speed box are £70 and £65 respectively.

Considering that Hazlewood lightweights belong to the large class of machines using proprietary components for engine and gear box, they are unusually distinctive in general outline. The riding position in every case is good, and the rider's comfort has been studied in the provision of footboards and an XL-All saddle.



Graceful design in the new 348 c.c. Hazlewood-Jap makes an instant appeal to the eye. Transmission is by chain, and both brakes are internal expanding.

MEETING EXTREME REQUIREMENTS.

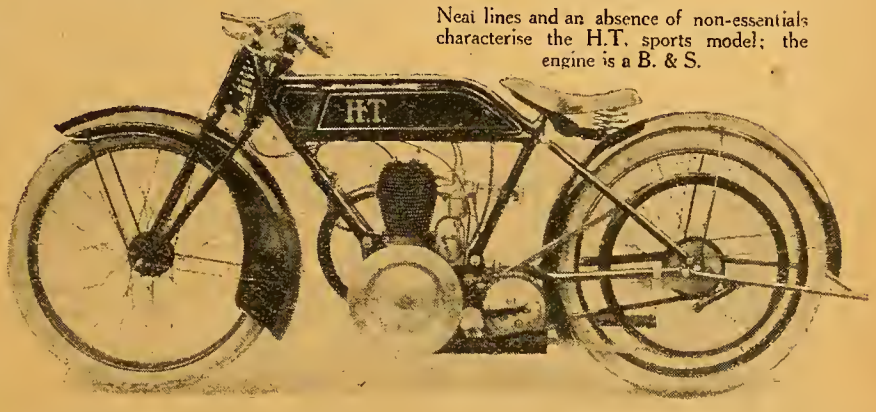
Sports Solo Model Introduced by Makers of the Hagg Tandem.

ALTHOUGH decidedly unconventional, the machine introduced as the Hagg Tandem, and now known as the H.T., bore every mark of careful designing, with the object of providing a machine having enclosed mechanism and full protection from road dirt. Incidentally, the machine was planned to carry two people, as its name implies.

Now the H.T. Motor Cycle Co. has gone to the length of catering for taste at the other end of the scale, and produced a straightforward sports model, neat almost to the point of bareness.

Sleeve Valve Sports Model.

The frame of the H.T. sports machine is of the usual type, with curved top tube; the power unit is a 349 c.c. B. & S. sleeve valve engine and transmission is by chain and belt through a Burman two-speed box. Webb expanding brakes are fitted to both wheels, and Maplestone front forks are used.



Neat lines and an absence of non-essentials characterise the H.T. sports model; the engine is a B. & S.

Almost unique in being designed as a tandem two-seater on two wheels, and at the same time following the general lines of a motor-bicycle, the H.T. dual-purpose machine has many commendable features. The frame is simple and strong, and the rear wheel is adaquately sprung.

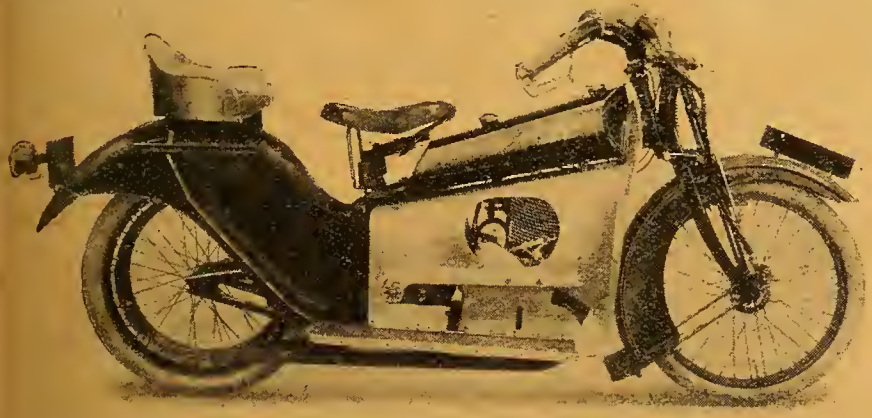
Again a B. & S. engine is employed, and belt and chain drive is used, the Burman gear box being foot operated. Webb brakes are carried by both hubs, and the tyres are 26 × 2½in.

Hand Starting.

Starting is effected by a long hand lever on the off-side of the engine cover or "bonnet."

Provision is made for rapidly detaching the passenger seat, and it is noteworthy that the bulk of the weight is within the wheelbase; moreover, both seats are only 29in. from the ground.

The footboards are sufficiently long and the extra seat sufficiently far forward to allow adequate support for the passenger's feet; it will thus be seen that the usual objections to pillion riding on the score of instability, and over-hang of the additional rider are eliminated in the H.T. design.



One of the few single track machines built for two people—the spring-frame H.T., formerly known as the Hagg tandem.

TWO MORE ULTRA LIGHTWEIGHTS.

THERE will be several new names on machines exhibited at Olympia.

Among these will be the Ray, an ultra-lightweight, produced in Nottingham by W. H. Raven and Co., Ltd.

This machine will have a 200 c.c. four-stroke engine, a two-speed gear and clutch in one unit, and a single driving chain.

Another new lightweight for next year is the D.O.M., produced in Loughborough; it will have a 147 c.c. Villiers engine and clutch, 26 × 2¼in. tyres, Brampton forks, and a Carbjector silencer. While the price has not yet been fixed, we understand that it will be well under the £30 mark.

TRIUMPH REFINEMENTS FOR 1923.

Detail Changes on Four-valve Model; New Forks and 3 in. Tyres on Chain-driven 550 c.c. Machine; Larger Engine, Clutch and Kick-starter on Two-stroke. Attractive Sporting Sidecars.

ALTHOUGH the improvements to the Triumph range of models for 1923 may seem, when viewed separately, of a minor nature, taken together they undoubtedly enhance the great reputation of the firm and the usefulness of the machines.

The chief innovations are a larger engine and a clutch and kick-starter for the two-stroke lightweight, and a "super-sporting" sidecar for the four-valve, 499 c.c. machine. Detail alterations have also been made to the last-mentioned model and to the 550 c.c. chain-driven side-valve single. Electric lighting, by Lucas Magdyno, has been arranged for as a "standard extra" in every case except the lightweight.

T.T. Lessons on o.h.v. Model.

Since it is newest, we will deal with the four-valve machine first. Following the lead of the T.T. Triumphs this year, the sparking plug has been transferred from the centre of the cylinder head to an accessible position at the side. The silencer has been considerably enlarged and the initial pair of exhaust pipes take an easier sweep than hitherto. Instead of two tail pipes to the rear, a larger single pipe is fitted at the right-hand side, which permits the foot-rest hanger bars to be modified to give a greater ground clearance. From actual road experience we know that these changes will remove two of the few points for criticism on this most fascinating machine.

700 × 80 mm. instead of 26 × 2½in. tyres and new Druid-type Triumph forks will be fitted to the chain-driven machine next year, as well as a new and more efficient front mudguard and front wheel stand.

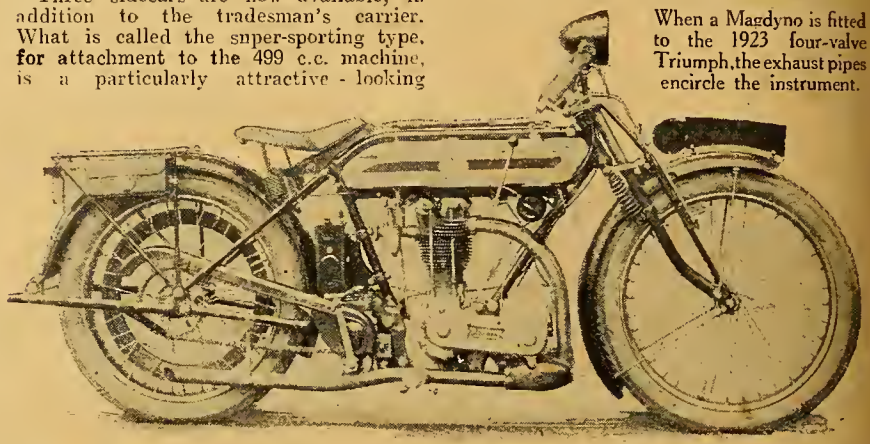
No alteration of importance has been made to the chain-cum-belt Sturmey gear machine, which retains the old barrel-spring "hinged" fork.

Electric Equipment as Standard Extra.

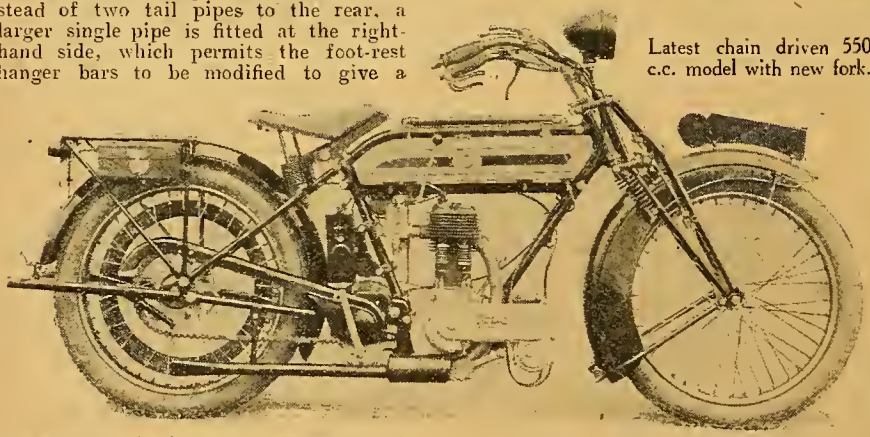
As already mentioned, special provision has been made for Magdyno equipment on the three larger machines. On the four-valve model this entails a special bracket and a lengthened and slightly dropped magneto driving chain. In each case a special head lamp is used, supported on a central single pillar with a large eccentrically faced washer to permit the lamp to be tilted to the correct angle. A new bracket has also been devised for carrying the battery case on the saddle tube.

Three sidecars are now available, in addition to the tradesman's carrier. What is called the super-sporting type, for attachment to the 499 c.c. machine, is a particularly attractive-looking design. The standard chassis is used, but a polished aluminium body is supported on coil instead of leaf springs, as on the latest touring attachment. Roomy but exceedingly sporting lines are followed by the body, which has a combined windscreen and apron of ingenious design. The screen slides forward to allow entrance or exit for the passenger and, being hinged, may be dropped completely when the car is empty. A second apron then extends from the dash to the back of the seat. Access to a capacious locker is gained by removing the back cushion, and on the top of the locker is a platform big enough to carry a spare tin of fuel. The weight of the complete sidecar is 132 lb., against 169 lb. for the coachbuilt touring model.

In between these two comes a coachbuilt sports sidecar of simple but sturdy design, not unlike the aluminium one in general contour, but without its refinements of windscreen, etc.



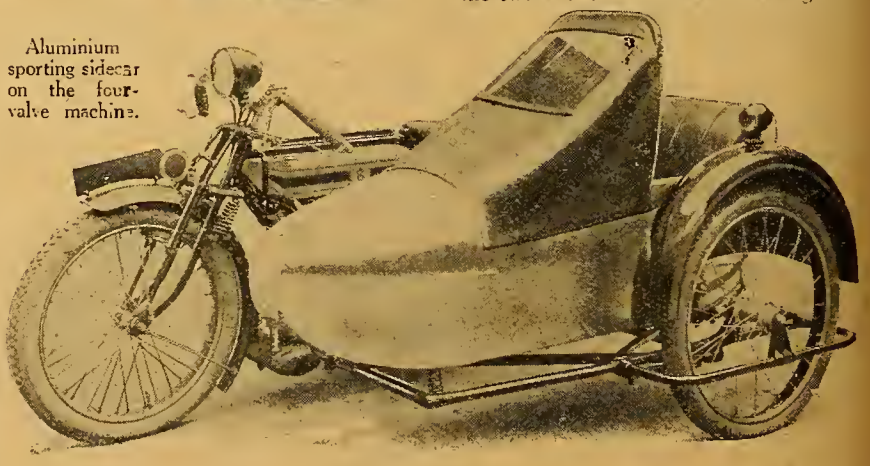
When a Magdyno is fitted to the 1923 four-valve Triumph, the exhaust pipes encircle the instrument.



Latest chain driven 550 c.c. model with new fork.

Increased Engine Size of Two-stroke.

Perhaps the most improved of all is the two-stroke miniature. The engine is



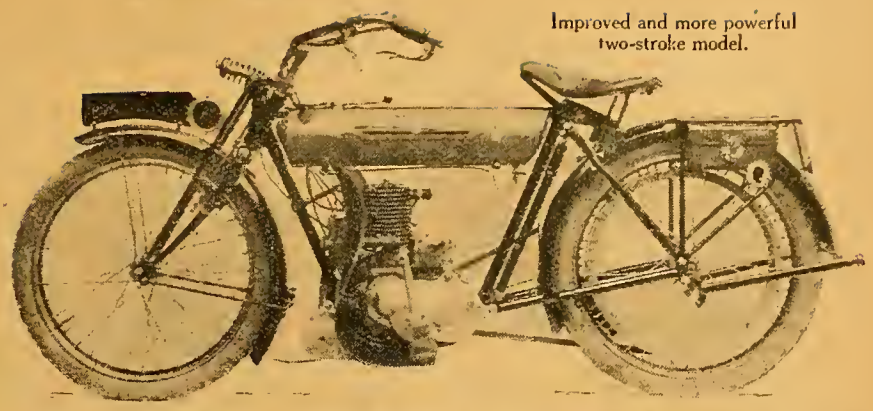
Aluminium sporting sidecar on the four-valve machine.

Advance Details of 1923 Models.—

now 67.25 × 70 mm. (249 c.c.), and has been re-designed so that the inlet port is at the side of the cylinder instead of in front. A large aluminium silencer, with an exit tapering to a wide slit, makes for considerably greater silence.

Carried in a bush in the primary chain cover, the new kick-starter operates directly on a pinion alongside the engine sprocket, the pinion, of course, being provided with a ratchet and spring engagement. On the tiny two-speed gear box there is now an equally tiny clutch, of the fabric insert type, but in general arrangement and face-cam actuation following that on the Triumph three-speed box. It is handle-bar controlled, but the change-speed lever is now mounted on a boss on the front tank strap. This gives an improved indication of the neutral position of the lever—*i.e.*, when it is parallel with the top tube.

Polished aluminium legshields of graceful contour, and wider front and rear mudguards, complete the transformation of this popular miniature.



Improved and more powerful two-stroke model.

ADDITIONAL NEW IMPERIAL MODEL.

348 c.c. Touring Double-purpose Machine. Few Changes to the other Lightweights.

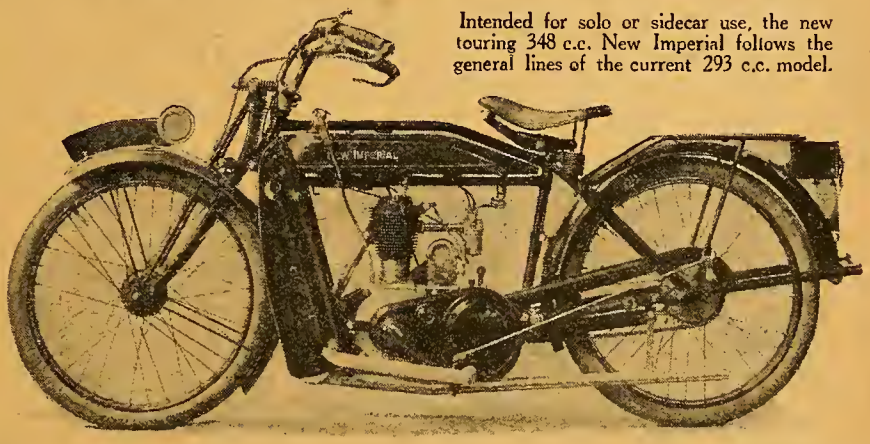
CONSIDERING the numerous successes of New Imperial lightweights this year in competition on road and track, it is not surprising that practically no changes have been found necessary for 1923.

On the 293 c.c. Light Tourist model a larger silencer has been fitted, but since the exhaust pipe curves have been improved an actual gain in power should accompany the greater silence thus obtained. Positive adjustment for the primary chain, by means of a draw-bolt, is the second and last innovation in this case.

Two Sports Models.

The 248 c.c. and 348 c.c. sports models also have been fitted with this means of facilitating chain adjustment, and again the question of silence has received attention. In the straight through fish-tailed exhaust pipe, a neat silencer is introduced in the neighbourhood of the chain stays. Also a rear carrier is supplied, fixed independently of the rear mudguard to allow easy removal for participation in speed events.

These three machines comprised the complete New Imperial range of lightweights during 1922, but for next year an addition has been made in the shape of a 348 c.c. touring machine for solo or sidecar use.



Intended for solo or sidecar use, the new touring 348 c.c. New Imperial follows the general lines of the current 293 c.c. model.

In general specification it follows the same lines as the others, a loop frame, carrying engine and New Imperial three-speed gear box, internal expanding brakes front and rear, shock absorber on engine shaft, etc., being salient features. The engine, however, is of the touring type, and the gear box has a kick-starter and a wider range of ratios than the sports type.

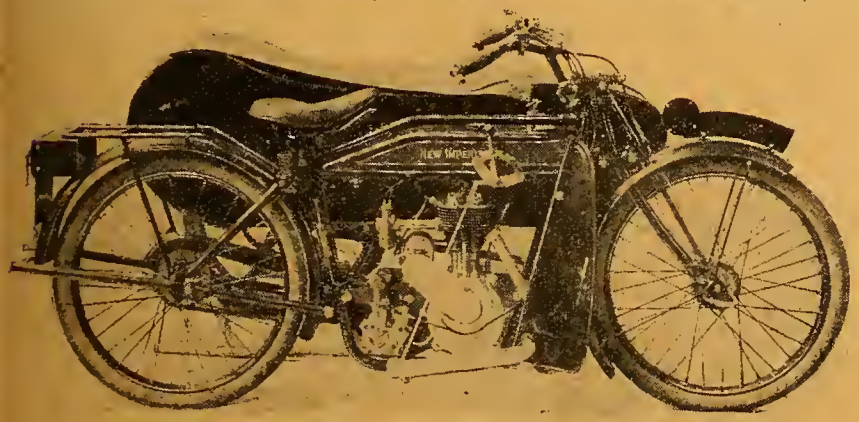
Touring handle-bars, footboards, wide mudguards, neat leg-shields, and other details as on the Light Tourist also distinguish it from the sports machine.

A special sidecar has been designed which is remarkable for its roominess and comfort compared with the average attachment hauled by 350 c.c. engines. It has a large door, and even an aluminium step.

The chassis is of simple triangular construction, having three point connections. "cantilever C" springs—a coined term that aptly describes the system—in the rear, and a single C spring in front, carry the body.

Finished in New Imperial green the outfit is most attractive in appearance.

Several changes are also being made to the 976 c.c. twin, including a new loop frame similar to the lightweights, and the most efficient looking internal expanding brakes we have yet seen on a motor cycle. More details will be published next week.



The 348 c.c. New Imperial outfit is as fully equipped as any of the 500 c.c. type.

250 c.c. ARIEL LIGHTWEIGHT.

Addition to a Wide Range, as well as Chain-driven 498 c.c. Machines.

TWO important additions have been made to the Ariel range for 1923—a 249 c.c. lightweight and a chain-driven 498 c.c. model (sports or touring).

Although the engine of the former is a Blackburne, it has been specially designed in some respects, including a magneto platform at the rear. Since the frame is of the loop type, this gives a very neat and well-balanced layout.

The riding position is low and comfortable, half-flat handle-bars helping towards this last-mentioned attribute.

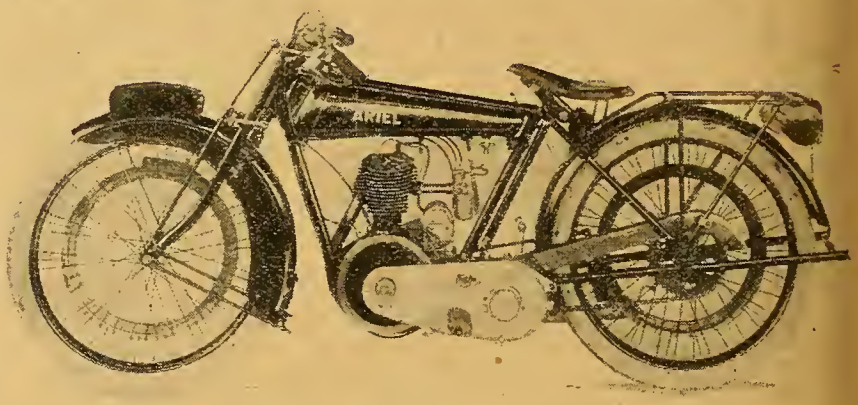
All-Chain Transmission.

Transmission is by chain throughout, by way of a lightweight Burman two-speed gear box, with clutch, kick-starter, and transmission shock absorber. The primary chain is covered in and the rear one guarded on its upper run.

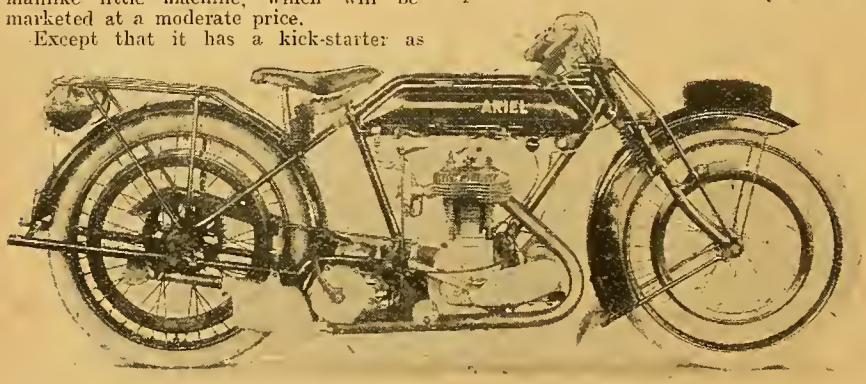
A neat but effective detachable aluminium silencer is fitted below the right rear chain stay.

B. and B. carburetter, E.I.C. magneto, front wheel stand, and Druid forks complete the specification of this very workmanlike little machine, which will be marketed at a moderate price.

Except that it has a kick-starter as standard, the belt-driven 498 c.c. sports model is unchanged. Several new features, however, appear on a chain-driven version of the same machine. Deeper radiating fins and a simpler decompressor operation—both tested in this year's Six Days Trials—are the chief improvements. A roller bearing big end, ball bearings at the driving side of the main shaft, and a larger exhaust pipe emptying into a new type silencer, like the lightweight at the rear, are the other changes. There is a transmission shock absorber on the main shaft.



Embodying a loop frame, the lightweight has a very compact appearance.



Chain transmission is offered as an alternative to final belt drive on the 1923 498 c.c. sports model.

Touring and Sidecar Models.

Most of these alterations also apply to the 498 c.c. touring model, which differs in having two leather tool-bags, an Ariel spring seat pillar, wider mudguards, and footboards instead of footrests.

All the models dealt with thus far, including the lightweight, have efficient dummy belt rim brakes front and rear.

The 796 c.c. twin (chain- or belt-driven), 665 c.c. single (chain-driven), and 993 c.c. M.A.G. twin (chain-driven), remain practically unaltered.

Thus the 1923 Ariel range caters for every type of motor cyclist, and the prices, moderate in themselves, will be doubly attractive by reason of the firm's reputation for workmanlike and reliable products.

FOUR-STROKE IVY FOR NEXT YEAR.

Well-known Two-stroke Specialists Introduce a 350 c.c. Four-stroke.

INTEREST is automatically aroused by the news of a four-stroke machine with Ivy on its tank, and it becomes more acute when it is known that the designer is Mr. H. C. Newman, whose fame as a speedman in pre-war days was world-wide, and who has been responsible for more than one very successful engine in the past.

The new unit, which will be shown at Olympia, is of the single cylinder outside flywheel side valve type of exactly the same dimensions as the 349 c.c. two-stroke, i.e. 75 × 79 mm. It has a detachable cylinder head, held down by three full-length bolts, and is chiefly remarkable for the depth and uniformity of the radiating fins on the head and the extremely large streamlined exhaust port. The gaps between the fins joining the valve pockets go right through, permitting free circulation of air to the actual cylinder wall at this point.

Actually the flywheel and crankshaft, and therefore the plain main bearing are the same as in the two-stroke. A cast iron piston is supported on a floating gudgeon pin, the pin itself being retained in position by a light ring encircling the piston. Only two piston rings proper are employed, both above the gudgeon pin.

Provision for Mechanical Oiling.

Lubrication is at present by drip feed, but space has been left in the timing case for fitting a mechanical oil pump inside, if it is found desirable at a later date. Incidentally, it must be emphasised the new engine is not of mushroom growth, it being fully eighteen months since the first experiments began. Road tests have given eminently satisfactory results, and it will be extremely interesting to watch how the new four-stroke compares in general performance with the two-stroke of the same capacity.

Excepting one set of engine plates and the magneto platform, the standard Ivy frame has necessitated no alteration to take the latest engine. The magneto platform is of particularly neat design, allowing easy chain adjustment without danger of upsetting its alignment.

Only one item of importance has been altered in the two-stroke models: the transfer port is now oval instead of rectangular, which allows bridge-pieces to prevent the piston rings fouling to be dispensed with. Also the sparking plug on the 250 c.c. engine has been moved to the same position that it occupies on the 350 c.c. model—diagonally at the rear of the cylinder head.

CURRENT CHAT (continued from p. 659)

Brooklands Sundays.

Notice has just been received by the catering company at Brooklands that the track will *not* be open on Sundays during the winter. No reason has been given by the track authorities for this decision which takes effect after November 12th.

The Cause of a Crash.

In the course of a letter acknowledging the many congratulations he has received on his lucky escape after a spill at 100 m.p.h. in the Brooklands 1,000 c.c. Championship, Mr. George Brough states that his tyre—a Dunlop—was not really to blame, for it was noticed by another rider to be under-inflated at the start.

Lightweight Sidecars on Alms Hill.

First ascent of Alms Hill, Henley, by a lightweight sidecar outfit was made, according to the latest information, by S. M. Greening on a 348 c.c. Francis-Barnett-Jap sidecar in a North London M.C.C. trial on September 9th. This was not known when the honour was claimed for L. A. Welch (O.K. sc.) at a later date. Greening's low gear was 17 to 1. Are there any more claimants?

What You Buy.

An American opinion: "The real appeal of the motor cycle is not merely transportation nor even economy in mileage and general upkeep, but sport. Customers buy not a two-wheeled or three-wheeled automotive vehicle but the finest sport on the highways. For tours, hunting and fishing trips, week-end runs into the country, either by individuals or club organisations, the motor cycle as a solo machine or combined with a sidecar offers the greatest possibilities for red-blooded youth."

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B.M.C.R.C. Annual Dinner.

The annual dinner of the B.M.C.R.C. will be held at the Holborn Restaurant at 7.30 p.m. on Tuesday, the 14th inst. All members should make immediate application for tickets, price 12s. 6d., to Mr. T. W. Loughborough, 83, Pall Mall, S.W.1.

How True.

"When a customer begins to argue about the comparative prices of motor cycles and cheap automobiles," says an American paper, "the motor cycle dealer may as well save his breath. As the cure for love is marriage, so the only cure for the flivver-inclined is to let him buy a flivver."

100 m.p.h. in Belgium.

While Le Vack is breaking 100 m.p.h. records at Brooklands, news comes to hand that this speed has been attained for the first time in Belgium. At officially recognised trials on the road at Oostmalle, a rider named Gheude on an American-X averaged exactly 100 m.p.h during his best run for the mean speed kilometre record.

Expert Thieves.

A model H 1921 Triumph with Whitley sidecar (ME 3314; engine 78415 CRT; frame 317631) and Sunbeam silencer was stolen from a private yard in Wood Street, London, E.C., despite the fact that the owner only left it two minutes, had removed the wire from the plug and that the magneto and air controls were reversed on their respective levers.

In a Good Cause.

The Cycle and Motor Trades' Benevolent Fund is holding a "Motor Revel" at the Holborn Restaurant to-morrow (Friday) night, dancing to commence at 9.30 p.m. For non-dancers there will be Jack Hilton's Cabaret Follies, and supper at 11.30 p.m. After defraying expenses the proceeds will go to the fund, which does much good work by relieving distress in the trade.

NEXT THURSDAY! THE MOTOR CYCLE **SECOND SPECIAL SHOW NUMBER.**

RELEASE OF "THE MOTOR CYCLE" FILM.

ARRANGEMENTS relating to the distribution and exhibition of *The Motor Cycle* film are well in hand, and numerous clubs have had dates allotted to them.

No club may have the film before the motor cycle show (Nov. 25th-Dec. 2nd), as from the 27th Nov. it will be included in the programme of The Broadway Cinema, Hammersmith, and will be screened there three times daily until the end of the Show, at 2.30 p.m., 5.50 p.m., and 8.30 p.m. The prices of admission are 8d., 1s., and 2s. 4d. The 2s. 4d. seats may be booked in advance (Telephone: Hammersmith 718).

This year the film is longer and more varied than last, and includes such attractive features as—

M.C.C. Team Trial for *The Motor Cycle* Cup.
Motor Cycle Tourist Trophy races (Senior, Junior, and Lightweight).
London-Land's End Trial.
London-Edinburgh run.
Car Tourist Trophy races.
French Grand Prix (Car and Motor Cycle Races).
Speed events on Daytona Beach (U.S.A.).
American hill climbs.
Snow Car Competition.

T.T. DATES PROVISIONALLY DECIDED.

AT a meeting of the Competitions Committee of the Auto Cycle Union held last Friday, it was decided, subject to the General Committee's approval, that the T.T. Races be held on:—

Monday, June 11th, morning.—Junior Race.

Wednesday, June 13th, morning.—Lightweight Race.

Wednesday, June 13th, afternoon.—Sidecar Race.

Friday, June 15th, morning.—Senior Race.

It is suggested that all entrants shall submit for inspection the silencers they propose using, also that the full equipment of the winning machines will be announced by the A.C.U. It was also proposed to recommend to the General Committee that a T.T. Race be organised for cycle cars with engines not exceeding 1,100 c.c.

The dates suggested are a clear three weeks after Whitsuntide, which is much better than last year, when the races synchronised with the busiest week of the manufacturers.

MORE 100 M.P.H. RECORDS.

H. LE VACK on the 100 m.p.h. Zenith-Jap broke six further remarkable records last week.

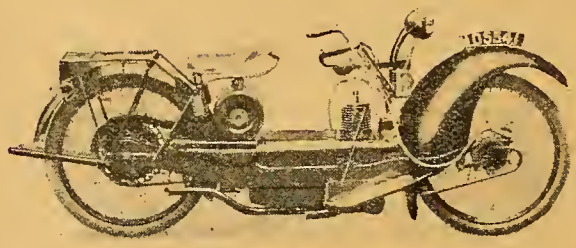
He averaged over 102 m.p.h. mean speed over the mile and kilometre distances, and attained over 103 m.p.h. by the one-way mile; he also broke the corresponding sidecar records.

Then, as was inevitable, C. G. Pullin captured another, this time on the 500 c.c. Douglas.

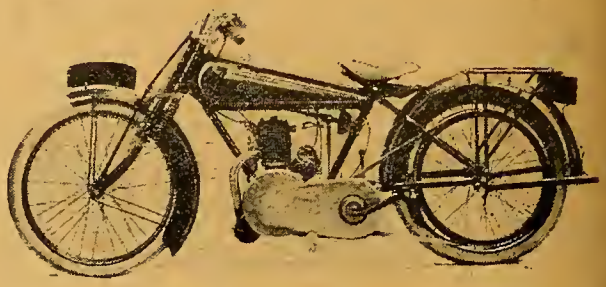
Full details of the records are as follows:

H. LE VACK (998 ZENITH-JAP). CLASS E (1,000 c.c. SOLO).
FLYING KILOMETRE (British Record):
(Mean) 21.76sc.=102.80 m.p.h.=165.44 km.p.h.
FLYING MILE (British Record):
(Mean) 34.98s.=102.91 m.p.h.=165.61 km.p.h.
FLYING MILE (British Record):
(Normal) 34.71s.=103.71 m.p.h.=166.90 km.p.h.
H. LE VACK (998 ZENITH-JAP SC.). CLASS G (1,000 c.c. SIDECARS).
FLYING KILOMETRE (World's Record):
(Mean) 25.825s.=86.62 m.p.h.=139.40 km.p.h.
FLYING MILE (World's Record):
(Mean) 42.15s.=85.40 m.p.h.=138.13 km.p.h.
FLYING MILE (British Record):
(Normal) 41.99s.=85.83 m.p.h.=139.43 km.p.h.
C. PULLIN (500 DOUGLAS). CLASS C (500 c.c. SOLO).
FLYING MILE (World's Record):
(Mean) 40.63s.=88.59 m.p.h.=142.57 km.p.h.

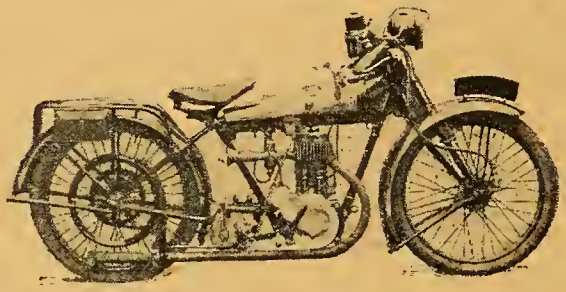
TYPES OF MODERN MOTOR BICYCLES.



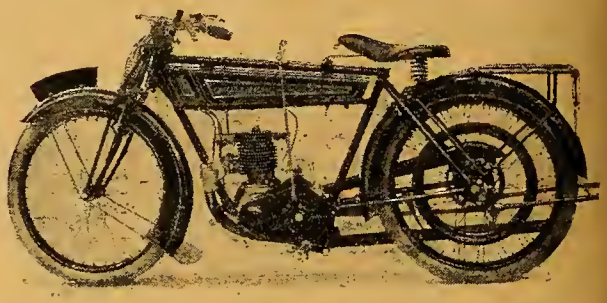
211 c.c. two-stroke Ner-a-car.



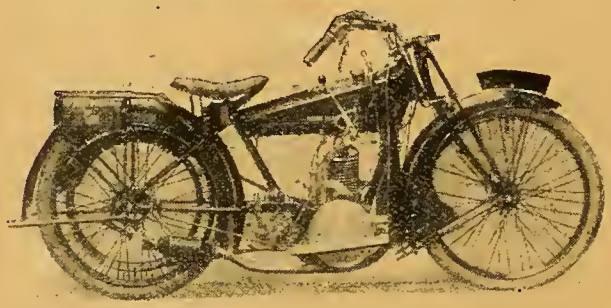
350 c.c. two-stroke Calthorpe.



490 c.c. four-stroke Quadrant.

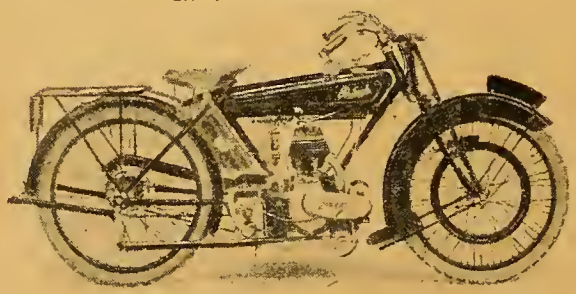


225 c.c. two-stroke Enfield.

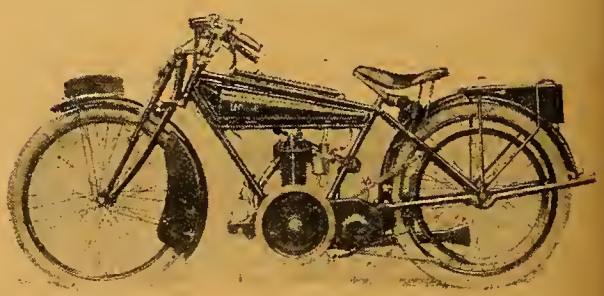


292 c.c. two-stroke Allon.

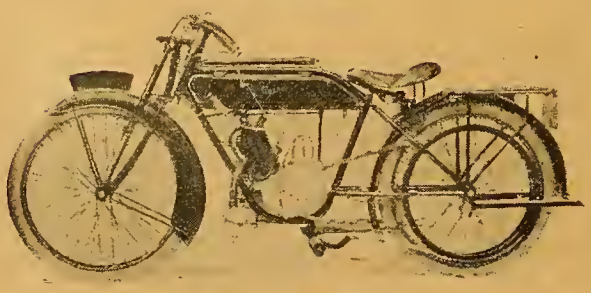
292 c.c. two-stroke Hawker.



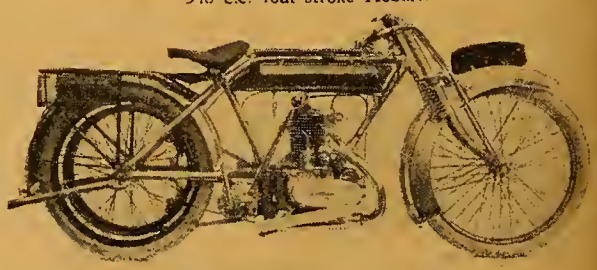
348 c.c. Raleigh.



348 c.c. four-stroke Hobart.

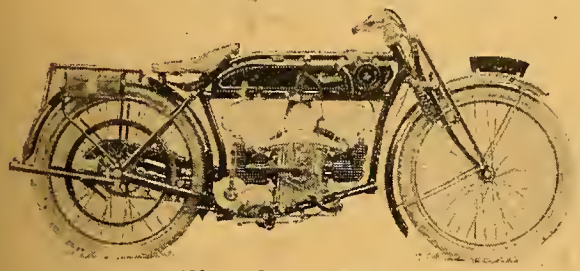


269 c.c. two-stroke Clyno.

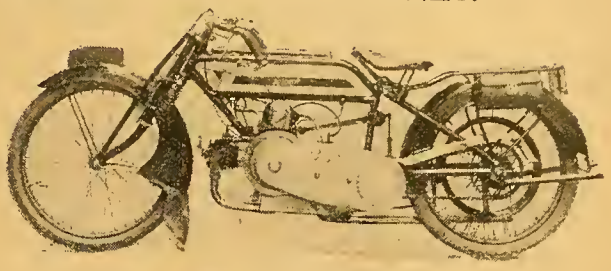


348 c.c. two-stroke Connaught.

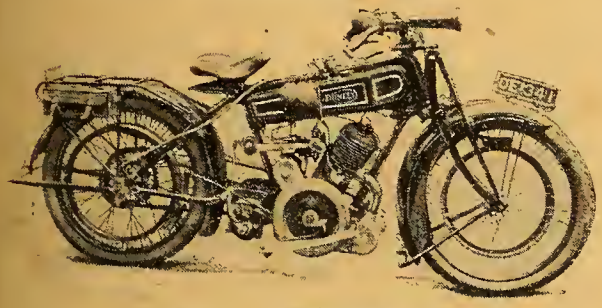
EXAMPLES OF FULL POWERED SOLO MACHINES.



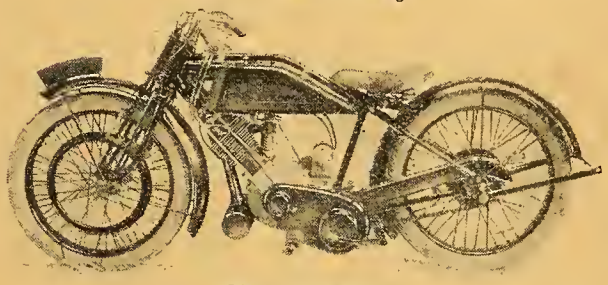
600 c.c. flat-twin Humber.



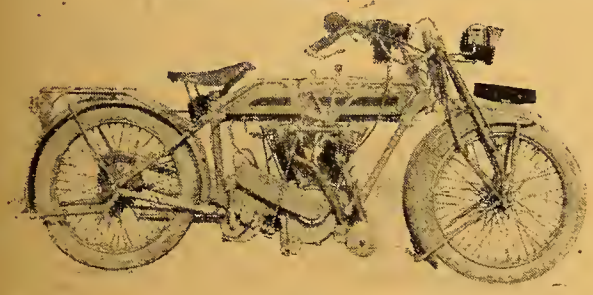
496 c.c. flat-twin Brough.



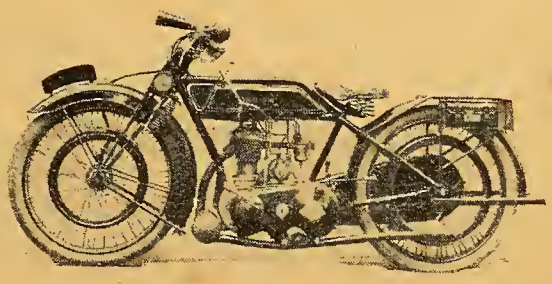
499 c.c. two-stroke Dunelt.



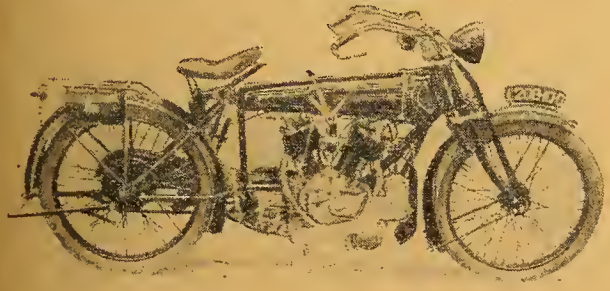
555 c.c. P. & M.



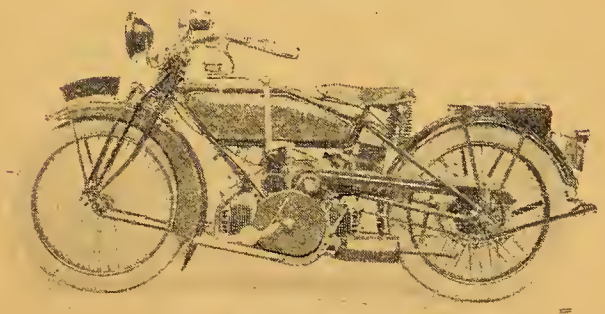
993 c.c. V-twin Matchless.



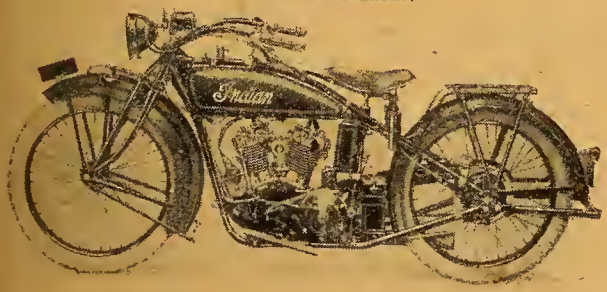
499 c.c. Sunbeam.



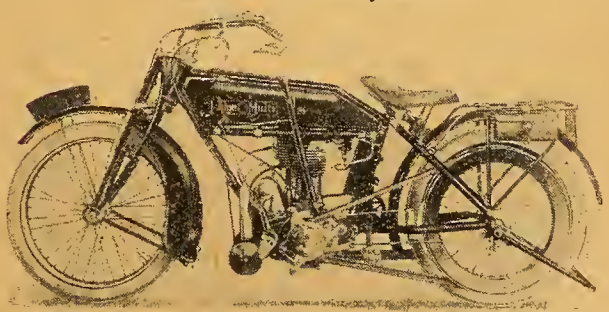
749 c.c. V-twin Bradbury.



584 c.c. flat-twin Harley-Davidson



1234 c.c. Indian Chief.



499 c.c. Rudge Multi.

AT THE CAR SHOW.

A Motor Cyclist's Impressions. Everyman's Motor Car Still Awaited.

ACCORDING to the pundits who fill the "motor notes" of the daily papers, and even according to some of the more disgruntled members of the motor cycle industry, the day of the small, cheap runabout car for everybody is at hand.

The present exhibition at the White City and Olympia does not bear out the impression which has been so sedulously cultivated in many quarters. True, there are small four-wheelers to be seen in both buildings, but there are only one or two likely to appeal mechanically to the experienced motor cyclist, while on the financial score the choice is equally limited.

Interest in Low Prices.

At the same time the dense crowds which assemble around some of the very small and low-priced vehicles indicate a strong interest in the economy type of machine, and tend to show that there is a potential market for sound runabouts. It seems doubtful, however, from the enquiries addressed to the salesmen, if the majority of those interested have ever previously possessed a motor vehicle; the general tendency seemed to be to judge a machine on price, colour scheme, and whether the body is a nice fit. With most people at the Car Show, from Rolls buyers downwards, it appears to be the thing to choose the car as one buys shoes, by "trying on," as it were.

This method of selection strikes the motor cyclist as rather amusing, while the young Apollos in spats and faultless soft collars that never wrinkle, and who simply exude salesmanship "courses," are in many cases not too anxious to discuss technicalities; in this they are aided by a becoming modesty on the part of many small car firms with regard to displaying a chassis, naked and ashamed, to the public gaze.

Although it does not follow that bodywork hides a multitude of sins, the lack of a bare chassis does much to rouse the suspicion of a motor cyclist, who is usually of a practical and inquiring turn of mind.

Air Cooling.

Air-cooled engines of motor cycle type are to be seen on quite a number of vehicles, and in some cases chain transmission is adopted. The most prominent in what appears to be a disappearing rather than an incresing cycle car class are the Bleriot Whippet (Blackburne twin engine, three-speed and reverse, chain drive, £155), the Tamplin (J.A.P. engine, three-speed and reverse Sturmey gear, chain drive, £150), and the R.T.C. (J.A.P. engine, automatic variable pulley gear, belt drive, £160).

The phenomenally cheap Rover "8" at £180, the Belsize-Bradshaw (£235), the Lea-Francis ditto (£190), and the 90° twin-engined Stoneleigh (£185), Buckingham (£185), Princess (£245), B.S.A. (£230), and G.N. (£215) are all "cars" in the full sense of the term, albeit air (or oil) cooled. Undoubtedly the cycle car world has lost its brightest upholder and exponent by the apostasy of the G.N.; the abandonment of the chain transmission, the introduction of a water-cooled four-cylinder engine and the adoption of a "de-gingered" twin for the sake of quiet running, have been received with mixed feelings by many interested in the true, but still undefined, cycle car.

One of the most interesting machines at Olympia is without doubt the Trojan, a two-stroke four-seater at £175, from the Leyland factory. This somewhat curious vehicle has solid tyres which are rendered possible by a very supple springing. The engine is a side-by-side twin laying horizontally under the floorboards; it has a two-speed epicyclic gear upon an extension of the crankshaft, and drives to the solid back axle by a duplex chain. Compared with the best motor cycle practice the whole machine is crude and roughly finished, but if its road performance is successful it may have a following which, however, is unlikely to be recruited from the ranks of the motor cyclists.

Clean Continental Design.

Amongst the larger cars there is much to attract anyone interested in cleverly-designed and finely-constructed mechanism, but when the smooth, completely enclosed overhead valve units of some of the more modern (especially French and Italian) cars are compared with the complicated mass of pipes, bolts, studs, plugs and wires on, say, the Rolls-Royce, one cannot do other than wonder. At any rate, a motor cycle on Rolls lines, without a bonnet, would never do.

Some of the miniature French cars—Mathis or Benjamin, for example—have delightful little engines; just square boxes like petrol tins standing on the narrow side. Only the sparking plugs are exposed. It seems quite possible that these small, smooth engine units could be applied to motor cycle use. Would it be worth the extra complication of water cooling to have an engine that could be rubbed over in twenty seconds with an oily rag?

One miniature car, the Austin "7," was shown in chassis form, and it appeared particularly attractive—much more so, indeed, in that way than when fitted with the undignified bodywork which it is doomed to carry. The chassis is small in the extreme, and the control levers, rods, and fittings generally are reminiscent of the A.B.C. motor cycle; they are certainly on no bigger scale.

Too Much Expected.

Summing up, the 1923 Car Show seems to indicate that the true cycle car is moribund through over-development; even the tiny 700 c.c.-800 c.c. vehicles have to carry four-seater all-weather bodies, and it is a rare car owner who is content without an electric starter. Motor cyclists demand from their machines high road performance; the car world seems to place comfort and silent running first. With one or two exceptions the small and moderate priced vehicles at Olympia appear to be designed more for suburban shopping expeditions than for go-anywhere touring work which is usually demanded of big sidecars.

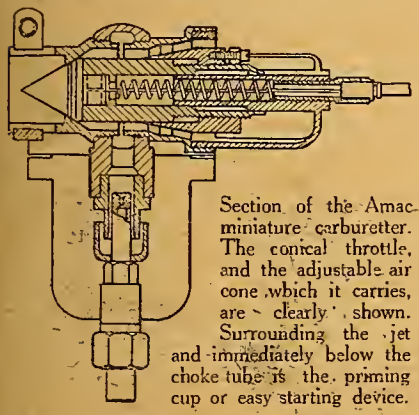
Full details of the exhibits at the Car Show will be given in to-morrow's issue of "The Autocar" . . . . Price 4d.

MINIATURE AMAC CARBURETTER.

New Instrument of Great Simplicity to meet the present Trend of Lightweight Design.

THE introduction of many ultra lightweight motor cycles has naturally caused a demand for carburetters to suit; and the firm of Amac, Ltd., is among those to tackle the problem.

The new instrument is of the single-lever type, and is so simple in action and in adjustment that it should prove particularly suitable for the type of vehicle for which it is intended. Apart from the float, which is of the usual Amac type, but on a smaller scale, there is only one moving part which takes the form of a combined throttle and air slug. Cast on the top of the float chamber is a protruding ring into which may be screwed suitable inlet and outlet pipes. This arrangement is particularly handy since by reversing the positions of the two pipes a left- or right-hand float chamber position can be obtained.



Section of the Amac miniature carburetter. The conical throttle, and the adjustable air cone which it carries, are clearly shown. Surrounding the jet and immediately below the choke tube is the priming cup or easy starting device.

Inside the outlet pipe is a restriction in the bore which is closed by a taper throttle valve, the body of which extends rearwards and is screwed externally at the back end; on this screw is mounted a second taper plug of larger diameter which forms the air valve, and this may be locked in any desired position by tightening a set screw.

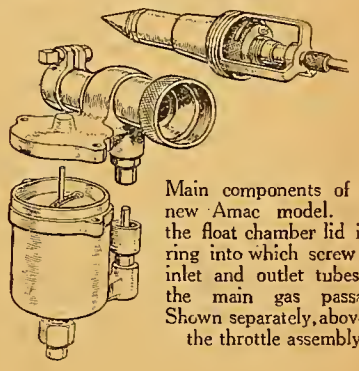
Mixture Proportions can be Varied.

The tapers are such that the carburetter, as supplied, will give approximately correct results, but by screwing the air valve along the body of the throttle valve any desired variation in proportion of air to petrol mixture may be obtained. The peculiar type of valve used, of course, provides an annular space for the air flow, and it is employed because the usual type of throttle is apt to permit of a certain amount of air leakage, a feature highly detrimental in the case of tiny engines.

Easy starting is a *sine qua non*, and provision is made to ensure this desirable feature in the latest Amac. This takes the form of a cup surrounding the jet which is placed in a normal position at the side of the float chamber; into this cup dips a choke tube which surrounds the jet. In normal circumstances the air passes direct up this choke tube, but for starting purposes, if the carburetter is flooded, the cup is filled with petrol which submerges the base of the choke tube. Thus a heavy proportion of petrol is bound to be sucked into the engine.

So simple is the construction of the carburetter that anyone might dismantle the instrument without fear of upsetting the adjustment.

Either top or bottom feed to the float chamber can be supplied, and the usual dimensions of the stub pipe are $\frac{3}{8}$in. and $\frac{5}{8}$in. internal diameter.



Main components of the new Amac model. On the float chamber lid is a ring into which screw the inlet and outlet tubes of the main gas passage. Shown separately, above is the throttle assembly.

REVERSE GEAR FOR MORGAN RUNABOUTS.

Two Ingenious Conversions Greatly Improving Ease of Handling.

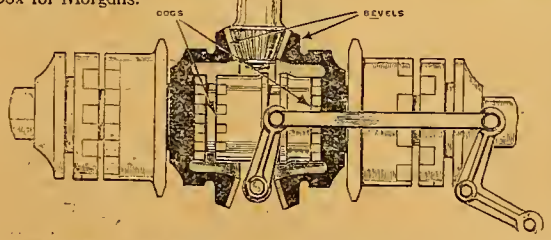
PERHAPS the only real criticism which can be urged against the general handiness of the Morgan three-wheeler is its lack of a reverse gear, which makes turning in narrow lanes or backing out of a garage somewhat laboursome.

One of our readers, however, Mr. L. Anderton, of 17, Abbey Grove, Bolton, Lancs, convinced that the application of a reverse gear to the Morgan transmission was by no means difficult, set about the task of effecting a conversion. Two methods were finally evolved, both of which have been tested and found satisfactory. One is a thoroughly mechanical method, which must have suggested itself to many Morgan owners, the other is very ingenious, but somewhat crude, yet it has the advantage of being easily fitted without removing the body or the existing gear box.

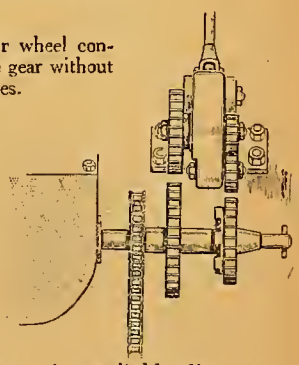
Reversing the Primary Reduction.

As is well known, the Morgan transmission consists of two separate chain drives of different ratio to the back wheel from a low-speed countershaft, which is driven by a shaft and bevel gear from the engine. It is obvious that if two crown wheels could be used, one on each side of the shaft bevel, and alternately locked to the countershaft as required, the latter would revolve either forward or backward, according to whichever crown wheel was in operation. This is the principle of the first conversion, and it necessitates a special bevel box, which is fitted in lieu of the existing Morgan box. A special countershaft, with a squared centre, runs through this box, and on it is mounted a double dog clutch and two crown wheels, meshing with the original bevel pinion. By means of a special lever either crown wheel may be dogged to the countershaft to obtain the desired forward or reverse motion.

(Left) Arrangement of crown wheels and dog clutches in Anderton's reversing bevel box for Morgans.



(Right) An alternative spur wheel conversion set giving a reverse gear without structural changes.



In the second conversion set the Morgan low gear sprocket has a toothed wheel mounted on its boss, and a new sliding dog is fitted, also compounded with a toothed wheel. Mounted on a chassis cross member, at a suitable distance, a swinging bracket is fitted, which carries a spur wheel, engaging with one of two others mounted on a common shaft.

To bring the reverse motion into operation the clutch is disengaged and the Morgan gear placed in neutral; the swinging bracket is then moved by means of a separate reverse lever until its single wheel meshes with the pinion on the low gear dog, and the remaining one of the pair on the common shaft engages with that on the low-gear sprocket. When the clutch is again engaged the sprocket is driven in the reverse direction from the pinion on the low-gear dog through the train on the rocking lever.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Heat for Self-Sealing Tubes.

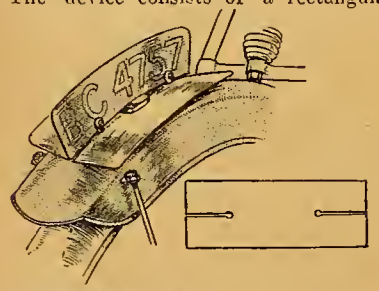
THE other day I was rather surprised to find my back tyre growing flabby, as it contained a Challenger self-sealing inner tube, which had previously defied a variety of metal objects which had been extracted without loss of pressure. However, there was no doubt on this occasion that the Challenger was not functioning perfectly, so out it came. On examination a piece of glass had inflicted a clean, straight gash perhaps ¾-in. long; the sealing process, always so promptly operative with reasonable punctures, had evidently commenced, but was not wholly effective. I tried the effect of ironing the gash with a domestic flat-iron just not hot enough to scorch the rubber, and found that when heated the mastic expanded enough to close the cut. Presumably, even this gash would have sealed itself if it had been sustained after a long run had heated the tube; but the triangular bit of glass was picked up on a very short expedition.—B.H.D.

Illuminating Front Number Plates.

THERE are no doubt many solo riders who find the lighting of their front number plate far from satisfactory, and in consequence have the fear of being pulled up by the police when night riding.

A reflector of the kind made by A. K. S., of Leicester, out of a piece of an old oil tin, and which requires no screws or rivets, will enable them to ride with their minds at ease.

The device consists of a rectangular



Reflected light is used in this idea to make the number plate visible at night.

piece of thin sheet iron cut with longitudinal slots at each end and enamelled white on the upper side; the slots are necessary to permit of bending to required shape.

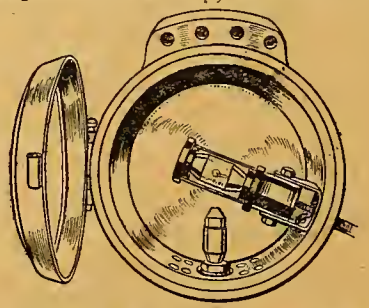
The two screws holding the number plate and the plate itself are removed; then the reflector is dropped over the lugs and the number plate and screws replaced. To hold the reflector firm and prevent rattle, a pad of rubber with a groove cut in it, into which the bottom edge of the number plate presses, may be fitted.

On a dark night away from all street lamps it was found that without the reflector the numbers could not be read beyond 6 yds.; with reflector they could be read at 20 yds.

It is best to experiment with a piece of white cardboard first to get correct size and bending, as number plates vary.

Home-made Auxiliary Head Lamp.

THOSE who are not wealthy enough to acquire a first-class dynamo outfit, and who, in consequence, remain faithful to acetylene for the sake of its cheapness and efficiency, find their worst



Ex-R.A.F. instrument lamp used as a "short distance" illuminant in an acetylene head lamp.

trouble is the need of having speedily to summon enough gas for five minutes' town riding, or for that last mile or so from home. The device of W. J. F., of Finsbury Park, to overcome this disadvantage is cheap and economical, but it must be understood that it is intended for use in lighted thoroughfares, where illumination of the ground is not necessary, and not for dark roads, except, of course, in case of emergency.

The head light consists of an R.A.F. surplus dashboard lamp of 2.5 volts 0.1 amp (costing about 8d.), swivelled on its bracket. As shown in the sketch, this bracket is riveted or screwed to the lamp body in such a manner that the bulb-holder is over the jet, and central in relation to the reflector, and able to be swivelled forward when it is desired to burn gas. To attain this object it may be necessary to shorten the bulb-holder, but this, of course, depends on the size of one's head lamp. Of the inner and outer portions of the bulb-holder, all but two diametrically opposed strips should be cut away so as to obtain as much light as possible.

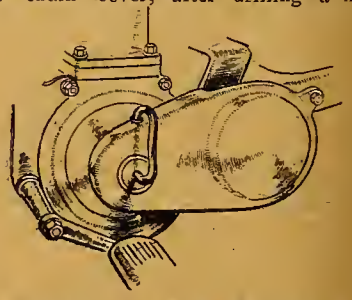
Current is best derived from a 3-volt dry battery of reputable make—a suitable size will cost 3s. to 4s. (and that only if one's researches for surplus stores should prove unsuccessful), and will last for months with intermittent use—carried on the steering head or rear stay in a tin or wooden case, which can easily be constructed for a few pence.

An additional useful fitment is to insulate the holder from the bracket by means of washers, and fix a small strip of metal on to the bracket in such a manner that contact is formed only when the lamp is in its working position. This is invaluable if, as in W. J. F.'s case, a rear lamp of the same elements is run in parallel from the same battery, the rear lamp can thus be used with the acetylene head lamp without necessitating removal of the front lamp.

Automatic Chain Lubrication.

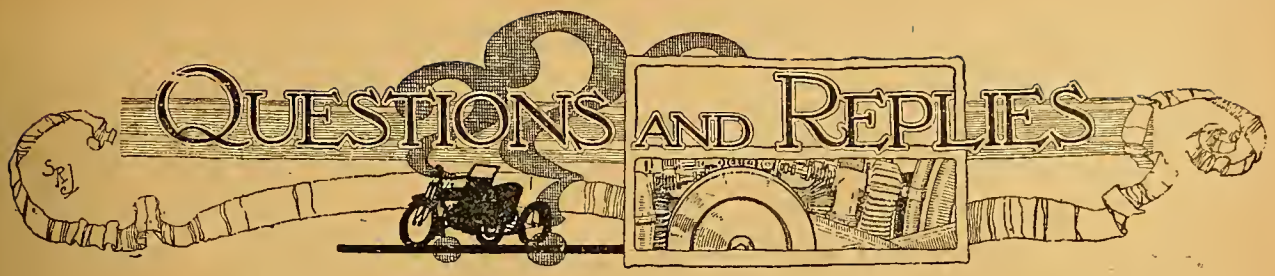
USERS of machines on which the primary chain does not run in an absolutely completely enclosed case frequently discover that the links are dry or show signs of rust, while the rear chain, often with much less protection, remains fairly well lubricated. The reason for this, of course, is that the high speed of the chain causes the oil to be flung off by centrifugal action.

This chain lubrication problem was overcome by W. H. B. of Southport, the owner of a countershaft Trinmph, by soldering a short length of ⅜in. copper pipe on to the centre of the name-plate on the chain cover, after drilling a hole



Oily vapour blown from the crank case release is led to the top of the primary chain sprocket.

through opposite the main-shaft centre. Suitably bent, the other end of the pipe enters the lubricating hole above the top run of the chain. Oil mist blown through the hollow engine-shaft is led directly to the chain, and the originator of the idea claims a doubled life for his chain.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

OILED PLUGS AND SPARK GAPS.

Owing to my 1921 770 c.c. twin oiling up the plugs to an annoying extent I have fitted a proprietary make of spark gap; will this cause any harm to the engine or the magneto?—P.J.L.C.

If the use of various makes of sparking plugs fails to remedy the trouble make sure that you are using suitable oil. Assuming of course that the oil supply to the crank case is not excessive it is quite possible that your trouble is due to faulty piston rings, allowing an excess of oil to reach the combustion chamber. Fitting spark gaps will not harm either the magneto or the engine, providing that they are not of abnormal width: they should be of considerable assistance in preventing stops due to oily plugs.

TUNING A LIGHTWEIGHT.

In tuning an Omega-Jap for speed I propose fitting an aluminium piston. Would I obtain any benefit also from the following alterations? (1) Fitting an extra valve in the exhaust cap. (2) Lightening the valve heads. (3) Fitting the carburetter against the cylinder instead of at the end of the ordinary induction pipe. (4) Larger choke tube in the B. and B. single-jet carburetter with a larger jet to suit.—H.P.B.

All the modifications which you suggest carrying out are worth trying if you wish to get the maximum speed from your machine, and if well done would no doubt have the desired result. It is impossible to say, however, either individually or collectively that the modifications suggested will attain the desired end. Tuning for speed is entirely a matter of continual experiment and test: even the most successful racing men have to proceed by a process of trial and error. This first suggestion is perhaps the least profitable one, and it should be left until everything else has been tried.

STARTING GEAR.

Will you kindly advise me on the following. My lightweight is fitted with a Sturmey-Archer hub gear and pedal starter, which starter I have never used; I am now desirous of fitting it up, but on close examination in order to ascertain the size of chain necessary, I find that the sprocket of the hub does not correspond with the wheel attached to the pedal. The hub wheel has 22 teeth, each being ½in. from centre to centre. The pedal wheel has 32 teeth, each being ⅝in. from centre to centre; thus I assume that the same chain will not work on both. Shall I have to get a new pedal wheel or a new hub chain wheel, or do you think that if I purchased a chain to suit the pedal wheel it would work—for the purpose of starting—on the hub wheel. I may say that I do not desire to spend much on it.—W.A.G.

You cannot very well alter the chain ring on the free-wheel of the three-speed hub gear, as these are standard. It will be necessary to use a chain wheel of the same pitch on the bottom bracket of the machine; the one now fitted is apparently ⅝in. pitch and what you need is one of ½in. pitch. There should be no difficulty in obtaining a suitable wheel, but you may have to get a new right-hand pedal to carry it. Order a wheel for ½in. pitch chain, and make sure that the teeth are the same thickness as those on the free-wheel of the hub (probably ⅛in.), and you will then have to get a chain to suit, *i.e.*, ½in. × ⅛in. or ½in. × 3/16in., as the case may be. Do not get a wheel with more than 40 teeth.

SLIGHT PRE-IGNITION.

Since fitting a sidecar to my 550 c.c. Triumph I notice a "tinkling" kind of noise at times (especially on slight hills or against the wind) which can be stopped by retarding the ignition about one third. I only notice this at round about 20 m.p.h.; over this speed I do not notice it. The timing is correct and everything appears to be tight, engine decarbonised two or three weeks ago and all bearings, etc., perfect. It is certainly not a knock. Is it "pinking"? (I never quite know what the latter really is). I find my outfit runs and picks up nicely on top gear at 10-12 m.p.h. on the level with ignition nearly fully (say ¾) retarded. Is this harmful or likely to cause overheating?—H.E.

The noise you describe is that form of pre-ignition knock which is generally described as "pinking," and it can usually be cured by retarding the spark, by altering the nature of the mixture admitted to the combustion chamber, or most effectively of all, by an admixture of benzole in the fuel. This will not cause overheating, neither will it be harmful to the engine provided it can be accomplished without any signs of obvious stress such as knocking or a marked "snatching" in the transmission. From the general behaviour of your engine it would appear advantageous to slightly retard the ignition timing.

Important Dates.

Fri., Nov. 3rd, to Sat., Nov. 11th—Olympia Car Show.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.

"THE AUTOCAR" THE COMPLETE JOURNAL.

Every phase of automobilism is embraced by "The Autocar," the sister journal of "The Motor Cycle."

Light, medium and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interest of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

SHOW REPORT NUMBER NOW ON SALE.

CONDENSATION ON INDUCTION PIPE.

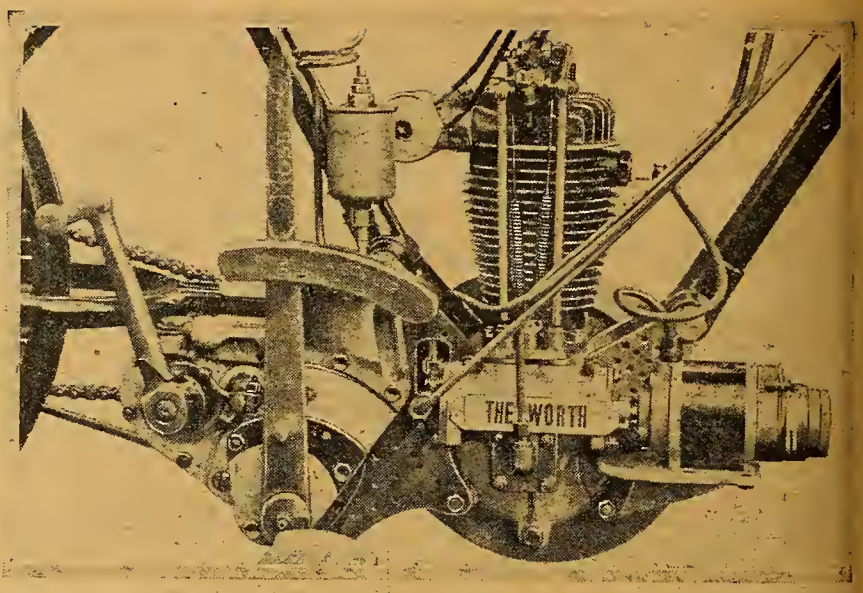
? My machine, a 1921 348 c.c. Douglas, seems to be very erratic in firing. It starts away quite well after flooding the carburetter, but after a few yards begins to miss. This lasts for a hundred yards or so, when it suddenly fires quite well on both cylinders and runs splendidly for a minute or so, and then starts to miss again. On stopping I find the induction pipe is extremely cold, and there is a lot of moisture (not petrol) round the pipe where the carburetter joins on. After standing for a short time the pipe gradually warms up and the machine will start quite normally till a few minutes later, when the pipe is freezing cold again and more moisture appears, which is presumably the warm atmosphere condensing on the cold pipe. Both cylinders are equally hot, so evidently it is not one cylinder only that is firing. I have tested both plugs, which give a good spark, and there is no leak in the induction pipe, either at cylinder joints or where the carburetter joins on. I have thoroughly cleaned the carburetter, and am satisfied that there is no stoppage in the passage from the tank, and the float chamber fills directly the plunger is pressed down. The valves seem quite all right, and so presumably is the timing, as this has never been interfered with. I may mention the machine was running perfectly last week, and the trouble has therefore come on quite suddenly.—E.S.B.

No doubt the recent cold weather accounts largely for the change in the running of your engine. The condensation on the induction pipe is due to the exposed position of the carburetter, which may have to be heated either by exhaust jacketing or by a warm air intake. Before proceeding further, wrap the induction pipe with asbestos string and insulation tape. Weak mixture will exaggerate the symptoms, so it would be advisable to fit a slightly larger jet.

PREVENTING BELT SLIP.

? Being the possessor of a 1921 chain-cum-belt driven Triumph, can you give me the details of the system employed by Miss Cottle, the North Wales competition rider, to deliver "belt grip" to the pulley whilst riding, and if it is applicable to my machine? Reference has been made to the device on more than one occasion.—C.G.

There is very little to add to the references to the belt slip preventing arrangement which you mention. The device is merely an ordinary screw-down grease gun with a pipe leading to the back of the countershaft pulley. On the end of the pipe is an acetylene tubing "Y" piece. The gun is filled with any of the well-known belt grip preparations which are on the market, and as required a little is forced through on to the pulley flanges, where it comes into contact with the sides of the belt.



FOUR VALVE 250 c.c. ENGINE. Fully described in our isssue of October 26th, the Worth engine attained a speed of over 50 m.p.h. on its initial run. Incidentally its name was derived from the motto of its town of origin (Keighley)—"By Worth."

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stomp.

"C.L.B." (Bristol).—532 c.c. Scott: petrol consumption solo and sidecar.

"D.W." (Bournemouth).—481 c.c. and 532 c.c. Scotts with sidecar: fuel consumption, long non-stop journeys, hill-climbing.

"J.W." (Belfast).—481 c.c. Scott: tuning for speed, care of chains and gear, general hints.

"E.M.C." (Leeds).—225 c.c. Royal Enfield, 398 A.B.C., 349 c.c. A.J.S., model B.I.: maintenance of tune.

"T.S.A." (Leicester).—349 c.c. A.J.S.: tuning for speed.

"H.W." (Peterborough).—596 c.c. Indian Scout, solo and sidecar: ease of starting, brakes.

SPARKLETS.

Lapping at 100 m.p.h.

H. Le Vack, who broke a world's record in class "E" by covering five miles at 100.29 m.p.h., was using an M.L. magneto on his 976 c.c. Zenith.

Cheaper Lubricants.

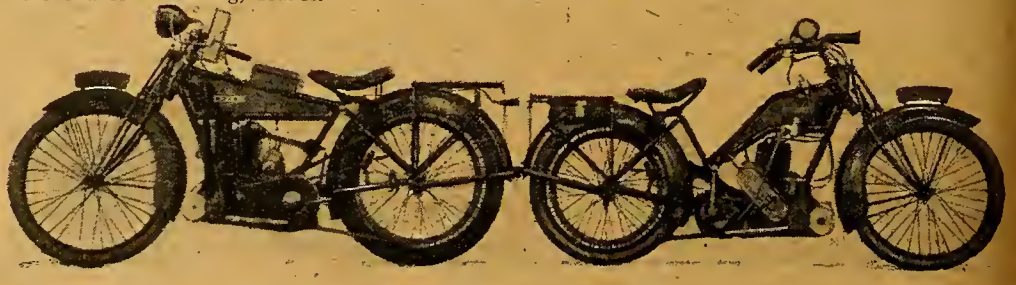
Prices' Company, Ltd., has made reductions in the prices of motor lubricants; the revised rates came into force on the 3rd inst. Those interested may obtain price lists by applying to Prices' Company, Ltd., Battersea, London, S.W.11.

Overseas Successes.

A brilliant victory was gained by the Douglas team in the 176 mile race for the Harley-Davidson Shield, which took place recently in South Africa. A further success was that of G. Shepparson, who, riding a 348 c.c. Douglas, won the three and five mile events at the Weston Motor Cycle Races, Ontario, Canada.

Polishing Aluminium.

Owing to its comparative softness aluminium is easily abraded by coarse polishing materials; no criticism in this respect can be directed against Alupol (Metalastene Co., Poulton-le-Fylde: price 1s. 3d. per tube), which we have found to be very effective for polishing this metal.



Unless compared side by side the size of the various models cannot easily be judged. This illustration depicts two Cedos models—a 26in. wheel sports model and a 24in. wheel lady's mount. The difference in saddle height is appreciable.

THE BINKS CARBURETTORS ARE the most flexible and economical in the world

THE BINKS 3-JET CARBURETTOR is both an investment and a pleasure.

IT WILL REDUCE YOUR PETROL BILL BY AT LEAST ONE-THIRD.

AT the same time it will impart a marvellous flexibility to your machine—make it docile in traffic and give ample power for touring in hilly country, and allow greater speed on the level.

A Real Extra Air Valve is incorporated to allow you to coast downhill on pure air and use your engine as a brake.

FIT A BINKS TO YOUR MACHINE & SAVE MONEY

Thousands of gentlemen have already done so, and are now delighted owners.

Lists sent gratis on application.

Price on Approval

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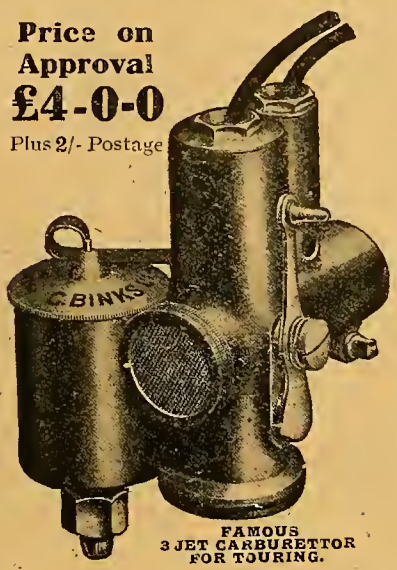
Plus 2/- Postage



FAMOUS 3 JET CARBURETTOR FOR TOURING.

TWO STROKE MACHINE OBTAINS ANOTHER BROOKLANDS RECORD!

Mr. JUDD ON HIS VELOCETTE breaks all previous records.

Standing Kilometre 58-83 M.P.H.
Standing Mile 62-91 M.P.H.

The BINKS

incorporates the famous 3-JET DAMPING SYSTEM, which is a proved success.

Three-jet give enormous power, but when you want to run slowly the big power-giving jet is damped out of action and cannot waste petrol.
The pilot jets give marvellous flexibility because they can be tuned up for slow running quite irrespective of power.

C. BINKS (1920), LIMITED, ECCLES, MANCHESTER.

THE MACHINE THAT HAS **MADE HISTORY.** SEND FOR BOOKLET WHICH TELLS YOU ALL ABOUT IT.

£250

would not procure for you a more RELIABLE, COMFORTABLE, DURABLE, QUIET, SPEEDY 2-STROKE in the 250 c.c. class than the machine illustrated below - - - **Prices from 29 Guineas.**

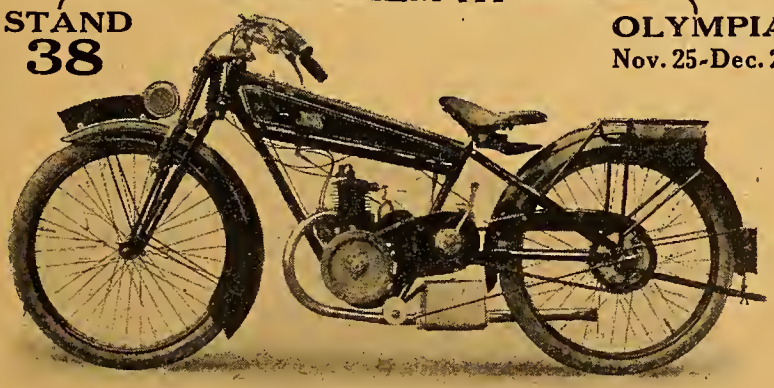
SEE THEM AT

STAND 38 **OLYMPIA Nov. 25-Dec. 2.**

NOT AN ASSEMBLED MACHINE.

DESIGNED AND MADE THROUGHOUT AT OUR WORKS AT GLOUCESTER

Nothing to equal it at anywhere near the price.



A CERTAIN COMPETITION WINNER

The J.E.S. has set up **8 RECORDS** in 1922.

Nothing to beat it at any price.

2½ h.p. TWO-STROKE J.E.S.

ENGINE, 247 c.c. J.E.S., roller bearings to big end. Automatic Lubrication. 4-SPEED J.E.S. Gear Box. Ball Bearings throughout. Clutch K.S. ALL-CHAIN Drive. LARGE internal expanding Brake. SLOPING Frame of rigid construction. FULL Valanced Mudguards. EXTRA Large Aluminium Silencer. BEAUTIFULLY FINISHED. Truly a magnificent machine.

J.E.S. MOTOR CO. (GLOUCESTER) LTD. (Established 1909). **57 Guineas.**

WORLD'S RECORD
AT BROOKLANDS

300 Miles at 64·02 m.p.h. without Changing Tyres

OCT. 11th, R. E. DICKER, on 6 h.p. Bradbury 750 c.c. Class D, fitted with Bates Tyres, obtained following records:

200 miles = 2 h. 55 m. 58·99 sec. = **68·19 m.p.h.**
300 miles = 4 h. 41 m. 23·87 sec. = **64·02 m.p.h.**
3 hours = 204 miles 1,417 yards = **68·26 m.p.h.**
4 hours = 271 miles 1,350 yards = **67·94 m.p.h.**

These are World's Records, the tyres being unchanged throughout the whole 300 miles.

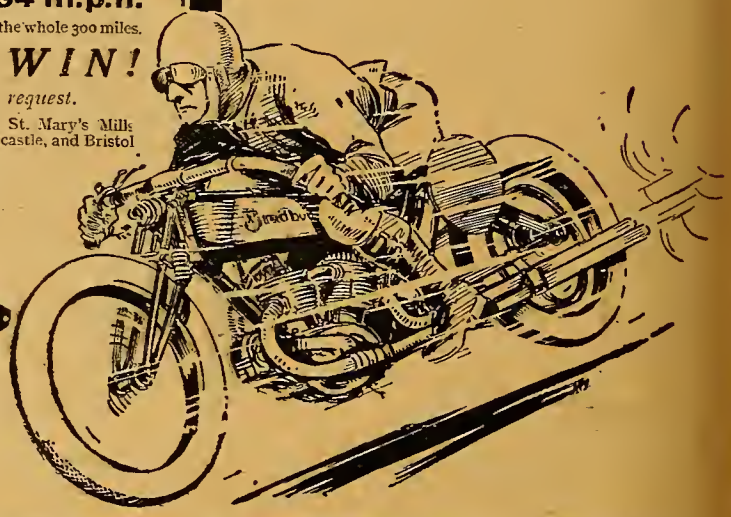
RIDE BATES TO WIN!

Interesting Motor Cyclists' Booklet free on request.

W. & A. BATES, LTD., Rubber Manufacturers since 1863. St. Mary's Mills Leicester. Depots in London, Manchester, Glasgow, Belfast, Newcastle, and Bristol

Subject to A.C.U. Confirmation

Bates REG. TRADE MARK
MOTOR CYCLE TYRES, BELTS & ACCESSORIES
Season 1922



The Best Value in the Twin Class

100 GUINEAS

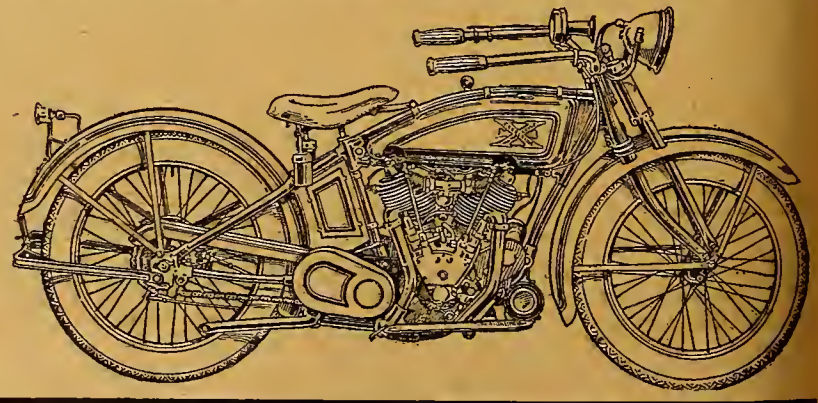
with complete electric equipment (separate generator)

STANDARD COMBINATION WITH ELECTRIC EQUIPMENT 125 Gns.

AMERICAN "X"

EXAMINE IT ON
STAND 123
OLYMPIA.

Melchior, Armstrong & Dessau (London), Ltd.,
15, NEWMAN STREET, LONDON, W.1.
'Grams - - - "Melarm, London."
'Phone - - - - - Museum 8190.



Has three immense advantages:—

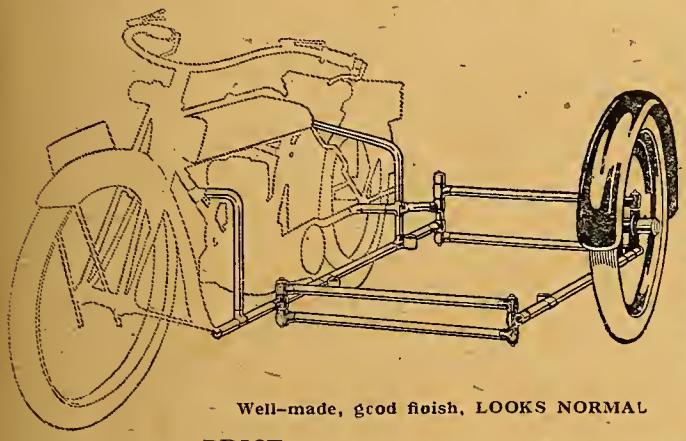
1. Will pass through any ordinary doorway of about 30 inches.
2. Two bodies, if desired, Touring and Commercial, quickly interchangeable.
3. Easy access to both sides, engine and transmission.

The "Dorway" SIDECAR with patent folding chassis

Can be fitted to any make motor cycle.

Can be fitted with any type of Touring or Commercial body—or with BOTH.

Can be supplied, if desired, as a chassis only.

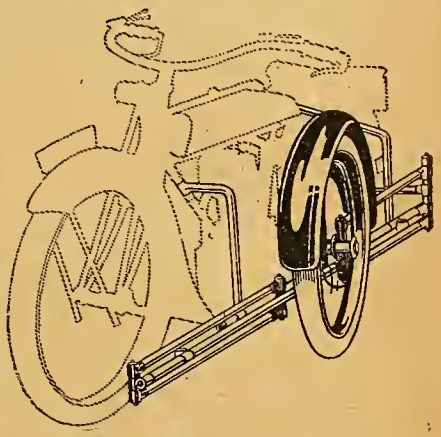


Well-made, good finish, LOOKS NORMAL

Locked in open position by sub-frame of body.

Lift off body and chassis is ready for folding.

When open looks like any other sidecar, and is as rigid as any other sidecar. Chassis folds — body does not fold—it lifts off



PRICE—

Chassis (less tyre) - - - - £16
With high-class coachbuilt body - £28

OLYMPIA, STAND 113

Address—DORWAY SIDECARS,
345, BELL BARN ROAD,
BIRMINGHAM.

1923 LEVIS MODELS

TWO STROKE

Are now available at the following surprising New Prices:—

"POPULAR," 211 c.c., with sloping top frame, single geared	**£38**	(Delivery from stock)
MODEL "S," 211 c.c., with 2-speed gear, clutch and kick-starter	**£48**	(Delivery from stock)
MODEL "T," 211 c.c., with sloping top frame, 2-speed clutch and kick-starter ...	**£49**	(Immediate Delivery)
MODEL "H," 247 c.c., with sloping top frame, all-chain drive, internal expanding brakes, 3-speed gear with clutch and kick-starter	**£65**	(Delivery 4 weeks)

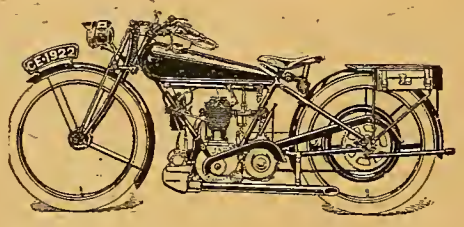
Don't leave your order until too late—these machines will be difficult to get next season!

BUTTERFIELDS, Ltd.,
Levis Works,
Stechford, BIRMINGHAM.

Telegrams: "Butterfields, Stechford." Telephone Stechford 38.

Ride a

Coventry-Eagle



because——

Not only will it give you better service, but it will give you that ease of mind which can only come from complete confidence in every detail of its make-up.

There are 5 models to choose from, ranging from a 1¾ h.p. Ultra Lightweight giving upwards of 160 m.p.g. up to an 8 h.p. Big Twin suitable for the "Speedman" covetous of Golds and Special Awards.

1¾ h.p.	Ultra Lightweight, Single Speed	29 Gns.
	Countershaft Two Speed..	32 Gns.
2¼ h.p.	Blackburne, Belt Drive, Two Speed	£59
2¾ h.p.	Blackurne, Chain Drive, Two Speed	£69
2¾ h.p.	J.A.P., Belt Drive, Two Speed	£59
3 h.p.	J.A.P., All-Chain Drive, Three Speed..	£72
4½ h.p.	J.A.P., All-Chain Drive Two-Speed Combination	£110
8 h.p.	J.A.P. Super Sports, Three Speed, All-Chain Drive, Solo	£125
	Combination	£145

Write for Catalogue

COVENTRY EAGLE CYCLE & MOTOR CO., COVENTRY.

ALECTO

—*The Two-Stroke of 1923.*

An important feature of the "ALECTO" single-cylinder two-stroke motor cycle is its wonderful power capacity.

Simplicity, balance and stability of design, coupled with accurate manufacture and thoroughly dependable material, make the "ALECTO" engine what it is.

The general specification of the "ALECTO" Motor Cycle is a thoroughly sound one, and of proved reliability.

Visit Stand No. 25, Motor Cycle Show, Olympia.

The Whitmee Engineering Co., Ltd., "ALECTO" Works, Grove Road, Balham, London, S.W.12.

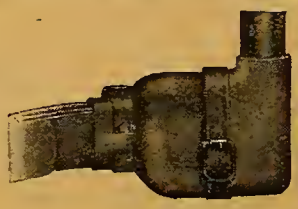
'Phone: Streatham 3035. 'Grams: Metrical, Bal. London.

SIGN OF OLYMPIA GALLERY

BELDAM TYRES

Stand 521

SUPREMACY



Something New!

Smooth riding depends on whether the shackles of your sidecar perform their intended functions. Dickins' Shackle Covers ensure that they do, in forming a perfect shield for shackles, filled with grease they maintain constant lubrication and keep out dirt, rattling and joint evils are banished, resulting in comfortable and smooth riding.

Price 5/- Per Pair. Post Free.

W. DICKINS & CO., LTD., Cross Cheaping, COVENTRY.

Tel. 176.

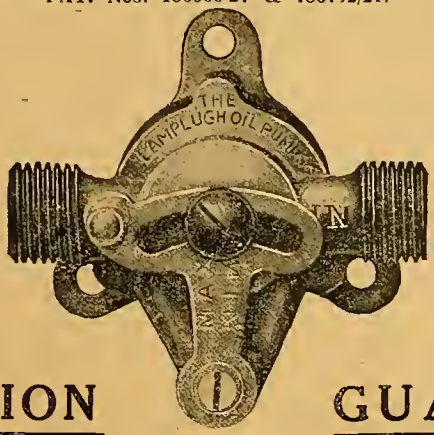
RELIABLE AUTOMATIC LUBRICATION AT LAST!

SEE THAT YOUR NEW MOUNT IS FITTED WITH

THE LAMPLUGH AUTOMATIC OIL PUMP

PAT. Nos. 186000/21 & 186192/21.

POSITIVE SUCTION



POWERFUL PRESSURE

DOES NOT RELY ON GRAVITY. DOES NOT RELY ON GRAVITY

SATISFACTION GUARANTEED

FULL SIZE.

EASILY FITTED TO YOUR PRESENT MACHINE.

PRICE COMPLETE WITH T PIECE TO FEED THROUGH EXISTING SEMI-AUTOMATIC SIGHT **16/-** POST FREE.

S. A. LAMPLUGH, LTD. KINGS ROAD, TYSELEY, BIRMINGHAM.

LONDON OFFICE: Mr. G. H. SMITH, 12, MORTIMER ST., W.1.

STAND 306 GALLERY OLYMPIA MOTOR CYCLE SHOW.

2d. 3d. & 4d.

CLUB BLACK ENAMEL
Special Hard Drying ... Jars 1½d. & 1/6

CLUB COLOURED ENAMEL.

Dries in 24 hours. Does not crack or chip.	Motor Cycle size Tins		1/9
	Made in: Large Tins		3/
	Royal Mail Red.	Black.	
	Elswick Green.	White.	
	Emerald Green.	Cream.	
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CLUB TRANSPARENT ENAMEL FINISH. 1/6

ANY ARTICLE SENT. POST FREE IF LOCALLY UNOBTAINABLE.

PLEASE SEND NAME OF AGENT.

6d. & 1/9. 1 lb. Tin.

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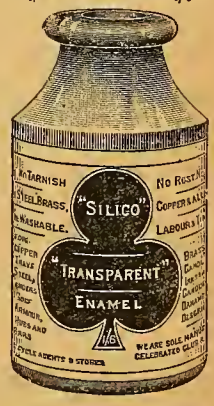
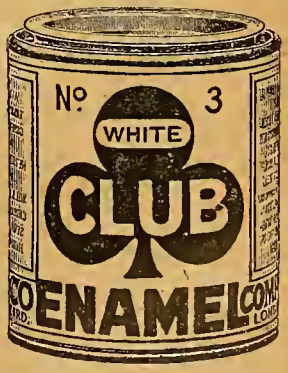


CLUB ENGINE BLACK.
For Radiators Exhaust Pipes, etc. Tins 1/- & 1/8

7½d.

FOR ALL ENGINE JOINTS. 1/- & 3/9.

IN ALL COLOURS. See Above 1/9 & 3/-



SOLE MANUFACTURERS:

SILICO ENAMEL CO.——STRATFORD, LONDON.

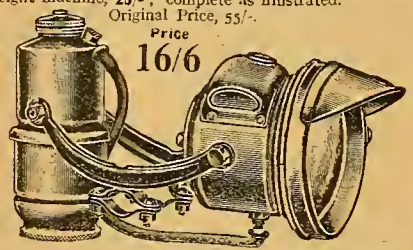
In answering these advertisements it is desirable to mention "The Motor Cycle."

BANCROFTIAN CO.'S GREAT BARGAINS.

TYRES (clearance but not W.D.).—Hutchinson 26×2⅜ heavy T.T., **22/6**; Passenger 26×2½ for 2¼, **32/6**; 650×65 steel stud, car type, **52/-**; 700×75, to fit 650×65 rim, small car, extra heavy, **35/-**; Palmer 26×2 light, **17/6**; 28×3 cord heavy, unblemished, **45/-**; 26×2¼ cord heavy, **32/6**; Clincher de Luxe heavy 26×2¼, **27/6**; 26×2 Junior de Luxe, **17/6**; 26×2¼ **17/6** 26×1¾, **16/6**. Postage 1/3.

TUBES.—24×2 and 2¼, **4/6**; 26×2¼ and 2½, **4/11**; 2⅜, **5/6**; 28×3 and 700×80, **6/6**. Postage 9d.

Great Purchase of Genuine "Bobjon" Lamps.
All new and perfect.
Nickel-plated on brass, black and plated, and all black. Large size, 5½in. front, with powerful back lens, large generator, sufficient for two lamps, suitable for a heavy-weight machine, **25/-**; complete as illustrated.
Original Price, 55/-.



Also smaller set, British made," suitable for light weights similar to above, 4½in. front. Plated on brass or all black, **16/6**. Original price 42/-. When cleared can never be repeated at near the price. Postage 1/6.
Special quotation for quantities.

GOGGLES.—Fitted with genuine Triplex Glass, 15/- model to clear, **8/9**. Limited quantity. Postage 9d.

WATERPROOF SUIT.—Double-breasted coat and seatless trousers, less than pre-war prices. Original price £4 10s., **£2 2s.** Postage 1/6.

TAN-SADS.—A few with back seat to clear, **28/6**. Original price 57/-. Carriage 3/6.

HORNS.—Special purchase of genuine "Clayrite" electric motor cycle horns, 4 and 6 volt, **29/6**, usual price £3 2s. 6d. Reliable electric, up to 4 volts only, **15/6**, usual 29/6. All new and perfect. Post 1/6.

We can supply everything for the Motor Cyclist at Competitive Prices

BANCROFTIAN CO. 78, Bishopsgate, London, E.C.2.
Grams: "Chaikel, London." Phone: London Wall 9897

PHILIPSON'S

PATENT AUTOMATIC GOVERNOR

PULLEY

AND GEAR COMBINED FOR

2 and 4 STROKE ENGINES

During the past few weeks the following machines have been fitted with PHILIPSON Pulley.

Triumph	Premier	Singer
Rover	New Hudson	Douglas
Norton	Rex	McKenzie
Ariel	J.A.P.	Villiers Mark IV.
B.L.A.	James	O.K.
Rudge	Precision	Radeo. Dalm

and several other 2 and 4 stroke machines

What is your make? Write us for Illustrated Booklet.

Reduced Price **£6-6-0** Baby Philipson **£4-4-0**

Carriage paid.

PHILIPSON & CO. Ltd.
Astley Bridge, BOLTON, Lancs
(Established over 50 years.)
'Phone: 147 Eagley. 'Grams: "Safety, Bolton."

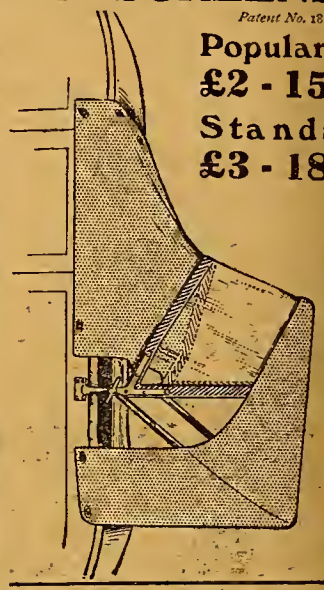
SANDUM

V SCREENS.

Patent No. 181,289.

Popular (Full size) **£2-15-0**

Standard £3-18-0



Write for Particulars of Combination Hoodscreen. As illustrated **£4-10-0**

SANDHAM Engineering Co., Ltd.
Showrooms: 333, Gray's Inn Road, W.C.1.
'Phone: Mus. 3427.
Factories: 162 to 165, Pentonville Road, N.

NEW IMPERIAL : :
RUDGE MULTI : :
DOUGLAS : A. J. S.
ENFIELD : : B.S.A.
RALEIGH : : LEVIS
TRIUMPH : : : :
QUADRANT : : :
MATCHLESS : : :
CONNAUGHT : : :
ROVER "8" : : :

also for

MORGAN CYCLE CARS
(LONDON SERVICE DEPOT).

Our representatives will be in attendance on Messrs. The Morgan Motor Co.'s Stand No. 139, or will be pleased to attend any other stand by appointment.

HOMAC'S
MOTOR AGENTS

(H. W. Holmes & S. A. McCarthy.)

243, Lower Clapton Road,
Telephone: Dalston 2408. **LONDON, E.5.**

"STERLING"

PAT. 23047.

LEG SHIELDS.

The original and only quick detachable Metal Shields.
RIDE IN COMFORT.

To fit A.J.S., ENFIELD, B.S.A., TRIUMPH, LIGHTWEIGHT RALEIGH, DOUGLAS, INDIAN, HARLEYS, Etc.

For the Man who requires the Best.

For superiority, style and protection, hundreds of riders have given their testimonials of Sterling Shields.

Stocked by all leading agents,
Prices from - - - - - 21/ to 36/-.

Don't hesitate, but write for particulars of the best and most popular leg shield.

SPECIAL COLOURS TO SUIT.

THE HIGHGATE MOTOR CO.,
6, Highgate Road, Birmingham.

Are you interested in

LIGHT CARS?

Readers of "The Motor Cycle" who are considering the purchase of a small car will find all the information they desire in the pages of

The Autocar

Every Friday. FOURPENCE

"THE AUTOCAR" deals with *every* phase of motoring, and very fully covers the small car movement.

All the known makes of light cars are advertised in "THE AUTOCAR."

Bargains in second-hand light cars are more likely to be secured through "THE AUTOCAR" than any other medium

Because—

More second-hand light cars are offered for sale in "THE AUTOCAR" than in any other motor journal.

Published by
Iliffe & Sons Ltd., Dorset House, Tudor St. London. E.C.4.

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PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To insure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements the mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt. The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, ½%. All deposit letters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1920, perfect condition, carefully used, town and dynamo lighting set, new tyre, and accessories; £70; seen any day before 4.30.—Bucknall, Mayfield Rd., Oxford. [9510

THE SIGN OF GOOD SERVICE

A LILLIPUTIAN—
REGARDED FROM THE ANGLE OF COST, WEIGHT and UPKEEP

But a very LEVIATHAN—
REGARDED FROM THE ANGLE OF PERFORMANCE

IS THE

LEVIS
TWO STROKE

Come and see the 1923

LEVIS MODELS, or write for details of this incomparable lightweight.

"POPULAR," 211 c.c., with sloping top frame, single geared - - - **£38**

MODEL "S," 211 c.c., with 2-speed gear clutch and kick starter - - **£48**

MODEL "T," 211 c.c., with sloping top frame, 2-speed clutch and kick starter - - - - - - - **£49**

MODEL "H," 247 c.c., with sloping top frame, all chain drive, internal expanding brakes, 3-speed gear, with clutch and kick-starter **£65**

CARRIAGE PAID. TRADE SUPPLIED.

GODFREY'S Ltd.,
The London Agents,
can give immediate delivery of the "Popular" Models and Model "T" Machines, and earliest delivery of the 247 c.c. Model "H."

Write for a copy of GODFREY'S Special List of 1922 New (shop-soiled) Models. Our stock of these exceptional end of season Bargains will very soon be exhausted, so don't delay.

EXCHANGES. EASY TERMS.

IF you are thinking of a LIGHT CAR,

Get in touch with GODFREYS—their experience is entirely at your service, and they will be pleased to assist you in making a choice.

GODFREY'S LTD.

208, GT. PORTLAND STREET, LONDON, W.1.

'Phone: LANGHAM 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., late 1921, dynamo, speedometer, tax, perfect; £65.—1, Alexandra Rd., Kingston. [9754

1921 A.B.C., electric lighting, less dynamo, in first-class condition; £65.—R. Linklater, Clapham, Lancaster. [9515

Acme.

ACME 1920 8h.p. J.A.P., Wattalite dynamo, beautiful outfit; for quick sale £90; ride away, perfect condition.—220, High St., Brentford. [9488

A.E.L.

1922 A.E.L.-J.A.P., brand new, 2¾h.p., 2-speed, clutch, kick-start; good reason for selling; sacrifice, £46/10.—158, Venner Rd., Sydenham. [9847

AT Edwards.—1922 2¾h.p. A.E.L., J.A.P engine, Burman 3-speed gear box, kick-starter and clutch, brand new, unregistered; 37 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1147

A.J.S.

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries. —Clifford Motories, Eastwood, Notts. [9957

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8384

1921 (October) A.J.S. Touring Model, Tan-Sad, lamps; £70.—Edwards, The Bakery, Hayes End. [8890

1922 A.J.S. Combination, shop-soiled, dynamo lighting; £170.—Cross, Agent, Rotherham. [9571

2¾h.p. 1922 A.J.S. Touring Model, new but slightly shop-soiltd; £76.—Cross. Agent, Rotherham. [9572

A.J.S. 2¾h.p. 1922, Model B1, as new; £75.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [9965

A.J.S. 2¾h.p. Standard Sports, brand new, cannot take delivery; nearest offer £85.—Chalmers, 28, Fort St., Ayr. [9392

A.J.S. 1922, June, 2¾h.p., model B.1, fully equipped, unscratched; £63.—107, Bannercross Rd., Sheffield. [9551

1922 A.J.S. 2¾h.p., B., 1,000 miles, Lucas lamp, horn, Cowey, spares, special saddle; £70.—Blewett, Bank, Uckfield. [9860

A.J.S. 6h.p., new sidecar, Cowey, all spares, perfect condition; first offer over £50.—Allan, 14, Dundas Rd., Hollydale Rd., Peckham. [8664

1922 2¾h.p. B1 A.J.S., splendid condition, licensed, tools, spares; £60.—H. Sawtell, Yeovil Rd., Sherborne, Dorset. [9661

2¾h.p. A.J.S., B.1, 1922, fully equipped, perfect condition, insurance, spares, etc.; £68.—Central Buildings, Stockton, Durham. [9356

1922 A.J.S. 2¾h.p., new July last, small mileage, fast machine, all on; £65; any trial.—Burgess, 3, Rawlinson St., Barrow-in-Furness. [9770

A.J.S. Combination, 1916, fully equipped, electric lighting, good condition throughout; £65.—Milwards Garage, 45A, West Hill, S.W.18. [8539

A.J.S. 6h.p. Combination, hood, screen, luggage grid, lighting, spare wheel, etc., perfect condition, any trial; offers.—46, Liverpool St., Salford. [9432

F.O.C.H. Invite Inspection. A.J.S.'s and other makes far below any anticipated price reduction.—5, Heath St., Hampstead (near Tube). [3862

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

1922 A.J.S. Combination, 8h.p., new in June, mileage negligible, all accessories; what offers?—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [1017

A.J.S. Combination, 1920, hood, screen, spare wheel, lamps, speedometer, horn, engine and gear box overhauled makers.—29, Park Crescent, Enfield, N. [9419

2¾h.p. A.J.S., 6 months old, the personal property of W. Brandish; do guaranteed before purchase 68 m.p.h.; best offer over £60.—W. Brandish and Sons, Coventry. [9868

A.J.S., brand new 1922, 2¾h.p. models, touring, semi-sports, and stripped sports, list £85; our price £70; immediate delivery.—Will Chapman's Garage, Belgrave Rd., Leicester. [9068

A.J.S. 1921 7h.p. Combination, Lucas dynamo lighting, electric horn, hood, screen, spare wheel, etc., excellent condition; £110.—P. J. Evans, John Bright St., Birmingham. [9581

SOUTHPORT.—1922 (Aug.) stripped Sports A.J.S., almost unused, Lucas accessories, speedometer, irreproachable; gift, 69 guineas. Exchanges.—Kents, 417, Lord St., Southport. [9870

A.J.S. Combination, 1920, in splendid condition and just overhauled by makers, lamps, discs, speedometer, horn, and a number of spares; £95.—J.A.G., 174a, Lavender Hill, London, S.W. [9627

MOTOR CYCLES FOR SALE.

A.J.S.

1920 6h.p. A.J.S., dynamo lighting, with hood, screen, electric horn, mechanical oil pump, speedometer and spares, perfect condition and tax paid; £95.—Kays, 8-10, Bond St., Ealing. [9245

7 h.p., May, 1921, A.J.S. combination, want to sell this week, complete with Lucas lamp, horn, hood, screen, speedometer, Tan-Sad, and every extra, in splendid condition; bargain, £120.—Timberlake's Garage, Wigan. Tel.: 512-513. [9438

PRACTICALLY new 1921 A.J.S. Combination, lavishly equipped, with electric lighting set, spare wheel, and envelope, hood, screen, speedometer, very small mileage; £95.—Hillier, 127, St. Mark's Rd., North Kensington. 7 or 7A Bus. [9880

1922 A.J.S. 7h.p. Combination, like new throughout, mileage 375, Lucas Magdyno lighting, electric horn, hood, side screen, spare wheel, Bonniksen speedometer, fitted tool box, spare chains, valves, etc.; genuine bargain, £150.—Urquhart, 166, Ashley Gardens, S.W. [9675

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

ALLON 2¾h.p., 2-speed, tax paid, all on, good condition; £24.—Houchin, 189a, High St., Peckham, S.E.15. [9693

£35.—1921 Allon, 2-speed, clutch, K.S., fully equipped, registered, in excellent condition; evenings.—4, Elm Gardens, Hammersmith. [1057

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

American X.

AMERICAN X, 2-speed, running, £30; sidecar, £8/10; exchange.—Johnson, 172, Avenue Rd., Acton. [9525

Arden.

ARDEN, 2-stroke, 2-speed, shop-soiled; £35, or nearest cash offer.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9334

Ariel.

ARIEL Combination 3½h.p. 1920, guaranteed in perfect condition; £75.—Apply Tremaine, Honiton. [9464

1922 3½h.p. Sports Ariel, fully equipped; first reasonable offer to clear.—82, Caledonian Rd., N. [9647

ARIEL 1920 5-6h.p. Combination, 3-speed, electric lighting, perfect; 68 guineas; exchanges; photograph.—Below.

ARIEL 1920 3½h.p., 3-speed, as new, 52 guineas; with sidecar, 62 guineas; exchanges; photograph.—Below.

ARIEL 3½h.p. 3-speed Coachbuilt Combination; 32 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1115

1913 Ariel 3½h.p., in good running order; £30.—Mr. Maker, 4, Percy Cottage, Thames St., Walton-on-Thames, Surrey. [9395

AT Edwards'.—1920 6-7h.p. Ariel combination, lamps, horn, speedometer, screen, perfect order; 75 guineas.—101, Great Portland St., W.1. [6617

1922 Sports Ariel, 3 speed, clutch, etc., fully equipped, taxed, few miles only, absolutely new; £68.—51, Upper Richmond Rd., Putney. [1129

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Winecycle Co., Ltd., 236, High Holborn, W.C.1. [0704

1922 8h.p. Ariel-M.A.C., electric and D.A. lighting, Easting, speedometer, fully equipped, 2,500 miles only; owner buying car; offers.—Seen at Magnet Motor Works, Lancing Rd., Croydon. [9514

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0804

Bat.

£7.—Old Bat combination, magneto ignition; room wanted.—King, Egrove Farm, Oxford. [9926

BAT, 1921, October, under 500 miles, 6h.p., 3-speed, chain drive; £52; bargain.—7, Exhibition Rd., S.W.7. [1156

Beardmore.

BEARDMORE-PRECISION 1921, electric light, fully equipped, excellent condition; bargain, £45.—Philpot, Motors, Canterbury. [9764

Blackburne.

1920 4h.p. Blackburne Combination, perfect order; £70; fully equipped.—Rannoch, Reading Rd., Farnborough, Hants. [9722

1920 Blackburne Combination, Sturmey 3-speed, clutch, Swan sidecar body, smart, tax paid; £48.—43, Leavesden Rd., Watford. [9834

1920 Blackburne 4h.p. and C.B. Sidecar, completely equipped, and in excellent condition; £55.—The Layton Garages, 30, Holywell St., Oxford. [9701

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IN STOCK.

New Cars.

1922	**RHODE** (self-starter £15 extra) ...	£250 0
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1922	**ROVER "8"** ...	£180 0
1922	**COVENTRY PREMIER** ...	£230 0

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1922	**CALTHORPE** s/s ...	£36 0
1922	**O.K.** s/s ...	£39 18
1922	**RUDGE** I.O.M. ...	£60 0
1922	**CONNAUGHT** s/s ...	£39 18
1922	**TRIUMPH "H"** ...	£80 0
1922	**TRIUMPH BABY** ...	£55 0
1922	**ALLON** 2-speed ...	£55 0
1922	**CALTHORPE** 2-sp., with clutch ...	£45 0
1922	**O.K.** 2-sp., with clutch ...	£49 10
1922	**McKENZIE** lightweight ...	£27 6

New Combinations.

1922	**MATCHLESS** Comb., dynamo ltg., model "J" ...	£180 11
1922	**TRIUMPH**, model "SD" ...	£120 0
1922	**ARIEL** ...	£97 10
1922	**ARIEL** 6/7 ...	£115 0
1922	**TRIUMPH**, all-chain ...	£139 10
1922	**COVENTRY PREMIER** ...	£199 10

Second-hand Machines.

1921	**ROYAL ENFIELD** ...	£115 0
1921	**RUDGE**, 3½ h.p. ...	£52 10
1922	**RUDGE** ...	£55 0
1922	**O.K.**, s/s, cl., elec. ltg. ...	£37 10
1922	**ROYAL RUBY**, 2-spd., cl., K.S. ...	£50 0
1922	**CONNAUGHT**, 2-spd., cl., K.S. (shop-soiled only) ...	£47 10
1921	**ENFIELD** Comb., dynamo, fully equipped ...	£121 0
1920	**AMERICAN EXCELSIOR** ...	£97 10
1922	**NEW HUDSON** Comb. ...	£115 0
1921	**O.K.**, 2-speed, clutch ...	£37 10
1919	**ENFIELD** Comb. ...	£89 10
1919	**TRIUMPH** Comb. ...	£67 10
1916	**DOUGLAS**, 2¾ h.p. ...	£28 0
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1919	**TRIUMPH** Comb. ...	£67 10
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'Phone: Walthamstow 169 (2 lines).
Hire Dept., Walthamstow 418.

MOTOR CYCLES FOR SALE.

Blackburne.

1921 8h.p. Blackburne Combination, very little us and in perfect condition, licensed Decemb 1922; any examination; bargain, £90.—Brainsb Peterborough. [8

Bradbury.

BRADBURY 1914 4h.p. Combination 2-speed, £ ditto sole, Philipson, £15; both excellent co tion.—7, Exhibition Rd., S.W.7. [9

SOUTHPORT.—1921 Bradbury Combination, chain, 3-speed, K.S.; 49 guineas. Exchanges Kents, 417, Lord St., Southport. [9

AT Edwards.—1922 2¾h.p. Bradbury, 2-spe clutch, K.S., equipped, tax paid, indistingui able from new; 47 guineas; exchanges or deferred 101, Gt. Portland St., W.1. [8

1922 Bradbury 4h.p., 3-speed, clutch, kick-start licensed year, fully equipped, indistinguisha from new; £70; exchanges or deferred.—Edwar 50, Harrington Rd., South Kensington. [2

BRADBURY Combination, 4h.p., 2-speed, as n renovated by makers late 1920 at cost of £ just overhauled, new piston rings fitted, lamps, belt, good tyres; best offer over £50.—Kennett, Romney. [

Brough.

BRAND New 3½h.p. Brough 1922 Sports T.T.; price £115, our price £80.—Pioneer Mot Grindlay St., Edinburgh. [9

SPECIAL Competition 5-6h.p. Brough, first ridd last London-Exeter, lavishly equipped, scratched, in perfect condition; evenings.—4, Elm G dens, Hammersmith. [1

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depo

THE Allen-Bennett Motor Co., Ltd.

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THE Sporting Rider's Ideal. Immediate delivery Mark 2 6.5b.p. solo, £125; Mark 2 combi tion, £150; Mark 1 solo, £150; Mark 1 combinati £180. S.S. 80 supplied, with Brooklands certific of 80 m.p.h., £165, delivered ten days. Demonstrat models in stock, catalogues post free on request. tended payments and exchanges.—9, 10, 11, Ro Parade, West Croydon. 'Phone: 2450-1. 'Gra Track, Croydon. [0

BROUGH SUPERIOR, Mark II. Combination, h equipped, taxed, absolutely new; £105.— Upper Richmond Rd., Putney. [1

BRAND New 1922 Brough Superior, Mark I. mo side valve; list price £130, our price £12 Pioneer Motors, Grindlay St., Edinburgh. [9

Spare Parts:

SPARES.—All engine, gear box, and frame spa for Brough Superior in stock; write for list C. and J. Dawson, The Ideal Garage, Cambridge. [0

Brown.

£22.—Brown 3½h.p., low, fast, powerful; take pa cycle part.—57, Kenbury St., Camberwell, L don. [9

B.S.A.

SHOP-SOILED 6-7h.p. B.S.A. Combination, M dyno, £140; H2 sports, 80.

COUNTY Cycle and Motor Co., Ltd., Broad Birmingham. [7

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. Model Spo £70.—Clifford Motories, Eastwood, Notts. [9

1920 B.S.A. Combination, excellent order; £5 Maynard, 161, Bowes Rd., Bowes Park, N. [99

BRAND New 3½h.p. B.S.A. Touring Model, all-ch drive; bargain, quick sale, £79.—Pioneer Mot Grindlay St., Edinburgh. [9

B.S.A. Combination, 1919, 4¼h.p., Easting scre lamps, horn, speedometer, new condition; £80 Philpot, Motors, Canterbury. [9

B.S.A. 4¼h.p., new, shop-soiled, all chain, list p £107, must clear; £77.—Shepherd and Co., field Highway, Waltham Cross 31. [1

B.S.A., 1920, Model K (solo), 4¼h.p., new year, very good condition; £55; no offers. ters only.—117, Bromley Rd., Catford, S.E.6. [9

FOR Sale, B.S.A. motor cycle and sidecar, 2-seat 1920 model; £80; in good condition.—Rous, No wood Corner, Allhallows, nr. Rochester, Kent. [9

B.S.A., late 1918, tax, insurance, completely o hauled, coach sidecar, windscreen, speedome all on; £60.—Apply, Bousfield, Grinsdale, Carlisle. [9

B.S.A. 1916 4¼h.p. Combination, all-chain mo accessories, tax paid, in splendid condition; £ or exchange.—A., 30, Thornsett Rd., Earlsfield, don, S.W. [9

1921 4¼h.p. B.S.A. and large bulbous sidecar, co plete with lamps, Easting, Tan-Sad, spee meter, etc., splendid condition; £90.—Fulwood, Vau Eastwood, Notts. [9

MOTOR CYCLES FOR SALE.

Enfield.

T Edwards'.—1922 2¼h.p. Enfield, kick-starter model, equipped with lamps and horn, tax paid, distinguishable from new; 37 guineas. Exchanges deferred.—101, Great Portland St., W.1. [9329

9 18 6h.p. Enfield Combination, fully equipped with Bluemel windscreen, all lamps, horn, etc., plenty of spares, tax paid to December 31st, insurance policy to June, everything in good order; will accept £45; no offers.—Day, Okehampton. [9813

9 18 8h.p. Enfield Combination, specially built sidecar, large hood, windscreen, electric lighting throughout, electric and bulb horns, new chains and tyres, engine completely overhauled, everything in perfect condition; 75 guineas, or exchange Morgan, preferably G.P.; appointment.—Trench, 10, Queen Victoria St., Coventry. [9842

Spare Parts:

ENFIELD Spares. — Immediate delivery. — Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 19. [5601

Excelsior.

EXCELSIOR 1922 2½h.p., only run 500 miles; £40, or nearest.—Harrison, 8, Bath Rd., Worcester. [9493

1922 2¾h.p. Excelsior, run 1,500 miles, Blackburne engine; £55; perfect condition.—Apply, Kirby, Art Office School of Education, Shorncliffe. [8644

1921 Excelsior-Villiers, 2-speeds, Sturmey-Archer, kick-start, clutch, fully equipped, taxed, as new, fully guaranteed; £29.—51, Upper Richmond Rd., Putney. [1130

EXCELSIOR, De Luxe model, 2-stroke, 2-speed, clutch, K.S., brand new, shop-soiled; £45, or nearest cash offer.—Sam, E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10 [9332

EXCELSIOR-J.A.P. 8h.p., 1916 Combination, excellent condition, engine recently rebushed, sidecar upholstered, Lucas dynamo lighting, Binks carburetter; £55.—Prior, Couchmore, Esher. 'Phone: 122. [9610

F.N.

FN., 4-cyl., 2 speed; £20; exchange single, combination.—7, Middle St., Hastings. [9745

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langley's, 37, Cricklewood Broadway, London, N.W.2. [1363

Harley-Davidson.

1915.—1919 7-9h.p. Harley-Davidson, 3 speeds, clutch, all K.S., only been 1,000 miles.—King, Egrove, Stoford. [9928

1922 Harley (De Luxe) model, mileage 800, condition as new, buying car; offers.—Phillips, 20, Wightman Rd., Harringay. [9823

HARLEY-DAVIDSON 7-9h.p. Combination, 1919, all accessories, perfect running order; £85.—Warwell, 27, Fairfax Rd., W.4. [9442

HARLEY 1920 7-9h.p., dynamo model, lamps, speedometer, perfect throughout; £63 for quick sale.—Altmore Avenue, East Ham. [9854

1922 7-9h.p. Harley, electric model, perfect condition, discs, spot light, etc.; £97, or near.—15, Mansfield Rd., Hampstead, N.W.6. [9616

1915.—1920 7-9h.p. Harley Combination, dynamo, exchange J.A.P. countershaft lightweight, not earlier 1919, cash, offers.—D. Barlow, Ramsey, Huntingdon. [9820

1921 Harley-Davidson 7-9h.p. Combination, dynamo lighting, perfect, small mileage; 80 guineas.—Service Garage, Turnham Green Station, S.W. (near Olympia). [9454

1921 Harley-Davidson Combination, Coupette sidecar, electric model, excellent; £100; terms with £20 down.—Goad, 122, Maida Vale, W.9. 'Phone: Maida Vale 1353. [1033

HARLEY Combination 7-9h.p. 1921, perfect condition, all accessories, mileage 3,000, guaranteed, must sell; best quick offer accepted.—'Phone appointment, Museum 7286. [9938

HARLEY-DAVIDSON, late 1919, electric model, aluminium discs, windscreen, Tan-Sad, in excellent condition; £80; seen London by arrangement.—Gardner, Abbott, Buckingham. [9397

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [1031

1920 Harley-Davidson Combination 4h.p., flat twin, 3 speeds, C. and K.S., all lamps, horn, speedometer, absolutely as new, guaranteed; £75; exchanges.—Mac's. 243, Lower Clapton Rd., N.E. Dalston 486. [1081

A BRAND New 1922 Harley-Davidson Combination, never been used, makers' guarantee, delivery this week £155, nearest; also 1919 combination, beautiful aluminium sidecar, new condition, £90, nearest; cloth air sleeve, for Harley, 15/- (new).—122, Cowlett Rd., Ilford, Essex. [9723

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1923 MODELS.

COVENTRY PREMIER, 10 h.p., 4-cyl., 2-sr.	230 gns.
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LAGONDA, 11.9 h.p., 4-cyl., 2-seater	280 gns.
SINGER, 10 h.p., 4-cyl., 2-seater	£395 0
STONELEIGH, 8-9 h.p., 3-seater.....	£185 0
LEVIS, 2½ h.p., single gear	£38 0
LEVIS, 2½ h.p., single gear, 2-speed.....	£43 0
EDMUND-BLACKBURN, 2½ h.p., 3-speed .	£75 0
MARTINSYDE, 6 h.p. combination.....	£130 0
NEW IMPERIAL, 2½ h.p., 3-speed	£65 0
NEW IMPERIAL, 8 h.p., 3-speed comb. ..	£125 0
SCOTT 3½ h.p. Squirrel	£89 0
O.K. JUNIOR, single gear	£38 0

Cash, Exchange or deferred payments.

SECONDHAND BARGAINS.

Each one overhauled and ready to drive away.

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ALLDAYS-MATCHLESS, 3½ h.p.....	£22 10
BLACKBURN, 1921, 4 h.p., 3-speed.....	£59 10
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HARLEY, 1918, 7-9 h.p., 3-speed, all-chain	£67 10
HUMBER, 3½ h.p., 2-speed, tree engine ..	£27 10
LEVIS, 1922, G.1, 67×70 engine, as new..	£39 10
NORTON, 1922, Big Four, new.....	£90 0
REX-ACME, 1922, 2½ h.p. demonstration m/c.	£42 10
RUDGE-MULTI, 1921, 3½ h.p., like new..	£52 10
RUDGE-MULTI, 1920, 7-9 h.p.	£65 0
TRIUMPH, 1913, 3½ h.p., clutch model....	£29 10
VELOCE, 1920, 3½ h.p., 3-speed.....	£52 10

PASSENGER MACHINES.

ACE, 1921, 4-cyl. comb., tax paid.....	£97 10
B.S.A., 1919, 4½ h.p., all-chain comb.	£75 0
B.S.A., 1921, 6 h.p., all-chain comb.....	£119 10
COVENTRY EAGLE, 1921, combination ..	£62 10
COVENTRY VICTOR, 1921, 5-7 h.p. comb.	£79 10
HARLEY, 1919, electric comb., extra good	£97 10
MATCHLESS, 8 h.p. comb., belt drive....	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£79 10
NEW IMPERIAL, 8 h.p., 3-speed comb. .	£69 10
REX, 1913, 6 h.p., coach comb.....	£42 10
RUDGE-MULTI, 1920, 5-6 h.p. comb....	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb.	£75 0
SCOTT, 3½ h.p., 2-speed comb., tax paid ..	£49 10
SCOTT, 1920 comb., screen, etc., tax paid..	£79 10
TRIUMPH, 3½ h.p., 2-speed comb., tax paid	£39 10
VELOCE, 1920, 3½ h.p., 3-speed, new sc...	£67 10

RUNABOUTS.

PRECISION, 8 h.p., wants attention.....	£47 10 (or offer)
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£10 deposit and 2S/- weekly buys

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CLYNO, 6 h.p., 2-speed, coach comb.	£35 0
INDIAN, 7-9 h.p., 2-speed comb., tax paid .	£39 10
MATCHLESS, 8 h.p. comb., belt drive	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£79 10
NEW HUDSON, 6 h.p., 3-speed comb.....	£49 10
NEW IMPERIAL, 8 h.p., 3-speed comb. .	£69 10
REX, 5-6 h.p., 2-speed, and sidecar	£29 10
REX, 1913, 6 h.p., coach comb.	£42 10
RUDGE-MULTI, 1920, 5-6 h.p. comb....	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb.	£75 0
SCOTT, 3½ h.p., 2-speed comb., tax paid ..	£49 10
SCOTT, 1920 comb., screen, etc., tax paid .	£79 10
TRIUMPH, 3½ h.p., 2-speed comb., tax paid	£39 10

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY-DAVIDSON, delivered 1922; £70; 4h.p., 3-speed, kick-start, electric lighting, speedometer, insured; a bargain.—11, Warwick St., Oxford. [9520

AT Edwards.—1920 (delivered 1921) 7-9h.p. Harley Combination, De Luxe model, equipped with dynamo lighting, hood, windscreen, speedometer and driving mirror, tax paid, in exceptional condition throughout; 77 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1152

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4804

HARLEY-DAVIDSON.—We have a very large stock of second-hand spares of these well-known machines, and on receipt of a post-card stating your requirements we will, by return, quote you very competitive prices; our stock comprises practically all parts.—Maudes', 100, Great Portland St., W.1. [9594

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [9941

Hawker.

HAWKER 4¼h.p. 3-speed model; £75. Exchange or deferred payments.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [1127

HAWKER 2¾h.p. Blackburne engine, 3-speed, brand new, special clearance price; £70.—Longman Bros., 17, Bond St., Ealing. Ealing 689. [1126

BRAND New 2¾h.p. Hawker, 3-speed, clutch, kick-start, Blackburne engine; list price £84, our price £65.—Pioneer Motors, Grindlay St., Edinburgh. [9535

SPECIAL Racing Hawker Motor Cycle for sale, fitted with 2¾h.p., O.H.V. T.T. Blackburne engine, winner of several awards on road and track.—Write Box 4562, c/o *The Motor Cycle*. [9481

1922 Hawker 2¾h.p., 2-speed, fully equipped, tax year, Tan-Sad, indistinguishable from new; 38 guineas; exchanges or deferred.—Edwards, 60, Harrington Rd., South Kensington. [7519

75 m.p.h. Guaranteed.—1922, July, 2¾h.p. o.h.v. Hawker, 3-speed, all chain, special engine, piston and cams, only used competitions, many awards, tax paid, photo, steers hands off at 60 m.p.h., what offers? Exchange considered.—Spikins, Warren Lodge, Kingston Hill, Surrey. [9360

Hazlewood.

5·6h.p. Hazlewood-Jap Combination, 3-speed, K.S., new condition; £35, or exchange.—120, Argyle St., St. Helens. [1077

Henderson.

1921 Henderson Combination, dynamo lighting, reverse gear, splendid condition; cost £300, accept £135.—307, Camden Rd., Holloway, N.7. [9316

ROBERTSON'S Motors, Ltd.—1922 De Luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [2350

BRAND New Henderson De Luxe, with Millford De Luxe sidecar, most luxurious outfit; list price £175, our price £110.—Pioneer Motors, Grindlay St., Edinburgh. [9541

BARKER'S Motors, the Henderson specialists and authorised agents. Overhauls and repairs carried out; all spares in stock; deferred payments.—194, Balham High Rd., S.W.12. 'Phone: Latchmere 4441. [1028

Hobart.

1920 Hobart-Villiers, 2-speed, good condition; £25.—W. Ciuett, Tarporley. [9492

HOBART (1919), 2-stroke, in excellent condition, lamp set, mechanical horn; £30.—The Wimbledon Park Engineering Works, Ltd., 74, Arthur Rd., S.W.19. [9387

1922 Hobart, 2¾h.p. Blackburne, 3-speed, clutch, Sturmey-Archer model, brand new, list £73; accept £65, or near cash offer.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9336

Humber.

2¾h.p. Twin Humber, dropped, perfect; bargain, £12.—Fisher, Springwell Rd., Heston, Hounslow. [9985

1922 Humber Flat Twin Combination, completely equipped, equal to new; cost £145, accept £90 cash.—The Layton Garages, 30, Holywell St., Oxford. [9704

1922 Humber; special offer of our last remaining standard touring model, brand new; list price £110, special cash price £80.—The Layton Garages, 30, Holywell St., Oxford. [9714

Indian.

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

MOTOR CYCLES FOR SALE.

Indian.

INDIAN 5h.p. Coachbuilt Combination; £25; lightweight part.—Box 4593, c/o *The Motor Cycle.* [1006

1920 Indian Combination, spring frame, powerplus model; £48.—32, Merridale Rd., Wolverhampton. [9362

7-9h.p. Indian Combination 1919, 3-speed, K.S., in good condition; £60.—785, Lincoln Rd., Peterborough. [9920

POWERPLUS Indian Combination, Binks, equipped, taxed, discs; £40.—10, College Slip, Bromley, Kent. (P) [9890

£18, offers.—Indian 5-6h.p., o.h.v., clutch, Amac, all-chain, lamps, tools, very fast.—18, Freelands Rd., Bromley, Kent. [9727

1915 Indian 3½h.p. Twin, 3-speed combination, excellent; £37/10.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [1036

INDIAN Combination 5h.p., 3-speed, K.S., tax paid, lamps, horn, good condition, trial; £48, or nearest offer.—5, Railway Cottages, L.N.W. Lichfield. [9484

1921½ Indian Scout, scarcely used, positively unscratched, lighting, speedometer; 75 guineas, exchange.—284, South Lambeth Rd., S.W.8. [9829

AT Edwards'—1914 7h.p. clutch Indian, lamps, horn, tax paid, nice order; 24 guineas. Exchanges or deferred.—101, Great Portland St., W.1. [9328

7-9h.p. Indian 1919, Binks, good condition, any trial, sidecar optional; sell or exchange late 2¾h.p. A.J.S. or o.h.v. Blackburne.—Gaskell, Woodlea, Orrell Rd., Wigan. [8581

1920 Indian Combination 7-9h.p., fully equipped, electric lighting, speedometer, Cameo windscreen, exceptional bargain to clear stock; £70.—The Layton Garages, Bicester, Oxon. [9817

INDIAN Combination, 7-9h.p., 1921 model, new last March, done under 4,000 miles, has been carefully ridden, and is in perfect condition; price £98.—Greswell, Wellesbourne Hall, Warwick. [9371

54 Guineas, Exchange.—1919 Indian, 7-9h.p., 3 speeds, kick-start, coach sidecar, windscreen, luggage grid, lamps, smart, fast, splendid condition.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [9338

INDIAN Combination 1920, 7-9h.p., fully equipped, electric lighting and horn, dynamo, speedometer, accessories, mileage 4,000, new condition throughout, been well looked after; Kent; offers.—Box 4580 c/o *The Motor Cycle.* [9605

NO Reasonable Offer Refused or solo part exchange late 1914 7-9h.p. Indian combination, in really nice condition; photo; any trial, examination; deliver reasonable distance.—Solwaybank, Hayes, Kent. 'Phone: Bromley 532. [1043

DAYTONA Indian, 9.8h.p., sports sidecar, electric lighting, speedometer, sidecar brake, rigid frame, 4-speed gear, spare carburetter, handle-bars, etc., small mileage, new tyres, in excellent condition; cheap.—L. Runton, Burnside, Ilkley. [1041

85 Guineas.—Indian 7-9h.p., 1921, delivered this year, with Mills-Fulford sidecar, Plus-One 2-seater body, dynamo lighting, hood, Anster screen, 3 lamps, speedometer, Klaxon electric horn, legshields, pillion seat with back and footrests, practically indistinguishable from new, tax paid.—Delancey Street Garage, Camden Town, N.W.1. [9895

1916 5-6h.p. Indian, 3-speed, K.S. and clutch, Lucas lighting set, speedometer, rear wheel drive, Stewart mechanical horn, full tool kit, engine has just been thoroughly overhauled and new B. and B. carburetter and Bosch magneto fitted, the whole machine is in excellent condition and running order, enamel like new; expert examination invited; £35; must sell.—F. C. Lingley, New St., Woodbridge, Suffolk. [9943

Spare Parts:

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 3616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [3787

Invicta.

£20.—1920 2¾h.p. Invicta, 2-stroke, perfect order throughout.—King, Egrove Farm, Oxford. [9929

3½h.p. Invicta Combination, practically new, owner must sell; £65.—Tomlinson, 194, Church Rd., Hove. [9477

Ivy.

IVY 1922 2½h.p., 2-speed, C. and K.S., accessories, 2½in. tyres, licensed, splendid condition, recently overhauled, owner purchasing sidecar model Ivy; North Wilts; nearest £50.—Box 4550, c/o *The Motor Cycle.* [9435

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4½h.p. James Combination 1918, recently over will accept £45.—Tremaine, Honiton.

1920 3½h.p. Twin James, lamps, ready away; £35.—Day, Arch 23, Walmer Kensington, W.10.

JAMES 5-6h.p. Combination, late 1919 order, lamps, screen, legshields, Tan-Sad —Redding, 248, Holly Lane, Erdington.

AT Edwards.—1922 3½h.p. Sports James, eq tax paid, indistinguishable from new; 79 Deferred payments and exchanges.—101, Great P St., W.1.

JAMES 3½h.p., new 1921, 3-speed, kick-start overhauled and repainted, guaranteed mechanical condition; sacrifice £55.—Adie, Works, Bozells St., Birmingham.

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1920 5-6h.p. James De Luxe Combination, dynamo lighting, electric horn, Easting screen, luggage grid, full tool kit, just been oughly overhauled, and all in splendid con £65.—B. Timbers, Castle St., Woodbridge, Su

7h.p. James, special semi-sporting sidecar, changeable wheels, Magdyno, legshields, meter, under 4,000 miles, new condition, perf gine; selling, account of health; £130, or off spection invited Ealing.—Box 4583, c/o *The Cycle.*

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JAMES Spares.—Immediate delivery.—Kays, 10, Bond St., Ealing.

WHITBYS.—James spares, expert service.—Vale, Acton, W.3. 'Phone: Chiswick 1513

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14 Guineas.—J.E.S. 1921, 2¼h.p., 2-stroke, meter, taxed, equipped.—10, Baroosmee Barnes.

J.E.S. 1½h.p. Motor Cycle for sale, little handles slightly rusty, tyres practically a no use for same; price 19 guineas, carriage paid Goodwin-Courtman, Awre, Gloucestershire.

Kerry.

5-6h.p. Kerry, T. B. magneto, Amac; £14, or e lower part.—Shepherd's Link, Kennaway,

Kingsbury.

LATE 1920 Kingsbury 2¾h.p., 2-speed, winner medal, perfect; £30.—O'Hara, Nevill Holt, Harborough.

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LEA-FRANCIS 1920, 3½h.p. J.A.P., perfect H. 21, Westdown Rd., Catford, S.E.

AT Edwards'.—1920 3½h.p. Lea-Francis, engine, fully equipped, lamps, horn, speed perfect order; 48 guineas. Exchanges or defe 101, Great Portland St., W.1.

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IMMEDIATE Delivery of 1923 Levis Models the last few 1922 models at further redu duced prices. 2¼h.p. Popular, single gear, Model S, 2¼h.p., 2-speed, clutch, kick-start, Model G2, 247 c.c., 2-speed, clutch, kick-start deferred payments 4% extra; sent on appr Premier Motor Co. Aston Rd., Birmingham

LEVIS 2¼h.p. 1921, fully equipped, taxed, £23.—10, Baronsmead Rd., Barnes.

LEVIS, 2 speeds, clutch, chain drive, perfect tion; £40.—5, Inverine Rd., Charlton, S.E.

LEVIS 2¼h.p., single speed, lamps, Klaxon, series, tax paid perfect; £27.—161, Harro Leytonstone.

LEVIS Popular model (Sept., 1920), perfect co low mileage, new tyres (heavy rear), long e £24 lowest.—48, Grosvenor Avenue, Wallington.

1922 Levis, 2 speeds, Starmey, hand clutch, new; reduced to £48; exchanges or defe Homac's, 243, Lower Clapton Rd., N.E. Dalston

Spare Parts:

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MOTOR CYCLES FOR SALE.

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LINCOLN-ELK Combination, 4½h.p., 2-speed countershaft, kick-start; 38 guineas; take solo part, 7, Kenbury St., Camberwell, London. [9737

Martinsyde.

85.—1922 6h.p. twin Martinsyde Combination, fully equipped, splendid order throughout.—Speechley, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 02. [9773

922 6h.p. Martinsyde Combination, brand new, touring model; £120/10; cash or deferred.—rriss and Co., Ltd., 139, Finchley Rd., Swiss Cotge, N.W.3. [9559

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922 Martinsyde 6h.p. Combination, complete with Millord sidecar, cost £160, has only been used ew times; a gift at £130; cash or deferred.—Marlough (Motor House), 20, Finchley Rd., N.W.8. [6560

Spare Parts:

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Massey-Arran.

9 Guineas.—Massey-Arran, late 1922, 2¾h.p. Blackburne, 3-speed, clutch, K.S., all-chain ve, speedometer, equipped, licensed.—1A, Eleanor ove, White Hart Lane, Barnes. [9698

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UR Successes with the 500 c.c. and 1,370 c.c. Bradshaw engine in 1922 having proved without doubt the unquestionable efficiency of oil cooling, h for touring and racing, we have every confidence, a sole distributing agents for London, Surrey, and Sex, in recommending for 1923 the 2¾h.p. o.h.v. Matador-Bradshaw.

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21 Model H Matchless Combination, every possible accessory; £87/10; exchanges.—24, Balliol I, North Kensington. [1107

ATCHLESS 1921-22 Model H, windscreen, spare wheel, hood, M.A.G. engine, Lucas lighting; 88 eas.—67, Fernlea Rd., Balham. [1100

ATCHLESS, all models, 1923 prices; best exchange allowances; deferred.—Agents, R. B. k and Co., 7, Exhibition Rd., S.W.7. [1155

23 Matchless, the world's best, at revised prices to suit all; cash, exchange, easy terms.—Sam E. ham (Motors), 27, Stockwell St., Greenwich, S.E.10. [7528

5.—Sacrifice, 1921 Matchless Model H, electric light, M.A.G. engine, lavishly equipped, hood, screen, etc.—143, Ravensbury Rd., Earlsfield, [1045

5.—Matchless combination, M.A.G., 3-speed, speedometer, lamps, hood, screen, perfect running, d, insured.—Hall, 21, Dover Rd., Wanstead Park, E. [9613

ATCHLESS Combination, 8h.p., 2-speed, lamps, horn, etc., overhauled, good running order; 40 eas.—Edwards, 50, Harrington Rd., South Kenton. [1142

ATCHLESS Combination, 1921, M.A.G. engine, Lucas lighting set, speedometer, spare wheel, ex- nt condition; £110.—A. Norris, 15, Hazlewood d, Putney. [9530

ATCHLESS 1922 Model H, run 50 miles only, accessories, legshields, etc., tax paid, brand new; £193; sacrifice £110.—A., 30, Thornsett Rd., Earlsfield, London, S.W. [9991

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1920	7-9 h.p. **INDIAN** comb., dynamo, electric horn, screen, etc.	£63
1920	7-9 h.p. **AMERICAN-EX.,** 2-seater sidecar, lamps, etc., etc.	£65
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1920 Metro-Tyler Sports model, excellent order; £25; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. Dalston 2408. [1082

BARGAIN.—Metro-Tyler 1922 sports model, 2 speed, soiled only; 38 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [8249

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£14.—Minerva 3½h.p., fine condition, new Dunlops, C.A.V.—Write particulars, Butt, Stewkley, Bucks. (P) [9503

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3½h.p. Minerva, countershaft, 2-speed gear; bargain, £12.—Fisher, Springwell Rd., Heston, Hounslow. [9984

Motosacoche.

9 Guineas.—Motosacoche 2¼h.p. 1914, exceptional condition, good tyres.—10, Baronsmead Rd., Barnes. [9785

Ner-a-Car.

£57.—1922 Ner-a-Car, slightly shop-soiled only; bargain.—South Eastern Garage, Herne Hill, S.E.24. [1021

NER-A-CAR, 1921, milegae 800, condition excellent; seen London; £43.—Box 4584, c/o *The Motor Cycle.* [9686

New Hudson.

NEW HUDSON 2¼h.p., 2-speed, excellent condition; £32.—Philpot, Motors, Canterbury. [9766

1922 New Hudson, 2-stroke, 2-speed, fully equipped, unscratched; £25.—Ward, South-Western Garage, New Malden, Surrey. [9677

1920 New Hudson 4h.p. Combination, lamps, speedometer, screen; £60; taxed.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9975

NEW HUDSON 1915 Combination, 3-speed, clutch and K.S. hub gear, good condition; £35; or separate.—Houchin, 189a, High St., Peckham, S.E.15. [9692

2¼h.p. New Hudson, about 1916, 2 speeds, just been re-enamelled and plated, including tank, disc wheels; £23.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [9900

NEW HUDSON 2¼h.p. 1922, 2-speed, clutch and kick-start, all-chain drive, lamps and horn, shop-soiled only; £50.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [9966

1920 New Hudson 4h.p. Combination, lamps, tools, speedometer, legshields, child's seat attachment, in first-class condition; bargain, £60.—Rhind and Co., Stone Place, Rusholme, Manchester. [9585

1920 (June) New Hudson 2¼h.p. 2-speed, touring, mileage 2,700, speedometer, lamps, horn, insured to June, same owner since new from makers; £45, complete.—8, Commerce Rd., Wood Green, N. 'Phone: Palmer's Green 455. [9455

New Imperial.

£29, or near offer.—2¾h.p. New Imperial-Jap, 1916, clutch, K.S., 2 speeds.—Wilson, 24, Stoke Rd., Guildford. [9368

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; £55.—Clark, 7, Exhibition Rd., S.W.7. [5856

2¾h.p. New Imperial-Jap, June, 1921, 2-speed clutch, kick-start, good condition; £38.—39E, Emperors' Gate, Gloucester Rd. [9638

1922 2¾h.p. New Imperial-Jap, 3-speed, clutch and kick-starter, used 3 times; £45; exchanges.—24, Balliol Rd., North Kensington. [1111

NEW IMPERIAL 2½h.p. J.A.P., 2 speeds, accessories, tax paid, splendid condition; £24.—A., 136, Ravensbury Rd., Earlsfield, London, S.W. [9995

£26.—2¾h.p. New Imperial, kick-starter, 1916, completely overhauled, new piston, valves, and bearings.—Laker, "Ridgemount," Sellindge, Ashford. [9846

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MOTOR CYCLES FOR SALE.

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NORTON, 1922, Model 16H, shop-soiled; £85.—H. Julian, 84, Broad St., Reading. [9576

NEW 16H 1922 Norton, oversize tyres; any offers?—391, King St., Hammersmith. [9973

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LATE 1921 Norton 16H, mileage 2,500, like new, speedometer; bargain, £78, or near offer.—Brunswick House, Tiverton. [8675

NORTON 1922 Super Sports, close ratio gear box, Ricardo piston, Lucas lamp, tax; 70 guineas.—H. Rock, Cradley, Staffs. [9546

HALIFAX.—Norton (brand new), 1922 models, special exchange allowances to clear.—Halifax Motor Exchange, Horton St., Halifax. [9566

NORTON 1922, special engine, tuned by Judd, 72 m.p.h., Phillipson lamps, taxed, perfect condition; £57.—40, Lowlands Rd., Harrow. [9821

BIG 4 Norton Combination, 1922, countershaft, kick-start, equipped, taxed; £98.—Sidney, 769, Romford Rd., Manor Park, London. E.12. [9007

34 Guineas.—Norton, 1919-20, T.T., 3½h.p., Phillipson, Binks, 60 m.p.h., guaranteed, equipped, licensed.—1a, Eleanor Grove, White Hart Lane, Barnes. [9697

1921 Norton Model 16H, completely equipped, lamps, horn, speedometer, and tax paid, very smart and fast; £65.—The Layton Garages, 30, Polywell St., Oxford. [9709

NORTON 1921 3½h.p. Combination, special aluminium sports sidecar, Lucas Magdyno lighting, splendid condition; bargain, £80.—P. J. Evans, John Bright St., Birmingham. [9580

1922 Norton; special offer of our last remaining 16H 3½h.p. sports model, 3-speed, brand new; list price £115, special cash price £75.—The Layton Garages, 30, Holywell St., Oxford. [9713

1922 16H Norton, mileage 1,500, Best and Lloyds' mechanical oiling, Bonniksen speedometer, Lucas large lamps, cost £135; sell £78.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [9750

SOUTHPORT.—1922 brand new 16H Norton, unridden, barely soiled; 79 guineas. 1921 16H. model, Lucas dynamo, superb condition; gift, 69 guineas. Exchanges.—Kents, 417, Lord St., Southport. [9871

1920 Norton 4h.p., De Luxe sidecar, Watford speedometer, Binks carburetter, electric lighting, two new 700×80 tyres, perfect condition; £75, or near offer.—Robinson and Bendard, Motors, Cookham, Berks. [9364

1921 Norton Big Four, Lucas lamps, speedometer, Klaxon, knee grips, watch, mileage 500, indistinguishable from new, guaranteed perfect throughout; 80 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [9310

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N.U.T. 1921, J.A.P twin, touring model, accessories, Tan-Sad, insured, nearly new, genuine, bought combination; £65, lowest.—1, Southsea Rd., Croydon. [9650

N.U.T. 1920-21 Sports Combination, electric, clock, speedometer, well tyred, licensed, beautiful order; 60 guineas.—Terrace Garage, Turnham Green Station, S.W. (near Olympia). [9452

O.K.

O.K. 2-speed: £28.—Apply Penberthy, Station House, Woldingham, Surrey. [9655

1920 O.K.-Villiers, 2-speed, clutch, K.S., taxed, excellent condition; £35, or nearest; seen after 6. —34, Huddleston Rd., Tufnell Park, N. [9395

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Messrs. The Campion Cycle Co., Carlton Street.

LEICESTER.
Messrs. The Quorn Garage, Belgrave Gate.

LONDON.
Messrs. Allen Bennett & Co., Ltd., 9, 10 & 11 Royal Parade, Croydon.

RIDEEZI SALES LIMITED,
5, Victoria Street,
London, S.W.1.

MOTOR CYCLES FOR SALE.

O.K.

1921 O.K., as new, hardly used, taxed; £27.—O Horley St., Bishops Stortford, Herts. [

1920 2¾h.p. O.K. 2-speed, fully equipped, lice good condition throughout; £45, or neare Turk, Church Rd., Goodhurst, Kent. [

O.K. Junior, 1921, 2¾h.p. Villiers engine, flyw magneto, 2-speed, fully equipped, insured, paid, splendid condition; £28/10.—Gilchrist, Gra Rd., Ipswich. [

AT Edwards'.—1921-22 2½h.p. O.K. Junior, 2-sp kick-starter, and clutch, fully equipped, d knee-grips, tax paid, perfect order; 34 guineas. changes or deferred.—101, Great Portland St., W [

Omega.

OMEGA-J.A.P., 1920, all on, excellent coodit £53.—21, Hathaway Rd., Croydon. [

OMEGA-J.A.P., 2 speeds, semi-T.T., splendid co tion, taxed; £26.—2, Palace Gardens Ter Kensington. [

OMEGA-J.A.P., 2 speeds, new engine, carbure magneto fitted 1921, exceedingly fast; £25, gain.—7, Cowdrey Rd., Wimbledon. [

OMEGA-VILLIERS 1921 2¾h.p., 2-speed, la lamps and horn, done 500 miles; £35.—14, mandy Place, Brixton (opposite Russell St.). [

P. and M.

1920 P. and M. Combination, new covers; £40, offer.—83, St. Albans Rd., Watford. [

£17.—3½h.p. P. and M., 2-speed, clutch, K.S., running order.—King, Egrove, Oxford. [

P. and M. 1918 Combination, lamps, horn, etc., paid, makers' overhaul; £37/10 cash.—Below. [

1923 P. and M. De Luxe Solo, actually in s at the reduced price of £105.—Kenneth K and Co., 4, Berkeley Mews, Connaught St., Lon 'Phone: Padd. 1177. [

1917-18 P. and M. Combination; 37 guineas gen bargain.—Vickers, 96, Paulet Rd., Camber [

1919 P. and M., 3 speeds, free engine, lamps, h £35, or exchange.—198, King St., Ham smith. [

1918 P. and M., 2-speed, first-class condition; trial; cheap. £38/10.—R. Linklater, Clap Lancaster. [

1921 3½h.p. P. and M. motor cycle, only run miles, condition as new, licensed; price £5 Fonlkes, Wales and Co., Shrewsbury. [

1918 P. and M. Combination, renovated as many new parts; bargain, £38.—Coad, Maida Vale. 'Phone: Maida Vale 1353. [

1917 P. and M., De Luxe sidecar, recently hauled, splendid condition; £45, or near o —Robinson and Benfield, Motors, Cookham, Berk [

P. and M., 1918, 2-speed, K.S., coachbuilt 2-se sidecar, fully equipped, tax, insurance spares; £50.—15, Evangelist Rd., Highgate Rd., [

1919 P. and M. 3½h.p. and Watsonian sidecar, ing windscreen, lamps, and horn; great bar to clear stock, £45.—The Layton Garages, Bice Oxon. [

P. and M. 1918 R.A.F., rebuilt, re-enamelled, and plated, new T. and B. magnetos, B. and carburetter, tyres and tubes; £38.—Voltaire M Works, 4, Voltaire Rd., Clapham, London. [

BARGAIN.—1918 P. and M. 3½h.p., 2-sp clutch, kick-start, 29 guineas; with coseht sidecar, 36 guineas; photograph.—Peter Gordon, 110, Upper Richmond Rd., East Sheen. [

Spare Parts:

ALL Spares in Stock; please write for quotations all parts; all guaranteed by return.—P. and Specialist, H. Beardwood, 147, Borlington St., L pool. [

KENNETH KEMP and Co., the Authorised A Specialists, carry the most comprehensive s of P. and M. spares in London at the right pri Note the address, 4, Berkeley Mews, Connaught Marble Arch, London. 'Phone: Padd. 1177. [

P. and M.—We have a very large stock of sec hand spares of these well-known machines, on receipt of a post-card stating your requirements will, by return, quote you very competitive pri our stock comprises practically all parts.—Mau 100, Great Portland St., W.1. [

Premier.

BARGAIN.—Premier 1915 3½h.p., 3-speed, clu K.S., countershaft; £17; seen any time.— Grand Parade, Harringay. [

£22, offer.—3½h.p. Premier, 2-speed, clu countershaft, equipped, perfect.—97, Elsen St., Southfields, S.W.18. [

PREMIER Combination, 4h.p., 3-speed counterah kick-start; £43; take solo part.—57, Kenh St., Camberwell, London. [

PREMIER Countershaft Combination, 3 spe clutch, kick-start, as new throughout; sacri £38.—7, Cowdrey Rd., Wimbledon. [

MOTOR CYCLES FOR SALE.

Premier.

EMIER, about 1916, 3½h.p., 3 speeds, countershaft, kick-start, clutch, fully equipped, taxed; —51, Upper Richmond Rd., Putney. [1133

oare Parts.

EMIER Genuine Motor Cycle Parts.—Have just purchased entire stock from the makers; I have real goods.—Alf. Holland, Hearsall Lane Corner, ntry. 'Phone: 1945. [9886

EMIER Genuine Spares and Repairs.—We claim to be the most competent firm to supply spares and ate repairs to Premier motor cycles. We served in Premier works, and know this machine from A to Z. hold the most varied stock of parts for it in the l. We are the only traders who can claim to ly every part for a Premier machine. Our prices ock bottom, and our service unsurpassable. Write ull requirements; you will receive our reply per rn.—Forfield Motors, Forfield Place, Leamington 'Phone: 651. [8369

Priory.

IORY-J.A.P., brand new; £45.—Clark, 7, Exhibition Rd., S.W.7. [2305

Edwards.—2¾h.p. Priory 2-stroke, 2-speed, brand new; £38.—101, Gt. Portland St., W. [7503

22 Priory, 2¾h.p., J.A.P., 2-speed, clutch and kick-start, brand new and unused, three months' antee; £50; exchanges or deferred.—Edwards, 50, ington Rd., South Kensington. [1143

P V

21 P.V., spring frame, 2¾h.p. Villiers engine, 2 speeds, clutch and kick-starter, dynamo lighting, ric horn, knee grips, etc., exceptionally nice condn, guaranteed perfect; £37/10; exchanges.—Homae's, Lower Clapton Rd., N.E. Dalston 2408. [1083

Quadrant.

IFFORD WILSON Manufacturing Co. Sixteen years' experience with Quadrants.

5.—1921 Quadrant, 4½h.p., chain drive combination, accessories, tax, slight use only.

5.—1921-22 Quadrant, 4½h.p., chain drive combination, accessories, tax, overhauled throughout.

5.—1922 Quadrant, 4½h.p., chain drive combination, accessories, insurance, tax paid, overed.

5.—Brand new 1922 Quadrant, 4½h.p., all-chain combination; close offer accepted.

IFFORD WILSON Manufacturing Co., Quadrant Works representatives and sole wholesale distris for London, Southern and Eastern Counties, ow booking orders for the new 1923 3½h.p. Quadsports model; deferred payments; exchanges. al insurance facilities. [9988

AND New 4½h.p. Quadrant, 1922 model; bargain, quick sale, list price £105, our price £90.—ler Motors, Grindlay St., Edinburgh. [9539

RGAIN.—1921 Quadrant Combination, 4½h.p., 3-speed, Sturmey countershaft, equipped, taxed; guineas; photograph; exchanges.—Peter Gordon, 110, Upper Richmond Rd., East Sheen. [1117

are Parts:

FFORD WILSON Manufacturing Co., Quadrant official repairers and spare parts stockists, 177, minster Bridge Rd. (opposite Waterloo Station ach), London, S.E.1. Tel.: Hop 210. [9989

Radco.

DCO, 2-speed, perfect order; offers.—21, Sedgemere Villas, East End Rd., Finchley. [9414

DCO Motor Cycle, very nice condition, mechanically perfect; 15 guineas.—67, Fernlea Rd., Bal- [1105

Raleigh.

EMIER Motor Co. for Raleigh Bargains.

RTHER Great and Final Reductions to Clear; all brand new 1922 models, carrying makers' guarantee.—Below.

LEIGH New 1922 Sports 2¾h.p., 2-speed, £55; 2¾h.p. standard touring, 3-speed, with Montcy sidecar, £72; 5-6h.p., 3-speed, spring frame, impossible to repeat at these prices; guaranbelow 1923 prices.—Premier Motor Co., Aston Birmingham. [9592

LEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £56.—7, Exhibition Rd., S.W.7. [3588

LEIGHS.—1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [9960

22 2¾h.p. Raleigh, plated exhaust, Ace discs, as new, done 500 only; offers.—Cockersole, Aston Uttoxeter. [9548

1.p. Raleigh (April), 2-speed, kick-start, splendid condition, carefully used; trial; offers over —Bausor, Barnstaple. [9726

JST Clear!—Shop-soiled 5-6h.p. Raleigh Combination, De Luxe sidecar, fully equipped with lamps, horn, and tax paid, not been 200 miles, few demonstrations only; £110.—Walbro Motor Co., High St., Saffron Walden. 'Phone: 45. [9598

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MACINCOAT HOUSE,
34, North John St., LIVERPOOL.

MOTOR CYCLES FOR SALE.

Raleigh

RALEIGH 5-6h.p. Combination, shop-soiled only, 1922 model; list price £165; accept £140.—James Coultert, Motor Engineer, Kirkby Lonsdale. [9859

Reading-Standard.

READING-STANDARD 8-10h.p., with dynamo lighting, lamps, electric horn, new, shop-soiled only; £95.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [9969

Ready.

READY 2¾h.p. J.A.P. 1922, shop-soiled only, 2-speed model; £50.—Fredrics and Co., Ltd., 89, Gt. Portland St., W.1. [9967

AT Edwards.—1921 2¾h.p. Ready, J.A.P., 2-speed, countershaft gear, equipped with lamps and horn, tax paid, exceptional condition; 35 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1145

Record.

3h.p. Record, T.T. low, sporty, smart, perfect; £8/10; stamp.—17, Heaton Rd., Mitcham. [9837

Rex.

5-6h.p. Sporting Rex, dropped, clutch, taxed; £12.—Fisher, Springwell Rd., Heston, Houslow. [9935

1915 8H Rex, all chain, 3-speed gear box, perfect condition, large cantilever coachbuilt sidecar, real leatner upholstery, illustrated "M.C.," July 15th, 1920, fully equipped, as new; £90.—161, Gulson Rd., Coventry. [9376

Roc.

3½h.p. Roc Motor Cycle, Bosch magneto, 2 speeds, H.S., splendid condition; bargain, £11/10; also Chater 2-speed gear box.—Pooley, 1, Wastdale Rd., Forest Hill. [9987

Rover.

ROVER Combination 3½h.p., March, 1921, screen, dynamo; £80.—3, North End, Croydon. [9639

ROVER 3½h.p., 3-speed, clutch, good condition, lamp, tools, etc.; £28; exchange.—132, Silvermere Rd., Catford, S.E.6. [9379

3½h.p. Rover 1915-16, countershaft, 3-speeds, clutch, kick-starter, fully equipped; £40; instalments.—63, Solon Rd., Brixton. [9797

3½h.p. Rover Combination, 1920 (about), kick-start, 3½ countershaft, all on, taxed; £68.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [9006

1919 Rover 5-6h.p. Combination, lamps, screen, grid, speedometer, many spares, little used, lovely condition; 70 guineas.—13, Penn Rd., Holloway. [9632

5-6h.p. Rover Combination, lamps, windscreen, spare chain, perfect condition; £70. Call Saturday evening or Sunday.—30, King Sq., Goswell Rd. E.C.1. [9776

49 Guineas.—1920 Rover Combination, 3-speed, clutch, kick-start, speedometer, windscreen, lighting set, equipped, taxed, new condition, guaranteed sound.—186, St. James' Rd., Croydon. [9630

ROVER Combination, 1918-19, 5-6h.p. twin J.A.P., 3 speeds, clutch, kick-starter, dynamo lighting, hood, windscreen, luggage grid, speedometer, licence; £52/10 lowest.—63, Solon Rd., Brixton. [9798

AT Edwards.—1920 3½h.p. Rover, all-chain drive, equipped with electric lighting, horn and speedometer, absolutely indistinguishable from new; 55 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1149

BARGAIN.—Rover 3½h.p., 3 speeds, hand clutch, kick-start, 29 guineas; also Rover 3h.p. 3-speed combination, Rover sidecar, 38 guineas; exchanges; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1118

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9445

Royal Ruby.

1921 Royal Ruby, 2-stroke; bargain, £32/10.—Stone, 5, Penn Rd., Datchet, nr. Windsor. [9389

1921 3h.p. Royal Ruby, spring frame, kick-start, clutch; 33 guineas.—19, Valnay St., Tooting. [1098

ROYAL RUBY.—Latest 2¾h.p. sports model, little used; £40.—Fowler and Brigden, 130, Euston Rd., King's Cross. [0963

RUBY 2¾h.p., 1921, for sale, K., C.S., all on, latest pattern cylinder, valves and piston; offers.—"Handyside," Rowley Park, Stafford. [9407

1922 3h.p. Royal Ruby, spring frame, combination, lamps, screen, spare wheel, etc., fully equipped, bargain, brand new, shop-soiled; £155, or nearest cash offer.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich. [9335

Rudge.

1918 Rudge-Multi, as new, taxed, equipped; £25.—17, Heaton Rd., Mitcham. [9838

1922 Rudge-Multi 3½h.p., new August; £55.—Ritchings, Crooked Shore, Bacup, Lancashire. [9426

RUDGE T.T. Racing Model, special picked engine, 1920; 33 guineas.—67, Fernlea Rd., Balham. [1103

MOTOR CYCLES FOR SALE.

Rudge.

1921 Rudge-Multi, starter, clutch, been 668 miles; £35.—"Cranleigh," College Slip, Bromley, Kent. (P) [9889

SOUTHPORT.—1921 I.O.M. Rudge, splendid condition; 39 guineas. Exchanges.—Kents, 417, Lord St., Southport. [9875

33 Guineas.—1920 I.O.M. Rndge, tax paid, lamps, etc.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [9738

1919 Rudge-Multi and Henderson Sidecar, Easting, licensed; £50.—Starsmore, The Folly, Wicken, Stoney Stratford. [9556

1920 3½h.p. Rudge-Multi, lamps, horn, speedometer, thoroughly overhauled, licensed, trial.—Lawson, 22, Liverpool Rd., Chester. [9470

3½h.p. Rudge-Multis from stock; £60; Rudge spares per return.—Popular Motor Depot, Riversley Rd., Nuneaton, Warwickshire. [9466

RUDGE-MULTI 1915, clutch, lamps, tax paid, beautiful condition; £25.—Call any time, 105, Moore Park Rd., Fulham. [9743

33 Guineas.—1920 I.O.M. Rudge, fully equipped, in exceptional condition; bargain; evenings.—4, Elm Gardens, Hammersmith. [1058

RUDGE-MULTI, 1919, clutch, electric lighting, oversize tyres, all on, tax paid, 56 m.p.h.; £35.—Crawley Mews, Seymour St., N.W. [1039

RUDGE 8-6h.p., late 1920, fast, powerful, in perfect condition; snip, 50 guineas, near offer.—Hemingway, Heyman Rd., Minehead. [9828

AT Edwards.—1922 3½h.p. Rudge, chain drive, 3-speed, clntch and kick-starter, fully equipped, excellent condition; 59 guineas.—Below.

1921 Rudge-Multi, fully equipped, splendid condition; 47 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8402

BRAND new 1922 Rudge-Multis, maker's guarantee, T.T. or touring; £55; number limited.—Cleare and Co., 126, High St., Woolwich. 'Phone: 174. [9495

RUDGE 1921, Multi engine 22132, lamps, horn, insured, excellent condition, owner bought car; quick sale, nearest £55.—Waterloo Villa, Tonbridge. [9473

1922 Rudge-Multi 3½h.p., brand new, but shop-soiled; 60 guineas.—Morriss and Co., Ltd., 139, Finchley Rd., Swiss Cottage, London, N.W.3. [9611

£41.—Late 1921 I.O.M. Rudge-Multi, fully equipped, indistinguishable from new.—164, Revelstoke Rd., Southfields, S.W.18. 'Phone: Wimbledon 1185. [9794

1920 7-9h.p. Rudge-Multi Combination, in first-class condition, F.R.S. electric lighting; exchange part, good solo, sell £85.—Box 4581, c/o *The Motor Cycle*. [9621

1922 Rudge, all-chain drive and Multi models, sidecars, etc., at special end of season prices.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9337

1914 3½h.p. Rudge-Multi, good appearance, perfect running, lamps, horn, tax paid, £28; sidecar, £4/10.—28, St. Mary's Rd., Nuneaton, Warwicksbire. [9998

SUOP-SOILED Brand New 5-6h.p. Rudge Solo, £69; also ditto combination, £87/10; also ditto 7-9h.p. combination, £97/10.—Shepherds, Enfield Highway. Tel.: Waltham X 31. [0925

1919 3½h.p. Rndge-Multi, appearance and running guaranteed as new, lamps, horn, tax paid; £35; sidecar, £5.—Collins, Arcade, Market Place, Nuneaton, Warwickshire. [9997

RUDGE 1921, magnificently equipped, fast and perfect. Allen Liversidge searchlight lighting, speedometer, watch, mirror, route guide, spare belt carrier, 3 tool bags, discs; £53.—Corrie, Bayfield, Bookham, Surrey. [9459

RUDGE-MULTI, 1922, fully equipped with watch, Tan-Sad, spare belt, exceptionally fast, Argus silencer, taxed; any trial; £50.—Kennoth Kemp and Co., 4, Berkeley Mews, Connaught St., London. 'Phone: Padd. 1177. Exchanges invited. [1164

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd. Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Illustrated list free.—Forfield Motors, Forfield Place, Leamington Spa [3163

Scott.

SCOTT, standard, only run from works, T.T. bars; £80.—Box 4596, c/o *The Motor Cycle*. [1009

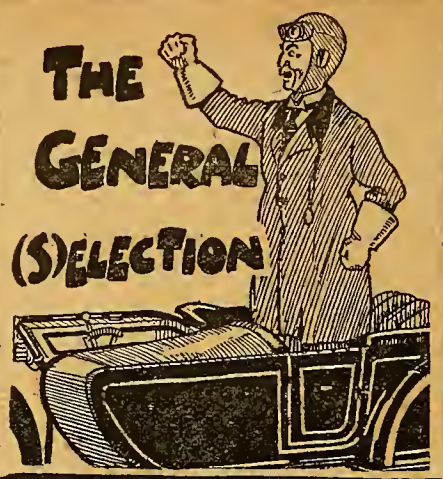
SCOTT, 1921, standard model, perfect condition; £52; bargain.—7, Exhibition Rd., S.W.7. [1157

SCOTT Combination 1922, spotless within and without, fair market reduction.—Vicar, Redcar. [9390

NEW Scott Squirrel, tested over 60, 3in. tyres, carrier, equipped; £80.—Taylor, Ferncliffe Cottage, Keighley. [9365

SOUTHPORT.—Instant delivery, late 1923 Scott Squirrel; new price, £89. Exchanges.—Kents, 417, Lord St., Southport. [9374

AT Edwards.—1921-22 3½h.p. Scott Squirrel, perfect order; 49 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1153



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Underslung type, four point attachment with accurately machined fittings, enclosed and easily detachable wheel, with wide mudguard, 26 in. wheel, fitted with tyre 26 in. by 2¼ in. Other sizes to order.

Price, complete with waterproof apron, £26

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Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

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SCOTT Service Depot, Cathedral Motor W. Liverpool.—Scott motor cycles and Scott socia 1922 Scott Sociables at 158 guineas. [

SCOTT 3¾h.p., 1920, excellent condition, tax £55; similar machine, 1915 model. £35.—P Evans, John Bright St., Birmingham. [

SCOTT 3¾h.p., December, 1820, Lucas equipm 3in. tyres, 90 m.p.g., extrns, perfect; £80; oil lighter machine.—42, Victoria Rd., Peckham. [

1920 Scott 3½h.p., with sports model sidecar, plete with lamps, licensed; magnificent bar to clear stock; £57/10.—The Layton Garages, Bice Oxon. [

SCOTT Squirrel, 1922, indistinguishable from 700 miles only, powerful lamps, speedom 4 tool bags, etc., tax paid, cost owner £120, must cash, £80.—Mjelde, 13, Mayfield Rd., Acton, Saturday 2-5 or Sunday. [

Spare Parts:

SCOTT Parts.—New 25% under list for engine, sprockets, mudguards, forks, radiators, Cox-A carburetter; stamp.—Beard, Mill Hill, Blackburn. [

WARD Motors Ltd 32, Hustler St., Bradf for sound second-hand Scott parts at less t half-price; satisfaction guaranteed. List by retu [

GODFREYS', Ltd., 208, Gt. Portland St., Lon W.1.—Complete stock of all Scott spare always in stock. Write for free spare part list, sta year of manufacture. [

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4½h.p. Singer Combination, 2 speeds, clutch, all lm horn, etc., goes well, good reliable mount; £ Homac's, 243, Lower Clapton Rd., N.E. 'Ph Dalston 2403. [

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GENUINE Singer Parts.—Let me quote you.— Holland, Hearsall Lane Corner, Cover 'Phone: 1945. [

Sparkbrook.

BARGAIN.—Sparkbrook, 1917, 6-8h.p. J.A.P., c tershaft gears, coach sidecar, 42 guineas; ph graph.—Peter Gordon, Ltd., 110, Upper Richmond East Sheen. [

Sun.

FOR Sun-Jan. or Sun-Vitesse, get in touch the sole North London agents. Models in st single Special, 42 guineas; 2¾h.p. J.A.P., 2-spe K.S., 60 guineas.—Send for catalogues. 'Trade plied.—Jones' Garage, Broadway, Muswell Hill, N. [

Sunbeam.

SUNBEAM Twin Combination; £76.—77, Lane, S.W.2. [

SUNBEAM, latest 2¾h.p., 1923, all other mode Clifford Motories, Eastwood, Notts. [

SUNBEAM 1921 3½h.p., new condition, Lucas se lene, speedometer, taxed, 26×3; £85.—7, Ev tion Rd., S.W.7. [

BRAND New T.T. Sunbeam 3½h.p.; list £137/10, our price £108.—Pioneer Mot Grindlay St., Edinburgh. [

1919 3½h.p. Sunbeam, all chain, black and model; £55.—37, Arlington Rd., Surbit 'Phone: Kingston 1274. [

SUNBEAM 1922 4½h.p. Combination, electric lan scarcely used, unscratched, beautiful outfit; £ 7, Exhibition Rd., S.W.7. [

SUNBEAM 1920 3½h.p. Semi-sports, lamp, h speedometer, in very good condition.—Offers T. M. Jones, 26, High St., Bala. [

SUNBEAM 8h.p. Combination, 1919, legshie Binks, Easting, splendid conditinn; £68, barg no offers.—7, Cowdray Rd., Wimbledon. [

3½h.p. Sunbeam 1922 Combination, guaranteed used 50 miles, licence paid, as new; £12 Timberlake's Garage, Wigan. Tel.: 612-513. [

SUNBEAM Twin-cyl. and Gloria Sidecar, lice paid, lamps, horn, speedometer, and screen, perfect order; £80.—Jenkin, Garage, St. Austell, C wall. [

1920 Sunbeam 3½h.p. Sports Combination, pletely equipped and licensed, excellent co tion; £90.—The Layton Garages, 30, Holywell Oxford. [

SUNBEAM 1921 3½h.p., complete with D.A. cy der, Lucas lighting set, speedometer, horn, splendid condition; price £75, or near offer.—S ningdale Motors, Sunningdale. [

1921 Sunbeam 8h.p. Combination, most luxurio equipped, dynamo, spare wheel, hood, many spares, as new; £130, nearest.—James, Bradmores, 482, Harrow Rd., Paddington. [

1920 3½h.p. Sunbeam, in perfect condition, be tifully equipped with best Cowey and Lu accessories; 6,000 miles; 75 guineas, or near o Seen by appointment.—Box 4220, c/o *The Mo Cycle*. [

MOTOR CYCLES FOR SALE.

Triple-H.

DON'T buy a second-hand dud when the 1923 Triple H costs from 33 guineas new; instalments, if desired.—Meeten Motors, Dorking. [9892

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PREMIER Motor Co. for Triumph Bargains.

SPECIAL Offer of a few brand new 1922 type SD, 4h.p. all-chain drive Triumphs, at £85; makers' present list price, £115; sidecars to match, Millford £, Montgomery sporting £18; carriage paid to any address; deferred payments arranged.—Premier Motor Co. Aston Rd., Birmingham. [9595

SPEED 3½h.p. Triumph, complete; £25.—Cross, 5, Effingham Sq., Rotherham. [9574

SHOP-SOILED 1922 Triumphs, at 15% off list prices.—Cross, Agent, Rotherham. [9573

1921 Triumph Junior, perfect, lamps, etc.; £45.—Macnab, Beal, Northumberland. [9808

TRIUMPH, 1913, clutch, taxed; £16.—Kennard, 78, Yerbury Rd., Holloway, N.19. [9955

1914 Triumph, 3-speed, £22; 1913 clutch, £18; 1912 Grade, £15.—17, Heaton Rd., Mitcham. [9839

20 Guineas.—1921 Triumph, all-chain, equipped, perfect condition.—40, Aynhoe Rd., W.14. [9814

2.—3½h.p. Triumph, Bosch, B. and B., good running order.—King, Egrove Farm, Oxford. [9931

TRIUMPH Combination, bought Jan., 1921, low mileage, perfect order; £90.—Apps, Bracknell. [9841

1922 Shop-soiled Triumphs; Ricardo, £95; Model H, £85; Baby, £50.—Thos. Booth, Frodsham. [9952

TRIUMPH 1921 4h.p., chain-belt; £70, bargain.—Williams, Brightview, Hadley Rd., New Barnet. [9614

TRIUMPH 3½h.p., 1911, N.S.U. 2-speed, clutch, perfect; £20.—3, Clarence Rd., Berkhamsted, Herts. [9623

1922 Triumph-Ricardo, new July 10th; £90; exchange.—May, The Hermitage, Barming, Maidstone. [9410

TRIUMPH 1920 Gloria Combination, Lucas lamp, tax; £75; lightweight part.—H. Rock, Cradley, Worcs. [9547

TRIUMPH, 1922, brand new, all-chain drive, usual guarantee; list price £115; our price £85.—Shaw. [9346

TRIUMPH, 1920, splendid condition, guaranteed; snip, £55 cash, or extended payments.—Below.

THE Hackford Eng. Co. have four more renovated countershaft Triumphs at £45. Cash or extended payments. Do not miss this opportunity. Call, write or phone Brixton 3052.—33, Hackford Rd., Brixton, S.W. 9. [1067

1918 Countershaft Triumph, perfect as new, £45; ditto, 1921, £55.—24, Balliol Rd., North Kensington. [1106

TRIUMPH Countershaft Combination, equipped, splendid condition; bargain, cheap.—33, Pennard Rd., W. [9789

1920 Triumph Combination, fine condition; £62/10.—M. Hillier, 216, Portobello Rd., North Kensington, W. [9906

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High St., Lee, S.E. [3245

TRIUMPH, brand new, makers guarantee; S.D., £87; Model H, £85; Model R, £100.—Parker's Garage, Derby. [8793

1921 All-chain Triumph-Gloria Combination, accessories, tax paid.—Drummond, 7, Sydney Place, Hendon. [1065

1920 Triumph Combination, C.S., Mills-Fulford sidecar, splendid condition; £50.—120, Sutherland Ave., W. Croydon. [9971

1918 Triumph, 58920, fully equipped, perfect. £43.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9976

1920 Triumph Combination, fully equipped, Easting; 60 guineas.—Maynard, 161, Bowes Rd., Palmers Park, N.11. [9899

TRIUMPH, 1920, Model H, perfect condition throughout, any trial, very fast; £60.—Fox, 102a Church St., Chelsea. [9852

20 Guineas.—1921 all-chain Triumph, licensed, insured, equipped, new condition.—Bacon, Offington Lane, Worthing. [9729

1922 Triumph Model H, in excellent condition and fully equipped; £65.—The Layton Garages, 30, Holywell St., Oxford. [9711

2½ Baby Triumph, 2-speed, 2-stroke, nice condition, all on; £39, no offers.—11, Norwich Rd., Fairfield, Liverpool. [1078

TRIUMPH 4h.p. 1921 Gloria Combination, Magdyno lighting (Lucas), taxed and insured, perfect condition; £110.

TRIUMPH 4h.p. 1920, with M.P. cantilever sidecar, lamps, horn, taxed, in perfect order; £80.—Hedries and Co., Ltd., 89, Gt. Portland St., W.1. [9968

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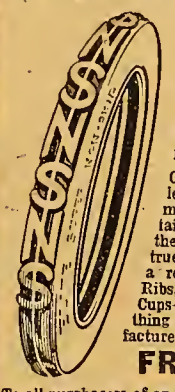

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	26×2½×2¼	35/–	6/9
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Size.	Make.	Our Price.	List Price.
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,,	Clincher de Luxe, ex. heavy.	17/6	26/–
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26×2	Clincher de Luxe, ex. heavy.	18/6	27/9
,,	Elite, 3-ribbed, ex. heavy	24/6	—
26×2¼	Clincher de Luxe, ex. heavy.	18/9	28/3
,,	Dunlop, heavy, rub. std.	22/6	26/9
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,,	Palmer, cord	25/–	43/4
,,	Bates, spec. hvy., wired-on	26/9	—
,,	Palmer, cord, heavy	30/–	47/9
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,,	Dunlop, heavy, rub. std.	25/–	30/–
,,	Palmer, 3-ribbed, ex. hvy.	27/6	—
,,	Dunlop, ex. heavy, rub. std.	30/–	35/9
26×2½ ×2½	Clincher de Luxe, ex. heavy.	23/3	34/9
	Clincher, Dreadnought	29/6	38/9
26×2½	Clincher de Luxe, ex. heavy.	25/–	33/6
28×3	Clincher de Luxe, ex. heavy.	30/–	45/–
,,	Ajax, Road King	35/–	—
,,	Goodyear, All-weather	37/6	45/3
,,	Palmer, cord	42/6	63/–
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MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH and Sidecar, 1920, 4h.p., fully equipped and licensed; £60.—Baxter, Motor Engineer, Chobham Rd., Woking. [9357

1921 Countershaft Triumph Combination, every fitment, as new; £60; exchanges.—24, Balliol Rd., North Kensington. [1110

TRIUMPH 1919 4h.p., 3-speed, clutch, K.S., perfect condition, any trial; £60, or nearest offer.—193, Brentwood Rd., Romford. [9394

£35.—Countershaft Triumph, 3-speed Sturmey-Archer, perfect condition.—46, Elnathan Mews, Shirland Rd., Paddington. [9825

TRIUMPH Combination, new last July, insured, good condition, owner going abroad; 70 guineas.—69, Argyle Rd., West Ealing. [9802

TRIUMPH 1918, complete with sidecar, in perfect running order, very little used; £60, or nearest.—Stuarts Garage, Methven. [9812

TRIUMPH 1914 4h.p., 3-speed, just overhauled, lamps, Klaxon; £30, or near.—Liddle, 10, Hawsleigh Gardens, Anerley, S.E. [9769

1919 Triumph 4h.p. Combination, exceptionally smart outfit; £60.—Rhind and Co., Stone Place, Rusholme, Manchester. [9536

1918 Triumph, recently overhauled, new cylinder, bearings, chain, tyres unpunctured, Tan-Sad.—28, St. Margarets Rd., Brockley. [9635

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3589

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

1922 Triumph-Ricardo, 3½h.p., o.h.v. engine, brand new, shop-soiled; £105; exchanges.—Homac'a, 243, Lower Clapton Rd., N.E.—Dalston 2408. [1084

£22.—Triumph, late countershaft model, original enamel, lamps, accessories, less cylinder, crank case, gear box.—63, Solon Rd., Brixton. [9799

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

1918 Triumph 4h.p., countershaft, equipped, Tan-Sad, splendid condition; £50; exchange.—37, Canterbury Rd., Balls Pond Rd., Dalston, N.1. [1047

NEW 1922 Triumph, S.D., all-chain (maker's guarantee), list price £115; spot cash, £84.—Harry Nash, 391, King St., Hammersmith. [9973A

1922 Triumph, Gloria sidecar with Easting windscreen, never used, unpacked in original crate; what offers?—Watts, York House, Bideford, Devon. [9922

TRIUMPH, Model H, brand new and unused, offered at £105; our price £88; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

£43.—1918 Triumph, countershaft, fully equipped, registered, in excellent condition, any trial; exchanges; evenings.—4, Elm Gardens, Hammersmith. [1064

1914 3½h.p. Triumph, hub gear, hand clutch, engine just had all new bearings, hub overhauled, lamps, horn, taxed; offer.—Easter, Five Ways, Swanley, Kent [9811

£80.—Triumph H, 1922, complete with lamps, Bowden extra air, Bcence paid, only done 600 miles, as new.—Barton, 41, St. Mathews Parade, Northampton. [8600

1920 Triumph Combination, Coupette sidecar, very smart lot, nearly new; £70; terms with £18 down.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [1034

1921 Triumph H Combination, Gloria sidecar, Easting, luggage grid, many extras, few miles only, and indistinguishable from new, fully guaranteed; £92.—Below.

1922 Triumph S.D., all chain, brand new, in crate; £75.—Below.

TRIUMPH (late model) Combination, Easting, fully equipped, new tyres, taxed, perfect; £53.—Ward and Co., 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [1151

1922 Triumphs.—Showroom soiled only; Type H, £80; Type SD, chain drive, £85; Ricardo models, £90.—The Layton Garages, 30, Holywell St., Oxford. [9715

3½h.p. Triumph, Philipson pulley, mechanically as new, fitted new links, carburetter; £22/10; a gift.—Rhind and Co., Stone Place, Rusholme, Manchester. [9587

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [9653

TRIUMPH-GLORIA Combination, 1921-22, all-chain drive, fully equipped with Lucas accessories, and as new; £85; or exchange.—3, Stamford Brook Rd., Hammersmith. [1050

TRIUMPH-GLORIA Combination, 1920, good running order, Easting, Tan-Sad, Cowey speedometer, Cowey horn, Lucas lamps; £80.—Gidea Park Motor Stores, Romford. [9908

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1918 4h.p., countershaft, 3 speeds, with brand new sidecar and new Sandum screen, in excellent running order; £55.—96, Bickersteth Rd., Tooting, S.W.17. [1074

TRIUMPH 1922 Models, slightly shop-soiled only; Type H, £80; Type SD, £85; Type R, £90. Write for shop-soiled bargain list.—P. J. Evans, John Bright St., Birmingham. [9578

1918 Triumph Countershaft, Model H, and sidecar, original enamel and plate (not renovated), under 5,000 miles, accessories; £50; after 7.30.—Parker, 65, Clifton Avenue, Wembley Hill. [9381

TRIUMPH-RICARDO 1922, special machine, winner of over 30 events this season, new condition; 85 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1120

NEW 1922 Triumphs, all-chain drive, and Junior models; cash offers invited to clear. Write, call, or 'phone Greenwich 751.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9331

1920 Triumph and Gloria Sidecar, fitted with aluminium disc wheels, all accessories, stored and unused for 2 years; price £85.—Lt. Bolton, 1, Richmond Mews, Whitehall. Tel.: Victoria 5355. [8671

TRIUMPH 1920, 3,000 miles, speedometer, lamps, new belt and tyre, fast, licensed December, insured August, 1923, seen by appointment Aldershot or Folkestone; £55.—Page, 10, Wellington Terrace, Sandgate. [9725

£18, Honest Bargain.—Fast, reliable Triumph, early, entirely transformed, no smarter on road, aluminium discs, D.R. bars, adjustable jet, kick-start, Grado, U.H., lamps, horn, tools.—Box 4578, c/o *The Motor Cycle*. [9603

44 Guineas.—1917 4h.p. Triumph Combination, 3-speed, clutch, K.S., semi-sporting sidecar, lamps, Klaxon, Tan-Sad, tax paid, engine just been overhauled, guaranteed perfect.—239, Goldhawk Rd., Shepherd's Bush. [1071

1922 Triumph-Ricardo 3½h.p., o.h.v., fast roadster, all Lucas equipment, special exhaust pipes, all parts highly polished, small mileage, the smartest Ricardo in England; £87/10.—The Layton Garages, 30, Holywell St., Oxford. [9712

SOUTHPORT.—1922 model S.D. Triumph, Gloria Lucas Magdyno Combination, spring wheel, Triumph legshields, Lucas electric horn, Easting, luggage carrier, superb condition, unpunctured; collosal bargain, 105 guineas. 1921 Sports model H, Ricardo bars, very fast, excellent, specially tuned; 67 guineas. Exchanges.—Kents, 417, Lord St., Southport. [9372

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

TRIUMPH Spares, second-hand or new; goods sent per Return Service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [9885

TRIUMPH Spares, every part in stock, no waiting, prices right.—Ward and Co., 51, Upper Richmond Rd., East Putney. 'Phone: Putney 2754 [1135

1914 Triumph Spares, £300 Worth.—Engines, cylinders, flywheels, frames, barrel springs, all spares; half list.—Day, Arch 23, Walmer Rd., N. Kensington, W.10. [1092

TRIUMPH Spare Parts for all Models; as-Sturmey-Archer gear parts from stock, post free. gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [080

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa [7361

Trump.

BRAND New 2¾h.p. Trump-Jap, 2-speed model; list price £60, our price £47.—Pioneer Motors, Grindlay St., Edinburgh. [9533

Velocette.

PREMIER Motor Co. for Velocette Bargains.

FURTHER Startling Reductions in showroom-soiled 1922 models; E2, 2-speed, £52; E3, 3-speed, £55; these prices are £10 below makers' 1923 prices; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [9091

£18.—2¼h.p. Velocette, 2-speed, all-chain, 24in. wheels, fine order.—King, Egrove, Oxford. [9932

VELOCETTE, 1921, perfect condition, all accessories; £37, or nearest offer.—28, Seaward Av., Bournemouth. [9552

2¼h.p. Velocette, 1921, all on, 2-speed, as new, ran 100 miles, speedometer, fast, reliable, £38; also 3½h.p. Rover, 50 m.p.h., guaranteed, £24; offers.—A.R., 3, Montague Rd., Cambridge. [9523

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3½ H.P. **Ariel,** 3 speed, clutch and kickstarter.	**£80**
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4½ H.P. **Hawker Blackburne,** 3 speed all chain.	**£75**
4 H.P. **Triumph,** 3 speed, all chain S.D.	**£97-10**
4¼ H.P. **B.S.A.** Model H and No. 3 B.S.A. sidecar	**£115**
6 H.P. **B.S.A.,** twin model B. combination	**£140**
8 H.P. **Enfield,** Standard combination	**£125**
8 H.P. **A.J.S.** combination, detachable wheels, screen, etc.	**£155**
8 H.P. **Matchless** combination, Model J	**£125**
3½ H.P. **Triumph,** Model R	**£105**

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MOTOR CYCLES FOR SALE.

Velocette.

1920 Velocette 2¼h.p., 2 speeds, fully equipped, ... dition perfect; £35.—The Layton Garages, Holywell St., Oxford. [9

VELOCETTE, as used in the Grand Prix T.T., ... speed clutch, internal brakes, shock absorl 3-speed oil pump, large tank, new oversize ty Michelin Cable, very fast, winner of several eve in excellent condition; cheap.—L. Runton, Buros Ilkley. [1

Verus.

32 Guineas.—1922 Verus-Blackburne 2¾h clutch, K.S., discs, lamps, tax, as new.— Eleanor Grove, Hoggers Corner, Barnes. [9

Weatherell.

WEATHERELL 2¾h.p., 2-stroke, Competit model, 3-speed, winner many events, fitted cially for competition purposes; cost over £120; cept £50.—12, Temple Sheen Rd., East Sheen, S.W [9

Werner.

WERNER 4h.p., low, fast, powerful, £22; t pedal cycle part.—57, Kenbury St., Camberw London. [9

Wolf

FIRST offer over £17.—Wolf 1917, fully equip splendid condition.—Before 8 p.m., 37, High Merton. [9

Zenith

ZENITH Combination 1916, 4h.p. J.A.P., Bos £50; write appointment.—Owner, 48, Barnes Rd., Catford. [7

SPORTS Zenith, 5h.p., fully equipped, tax paid, machine; £45, or exchange.—198, King Hammersmith. [9

1920 Zenith 5-6h.p., equipped and licensed, perf order, little used; £45.—The Layton Garag 30, Holywell St., Oxford. [9

ZENITH 1920 8h.p. Sports Model, tyres, belt, r Lucas lamps, taxed, magnificent machine; £5 4a, County Grove, Camberwell. [9

ZENITH-BRADSHAW, 1922, lamps, tax, spee meter, as new; £65; exchanges.—2a, Elean Grove, Hoggers Corner, Barnes. [9

ALLAN GRUZELIER, the Zenith Specialists, ster Chambers, 168, Regent St., W., have disposal the following bargains:—

1922 5h.p. Sports, Magdyno, Bonniksen, spee meter, perfect; £65.

1922 3½h.p. Sports, Bradshaw, chain, as new; £

1921 5h.p. Sports, electric lighting, perfect ord £50.

1920 5h.p. Sports, all on, only run 1,500 mil £45.

COMBINATIONS.—1920 Sports, 8h.p., £65; 19 countershaft, £75.

A BUNCH of Bargains, and all in really excelle condition, to be seen in London, or at 4, T Pavement, Coulsdon, Surrey. [1

29 Guineas; Exchange.—4h.p. twin Zenith count shaft, clutch and K.S., fully equipped, ov hauled, taxed.—15, Deal Rd., Tooting. [9

F.O.C.H. Invite Inspection. Zeniths and oth makes far below any anticipated price reductio —5, Heath St., Hampstead (near Tube). [38

1922 all-chain super sports 8h.p., Zenith, excelle condition, Dunhill sidecar, Lucas accessori £115; consider cheap solo.—Finch, 10, Osborne R Coventry. [96

1919 8h.p., T.T., Zenith, with Henderson 1922 spo sidecar, all in splendid condition, large P lamps, licence paid, any trial; £70.—Harold Mann Spitzbrook, Marden, Kent. [96

YOUR Motor Cycle or Combination taken in pa payment for a Zenith, any model; deferred pa ments.—Barker's Motors, 194, Balham High R S.W.12. 'Phone: 4441 Latchmere. [10

BRAND New Latest 8h.p. Zenith Combination, 192 super sports J.A.P. engine, 3-speed, clut and kick-start, all-chain, magnificent outfit; sac fice £110; exchanges.—24, Balliol Rd., North Ke sington. [10

1921 5h.p. Sports Zenith and Canoelet Sidecar aluminium pistons, speedometer, electric ligh spare belt in case, handle-bar watch, hand-controlle jet, windscreen on sidecar, 26×3 on rear, fast, spor ing; £75.—Brooke, R.M. College, Camberley. [94

1922 Zenith-Bradshaw, Gradua, fast and well gua guarded, speedometer, lamps, equipped, Mor gomery semi-sports sidecar, winner special pri C.U.M.C.C. one-day trial, clean ascent Alms Hill, own compelled to buy car; £100 for finest dual purpo machine.—Chalmers, 19, Market Hill, Cambridge. 94

Spare Parts:

ZENITH Spares.—Immediate delivery.—Kays, 8 an 10, Bond St., Ealing. [94

MOTOR CYCLES FOR SALE.
Miscellaneous

EBDEN and Sons, Nelson.

ND New 1922 Models.

.p. Royal Ruby, 3-speed; list £75; our price £52.

.p. Douglas, 2-speed; list £68; our price £54.

.p. Masser, Blackburne engine, 3-speed, guaranteed 60 m.p.h.; list 76 guineas; our price 60 is.

.p. James, Sports Model; list £105; our price £82. 7h.p. James combination, spare wheel, ist £170; our price £140.

Triumph, type H; list £105; our price £85.

.p. P. and M. Combination, 4-speed; list £130; our price £111.

Matchless 2-seater Combination, Magdyno, are wheel, etc.; list £206; our price £170.

Enfield Combination; list £140; our price 110; also new 1921 combination; £100.

EBDEN and Sons, 71, Scotland Rd., Nelson, ancs. Tel.: 91. [1022

—4h.p. o.h.v. J.A.P., absolutely perfect running and condition.—26B, Ingleton St., Brixton. [9783

. 2¾h.p., overhead valves, special races, speed rial winner; £30.—Wheelhouse, Walton, Chester- [9391

TLOR and Kirk offer the following bargains, ach item being better value for money than ised elsewhere:

) Sunbeam Combination, 8h.p., dynamo lighting, fully equipped, lamps, Lucas, electric horn, meter, Sunbeam sidecar, screen, and hood, spare any trial; £75.—Below.

) Harley-Davidson Combination, fully equipped, electric and acetylene lighting, Canoelet sidemart and reliable; £54; any trial.—Below.

) Harley Combination, most luxurious sidecar, hood, etc., in first-class mechanical condition. convince you; £56.—Below.

) Harley Solo, 3-speed, K.S., fully equipped, speedometer, etc., as44; 1918 James combina-, 4-4h.p., 3-speed, K.S. The most fully equipped ation possible, and in new condition both appe and mechanically, hood, screen, speedometer, ds, and many spares, any trial; £45.—Below.

). Rover Combination, 3-speed, fully equipped, new sidecar body, any trial; £22.—Below.

). Rex Combination, 2-speed, fully equipped; 4.—Below.

) A.B.C., 4-sped, K.S., machine not been used over 12 months, enamel unscratched; £47.—

Douglas, 2-speed, smart; £19.

. B.S.A., appearance and mechanical condition erfect, will stand real hard work; £24.

. New Imperial, 2-speed, fully equipped, fast achine; £18/10.

. P. and M., 2-speed, powerful engine and ood appearance, trial willingly; £26.—Below.

Precision, 1916 engine, up-to-date in every 2-speed, a fast solo; £14.—Below.

A.OR and Kirk, 406, Garratt Lane, Earlsfield, W. 'Phone: Wimbledon 2041. [9936

DS Garage, The Broadway, Muswell Hill, N.10. Open all Saturday. London's lowest prices; all cycles guaranteed 3 months.

DS Garage.—2¾h.p. New Imperial-J.A.P., 2-ed, all accessories, excellent condition, any en; £20.

DS Garage.—4h.p. Douglas Combination, 1919, ceptional condition and fast; £55.

DS Garage.—2¾h.p. Hobart-Villiers, brand new, ampton forks, large Dunlop tyres; list price duced to £35; gear box to suit, £5 extra.

DS Garage.—Indian sidecar, to suit spring-frame del, coachbuilt, perfect condition, one only;

DS Garage.—1919 B.S.A. 4¼h.p. Combination, y fully equipped, very smart, and in faultless n throughout; £59.

3½h.p. Humber 3-speed Combination, fully equipped, perfect condition; our special bar- the week; £27/10.

renovated Triumph, purchased from Triumph's 1920; completely equipped; looks and runs absolute as new; beautiful condition; £45.

DS Garage.—Heaps of bargains from £20. Also ceptional reductions in brand new 1922 models allmakes. Large comprehensive list free for the All machines guaranteed. 'Buses from High- d Finsbury Park pass the door.—Broadway, sw Hill, N.10. Tel.: Hornsey 2917. [9607

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3-WHEEL Runabout 6h.p., 2-speed, clutch, perfect; £14.—17, Heaton Rd., Mitcham. [9840

G.N., 1922 model, specially tuned, shop-soiled only, 2-seater and nice dickey; only £210.

G.N. Model De Luxe, dynamo lighting, disc wheels, hood, screen, painted makers', exceedingly smart car, looks like this year's model; £115; exchange or deferred payments for either.—Marlborough (Motor House), 20-22, Finchley Rd., N.W.8. Hampstead 7355. [6564

MORGAN De Luxe, 1919, M.A.G., speedometer, perfect; £92.—Hockerill Works, Bishops Stortford. [9098

HUMBERETTE, perfect, fully equipped; £50; lightweight part.—887, Lea Bridge Rd., Walthamstow. [9637

ROVER Eight 1923 models from £180; motor cycle exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7517

CYCLE Car, less engine, new wheels, tyres, friction drive, windscreen, etc.; £11.—Tredegar, 23, Eaton Rd., Margate. [9502

L.A.D. Monocars, simplest and lightest, takes up same room as motor cycle; £75.—Durant, Bourne, Farnham. [9780

G.N. 1921 Model de Luxe, not a year old, mileage 6,500, condition and appearance equal to new; 110 guineas.—Below.

G.N. 1922 All-weather Coupé Model, mileage 6,000, guaranteed condition; 130 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [1128

TAMPLIN 1921 8h.p., 3 speeds, lamps, hood, excellent condition; £42.—2a, Eleanor Grove, Hoggers Corner, Barnes. [9758

1922 Aero Morgan, Lucas dynamo lighting, painted yellow; £180; exchange solo or combination.—H. Rock, Cradley, Staffs. [9545

G.N., 1922, dynamo, spare wheel, 3 new tyres, exceptional condition; £90.—Lake, Jeweller, 33, High St., Camden Town, N.W.1. [9657

RUNABOUTS AND CYCLECARS.

PEUGEOT 10h.p. Twin, Amac, E.I.C., 2-speed, C.S., clutch, running order; £15 offer.—Dunn, 8, Westmount Rd., Eltham, S.E.9. [1073

ROLLO Cycle Car, 8h.p., J.A.P. engine, had £8 worth new parts fitted, 3 new tyres and tubes; £25.—Glover, The Ledge, Desborough. [9543

NEW HUDSON 1922 Light Car, showroom model, slightly soiled, fully guaranteed; £195.—New Hudson Depot, 45, Gray's Inn Rd., W.C.1. [9152

3-WHEELER 2-seater Cycle Car, £15; also a 4-wheeler small light car, less engine, £6.—H. R. Hall, c/o Green Man Hotel, Whetstone, London. [9424

MORGANS.—Hall, 91, St. Peter's St., St. Albans, can give early delivery of this famous runabout; Grand Prix £160, De Luxe £165, Family Model £170. [0935

VERY Smart 1920 8h.p. Richardson Light Car, every accessory, 4-speed and reverse, very reliable; £65; exchanges.—24, Balliol Rd., North Kensington. [1114

1922 De Luxe G.N., dynamo lighting, every possible accessory, including discs, £140; ditto, 1921, £100; exchanges.—24, Balliol Rd., North Kensington. [1113

44 Guineas. Exchanges.—1913-14 G.N., 2-seater, hood, screen, polished bonnet, electric lamps, speedometer, smart, any examination, trial.—Seabridge. —Below.

63 Guineas. Exchange.—1914 Perry, 8h.p., 2-seater, 5 detachables, hood, screen, lamps, smart, any examination trial.—Seabridge.—Below.

37 Guineas. Sacrifice Price, Exchange.—De Dion, 8h.p., 2 cylinders, monobloc, 3-speed, gear box, side change, 2-seater, dickey, hood, screen, lamps, Stepney, good tyres, splendid condition.—Seabridge.—Below.

ALL the above and many other bargains at Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [9339

1921, September, latest Carden De Luxe, beautiful 2-seater, electric lighting, hood, screen; trial; sacrifice, 59 guineas; motor cycle part.—1, Ebner St., Wandsworth. [9962

85 Guineas.—Morgan 1920 Grand Prix, hood, screen, lamps, Stewart mechanical horn, discs, pump, and tools, tax paid.—Delancey Street Garage, Camden Town, N.W.1. [9897

SOUTHPORT.—1917 Grand Prix Morgan-Jap, Aero, body primrose and black, all-on, recent overhaul, £30; 79 guineas. Exchanges.—Kents, 417, Lord St., Southport. [9876

1921 Carden 2-seater, hood, screen, electric lamps, in really excellent order; £65; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1087

1922 Morgan Popular model 8h.p. J.A.P., standard equipment, guaranteed faultless; £115.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1088

1922 8h.p. Grand Prix Morgan, water-cooled J.A.P. engine, fully equipped as list, and tax paid, in very nice order; £120.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [9600

£65.—1921 Tamplin Cycle Car, 8h.p. twin J.A.P. engine, only done 500 miles, fully equipped; splendid bargain.—Speechley, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [9774

MORGAN, 1920, w.c. Grand Prix, Aero, speedometer, clock, 2 spare inners, usual lamps and accessories, perfect order; £115.—72, Parliament Hill Mansions, N.W.5. Tel.: 3169 Hornsey [9529

AT Edwards.—1921 Bleriot Whippet, electric light, spare wheel, hood, screen, hand-starter and reverse gear, perfect order; 62 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1154

1922 10h.p. 2-seater A.V., 3-speed, reverse, aluminium body and discs, electric lighting, hood, screen practically new; exchange Morgan or combination and cash.—89, East Hill, Wandsworth. [9759

1922 Latest De Luxe Rover, peacock blue, many extra fittings, tax paid and insured, indistinguishable from new, £160; another, £150.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9977

1922 Morgan Grand Prix, 10h.p., M.A.G., water-cooled, Lucas dynamo lighting, fully equipped, licensed, fast, and in excellent condition; any trial; £120.—Edwards, 50, Harrington Rd., South Kensington. [1144

MORGAN'S G.P. model, 10h.p. Blackburne w.c. engine, fully equipped, brand new, for immediate delivery; £160; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1085

A.V. Monocars.—1920, dynamo lighting, £55; 1920, accumulator lighting, £50; 1920 6h.p., gas lighting, £40; all fully equipped; exchanges; cash either way.—A.V. Specialist, 2a, Eleanor Grove, Hoggers Corner, Barnes. [9757

1922 Morgan G.P. 8h.p. w.c. J.A.P., Lucas dynamo lighting, discs, speedometer, etc., absolutely as new, guaranteed; £140; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1086

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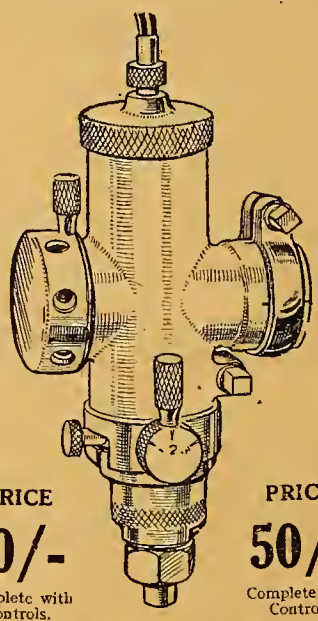

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GREATER POWER AT LOW SPEEDS.

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LOW PETROL CONSUMPTION. SLOW RUNNING.

VIOLENT ACCELERATION AT ALL SPEEDS.

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BIRMINGHAM.

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1921 De Luxe Morgan, dynamo, discs, el horn, etc., speedometer, clock, paintwor fittings as new, mechanically perfect; excep bargain; £135 cash.—Elce, Ltd., 13-15-16, Bi gate Avenue, Camomile St., E.C.3. 'Pl Avenue 5548

MORGAN De Luxe Model, very late 1920, M.A.G., air-cooled, long wheelbase, done not been used for 18 months, 2 new tyres, s lighting, 4 lamps, one Lucas searchlight, all s accessories, licence paid, engine and whole ma in perfect condition; £100.—Rae, Saltcoats, Ayr

Spare Parts:

MORGAN Spares from stock for all models.— your enquiry to Hall, Morgan Specialist St Peter's St., St. Albans.

MORGAN Spare Parts Depot.—Spares for mode's from stock; list free.—Elce, Ltd., 13- Bishopsgate Avenue, Camomile St., E.C.3. 'Pl Avenue 5548.

MORGAN Service Depot, officially appointed b Morgan Motor Co. for London. Every spare in stock. Overhauls, repairs, and tuning by M specialists.—Homac's, 243, Lower Clapton Rd., 'Phone: Dalston 2408.

TAXI-COMBINATIONS AND CAB

COUNTY.—B.S.A. 8h.p. Motor Cycle Taxi licensed throughout this country.—Write fullest particulars, County Cycle and Motor Co., "The Originators." Broad St., Birmingham. hibiting Olympia. Stand 160

CARS FOR SALE.

A.V. Car, 1921; £75; all on, as new.—See Excl column.

CHEVROLET, late 1922, as new; £130 Glenelg Rd., Brixton, S.W.

SCRIPPS-BOOTH 1917 2-seater; £95.—Miss 25, Jeffries Rd., Clapham, S.W.4.

RICHARDSON 1921, 2-seater, dickey, excellen dition; £68.—7, Exhibition Rd., S.W.7.

7-9h.p. Swift, 2-seater, electric lamps; £75; c change.—C. Medcalf, Sudbury, Suffolk.

STUDEBAKER 6-cyl. Tourer, excellent order; —E. Bromley, 1a, Strathleven Rd., Brixton.

PALMER'S Garage, 187-199, High St., Toot The pre-eminent place for purchasing. De list below.

PALMER'S Garage, Tooting.—Auction sale Thursday, starting at 2 o'clock. Apply for logue.

PALMER'S Garage, Tooting, have the best gains. Compare prices below as proof.

PALMER'S Garage, Tooting.—20h.p. Lancia 5 darlet, monobloc, 4 speeds, quiet, splendid dition; £135.

PALMER'S Garage, Tooting.—20h.p. Star c let, 1914, 4 speeds, detachable wheels; £

PALMER'S Garage, Tooting.—10h.p. Wa sporting 2-seater, hood, screen, 4-cyl. mono £65.

PALMER'S Garage, Tooting.—20h.p. Overland ing car, 1920½, dynamo lighting, self-sta practically equal to new; £130.

PALMER'S Garage, Tooting.—15.9h.p. Royal E touring car, 4 cyls., monobloc, wire wheels ceptional bargain, £75.

PALMER'S Garage, Tooting.—1921½ De Dio seater, 12h.p., dynamo lighting, self-sta nearly new; £425.

PALMER'S Garage, Tooting.—12-14h.p. Fiat daulet, 3 speeds, good running order; £50.

PALMER'S Garage, Tooting.—15.9h.p. Arrol-ston, very late model, dynamo lighting, starting, extra smart; £145.

PALMER'S Garage, Tooting.—30h.p. Sheffield plex full landaulet, 6 cyls., 3 speeds; £95

PALMER'S Garage, Tooting.—20h.p. Metallur very smart 2-seater, dickey, dynamo ligh splendid car; £125.

PALMER'S Garage, Tooting.—10h.p. Alcyon to 2-seater, dickey, 4 speeds, runs well, hood, sc £60.

PALMER'S Garage, Tooting.—16-20h.p. limousine, 4 cyls., runs well; £47/10.

PALMER'S Garage, Tooting.—14-16h.p. Da landaulet, 4 cyls., monobloc, suitable st work; £40.

PALMER'S Garage, Tooting.—15-18h.p. Ma light 2-seater, hood, screen, runs well; £47/

PALMER'S Garage, Tooting.—18-24h.p. Austin limousine, 4 cyls., dynamo lighting, except condition; £85.

PALMER'S Garage, Tooting.—17h.p. Delaunay-ville, enclosed drive landaulet, dynamo ligh reliable car; £120.

PALMER'S Garage, Tooting.—Any above cars plied on easy payments. We shall be pl to quote special terms to meet clients require All are in running order.

CARS FOR SALE.

—Ford chassis, rebuilt, perfect condition guaranteed, one only.—Hockerill Works, Bishops Stortford. [9099

STIN 6-cyl. Racing 4-seater; £95; or exchange .J. Daniels, jun., 8, Crowhurst Rd., London. [9684

ADIATOR 5½ Landaulet, C.A.V., Rudge wheels nd spare; £95. Mrs. Moore, 106, Acre Lane, [9680

:2 8h.p. Rover Car, latest model, run few miles; £135; exchanges.—24, Balliol Rd., North Kenu. [1112

'E 1919 10h.p. Calcott, in fine order; £230; ynamo lighting set.—Willis, 14, Lister St., rham. [9575

9 Ford 5-seater, all accessories, back windscreen, etc.; £65, or near offer.—20, Gheluvelt Av., rminster. [9359

FT 2-seater 1915, 2-cyl., dynamo lighting, £7 ax paid, trial run Haywards Heath; £82 for sale.—Box 4585, c/o *The Motor Cycle*. [9687

C CAMPBELL, late 1921, full equipment, small ileage; £165, or exchange.—Hillier, 127, St. s Rd., North Kensington. 7 nr 7A 'Bus. [9882

p. 4-seater Clement, new tyres, repainted, over hauled, perfect order; £68, or exchange 2- or combination.—Ellis, High St., Beaconsfield. [9487

2 Morris-Cowley, dynamo, double dickey, speedometer, original tyres, beautifully en, as new; £195.—89, East Hill, Wandsworth. [9760

ER 8h.p. Standard model, £130; 8h.p 4-seater odel, £190; 4-seater model De Luxe, £210; r De Luxe, £200.—Ratcliffe Bros., 200, Gt. nd St., W. [0729

GAIN.—1921 Rover 8h.p. 2-seater, taxed, insurance, equipped, sound condition; £110 cash; solo and combination part exchange.—143, sbury Rd., Earlsfield, S.W. [1044

) Guineas, Exchange.—Really ultra-smart 1920 Sports Singer, 2-seater lighting, starter spare lovely condition.—Seabridge, 35, Hansler Rd., Dolwich (Sydenham 2452.) [2400

ALLY handsome Singer Coupe, dickey, handsome dy, painted primrose, dynamo lighting, 5 detach- wheels; £175, cash or deferred.—Marlborough House), 20-22, Finchley Rd., N.W.8. [6565

LIFAX.—1923 Lagonda, Calthorpe, Coventry remier, Deemster, Stoneleigh, and Singer Light Rover, Morgan, or combination taken in ex- .—Halifax Motor Exchange, Horton St., Hali- [9568

'ER.—Godfrey's are authorised agents for the 3h.p. model; early deliveries of 1923 models. r, £180; 4-seater, £190; exchanges; gradual ots.—Godfrey's, Ltd., 208, Gt. Portland St., n, W.1. [0350

MBULL 2-seater, double dickey, 4-cyl., w.c., lectric lighting, spare wheel, 35 m.p.g., 45 silent, new condition, equipped, taxed; 80 s; exchange G.N., 3-wheeler.—186, St. James 'roydon. [9631

Guineas.—Singer 1914 2-seater and dickey, 10h.p., 4-cyl., dynamo lighting, 5 lamps, spare wheel, meter, ammeter, horn, luggage grid, hood and tyres perfect, tax paid, bargain.—Smiths, 86, Farm Rd., N.W.3. [9676

ER 1921 Model, in absolutely brand new condition, dynamo, hood, screen, lamps, horn, spare and tyre, aluminium number plates, tools, pump, ck, tax paid; £112/10.—Delancey Street Garamden Town, N.W.1. [9893

VERLEY, 2-seater, with dickey, detachable rims, in very excellent condition, last and is, quite exceptional bargain at £95, cash or d, or exchange.—Marlborough (Motor House), -2 Finchley Rd N.W.8. [6566

ER Cars at 1923 prices: Standard 2-seater, £180; -seater, £190; De Luxe 2-seater, £200; De Luxe r £210; deferred payments; your motor cycle taken in part exchange; prompt delivery.—Official Eagles and Co., 275, High St., Acton, London. [0761

Salmson immediate delivery; list 235 guineas, exchange or instalments; French type (1,100 c.c.) with English model De Luxe body, full guarantee, essories; shuts up like a Coupe, holds the road eech.—Graff, Hayes, Kent. 'Phone: Bromley 532. 1 'bus.) [0951

13 CAMPBELL, 1922 (July), 10h.p., 2-seater, all luminium body, dynamo lighting, spare wheel, eedometer, clock, only run 800 miles; cost over 30; accept £185, or exchange combination and cash. Hillier, 127, St. Mark's Rd., North Kensington. ot A 'Bus. [9881

C.—Everybody says that that's a new car. It n't, although it looks and goes like it; only one owner from new last year, cost then over 40; small mileage, dynamo, lamps, tools, very y bargain indeed at £195; cash or deferred or change.—Marlborough (Motor House), 20-22, Finchy L., N.W.8. [6663

if he saw the prices of our shop-soiled

BARGAINS

	LIST PRICE	OUR PRICE
3½ h.p. NORTON 3 speed 16 H. ..	£115	£80
4½ h.p. HAWKER-BLACKBURNE	90	75
3½ h.p. SUNBEAM LIGHT SOLO..	136	115
3½ h.p. SCOTT SQUIRREL ..	105	78
2¼ h.p. VELOCETTE 2 speed k/start and clutch ..	65	55
8 h.p. INDIAN CHIEF, Combination ..	199	150
5 6 h.p. RALEIGH, spring frame ..	130	110
2¾ h.p. RALEIGH, 2 speed, k/start and clutch. ..	68	60
3¾ h.p. SCOTT STANDARD ..	110	80

We have a few second-hand guaranteed machines at the lowest prices. Write for list now.

Agents for: NORTON, INDIAN, LEVIS, RALEIGH, VELOCETTE, MARTINSYDE, VICTORIA, QUADRANT, SCOTT, CLYNO, SUNBEAM AND HAWKER MOTOR CYCLES.

VICTOR HORSMAN, Ltd., 7, Mount Pleasant, LIVERPOOL.

MOTOR TRANSPORT VEHICLES.

ROVER 8h.p., recently overhauled, new, van body, drive away, low tax; too small for owner; £55.—Mulley, Builder, Welling. [9375

12h.p. Light Motor Van, good running order; £65; exchange for Ford touring or combination or motor cycle, cash adjustment.—80, High St., Bexley. [1094

1917-18 Model Albions, 3-ton lorries, first-class condition; £175 cash; deferred or exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [9590

SHARD Garage Offer Eight 30-40-cwt. Lorries, 1916 and 1917, Straker-Squires and Garfords, all one price, £175 each; all are 20h.p., are 3 speeds, worm drive, all fitted solid tyres as new, smart open lorry bodies 8ft. and 9ft., coachbuilt driver's cabs, all equipped with new lamps, horn, jacks, and tools, written to suit purchasers; they are sound, smart lorries, and are guaranteed. Call early and secure a genuine vehicle. (Note the low price, £175 each.)—Shard Garage, Shards Sq., Peckham Park Rd., Old Kent Rd., London. 'Phone: New Cross 1506 [8506

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ROBERTSON'S Motors, Ltd.'s hire purchase terms could not be simpler.—157b, Gt. Portland St., W.1 [5935

MIDDLETONS can arrange extended payments on excellent terms.—For our address see Sidecar Column. [0956

HALIFAX.—Motor Cycle Combinations. Special terms; from £5 deposit and 15/- weekly. Get list.—Halifax Motor Exchange, Horton St., Halifax. [9570

ANY make of cycle or any combination complete equipped; licensed, insured on 12, 15, 18 months' extended payments system.—Write for particulars, Rideezi Sales, Ltd., 5, Victoria St., S.W.1 [0830

A WIDE Selection of Second-hand Machines, most makes of new ones supplied immediately on payment to suit buyer's convenience; getting our terms incurs no obligation.—Marlborough (The Motor House), 20-22, Finchley Rd., N.W.8. [8391

ENGINES.

ARIEL 2½h.p. Engine, magneto, carburetter; genuine bargain, £4.—Prout, Canon St., Taunton. [9946

TRIUMPH, 1913, complete with Bosch magneto, carburetter, silencer, perfect; £9.—Derrington.

4-CYL. F.N., complete unit, Bosch magneto, carburetter, silencer; £8/10.—Derrington.

8-10h.p. Douglas Water-cooled Engines, horizontally opposed, mechanical lubrication, suitable light car, stationary power plant; stamp specification.—Derrington, Grafton Rd., New Malden. 'Phone: 256. [9255

BLACKBURNE 2¾h.p., 1920, good condition.—Taylor, Lynne House, East Common, Harpenden. [9640

P. and M Engines, £4/10; overhauled and completed, £6/10; stamp.—7, Hereford Rd., Bayswater. [2715

8h.p. twin, water-cooled engine, good condition; £7/10, or offers.—31, Capstone Rd., Bournemouth. [9950

4-CYL. F.N. complete unit, Bosch magneto, carburetter, silencer; £5.—Clarkson, Colman St., Ipswich. [9411

TWIN Engine, 8h.p., air-cooled, with Bosch magneto, £8.—H. R. Hall, c/o Green Man Hotel, Whetstone, London. [9425

3½h.p. Rover Engine, Triumph carburetter, M-L magneto; £5/10; after 6 o'clock.—10, Galesbury Rd., Wandsworth. [9672

3½h.p. B.S.A. Power Unit, complete with Bosch magneto, Amac carburetter; £7/10.—Cooper, 63, Avenue Rd., Camberwell. [1054

ENGINE, suit lightweight, recently overhauled, new piston, bushes, rings, and new T.B. magneto; £9/10.—Blackpool, St. Brides, Magor. [9366

BARR and Stroud engines and parts always in stock.—Acton Motor Exchange, 55, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1363. [9664

NEW 2-stroke engine, 2½h.p., complete with chain case, exhaust pipe, and release valve; £5/10.—17, Poplar Avenue, King's Heath, Birmingham. [9942

3½h.p. M.A.G. Engine, Splitdorf magneto, B. and B., complete unit, ready for fixing into frame; £15.—Poole, 17, Smallpage, Queensbury, Bradford. [9429

2¾h.p. o.h.v. Blackburne Cylinder, with piston, racing cams, and o.h. cylinder head complete, as new; offers; approval.—P. Bell, Commercial Hotel, Bishop Auckland. [9674

HEPPELTHWAITE'S.—A few of them. 5-6h.p. A.J.V., J.A.P. and Binks, £5/17/6; 5-6h.p. Precision £9/10; 5-6h.p. Clyno, £9/10; 5-6h.p. N.S.U., £5; 5-6h.p. Rex, M.O.H.V., and T.T. engine, £7/15; 5-6h.p. (unassembled) Rex, £4; 4h.p. Precision, £5; 3½h.p. Triumph £6/10 (unit); 2½h.p. Triumph, £2/10; 5h.p. M.M.C., £3; 2¾h.p Douglas, £4; 2¾h.p. Minerva, M.O.V., £3/10; 2½h.p. Union, 2-stroke, £4/15; 3½h.p. Murphy, 2-stroke, £2/15; state requirements (stamp please).—Hep, 17-19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 1958 Brixton. [1124

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ENGINES.

1914 Triumph Engine, £8; 1918 2¾h.p. Douglas complete, £10; A.B.C. stationary engine, complete on stand, £10.—Day, Arch 23, Walmer Rd., N. Kensington, W.10. [1093

TWO M.A.G. 7-9h.p. Engines, brand new, £29 each; now is your chance; latest type, as fitted to Matchless, Morgan, etc.; two only.—Jones, 4, Woodside Parade, North Finchley. [9808

BRAND new Morris 2-stroke, slightly soiled, £6; ditto, second-hand, £5, perfect; Arden 2-stroke engine, unused, £6; 8h.p. J.A.P., £11/10; 1914 Triumph, perfect, £11/10; send for my engine list.—Syd. Pearson, Gate House, Cheylesmore, Coventry. 'Phone: 1639. [1001

IGNITION, LIGHTING, ETC.

A

REAL Bargain

IN Magnetos can be secured from the Marble Arch Motor Exchange.

600 Motor Cycle Magnetos to be cleared.—Below.

PLEASE note (particularly) our stock consists of genuine motor cycle magnetos, all variable ignition and guaranteed not converted or reconstructed aeroplane starter magnetos.

WE guarantee we can supply you a (genuine) magneto cheaper than anyone.

SINGLE-CYLINDER anti-clock, M.L., 45/-; C.A.V., 35/-; U.H. 35/-; Dixie large type, 30/-; all above suitable for Triumph, B.S.A., etc.—Below.

SINGLE-CYLINDER Clock, Dixie, 30/-; Berling, 30/-.—Below.

180° Anti-clock, C.A.V., 35/-; Splitdorf, 35/-; Dixie, 30/-.—Below.

180° Clock, Thomson-Bennett, 38/-; Splitdorf, 35/-.—Below.

42°, 50°, 55° Thomson-Bennett, Splitdorf or Dixie; all the above are guaranteed variable ignition and perfect; sent on approval against cash.—Below.

SPARES.—Brand new C.A.V. contact-breakers, anti-clock, 11/-; brush holders, 1/9; brushes, 6d. each.—Below.

PLEASE note, carriage on all above extra.—Below

MARBLE Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. [7577

COUNTY of London Engineering Works, Ltd.

MAGNETO Factors and Repairers.

ALL Magneto Spares Stocked.

BOSCH Single, Type D.A.L., variable ignition: £3/5.

M-L Singles, 30/-; C.A.V., 37/6; variable ignition. £3/15

THOMSON-BENNETT, single or twin, enclosed, waterproof, variable ignition, all degrees; £2/15 each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed, waterproof, variable ignition; £2/15 each.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle, suitable for Rudge.

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required. Please state make of engine when ordering.

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed. Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade. Write for list.

COUNTY of London Engineering Works, Ltd., 27, Stockwell Rd., London, S.W. (1 min. from Stockwell Underground Station). T.A.: Ignitionac, Clapham Road, London. Tel.: Brixton 2841. [2717

M-L singles, 30/-; C.A.V., 37/6; variable ignition, guaranteed.—84 Greenside Rd., Croydon. [9694

RATCLIFFE BROS.

200, GT. PORTLAND ST., W.

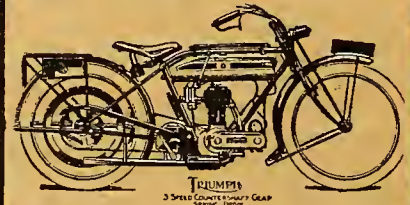
'Phone—Langham 1704.

SPECIAL OFFER OF SHOP-SOILED AND SECOND-HAND MACHINES TO BE CLEARED AT BARGAIN PRICES TO MAKE ROOM FOR 1923 MODELS.

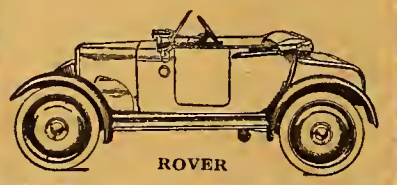
	List Price.	Special Price
Beardmore-Precision, sports model, Barr & Stroud engine	£90 0	**£60**
1922 **Raleigh**, 2-speed, 2¾ h.p.	£68 0	**£62**
1922 **Raleigh**, 3-speed, 2¾ h.p.	£73 0	**£65**
1922 **Omega**, No. 3, 3-speed	£66 0	**£51**
1922 **Omega**, No. 2b, 3-speed	£65 0	**£50**
1922 **James**, 7 h.p., model No. 10 combination	£160 0	**£136**
1922 **James**, 2¾ h.p., model No. 8	£60 0	**£51**

RUDGE.

1922 **I.O.M.** models, new ..... — **£60**

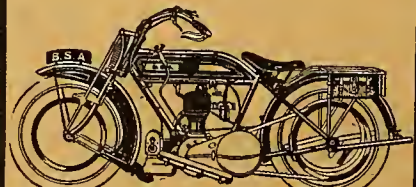


Triumph chain-drive 1922 models to clear at **£85.** Fully guaranteed.



ROVER

8-h.p. Rover, two seater, **£180.** Four seater, **£190.** Immediate delivery, cash or payment out of income.



B.S.A.

1922 shop soiled **B.S.A.**, K 2 model, **£72,** with No. 3 sidecar, **£97.**
1923 **Coventry Premier**, two or four seater **£245**
1923 **Calcott**, 10 h.p. **£325**
1923 **G.N.**, all models from **205 gns.**

TRADE SUPPLIED.

IGNITION, LIGHTING, ETC.

H.B. I. Co.

H.B. for new and second-hand magnetos; all spar stocked.

H.B. Specialise in Thomson-Bennett, complete f fixing to Triumph.

P.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

C.A.V. New, twin and single, clock and anti; £3.

DIXIE, single and twin, all degrees; £2/5.

H.B. Guarantee all magnetos one year.

H.B. will take your old machines in part payment.

H.B. Despatches all goods per return, carriage pai on approval against cash, or through *The Moto Cycle* deposit system.

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RELIANCE Magneto Repairing Co.

RELIANCE for repairs, new magnetos and spar parts.

RELIANCE have the largest and most up-to-dat repair factory in London.

RELIANCE carry out all repairs on the premises including armature winding.

RELIANCE have one of the most modern winding plants and test rooms in the country, and can therefore offer you the following advantages.

TIME.—All work within 6 to 48 hours, and a solid 12 months' guarantee in writing to back it up.

CHARGES.—No flat rates. You are charged according to the work that is required, therefore you are not in some cases helping to pay for other people's repairs.

OUR Offer.—We shall be pleased to allow you to see your magneto on test after repair at our works. How many others can make the same offer?

RELIANCE have the following magnetos in stock, all fully guaranteed.

THOMSON-BENNETT.—Singles and twins, new, any degree, waterproof, variable, suit any engine; price 55/-.

C.A.V. singles and twins, new, ideal for any light weight, 2¾h.p. and 4h.p. Douglas; 55/-.

BOSCH type Z.A.2, second-hand, enclosed, waterproof, variable, latest pattern, for Douglas 2¾h.p. and 4h.p.; £4/10.

ACCUMULATORS, best makes only, for all purposes, any voltage, charged and uncharged, always in stock; send for prices.

BOSCH enclosed, waterproof type D.A.L. magnetos, Government surplus, any degree, ready to fit on Indian, Harley, J.A.P., or any big single or twin. We guarantee these to give you slow running and easy starting, and they are in every way ideal for the big machine; price, carriage paid, £4/10.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors. List sent post free upon application.

RELIANCE were established in 1914, since when we have enjoyed a reputation which is second to none for straight and fair dealing.

RELIANCE Magneto Repairing Co., 283, St. John St., London, E.C.1. 'Phone: Clerkenwell 4290. T.A.: Remagco, Smith, London. [9909

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LUCAS Dynamo, 6-volt, new, cost £5/15; will accept £5.—M. Gardiner, 124, Mile End Rd., South Shields. [9476

MAGNETO Sprocket Manufacturers.—7-tooth to 24-tooth stocked.—Ridington, 202-4, Southampton St., Camberwell. [1500

MAGDYNO lighting outfit (Lucas), complete, new; £22; would separate; offers considered.—60, Baker St., Sparkhill, Birmingham. [9233

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DASH Switchboards, 4-way, with ammeter, 20/-; with ammeter and voltmeter, 35/- each nett.—Leslie Dixon and Co. (Dept H.1), 9, Colonial Av., Minories, E.1. [0760

ANY Motor Cycle Magneto Repaired, no matter what condition, provided complete, for 30/-; 24 hour service.—Kays, Electrical Dept., 8 and 10, Bond St., Ealing, W. [9443

IGNITION, LIGHTING, ETC.

MAGDYNAMO Engineering Co., Ltd., for magnetos, spares, and repairs.

MOTOR Cyclists fit reliable high quality magnetos now and avoid certain failure of inferior magnetos.

BOSCH Enclosed Waterproof Type D.A.L. Magnetos, Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds, makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each, postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine. Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

ZENITH Owner writes: "Since fitting magneto have completed a run of 250 miles; highly satisfied; will certainly recommend these magnetos."

INDIAN Machine Owners.—Your high-class machine deserves a high-class magneto. We want 1,000 Dixie 42° magnetos; send your magneto and £4 now, and we will immediately despatch you a Bosch D.A.L.

READY to fit on your machine; there are no alterations to make.

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, supplied by Magdynamo, beat all other Magnetos.

MAGDYNAMO will take your old Magneto in part payment.

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch XA2 magneto now, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and I. and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 1808 Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting pounds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparking plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it; we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

EXPRESS Dixie Repair Service. Your Dixie magneto, no matter what size, rebuilt equal to new and returned in 12 hours, at 30/-; a small extra charge for necessary replacements.

ARMATURE rewinding, no matter what make, type, or size, 11/6. Wound cores from stock.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row E.C.2. 'Phone: London Wall 4570. (One minute from Brown Bros.) [8986

BARGAINS!—Magdynamo new lighting set for 50° twin engine, complete battery and lamps; £10. 6-volt new accumulator, 15/-.—88, Gloucester Place Mews, Portman Sq., W. [1042

36/6.—C.A.V. magnetos, singles and 180° twins, variable, guaranteed new and perfect; approval against cash; state rotation required.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [8388

DYNAMO E 3 (Lucas), clamp, pulley, £4/15; Lucas head lamp, 45/-; tail, 9/-; side, 10/-; accumulator and case (Solo), 42/-; Combination, 48/-; switchbox, 30/-; junction box and wires, 18/-; all new; offers wanted.—60, Baker St., Sparkhill, Birmingham. [9224

REGISTERED H.A.H. TRADE MARK — H.A.H. Complete Electric Lighting Sets. — REGISTERED H.A.H. TRADE MARK

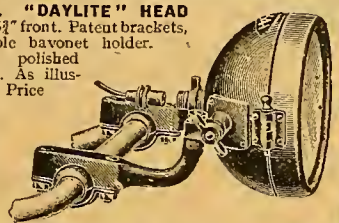
Manufacturers of ACCESSORIES, PATENTS, SPECIALITIES. POWERFUL LONG RANGE LAMPS.

AGENTS

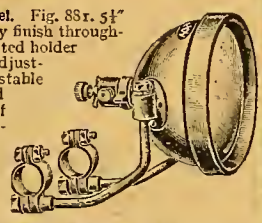
HAVE THEM IN STOCK.

H.A.H. MOTOR CYCLE HEAD LAMPS.

Fig. 895. **"DAYLITE" HEAD LAMP,** 6¾" front. Patent brackets, adjustable bayonet holder. Highly polished reflector. As illustrated. Price Nickel 60/- ea. Black 65/- ea.



Medium-sized Model. Fig. 881. 5¼" front. Best quality finish throughout. Totally insulated holder with switch and adjustable focus, adjustable brackets, dust and weather-proof front, as illustrated. 36/- ea. Nickel. 39/- ea. Black.



H.A.H. REAR LAMPS.

Fig. 576 to take Bayonet Bulb. Supplied less Bulb and Wire. **Price 4/9 each.**

Fig. 347.

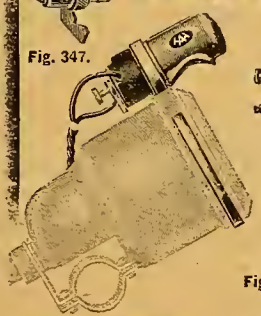


Fig. 574. Supplied with screw-in-Bulb and Wire. **Price 5/9 each.**

Fig. 347. Speedolite. **Price 7/6 each.**

H.A.H. Insulating Tape.
Fig. 455. ½" small roll, 7½d. each.
Fig. 456. ½" large roll, 1/- each.
Fig. 457. ¼" small roll, 6d. each.

Fig. 410. Cut-out. **Price 2/- each.** Fig. 449. 2-way. **Price 3/- each.** Fig. 428. 1-way **Price 2/- each.**

Postage extra on above.

A. H. HUNT, LTD.
H.A.H. WORKS,
Tunstal Road, CROYDON, Eng.
Telephone— Croydon 2225. Telegrams— "Keyage, Croydon."

IGNITION, LIGHTING, ETC.

LUCAS King of the Road Dynamo, type E.20, as new, £4 10; Lucas Aero 12-volt 250-watt, type A.12, as new, with cut-out, £3/15; would exchange either for good Exide 6-volt 50-amp. actual and cash.—Perry, 76, Durham Rd., N.15. [9834

U.H. Magneto Repairs.—We specialise in these magnetos and can be relied upon to give you good service. A.L., B.I., K.B.2, V. type spares stocked; prices moderate; 12 months' written guarantee.—Standard Magneto Co., 59, Gt. Portland St., London. [9793

SURPLUS Magnetos, with written guarantee one year. M-L single, 35/-; B.L.I.C. ditto, 42/-; Bosch ditto, 45/-; C.A.V. single or twin, 50/-; Thomson-Bennett ditto, 60/-.—We specialise in repairs and spares for all makes. Lists, 2d. stamp. Deal with experts and avoid certain disappointment.—Whitdale Magneto Service, Cherry Orchard, Croydon. 'Phone: Croydon 1625. [8661

MAGNETOS.—M-L single-cyl., clock, complete, of Rotary engines; 20/-, postage 1/3; the above, less contact breakers, 12/-, postage 1/3; 4-cyl. Dixie, complete, 25/-; new B.T.H. 6-cyl., complete, £1/10; B.T.H. 8-cyl., complete, 25/-; C.A.V. starting magnetos, complete, 18/6, postage 1/3. Carriage extra. Cash with order. Send 1½d. for list of Aero parts.—Coley, Ordnance Works, Queen Elizabeth Rd., Kingston-on-Thames. 'Phone: Kingston 365. [3380

EUSTON Ignition Co., sole representative for the Splitdorf Electrical Co.—Repairs, spares service to Splitdorf magnetos, dynamos, Dixie magnetos, etc. We have the factory, plant and experience. Official Indian electrical service station. Thomson-Bennett repairs and spares; spares and repairs to all makes of magnetos; all repairs are tested on an approved A.I.D. test bench before dispatch, and carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London. Twins, all degrees, charged accumulators, all voltages always ready. We stock everything electrical for the motorist. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., N.W.1. 'Phone: Museum 5034. T.A.: Magdymo, Eusroad, London. [0263

TYRES.

A

EXCEPTIONAL Offer.

BRAND New Covers.—Reflex Clipper Ideal, made by Dunlop, heavy, 3-ribbed, each cover guaranteed perfect, 26×2¼, 23/-; 26×2¾, 26/-; 26×2½, to fit 2¼, extra heavy, 4-ply, 30/-; 28×3 extra heavy, 4-ply, 35/-.—Below.

TUBES.—26×2¼, to fit 2¼, 5/9; 28×3, 6/6, made by Dunlop; postage on all above extra.—Below.

MARBLE Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. 'Grams: Archmotex, Padd, London. [7569

A

MAUDES' have a very large stock of clearance covers in all sizes, and a post-card stating your requirements will bring a reply by return.—Maudes', 100, Great Portland St., W.1. [9597

3/-.—Palmer and Capon Heaton, 26×2¾, new endless tubes.—Below.

25/-.—Dunlop extra heavy, 26×2¾, brand new tyres. Goods sent on 3 days' approval against cash; reduction on quantities.—Pride and Clarke, 156, Stockwell Rd., Brixton, S.W.9. [8876

MOTOR Cycle Tyres on Easy Terms, standard makes, list post free.—J. G. Groves, Ltd., Sheffield. [0589

25 Per Cent. Reduction.—26in. tyres now cost only 15/- to retread, 3-ribbed or cross-grooved, 3,000 miles wear.

BURST tyres and broken away beads remoulded like new, best work in the country; send for list.—Melton Rubber Works, Melton Mowbray. [0347

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [5836

BULL'S.—All sizes in bargain covers and tubes. If your size is not below, write or telephone us. Gerrard 1347.—See below.

26×2¼ Palmer cord, 30/-; Wood-Milne and Avon, 22/6; Stepney roadgrip, 27/6.—Below.

26×2½ Avon tricar, 30/-; Beldam, 25/-; Clincher De Luxe, extra heavy, 27/6.—Below.

26×2½×2¼ Wood-Milne 4-ply, 25/-; Palmer cord heavy, 30/-; Beldam 3-ply, 22/6.—Below.

26×2¾ Palmer cord, 30/-; Wood-Milne and Beldam, 22/6.—Below.

28×3 Clincher sidecar, 30/-; Avon Druid, 20/-; Beldam R.N.S. or Wood-Milne keygrip, 30/-.—Below.

650×65 Palmer cord heavy, 37/6; Clincher R.N.S., 30/-; Wood-Milne, 22/6.—Below.

TUBES, all sizes, 4/6 each; all goods on approval against remittance; postage 1/- extra.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, W.C.2. Gerrard 1347. [0869

SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 436, Argyle St., Glasgow. List post free. [9831

TYRES.

BASTONE'S for Covers and Tubes No better or cheaper house.

BASTONES.—26×1¾ Clincher De Lux 10/6.

BASTONES.—24×2 Dunlop rubber-stud, 16/3; Clincher De Luxe Junior, 14/6; ditto extra heavy, 19/9.

BASTONES.—24×2¼ Hutchinson T.T., rubber-stud, 21/-; Dunlop rubber-stud heavy, 26/-.

BASTONES.—26×2¼ Hutchinson T.T. 18/6; Dunlop rubber-stud heavy, 26/9; Michelin Semille, 20/-; Goodrich safety tread, 27/-; Clincher De Luxe, extra heavy, 24/-; Spencer-Moulton steel-stud, 24/-.

BASTONES.—26×2⅜ Hutchinson T.T., rubber-stud, 19/6; Clincher De Luxe heavy, 23/-; Bergougnan rubber non-skid, 23/-; Palmer cord heavy, 28/-

BASTONES.—26×2½×2¼ Goodric Safety tread, 36/-; Clincher Dreadnought extra heavy, 36/-; Dunlop rubber-stud heavy, 33/-; Dunlop rubber stud extra heavy, 39/9; Hutchinson Pass rubber-stud, 36/-; Dominion Usco rubber non-skid heavy, 23/-.

BASTONES.—26×2½ Michelin fine ribbed, 15/-; Hutchinson T.T. rubber-stud 24/-; Goodrich Safety tread, 35/-; Spencer-Moulton steel-stud, 25/-.

BASTONES.—650×65 Goodrich Safety, 38/6; Clincher Dreadnought, 34/-; Dunlop cord, 44/9.

BASTONES.—700×80 Dunlop Magnum, 41/3; Goodrich Safety tread, 40/-; Clincher 3-ribbed, 38/-

BASTONES.—28×3 Dunlop Magnum, 42/6 Goodyear all-weather tread, extra heavy, 37/6; Goodrich Safety tread, 37/6; Firestone rubber non-skid extra heavy, 42/-; Clincher De Luxe, extra heavy, 35/-; Clincher Dreadnought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson and Red-Fox tubes: 24×2 and 24×2¼, 3/9; 26×2¼ and 26×2½, 5/6; 700×80 and 28×3, 7/3.

ALL the above new and clearance covers and tubes are sent on approval against remittance.

BASTONES, 228, Pentonville Rd King's Cross London, N.1 Tel.: 2481 North. [8394

REAL Good reliable second-hand motor cycle tyres, all sizes and makes; 10/- each, plus 1s. carriage. See displayed advertisement.—H. Emanuel and Co. [0832

ECONOMIC Tyre Co.—The following new blemished and clearance covers and tubes sent on seven days' approval against remittance, per passenger train, carriage paid.

ECONOMIC.—24×2 Clipper Ideal, 14/6; tubes, 4/6; 24×2¼ (also fit 2in. rims) Dunlop heavy, 26/-; Clincher Junior, 16/9.

ECONOMIC.—26×2¼ Dunlop heavy, 26/9; Firestone extra heavy, 22/6; tubes, 4/9; 26×2⅜ Dunlop heavy, 30/-; extra heavy, 35/9.

ECONOMIC.—26×2½×2¼ Goodyear Diamond, 30/-; Avon extra heavy, rubber stud, 25/-; Palmer tubes, 5/6.

ECONOMIC.—26×2½ old standard Clipper extra heavy, 27/6; Redfern, rubber stud, 25/-; tubes, 5/-.

ECONOMIC.—28×3 Goodyear Diamond, 42/6; Goodrich Safety, 39/6; Firestone non-skid, 39/6; tubes, 6/6.

ECONOMIC.—650×65 Goodrich Safety, 34/6; Stepney road grip, 34/6; Clipper extra heavy, 27/6; tubes, 6/9.

ECONOMIC.—700×80 Goodrich Safety, 39/6; Beldam extra heavy, 44/3; Goodyear, 44/3; Goodyear cord, 58/-.

ECONOMIC.—Dunlop rubber stud, fully warranted 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26×2¼, 18/6.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14 'Phone: New Cross 1393 [7429

DUNLOP Extra Heavy, 26×2⅜ (fit 2¼), all new, not clearance; must be sold; 25/- each (list price £2); carriage paid on two or more.—Hurst, 26, Pulse Hill, Brixton, S.W.2. [0166

500 NEW Beldam Covers, 26×3, 2½, 2⅜, 2¼ and 2, 15/- each to clear, postage 1/6 extra.—Homerton Rubber Works, 11, Upper St. Martin's Lane, W.C.2; and Brooksby's Walk, Homerton E.9. [0331

MASONS.—Tyres are down, and the following offers beat all:—Wood-Milne Key-grip, 4-ply covers. 26×2½, 24/6; 26×2¾, 26/-; 26×2¼, 23/6; 26×2½×2¼, 25/-; 650×65, 26/-; 3-ply covers, 24×2¼, 18/-; 700×80, 28/6; 28×3 (American), 27/6; 28×2½ (American), 24/6.—Below

MASONS.—26×2½ Dunlop Heavy Fluted, 21/6; 26×2¼ ditto, 18/6; 26×2¼ Dunlop extra heavy ribbed, 31/-; 650×65 ditto, 30/-; perfect stock, maker's guarantee.—Below.

MASONS.—Great Offer Moseley Heavy, large studded, perfect stock:—24×2¼, 19/9; 26×2¼, 22/6; 26×2⅜, 23/6; 26×2½×2¼, 25/-; 26×2½, 26/-. Approval against remittance, carriage paid.—Masons, The Tyre House, Ipswich. [0916

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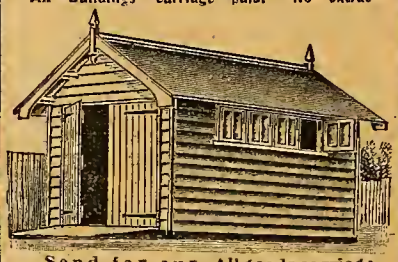
at this and compare prices and quality. Invitation to inspect before purchasing.

All Buildings carriage paid. No extras.



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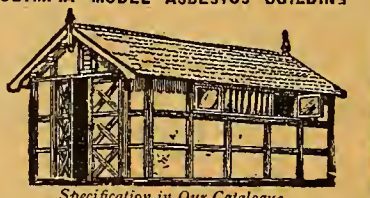

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16 × 10	£37 15 0		

Delivered with iron roof complete. Fire-proof and sound-proof.

Our unsolicited testimonials should create confidence.

Sheen Park Lawn Tennis Club,
May 22nd, 1922.

Dear Sir,

I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.

Yours faithfully, JOHN O. GRIFFITS.

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Sittingbourne, Kent.
August 17, 1922.

Mr. Brodrick,
The South-Western Appliance Co.

Dear Sir,

The St. Helier Building arrived on Saturday, two days before promise of delivery, and we are more than satisfied with it.

We erected it on Wednesday and it went together like clockwork. I am very pleased we left the order with you, as all who have seen it think the value is remarkable and admire the artistic appearance. Trust us and believing it will get you further orders from this district.

Yours faithfully,
THOS. E. KENNETT.

Illustrated Catalogue Free.

SOUTH-WESTERN APPLIANCE Co
High Street, Fulham, London, S.W.
Telephone: PUTNEY 2771

TYRES.

DUNLOP Heavy Studded, 26×2⅜×2¼, 25/-; extra heavy, 28/6; Wood-Milne, 650×65, 21/-; 700×80 Avon, 3 rib E.H., 34/6; tubes, 4/6; all guaranteed brand new.—Harvey and Co., 47, South Lambeth Rd., London, S.W.8. [9199

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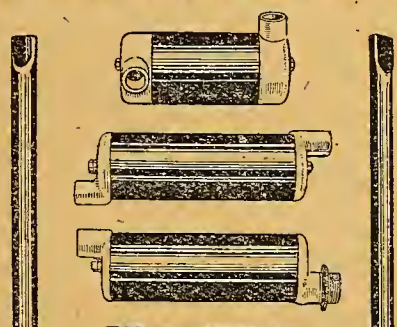

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1920 Rudge 5-6h.p. Combination, top-hole condition; sell £70; small 2-seater wanted.—Marks, 121, Acton Lane, Chiswick, W.4. [986

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A.V. Bi-car, 2-3-seater, 1921, fully equipped, as new; exchange late combination or solo and cash.—58, Dynevor Rd., Stoke Newington. [940

3h.p. Enfield, 2-speed, licensed, lightweight sidecar, and £25, for higher power, solo or combination (late model).—116, Church Rd., Northwood. [973

85 Guineas; bargain of the week.—1920 Ford Tourer, electric starter, lamps, tyres good, spare wheel, etc.; exchange.—18, Lark St., Burnley. [972

PIANO-PLAYER, rosewood, perfect condition, 30 music rolls; exchange motor cycle; sell, £30.—Gerard, Tank Workshops, Bovington, Dorset. [994

DOUGLAS Combination, 1920, 4h.p., mileage 2,500, fully equipped; exchange solo, little cash.—17, Sussex Rd., New Malden. 'Phone: Malden 138. [977

EXCHANGE 1921 2-seater Carden, dynamo lighting, splendid order and condition, for a combination or sell.—James, 254, Merton Rd., Southfields, S.W. [995

TRIUMPH, 1921, and 2¾h.p. New Imperial, for 1922 all-chain Norton, Triumph, or Blackburne; cash either way.—Rollinson, Bridge St., Belper, Derbyshire. [980

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EXCHANGE offers considered for brand new shop-soiled 1922 Zenith-Bradshaw 3½h.p.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1121

EXCHANGE late 1914 3½h.p. Rudge-Multi, overhauled, re-plated, perfect, and £10, for best combination offered.—Write, Stapleton, Meadfield, Langley, Bucks. [1125

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LATE 1919 Dynamo Indian Combination, little used, exceptionally fast; best offer accepted, or consider solo and £25; ride 100 miles.—9, Red Hill, Bassett, Southampton. [9772

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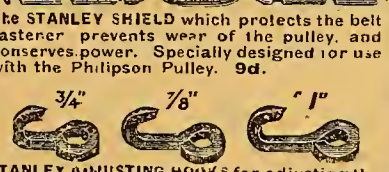

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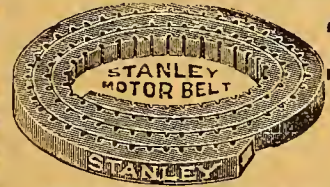

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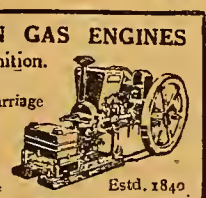

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GEARS.—Any type of gear boxes or gear replacements made to pattern or drawing; send gears passenger train.—Tavistock Engineering Co., Johnson St., Notting Hill Gate, London. 'Phone: Park 3447. [0917

INDIAN Owners.—If you have trouble with your machine, send to Indian repair specialists, Dennis, 89 Brixton Rd., London. [3655

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WELDING.—Broken cylinders, crank cases, etc., made like new; work guaranteed; quick return.—Tonge Welding Co., Morton St., Middleton, Manchester. [6608

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WELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve seatings, welded and machined; scored bores filled in and ground to existing pistons.—Below.

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CYLINDERS Reground, accurate finish, compression guaranteed; Triumph, Rover, Premier, 35/-; 2¾h.p. Douglas, 25/-; 70 mm. bores, 30/-; rings and gudgeons complete, twins, low price.—Below.

PISTONS, all patterns, oversize specialists, low price.—Below.

PISTON Rings, oversize or step-cut, 2/-; standard, 1/6; return post; none better. Thousands of testimonials.—Patent Rings, 30, Wigan Rd., Atherton. [5136

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SCORED Cylinders Repaired in 48 hours, price 11/- per cylinder; engines rebushed and overhauled, 35/-; twins, 40/-; aluminium and frame repairs cheap.—Godwin's Garage, Sunbury-on-Thames. [9485

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CLYNO Repairs. For guaranteed repair. Bring your machine to the Clyno Engineering Co.'s official service depot, 8-10, Bond St., Ealing. Every spare part in stock from 1911, for any model; estimate for repairs free. [9246

FORFIELD Motors, Forfield Place, Leamington Spa, for repairs and overhauls to any engine or motor cycle; special department for Premier and Triumph repairs; work carried out by mechanics late with Triumph and Premier works. [9143

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BRAND NEW, 8 H.P. ROYAL ENFIELD Combination, Lucas Magdyno Equipment. Cash **£125** or **£41** Deposit (comprehensive policy free) and ..	**£7 16 3**
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On many occasions we are asked where parts and replacements for Armstrong and Sturmey-Archer hub gears can be procured. We recently paid a visit to the works of the Cromwell Engineering Co., 327, Putney Bridge Road, London, S.W.15, and were extremely well satisfied with the way repairs are carried out to epicyclic and other types of motor cycle gears. All parts are made on the company's premises, and all repairs are skilfully executed. It is interesting to note that during the war the Cromwell Engineering Co. were doing very accurate gauge work. They have special machinery for making gear wheels and for cutting the internally toothed rings used in the two hub gears mentioned. Repairs are also executed to countershaft gear boxes.

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Works: 327, Putney Bridge Road, S.W.15.

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HUB Geared machines converted to countershaft conversion sets supplied for all makes. All mak of gear boxes supplied from stock at the new reduce prices. Trade supplied. Recommended by the leadin manufacturers. Stamp please.—Sheldon Engineering Co Bayley Lane, Coventry. 'Phone: 634. [48

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NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

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W.J.C.—Brand new 5-6h.p. parts: Valves, 3/-; valve springs, 4d.; valve guides, 2/-; pistons, 12/6; piston rings, 10d.; hollow crank pin, 2/9; gudgeon pin, 1/10.

W.J.C.—Every part in stock for the 5-6h.p. Clyno at lowest prices.

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W.J.C.—Special offer Terry 4-leaf C springs, 15/6 pair; limited quantity only.

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W.J.C.—Brand new latest type 5-6h.p. engines, guaranteed, £15; second-hand ditto, £10.

W.J.C.—Every part in stock for the 5-6h.p. Clyno at lowest prices.

W.J.C.—Electric soldering irons, G.E.C., brand new, 200-220 volts, list 50/-, our price to clear 10/6; guaranteed perfect.

W.J.C.—Wattalite dynamo lighting sets, brand new, list price 16 guineas, our price £6/10; have one on approval, wonderful value.

W.J.C.—Brand new Beldam Bulldog covers, heavy, 26×2¼, 26×2⅜, 26×3 to fit 2½, to clear 20/- each; postage, 1/6.

W.J.C.—Postage extra; approval terms, money returned if not satisfied.

W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11 (5 minutes from Shepherd's Bush Tube Station) Tel.: Park 2071. Hours 8 to 8.30, Wednesday Saturday. [9274

BURLINGTON.

BURLINGTON.—Annual stocktaking sale. Stock must be reduced. Take advantage of this unique opportunity and buy your spares now.

BURLINGTON.—Engine parts for 2¾h.p. Douglas: Piston, complete with gudgeon, 6/6; piston rings, pr.; cylinders, 32/6; big end bushes, 1/-; small end bushes, 1/-; valves complete, 2/3; valve guides, 1/-; flywheel sprockets, 16 or 17T 2/6, 18T 3/-; tappets, 1/9; tappet guides, 1/-; cam wheels, 13/6; rocker arms, 2/6; ball races, timing side, 6/6; big end bolts, 4d.; nuts, 2d.; silencers, 10/6; gudgeon pins, 2d.; connecting rods, complete with small end bush, 2/6; valve springs, 4d.; timing case covers, 3/6.

BURLINGTON.—Gear box parts: Gear box complete, £4/15; chain wheels, 4/6; pulleys, 4/-; chain wheel nuts, 6d.; secondary shafts, 13/-; main shafts, 8/-; Renolds chains, 7/6; Coventry chains, 7/6; ball races, large 4/-, small 3/-; plain sleeves, 1/-; friction rings, 3/6 per pair; down operating rod, 6/9.

BURLINGTON.—Tank parts: Tank, late pattern, to take early type drip feed, £2/10; oil pump plunger, complete, 3/-; drain taps, 1/6; tank caps, glass 1/9, plain 1/6.

BURLINGTON.—Frame parts: Mudguards, 12/- per pair; rear stand, 9/-; rear stand clip, 1/3; rear stand bolt, 4d.; front stands, 2/6; front stand clip, 9d.; carriers, 12/6; toolbags, special deep armoured, 6/6; saddles, large pan seat, £1/2/6; handle-bars, semi-T.T., plated, 15/-; front fork springs, plated, 2/6; fork spindles, loop 1/3, short 1/-; spindle nuts, 3d.; fork links, 1/9; head locking ring, 1/6; frame races, 9d. each; handshield complete, 5/-; footboards complete, 12/6 per pair; front brake complete, 2/6; wheels, front 30/-, rear 37/6; dust covers, 1/; chain cases, 5/-; chain guards, 3/-.

BURLINGTON.—Tyre gaiters (Dunlop and Bates), 2¼in., 2½in., 2⅝in. 1/-, 3in. 1/6; Shaler vulcanera, motor cycle size, 7/6; sidecar footrest, polished aluminium, 4/6.

BURLINGTON.—Carriage on the above goods is extra.

BURLINGTON Motor Cycle Co., Ltd., 7, South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. 'Grams: Burlington Motors, Clapham. [9577

PILLION Seats! Pillion Seats! Pillion Seats!

BEAUTIFULLY Finished, well sprung, etc.; 14/6. —Robini Manfc. Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [9563

HERBERT ROBINSON
GREEN STREET, CAMBRIDGE, LTD.

SEATLESS TROUSERS.

Made from heavy double-texture guaranteed waterproof material; clasp fasteners, leather waistbelt, and straps for boot in all sizes, 21/- pair. Lighter weight single texture, rubber lined, 15/11.

Waterproof Overalls.

Single legs, clasp fasteners, open all the way down, double-texture material for real hard wear, 15/11. Single texture, rubber lined, 12/6 per pair. When ordering state leg measurements.

MOTOR GAUNTLETS.

Cape, tan lined, 10/6. Keep you warm. Sheepskin Gauntlets, lined throughout natural wool 8/6; extra heavy, 10/6. Genuine New R.A.F. Fur Gauntlets, with finger muffs, 37/6. Special clearance Gauntlets as illustrated, small sizes, 5/- pair.

LADIES' MOTORING HATS.

Made of soft suede leather in all colours. Turned up they make an ideal walking-out hat, turned down you have a comfortable warm motoring hat.

Leather and Fur, **30/-**

Leather only, in plain or fancy colours, **25/-** each

WIDE MUDGUARDS.

As illustrated. Suitable for 2¾ and 4 h.p. Douglas fitted with old type Forks, also Triumph and B.S.A., 25/-. Wide rear guards, Triumph, 18/-, B.S.A., 21/- Triumph Pattern Front, 12/6, Levis Front, 12/6 Rear, 7/6. Douglas T.T., 17/6 pair.

Leather Helmets

All leather, fleece lined, 7/6 and 10/6. R.A.F. pattern, as illustrated, trimmed fur and Chamois lined, 21/-; lined throughout fur, 22/6. Long R.A.F. Winter pattern, brand new, 27/6

HANDLE BARS.

The New Half Moon Flat pattern, as now being fitted, 1in. stem, 1in. top, and ⅞in. stem, ⅞in. top, 21/-. We have also specially designed a new handlebar for the 2¾ Douglas, similar to the A.J.S. T.T. pattern, 17/6. Special Clearance offer—Slightly soiled Douglas Flat T.T., ⅞in. stem, ⅞in. top; Touring, ⅞in. stem, 1in. top, 19/2; Flat T.T., ⅞in. stem, ⅞in. top; Semi T.T., 1in. stem, 1in. top, 14/6 pair. Touring Bars, 1in. stem, 1in. top, and ⅞in. stem, ⅞in. top, 10/- pair. Shop soiled bars, 7/6 pair.

PARTS AND ACCESSORIES.

HERBERT ROBINSON, Ltd., Green St., Cambridge.

DOUGLAS 2¾h.p. Spares.—Ex Government stock, soiled only.—Pulley, 7/6; sprockets, 4/-; chain wheels, 5/-; valve guides, 1/6; valves, 3/-; rocker arms, 2/6, petrol pipes and union nuts, 1/6; piston rings, 1/-; front forks, complete, 60/-; fork links, 1/-; front stands, 3/6; undershields, 8/6; silencers, 10/6; back carriers, 18/6; number plates, 1/6 pair; clutch release levers, 4/6; exhaust pipe spanner, 6d.; oil pipe rubber connections, 4½d.; chain guard stays, 1/-; magneto handle-bar controls, complete, 9/-; knobs for change-speed lever, 8d.; camwheel stud, 1/6; rear wheel rims, 5/3; valve rocker studs, 1/3; intermediate gear studs, 1/6; tappet guides, 1/6; valve cap spanners, 9d; box spanner, 9d.; new tool kits, complete, 21/-; Douglas handbook, your own repairs, 1/6; complete illustrated spare part price list, 6d.—Herbert Robinson, Ltd.

4h.p. Douglas Spares.—Unused ex-W.D. stock frames, new, £5/17/6; second-hand, £4; rear rims, 5/3; back stands, 8/9; hubs, completed, 17/6; worm wheel, 1/-; top back spindle, 2/2; top front spindle, 2/2; bottom front spindle, 2/6; back hub spindle, 2/9; tappet guides, 3/-; valve caps, 2/3; gear box halves, 7/6; camshaft housings, 3/3; elbow to oil tray, 1/3; change-speed lever knob, 8d.; magneto handle-bar controls, complete, 9/-; big end bolts, 4d.; exhaust lifter cams, 5/6; keys for clutch release arm, 9d.; pump driving spindles, 1/6; tappet rollers, 6d.; intermediate studs, 1/6; oil trays, 2/6; levers for clutch release, 4/6; oil gauge glasses, drip-feed, 1/-; flat lubricating glasses, 3d.; head ball races, 1/-; 1915-16 sight-feed lubricators, 8/9; oil pipe rubber connections, 4½d.; oil pump, 10/-; screwed sleeve pinions, 7/6; 19-t. gear wheels, 6/3; 23-t. gear wheels, 6/3; plain sleeves, 5/-; undershields, 8/-; valves, 3/9; valve springs, 6d.; valve collars, 3d. Thomson-Bennett magnetos, 55/-; new cylinders, slightly chipped, 37/6; gear box spanners, 6d.; box spanners, 6d.; Douglas handbook, 1/6; complete illustrated spare part list, 6d.—Herbert Robinson, Ltd.

VALVES.—Best quality unbreakable pattern valves for all makes of motor cycles, 4/6 each.—Herbert Robinson, Ltd.

TOURING Maps of the British Isles.—32 large coloured maps, with key map to sections, in book form; 3/-.—Herbert Robinson, Ltd.

VILLIERS Cylinders, new, slightly chipped fins, Mark 2, 3, and 4; 35/- each.—Herbert Robinson, Ltd.

CYLINDERS.—2¾h.p. J.A.P., 74/-; 4h.p., 6h.p., and 8h.p., 83/-; 3h.p. Enfield, front 59/3, rear 58/6; Humber, 115/-; Sunbeam, 100/-; Rudge, 66/-; Triumph, any year, 86/-; Rover, 117/6; B.S.A., 90/-; Premier, 120/-; 2¾h.p. Douglas, 50/-; 4h.p., 60/-; 3½h.p. Norton, 97/6; Big Four, 100/-; 2¼h.p. Levis, 62 mm., 42/-; 2¼h.p., 67 mm., 47/6; 2½h.p., 73 mm., 45/-; 2¾h.p., 75 mm., 47/6; 4h.p. Douglas, 37/6.—Herbert Robinson, Ltd.

SILENCERS suitable for 2¾h.p. Douglas, complete with union nuts, unused, shop soiled only; 10/6 each.—Herbert Robinson, Ltd.

WHEELS, brand new, suitable for Triumph: front, 35/-, rear 40/-; Douglas, front 30/-, rear 40/-. Other standard sizes suitable for 2½h.p. with 26 by 2¼ rims, £2/17/6 pair; 3½h.p. or 4h.p., 63/- pair; suitable for 6h.p., £4/5 pair. When ordering state measurements of old wheel.—Herbert Robinson, Ltd.

SPECIAL Clearance Bargains.—Back carriers, suitable for Triumph and Douglas, 21/-; 2¾h.p. Douglas chain covers, 3/6; waterproof capes for cycling or motor cycling 5/-; plated French horns, 7/6; tool rolls, 3/-; knee grips, 3/6; dust suits, 15/-; leather helmets, 5/-; Renold's rivet extractors, 3/6; large repair outfit, 1/-; large packet assorted patches, 1/-; toolbags, 7/6; leather gauntlets, 4/11; new Lycett's saddles, grained leather top, large size, 23/-; small, 19/6, 2oz. tins Grip solution, 6d.; petrol-proof enamel in all colours, 1/- and 2/- tin; touring handlebars, 1in. stem, 1in. top and ⅞in. stem, ⅞in. top, 10/-.—Herbert Robinson, Ltd.

B.S.A. New Unused W.D Spares.—Copper clutch plates 3d.; steel clutch plates, 1d.; gudgeon pin bushes, 1/-; gudgeon pins, 1/3; crank pins, 2/9; kick-start cranks, 6/9; crank pin bushes, 2/3; 3-speed gear box pinion, 4/6; free engine actuating lever, 3/6; gear box operating lever, 4/3; inlet cam wheel, 5/3; exhaust cam wheel, 5/6; front fork bottom links, 1/6; ball head clip yokes, 4/6; inlet valve caps, 1/10; exhaust valve caps, 1/9; bottom half front brake, 6/3 valve guides, 2/-, exhaust cam chain pinion, 2/-; pistons, complete, 10/6; valves, 4/6. Pistons.—Best quality, complete with rings and gudgeon pins, suitable for 2½h.p. Premier, 22/6; 3½h.p. Premier, 21/6; 2¾h.p. J.A.P., 17/6; 4h.p., 6h.p., and 8h.p. J.A.P., 21/6; Triumph, any year, 20/-; B.S.A. 19/6, 3h.p. Rover, 20/-; A.J.S., 22/-; Indian Scout, 15/; New Hudson, Sunbeam, Harley-Davidson, Singer, 2½h.p. and 3½h.p., 25/-; Rudge, 27/6, genuine 2¾h.p. Douglas, 14/6; 4h.p., 20/6; best quality piston rings, all makes, 1/6 each.—Herbert Robinson, Ltd., Green St., Cambridge. [8348

PARTS AND ACCESSORIES.

ACLYNO Spares.

MARBLE Arch Motor Exchange.

CLYNO.—5-6h.p. and 8h.p. spare parts; enormous stock; undoubtedly we hold the largest stock of these spares, all brand new at the lowest prices.

CLYNO Riders! If money, time, quick despatch, personal attention to your order, and a guarantee that all parts sent by us are new and undamaged, and your money returned in full if you are not satisfied is what you require, then you cannot do better than send to us.

CLYNO.—We are among the pioneers for Clyno spares, always have, and always will be the cheapest.

CLYNO Riders! It is our aim to make our address the only depot for Clyno spares.

CLYNO.—All goods by post despatched same day as ordered.

CLYNO.—Wheels, 25/-; hubs, 12/6; hub shell, 3/-; cup, 6d.; cones, 1/3; bollow spindles, 2/3; spindle nuts, 10d.; Hoffman 5-16in. balls, 4d. dozen; felt washers, 2d. each; spindles, front or sidecar 6d. each, rear 1/3.

CLYNO.—Cylinders, 50/-; valve guides, 1/6; valves, 2/-; spring, 3d.; valve cap, inlet or exhaust, 1/10; piston, 10/-; rings, 10d. each; gudgeon pins, 1/6 each; bush, 1/-; hollow crank pin, 3/-; crank pin washers, 3d.; rollers, 1d.; exhaust nuts, 9d.; exhaust tappet, 1/9; inlet, 1/-; tappet guides, 1/3.—Below.

CLYNO.—Clutch centres, 12/-; clutch plates, bronze 10d., steel 4d.; small cone nut, 1/6; large, 2/-; screwed centre sleeve, 2/4; outer clutch dome, 8/6; push rod, 1/-; thrust block, 9d.; striking fork, 6/-; starter pinion 18T, 2/6; ratchet sleeve, 2/-; pinion sleeve, 1/-; kick start spring, 4d.; sprocket spindle, 3/-; Ferodo brake liner, 1/-; kick-start quadrant, 10/-.

CLYNO.—Front mudguards for Brampton forks, 7/6; front stand, 4/-; front number plate, 6d.; rear complete with strap, 9d.; C springs, 15/- pair; petrol and oil filler caps, 1/-; rubber pad for bottom of tank, 2d.; front flat leaf spring, 5/-; rear portion of frame, 27/6.

CLYNO.—Our stock of Clyno spares is too well known to ask inspection; at the same time, you are welcome.

CLYNO.—Our latest list is now ready; send for one at once.

CLYNO.—Metal case for carrying spare tube, 1/6; listed 4/6.—Below.

CLYNO.—Brampton or Coventry Chain, ¾×5-16, 5ft.; 12/6.—Below.

CLYNO.—A postcard will bring you a quotation by return for any Clyno part you require.—Below

CLYNO.—Tyres: brand new Stepney rib stud, 26×2½, to fit 650×65, for Clynos; 22/- each.

BRAMPTON heavyweight spring forks, 8in. or 10in. stem, for 1in. bars, brand new ex-W.D.; 45/-; Druid, 35/-.—Below.

DOUGLAS 4h.p. Spares, all brand new, genuine.—Below.

PISTONS, oversize, 5/-; piston rings, 7d.; valves, 1/9; tappets, 1/9; tappet guides, 1/9; small-end bushes, 10d.; big-end bushes, 1/3; gear change quadrants 2/6; rear hubs, complete, 8/-; spindles, 1/9; cups, 7d.; rear brakes, complete, 10/-; rear stands, 6/-; tanks, complete with sight-feed lubricator, etc., 1915 type, new, 35/-; carburetter control wires complete, 3/- pair; only parts as above in stock.—Below.

WILLIAMSON and Douglas 8h.p. Engine Spares; enormous stock of engine parts from 50 per cent. to 75 per cent. under list price, all brand new and genuine; let us know your requirements.—Below.

J.A.P. 8h.p. Spares.—Brand new crank cases, 35/-; double cam gear wheels, 7/6; crank pins, timing side shafts, 3/- each; main shaft timing pinions, 1/9; piston rings, 9d. each; gudgeon pin bushes, 1/6 each; all above brand new.—Below.

P. and M. cylinders, brand new, 1909 to 1913; 40/- each.—Below

NEW IMPERIAL 8h.p. spindles, complete with cones, nuts and dust caps, 7/6 pair; also suitable for 8h.p. Royal Ruby.—Below.

CHAIN, ⅝×¼ Coventry, 2ft. 7in. lengths, 8/6; 22½in. lengths ½×⅛ Coventry magneto chain, 1/6 each, all above brand new.—Below.

RENOLDS chain rivet extractors, 2/6 each; listed 5/6; very useful tool.—Below.

LEATHER helmets, soft tan leather, lined chamois; special offer to clear, 4/- each.—Below.

SIDECAR C springs (Terry), 4-leaf, bushed; 17/6 pair.—Below.

ELECTRIC soldering irons, brand new, by G.E.C., 200-220 volt, listed 50/-; our price 12/-; a bargain.—Below.

SPROCKETS.—J.A.P. 6h.p. or 8h.p., ⅝×⅜, 16-tooth 3/6, 14-tooth 2/6; 12-tooth magneto sprockets, 1/6 each.—Below.

(This advertisement continued in third column.)

LAST MINUTE BARGAINS.

GOING!

GOING!

They will be

GONE!

shortly, and such prices cannot be repeated.

A FEW MACHINES TAKEN AT RANDOM FROM OUR LIST.

List Price.		Sale Price.
£67 10s.	2¾ h.p. **HENLEY-BLACKBURNE,** 2 speed, clutch and kick-start	£53
£78 15s.	2¾ h.p. **SPARKBROOK-J.A.P.,** 3 speed, clutch and kick-start	£60
£60	2¾ h.p. **TRUMP-J.A.P.,** Sports model, 2 speed and clutch	£48
£65	2½ h.p. **VELOCETTE,** 2 speed, clutch and kick-start	£50
£78 15s.	2¾ h.p. **MASSEY-BLACKBURNE,** 3 speed, clutch and kick-start	£60
£85	2¾ h.p. **A.J.S.,** 3 speed, clutch and kick-st rt	£73
£115	3½ h.p. **NORTON,** Model 16H, 3 speed, clutch and kick start	£85
£115	3½ h.p. **DOUGLAS,** Sports model, 3 speed, clutch and kick-start, overhead valves, fully equipped	£85
£82	2¾ h.p. **DOUGLAS,** 3 speed, clutch and kick-start, fully equipped	£68

ALEXANDER'S

113-115, LOTHIAN ROAD, EDINBURGH.
272-274, GT. WESTERN RD., GLASGOW.

A GOOD GENERAL S-ELECTION!

LIGHT CARS.

L. S. D.
Coventry Premier
A. B. C.

MOTOR CYCLES.

A. B. C.
Powell
Velocette
Connaught
Edmund
Martinsyde
Matchless
Quadrant
Scott
Wetherell
Sheffield Henderson.

We are Agents for the above, but can supply any make.

Our representative will be in attendance at the above Stands during the Show.

DARMODY & LAMPLUGH Ltd.
CARR LANE, HULL.

'Phone: 2303 Central. 'Grams: "Autocar, Hull."

PARTS AND ACCESSORIES

ACETYLENE headlamp sets, black or nickel, comprising 6in. lamp, generator, H.B. brackets and tubing; 16/-; usual price 30/-.—Below.

MUDGUARDS, front 4in., heavily valanced and complete with stays for 26in. wheels, special clearance offer; 6/- each; worth treble.—Below.

AUTOCRAT mechanical horns, handle-bar or top tube fitting, 400 to be cleared at 9/6 each; usual price, 27/6.—Below.

KLAXONS, genuine M.C., top tube fitting; 12/6 each.—Below.

WE have a few motor cycle dynamo lighting sets these are really magnificent outfits, and were manufactured to retail at 16 guineas; we have a few sets left; our price £7/10; come and see one or write for particulars; all brand new.—Below

ELECTRIC headlamps, 7in., complete with H.B brackets and box to take accumulator, a real bargain; 35/-; these are honestly worth £3/10.—Below.

WELL-MADE metal accumulator boxes, 6in. deep by 5¼in. by 3½in., with hinged lid and bracket lugs, 2/- each; ordinary retail price, 10/6.—Below.

CYCLE Car wheels, brand new; 24×2¼, with No 2 car hub, as fitted to the Grahame-White cycle car, 10/- each; usual price 30/-.—Below.

STEEL Tubing, 1⅛×14 gauge, finest quality for M.C. work; 7d. per ft.; any length cut.—Below.

TYRE Gaiters, 26×2½, useful spare; 1/- each usual price 2/6.—Below.

TUBES, 28×3, made by Dunlop, 6/6; 26×2¼, to fit 2¼ rim, 5/9 each; 28×3 St. Helens, butt ended, 5/-; all above brand new and in perfect condition.—Below.

BELTS.—200 brand new surplus belts, 3½in. by 6ft. 6in., made by Palmer; 5/9 each; condition guaranteed; postage 9d.—Below.

BELT Punches, King Dick (genuine), 1in., brand new; our price 1/9; listed 3/6.—Below.

WATTALITE Sets.—Owners of these sets should not miss this opportunity to secure a spare driving cable complete at 17/6; only a few left; don't wait till the one in use breaks; it will be too late then.—Below.

C.A.V. contact-breakers, brand new, anti-clock 11/-; brush holders, 1/9 each; brushes, 6d. each.—Below.

BOWDEN Controls.—Brand new plated single-lever (heavy type) magneto control, complete with inner and outer cable, 5/-; double throttle control levers (black), 5/- pair.—Below.

BEST and Lloyd sight-feed lubricators, less pumps, brand new; 6/- each.—Below.

ACETYLENE burners, standard motor cycle size, taper thread, 10-litre; 4d. each, 2/6 doz.—Below.

PLUGS.—K.L.G. R.1, 2/9; Apollo No. 1, 2/9; these plugs are the goods, not aircraft surplus, which are, for motor cycles, useless.—Below.

PLEASE note, carriage on all above goods extra —Below.

ALL goods sent on approval against cash; cheques and P.O.'s should be made payable to Marble Arch Motor Exchange, 135, Edgware Rd., London, W.2. 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. Hours of business 9 a.m. to 7 p.m.; Saturdays 4 p.m. [7576

A

AVENUE Motors for all kinds of Douglas spares; we will also build you a machine and take your old one in part exchange; we guarantee you 50 m.p.g. For spares as follows:—

2¾h.p. valanced mudguards with legshields, 18/6; 2¾h.p. frames, enamelled, complete, £3/10; front forks, 15/-; wheels, £3/5 pair, soiled only; saddles, from 12/6 to 30/-; engine spares, crankshaft, 30/-; ditto races, 16/- pair; connecting rods, 15/-; tappets, 1/6; guides, 1/6; valve, 2/-; spring, 6d.; head stem, 7/6; second-hand cylinders 15/-, new 32/6; piston, 7/-; rings, 1/-; gudgeons, 1/; S.E. bushes, 1/3; B.E. bushes, 1/9 pair; valve caps, 2/6; second-hand tanks, 25/-; handle-bars, pattern, 12/-, plated; all gear box parts in stock, also 4h.p.; please sent stamp for prices not advertised; approval with pleasure; we specialise in repairs.—Avenue Motors, 373, London Rd., Thornton Heath. Tel.: 468 Croydon. [9232

TRIUMPH, Triumph, Triumph Spares.—Ward and Co.—Below.

BARREL Springs, 4/9; rear guards, 13/6; rear stands, 15/-; exhaust valves, 4/-; rear rims, 8/6; hub shells, 8/6; rear wheels, 27/6; front, 22/6.—Below.

STURMEY-ARCHER clutch sprockets, 18/-; all parts in stock, brand new, unsoiled.—Below.

WARD and Co., 51, Upper Richmond Rd., Putney. [8489

J.A.P. Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9444

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

The Future of the Sidecar.

PROBABLY never has the sidecar been more popular than to-day, and, furthermore, its vogue is increasing. Its development is running on parallel lines to the light car, but there is not the slightest possibility of the two lines converging into a common track. The sidecar stands in a position by itself, presenting the cheapest mode of motor travel for two or more persons.

Its universal appeal to all ages and both sexes is another striking manifestation of the sidecar's attraction. Youngsters of fourteen glory in "taking over the reins" and manipulate the controls with the ease of veterans. Men of seventy find their youth again in piling up astonishing mileages, and are candid in their preference for this sporting form of motoring to the more orthodox and staid motor car. The sidecar is sporting, cheap, and reliable; these factors are sufficient to maintain its unique position.

A reliable second-hand sidecar outfit, capable of carrying three persons, can be bought for £60, or a new machine embodying recent improvements for £100. These prices bring the sidecar within the means of thousands who only two short years ago stood aloof because of the high initial outlay. Now that prices have dropped to a level that must satisfy the most cautious, a still keener interest will be manifest in this form of travel.

The thronged highways during any week-end form evidence of the sidecar's popularity. Another pleasing feature is the enthusiasm of the devotees of the pastime. The spirit of comradeship which exists between the owners of all types of passenger outfits from the inexpensive little two-stroke outfit to the elaborate electrically equipped big twin is remarkable.

The future of the sidecar must be rosy, for thousands of none too well off family men see in it a means of realising their ambition to travel, an ambition in many cases stifled during the last nine years, but now reviving again.

Solid Tyres on Touring Machines.

THANKS to a specially designed springing system, a small runabout car is being offered to the public with solid tyres. This vehicle was exhibited at the recent Car Show and was mentioned in our article in the last issue, in which a motor cyclist's impression of the car exhibits was recorded.

Given excellent suspension and a minimum of unsprung weight, there does not appear to be any inherent objection to the arrangement except in its relation to wear and tear of the roads, which must always be greater with solid than with pneumatic tyres.

Occasionally a reader horrified by the prospect of punctures sends an enquiry as to the feasibility of fitting solid, or semi-solid (filled) tyres on a motor bicycle or sidecar outfit, and the advent of the above-mentioned machine may increase the interest in tyres which cannot be pierced. All things considered, however, the advent of solid tyred wheels on motor cycles is not likely to be yet, for the problem of sufficiently insulating such a comparatively light vehicle as even the heaviest sidecar is almost insuperable. There are those, of course, who maintain that the rather undersized covers often fitted to motor cycles and cycle cars are necessarily inflated so hard as to lose the advantage of pneumatic tyres; that this is not so is easily proved by dropping fully inflated pneumatic tyred wheels and those equipped with solid tyres from a fixed height on to the ground. The difference in the "bounce" of the former and the dead thud of the latter conveys its own story.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY IXION

For Emergencies Only.

THE owner of a four-valve Triumph is really angry with me. He read in this column some months ago that the Lucas acetylene head lamp of my own "Rikky" is adorned with one of Siemens' auxiliary dry battery fitments. Knowing I can do no wrong, he bought a duplicate attachment, and essayed a long cross-country at speed. Having scraped his proboscis against the tailboards of several motor lorries, he now thirsts for my blood. I protest. This auxiliary set is sold for two purposes only, and neither of them is "Rikking" at speed. The dry battery set gives an extremely modest light in the form of a long, narrow pencil of mild illumination. It is intended (*a*) to save fouling the generator during a brief spin upstreet o' nights; and (*b*) to get you home in the event of the speed lamp letting you down. This it does well. My own set has been in use for over a twelvemonth, and is not through its first battery yet. But more it will not do.

Lucas in a New Role.

THE following incident has little connection with motor cycling, but I really must drag it in. Of the lessons of the Great War, to quote various preachers and politicians, I learnt little, but at any rate I painfully and compulsorily acquired a knowledge of Morse. The other night, whilst repairing a puncture in a rural area, I distinctly recognised the Morse dash and dot in the winkings of a bright lamp on the hillside. Thinks I to myself, I will read this message. Some stranded motorist is signalling to his homestead to send the spare back axle along *toute suite*. I ransacked the aforesaid painful memories, and anon deciphered the following weird message:

"Nosey is very sorry he can't come up to-night, but he has to take his tart for a mootch."

Arriving presently outside the sending station I spotted some Boy Scouts, and forgathered with them. They were informing their scoutmaster at the local centre of their sorrowful inability to attend parade that evening; and the instrument with which their communications were performed was an electric lamp beautifully built by our old friend Lucas. But I should like to have seen "Nosey's tart"; also to have deciphered the scoutmaster's reply, which was doubtless flashed whilst I applied my patches. I wonder what my old O.C. would have said. No, on second thoughts I will not reconstruct his probable remarks on this page. By the way, was their spelling of "mootch" correct? There is no copy of Skeat's slang dictionary in the office.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Dissolved Acetylene.

UNTIL we get the mass production dynamo outfit, easily transferable from one machine to another, we motor cyclists shall continue to rely on a form of lighting which has long been obsolescent upon cars; to wit, the gas lamp supplied by some form of drip generator. It is really the one and only thoroughly cheap and efficient alternative to a dynamo; and as yet dynamos are too expensive for the ordinary man, especially as they are not readily transferable to his new machine, and do not fetch their real value on the second-hand market. I use acetylene generators not only on my machines, but also for lighting a small country cottage. But for household purposes we only use them in winter. In summer they are only required for, say, an hour at the end of the day; they cannot be relighted, and are extravagant for short burning periods. This applies *a fortiori* to short runs on a motor cycle, which also suffers from smaller generators of a simpler type. This being so, I continue to be amazed at our failure to adopt the temporary solution which American riders employed almost universally until their electrical firms simplified dynamo supply. They used dissolved acetylene, and nothing else.

Elements in the Contrast.

DISSOLVED acetylene has yet to make headway over here for several reasons. In the first place, it has still to be pushed. It appears annually at the Show, where innumerable riders study it, are attracted, and take home leaflets. They then discover that their local garage will not stock replacement cylinders except under heavy pressure. They find that the stuff is on the dear side, as must always be the case where output is small, and organisation fragmentary. If their machines are small, they realise it may be awkward to accommodate the somewhat bulky apparatus anywhere on the frame. Between America's cheap, pleasant riding in its pre-dynamo period, and our own makeshift methods with generators, there is only one petty difference in the technical factors, viz., that the average American rides a big twin, which has lots of power and space. Nevertheless, I have always been convinced that dissolved acetylene (which I have repeatedly used in spite of all the difficulties) could be a great boon to us. If I were secretary of one of the big, live northern clubs, I should try to organise.

Occasional Comments.—

a band of D.A. users among my membership, so as to solve the local problem of spare cylinder stocks. I believe the fashion might spread like wildfire. The present drip generator is unquestionably excellent on long runs in practised hands. It is fundamentally ill-suited for short spins, and it can give an unaccustomed user quite a lot of trouble.

Wanted, an Instrument Board.

BEFORE long, motor bicycles *de luxe* will certainly be sold complete with instrument boards. For many years past there has only been one indispensable instrument, the speedometer; it enables you to test tune, to verify the effect of each adjustment singly, to check your running costs, and to shatter that awkward incubus, your conscience (for you cannot hold your own when speed is discussed unless you either have no speedometer or frankly determine to let the best liar in). But to-day there are three essential dials. The speedometer is one; the ammeter is another—if you have a dynamo; and the Tapley gradometer is a third. The latter is quite as essential for verifying tune as a speedometer, and adds a treble interest to all runs in unknown country, and also to runs in country which you have not previously tapleyed. Now one can, of course, mount the Cowey, the Tapley, and the ammeter as three naked excrescences. In this case they make your machine look like a warthog. They demand incessant cleaning, owing to the hosts of plated crannies thus exposed. And the speedometer upsets your steering unless you either mount it on the top tube *à l'Indienne*, or balance it by bolting a fat mechorn to the other side of the bar. As soon as my 1923 machine comes along I must get busy with some sheet aluminium and mount all my dials on a proper facia board.

IN GLENCOE—the Glen of Weeping. The curving road shown is the beginning of the newly-made route from Bridge of Coe to Kinlochleven, which embraces wild country, described by Dickens as "fearful in its grandeur and amazing solitude."

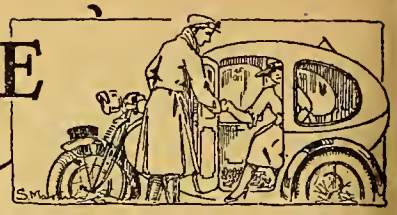
About Knee Grips.

KNOWING that I should be earning some overtime pay at the Show, I gave a lordly order to my garage to fit knee grips to my pet 'bus. Just "knee grips." I didn't specify size or make or price. Then I went for a ride. The garage probably felt dubious about their bill, and elected to cut their loss. Anyhow, they fitted the tiniest knee grips I have ever seen. Secured by single ½in. straps to the tank. On the road I sometimes found these knee grips trying to work off the tail of the tank, and at other times exploring its forward end to test the effect of oil leaks on their indiarubber. At any rate they never stayed under my knees for more than half-a-mile at a time. Next time I want knee grips I shall specify some with two broad straps, which will "stay put."

In the Hands of a Liquidator.

TROUBLOUS times have put several excellent businesses in the hands of liquidators during the last four years. In several cases manufacture has been continued, and the machines have been advertised at very tempting prices. Riders from all over the country continually ask my advice as to the purchase of machines built under such conditions. The answer suggested by the facts is fairly obvious. In most cases financial difficulties have not originated through any technical fault in the machine. In such cases it will be entirely roadworthy. If it has been manufactured in considerable numbers it will always be worth somebody's while to maintain a supply of spare parts; the patterns will not be destroyed even if manufacture ultimately ceases. On the other hand a receiver is plainly inferior to a prosperous manufacturer in one main respect. He may not deal so generously with a customer who has had bad luck with a new machine.

PASSENGER MACHINE TOPICS



by "Friar John"

What will Olympia Reveal? From Fishing to Fleet Street. Things Found on the Road.

NO one can ascertain at the moment what type of sidecar will be most popular at the Show. Interest will, of course, be fairly divided between both the big and little outfits. But I shall be interested to observe the attention given to the super-sidecars, that class that is on its last legs, and standing with one foot in the grave, according to various scribes and others who ought to know better than to prophesy.

Of course the scrutiny given to Olympia exhibits is often misleading, and big crowds do not denote big sales. The primrose coupé on the F.N. last year, and the Harley de luxe coupé ensnared the feminine visitors by the hundred, but there were precious few coupés on the road last year. But superficial visitors won't deceive the experienced and observing heads of firms. Two Show days will be sufficient to tell them which way the wind is blowing, and the makers of outfits costing anything over £140 will have felt whether the wind is balmy or has a knife edge. I hope it will be a sirocco from spice-scented, sun-kissed isles.

THE OLD OAK AT BAGINGTON which marks one of the several "centres" of England. Quite an interesting afternoon's run is to visit the various reputed centres round about Leamington and Coventry.

MORE than one sagacious maker thinks there is a lot to be said for "round figures." Personally I agree, for I know a lot would be said if there were a few more round figures on the balance in my pass book. I refer, however, to the price of an outfit. The round figure is, of course, £100. Many men will go to the Show prepared to spend that amount, and the same old few will be there also who order a *de luxe* sidecar, then write and cancel it when freed from the intoxicating atmosphere of those enchanted aisles. But the firm giving the best value in outfits round about £100 will get a fat book of orders.

ON a recent warmish afternoon I spent an hour or two spinning for jack. It is really a wicked thing to do in early November. But that is what the sidecar does for you. It is such an easy thing to throw rod and tackle in the sidecar and run down to your favourite haunt. It made a destination on an open afternoon, and I am no golf fanatic.

The net result was one fierce-looking little wolf of about 3 lbs. But the waters are not clear of rubbish yet; not until we get some weed-killing frost can the silvery spoon be cast across the black waters and reeled in free from green "flannel."

It is a very sorry tale compared with a sidecar run in 1912, when the catch covered thickly the bottom of an old wicker sidecar, so thickly indeed that one of the pike slipped underneath the cover at the toe and was left on the road—a strange thing for someone to pick up in the highway, a 6 lb. pike, but not the strangest thing picked up on the road by any means. In my sidecar seat at the present moment is a rubber hot-water bottle to which is tied two baby's comforters. This was found on the road near Barnet. Why it was not cast away I don't know. Another queer thing I picked up years ago was a bundle of love letters written by a passionate Don Juan to a pinnacle of ice apparently. My companion in the sidecar held no ideals; he—or was it she—spent an amusing ten minutes with them, I well remember.

I COME back with a bump to London, E.C. It is a murky day, and through the murk I see two or three Enfield sidecars flash by laden with evening papers. (What a contrast from the crystal air of a bright January day and a sidecar laden with pike!) Those sidecars have been stationed for an hour or so outside a printing house, the drivers waiting to receive the first bundles straight from the press. This goes on every day, week after week, with the same machines, midst the same rush and scurry. Hard usage and heavy weights are their lot. But they run splendidly, and appear to revel in an occasional collision, so long as it doesn't

Passenger Machine Topics.—

do more than knock the sidecar mudguard off or smash the lamps.

◈ ◈ ◈ ◈

THE *Autocar* was a weighty feature of Smith's bookstall last week, and no wonder, for every copy weighed nearly 2 lbs., and contained 350 pages, all for 4d. In it there was contained everything the light car man wanted to know about all the little four-wheelers.

◈ ◈ ◈ ◈

I WONDER if all owners part with their mounts with the same curious reluctance one associates with the parting of animate things. Two acquaintances came last week and dragged my outfit from its snug home in the garage. One of them carelessly banged open the throttle, and, with an unfeeling and muscular dig, endeavoured to set the works in motion. Of course the machine refused to fire, as was only natural. After irritating the float he again kicked furiously, but nothing happened. He again waggled the lever and heaved mightily. This time he broke her spirit. She fired. Then the gears —gr-grrrrr. I turned sadly away.

A few days afterwards I told a colleague of my tender, lacerated feelings as I stood with clenched hands (gripping the cheque) watching the departure of a faithful mount.

He looked at me a few seconds in silence, then said he sympathised with me deeply, for he himself had become so attached to his sidecar that he had decided to keep it next year, and probably for a long, long time, simply because he dare not face the pangs of grief in parting with so dear a thing. He turned slowly away muttering.

◈ ◈ ◈ ◈

SHALL we soon be seeing pater scuttling away on a motorised bicycle, his family being left to practise economy by going for a walk in the country instead of being packed in the sidecar? Week by week we hear of innovations in this class of vehicle.

Some of these little machines are decidedly attractive at the price asked for them. The Rolls-Royce individual buys a light car as a tender; why not a motorised bicycle as a tender to the big sidecar? I know one owner who is contemplating the purchase of a miniature, but underground influence is at work in his case. His daughter is thirteen years and ten months old.

The Smallest Practical Sidecar

Machines of 250–350 c.c. for Passenger Work.

Economical Transport for Two.

Sidecar outfits of 350 c.c. capacity have demonstrated wonderful hill-climbing ability. (Above) A side-valve four-stroke shows its paces. (Below) No audience applauds this sleeve-valved engine's ascent of a Scottish hill.

JUST as the cubic capacity of the popular touring solo mount has been gradually decreasing in size, so also has it been found practicable to decrease the engine capacity of passenger-carrying vehicles.

In pre-war days one was apt to consider that the attachment of a sidecar to any engine of less than 500 c.c. partook of the nature of cruelty to small engines. Even the use of the 500 c.c. engine for this purpose was criticised quite severely by many people, though there were not a few smaller sidecar outfits.

Now, however, 350 c.c. (and even smaller) outfits are quite common objects, and many who have undertaken long tours with machines of this size consider that no larger engine is required for normal work.

A Word of Warning.

Though this is true to a very large degree, a word of warning should be issued to new owners of motor cycles in that it is unwise to buy a small solo mount and thereafter attach to it even an ultra light sidecar without first consulting the manufacturers. One has only to consider that even a perfectly aligned sidecar imposes a considerable drag on the chain stays and down tube of a motor cycle to realise that a frame designed entirely for solo work is quite unsuitable for double transport. In addition to this, bumpy roads impose a very considerable twisting action on the parts mentioned.

Again in anything but the flattest country a three-speed gear with a fairly low emergency ratio is desirable unless the engine pulls particularly well at low speeds as is the case with many two-strokes.

Both two- and four-stroke engines of considerably less capacity can and do pull a light sidecar satisfactorily, as may be proved by the performance of several 250 c.c. machines on the track and in open competition. At the present moment, however, the majority of really small engines which are set the task of conveying an extra passenger in any form of wheeled attachment are of the two-stroke type; probably because this form of engine is capable of developing a considerable amount of power at low speeds and will "slog" along patiently up long hills, even when it appears to have reached its last gasp.

There are too many lightweight sidecars now before the public for us to give a list of every make available, but amongst the two-strokes the Connaught, Ivy, Calthorpe, Sirrah, Velocette, Levis, and Allon should be numbered as pioneers in this line, while more recently the Villiers Co. has produced a 350 c.c. engine largely with the idea of providing a suitable power unit for such work.

Speed of Four-stroke Outfits.

The case with four-strokes is somewhat similar. One of the most prominent performances in speed events during the past competition season has been the 250 c.c. Francis-Barnett, and 350 c.c. A.J.S. and New Imperial models with suitable sidecars are listed in the manufacturers' catalogues.

The makers of such machines as the Sparkbrook, Radco, Raleigh, Royal Ruby, and many others have successfully applied a passenger attachment to lightweight machines, and one cannot help feeling that

The Smallest Practical Sidecar.—

there is a large future for any form of transport for two which can be bought and maintained at such moderate figures as the modern lightweight and sidecar.

The average motor cyclist whose touring is confined to week-end outings, and perhaps a fortnight's holiday in the year, does not require a machine which will climb mountains, and will be perfectly content to take his passenger over main, or at any rate reasonable, roads. The climbing capacities of the modern machine are such that the touring ground for this class of rider is unlimited, except in a few well-known corners of the country. Should outstanding examples of hill-climbing capabilities be required, the performance of the little Hawker two-stroke on Applecross in the 1921 Scottish Trials and the repeated ascents of the Old Wyche at Malvern by an Ivy sidecar may be instanced. Then there are G. Denley's many fine mountaineering feats on the Velocette outfit, Litton Slade and Bwlch-y-Groes being perhaps the chief; or S. M. Greening's (Francis Barnett) and L. A. Walsh's (O.K.) ascents of Alms Hill.

Apart from this, there should be a great future for such machines in the hands of ladies who live perhaps five or ten miles from a first-class shopping centre. In this case the light weight and ease of starting and handling of a small sidecar outfit have great advantages.

On the Track.

Regarding the speed capabilities of the light sidecar outfit, C. G. Pullin has attained 71.83 m.p.h. on a 346 c.c. Douglas over a kilometre, and has maintained 41.76 m.p.h. for 24 hours.

Concerning the maintenance of small outfits, there is little to be said. Low gears, and, in the case of two-strokes and flat twins, even torque, save wear on transmission and tyres. It is advisable to spend ten minutes every now and then in making certain that all nuts and sidecar fixings are well screwed home, and the sidecar should be periodically checked for alignment, since a very small error in this direction will produce a noticeable decrease in the performance of a small engine, and will affect power and fuel consumption to a marked degree.

One cannot expect to be able to overload really small outfits with hoods and the thousand and one fitments so dear to the heart of a certain type of motor cyclist, but as regards practical accommodation and comfort there need be nothing lacking, and all necessary spares can be carried with ease in the lockers usually provided.

In some of the most important reliability trials, small two-stroke outfits with engines of 350 c.c. capacity or less have performed like the 500 c.c. four-strokes of pre-war days.

So wonderful have been the performances of tiny engines that one wonders how long it will be before a passenger attachment is produced for the latest ultra lightweight motor cycles of approximately 150 c.c. In the present stage of the industry such a move would be most undesirable, though in a year or two's time it is very possible that some light attachment may prove a success for short distance work even in conjunction with such tiny engines.

Selection Hints.

A word of advice to those considering the purchase of a small sidecar outfit. Select a sturdily built machine, the makers of which are prepared to recommend it for sidecar use. If it is proposed to undertake long distance touring, specify a three-speed gear, and by all means select final chain drive. Final belt transmission answers satisfactorily, but requires periodic attention in wet weather, since the big reduction both in primary and secondary drives is apt to produce a low speed belt running over pulleys of widely varying diameter, two features which are not altogether desirable for passenger work. Very few of the miniature outfits of to-day, however, are offered in the belt-driven form, and this advice applies mainly to those who buy on the second-hand market, which is not a very wise procedure in this particular case.

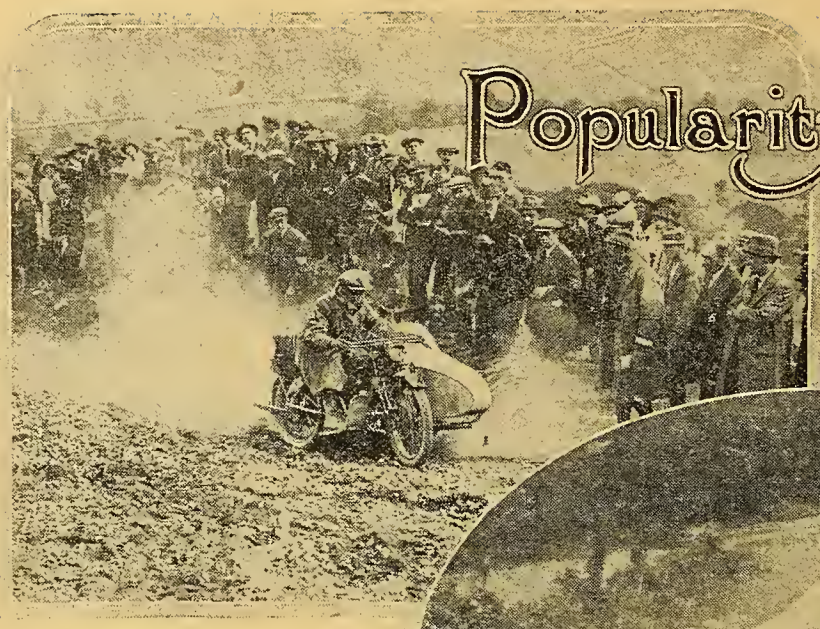
As regards tyres there should be no difficulty, for the majority of such machines are fitted with 26 × 2¼in. rims on which 2⅜in. or even 2½in. tyres may be fitted according to taste. It is not desirable, however, to over-tyre the smaller of these small outfits, since the additional weight and road resistance are more noticeable with an engine of approximately 250 c.c. than with an outfit of normal capacity.

In the case of a rider whose means limit him to a two-speed machine, he need have no fear that his machine will be unsatisfactory under any normal conditions, if he chooses wisely from the products of the best-known manufacturers.

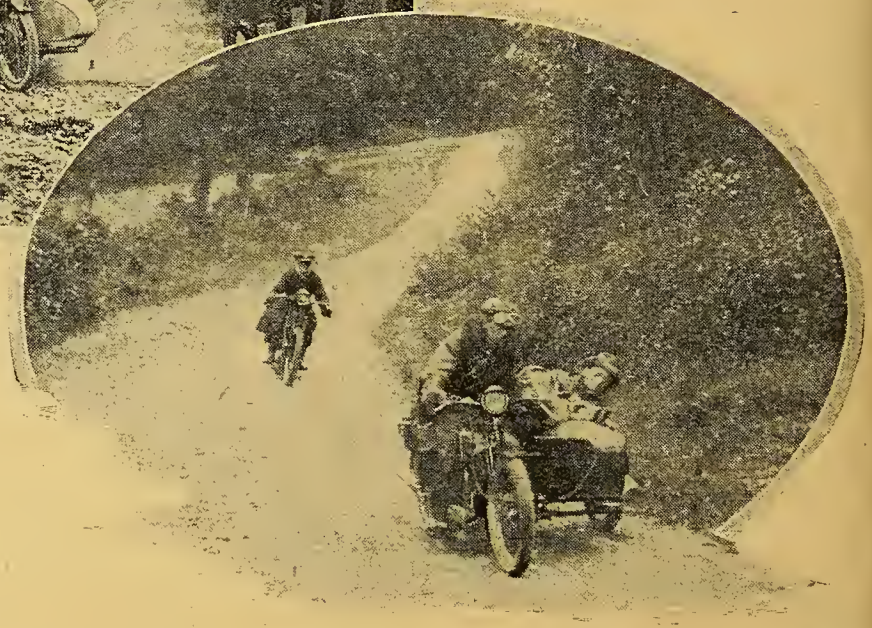
Whatever the choice of the prospective owner, he should very definitely stipulate for a clutch and kick-starter, for there are comparatively few motor cyclists who are sufficiently young and energetic to put up with a push start (with a passenger normally seated) more than once or twice a day.

The upkeep of a small sidecar outfit is miraculously low, if the machine be a good one; fuel consumption of from 70 to 100 miles a gallon may be expected, and tyres should last for 4,000-5,000 miles even on the rear wheel—at least a season's running for the average buyer of this type.

Popularity Bred by Efficiency



In trials, touring, or hill-climbing, the ubiquitous single-cylinder sidecar easily holds its own.



Always the Passenger Machine of the Masses, the 500 c.c.—650 c.c. Single Cylinder Sidecar has had a Long and Worthy Development.

THERE is one type of passenger machine which has no rival on the road; it is the economical 500-650 c.c. sidecar with the motor cycle of the dual-purpose type.

The medium-weight sidecar does, and will continue to, meet an enormous demand, and so long as we have solo motor cycles just so long will the owners of these desire at times to carry a passenger in a sheltered and comfortable position.

How Solo Sizes Increased.

At one time most solo enthusiasts blessed, or rather cursed, this tendency. The public appreciation of the sidecar attachment was so great that manufacturers, anxious to concentrate upon one, and that the most serviceable model, could not lose sight of the sidecar. They realised that whatever their own views were, a very large percentage of their customers were going to attach sidecars to their machines. Therefore, there was nothing for it but to add weight, to increase cubic capacity, and to amend compression ratios and valve settings for the hard slogging conditions imposed. Thus the soloist found his favourite make developing cart-horse features, which were heart-breaking to contemplate; and a large number of men turned to overseas productions for relief of the situation.

That order also is gone. To-day no one is better catered for than the soloist. Every factory with any following has its essentially solo machines, but it has also its dual-purpose machine.

Vogue of Dual Purpose Models.

The popularity of the latter has remained unaffected throughout all the undulations of recent years. A little heavier than the sports model type, it is not too heavy to be used solo by the man who represents the masses. He does not want super-speed, though naturally he desires to be able to maintain good averages. With the dual-purpose mount he can pile on what accessories he likes without detracting from its distinctive merits; he can fit a sidecar and carry a passenger, knowing that his cost of upkeep will remain as nearly the same as makes no difference, and that, except on winter roads and against head winds, his machine will be only a little slower than it is when ridden solo. It is a type which, for general usefulness, is unrivalled. Sidecars can be attached to lightweights, but not without detracting considerably from their speed and climbing powers, while from the point of view of the majority, the average big twin sidecar machine is not a desirable solo mount.

So, as a popular type, the dual-purpose mount is

Popularity Bred by Efficiency.—
firmly established, and this being so the purchaser of such a machine is safe in concluding that his depreciation will be as low as can be expected. In initial cost, as in upkeep, the 500-650 c.c. mount is as cheap as anything that can be bought, taking its speed, hill-climbing, and general utility into account. It is probably the most reliable mechanically-propelled vehicle on the road; it affords all but the cheapest travelling for one, and certainly the cheapest travelling for two, especially if a fair amount of luggage has to be carried.

Utility Duties.

For the country tradesman who does his delivery by sidecar, but who desires occasionally to use his machine solo, or to fit a passenger-carrying body for his wife; for the civil servant who covers a great mileage during the week unaccompanied, but who wants to take his wife and family out during the week-end; for the rider who is one of thousands desiring a certain amount of speed but at no sacrifice of reliability, and who wants a machine which he can ride and keep on riding with a minimum of attention—that is, a machine which will maintain its tune—the 500-650 c.c. type stands unrivalled. And well, indeed, it might be.

For years past the trade has concentrated, by gradual stages, upon its production. It is not an invention; it is an evolution. No type is so much the outcome of close practical research and road test.

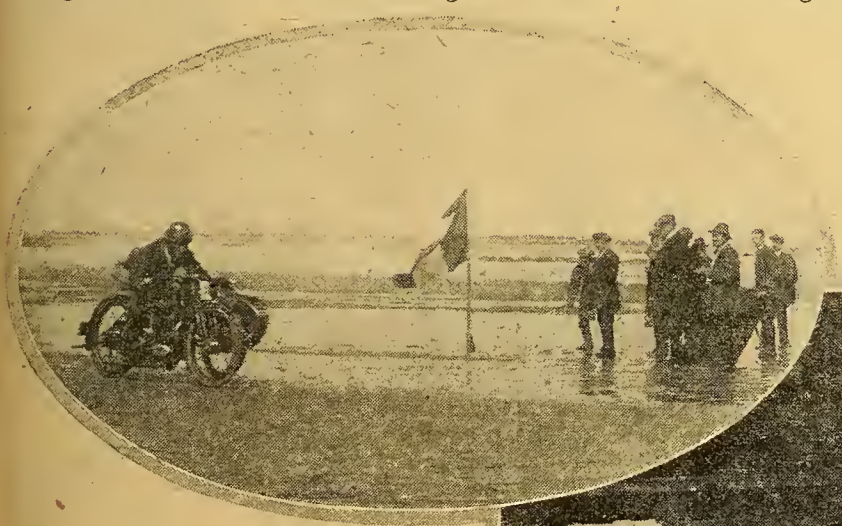
To get down to bedrock facts concerning the medium-weight outfit, one or two observations based on practical experience may be of value. It has been said that the type affords the cheapest travelling for two, and this, taken the year round, is unquestionably so. Brief experience of the big powered outfit and the medium-weight, may lead one to think that there is very little difference between the two in cost of upkeep, but there is this difference. There may be periods when adverse conditions bring the general upkeep cost of the big twin outfit to double what it is normally. In the case of the smaller machine, however, the variance under the same conditions is not so great. These circumstances, it is only fair to say, are rare, and only arise in the event of, say, the breakdown of some important engine component; nevertheless, they are to be considered by those who can "only just afford it," and it is for this reason that the alternative mount remains essentially the poor man's machine.

There is, in addition, of course, the question of initial cost, which, since it runs hand-in-hand with depreciation, is a very important item. Tyres, chains, insurance, taxation are in every case a little heavier with the big machine than with the lighter one. The same, of course, applies to the type of vehicle which it is said might supersede the 1,000 c.c. sidecar.

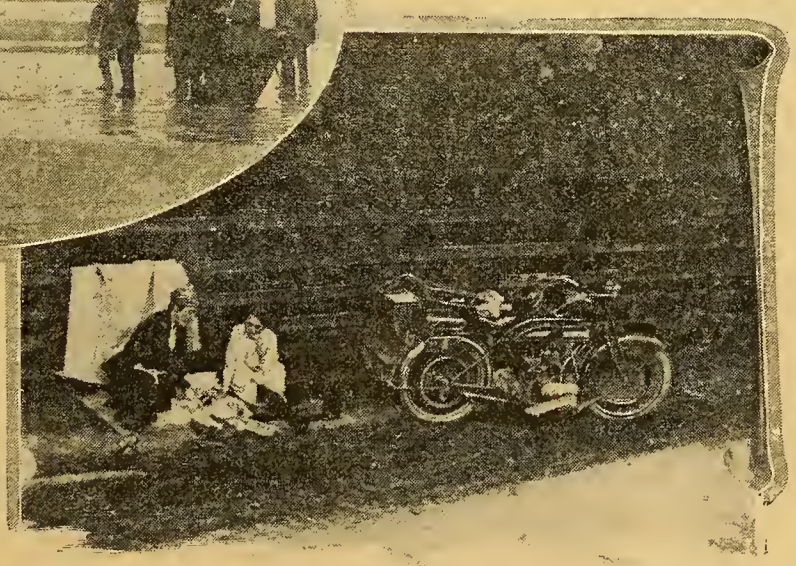
Over-all Economy.

If the big outfit should go, it could only be a case of one type slowly superseding another rather than of annihilation. The big outfit has established as great a host of devotees as the dual-purpose medium-powered models, but it is only the latter which has entirely escaped questions as to its permanency; there is no question but that it is as firmly established as the solo machine, for it represents over-all economy for the thrifty man in the street who can afford to sink a little more capital than the lightweight buyer.

The foregoing is, then, written with a view to emphasising the fact that, whatever changes take place, whatever developments may be realised affecting those who desire always to carry a passenger or the equivalent thereto, the dual-purpose mount will remain a permanency.



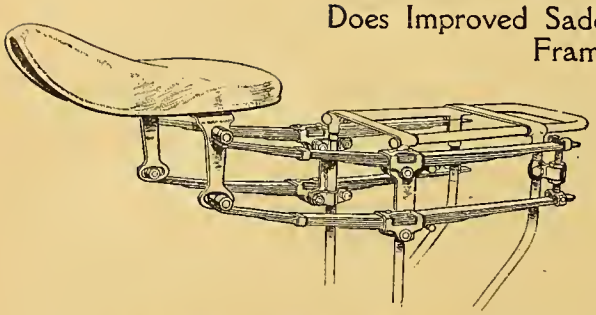
A single-cylinder sidecar machine as a racing mount.



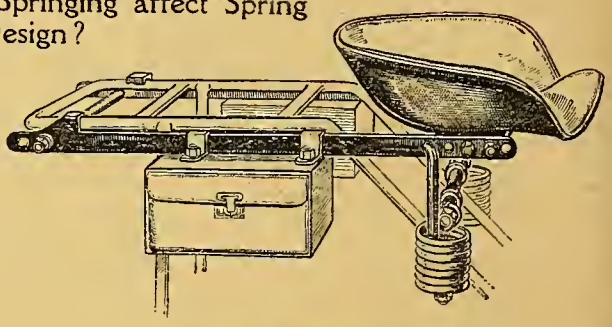
No type of machine offers greater power in proportion to its initial cost than the medium-weight big single. It will transport three people and the impedimenta of picnic or tour with the greatest ease.

SADDLE COMFORT.

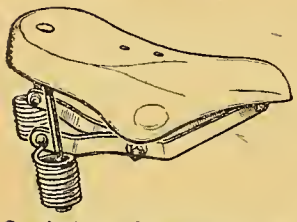
Does Improved Saddle Springing affect Spring Frame Design?



Brooks cantilever, a seat famed for its comfort.



X.L.-All model made for the Ner-a-car.



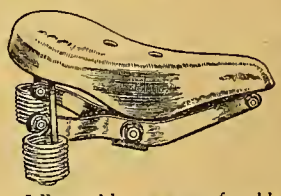
Standard model produced by the The Leatheries Ltd.

A SADDLE can make or mar the pleasures of a motor cycle. All experienced motor cyclists have at one time or another had occasion to grumble at particular saddles, and they can praise with equal fervour certain saddles which have been a pleasure to use.

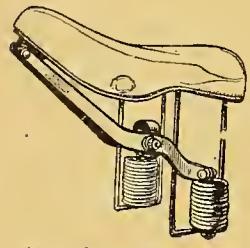
A few years ago luxurious saddles were scarce, even tolerably comfortable models were in the minority, but to-day it is a man's own fault if he rides a yard on a saddle that does not suit him. He can ride in luxurious ease on such designs as the Brooks cantilever, the Tan-Sad, the Terry, or the XL-All.

One of the latter designs has even advanced so far as to introduce ball bearings.

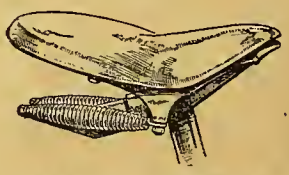
The Terry seat, too, is particularly original in that it embodies scientifically arranged coil springs in its construction, giving a comfort that must be experienced to be thoroughly appreciated.



The Jelley, with waterproof rubber top in place of leather.



A popular Lycett model.



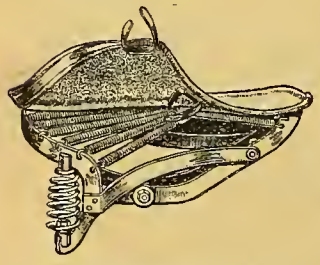
X.L.—All sporting lightweight model.

The Result of Progress.

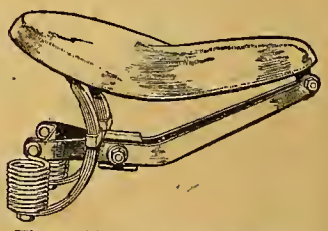
So closely is the question of saddle springing and suspension being studied to-day, and so effective are some of the designs produced, that this may account for the apparent indifference displayed by many motor cycle makers towards rear springing. After all, if a finely-designed system of saddle springing can give the rider an immunity from road vibration comparable to that offered by a spring frame, then it is doubtful if the extra complication of the latter is justifiable on the lighter and simpler type of machine.

On a solo mount neither a spring frame nor a saddle must permit too much side play, but on a sidecar outfit the same considerations do not obtain, and full use of long, supple leaf springs may be made.

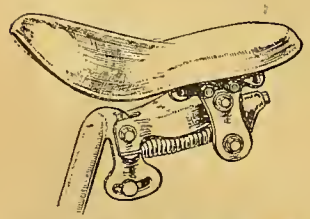
Racing Brooks model employing leaf springs.



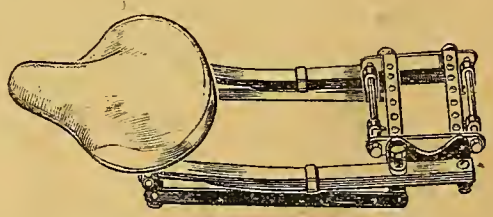
A seat of springs—the Terry.



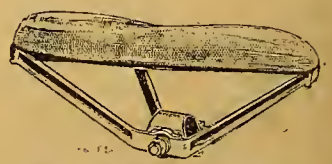
The Middlemore, supported on semi-elliptic and coil springs



Latest X.L.-All type with ball bearing pivots.



The Tan-Sad is mounted cantilever fashion.

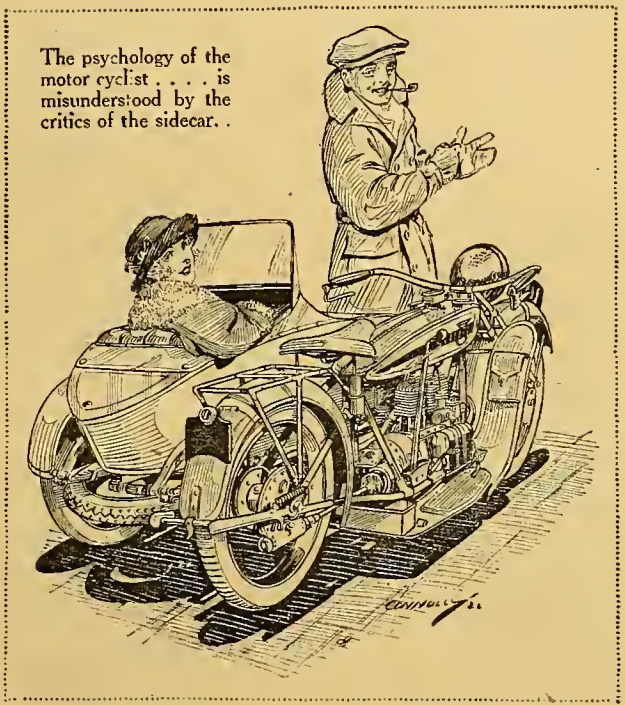


Simple and strong Austin saddle.

Why the High-powered Sidecar Outfit is not Menaced by the Advent of the Cheap Light Car.

At the Top of its Class

Price Margin between the Two Types as Wide as Ever. First Cost not the Total Cost.



The psychology of the motor cyclist . . . . is misunderstood by the critics of the sidecar. .

MERELY because small cars are cheaper this year, the old, old subject "sidecar or light car" is again a topic raising heated arguments as to whether the former will finally succumb to the attack of the latter.

As usual, 1923 car prices are compared with 1922 sidecar figures, and once more the old contentions against the popular outfit are cited as reasons why it is doomed; but the strange feature of this controversy is that very few sidecar owners are to be found among the critics.

We are not at the moment concerned with the extreme and absurd view that the sidecar in all its forms may ultimately be replaced by a light four-wheeler, but rather with the present position and the justification of the fully developed sidecar outfit—the machine which is at the top of its class and which, we are told, is in danger of extinction *because small cars have been reduced in price.*

One point overlooked is that 1923 prices of sidecars, too, are considerably below those of 1922.

Even Manufacturers Doubt.

Motor cyclists resent the implication that the cheapest small car is a better article than the most expensive sidecar. This seems to be the idea of all who expect a revolution in economical motoring next year. Even certain manufacturers have been caught in this offensive on the part of those interested in the production of cheap four-wheelers, and those who enjoy the confidence of sidecar makers are told that 1922 has been a bad year for big sidecars and that a light car proposition is being considered to take their place.

If the sale of big sidecars has really fallen off during the past year, *there is no proof that these sidecars would have sold in greater numbers had there been no light cars.*

Even if 1923 is a good year for small cars and a bad year for big sidecars, evidence is still lacking to show that the purchasers of the former would otherwise have bought the latter. Undoubtedly there is a big field for small cars at a low price, but the majority of buyers are those who have not been attracted by the sidecar and have waited for the cheap four-wheeler. Certain it is the average big sidecar owner is not as a rule a man who has been waiting for something which may cost more than his sidecar, but may easily be inferior in quality and performance. Very few owners who are at the top of one class are likely to be influenced to purchase something which places them at the bottom of another.

Every year sees a number of motor cyclists joining the ranks of car owners—it is only a natural sequence. But seldom do we see the owner of a *de luxe* outfit selling it to buy the cheapest form of four-wheeler. He requires a car of which he can be as proud as he was of his sidecar, and more often than not such a vehicle costs double the price of the most elaborate sidecar.

One had only to visit the Car Show last week to realise that the majority of those interested in the new light cars are not motor cyclists nor people ever likely to become motor cyclists. The few motor cyclists who inspected the array at the White City and Olympia were instantly recognised by the questions they asked—embarrassing questions to the average stand salesman. No owner of a sidecar first tried the cushion springs; he required to know something of the mechanical elements. On the other hand, the potential buyers of cheap small cars revealed their novitiate stage by ignoring altogether the essential features of the vehicle.

Where the Critics Err.

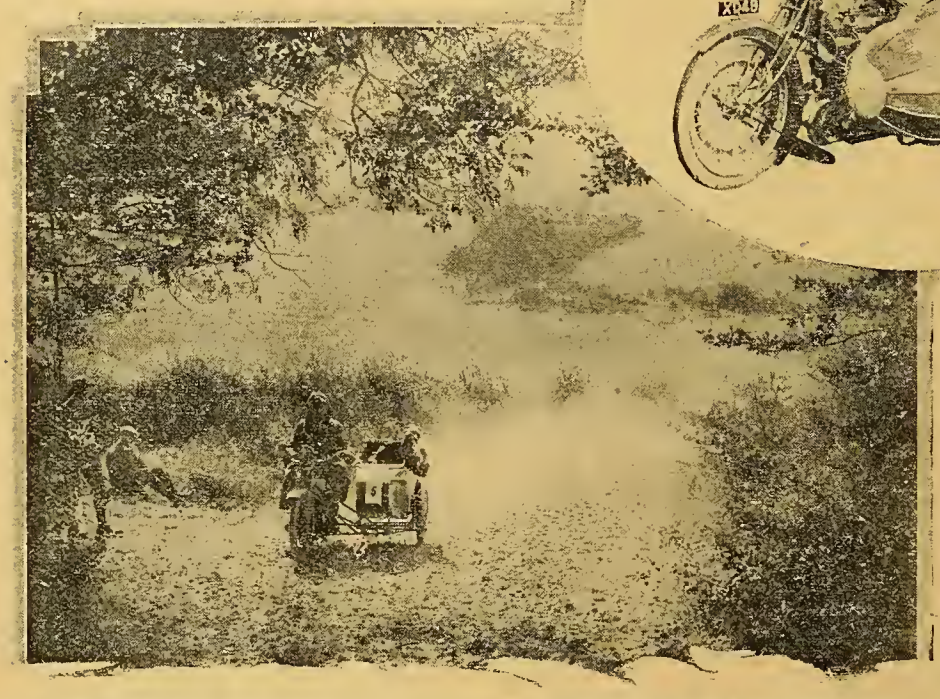
The psychology of the motor cyclist is one of the chief items misunderstood by the critics of the sidecar, who, by the way, are usually those who have never used sidecars, are not interested in their manufacture, and do not know the people who use them.

At the Top of its Class.—

If it were true, as they think it is, that all sidecarists consider anything on four wheels superior to their own machines, the big sidecar outfit would have disappeared long ago. In 1912 there were many cycle cars offering, it was claimed, "all the pleasures of a car at the cost of motor cycling," and it is true that they were offered at remarkably low prices, as the following price list of the period will show :—

Humberette ...	£125	A.C.	£65
Swift	£136 10s.	Morris Oxford ...	£175
G.W.K. ...	£150	Calthorpe	£168
Crouch	£132 15s.	Singer	£185
J.B.S.	£127	Baby Peugeot ...	£160

The big twin sidecar at that date was only in the embryo stage owing to its hub gear. In fact, one may say that the big sidecar outfit has been developed since 1913, and, therefore, in spite of the cheap light cars then on the market. If the arguments against the sidecar and the light car hold good to-day, they doubly applied ten years ago, when the big sidecar was a doubtful proposition and the majority of small cars followed large car practice.



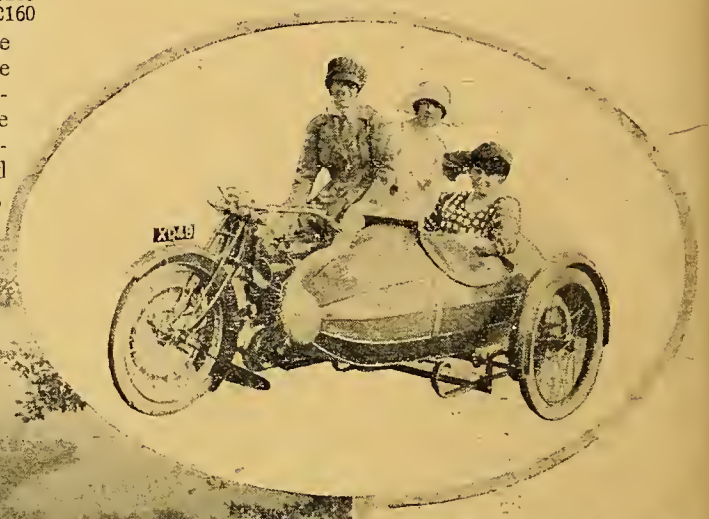
In hill climbing the big sidecar has an advantage over the small light car by the wider ratio of weight and power.

The 1923 small cars offered at prices which are supposed to compete with those of sidecar outfits are, after all, not so numerous, as the following list will confirm, for all best known small cars under £200 are included :—

Bleriot Whippet, 2 cyl., A.C., chain drive	£155
Buckingham, 2 cyl., A.C., shaft drive	£185
Tamplin, 2 cyl., A.C., chain drive	£150
Trojan, 2 cyl., W.C., 2-stroke, chain drive, solid tyres	£175
Unit, 4 cyl., W.C., friction and chain drive ...	£185 17s.
Stoneleigh, 2 cyl., A.C., shaft drive	£185
Rover, 2 cyl., A.C., shaft drive	£180
Mathis, 4 cyl., W.C., shaft drive	£197
Lea-Francis, 2 cyl., oil cooled, shaft drive	£190

One fact cannot be refuted. The sidecar has proved itself to be a mechanically sound proposition eminently suitable for the people who use it. It is economical, and costs much less in garaging, taxation and insurance than any four-wheeler. When replacements are necessary they are usually to be obtained at a moderate price because they are small items.

Even if prices, taxation, insurance and garaging costs were equal, the possibility of replacements has to be considered. If various parts are taken separately and in conjunction with the items approximating to them in a small car, it will be seen that those who motor on the small margin between necessities and total incomes have good reason to be satisfied with the sidecar, especially as it is logic to suppose that the more one pays for an outfit, the less possibility there is of having to meet a repairs bill, while the reverse is the case with the cheapest form of small car, built down to a price.



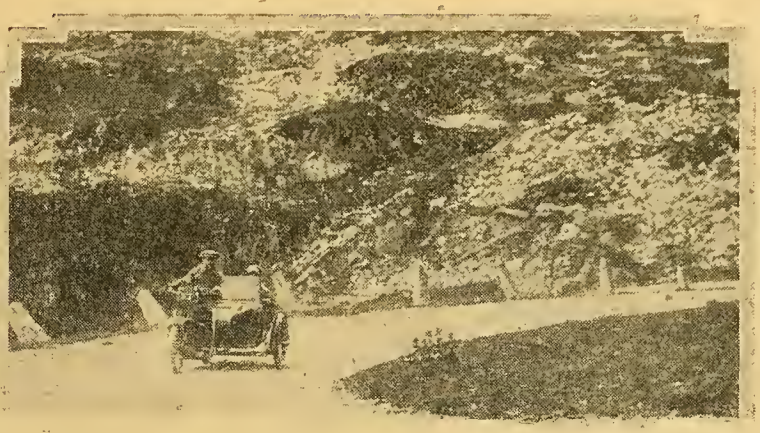
Whatever the critics may say, the fully equipped sidecar is a machine of which to be proud. It is easy to handle and keep in order.

Those with slender purses should try to imagine the difference between removing an engine or gear box on a motor cycle and dismantling the same units belonging to a car. Let him also visualise the task of decarbonising a twin-cylinder motor cycle engine and the same necessary proceeding with a *monobloc* four-cylinder car engine; let him enquire the cost of having this work carried out at the local garage, and the prices of a new back axle for sidecar and car respectively.

But, say some of the critics, with a sidecar one has all the units and material with which to make a cycle car. Why not re-distribute the material and drive from a seat instead of from a saddle? This

At the Top of its Class.—has been done in two notable cases, *i.e.*, the Scott Sociable and the Seal, but they still remain vehicles quite distinct from the cycle car and the light car.

This same question was asked by the present writer ten years ago, and he has seen it answered, not by words, but by actual experience. This is the very thing which was attempted by the makers of the early cycle cars, which were not only mechanically unsound, but as a commercial proposition were a dismal failure.



The owner of a cheap four-wheeler would hesitate before undertaking a tour of the Alps, yet the big sidecars—and smaller machines too—have proved themselves eminently suitable for tackling the long and severe grades encountered in Switzerland.

In 1912 a certain manufacturer of motor cycles produced a cycle car employing motor cycle practice in a vehicle which in appearance was a small car. The chief reasons for its disappearance were (1) it could not be produced at the hundred guineas at which it was offered, and (2) since it employed a motor cycle type of engine and chain transmission, enclosed in a metal body, it was noisy. This engine and gear box were embodied in a big twin sidecar outfit which showed its maker a handsome profit at a price 20 per cent. below the price of the cycle car. What is more, there was a ready demand for the sidecar and practically none for the four-wheeler.

All prices for 1923 big sidecars have not yet been announced, but the following suffice at once to refute the idea that they are in competition with those of cheap four-wheelers. As will be seen, there is still approximately a £50 margin :—

Harley-Davidson	£139 15s.	American X. ...	£131 5s.
Matchless ...	£130*	A.J.S.	£152 10s.
Excelsior ...	£123*	Dot.	£130*
F.N.	£140*	Martinsyde ...	£130*

* Electric equipment extra.

Even if prices were equal, the big sidecar could not be compared with the small car which usually has an engine of the same size or smaller. The power-weight ratio is so much in favour of the sidecar that its speed places it at a great advantage. If speed and carrying capacity be the point of comparison, then the new light cars at prices below £200 should be compared with the smaller types of sidecars which for 1923 will be at a figure in the neighbourhood of £100.

To summarise, 1923 sees practically no change in the respective positions of the big sidecar outfit and the light car, nor can there be so long as the extras for taxation, garaging and professional repairs alone in the case of the four-wheeler add an additional penny per mile on the average full year's motoring.

And extras for these items do not complete the bill; only motor cyclists who have toured on a car know the many extras one is expected to pay at hotels, ferries, garages, etc., merely because one is using a car.

There is one other item often overlooked by those who have land adjoining their houses upon which they can build a garage; frequently one hears the statement that, as they contemplate building a garage, the cost of housing their machines is nil.

Garaging at Home.

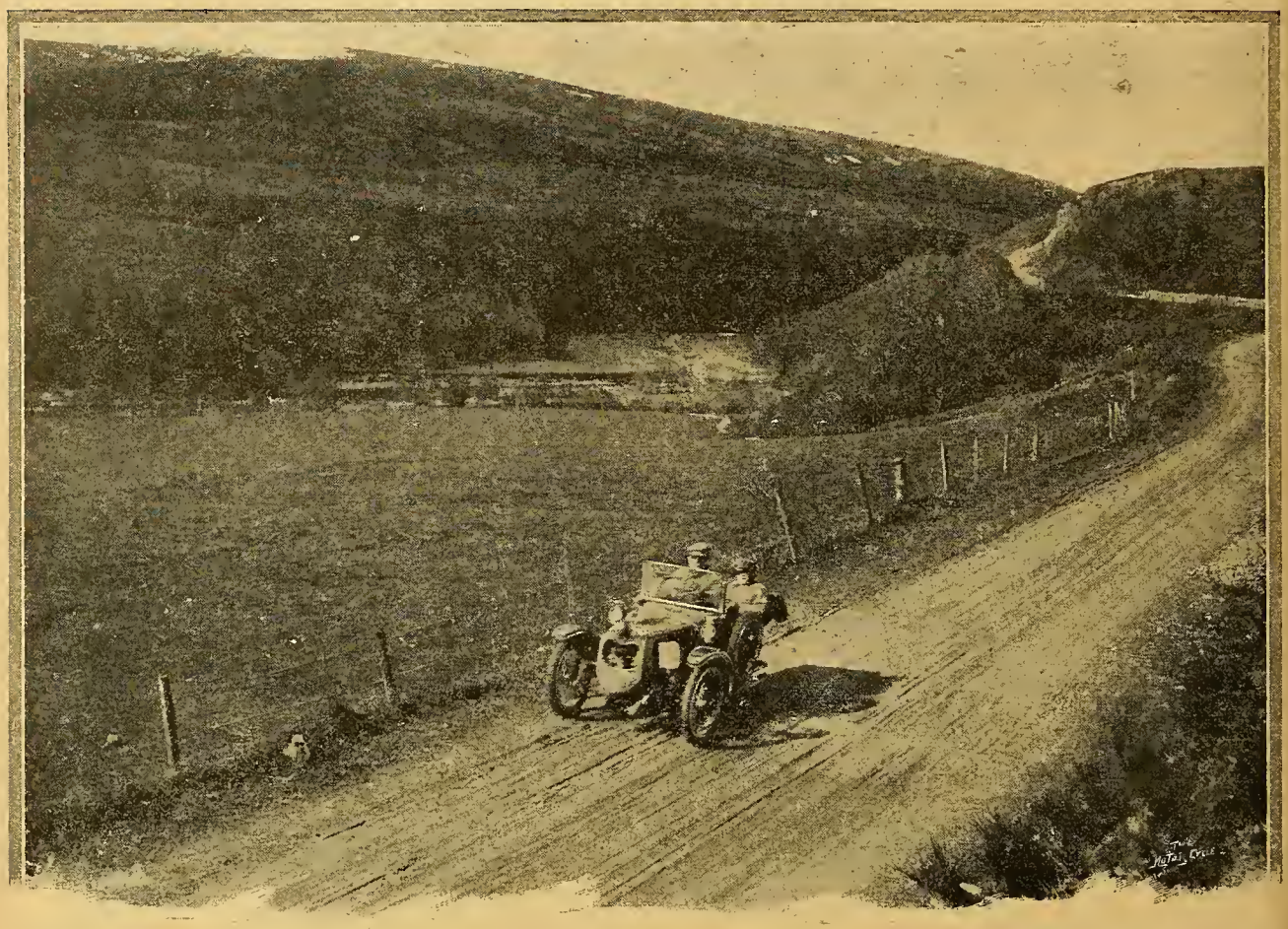
Very few houseowners who add a car garage escape a reassessment, and consequently the paying of extra rates for the privilege. In some cases the extra rates have been almost as much as the cost of renting a garage. In addition, an extra water rate is charged for the advantage of being able to wash one's own car. On the other hand, a sidecar may be accommodated in a portable shed. The difference on the interest of capital outlay is also a matter to be considered.

Of course there will be many new light cars on the road next year, but that section of the motoring public using big sidecar outfits will not be diminished in any way; in fact, it will increase just as the number of users of large cars will increase, because there is always a large number of owners "moving up." Whatever any one section will lose at one end, it will more than gain at the other, for the motoring movement, whether it be connected with the smallest lightweight or the most powerful car, is always expanding as more and more people learn the joys of the open road and the real utility of the motor vehicle.

Speed is another point where the big sidecar scores over the small car, which very often is fitted with an engine of the same size to propel double the weight.

MODERN THREE-WHEELERS.

Sidecar Alternatives for the 1923 Market



Champion of the three-wheeler movement. H. F. S Morgan in the machine which has made his name famous.

THOSE sidecarists amongst the number which yearly decides, either from the exigencies of business or the urge of the passenger, to seek an enclosed vehicle, will look eagerly to see what 1923 has in store for them.

Strange to say, despite the tremendous interest which is being paid to the development of economical car type machines, few new designs in the three-wheeler class have been announced. Possibly the apparent stagnation in this particular field is due to the fact that it is so easy to over-develop design in the three-wheeled vehicle class. Once the advantages of lightness and simplicity are overlooked, it becomes a moot point whether the four-wheeler is not as easy to evolve and as cheap to build; this solution of the designer's problem, however, is one which throws upon the prospective user all the additional tax and expenses which a full-blown car involves.

However, all the established three-wheeled runabouts are still with us, and certainly they show no sign of losing their popularity; indeed, in one case, thanks to a substantial reduction in price, a record run of success may be expected.

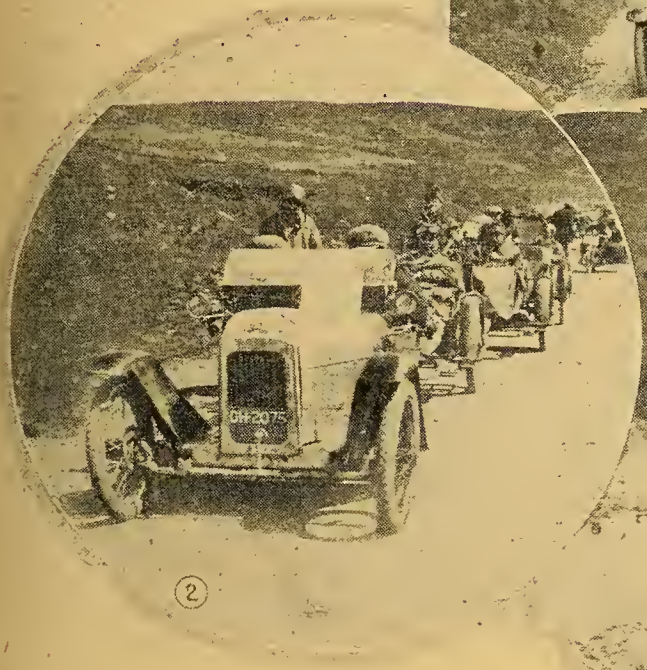
The runabout world resolves itself into two distinct classes: the first devotes its attentions to the simplest types of machine, while the second is mainly concerned with the more elaborate class of vehicle—the complete car on three wheels. Probably of the two the former, chiefly as a result of the energies of one particular maker, has earned the greatest fame.

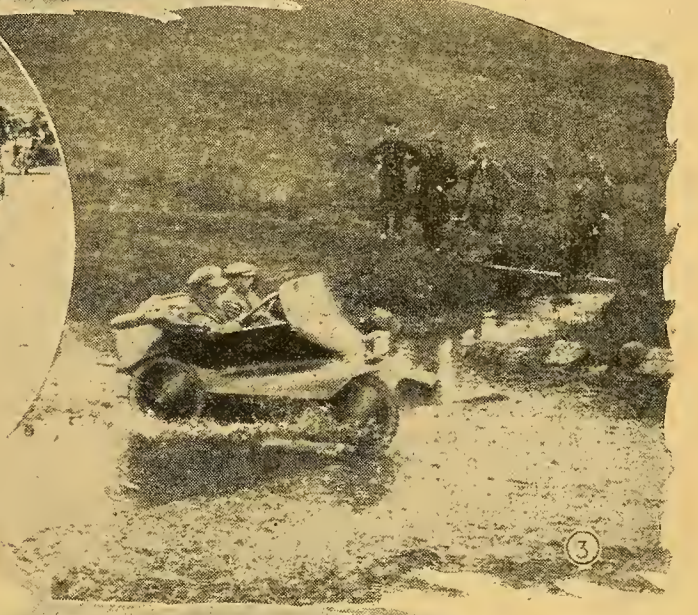
The Simplest Type.

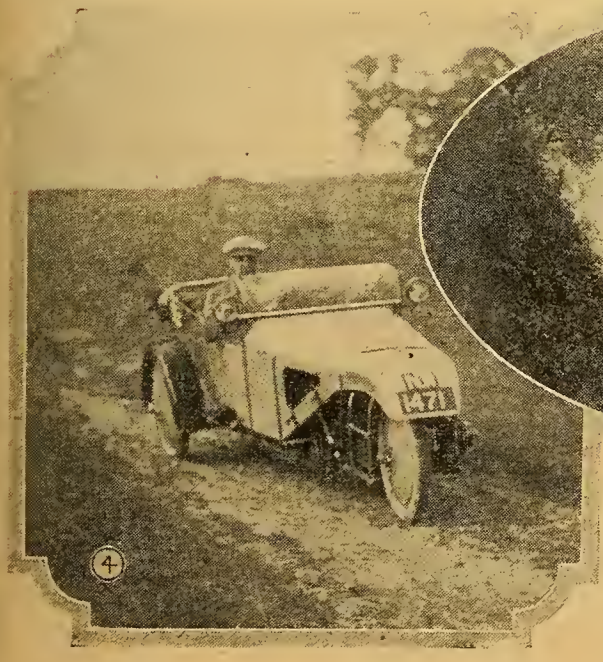
To deal now with particular examples: the Morgan must take pride of place. This well-known machine will remain to all intents and purposes unaltered, but considerable price reductions have already been made which cannot fail to increase the large sales that have been made in the past year. First there is the Popular model, which, although shorn of all unessentials in order to be sold at the very moderate price of £135, is nevertheless equipped with full acetylene lighting apparatus. This model is fitted with the air-cooled J.A.P. engine of 976 c.c. capacity.

Various engine alternatives, both as regards make and air or water cooling, can be had, but these of course involve additional charges.

MODERN THREE-WHEELERS ON TRIAL AND TEST.



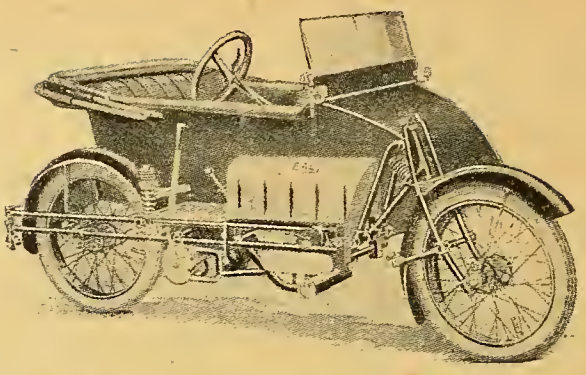




All the runabout machines shown on this page have been subjected to arduous tests, either in official trials or privately, over difficult mountainous country. The following makes are represented: (1) L.S.D. with air-cooled twin engine, shaft and chain drive. (2) New Hudson, water-cooled twin, shaft and chain. (3) Scott Sociable, water-cooled two-stroke twin, shaft drive. (4) Autogear, air-cooled twin, chain and gear drive to front steering wheel, and (5) T.B water cooled twin, shaft drive.

Modern Three-Wheelers.—

To counter the frequent criticisms which are levelled against the small runabout on the score of its limited capacity for accommodating extra passengers, a Family model was introduced more than twelve months ago, and this, of course, is being retained; for use in hilly districts the special four-speed gear box which is made is an extra well worth considering. The Family model provides comfortable seating for two adults and two children.



Based on the sidecar outfit, the Seal Sociable is, in effect, a double-seated sidecar with the driving arrangements brought into the body.

So far the utility patterns alone have been referred to, but naturally those who desire to possess a really lively machine with a high ratio of power to weight will find all their requirements met in the various models of the Grand Prix Morgan—a true high-performance machine of proven ability.

The price of the Family model is £160 in the air-cooled form, while in the water-cooled pattern it is £170. The Grand Prix type costs £160 with the J.A.P. engine (water-cooled), while the M.A.G. engine entails an extra outlay of £7.

Undoubtedly the Morgan, by virtue of its simplicity, stands in a class by itself, and in this respect it is only approached by the Yorkshire-made L.S.D., which follows a somewhat similar layout.

A J.A.P. air-cooled engine supplies the power in the L.S.D. machine, and the drive is by shaft to a two-speed gear box, in which a reverse is also incorporated; a kick-starter is also a feature of this design. Steel wheels of the artillery pattern are used on the L.S.D., and of course they are interchangable. The final drive is by chain, and there are two contracting brakes on the back wheel hub. Three models are available, these being a popular type at £145 19s., a family model at £161 14s., and a more refined example of the two-seater variety at £155 9s. The family model accommodates two adults and two children; the hood when erected covers all the passengers.

Highly Developed Machines.

Still keeping to machines which follow the lay-out that by virtue of long usage may be described as the conventional, the T.B. and the New Hudson must be next described.

The T.B. is available in both air- and water-cooled models, the prices being £155 and £165 10s. respectively. The engine is mounted transversely at the front of the chassis, and bolted directly to the crank case is the three-speed and reverse gear box, the pit of the fabric plate clutch intervening. From a fabric universal joint behind the gear box transmission to the bevel-driven rear wheel is by a shaft. All wheels are interchangable, and the springing is by quarter-elliptics at the front and cantilevers at the rear. Steel tubing, welded at all joints, is used throughout the T.B. chassis. Although apparently somewhat heavy, the performance of the machine is extremely high, as results obtained in all the important reliability trials go to show.

Next comes the New Hudson—an example of the fully developed runabout, or car on three wheels. This machine is of more recent growth than the others which have been mentioned, but it has nevertheless been before the public long enough to amply prove its worth. In the New Hudson the power unit is a water-cooled 1,098 c.c. M.A.G. V-twin mounted at the front of the channel steel chassis and driving through a car type clutch by shaft to a three-speed gear box secured to the rear cross-members of the frame; from a sprocket on the box the drive to the rear wheel is by chain. All wheels are interchangable, and springing throughout is of the quarter-elliptical variety. In external appearance and finish the New Hudson is comparable with the best in the small car world. Complete with electric lighting outfit (by dynamo) and spare wheel, the price of the New Hudson at the present time is £230.

On Sidecar Lines.

Quite separate from the above-described machines are a number designed more closely to follow the lines of the sidecar outfit; most highly developed in this class is, of course, the unconventional Scott Sociable.

This now well-known machine was designed entirely with the performance of the sidecar in view, to which, of course, should be coupled the comfort and protection of the most luxurious car. In these aims the designer has well realised his intentions, for the 578 c.c. two-stroke engine is silent and vibrationless in action, lubrication is automatic, and the compound lever and coil springing gives the essence of comfortable travelling. Gear changing is interlocked with the clutch control, and as the gears themselves are of the constant mesh type the operation is as easy as it is on the best of motor cycles and quite unlike the sleight of hand process so frequently involved on cars. No reverse is fitted, as owing to the steering lock and general mobility equalling that of a sidecar it has not been found desirable.

From the gear box, which is integral with the engine crank case, the drive to the off side rear wheel is by shaft and spiral bevel; independently controlled internal expanding brakes are fitted to both rear wheels.

The Scott Sociable chassis is constructed with a number of standardised tube units bolted together so that an incidental advantage is obtained in the event of frame repairs becoming necessary at any time as the result of an accident. If there are any objections to the plan of the Scott Sociable they are those which apply to the sidecar also, viz. :—that the single wheel on the near side gives a decidedly unsymmetrical appearance and that the off-centre one-wheel drive puts the machine at some disadvantage on abnor-

Modern Three-Wheelers.—

mally steep and rough hills such as those which are included in the more "freakish" reliability trials. Actually both these objections may be dismissed, as they are dismissed by the great majority of sidecar buyers; the question of appearance is a matter of use and custom, and that of loss of tractive effort on abnormal grades is one which only affects those who compete regularly in the more outlandish trials.

Equipped with all accessories, hood, screen, spare disc wheel, and dynamo lighting, the Scott Sociable sells at £176 8s.

Long before the machine above described was on the road a runabout produced in Lancashire and known as the Seal Sociable was marketed. This machine followed even more closely the lines of the ordinary sidecar outfit, inasmuch that it was (and still is) to all intents and purposes a motor bicycle and sidecar with a single frame common to both and an enlarged sidecar body in which the driver and passenger are accommodated. The framework encircles the rear wheel, and the whole is sprung on large coil springs. Steering is effected by a wheel which controls a modified form of motor cycle front fork, while the transmission from the air-cooled big twin engine is by chains through a motor cycle type of gear box. The price is £165; spare wheel extra.

Possibilities in the Unconventional.

Another type of three-wheeler, and one which has great possibilities if only it was more vigorously developed, is that represented by the Autogear, another northern production.

In the Autogear the complete power unit and transmission is located at the front of the chassis, the front wheel acting as both driver and steerer, while the two rear wheels are only called upon to carry the passenger weight and to deal with the braking forces. This layout has obvious advantages; the front wheel driving and steering allows the complete mechanism of the vehicle to be accessibly mounted in the front of the frame, and the front wheel can be sprung to carry a known and practically constant load. As the rear wheels have no other load than the body and passengers, they can be lightly and flexibly sprung and placed as far back from the front as may be desirable; thus a four-seater body without overhang is by no means out of the question.

Steering Advantage of Front Drive.

Less obvious benefits gained with this type of chassis are stability and ease of handling owing to the fact that before the weight of the machine is deflected from its path the actual direction of the power is altered by the movement of the steering wheel; in all other cars and runabouts the mass of the vehicle has to be deflected against the forwardly moving resistance of the rear driving wheel or wheels.

The Autogear has a 1,098 c.c. Blackburne air-cooled engine, a single plate fabric clutch, and a three-speed and reverse gear box in line with the engine shaft; from the box the drive is by a chain to the trunnion bracket which supports the swivelling front wheel, and a short universally jointed shaft completes the drive through an internally toothed reduction gear. All the wheels are carried on stub axles and are of the Lynton disc type. An extra wheel and dynamo lighting, together with a one-man hood which encloses the entire "occasional four-seater" body is included at an approximate price of £200.

B.M.C.R.C. MATTERS.

Aggregate Prize Won by Le Vack. More Records Recommended.

AT the last committee meeting of the British Motor Cycle Racing Club last Monday week, several announcements were made of interest to the motor cyclists who attend Brooklands meetings.

In the first place, the marking for the season's aggregate prizes has resulted in the following placings:

1.—H. le Vack, 158 marks.
2.—C. E. Temple, 107 marks.
3.—E. Remington, 102 marks.

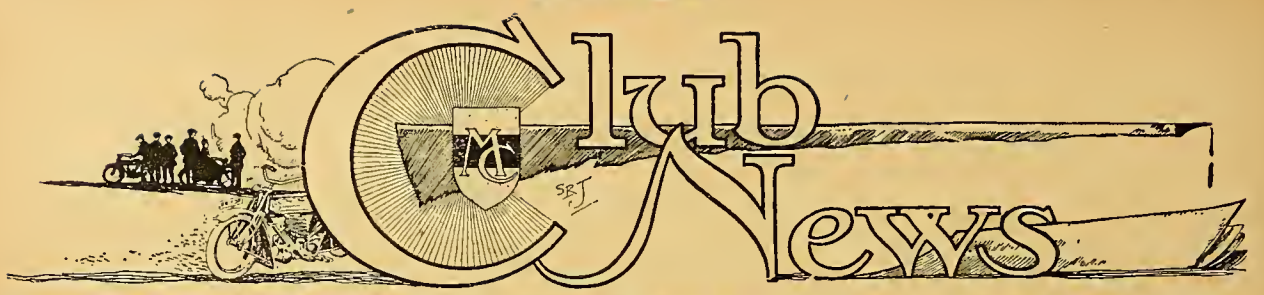
Le Vack and Temple, therefore, qualify for the 50-guinea Aggregate Cups presented by Mr. A. V. Mellano and the B.A.R.C. respectively. Incidentally, V. Horsman, who did so well at the Championship meeting, added no fewer than 90 marks to his previous aggregate, and, pulling up 18 places, finished fourth on the list.

The matter of the disqualification of a competitor at the Championship meeting, on account of his sidecar passenger not wearing a crash helmet, was raised. The facts are that the committee decided several months ago that a crash helmet should be worn by both driver and passenger, but, as this rule has been omitted from the entry forms, the committee agreed that it would be harsh to enforce it on the occasion in question, although it was agreed that the stewards of the meeting had acted in good faith on the facts as presented to them at the time. The competitor concerned, A. Gayder Smith (490 Norton sc.), is, therefore, reinstated in second place in the All-comers' Passenger Handicap, Horsman thus becoming third.

A record number of spectators attended the Championship meeting, but the committee's pleasure at this announcement was somewhat damped by the Secretary's production of a claim from the Inland Revenue authorities totalling about £80, on account of entertainment tax due on *members' subscriptions* for the years 1920-21-22. Membership of the B.M.C.R.C., of course, carries with it the right of free admission to the track, and it is on this account that there appears to be a liability for entertainment tax on such proportion of the subscription as may be estimated to be in lieu of admission fee.

Secretaries of motor cycle clubs which intend promoting one Brooklands meeting per season should be careful, therefore, not to announce free admission to the track on this occasion as being one of the benefits of membership of the club.

After some discussion, it was decided to recommend to the A.C.U. that the 7 hours, 8 hours, 9 hours, 10 hours, and 11 hours records should be recognised.



Coventry and Warwickshire M.C.

It has been decided to re-run the Manville Cup Trial, owing to so many competitors having lost their way through insufficient route marking. The new date is Saturday, the 18th inst.

Yorkshire Centre A.C.U.

The second annual dinner will be held on Saturday at 7 p.m., at the Queen's (Midland) Hotel, Leeds; ladies are invited. During the same afternoon the annual general meeting will be held at the Guildford Hotel, Leeds.

Cambridge University M.C.C.

Results of the recent sporting trial are as follows:—

FULL MARKS IN SOLO CLASS.—L. A. Humphreys (557 B.S.A.), R. Chalmers (498 Zenith-Bradshaw), E. W. T. Howard (492 Sunbeam), J. A. Orr (499 Sunbeam). Results of the timed hill climb give the premier award to E. W. T. Howard and the second award to J. A. Orr.

SIDECARS.—O. G. Smart (490 Norton sc.), premier award. A. B. Calkin (770 B.S.A. sc.) and F. Robinson (1,087 G.N.) tied for second place, which on the result of the timed climb is taken by A. B. Calkin.

Bradford M.C. and L.C.C.

Heavy rain having curtailed the Club's handicap speed trials on the 21st ult., the event had to be completed on the following Saturday. Results:—

SILVER CUP (won outright).—G. W. Cooke (486 Scott Squirrel), handicap as 65 m.p.h., actual 70.02 m.p.h.

SILVER MEDAL.—R. Turner (494 Douglas), handicap as 70 m.p.h., actual 74 m.p.h.

BRONZE MEDAL.—F. Catterick (494 Douglas), handicap as 70 m.p.h., actual 72.28 m.p.h.

SILVER CUP FOR FASTEST SOLO TIME.—R. T. Cawthorne (490 Norton), 85.7 m.p.h.

Liverpool M.C.

Results of the Reliance Cup trial are as follows:—

RELIANCE 50 GUINEA CHALLENGE CUP.—G. F. Burns (492 Sunbeam).

BURNS AMATEUR CHALLENGE CUP.—G. S. Boston (532 Scott).

BUTTERWORTH CHALLENGE TROPHY.—S. Doward (247 Sun Vitesse).

MOGRIDGE MEMORIAL CHALLENGE CUP.—L. Randles (492 Sunbeam).

GOLD MEDALS.—G. F. Burns (492 Sunbeam), 100 marks; G. S. Boston (532 Scott), 100; R. Brown (492 Sunbeam sc.), 100; W. J. Kellett (492 Sunbeam), 100; S. Doward (247 Sun Vitesse), 97; L. Randles (492 Sunbeam), 97; F. H. Hawkins (348 Raleigh), 97; H. Gibson (348 Raleigh), 97; C. H. Fox (557 B.S.A.), 97; J. H. Fox (633 Norton), 95; E. L. Boston (486 Scott), 95; J. Westwood-Wills (547 Powell), 95; A. Bennett (492 Sunbeam), 95; G. Warbink (492 Sunbeam), 95; E. Eggers (349 A.J.S.), 95; W. H. Hadfield (348 Raleigh), 95; J. H. Green (348 Excelsior), 95; J. H. Simpson (349 A.J.S.), 95; N. H. Brown (349 A.J.S.), 95.

SILVER MEDALS.—W. Clough (532 Scott), 94 marks; A. R. Evans (492 Sunbeam), 94; G. L. Falck (498 Rover), 94; H. Marston (349 A.J.S.), 93; Miss M. Cottle (547 Powell), 92; P. G. Thomason (398 A.B.C.), 92; E. H. Welch (490 Norton), 92; Graham Oates (249 Grindley), 91; S. Crabtree (499 Sunbeam), 90; S. Ollerhead (494 Douglas), 90; V. Horsman (633 Norton sc.), 89; O. Wade (799 A.J.S. sc.), 88.

Awards for best performance in each class:—

Solo up to 275 c.c.—S. Doward (247 Sun Vitesse).

Solo up to 350 c.c.—H. Gibson (348 Raleigh).

Solo up to 500 c.c.—G. F. Burns (492 Sunbeam).

Solo over 500 c.c.—G. S. Boston (532 Scott).

Sidecars up to 600 c.c.—R. Brown (499 Sunbeam sc.).

Sidecars up to 750 c.c.—V. Horsman (633 Norton sc.).

Sidecars over 750 c.c.—O. Wade (799 A.J.S. sc.).

WINNING TEAMS.

Machine Team.—Sunbeam team: R. Brown, A. Bennett, G. F. Burns.

Club Team.—Liverpool Club lightweight team: J. H. Green, H. Gibson, N. H. Brown.

Nominated Team.—E. L. Boston, G. S. Boston, G. F. Burns.

Richmond and District M.C.C.

A novel "Follow-the-confetti" trial will take place on the 19th inst., starting from the Angel Hotel, Thames Ditton, at 11 a.m. Should weather conditions make the event impracticable a postponement until the following Sunday will be made.

Cardiff M.C.C.

A dance will be held at the Pavilion Café on the 22nd inst., commencing at 7.30 p.m. Applications for tickets should be made to Mr. F. E. Jenkinson, 6, Romilly Crescent, Cardiff, or Mr. R. Bevan, Onstle Street, Cardiff.

Rotherham and District M.C.

Results of a reliability trial held over a course of 80 miles in the Derbyshire district are as follows:—(1) C. Beaumont (550 Triumph), 2 marks lost; (2) G. Bennington (500 N.U.T.), 3 marks lost; (3) D. Lister (348 Excelsior-Blackburne), 4 marks lost.

Bridgend and District M.C.C.

The above club's first reliability trial was run off successfully over a fifty-two miles course on the 25th ult. Nineteen competitors started, including one lady rider. Results:—

GOLD MEDAL.—H. R. Thomas (349 A.J.S.).

SILVER MEDAL.—C. Powell (499 Sunbeam).

BRONZE MEDAL.—F. Hawkins (499 Sunbeam).

Reigate, Redhill and District M.C.C.

"Old crocks" and single-gear machines participated in a trial held on the 1st inst., but the event was spoiled by heavy rain. The following results were recorded:—

SINGLE-GEAR MACHINES.

GOLD MEDAL.—E. F. Bewers (499 Triumph).

SILVER MEDAL.—E. C. Gordon (499 Triumph).

"OLD CROCKS" (1913 OR EARLIER MODELS).

GOLD MEDAL.—A. G. Harris (348 Douglas).

Lichfield and District M.C.C.

Results of the second round for the Hoskinson Cup, run off on the 15th ult., together with results of the first round, are as follows:—

HOSKINSON CUP.—F. H. Twyman (499 Sunbeam), 380 marks.

GOLD MEDAL.—J. J. Smith (490 Norton), 378 marks.

SILVER MEDAL.—G. Finch (584 Harley-Davidson), 371 marks.

BRONZE MEDAL.—A. J. Button (550 Triumph), 370 marks.

Surrey M.C. and L.C.C.

Hard going in narrow, winding lanes, a flexibility hill-climb, and 45 miles in darkness were some of the ingredients of a half-day trial for the Bateman Challenge Cup which took place on the 28th ult. Incidentally, the reliability of modern lighting systems was most marked. Results:

BATEMAN CUP AND GOLD MEDAL.—A. C. Brookes (499 Blackburne sc.), 100 marks.

SILVER MEDALS.—T. G. Meeten (249 Triple H.), 97½ marks; P. W. S. Bulman (976 Zenith sc.), 96¼ marks.

BRONZE MEDALS.—C. B. I'Anson (499 Zenith-B.), 78½ marks; Rev. Carver (998 Rudge sc.), 73 marks.

Southport M.C.

The fifth and last trial of the season for the "Blake" and "Taylor" Cups was run off on the 29th ult. Competitors covered a very sporting course of sixty-six miles, which included two water-splashes and three observed hills. Awards were made as follows:—

TAYLOR CUP, 1ST CLASS CLUB AWARD AND SPECIAL PRIZE IN SIDECAR CLASS.—E. H. Clifton (976 Enfield sc.).

BLAKE CUP, 1ST CLASS CLUB AWARD AND SPECIAL PRIZE IN OVER 350 c.c. CLASS.—E. H. Hope (976 Brough Superior).

FIRST CLASS CLUB AWARD AND SPECIAL PRIZE IN 350 c.c. CLASS.—G. W. Williamson (349 A.J.S.).

SECOND CLASS CLUB AWARDS.—V. F. Crosthwaite and W. H. Allison.

South-East Essex M.C.C.

A club is being formed in South-East Essex. It is proposed that events covering all branches of the sport and catering for all types of machines be organised. Those interested are invited to attend a meeting at "Cotgroves," 16, High St., Southend-on-Sea, to be held on the 16th inst., at 7.30 p.m., or to communicate with Mr H. T. Baldwin, The Bungalow, South Woodham Ferrers, Essex.

Dublin and District M.C.C.

A trial for a trophy presented by the Manufacturers' Union was run off on the 28th ult. Snow and hailstorms troubled competitors on the higher points of the course, but on the whole the weather was good. Among the observed hills Goat Pass accounted for the greatest number of failures, quite one-third of those who attempted it coming to grief. Thirteen of the finishers secured full marks at the open controls. Of these J. A. Carvill (557 B.S.A.) had the least variation at the open checks, thus winning the Manufacturers' Cup. T. E. Greene (494 Douglas) and G. Briggs (550 Triumph) were second and third respectively. Gold medals were also won by: R. Murphy (499 Triumph), P. H. Hurse (490 Norton), S. Woods (348 Cotton), W. T. Malcomson (1,087 G.N.), J. Healy (749 James sc.), C. D Maguire (993 Matchless sc.), C. C. Callaghan (500 N.U.T.), J. G. Burney (225 Enfield), H. G Ellerker (349 A.J.S.), A. A. Wayte (492 Sunbeam). Silver medals: D. Allen (633 Norton sc.), G. Tracey (976 Sparkbrook), R. G. Gibson 348 Raleigh), E. A. Tracey (596 Indian), J. C. Cathcart (600 Humber), R. Walshe (500 James), T. F. Slevin (292 Velocette), H. B. Evans (348 Douglas).

Birmingham M.C.C.

Results of the sporting half-day trial held on the 21st ult. are as follows:—

SILVER CUP for best performance, solo class.—R. W. Duke (550 Triumph).

SILVER CUP for best performance, sidecar class.—F. H. Brown (998 Rex-Acme sc.).

SILVER MEDALS.—V. H. Smith (490 Norton), T. Lane (490 Norton), H. G. Uzzell (348 New Imperial), B. Bourke (498 New Hudson), T. Laurence Cox (292 Allon), B. L. Bird (557 B.S.A.), J. Lidstone (350 James), J. Cotton (749 James sc.), G. Kimberley (350 James), P. Cope (490 Norton), R. Edwards (247 Levis), R. W. Duke (550 Triumph), S. J. Neal (518 Neal-Dalm), R. C. Cooper (292 Allon), L. E. Clulee (292 Allon), E. F. Hollyoak (249 Federation), J. Stretton-Ward (499 Triumph), F. H. Brown (998 Rex-Acme sc.), E. R. Jacobs (350 Beardmore-Precision), C. S. Burney (598 Beardmore-Precision), H. Greaves (598 Beardmore-Precision), H. S. Perrey (557 B.S.A.), J. G. Orford (348 Henley-Blackburne). Mrs Thrush (498 Sunbeam), L. Bacon (490 Norton).

Surbiton M.C.

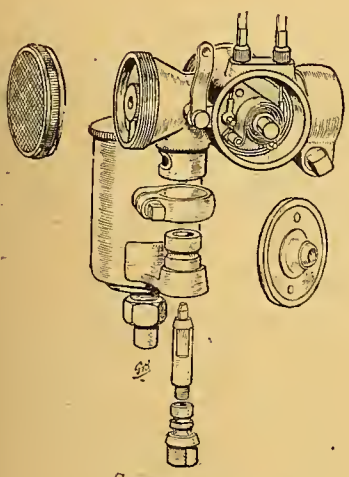
Practically the whole course of the Ballard's Cup Trial, on the 28th ult., was of a colonial nature. Starting at the Angel Hotel, Thames Ditton, the course followed a tortuous route of forty-three miles to Ripley. No competitor actually made a non-stop run, but a number of stoppages were caused by baulks. The trial was not devoid of incident; Charlesworth (976 Zenith sc.) turned over on Leith Hill, fortunately without injury to himself or his passenger, while Miss Mackintosh (584 Harley-Davidson sc.) broke her frame in the Oxshott Common section and retired. O. E. Taylor (Vasco) caused much excitement by taking the Shere water-splash at speed, causing the spectators to beat a hasty retreat. Among the solo men an excellent performance was made by B. F. G. Fowke (350 Beardmore B. and S.), also by F. E. Salter (350 Zenith) and R. C. Stannton (550 Triumph). Results:—

BALLARD'S CUP AND GOLD MEDAL.—B. Alan Hill (9.5 Rhode).

GOLD MEDAL for best sidecar performance.—E. O. Spence (998 Harley-Davidson sc.).

BRONZE MEDALS.—W. R. Preston (492 Sunbeam), R. C. Stannton (550 Triumph), O. T. Ashby (349 Wooller), E. A. Bridgman (998 Indian sc.), Geo. Baxter (998 Harley-Davidson sc.), L. G. Seth Smith (10 A.B.C. car).

TYPES OF MODERN CARBURETTERS.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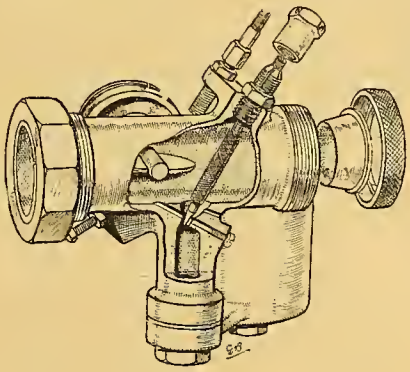
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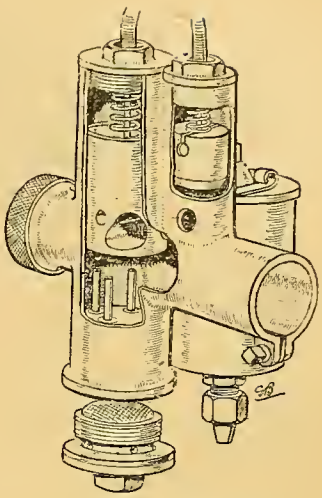
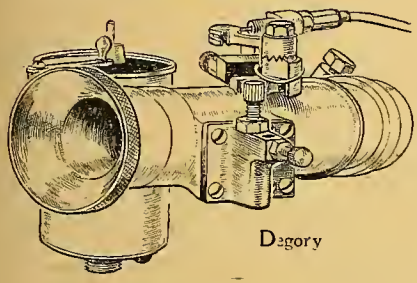

Binks three-jet model.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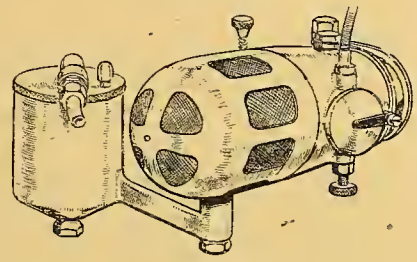
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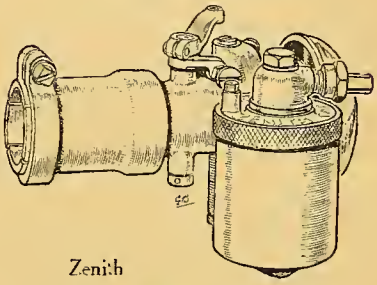
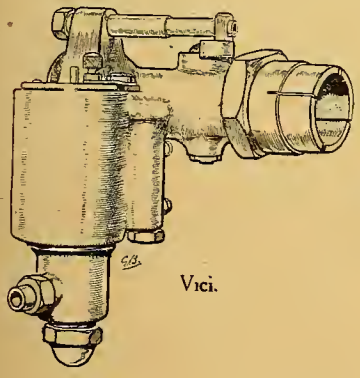
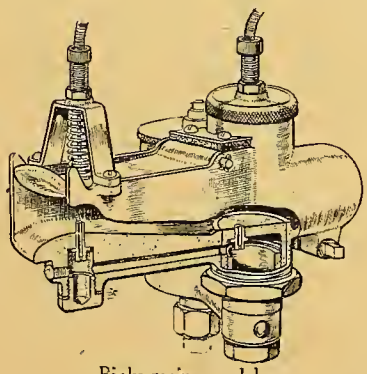
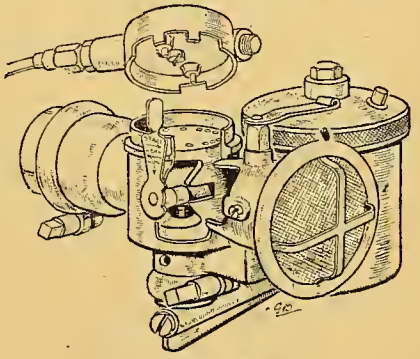
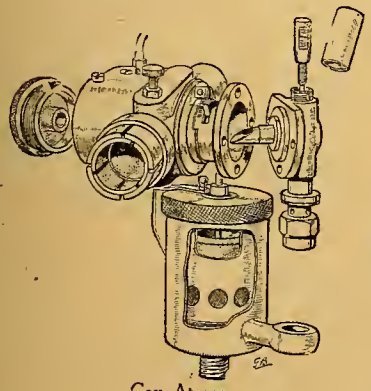
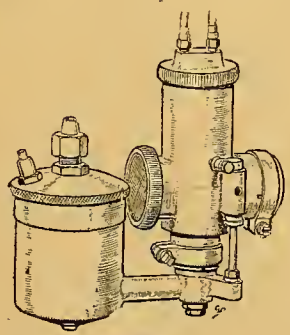

Zenith


Vici.


Binks racing model


Claudel.


Cox Atmos.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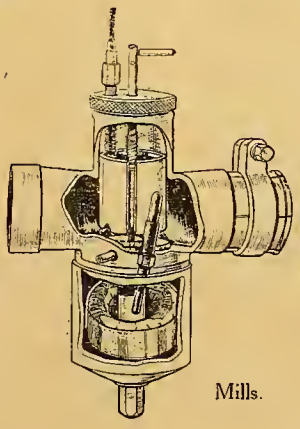
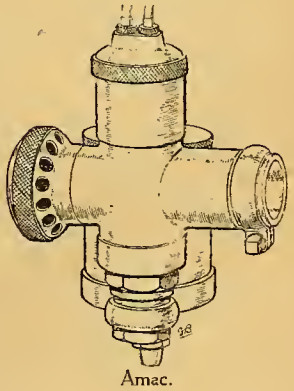

Mills.


Amac.

Current Chat

Times to Light Lamps.

Nov. 16th	.. ..	4.39 p.m.
„ 18th	.. ..	4.36 „
„ 20th	.. ..	4.34 „
„ 22nd	.. ..	4.31 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Next Week's Issue.

Next Thursday's issue of *The Motor Cycle* will be a forecast and guide to the Olympia Motor Cycle Show.

Nomenclature.

One manufacturer is introducing a model named the All-Black Baby—presumably an offspring of the Coal Black Mammy?

Reversing Things.

On another page a new brake is described which reverses accepted practice by making the shoe of metal and the drum of fibre. If this reversing process goes too far, some Heath Robinson inventor will make an engine with a cylinder moving up and down outside the piston.

A Swedish Show for Motor Cycles.

Under the patronage of the King of Sweden, an International Exhibition for cars and motor cycles will be held at Gothenburg, May to July, 1923. The exhibition is being organised by the Royal Swedish Auto Club in connection with the Jubilee Exhibition in Gothenburg.

Reunion Dinner.

Members of the R.N.A.S. who served in German East Africa, 1916-1918, are invited to the Third Annual Dinner, to be held at Gatti's, Strand, on December 1st. Those wishing to be present should write immediately to Mr. C. R. Lucato, 17, Garden Avenue, Mitcham, Surrey, or Mr. C. S. Thompson, 25, Wharncliffe Gardens, N.W.8.

The Price Margin.

Every year sees a number of sidecar owners joining the car brigade for the reason that it is a natural sequence of events. As one gets older it is to be expected that the bank balance shows an improvement. Apart from these, however, we do not expect any of the motor-cycling fraternity to join the ranks of car owners merely because light cars are cheaper. The prices of sidecars, too, will be down next year, and the margin between the *best* sidecar and the cheapest car will be as proportionate as it has ever been.

Ban on Schoolboy Motor Cyclists.

Boys at Marlborough College have been forbidden to ride motor cycles during term time. According to the master of the college the reasons for the ban are "obvious." Perhaps we are very dense.

Express Train Speeds.

More than 100 m.p.h. was attained by a G.W.R. train as long ago as 1904, says a London evening paper. Apparently the public fears speeds above 60 m.p.h. and is therefore kept in ignorance.

Straight-through Pipes Legal.

The Chief Constable of Wolverhampton has given a certificate to the manufacturers of the Sunbeam motor cycle that the straight-through pipe and fish-tail arrangement on their long-stroke model complies with the law as regards silence.

Practical Sympathy.

When a Southport member of a local motor club was fined £10 for dangerous driving—actually, acceleration to avoid a steam wagon "cutting" a corner—contributions towards the fine were sent by local motor cyclists.

A New Feature for Gymkhanas!

The cover of a certain new boys' paper contains an illustration of a daring solo motor cyclist who, at express speed, bends down and picks up the unconscious heroine from the roadway. Curious as to how he did this, we read that he merely "gritted his teeth."

A Sad Loss.

It is with deep regret that we have to announce the death at Leeds on the 29th ult. of Mr. George R. Grundy. Mr. Grundy was for two years a vice-president of the Yorkshire Centre A.C.U., and for many years an enthusiastic member and committee man of the Bradford M.C. and L.C.C. and the Wakefield and District Club.

A.C.U. Centre Dinner.

A large number of awards will be distributed at the Yorkshire Centre A.C.U. Dinner, to take place at the Queen's Hotel (Midland Station Hotel), Leeds, at 7 p.m. on Saturday. Tickets may be obtained through the hon. secretaries of clubs, or from the centre hon. secretary at 26, Beamsley Road, Frizinghall, Bradford. At 4 p.m. on the same date a Centre Board meeting will be held.

Silencing.

Even amongst sports models few machines will be sold next year without reasonably efficient silencing apparatus.

Proprietary Units.

Many firms hitherto producing their own gear boxes are adopting proprietary components for their machines.

An Early Three-wheeler.

On Page 720 will be found an illustration of Pennington's famous tricar of 1896.

Tank Design.

Tank design is developing. A few years ago the majority of tanks had sharp edges which quickly lost their enamel. Present-day fashion is to have decidedly rounded corners.

Cheapest Motoring for Two.

We wonder whether any of the new ultra-lightweights will be found at Olympia fitted with sidecars such as were shown at the recent Paris salon.

Guaranteed Against Punctures.

It is a good scheme on the part of one maker to fit anti-puncture compound filled inner tubes to his models and give a guarantee against punctures.

More Solo Models.

Makers of big sidecars are deciding to tap the solo market. Martinsyde and Matchless are the latest converts to the popular "350"—and others are expected at the Show.

Police Sidecar T.T.

In hot pursuit of a speed fiend, a Liverpool motor cycle policeman on a 499 c.c Rudge-Multi *and sidecar* attained 59 m.p.h. A reader suggests that we should approach this gentleman for another article on the secrets of tune.

Forbidden Smoke.

Motor cyclists passing through the West End of London should reduce their oil supply to a minimum. Several readers have been warned for creating a slight blue haze when their engines were running in neutral. An old bye law prohibits exhaust smoke, but not, apparently, real smoke from, say, a steam wagon.

A proper mix-up.

"American X, new *5 6 h.p Jap* twin, *O.H.V.*, 3-speed kick start, countershaft, elec. light and horn, also *Klaxon Atmes* carb., *Streemaline* sporting sidecar, well covered in, all in nearly new con., smartest turn-out on the road." A recent advertisement, but, strange to say, *not* under the "Miscellaneous" heading.

ADVANCE DETAILS OF 1923 MODELS.

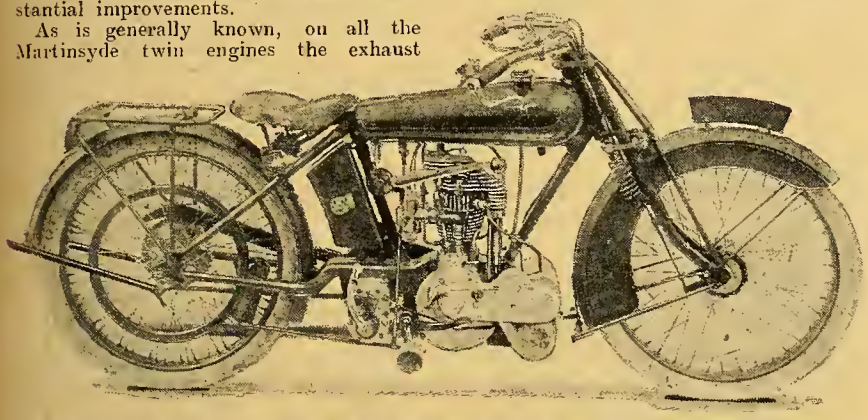
SOLO SINGLE MARTINSYDE.

New 347 c.c. Touring Model with Overhead Exhaust Valve.

NO one can accuse the firm of Martinsyde, Ltd., of letting the grass grow beneath its feet, for its record has been one of steady progress and well-deserved success.

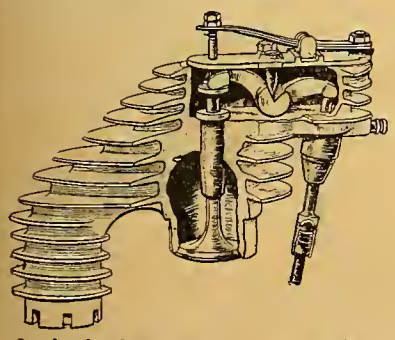
The latest example of enterprise is to be seen in the new 347 c.c. single cylinder touring machine, in which the special features of Martinsyde engine design have been embodied, together with several substantial improvements.

As is generally known, on all the Martinsyde twin engines the exhaust valves are above the cylinders, where they can get the maximum amount of cooling, while the inlet valves are carried in the position usually occupied by the exhaust in an engine of more conventional design.



Silent valve mechanism, and mechanical lubrication are features of the 347 c.c. Martinsyde.

In the 1923 model, however, the exhaust valve mechanism has been greatly improved and reduced to the lowest number of working parts; it consists merely of a rocker bearing on a knife edge attached to a plate held to the detachable head by two bolts. Another bolt secures the cantilever laminated valve spring, which is carried outside and so subject to the maximum amount of cooling. The rocker is always kept up against the knife edge by the light spring which serves to keep the push rod up to its work. It will thus be seen that only four nuts need be undone to allow the valve actuating mechanism to be removed, while it is a simple matter to detach the head.



Overhead exhaust valve and pocket of the 347 c.c. model. The knife-edge rocker and leaf spring are unconventional features.

Mechanical Lubrication.

Lubrication is by means of a Showell mechanical pump with a sight feed, through which it delivers oil into the back of the lower portion of the cylinder wall. From the crank case breather a pipe is led through the front chain cover so that the chain is always adequately lubricated by oil spray. The drive for the pump is both simple and ingenious, consisting of an idler sprocket driven off the top run of the magneto chain, the sprocket spindle being carried on two ball-bearings.

In the touring model a cast-iron piston is employed with two rings, of which the bottom one is used as a scraper, but for the sports model a Ricardo aluminium piston is used.

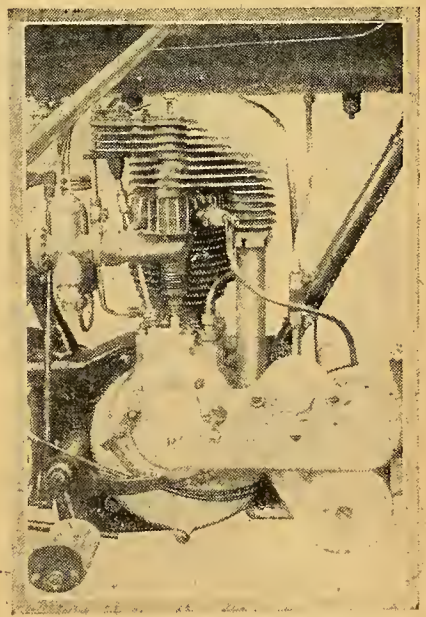
Fixed by means of copper rings, the gudgeon pin is of ample size, while the flywheels are of high tensile cast-iron, machined all over.

The rear brake is operated by the rider's right foot, and has a simple push-on action, while the front brake is a Webb internal expanding. A front wheel stand is fitted.

Considerable ingenuity has been displayed in the fixing of the petrol tank, which is held by means of a cleverly designed clamp, practically invisible and involving absolute security in its attachment. The saddle is only 28½ in. from the ground. In the case of the standard model, rubber covered footboards will be fitted, but in the sports model footrests will take their place.

Fitted with a Sturmey gear box having ratios of 5.2, 8, and 15¼ to 1, with a gear lever fitted to a lug on the saddle tube, adequate chain guards and excellent mudguarding, the machine should prove to be a thoroughly useful touring mount. Naturally the sports model will include such essential fittings as a close-ration gear box, T.T. handle-bars, and a special racing model Amac carburetter.

Prices of Martinsyde machines for the coming season are: "Quick-Six," £125; 678 c.c. standard and sports sidecar outfits and tradesman's carrier, £130. That of the 347 c.c. machine has not yet been fixed.



A close-up view of the 347 c.c. Martinsyde showing the new valve gear, exhaust outlet and the situation of the Showell pump.

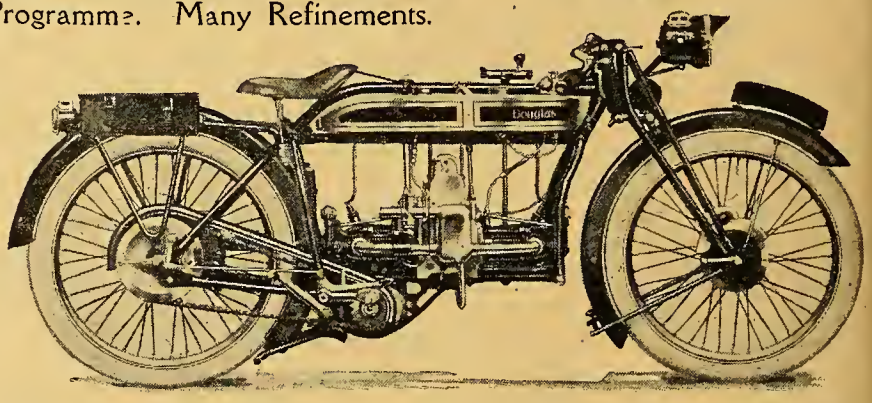
CHAIN DRIVE THROUGHOUT DOUGLAS RANGE.

348 c.c. Model now offered with Alternative Transmissions. Wide Scope of 1923 Programme. Many Refinements.

DOUGLAS is a name that needs little introduction. It is doubly famous as the pioneer of the flat twin and the 350 c.c. lightweight, and in another form, as the only 500 c.c. motor cycle to attain 100 m.p.h.

Changes for 1923 consist chiefly of detail improvements, but three variations of existing models, virtually earning the term new models, deserve attention. These are the chain-driven 348 c.c. lightweight, the chain-driven 595 c.c. machine, and a model of the 733 c.c. machine specially designed for solo use.

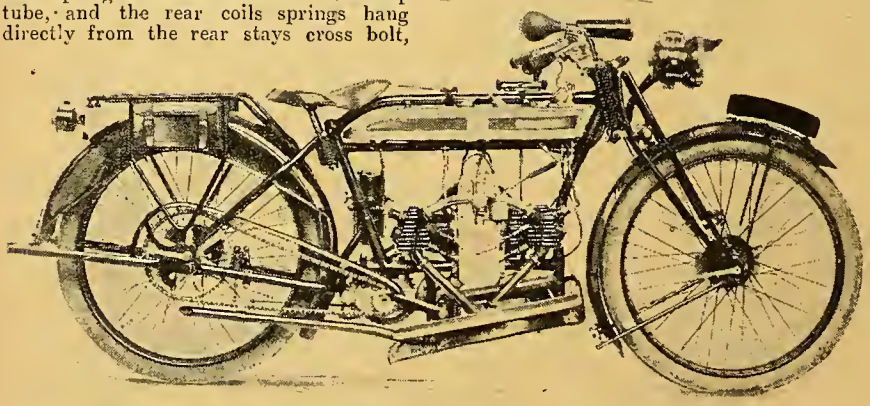
Many of the features on the sports models have been incorporated in the new lightweight, including improved contracting wedge type brakes and knock-out spindles on both wheels, and a transmission shock absorber in the flywheel. Considerably improved mudguards have also been evolved, and the silencer is doubly larger than hitherto.



Now standardised as a sports solo mount, the 733 c.c. o.h.v. Douglas will appeal to the big twin enthusiast despite its moderate engine size.

Engine and Saddle Refinements.

All the engines of the 348 c.c. machines (two-speed belt, three speed belt, and three-speed chain) have received attention, "H" section connecting rods of special material being now fitted. Also a new saddle suspension has been designed; the front is supported by a single leaf spring attached direct to the top tube, and the rear coils springs hang directly from the rear stays cross bolt, thus giving an appreciably lower riding position.



Many of the features on the larger sports models are incorporated on the new chain-driven lightweight.

As a proved example of high efficiency design the o.h.v. 494 c.c. engine has not been greatly altered. Careful thought, however, has been given to the provision of the most suitable steels for valves, rockers, etc. Wick lubricated rockers, double roller big-end bearings, double row ball main shaft bearings, and its other distinctive features are, of course, retained.

The rear axle unit, including the rear wheel shock absorber (there is another on the engine shaft), has been re-designed in a considerably more robust form; and greater leverage and consequently a lighter handle-bar operation is provided for the clutch. The handle-bar fixing has also been "cleaned up," so as to give a lower and more comfortable position for speed work. The new type of saddle suspension is again employed, and the mudguards are exceptionally efficient for a sports model.

In general the above-mentioned changes apply to the 733 c.c. machine in its solo form, and, in part, to the large sidecar outfit. Aluminium footboards or adjustable foot-rests are optional on the solo edition, which, although some way from 1,000 c.c., should prove a very capable upholder of the reviving British big twin class.

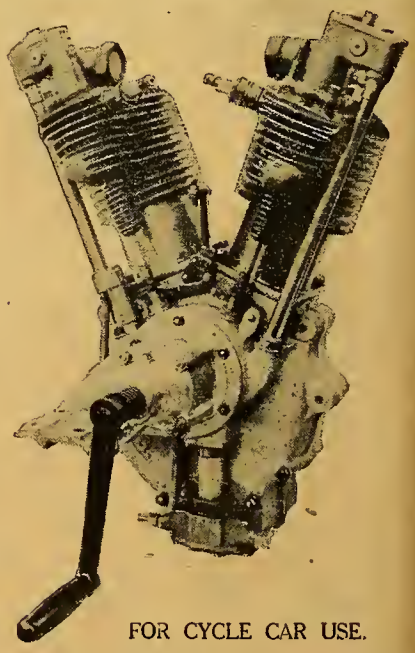
For fast sidecar work the gear box has been strengthened up, particularly the pinions, which are now of the stub tooth type in 5 per cent. nickel steel. Separate legshields replace the 1922 type of single auxiliary guard, and a pillion seat has been incorporated with the lid of the combined rear carrier and tool box. The sidecar body carries a neat luggage grid, and is fitted with the special Douglas sliding dash and a Triplex windscreen, with a curved face if desired. Various slight improvements have combined to make the sidecar chassis more than strong enough for this very fast machine.

Quite a different type of vehicle is the 595 c.c. Douglas, which is available, solo or sidecar, with final chain or belt.

The belt-driven machine remains substantially the same as before, although the cylinder heads, mudguards, and saddle have all been improved. Chain-driven, it follows the lines of the sports models in transmission, wheels and brakes. Touring or flat bars are supplied.

Absolutely complete equipment is supplied with every Douglas model.

A NEW M.A.G. ENGINE.



FOR CYCLE CAR USE.

An improved air-cooled M.A.G. engine with two eccentrically driven oscillating valve oil pumps. Long nuts are fitted to the inlet dome studs.

RUDGE DETAIL CHANGES.

Many Refinements in Construction and Finish. A New Light Sidecar

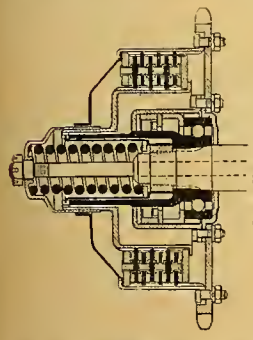
NOT very much change is visible in the latest type Rudge machines since the manufacturers are satisfied with the lay-out and have concentrated on refinements, most of which are not visible to the casual observer.

The two most obvious changes are a modification in the shade of green employed for the tank and the fitting of a roomy tool bag on the top tube. This, of course, is an ideal place to carry tools, since they are subjected to considerably less vibration and jolting than when placed on the carrier.

A full kit of tools placed edgeways on either side of the top tube is carried in the Rudge tool bag, which is very much more generous in proportion than is usually the case. Within the lid, also, are divisions for such tools as are required most frequently.

The tunnel covering the top tube in the bottom of the case is slightly increased in depth so as to house the cable of the speedometer drive. This drive is very neatly carried out, the actual gearing being mounted on the rear frame in such a manner that should the wheel be removed for tyre repairs the driving mechanism is left *in situ*.

Naturally, the Rudge fork, which has always been a most admirable feature,



Section of the new Rudge countershaft clutch. The simplicity of construction and the large single spring are noteworthy features.

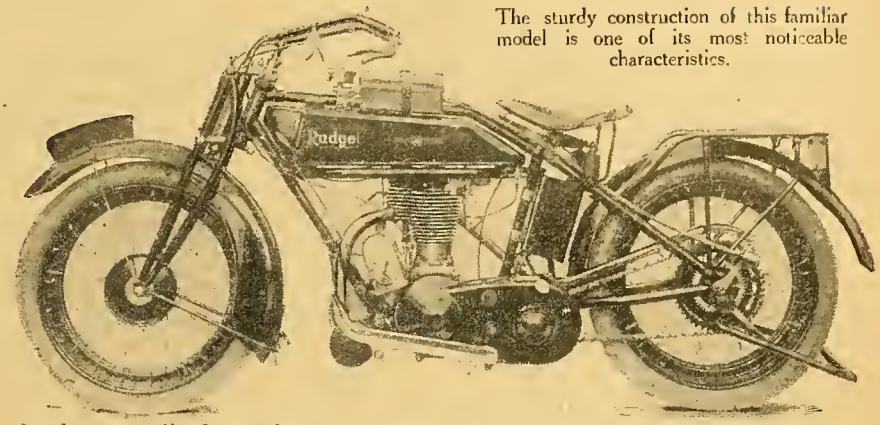
remains unchanged; but the mudguarding has been somewhat improved by the employment of 6 in. domed guards, the front guard being valanced for the rear half of its arc; the rear portion of the back guard forms part of the number plate, and is hinged to the carrier as usual.

Countershaft Clutch Standardised.

In the transmission arrangement of the chain-driven machines an interesting change has been made which was foreshadowed in the Tourist Trophy mounts, for the clutch is no longer mounted on the engine shaft. Instead it is mounted on the gear shaft.

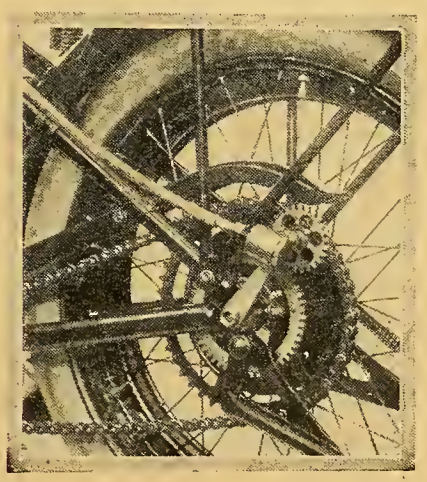
The design of the clutch is very well thought out; the chain ring, with an internally serrated drum, rotates on a ball and roller bearing on a sleeve extension of the gear shaft; and this extension, mounted on serrations, is in turn held in position by a nut.

Within the sleeve member lies the powerful single spring which serves to compress the plates, four of which, fabric-



The sturdy construction of this familiar model is one of its most noticeable characteristics.

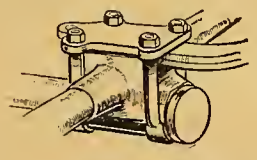
faced, are splined to the outer shell. Running between these are corresponding steel plates mounted on serrations on the inner shell, which in its turn is slidably mounted on the gear shaft extension.



Rear wheel drive has been adopted for the speedometer.

All the above details apply equally to the 499 c.c. and 998 c.c. models, which are similar in their general lines; the latter, however, is fitted with 700×80 mm. cord tyres.

Except for minor alterations, the well-known Rudge Multi is unaltered. It is,



Assembly of the sidecar axle on the frame member.

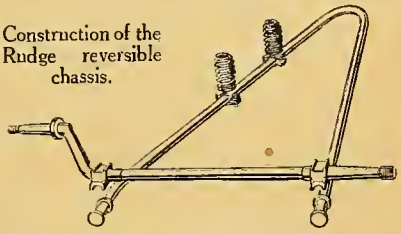
of course, a particularly suitable model for fast solo touring work.

An addition to the range of the sidecar bodies is a very simple and pleasing doorless model finished in green to match the machine. It has graceful lines and a roomy back, while in construction the floor has been made the foundation of the body, and is consequently fully strong enough to take the weight of a passenger even when standing upright without any other support.

Right or Left Hand Sidecar.

The ingenious construction of the chassis is also well worthy of note. In brief, it consists of a tubular hairpin, one side of which lies parallel with the centre line of the machine; this hairpin is made rigid by a very powerfully constructed rear axle consisting of a straight tube with massive forgings at both ends. The axle is clipped to the main chassis

Construction of the Rudge reversible chassis.



at either end, and the U bolts employed for this purpose serve also to hold the spring pads in position. By the simple process of undoing these clips and turning over the chassis and axle the chassis is made suitable for right-hand sidecar attachment for Continental work. The whole is rigid in construction, and has the additional advantage of being light.

At the front end the body is supported in two places by coil springs on the outer side member. It is claimed that this somewhat unusual arrangement of springing provides exceptional comfort.

NEXT THURSDAY!
THE MOTOR CYCLE
SPECIAL SHOW FORECAST.
3d.

DOT SPORTS MODELS.

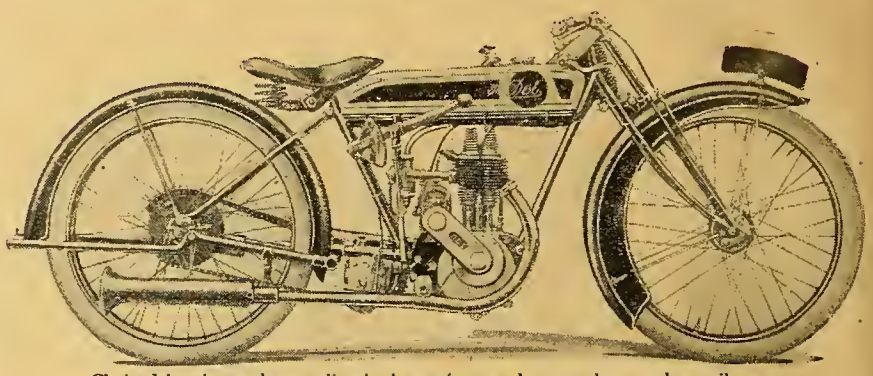
249 c.c., 348 c.c. and 976 c.c. Machines in Sporting and Touring Specifications.

UNDOUBTEDLY the most attractive models in next year's programme of Dot Motors, Ltd., are of the sports type.

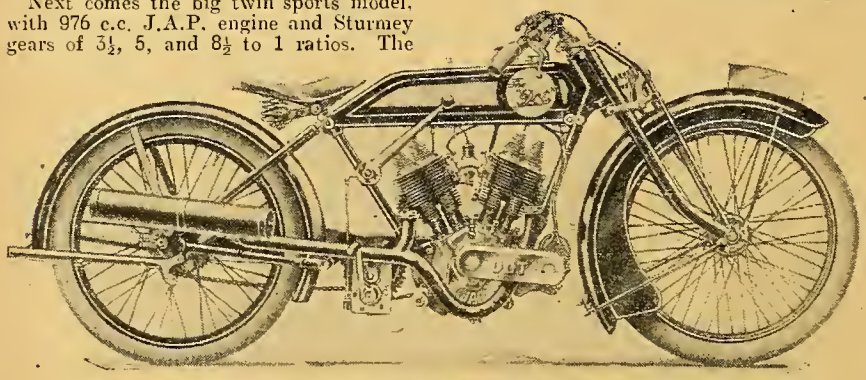
One is equipped with the 348 c.c. J.A.P. engine, and has all-chain drive through a three-speed Albion gear box, giving ratios of 5, 7, and 11 to 1. No kick-starter is fitted as standard, but a clutch is incorporated.

Both brakes are of the internal expanding variety. The handle-bar is attached directly to the head, and both front brake and clutch are controlled by inverted levers. A carrier is not standardised; tyre size is 26 × 2¾in. and the price is £78; a 249 c.c. J.A.P. engine model may be had at £75, and other alternative engines are the 349 c.c. o.h.v Blackburne (£80) and 349 c.c. Bradshaw engine (£78).

Next comes the big twin sports model, with 976 c.c. J.A.P. engine and Sturmey gears of 3½, 5, and 8½ to 1 ratios. The general specification is similar to that of the lightweight model, with, of course, 28 × 3in. tyres and other fittings in proportion. The frame has duplex tubes under the tank, and sidecar lugs, while the handle-bars are adjustably mounted on the head-clip. This model is priced at £140. Large silencers are a feature of these sports models.



Chain-drive, internal expanding brakes at front and rear and a very large silencer have been incorporated in the 350 c.c. Dot-Jap.



Designed for hill-climb and speed trial supporters: the sports model 976 c.c. Dot

Touring Dot machines embodying engines of the similar capacities are also to be produced, the same general specifications being maintained. The touring 976 c.c. machine costs £105, and a suitable sidecar brings the total cost of the outfit up to £130.

The touring lightweight has the 292 c.c. J.A.P. engine with three-speed Albion gear and chain-cum-belt drive, and the price is the very moderate one of £65.

A MOTORISED FRONT WHEEL.

Cykelaid Complete Power Unit and Spring Fork Attachment for Pedal Bicycles.

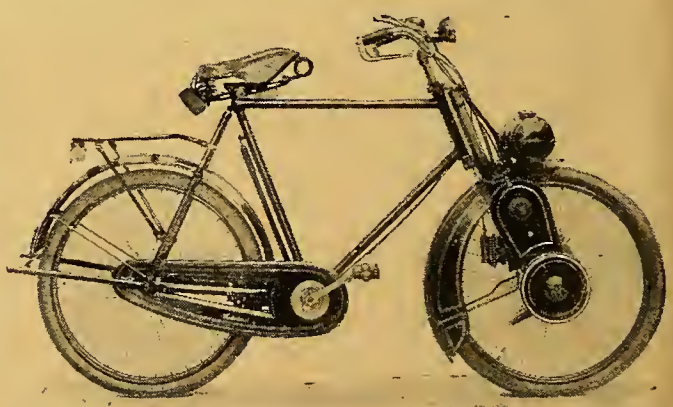
APPARENTLY the Sheppee Motor Co., Ltd., of York, has devoted more than an ordinary degree of logical thought to the problem of evolving a soundly designed motorised or motor-assisted bicycle.

Briefly, instead of applying power to the back wheel of the machine from an engine mounted in the frame (so subjecting the latter to many stresses which it was not designed to resist), a completely motorised front wheel and spring fork has been adopted.

The complete machine so laid out, or the separate attachment for use which an ordinary pedal cycle, is known as the Cykelaid, and was introduced to the public at the last Olympia Show, but, during the interval production has been delayed pending the development of the latest and much improved design.

A two-stroke engine of 55 × 56 mm. bore and stroke (133 c.c. capacity) is mounted on the side of the forks, ignition and lighting being provided by a Villiers' flywheel magneto. Transmission to the wheel is by chains throughout, *via* a handle-bar controlled cork-insert clutch.

Although a power-driven front wheel is not an innovation, its complete insulation from the bicycle by a sound and fairly heavy spring-fork is a feature likely to eliminate many of the troubles hitherto associated with this type of attachment, for the cycle is, in effect, merely towed, and bears little of the weight, and is subject to none of the torque reactions encountered when the power unit is fitted to any part of the original bicycle itself.



Engine, with tank, flywheel magneto and chain transmission is mounted on a heavy spring-fork to form the Cykelaid unit. The bicycle part may be any standard roadster; in this example 26 × 2 in. wheels are fitted

It is claimed that the weight distribution on the Cykelaid attachment is so good that the machine can be ridden with the hands away from the bars quite easily.

Speeds up to 30 m.p.h. are claimed—the tyres, incidentally, are 26 × 2in., and ball and roller bearings are used throughout. The price of the complete machine is £24 10s.

HARLEY-DAVIDSON LISTS 1,208 c.c. TWIN.

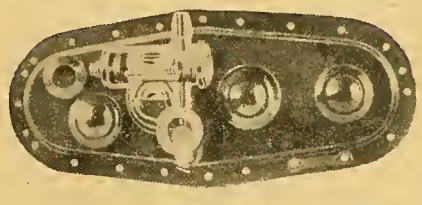
Improved Spring Forks. Roller Bearing Rear Hub. Double-seater Sidecar Available.

SUCH alterations which have been adopted in the latest model Harley-Davidson tend not only towards mechanical improvement, but add considerably to the comfort of the rider.

First, the brakes have been changed over, the toe-actuated pedal working an external contracting brake, which now has a band 1¼in. in width, with the result that its efficiency has been greatly increased, and the heel-pedal actuating an internal expanding brake.

Quite an important alteration has been made in the rear hub, which is now supplied with roller bearings suitably protected by two felt washers and two separate dust covers on each side. This hub has been tested by being run in liquid mud, and was not passed as satisfactory until it showed itself to be completely impervious to grit.

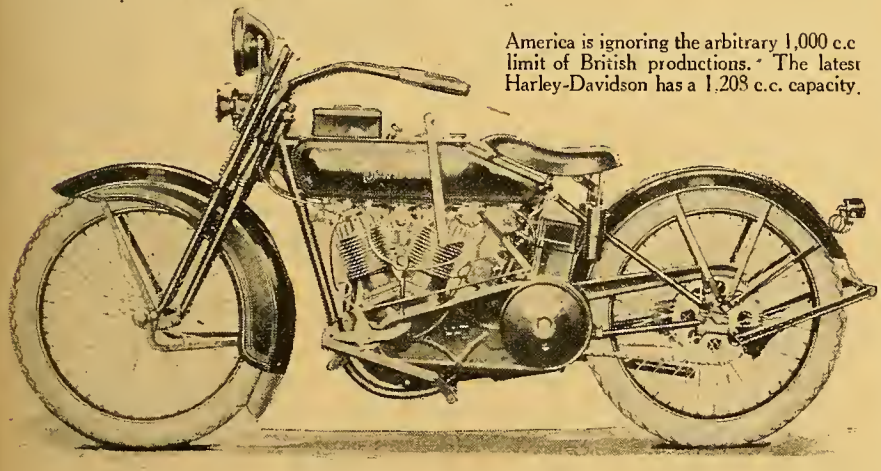
A small but important detail is the fitting of a hinged section to the rear mudguard, which can be thrown back merely by undoing a couple of nuts, thus



The mechanical oil pump is now a separate unit fitted outside the timing case.

rendering the tyre far more accessible, while it is well worth mentioning that the tail lamp is now carried on springs.

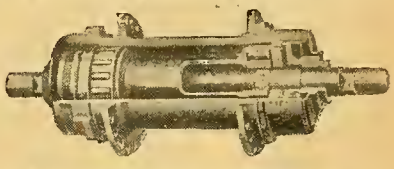
Good as was the method of controlling the engine switch in the 1922 model, a further improvement has been made for the coming season. This switch is now actuated by means of a key serving to safeguard the machine against theft, and should the rider omit to switch off there is a buzzer inside which tells him of his neglect.



America is ignoring the arbitrary 1,000 c.c limit of British productions. The latest Harley-Davidson has a 1,208 c.c. capacity.

Instead of embodying the oil pump in the timing gear case, it is now a detachable unit, bolted into position, so that it may be easily removed for the purpose of adjustment or repair.

No less than eight springs are used in the suspension of the 1923 pattern fork, and it should provide the maximum amount of comfort for the rider. Up to the present the Harley-Davidson spring forks have had only four springs, contained in the girders, but four extra ones have been added. The springs are carried between the fork members, and each main spring encloses a small auxiliary



Roller bearings are now employed in the latest pattern Harley-Davidson machines. The new hub is entirely water- and grit-proof.

spring, consequently no matter how rough the road it is impossible for the fork to bump.

Altogether the Harley-Davidson Motor Co., Ltd., will be marketing three separate types of machines: the 584 c.c. flat-twin (69.84 × 76.2 mm.), electrical equipment, £105; the 989 c.c. (84.1 × 88.9 mm.), £112 10s. with electrical equipment, or £107 15s. with magneto; the 989 c.c. sidecar model with electrical equipment, £139 15s., or the 989 c.c. sidecar model with mechanical horn and no lighting equipment £135. For £12 5s. extra the same models may be purchased with a 1,208 c.c. engine, while a double-seated sidecar of new design, in which the additional seat occupies the space usually taken by the back locker, can be had for £5 5s. extra.

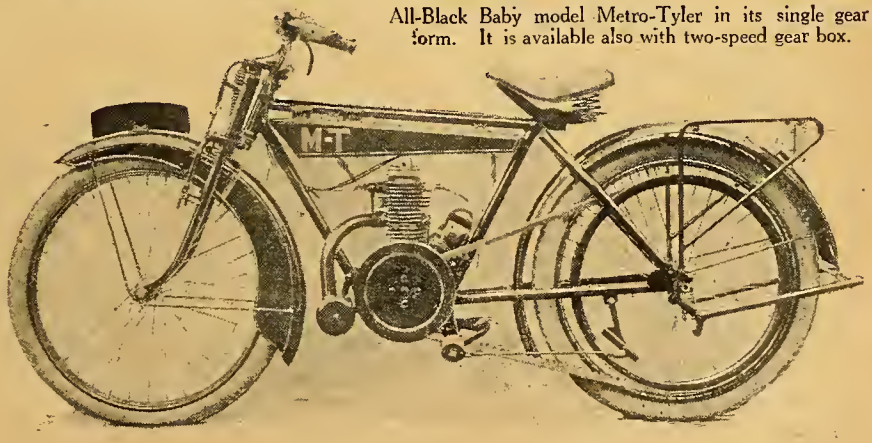
VARIED M.T. RANGE.

Two-strokes and Four-strokes in 350 c.c. Single Cylinder Class. Medium Weight Twin Retained. Puncture Sealing Compound Standardised.

SMALL alterations have been made in the Metro-Tyler 1923 programme, but mention must be made of a new model named the All-Black Baby, which is finished throughout as its name implies.

This machine will be obtainable in several different forms; as a single speed model to be sold at a very popular price, fitted with a 269 c.c. two-stroke engine, geared 7 to 1, and weighing only 120 lbs. If desired, it can be fitted with a two-speed gear at a small extra cost. The frame resembles that of previous year's models, but the engine is provided with plain phosphor-bronze bearings.

In the sports models, which are fitted with a similar type of engine (but equipped with a roller big end and ball bearing main shaft), some improvements have been made in the frame. The top tube is dropped at the rear, but a larger



All-Black Baby model Metro-Tyler in its single gear form. It is available also with two-speed gear box.

Advance Details of 1923 Models.—tank is supplied. This, too, may be available in several different forms; with a two-speed gear, clutch and kick-starter, or with a three-speed gear and all-chain drive. The weights range from 160 lb.

All the engines are fitted with an aluminium radiator on top of the cylinder, and a new type of decompressor, the spring of which is well away from the heat of the engine. The released exhaust gases pass into the exhaust pipe.

Other models will include a 348 c.c. overhead valve Blackburne engined type, with all-chain drive; and a 348 c.c. side valve model. The all-enclosed Metro-Tyler two-stroke, fitted with a roller bearing engine and with all the moving parts enclosed, is being retained without alteration, as is also the 698 c.c. Blackburne engined twin, which made its first appearance last year. This latter will be equipped with internal expanding brakes and all-chain transmission with a four-speed Jardine gear box.

All Metro-Tyler machines will be supplied, as standard, with Jackson's Impervo in the inner tubes and a positive guarantee against punctures for 4,000 miles is to be given.

A REAL ULTRA LIGHTWEIGHT.

Capacity 43 c.c. only in the Clement Bicycle; 350 m.p.g. Claimed.

IT was in the issue of *The Motor Cycle* for August 17th that we published a description of the ultra-lightweight Clement motor bicycle, which is fitted with a 43 c.c. engine (35 × 45 mm.).

So far as the unit is concerned there has been no alteration, but the machine itself has been built into three different models, one being a special racing pattern which is not intended for the market but is nevertheless interesting.

A Sports Model!

Outwardly the engine is absolutely standard, but it is fitted with a cylinder drilled at the bottom of the stroke, and has a very high compression. The machine to which it is fitted is to all intents and purposes a path-racing bicycle with dropped handle-bars, wooden rims, and Dunlop path-racing tyres.

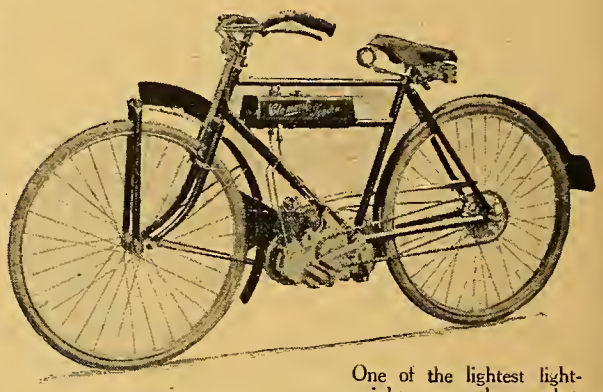
The cylinder follows closely the shape and type of that of the Gnome aero engine, while a miniature sparking plug of the type recently described in *The Motor Cycle* is fitted. The carburetter is of the one-lever variety following the lines of the Teutonic Pallas, while the magneto fitted at the rear of the unit is a Bosch.

An internal reduction gear is provided in the crank case, giving a ratio of 8 to 1, and this, with a slight reduction between the sprocket and the rear wheel, gives a total reduction of 12 to 1. To steady the engine in position two twin stays are fitted from a clamp on the down tube to the crank case.

In this racing model the oil breather is directed on to the exhaust valve so that the latter is cooled and lubricated at the same time.

So much for the racing model. The standard pattern is fitted to a bicycle which has a supplementary horizontal tube, the frame being composed of special tubing with welded joints. Details have been carefully studied, and owing to the microscopic size of the jet great care has been taken in filtering the petrol. There is a filter in the filler cap, another at the outlet from the tank just above the petrol pipe, and a third in the carburetter itself.

Another improvement is the fitting of a neat spring fork which is light, strong and efficient. The standard model has, of course, steel rims and 28 × 1¾in. tyres, while its price is £22 1s. A ladies' machine is sold at £24 3s.



One of the lightest lightweights on the market. The Clement machine with 43 c.c. engine. Later models will be equipped with a dropped top tube so as to lower the saddle position.

For this machine a consumption of 350 m.p.g. is guaranteed, and it is estimated that a 50 mile journey costs no more than 5d. The whole outfit is extraordinarily light and can be lifted about with ease. The petrol tank holds 2½ pints of petrol and ¾ pint of oil. It is claimed that 1 in 10 gradients can be climbed without pedalling.

The machine is built up in England at 26, Albany Street, London, N.W.1.

ALECTO PRODUCTION TO RECOMMENCE.

Three Two-stroke Models of 345 c.c., One for Sidecar Work.

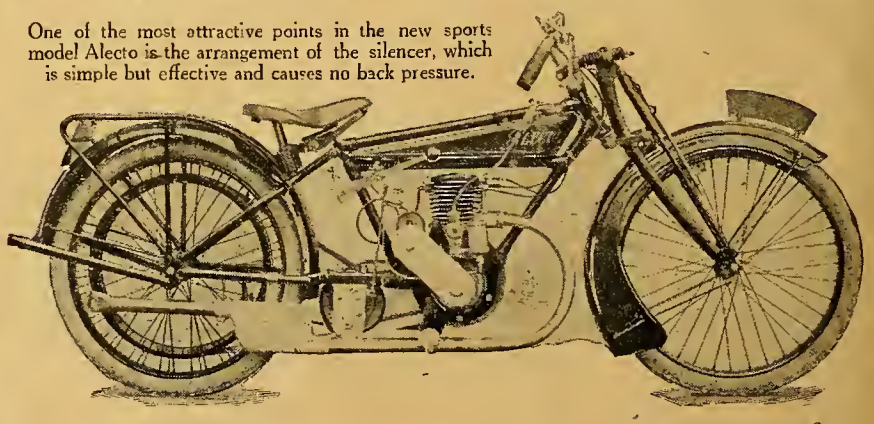
OF the various Alecto models which will again be placed on the market next year, perhaps the most attractive is the 345 c.c. two-stroke sports type, which, without tuning, is said to be capable of 50 m.p.h.

Complete System of Oil Ways.

From a sectioned engine, which we were able to examine at the makers' works, it is clear that the lubrication has received careful consideration. The oil is brought from a drip feed lubricator direct to the inlet pipe, whence, owing to the velocity of the mixture, an appreciable quantity is blown into the hollow gudgeon pin where it registers with the inlet port, thus lubricating it adequately. After lubricating the cylinder walls oil is collected in a well round the crank case baffle plate, whence it runs down specially cut channels to the main bearings, each of which is provided with double ball races.

An aluminium piston is fitted in which there are two rings at the top and a scraper ring at the base. The big end split bearing is lined with white-metal. The connecting rod is drilled, while in the small end the gudgeon pin is allowed a slight amount of movement, and it works also in the bronze bushed piston.

One of the most attractive points in the new sports model Alecto is the arrangement of the silencer, which is simple but effective and causes no back pressure.



Advance Details of 1923 Models.—
A large port is provided at the rear of the engine for the purpose of cleaning the transfer passages of carbon.

This engine, the bore and stroke of which are 76×76 mm., is fitted to all three Alecto models.

The weight of the sports model is 170 lb. all on, and the price, with a Burman two-speed gear box, £60.

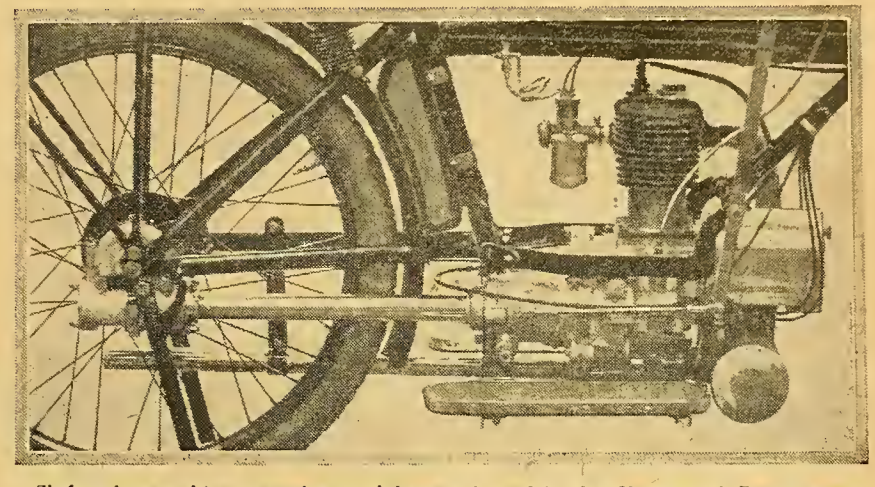
In the standard model a choice is given of chain-cum-belt or all-chain drive, or a two- or three-speed gear box, while the mudguards are 6in. across. These refinements are charged for as extras. Naturally, all models sold for sidecar use are fitted with three-speed gear boxes and chain transmission.

A notable improvement has been the fitting of a more spacious carrier, while behind the saddle tube is a tool box.

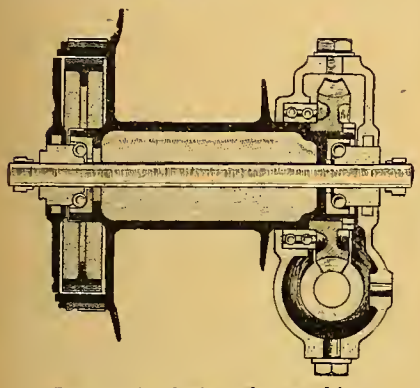
ANOTHER SHAFT DRIVEN SINGLE.

British Design Developed in France. Two-speed Gear and Worm Transmission.

A MEDIUM-WEIGHT motor cycle of 317 c.c., having a unit engine clutch and gear box, a propeller shaft and worm drive, has been designed by two English residents in Paris, Messrs. Claxton and Beatty, and, it is declared, will be put on the market shortly in both France and England.



Shaft and worm-drive, possessing novel features, is used in the Claxton and Beatty motor cycle, a nicely designed production of two Britishers in Paris.



Rear sectional view of worm-drive.

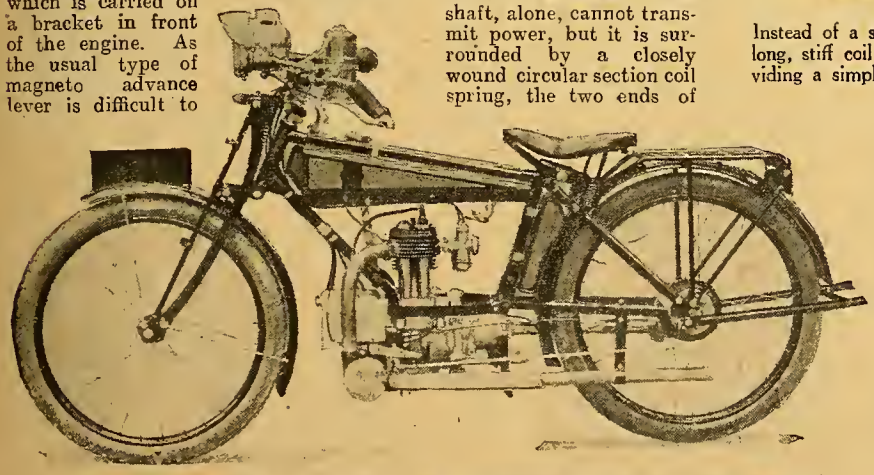
While the outstanding feature of this machine is the substitution of shaft and worm gear for the more usual methods of transmitting the drive, the engine is not without interest. It is a single cylinder of 70×76 mm. bore and stroke, with valves on one side. Hyatt roller bearings are used for the main shaft, while the big end has plain bearings. With a view to effecting protection from dust and mud, as well as easy cleaning, the valve stems are enclosed by telescopic sleeves and there is a particularly neat dust-proof aluminium housing over the magneto, which is carried on a bracket in front of the engine. As the usual type of magneto advance lever is difficult to enclose fully, use has been made of a rack and pinion with a Bowden wire control.

The engine is mounted on an aluminium crank case, which forms a unit with the clutch housing and the gear box. An eighteen-plate disc clutch is used, and immediately behind it is the two-speed gear box.

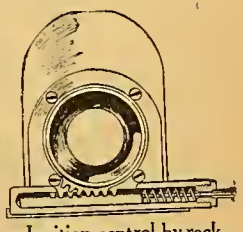
Hyatt roller bearings are employed for the gear shafts. From the gear box to the underslung worm on the rear wheel hub there is a propeller shaft with ball ends, one of which is received in a socket in the driving and the other in a similar socket in the driven member. The shaft, alone, cannot transmit power, but it is surrounded by a closely wound circular section coil spring, the two ends of which are screwed into and rigidly attached to the driving and the driven members. There is sufficient flexibility in the coil spring to take up all irregularities of the drive, as when running slowly or when starting away, and yet a perfectly rigid drive is secured when the engine is developing its full power.

An underslung David Brown worm is used, the efficiency of which is stated to be 95 per cent. Heavy radial and thrust ball bearings are used for the worm and the worm wheel, and the whole mechanism is oil-proof and dust-tight. The propeller shaft is enclosed in a steel tube, while the worm and worm-wheel run within an aluminium casting, the upper portion of which can be removed after withdrawing two studs.

Instead of a shaft proper the transmission is taken through a long, stiff coil spring, thus absorbing engine shocks and providing a simple universal joint. The ball-headed rod acts as a distance piece.



To the many advocates of shaft this French production will appeal. The engine is a 317 c.c. four-stroke.



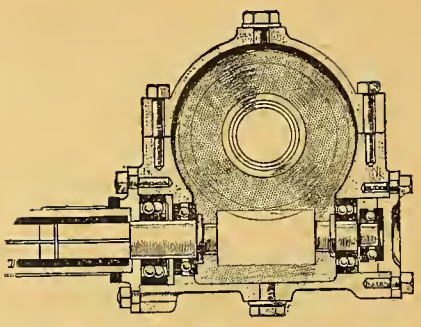
Ignition control by rack and pinion.

A drum on the rear wheel hub carries an internal and an external brake. Change of speed is effected by a lever on the right-hand side, with a gate giving

Advance Details of 1923 Models.—

two speeds and neutral positions. Among the features of the machine might be mentioned the exhaust pipe, the diameter of which is rather greater than that of the exhaust port, and the big capacity silencer mounted just ahead of the engine and under the magneto bracket. The exhaust is therefore got rid of with an absence of back pressure and without noise. The weight of the machine, fitted with 26 × 2½in. tyres, is just a little over 150 lb.

Some remarkable weight-paring must have been accomplished to bring the machine down to this exceptionally low figure, which, however, we understand, is only approximate.



Layout of bearings in the underslung worm-drive.

That a 317 c.c. machine with shaft transmission should even get under the 200 lb. limit proves that this form of drive need not necessarily be weighty. The unit engine and gear construction, of course, helps materially by eliminating primary chains, sprockets, and covers, but probably the greatest saving is in the shaft itself.

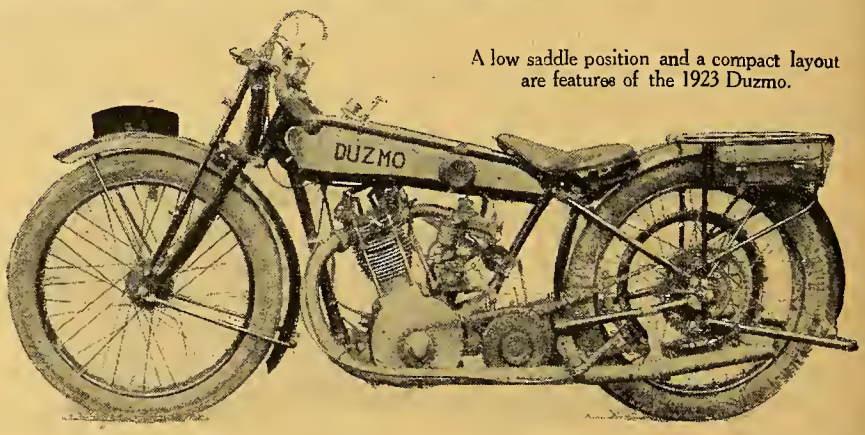
It is the intention of the designers to put this machine into mass production, and with this end in view they are having the drawings verified by machine tool makers and are preparing to lay down special machinery with a view to cheap production. It is stated that the motor cycle will be built both in France and in England, and that it will be marketed at a very reasonable price.

SOLO SINGLE FOR COMPETITION RIDING.

496 c.c. Duzmo with Inclined o.h.v. Engine and Close-ratio Gears.

FOR fast touring, competition work, or for use with a light sidecar the close ratio Duzmo is eminently suitable. Naturally, if employed for passenger work a different set of gear ratios would be required.

Fitted with a 496 c.c. engine (89×79 c.c.) tilted slightly in the frame, which is substantially constructed but of quite conventional design, and a three-speed close ratio Sturmey-Archer gear box, the machine has a pleasing and businesslike appearance.



A low saddle position and a compact layout are features of the 1923 Duzmo.

Overhead Valves in Detachable Head.

The actual model illustrated is the latest pattern, but owing to its having been prepared for Brooklands it differs from the standard model in one or two details, to which reference will be made later.

Overhead valves are fitted which are situated in the detachable head and are inclined to the extent of 30°. Machined all over internally, the head is semi-spherical and a very clean piece of work, as not only is its interior dead smooth and arranged so as to give a clear passage to the inlet and exhaust gases (1¼in. is the diameter of the exhaust outlet), but the exterior is heavily and scientifically finned, while an air passage is left beneath the top fin which bridges between the two valves.

Double Valve Springs.

Each valve is provided with two springs, while the rockers, mounted on brackets which are practically extensions of the holding-down bolts, have large bearing surfaces, and screw-down grease caps to ensure long life; they are kept up to their work by light return springs.

There are two sparking plug holes in the head, in one of which a fir cone radiator is fitted.

Other interesting engine parts are the aluminium piston, which has one deep ring, and the connecting rod, which is machined all over, is drilled for lightness and has a roller bearing big end; the gudgeon pin is ⅝in. in diameter, and Skefko self-aligning bearings are provided for the main shaft. Another important alteration is the increase of clearance between flywheels and crank case, which reduces oil friction.

Foot-operated Oil Pump.

While the model illustrated is fitted with a foot-operated oil pump delivering the lubricant through a drip feed, a Best mechanical lubricator is supplied to the standard model.

Binks rat-trap carburetters are fitted to all models.

The usual brake equipment is a Webb front brake and a rear pulley rim brake actuated by a direct pull pedal, but a Webb rear brake may be had.

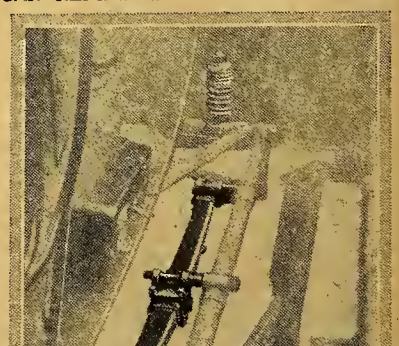
Brampton forks are supplied but modified by means of rubber blocks to the top springs, so as to stop "dithering" at high speeds.

In the machine illustrated it would appear that the silencing arrangements would be inadequate, and would invite the attentions of the police, but the standard model is provided with a silencer fitted to the end of the long exhaust pipe which is quite effective and causes no appreciable loss of power through back pressure.

The following particulars and dimensions will be of interest: Price, £100; weight, 220 lb.; wheelbase, 54½ in., ground clearance, 4½in.; and tank capacity, two gallons of petrol and half a gallon of oil.

Well thought out and bearing the mark of being designed by a practical rider, the new model Duzmo deserves popularity. John Wallace, Cedar Road Works, Enfield Highway, is the maker.

CAR REFINEMENT FOR SIDECARS.



Duco spring gaiters are now available for the springs of certain sidecars.

Here's Another Championship!

THE WORLD'S FASTEST STANDARD MOTOR CYCLE and the FIRST TO DO 100 M.P.H. in the 3½ h.p. and 6 h.p. classes, and the FIRST MOTOR CYCLE and SIDECAR TO DO 1,000 MILES officially timed in 24 HOURS.

THE VIBRATIONLESS TWIN-CYLINDER

Douglas

ROMPS HOME IN CANADA.

In the Ontario Championship Races held at Toronto a big field of 7-9 h.p. and 10 h.p. machines started. A 3½ h.p. Douglas Sports Model, ridden by Mr. G. Orange, gained a brilliant victory for amateur riders in the Province, and added to the ever-growing list of Douglas Championships.

At Brooklands, Cyril Pullin took out his 3½ h.p. Sports Model and straightway broke the

WORLD'S MILE RECORD

in class "C" run both ways of the track at a mean speed of 88·59 m.p.h. under the most adverse weather conditions.

In South Africa three Douglas machines were entered in the 176 mile Road Race, beating the whole field, and going through this gruelling ordeal in perfect condition, winning

THE HARLEY-DAVIDSON TEAM SHIELD.

At the Stockport and District M.C.C. Hill Climb, Mr. S. Ollerhead made a startling performance over a very treacherous course with a bad left-hand bend. He won

FIVE FIRSTS, THREE SECONDS, TWO THIRDS.

NADEN BOWL—FASTEST SIDECAR TIME.

TALBOT GARAGE TROPHY—FASTEST AMATEUR SIDECAR TIME.

DAN WOOD TROPHY—FASTEST AMATEUR SOLO TIME, beating a big field of fast machines.

We want to show you our attractive new programme with a model for every conceivable purpose, and we shall be delighted to demonstrate these to you at the

OLYMPIA—STAND 61.

"A Twin is the best and Douglas is the best twin."

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Mr. H. LE VACK
riding ZENITH-JAP at BROOKLANDS on 27th October broke the RECORD for FLYING FIVE MILES in 1000 c/c Solo Class at the AMAZING SPEED OF

100.29 M.P.H.

This creates also the RECORD
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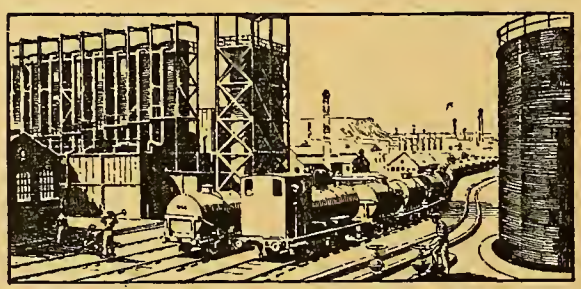

A Refinery at your door

The sort of motor spirit you want, as you want it, and when you want it, manufactured in Britain in one of the world's newest and best refineries.

That is what the great new enterprise of the Anglo-Persian Oil Co., Ltd., at Llandarcy, Wales, means to the British motorist.

It guarantees to him a constant supply of the finest and most uniform spirit, free from any danger of admixture or contamination in transport, produced to meet his special needs, and backed up by the skill and integrity which have made British industry supreme.

"BP" is the only entirely British petrol—British in every stage from the Crude Oil well to the familiar Khaki Can.
British Capital—British Enterprise—British Labour.

MOTOR BP SPIRIT

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Distributing Organization of the
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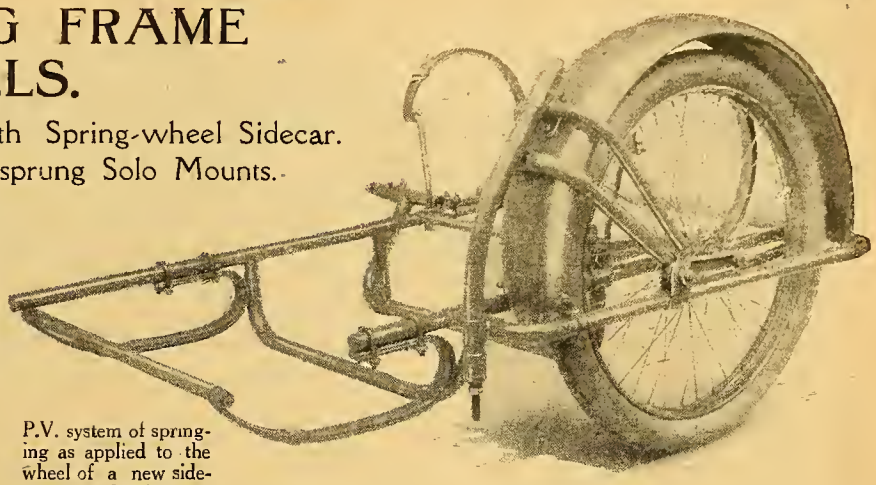
P.V. SPRING FRAME MODELS.

New 654 c.c. Machine with Spring-wheel Sidecar. Moderately Priced Fully-sprung Solo Mounts.

FOR next year the P.V. programme includes three popular models, fitted with a 250 c.c. Villiers two-stroke, a 350 c.c. Villiers two-stroke, and a 293 c.c. J.A.P. four-stroke. All are equipped with the simple P.V. spring frame, which is extremely satisfactory, having stood the test of time, and with a Burman two-speed gear, clutch, and kick-starter. The prices are: 250 c.c., £50; 350 c.c., £56; and 293 c.c. four-stroke, £60. Any one of these models can be supplied with a plain two-speed at £4 less or with a three-speed gear and kick-starter at £4 extra.

Next there are the *de luxe* models, of which the 350 c.c. model with B. & S. sleeve-valve engine and Burman three-speed gear is extremely attractive. It can, however, be had with a 349 c.c. J.A.P. four-stroke engine if desired.



P.V. system of springing as applied to the wheel of a new sidecar chassis.

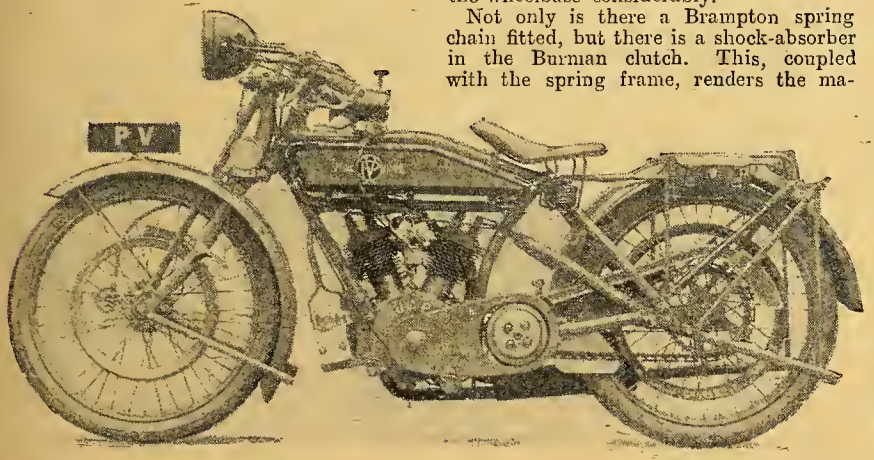
In these *de luxe* models the spring frame has been slightly modified, as the saddle tube containing the springs suspending the rear portion has been placed forward of the gear box, consequently shortening the wheelbase considerably.

Not only is there a Brampton spring chain fitted, but there is a shock-absorber in the Burman clutch. This, coupled with the spring frame, renders the machine extremely smooth, and the same method of transmission is employed in all three models, which have many details in common; for example, the excellent brake system, consisting of large shoes applied to dummy belt rims. It is also worth noting that customers are given a choice of carburetters.

Another interesting fitment which is supplied as a standard to these last three models is the Jackstand, which enables the machines to be jacked up with the minimum amount of effort, permits of easier access to the back tyre, and absolute rigidity when the back wheel is raised off the ground. Front stands are supplied to all these models, and an ingenious and absolutely secure form of stand clip which cannot rattle.

Prices of the *de luxe* models are: 350 c.c. with J.A.P. or B. & S. engine, all-chain drive, £76; 496 c.c. twin-cylinder J.A.P., £90, or with J.A.P. super-sports engine £95; the *de luxe* sidecar model, 654 c.c. twin-cylinder J.A.P., all-chain drive, £122.

The well-tested P.V. spring frame has been incorporated in the sidecar wheel most successfully, and the sidecar is undoubtedly one of the best sprung attachments obtainable.



496 c.c. P.V. *de luxe* model with B.T.H. ignition and lighting, which is supplied as an extra. This is one of the few small twins for 1923.

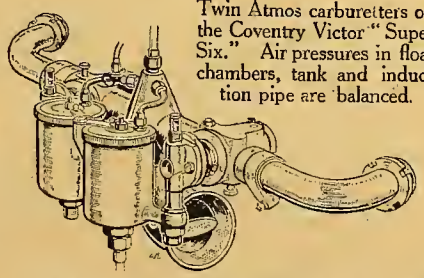
80 M.P.H. FLAT-TWIN.

Coventry Victor Refinements, Air-balanced Induction and Fuel System. Twin Carburetters.

A MOST striking model, the "Super Six," will bear the Coventry Victor name in 1923.

To all appearances the engine is similar to the standard flat-twin models, but it has a somewhat higher compression ratio than the standard, while the valve gear has been modified for speed purposes.

Two Cox Atmos carburetters are located near the centre of the induction pipe, and are connected by an ingenious balanced air intake. A funnel facing forwards may be entirely or partially closed by a butterfly valve; this not only facilitates starting, but is employed to control the amount of pressure present in the intake. Above this funnel is a cone-shaped body connected to each carburetter intake, and from the cone project three small pipes—one leading to the petrol tank, and one to the lid of each float chamber. By this means the air pressure is balanced throughout the whole petrol supply system.



Twin Atmos carburetters on the Coventry Victor "Super Six." Air pressures in float chambers, tank and induction pipe are balanced.

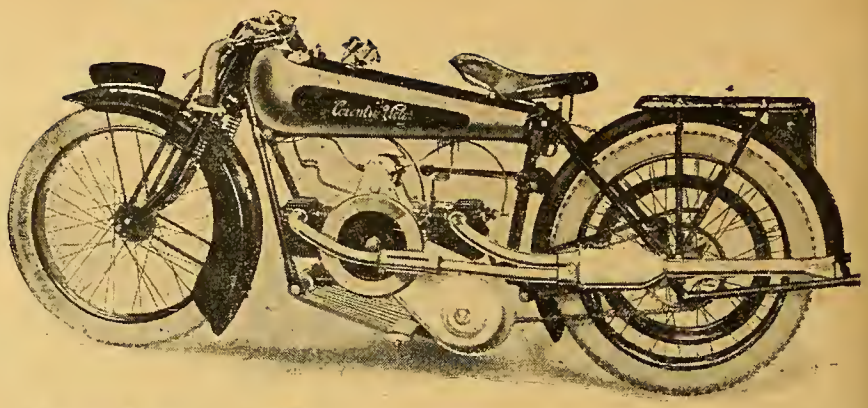
The frame follows normal Coventry Victor lines, having a duplex front down tube and bottom rails on which the engine rests. An imposing saddle tank covers the sloping top tube, and a cast aluminium underscreen is hinged at the front end, and functions also as a front wheel stand.

Transmission is by chain throughout, a Sturmey-Archer three-speed gear box with shock absorber, clutch, and kick-starter, being attached to the bottom

Advance Details of 1923 Models.—bracket. Long rubber grips are fitted to the somewhat flat bars, and reasonable mudguards (valanced in the case of the front) are employed to cover the 26×3in. tyres. This luxurious speed machine can be obtained with an 80 m.p.h. certificate at a slight extra charge.

Equally well finished, but slightly less ambitious in the way of performance is the standard sports model. In this case only one Cox carburetter is fitted, which lies behind the rear cylinder, the induction pipe having an ingenious air-tight expansion joint. Finished in grey, this machine is guaranteed to do 65 m.p.h.

Both these models are fitted with long exhaust pipes having a simple aluminium expansion chamber and fish tail near the back stays. The silencer is fitted with baffle plates and efficiently reduces the exhaust noise.



A *de luxe* flat twin. The 688 c.c. Coventry Victor model for which an 80 m.p.h. guarantee is obtainable.

ITALIAN UNIT CONSTRUCTION.

Twin Engine and Three-speed Box Integral in 600 c.c. V-twin Bianchi.

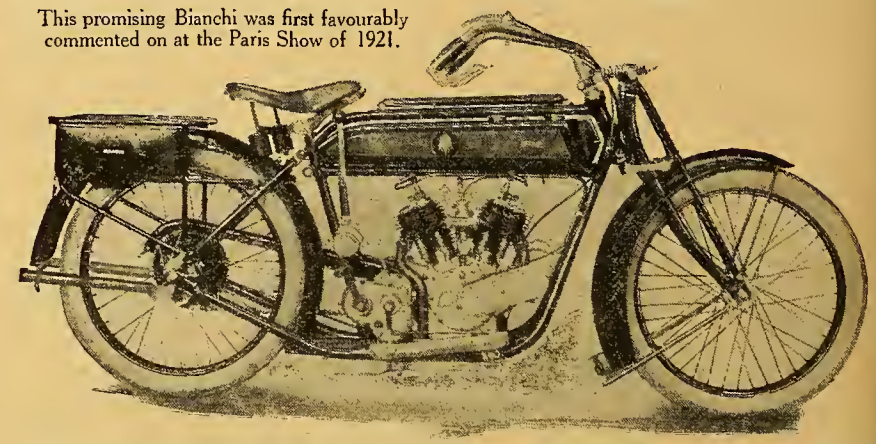
NO Continental country has made greater progress in motor cycle production than Italy, and one of the finest examples of Italian design is the 600 c.c. twin Bianchi, the external finish of which cannot fail to attract admiration.

Gear box and engine form a single unit, and the cylinder dimensions are 70×78 mm. bore and stroke (600 c.c.). Semi-automatic lubrication is provided, and the primary drive to the gear shaft is by three skew gears and a metal plate clutch, all running in oil.

Interchangeable wheels form another feature of the machine, the wheels being fitted with 26×3in. tyres. The mudguards are large and easily detachable, ample valances being fitted to the front guard.

A single-cylinder model, in which a Garelli pattern three-speed gear is incorporated, is another production of this firm. The engine is of 498 c.c. capacity,

This promising Bianchi was first favourably commented on at the Paris Show of 1921.



having a bore and stroke of 75 × 112 mm. The price of the twin-cylinder model is £150, and of the single cylinder £100. Bianchi Motors, Ltd., 26, St. James's Street, London, S.W.1, are responsible for the machine in this country.

VARIED ENGINES IN 1923 ORBITS.

Own Two-stroke and o.h.v. Sleeve-valve or Oil-cooled Four-stroke Models.

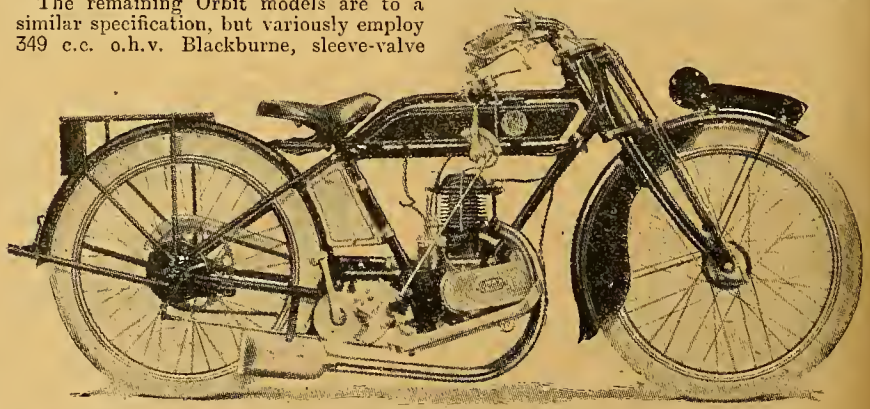
IN these days of proprietary units it is refreshing to find manufacturers of two-stroke lightweights building their own engines. There is a certain type of buyer with a rooted, albeit usually quite unreasonable, objection to assembled machines, and although many of the more important lightweight firms make their machines throughout, the majority of the smaller people patronise the proprietary unit.

Not so the Orbit, in its two-stroke form, anyhow. The 265 c.c. (68×72 mm.) engine, however, is quite conventional. Such details as a passage for the release-valve gases to the main exhaust pipe have received attention and the silencing arrangements for next year have been improved. A wide-swept exhaust pipe terminates in a large detachable silencer below the rear stay.

All-chain transmission *via* a three-speed Burman gear box is employed.

Other features are ample mudguarding, large footboards and a tool box on the saddle tube.

The remaining Orbit models are to a similar specification, but variously employ 349 c.c. o.h.v. Blackburne, sleeve-valve Barr and Stroud, or oil-cooled Bradshaw engines, thus meeting all requirements.



New silencing arrangements form the most important change on the two-stroke Orbit.

1923 PRICES

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When it resolves itself into a Question of Price consistent with Quality, otherwise Maximum Value for Money,

"WE CAN DO ALL THAT AND MORE!"

We Offer the Most Advanced Design of Motor Cycle on the Market.

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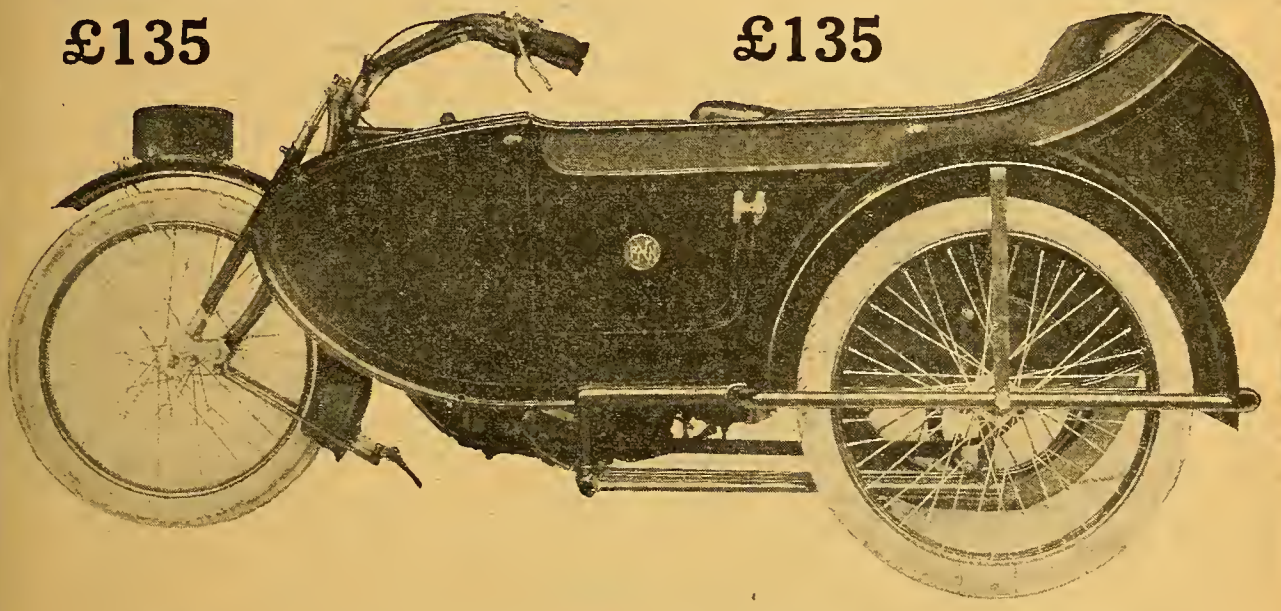

"Motor Car Practice at Motorcycle Cost."

Has the rapid growth of the small Car with comparatively tiny FOUR CYLINDERS yet opened your eyes to the many advantages of such a Power Plant and its Inevitable Development in Motor Bicycle Design? Study the 4-Cylinder F.N. Engine, imagine it in a Small Car, and then think what it must be like in a Motor Bicycle. And may we remind you that we have been manufacturing a 4-Cylinder Motor Bicycle since 1905—and Shaft Drive was fitted in those days?

1923 Programme.
Send for Handsome Booklet and name of nearest Agent.

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Telegrams: "Efenmo, Brond, London."

EASY TERMS ARRANGED.

8 H.P. 4 Cylinder Shaft Drive, Super Overhead Valve Engine, Mechanical Lubrication, etc., Standard or Sports Model, Solo	£110
8 H.P. 4 Cylinder with Standard Sidecar, as illustrated, including Waterproof Cover	£135
8 H.P. 4 cylinder Sports Sidecar	£135
8 H.P. 4 Cylinder Super Sprung Wheel Sidecar	£140
8 H.P. 4 Cylinder Two Seater (or one Seat at will) Sidecar	£140
2¾ H.P. Single Cylinder Model, Overhead Valve Engine, Semi-T.T. Bars, etc.	£63

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PERFECT COOLING
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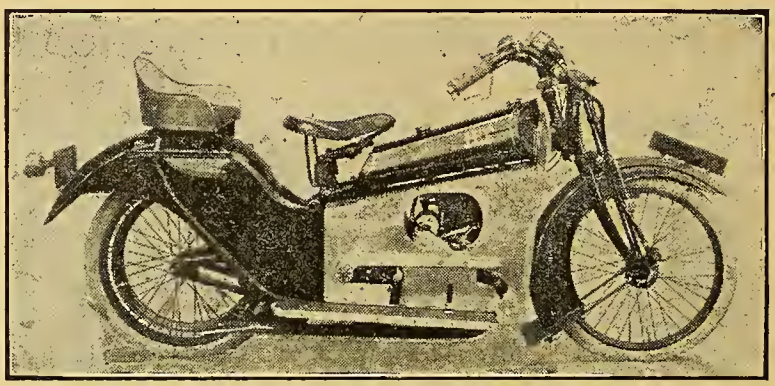
CLEANLINESS



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COMFORT

THE DUAL PURPOSE MACHINE

Designed to carry Two without spoiling its qualities as a Solo Mount.

LIGHT
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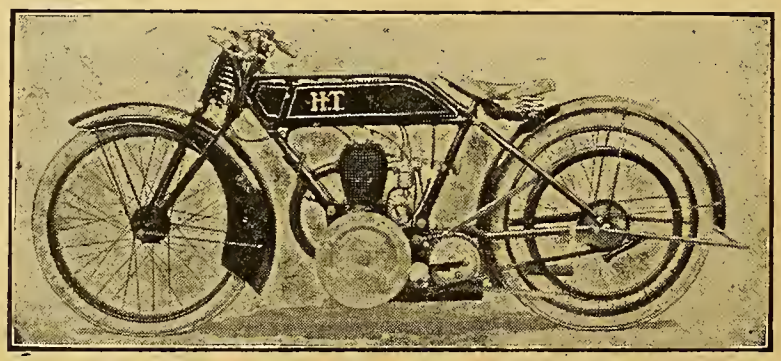
ECONOMICAL



FAST
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SIMPLE

THE SPORTS MODEL

A generally high performance Machine with rapid acceleration.

THE H.T. MOTOR CYCLE Co.,
PARK STREET,
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Herts.

MINIATURE AND BIG TWIN COVENTRY EAGLES.

Introduction of Two New Models of Extreme Types. Reduced Prices All Round.

BY the addition of two extreme models to the Coventry Eagle range, there is a 1923 machine of this make of practically every capacity known. The newcomers are a 147 c.c. two-stroke miniature and a sporting big twin with the 976 c.c. super sports J.A.P. engine.

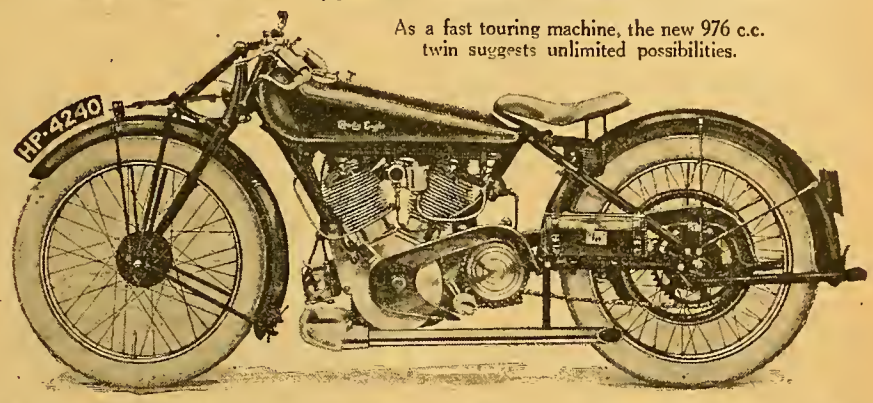
Prices of the two-stroke are £30 9s. single-geared, and £33 12s. with a two-speed box.

Compact Engine Housing.

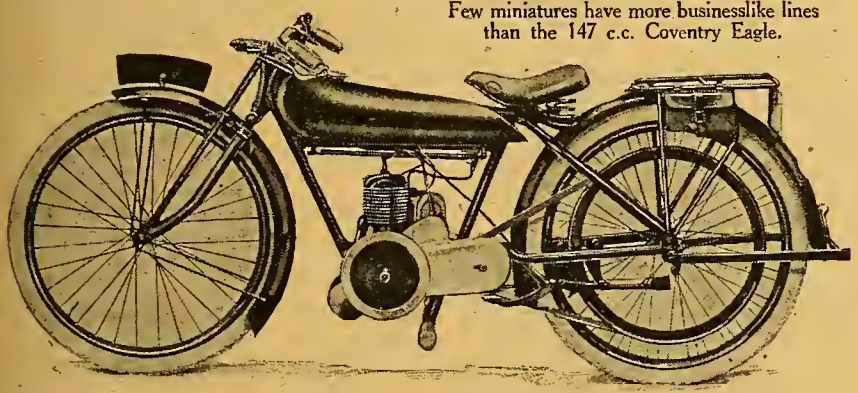
As might have been expected from the makers of motor cycles with the elegant appearance of the 1922 Coventry Eagles, the new big twin is particularly handsome and symmetrical. Furthermore, the way in which the engine is housed is exceptionally compact; a 5-in. ground clearance is allowed, although the saddle height is only 27in.

The finish is of the very finest, and, generally speaking, it represents remarkable value at £125. A suitable light sporting sidecar is marketed at £20.

One other addition deserves notice; it is a 349 c.c. side valve Blackburne-engined, chain-driven three-speed machine at £69.



As a fast touring machine, the new 976 c.c. twin suggests unlimited possibilities.



Few miniatures have more businesslike lines than the 147 c.c. Coventry Eagle.

The remaining Coventry Eagle models are retained without any alterations of note. Their prices, however, have been much reduced. For example, the 348 c.c. J.A.P.-engined utility mount—purely the maker's designation, for it is particularly pleasing in appearance—is now £72, although this figure does not include lamps, horn, etc., as last year. £19 buys a sidecar to suit either of the last-mentioned machines.

Dual-purpose Model.

A 550 c.c. J.A.P.-engined dual-purpose machine sells at £95 solo; and £115 with sidecar.

All the larger Coventry Eagle machines are, of course, fitted with the familiar bull-nosed saddle tank, introduced more than 12 months ago on the 250 c.c. o.h.v. sports lightweight.

SPRING FRAME RADCO LIGHTWEIGHT.

Novel Points in New Suspension System. New Chain-driven Model.

CHAIN-DRIVEN Radco two-stroke lightweights will make their first appearance at Olympia.

The new transmission is neatly carried out, and a most effective external contracting rear brake has been designed in conjunction therewith.

The 247 c.c. engine remains unchanged; but the tanks of all the models are now finished with a black instead of a silver-grey background.

During 1922 only the sporting model was marketed as a sidecar outfit; next year there will be a touring outfit as well.

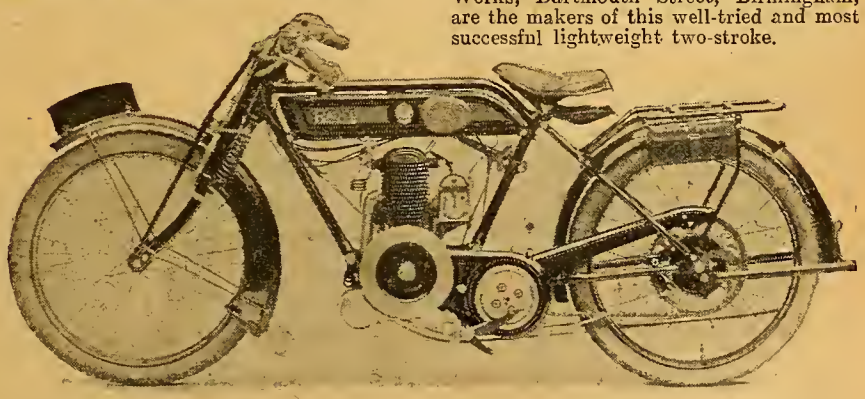
Brake Improvement.

On the remaining belt-driven machine the rear brake has been much improved; it now acts inside the V of the belt rim instead of outside, and the pedal and rod are considerably neater.

Wider mudguards and the substitution of footboards where footrests were previously fitted complete the list of changes to the various forms of the standard model.

Something quite new, however, is a spring frame Radco. It is novel by reason of the fact that the hinge occurs in front of the gear box and the two supporting coil springs are normally in tension instead of in compression. The design on the whole appears to have great possibilities, and not the least of its merits is its unobtrusive symmetry.

E. A. Radnall and Co., Vauxhall Works, Dartmouth Street, Birmingham, are the makers of this well-tried and most successful lightweight two-stroke.



Still another convert to chain drive is the Radco two-stroke, which also has a band type rear brake. This is the sporting model, which will be fitted with disc wheels as standard.

FRAME IMPROVEMENTS IN 1923 BRADBURYS.

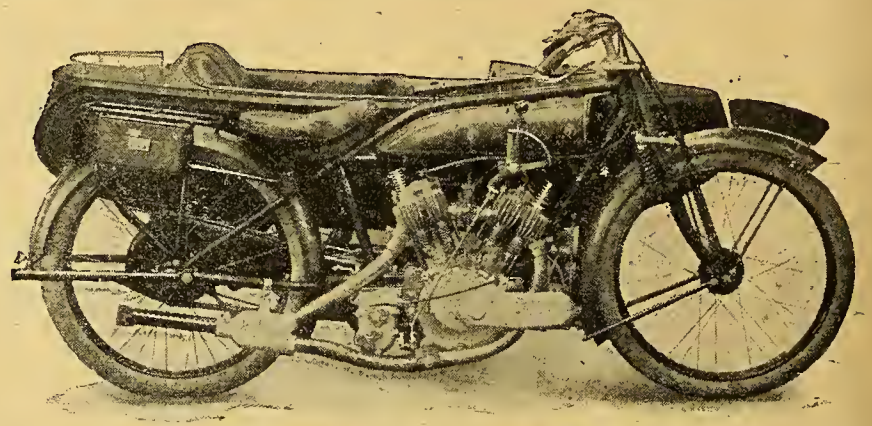
Old-established North Country Make Thoroughly Modernised for Next Year.

AFTER many years' honourable existence as a sturdy and reliable but not particularly handsome motor cycle, the Bradbury, in all its forms, has undergone a veritable transformation for next year.

It now compares favourably in the matter of appearance with anything else on the market, and recent records at Brooklands prove that sheer slogging capabilities are not its only commendable attribute.

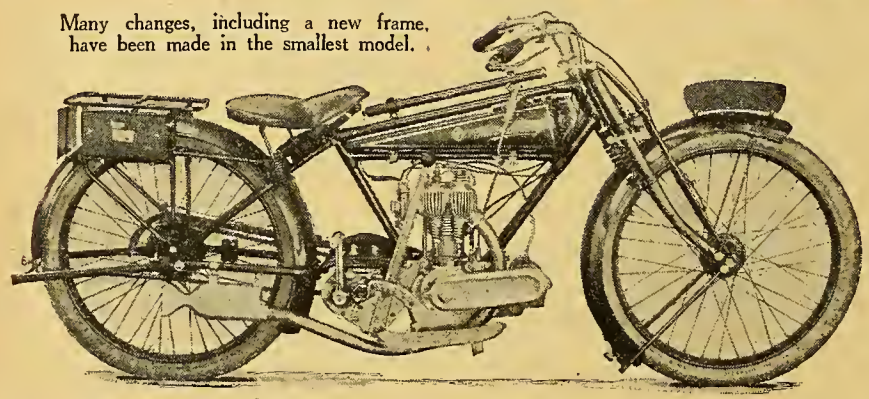
Three Main Models.

Three main models are offered—all side-valve four-strokes; a 350 c.c. single; a 554 c.c. single; and a 749 c.c. twin. In each case the engine is of Bradbury design and manufacture; in fact, except the gear box of the 350 c.c. model (a Moss three-speed), the whole machines are produced in the one factory.



Speedy lines are attained in the 749 c.c. Bradbury sporting sidecar outfit.

Many changes, including a new frame, have been made in the smallest model.



Chain transmission is employed throughout, light guards only being fitted in every case.

Each model is available as a sidecar outfit, but the big twin machine becomes a particularly attractive solo mount when turned out to a sports specification. A new frame of graceful design, well-curved exhaust pipes terminating in an aluminium silencer at the rear, and footrests instead of footboards, combine to make this model attractive to the most fastidious speed man.

Internal Expanding Brakes.

Internal expanding brakes on both wheels is a commendable feature of all the Bradburys for next year.

The makers are Bradbury & Co., Ltd., Wellington Works, Oldham.

350 c.c. MATCHLESS MODEL.

Range of Big Sidecars extended by Solo Medium-weight. A New Sports Twin.

MOST of the big sidecar specialists are turning towards the light solo machine as an addition to their range for the 1923 market.

In this class the Matchless concern must now be included, after long absence from the smaller solo field. The new model is engined by a 349 c.c. Blackburne side valve unit.

A Sturmey-Archer three-speed gear box, including clutch and kick starter, is fitted, and a drawbolt for the purpose of front chain adjustment is provided. And in this connection it must be pointed out that engine, gear box and magneto are assembled in a special cradle, which can be handled as complete unit.

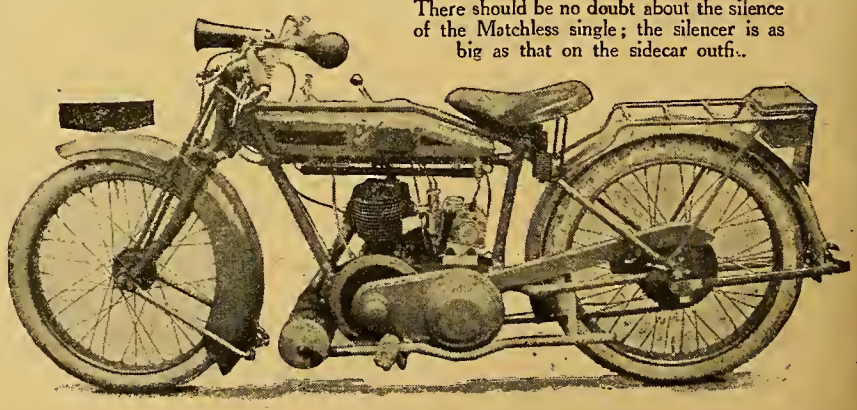
Above the gear box is the M-L magneto mounted on a sliding platform and provided with a suitable adjuster for the purpose of taking up any slack in the magneto chain.

Points of convenience have been carefully studied, kneegrips being fitted as a standard, and an excellent all-metal tool box situated on the rear of the carrier and fitting practically flush with the top thereof. A Webb brake is fitted to the front wheel and an internal expanding brake to the rear wheel, while the Binks two-jet semi-automatic carburetter forms part of the standard equipment.

If desired, a Lucas Magdyno can be provided at an extra cost. Both wheels have voiturette rims carrying 650×65 mm. tyres, and the weight is 220 lb., price £72 10s.

One new twin cylinder model will be introduced, to be known as the super-

There should be no doubt about the silence of the Matchless single; the silencer is as big as that on the sidecar outfit.



Advance Details of 1923 Models.—sports model J, equipped with a 976 c.c. super-sports J.A.P. engine, Sturmey-Archer three-speed gear box, clutch and kick starter, and 700×80 mm. tyres.

The other Matchless models will remain practically unaltered; all will be fitted with the standard Matchless three-speed gear box.

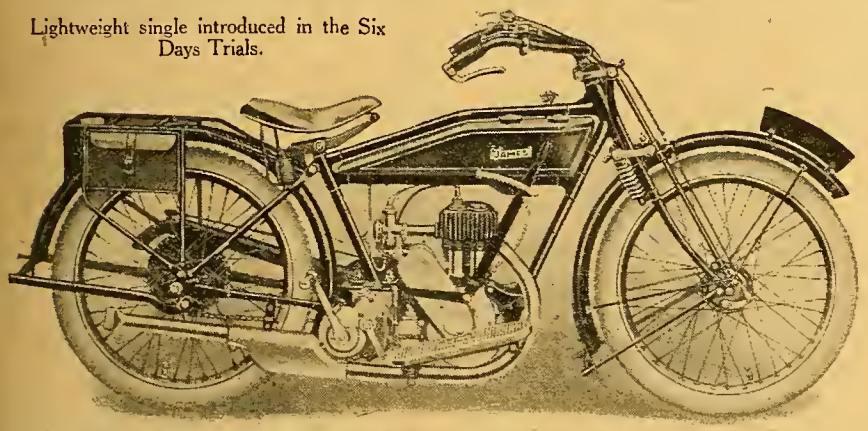
Small improvements have been made in the sidecars, there now being side shields to the windscreens, while a spring catch is fitted to the scuttle dash.

Prices of 1923 Matchless machines range from £110, 976 c.c. J.A.P. or M.A.G. solo to the luxurious model H with two-seated sidecar and J.A.P. or M.A.G. engine at £160 10s.

DETACHABLE HEADS ON 500 c.c. JAMES TWIN.

Detail Alterations only on the other Popular Models. Big Single no Longer Listed.

Lightweight single introduced in the Six Days Trials.



TWO of the James models remain practically unaltered; these are the 749 c.c. twin and the 350 c.c. four-stroke, which made its first appearance at this year's A.C.U. Six Days Trials.

The little two-stroke also has undergone but slight modifications, the most important being the adoption of all-chain drive with a two-speed gear.

Changes to the Solo Twin.

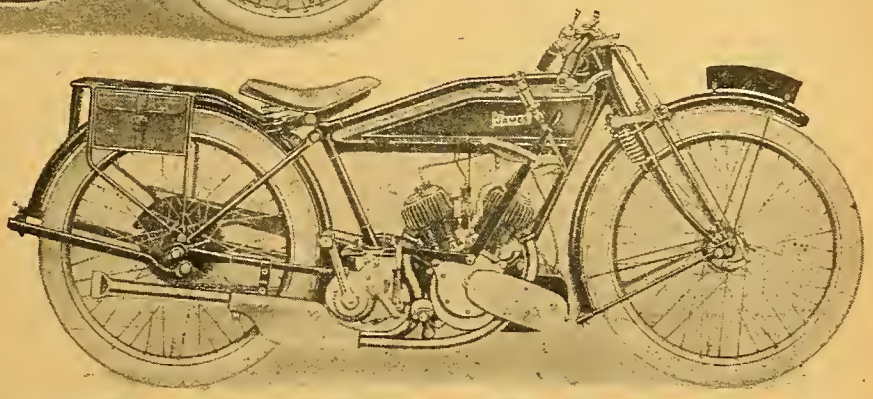
Considerable alterations, however, have been made to the 498 c.c. twin.

In the engine, aluminium pistons and detachable cylinder heads, held on by three studs, are fitted, the valves are of considerably larger diameter, and the magneto is in front instead of behind. A close ratio gear box, including clutch and kick-starter, will be fitted.

The frame also is entirely new, and closely follows the lines of that fitted to the 350 c.c. model, having a long slope in the top rail. Mounted in this frame is a tank which to all appearances is a unit, though the oil and petrol tanks are entirely separated, having double partitions in between. The rear wheel is quickly detachable, and larger exhaust pipes have been fitted.

Adjustable handle-bars clipped to the head lug have been standardised.

Those who favour the big single type of machine will look in vain for the James example, which has now been definitely abandoned.



Detachable cylinder heads, valves of large diameter and a new frame further improve the always attractive V-twin model.

MODERATE PRICED CHATER-LEA RANGE.

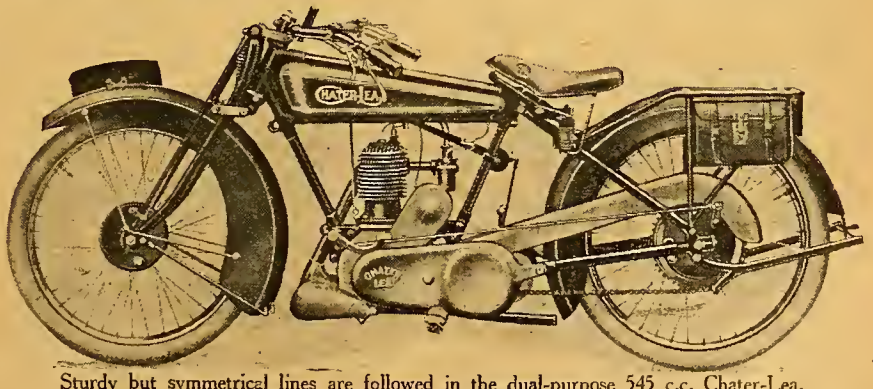
Big Single, Medium Single, Two-stroke and Big-twin Models for Solo, Dual-purpose and Sidecar Use.

TO those who are looking for a useful double-purpose mount the 545 c.c. single-cylinder Chater-Lea will undoubtedly appeal.

Its power unit is an engine made by the firm, and it is provided with all-chain transmission, a transmission shock absorber, and a Sturmey gear box incorporating a kick-starter, with the clutch controlled from the handle-bars.

Both wheels are interchangeable and detachable, while internal expanding brakes are fitted back and front. The price solo is £80, and with sidecar £100. The sidecar will not be sold separately.

Another new model is a 348 c.c. sporting solo mount fitted with an overhead valve Blackburne sports engine, all-chain drive, three-speed gear box, handle-bar



Sturdy but symmetrical lines are followed in the dual-purpose 545 c.c. Chater-Lea.

Advance Details of 1923 Models.—controlled clutch, kick-starter, and transmission shock absorber. As in the previous model, detachable and interchangeable wheels with internal expanding brakes are fitted. The price of this machine will be £72 10s., or fitted with a side valve Blackburne engine, £65.

Some small improvements have been made in the 269 c.c. Chater-Lea two-stroke, which has been considerably reduced in price, notwithstanding that it is fitted with a two-speed gear box. It is to be sold at £42 10s. without clutch, or £45 complete with clutch.

Little alteration has taken place in the popular 976 c.c. sidecar outfit, which is fitted with a 50° V-twin Chater-Lea engine, 85.5 × 85 m.m. (976 c.c.), with protected valve springs and enclosed valve lifter. It is a thoroughly practical mount which will take two or more people anywhere, and will be sold at £125.

FRICTION-DRIVEN MINIATURE.

Kenilworth Machine Now Fitted with an Infinitely Variable Gear.

IN spite of the fact that large numbers of scooter type machines have disappeared from the market, the little Kenilworth has met with success, and has proved exceedingly popular amongst its owners.

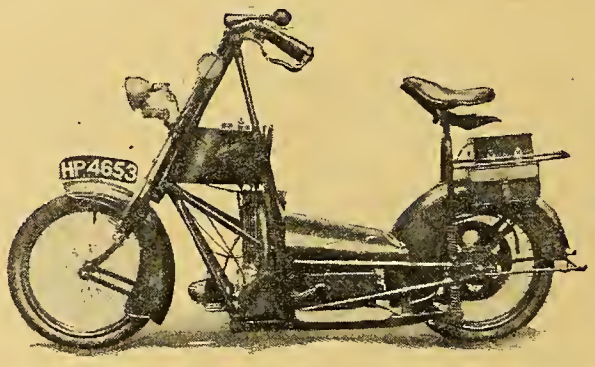
Originally the machine had primary belt drive to a countershaft, the final drive being by chain; only a single gear ratio was available.

Transverse Engine.

The engine is now set longitudinally in the frame, and the crankshaft carries a cast-iron flywheel at the rear end; against this flywheel bears a Ferodo-faced driven disc having a diameter of 7in. The disc is carried on a square shaft and supported in Skefko ball bearings, the final drive sprocket lying on the outside of the central bearing. Only a very light compression spring is needed for engagement.

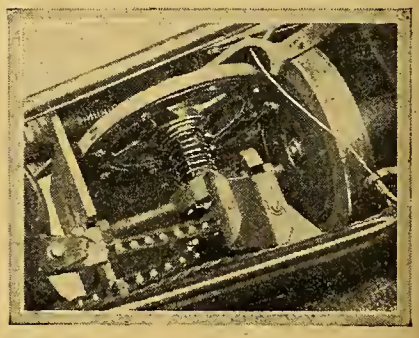
The whole friction gear is mounted in a cast aluminium case which also forms the engine bearer, and lies neatly in the standard Kenilworth frame.

So light is the operation of the gear that the control is effected by an ordinary carburetter air lever, and since the Vici single-lever carburetter is employed, the only addition to handle-bar fittings is a clutch lever.



(Left) One of he last of its class, the Kenilworth has been modernised for next year; the engine is now set transversely in the frame.

(Below) Disc drive variable gear replacing the primary belt drive.



Since the whole mechanism is enclosed it is unaffected by wet, and the friction gear is so efficient that it is possible to get away from a stand-still on a gradient of 1 in 9 with ease; the range of gear ratios available vary from 6 to 1 to 12 to 1.

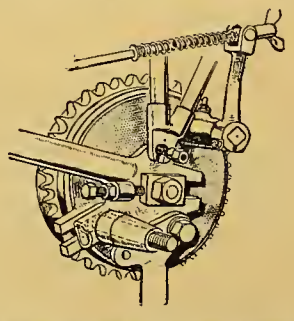
Propelled by a 142 c.c. o.h.v. engine (55 × 60 mm. bore and stroke), the Kenilworth is noted for its sturdy construction and sprung saddle pillar and foot-rests. It is a handy little machine, and in its latest form should make an appeal especially to ladies who require to travel short distances daily.

NEW IMPERIAL BIG TWINS.

Loop Frame and Engine-gear Unit Assembly. Sports Solo and Touring Sidecar Models. Internal Expanding Brakes.

AS forecasted in our last issue, two New Imperial big twins will be available next year, one a 976 c.c. sports model and the other a touring model of similar capacity. Both are fitted with J.A.P. engines.

In both cases, also, the engine and gear box are built up so as to form a unit which is held at three points in a sturdy loop frame, thus following the lines of the smaller New Imperial productions. Internal expanding brakes are fitted to both front and rear wheels, the latter having exceptionally wide shoes, while the anchorage for the brake is so arranged that it does not interfere with the quick detachment of the rear wheel. On the side of the plate is formed a heavy forked member which engages with a specially shaped stud head lying on the inside of the frame thus, when the wheel is withdrawn, the fork merely slides off its stop and can be easily replaced. Even this amount of trouble, however, should seldom be necessary, for, on the sidecar machine, the rear portion of the mudguard, complete with carrier, is quickly detachable by means of shouldered nuts



Rear brake and method of chain adjustment on the latest big twin.

locking into recesses in the carrier ends. The unit is self-contained and comes clear away from the machine, leaving three-quarters of the tyre fully exposed. A three-speed Burman box provides the necessary changes in ratio, chain-drive being employed throughout; a positive adjustment for the front chain is provided.

Grease-gun Lubrication.

Another most important detail is that forks, brakes, sidecar shackles, and practically every part of the machine is fitted with special nipples to take a screw-on grease gun. Timken roller hubs are fitted throughout, and a new sidecar chassis having five points of attachment evenly distributed over the frame is particularly sound in design.

When a Lucas magdyno is fitted it is carried behind the engine, and the specification of the touring model is very complete. Wide domed guards with guttered edges have been standardised, and knee shields can be fitted in addition.

In the case of the sports model somewhat lighter guards are, of course, fitted.

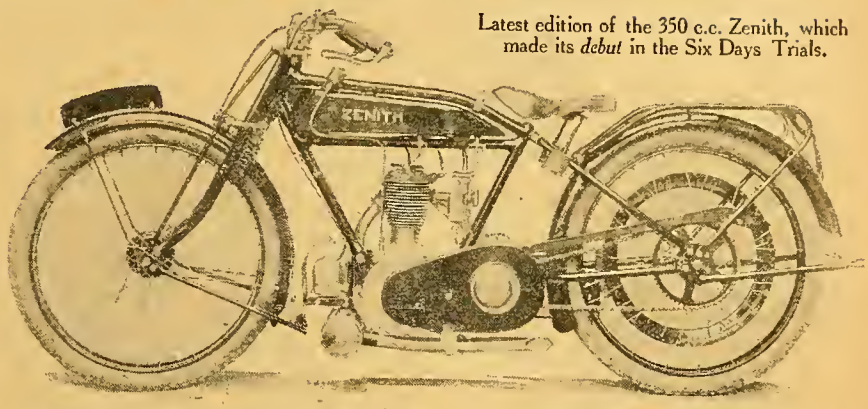
ALL-CHAIN ZENITHS.

350 c.c. Single, 500 c.c. Flat-twin and 1,000 c.c. Big Twin.

ONE of the most attractive features of the Zenith programme for 1923 is the 349 c.c. J.A.P.-engined medium-weight model. It has exceedingly graceful lines, and though it departs somewhat from previous Zenith practice, it is a pleasing-looking little solo mount.

This model is fitted with a Sturmey-Archer three-speed gear box having ratios of 5.9, 8.9 and 17.4 to 1, the control lever being carried on the gear box.

A Webb brake is fitted to the front wheel, while at the rear there is a compensating Zenith shoe brake applied to a dummy belt rim. Like other Zenith models, it depends for its ignition upon a Lucas magneto which is shielded from the wet by means of a guard. The price of this machine is £72, and its frame will take the 293 c.c. J.A.P. engine, price £66, and the 350 c.c. J.A.P. sports engine.



Latest edition of the 350 c.c. Zenith, which made its *debut* in the Six Days Trials.

Bradshaw Engine Improvements.

The Zenith-Bradshaw model, which attracted so much admiration at the Show last year, has undergone small but important improvements, but only so far as the engine is concerned, the latter being fitted with an improved valve mechanism. The rockers are now enclosed in an aluminium box, which, once filled with oil, will lubricate them almost indefinitely. New collars and cotters are fitted to the valves, while the springs are of the coil variety instead of being volute; the valve mechanism is more reliable and quieter in action. The price of this model is £95.

Despite the fact that most of the newest Zeniths are chain-driven, the famous Gradua model can still be had to order.

A new machine introduced this year is the 976 c.c. sports model, fitted with the super-sports J.A.P. engine. This also is a most attractive mount possessing graceful lines and an exceedingly strong duplex frame, constructed specially to stand rough work both at home and overseas. It has all-chain drive, Sturmey-Archer three-speed gear, and 28×3 in. tyres. The saddle tank is rigidly fixed, and is not only of large capacity but of pleasing appearance. Dummy rim brakes, incorporating a compensating mechanism, are fitted to both wheels.

Sidecar lugs are incorporated in the frame. The mudguarding has also been well thought out, the footrests are adjustable, and aluminium chain cases are fitted. It is to be sold at £125.

HENDERSON & AMERICAN-X IMPROVEMENTS.

Interchangeability of Parts a Feature. Low Prices for Complete Sidecar Outfits.

SEVERAL points of interest are to be found in the 1923 models of two famous American makers, the Henderson and American-X.

The former is now marketed as a "De Luxe model," a title which is not belied by the very comprehensive specification. The well-known four-cylinder power unit is, of course, retained, but has been mounted lower in the frame, so increasing the machine's tractability when used as a solo mount. A Zenith carburetter, incorporating a hot-air intake, and separate units for lighting and ignition, are fitted.

Transmission is *via* a gear box cast *en bloc* with the engine, giving three forward speeds (a reverse is supplied as an extra), and a heavy driving chain. A clutch of the multiple-disc type may be controlled either by hand or foot levers situated on the left-hand side.

A choice of two sidecars is offered—the standard model, supplied with step and apron, and the coupette model, equipped with a complete coupé hood and screen. Both types are mounted on a Millford chassis. Finished in deep blue with gold lining, the solo mount is priced at £137, while the standard and coupette sidecar outfits cost £163 5s. and £172 respectively with electrical equipment.

The American-X has a V-twin engine of 999.5 c.c. capacity. Automatic oiling, overhead inlet valves, and a Schebler carburetter are features of the power unit.

A three-speed gear box is neatly housed in the conventional position, and a dry plate clutch with hand and foot control is fitted. In addition to the well-sprung saddle and balanced plunger type front fork, 3½in. tyres should do much towards comfortable riding. The price, including electrical equipment, is £105. The sidecars obtainable are identical with those of the Henderson, the price of the outfits in this case being £131 5s. for the standard model, and £140 for the coupette. The finish is also identical with that of the Henderson, as are wheels, forks, handlebars, controls, and brake mechanism.

The two machines are distributed by Melchior, Armstrong, and Dessau (London), Ltd., 15, Newman St., Oxford St., London, W.1.

THE CALTHORPE PROGRAMME.

ALTHOUGH the Calthorpe motor cycle has been on the market for many years, for some reason it is not generally known that it is one of the comparatively few fitted with engines produced under the same roof as the machines themselves. In other words The Calthorpe Motor Cycle Co. is not an assembling firm, and for this reason greater interest attaches to its programme for the coming year.

The Calthorpe has always been a neat machine, and its evolution has been one of gradual improvement rather than of drastic changes and experiments.

For 1923 there will be three models. The first is a 250 c.c. single-speed machine at a popular price, which is the 1922 machine improved in all its details, and fitted with a C.A.V. magneto, a larger saddle, 26×2¼in. tyres, and a welded steel pannier bag.

Second on the list is a two-speed model, having an entirely new engine, which is said to develop considerably more power than the existing one. A Burman two-speed gear with clutch and kick-starter is fitted on a neat bracket instead of being cliped to the tubes of the back stays as the 1922 model. The tyres are 26×2½in., while the mudguards are 6in. D section over the rear wheel, and 5in. at the front.

The third model is the 350 c.c. sidecar outfit, a type of machine which the Calthorpe Company has done much to popularise. The engine fitted was one of the first, if not actually the first, two-stroke of 350 c.c. to be proved a practical proposition. For 1923 the model will have 26×2½in. tyres, and a sidecar with door and upholstered arms. Another addition to the existing model is a carrier which is equipped with a pair of pannier bags.

350 c.c. FOUR-STROKE TRIUMPH.

Side-valve Three-speed Model. Unit Construction.

THOUGH not altogether unexpected by the *cognoscenti*, it will come as a surprise to many to find that the Triumph name will now appear on a new side-by-side valve 350 c.c machine which will be staged at the forthcoming Olympia Exhibition, but will not be available for the public till April.

Almost every feature of the engine and gear unit, though unusual, is thoroughly practical, and there is hardly a detail that will not be of interest to the engineer.

The cylinder has a bore and stroke of 72×85 mm. (346 c.c.), and is a single iron casting having the valves at the side

Oscillating plunger oil pump on the new lightweight.

and the plug between the valve caps but somewhat nearer the centre of the cylinder. The shape of the head is unusual, in that almost the entire compression space lies in the valve ports, the piston reaching almost to the top of the flat head. This feature leads to a somewhat unorthodox appearance since the arrangement of the cooling ribs is, of course, modified to suit. The exhaust port is very well ribbed, but the actual inlet port casting is unribbed and tapers gradually from the carburetter to the valve.

Having a head diameter of 1½ in., the valves are somewhat raised above the floor of the ports; they are held down by very large diameter coil springs and are operated by cams lying side by side on a single sleeve. This sleeve rotates on a fixed spindle and is fed by oil under pressure, some of which is distributed through holes in the cams to the rocker gear.

An aluminium slipper piston having two narrow top rings is attached to the H-section connecting rod by a hollow gudgeon pin which floats both in the small end bearing and in the piston bosses. It is secured endwise by split rings.

In the crankshaft itself we came across a feature most unusual in four-stroke engines, in that this member is of the overhung type, having two bearings on the flywheel side between which lies the primary driving pinion. In actual practice the crankshaft itself bears only on the inner of these bushes, while the outer diameter of the flywheel boss provides the second bearing surface and is of very large proportions. The flywheel itself is bolted to this boss which, in its turn, is secured upon the splined end of the crankshaft.

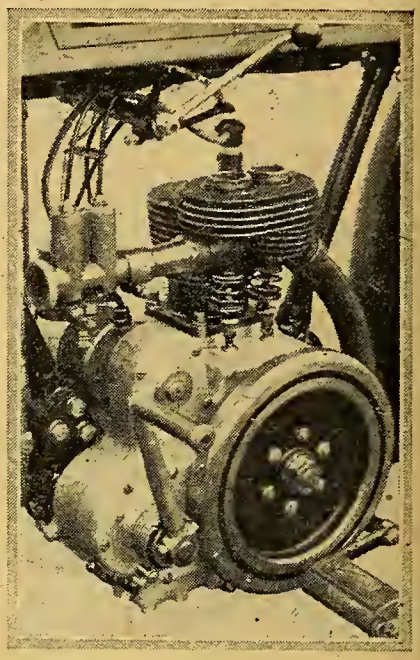
Advantages of Overhung Crank.

This unusual arrangement has several advantages inasmuch as the flywheel is readily detachable without special tools, while the boss provides an ample bearing surface, and, extending as it does close up to the primary pinion tends to prevent torsional oscillation of the shaft. It is possible, however, that a ball or roller bearing shaft will be substituted before the machine reaches the public.

Between the crankshaft and the gear shaft lies an intermediate pinion which is utilised to drive a most ingenious form of oil pump. In construction the pump is of the oscillating plunger type and is so constructed as to avoid external pipes.

Oil is delivered to the main crank bearings, the timing gear and the layshaft of the gear box.

Beside the absence of external pipes there are no valves proper employed in the lubrication system, the return from the engine and gear passing to a large well through a gauze strainer.

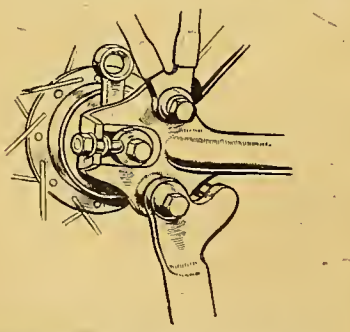


Combined engine and gear unit, with outside flywheel.

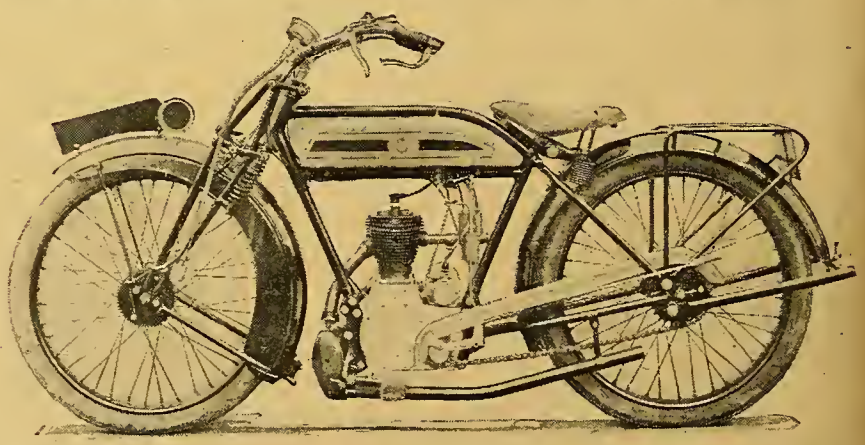
A metal plate clutch, with steel and copper plates, is mounted on the ball-bearing gear shaft, while the layshaft runs on floating bushes pressure-fed from the oil pump.

The design of the gear box follows existing Triumph practice, in that the gears begin to mesh before the wheels are locked to the shaft, thus insuring an easy engagement.

From the main shaft of the gear a bronze idle wheel carries the drive to an M-L magneto mounted directly behind the cylinder, and a kick-starter is, of course, incorporated with the unit.



Arrangement of the detachable wheel showing the extension to the distance piece.



Compactness and a short wheel-base are gained by the unit construction. Note the large cover plate giving direct access to the overhung crankshaft and big end.

Advance Details of 1923 Models.—

It might be considered that the long gear train would involve noisy transmission, but when the engine is running free the five gear wheels with which the magneto is operated are inaudible, a fact which may be attributed not only to excellent workmanship but to the system of lubrication.

On the side opposed to the primary drive projects the end of the gear shaft, on which is mounted the final drive sprocket and enclosed shock absorber.

The whole unit is very rigidly attached to a well-laid-out frame. All four engine plates are identical, as are the engine frame bolts; in fact, it is possible to attach the adjustable footrests on either front or rear cradle plates, according to the desires of the rider. The carrier and forks, also, have both sides of identical construction, the distance pieces, pivot bolts and links also being interchangeable. The smallest possible number of pin and nut sizes is employed.

Front and rear wheels are quickly detachable and interchangeable by the simple means of removing a knock-out spindle and short distance piece, the distance pieces being constructed with large eyes which may be easily reached for fitting and detachment purposes. Both wheels, also, are fitted with internal expanding brakes, and the drive is conveyed through a very simple form of dog teeth; a speedometer drive is incorporated with the front brake drum. As the knock-out spindle principle is used it is unnecessary to employ a full slotted fork rear end, and consequently the adjusting draw bolts are without loose end pieces, the ends of the rear fork being turned over to form an abutment.

Front springing is of the new Triumph-Druid type, and the mudguards are remarkably sensible, being the same as those employed on the S.D. model. A large expansion chamber lies in the front of the crankcase.

Weight distribution has received considerable attention, and the centre of the unit is also the centre of the frame, while the saddle is as far forward as is reasonably possible.

HAWKER BIG SINGLE.

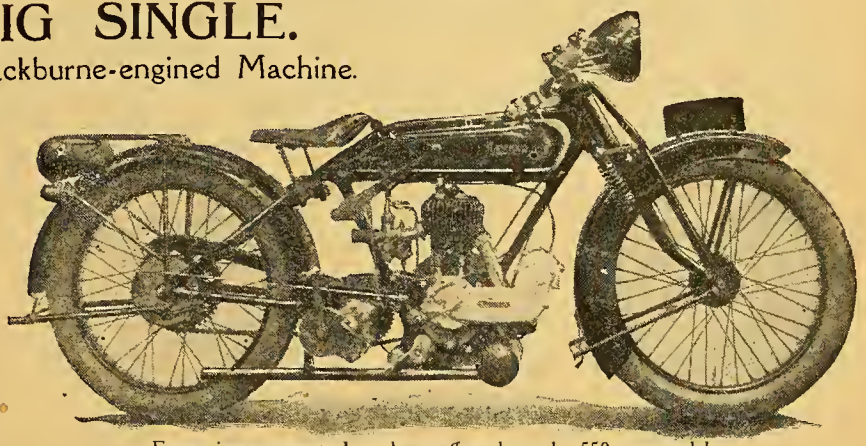
Double-purpose 550 c.c. Blackburne-engined Machine.

CONSIDERABLE alteration has been made in the frame of the 550 c.c. Hawker, which is now more symmetrical in design. The top tube is curved to the rear, which, it has been found, has resulted in steadying the steering of the machine, for the saddle is now within 28 ins. of the ground. Druid forks are used.

For Sidecar Work.

Sidecar lugs are incorporated in the frame, which, incidentally, will take all Blackburne engines.

The engine is of standard Blackburne pattern, with detachable head, outside flywheel, and roller bearing big-end. Best and Lloyd lubricator, Fellows magneto, Amac carburetter, and either a Lucas Magdyno or B.T.H. Sparklight as an extra for lighting equipment, are fitted. The transmission is by exposed chains which are guarded on the top run.



Frame improvements have been effected on the 550 c.c. model.

It is equipped with a Burman three-speed gear box, and 650×65 mm. tyres on flat base rims. Solo it is sold for £80, or with a Montgomery sporting sidecar at £95.

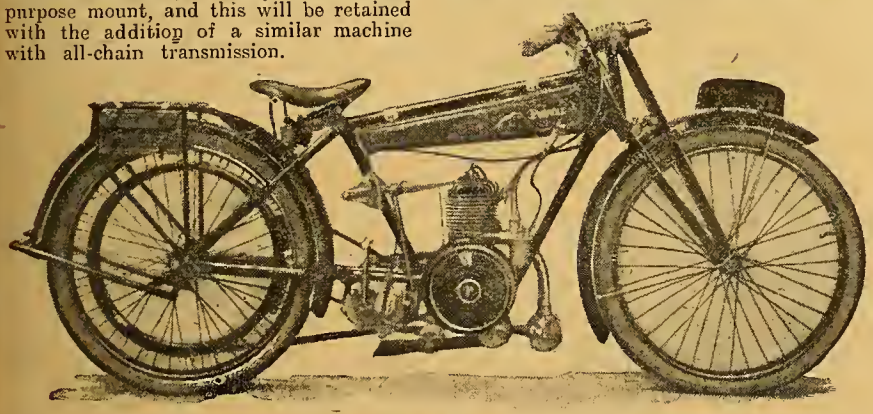
The 348 c.c. model is sold at £70. There is also a 348 c.c. overhead valve Blackburne sports machine, fitted with a close-ratio gear box and narrower mudguards.

INTRODUCTION OF A POWELL LIGHTWEIGHT.

Serviceable Solo Two-stroke at a Moderate Price. Chain-driven 547 c.c. Model.

IT comes as a surprise to learn that the makers of the Powell are introducing a lightweight for next year. Hitherto, of course, there has only been one Powell model, a sturdy 547 c.c. dual-purpose mount, and this will be retained with the addition of a similar machine with all-chain transmission.

The lightweight is a straightforward and simple design, embodying a 247 c.c. Villiers engine, and, in two cases, a two-speed Albion gear box, in a neat frame not unlike the larger type in general contour. Single-geared, it is priced at £36, with plain two-speed at £42, and with two-speed, clutch, and kick-starter at £45.



Villiers engine and Albion gear box as fitted to the Powell lightweight.

Considerable reductions have been made in the prices of the 547 c.c. Powells, which are now: £87 10s. with final belt drive, £90 with final chain drive, and £110 chain-driven with sidecar.

The inclined engine, with outside flywheel, detachable cylinder head, and very complete lubrication system, is practically unaltered.

Powell Bros., Cambrian Iron Works, Wrexham, is the address of the makers.

"THE MOTOR CYCLE" FILM

Will be screened Three Times Daily at THE BROADWAY CINEMA, HAMMERSMITH,

For one week commencing Nov. 27 (Show Week).

After this date the film will be released to the Clubs for their Cinema Nights during the winter months.

OIL-COOLED SHEFFIELD HENDERSON.

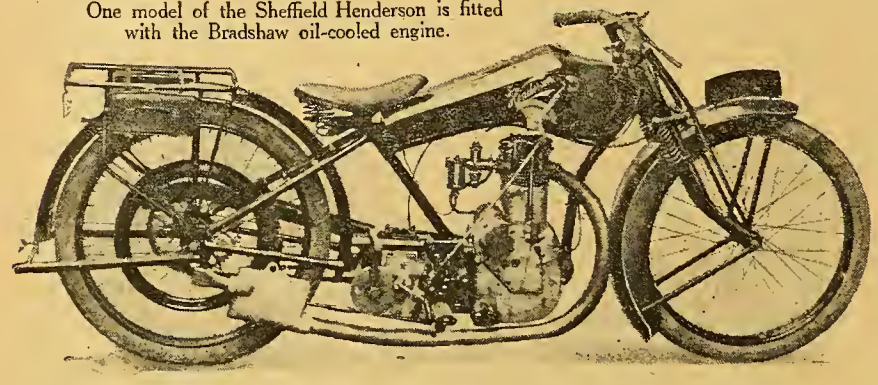
Range of Side and Overhead Valve 350 c.c. Machines Augmented by a Bradshaw Engined Model.

FOR next year the Sheffield Henderson range will be augmented by a model fitted with the 349 c.c. oil-cooled Bradshaw engine.

The newcomer otherwise follows the now familiar lines of this successful Sheffield make, and is particularly recommended for sidecar work. With Burman three-speed gear box with clutch and kick-starter it represents excellent value at £72.

Excepting detail improvements in mudguarding and silencing, the side-valve 349 c.c. standard and sports models (identical with the machine that scored top marks in the 350 c.c. class in the Six Days Trials) remain unchanged. The price in each case has been reduced to £72.

One model of the Sheffield Henderson is fitted with the Bradshaw oil-cooled engine.



Druid Forks Standardised.

Druid forks are now fitted to the 70 m.p.h. o.h.v. model, which incidentally was one of the first machines to be sold with a speed guarantee. The price of £90 includes this guarantee, and a spare standard piston and cam for touring work. Without the speed guarantee and fitted with a cast-iron or an aluminium piston, it costs £5 less.

All the Sheffield Henderson machines for next year are in the 350 c.c. class, and all employ chain transmission *via* Burman gear boxes.

The makers are Henderson Motors, Ltd., 73, Fitzwilliam Street, Sheffield, who also manufacture the well-known sidecars of the same name.

SLEEVE-VALVE OR OIL-COOLED ENGINES.

B. & S. or Bradshaw Engines in 1923 Coventry Mascots. Watersplash-proof Exhaust Pipes for Trials Riding.

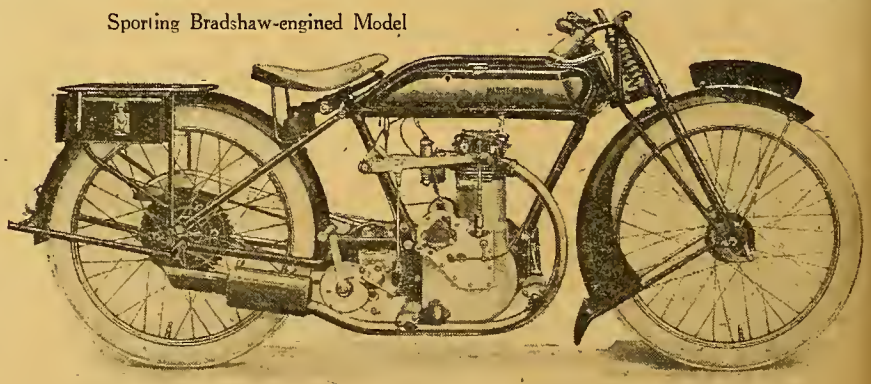
FIRST to adopt the Barr and Stroud sleeve-valve engine in Coventry, the makers of the Coventry Mascot continue to pioneer in a small way by introducing for 1923 a very similar machine fitted with the oil-cooled Bradshaw engine (349 c.c. single).

Frame design has been improved, and aluminium chain covers replace the metal guards hitherto used.

One Sports model using the B. & S. engine is notable for its silencing arrangements, which have been expressly designed for trials riding and watersplashes, the final exhaust exit being up in the neighbourhood of the rear tool bag. Chain-driven, with three-speed Sturmey or Burman gear box, this machine is priced at £72; or with a Bradshaw engine and more normal exhaust arrangements at £69. A similar touring B. & S. model is £72, or with final belt-drive and a two-speed gear box, £67.

The Coventry Mascot Cycle Co., Camden Street, Coventry, are the makers.

Sporting Bradshaw-engined Model



ANOTHER NEW LIGHTWEIGHT.

THREE new small two-stroke models will appear in the near future; they are manufactured by Coventry Bicycles, Ltd., of Gosford Street, Coventry.

Two of these are of the pedal-assisted type—one having a diamond frame, the other having an open frame suitable for ladies; the third is a miniature motor cycle having a similar engine but fitted with a two-speed gear and clutch instead of a pedalling gear.

The engine will have a bore and stroke of 60×60 mm. (170 c.c.), and the tiny motor cycle will be known as the "Wee McGregor."

The same firm will produce a medium-weight machine with B. and S. sleeve-valve engine and a three-speed Burman gear with all-chain drive. It is to be known as the Coventry B. and S.

Although these machines may not be exhibited at the Olympia Show it is likely that they will be available for inspection in the vicinity.

The 1923 models of over 30 manufacturers are detailed this week. Next week's issue will be a complete forecast of the exhibits at the forthcoming motor cycle show.

REMEMBRANCE DAY AT BROOKLANDS.

Indian, A.J.S. and Matchless-M.A.G. Wins at Well-attended Combined Meet.

REMEMBRANCE Day was celebrated at Brooklands by an afternoon's brisk racing, under the joint anspices of the B.A.R.C. and the B.M.C.R.C., three of the handicaps being for motor cycles.

The profits of the meeting went to Earl Haig's Fund, which was further helped by the auctioning of a painting of the track, bought by Mr. A. F. Millano for 27 gn.

Large Entries.

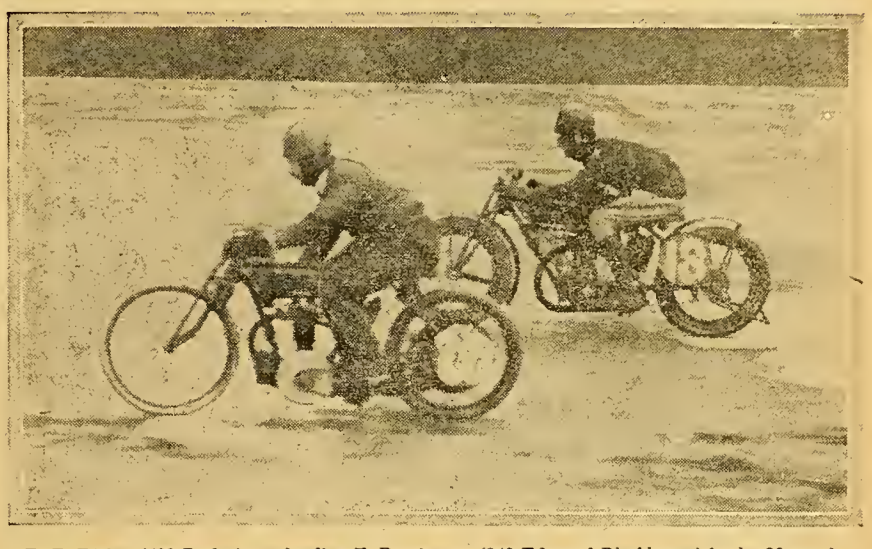
The field for the first race, a three lap all-comers passenger handicap, was so big that the track at the new starting line opposite the 2s. 6d. grand stand was barely wide enough to allow everyone to line up simultaneously. For one lap the limit men retained their advantage, but next time round E. A. Bridgman (998 Indian sc.) had overtaken half the field and, barring accidents, seemed likely to win easily. This he did.

ALL-COMERS PASSENGER HANDICAP.

		Handicap.
1.	E. A. Bridgman (998 Indian sc.) ...	57s.
2.	J. W. Jelpke (348 Weatherell sc.)	2m. 48s.
3.	L. F. Peaty (349 Hawker sc.) ...	1m. 45s.

Winner's speed = 68.3 m.p.h.

Another large and varied entry contested the Addlestone 70 m.p.h. solo handicap, and before all the back-markers had been started, C. T. Ashby, on one of the latest sporting Woolers, hurtled through on his second circuit so unexpectedly soon that the track had not been cleared of stray "pushers-off." The pace was too hot, however, and it was left to F. A. Longman on an o.h.v. A.J.S. to win a very fine race, to the great delight of the spectators who follow favourites. Prestwich, who was second, nearly lost his place by riding under a wrong number.



R. E. Dicker (499 Rudge) overhauling E. Remington (348 Edmund-Blackburne) in the 90 m.p.h. solo handicap.

ADDLESTONE 70 M.P.H. SOLO HANDICAP.

		Handicap.
1.	F. A. Longman (349 A.J.S.) ...	1m. 12s.
2.	J. V. Prestwich (248 New Imp.-Jap)	1m. 54s.
3.	V. G. Tucker (490 Norton) ...	1m. 21s.

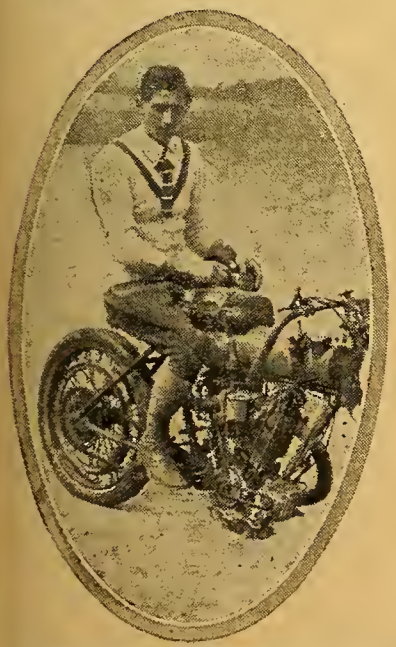
Winner's speed = 74.68.

As a fitting wind-up to motor cycle racing for 1922, the final event both was full of thrills and provided an extremely popular winner. Rumours that he had been lapping at nearly 80 m.p.h. made R. E. Dicker (499 Rudge) a hot favourite, but it was very quickly realised that R. O. Lowe (490 Norton), who started level with Dicker, was to make a game fight of it. For two laps these two struggled neck-and-neck, rapidly pulling to the front, but right on the final circuit O. M. Baldwin showed what his old Matchless was really capable of by overtaking the two singles and winning at nearly 90 m.p.h.

WEYBRIDGE 90 M.P.H. SOLO HANDICAP.

		Handicap.
1.	O. M. Baldwin (992 Matchless) ...	6s.
2.	R. E. Dicker (499 Rudge) ...	1m. 15s.
3.	R. O. Lowe (490 Norton) ...	1m. 15s.

Winner's speed = 89.1 m.p.h.

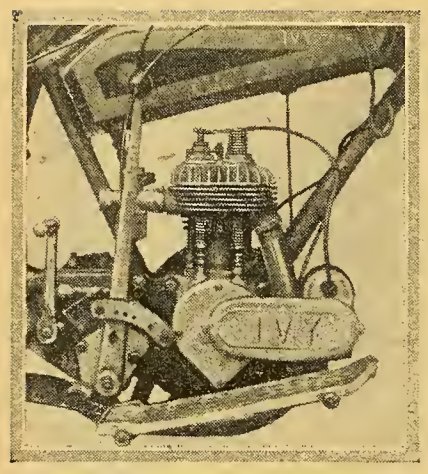


O. M. Baldwin (992 Matchless-M.A.G.), winner of the fastest race, at nearly 90 m.p.h.

E. Bridgman (998 Indian sidecar), winner of the sidecar handicap.

F. A. Longman, who won a race on the latest o.h.v. A.J.S. at 74·7 m.p.h.

CURRENT CHAT (continued from p. 696)



NEW FOUR-STROKE ENGINE. Described last week, the four-stroke Ivy is a clean, efficient-looking design. The timing case may contain a mechanical oiler.

1923 Prices.

£70 has been fixed as the price of the 350 c.c. Martinsyde touring model, described on p. 697; the sports model costs £72.

The price of the 350 c.c. Beardmore-Precision described in our last issne is not yet fixed; it was incorrectly given as £75, hnt it will be much lower than this figure.

The following is a list of Metro-Tyler prices for 1923: 269 c.c. two-stroke sports model, £46 4s., with clntch and kick-starter, £49 7s.; all-enclosed model, £54 12s.; All Black Baby (269 c.c.), £35 14s.; 348 c.c. four-stroke, £58 7s., with chain drive, £64 1s.; 348 c.c. o.h.v. speed model, £79 16s.; 698 c.c. sports three-speed, £94 10s., with four speeds, £97 13s.

Olympia!

Only nine more days and Olympia will once more open its doors as a motor cycle exhibition.

London-Exeter Arrangements.

Entries have already begun to flow in for the London-Exeter run, and forty were received within the first three days after the publication of details. November 20th is the last day on which intending entrants may send application forms for membership to the Secretary (Mr. Southcomb May, 34, Gower Place, London, W.C.1). The actual entries close on December 9th. Early entries have early numbers in their class.

Some improvement has been made in the arrangements at Exeter, and there will be a special breakfast at the garage, which will be in the hands of an experienced caterer.

To reach the new hill on the return journey, White Sheet, a *détour* will be made from Bridport to Beaminster, rejoining the course at Dorchester.

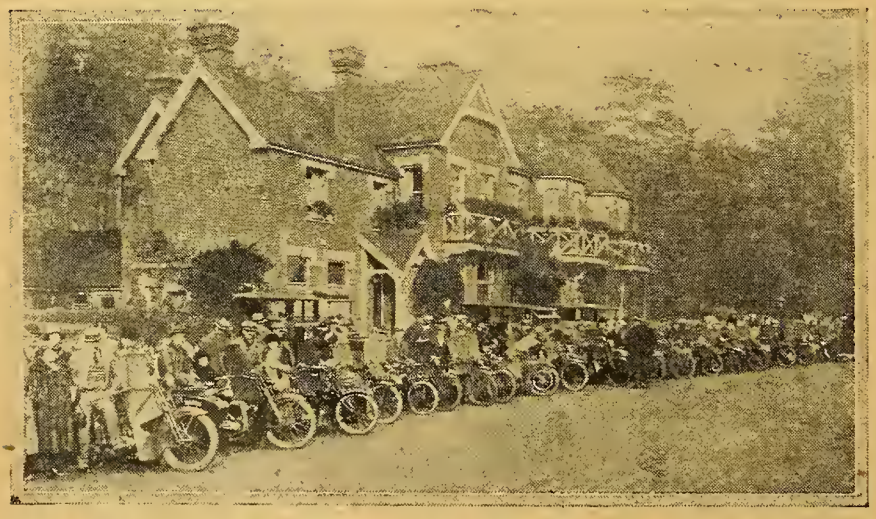
Imports and Exports.

There is an increase of 50% in the October imports compared with the returns of the previous month, and a slight increase against last year's figures. The number of machines imported was 93.

	1920.	1921.	1922.
Value of machines ...	£15,048	£3,344	£3,622
Value of parts ...	11,360	2,253	2,709
	£26,406	£5,597	£6,331

Exports of machines remain fairly consistent with the comparatively low returns of this year, although last month a slight decline was registered compared with the September figures. The total number of machines exported was 447, compared with 2,333 in October, 1920.

	1920.	1921.	1922.
Valuo of machines	£191,857	£35,034	£26,089
Value of parts ...	67,953	26,620	18,751
	£259,810	£61,654	£44,840



DEMONSTRATION OF WEATHERPROOF SIDECARS. More than 70 motor cyclists took part in a rally last week-end organised by the makers of the T.O.M. wind shield. The party outside the White Lion, Cobham, where they were entertained to lunch by Sir Walter and Lady Susan Townley.

NEXT WEEK. Reproduction of the striking coloured cover of next week's (Show Forecast) issue of "The Motor Cycle."

Thrills in the Fog.

Somebody has been complaining that life nowadays lacks the excitement and thrills of long ago. We suggest that they try a thirty-mile night run on a motor cycle over strange roads in a thick fog.

Humbers Introduce a Lightweight.

Yet another firm to introduce a lightweight model for next year is the Humber Cycle Co., Ltd., which for the last year or two has specialised on a 600 c.c. flat twin, but made a very successful 350 c.c. V twin before the war.

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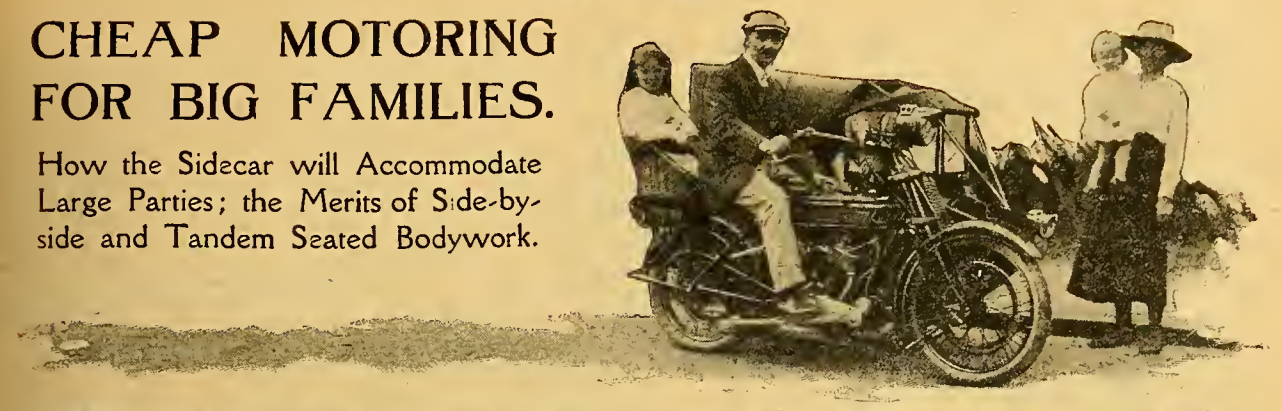
CHEAP MOTORING FOR BIG FAMILIES.

How the Sidecar will Accommodate Large Parties; the Merits of Side-by-side and Tandem Seated Bodywork.



An Enfield outfit, which usually carries a complement of six passengers.

THE first things to seek when purchasing an outfit to carry four, five, or six people are power and room in the sidecar body.

A 550-600 c.c. engine pulling a big load at good speeds will consume almost as much petrol as one of 900-1,000 c.c. under the same conditions. Nothing is more irritating than to feel under-powered against a strong headwind; others beside men with big family sidecars will agree with this.

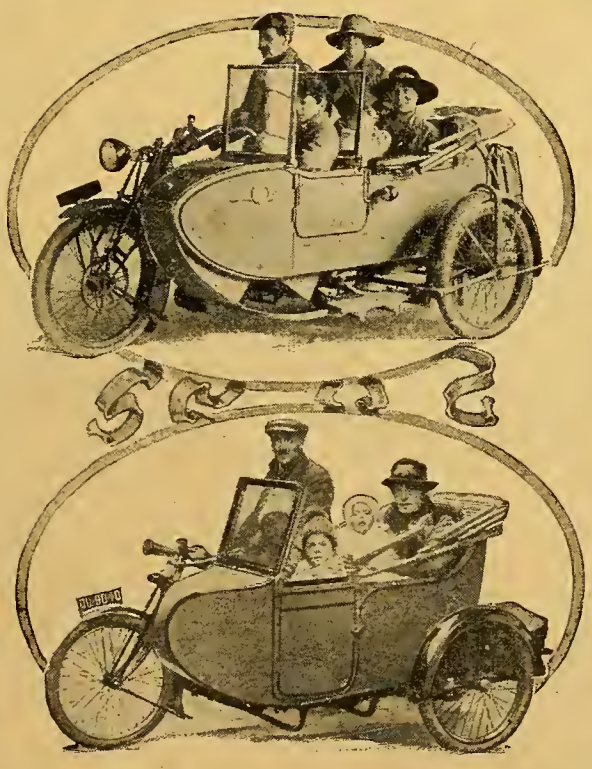
At Least 800 c.c. Required.

The first step, therefore, in the selection of a suitable outfit is to plump for a model embodying an engine of at least 800 c.c.

It can be safely said that all the big modern twin engines and three-speed gear boxes will stand up to any work to which they can be subjected in reason. The same can be said of the rest of the machine if common sense be used, always remembering that sidecar connections and the frame work will receive more strain with a heavily-loaded family sidecar than one of normal size. Alignment, too, should be watched closely, otherwise the tyres will receive abnormal wear, especially the front one.

Opinions differ on the type of body best suited to carry three or four persons. Some prefer the extra wide body, such as was shown by the Royal Ruby Co. at Olympia last year. The majority, however, appear to prefer a tandem seater.

One such outfit which we have seen is arranged with the driver's wife and youngest child occupying the back seat of the sidecar, two other children sitting side by side in the front seat, while the eldest is accommodated on the pillion. This is probably the best method of arranging such a party, and seems preferable to making use of a dickey seat or fixing a seat on the luggage grid in the manner adopted on the A.J.S. The latter method, however, seems to be preferred by the average small boy, who likes it better than sitting in the sidecar—a small boy would, of course, prefer such a place; it is unorthodox, and he can fidget to his heart's content, reach over to read the speedometer, and eat apples and sweets.



These two illustrations speak for themselves, and show graphically how easily big families are accommodated on a sidecar.

Making the Children Comfortable.

The above-mentioned children, incidentally, are rigged up with inexpensive leather helmets at 5s. 6d. each. They do not wake up in the night crying with earache in consequence of the side draughts, which sometimes whistle round sidecar screens. On this particular outfit, however, the owner has also fixed side-curtains on the off side, reaching from the front screen and extending to the rear of the sidecar.

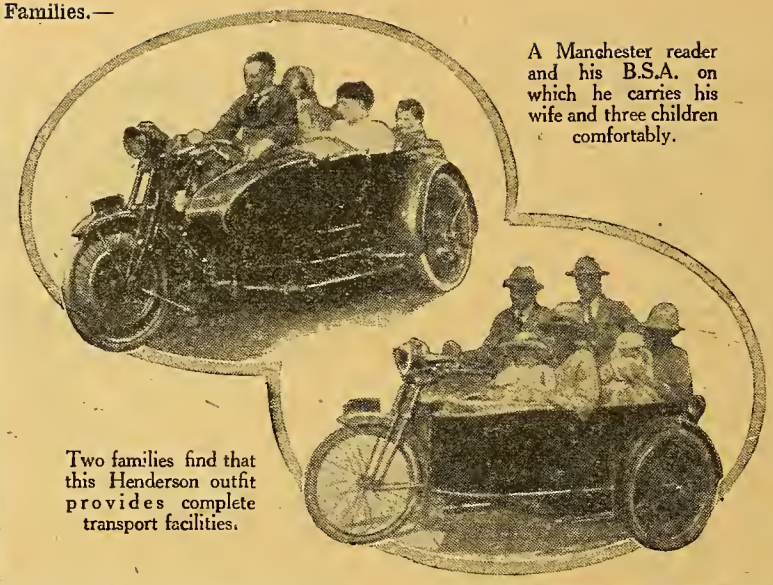
He was at great pains, too, fixing the pillion rider so that the child's legs were not frozen; this is a detail forgotten by hundreds of owners who seat youngsters on the carrier.

Another vastly important thing in connection with pillion riding is often ignored; that is the springing of the seat itself. For small children the springs of a standard pillion seat are usually much too strong, and many youngsters complain of internal pains after a long ride simply in consequence of this. Any pillion seat maker will fit springs to suit a particular weight if asked to do so.

In selecting a family out-

Cheap Motoring for Big Families.—fit the question arises of buying a machine separately and fitting a special sidecar, or of going to a firm which specialises in double seater outfits. One way is no better than the other.

Possibly the complete outfit would be a better selling proposition second-hand, the enamelling of the machine and sidecar is usually more uniform, and the attachments and lugs in most cases are built into the frame of the machine. But these things do not completely outweigh the pleasure of purchasing a separate sidecar possessing particular attractions or advantages which the specialists in sidecars know how to embody.



A Manchester reader and his B.S.A. on which he carries his wife and three children comfortably.

Two families find that this Henderson outfit provides complete transport facilities.

It can be taken for granted that one must motor cheaply if five or six be the usual complement. There is no cheaper motoring; in fact, there is no cheaper travel at all unless it be by excursion train, and sidecar costs may even beat excursion fares if a party of six has to be accommodated.

Although rather paradoxical, the more miles one accomplishes, the cheaper motoring becomes. If one can afford to buy the outfit in the first instance, pay taxation, insurance, and garaging, then it becomes parsimonious to begrudge the actual cost of running. Yet, strangely enough, this is often what happens.

It is ridiculous not to take the very fullest advantage of a vehicle that gives zest to life and enables one to appreciate to a fuller extent this country of ours.

The parsimonious motorist may in an average year cover 2,000 miles in this manner.

	Miles
Summer holidays	600
Say, 30 week-ends and odd days	1,400
	2,000

Rough cost of petrol oil, depreciation, garaging, etc., 5d. per mile.

This averages slightly under 1d. per mile per passenger.

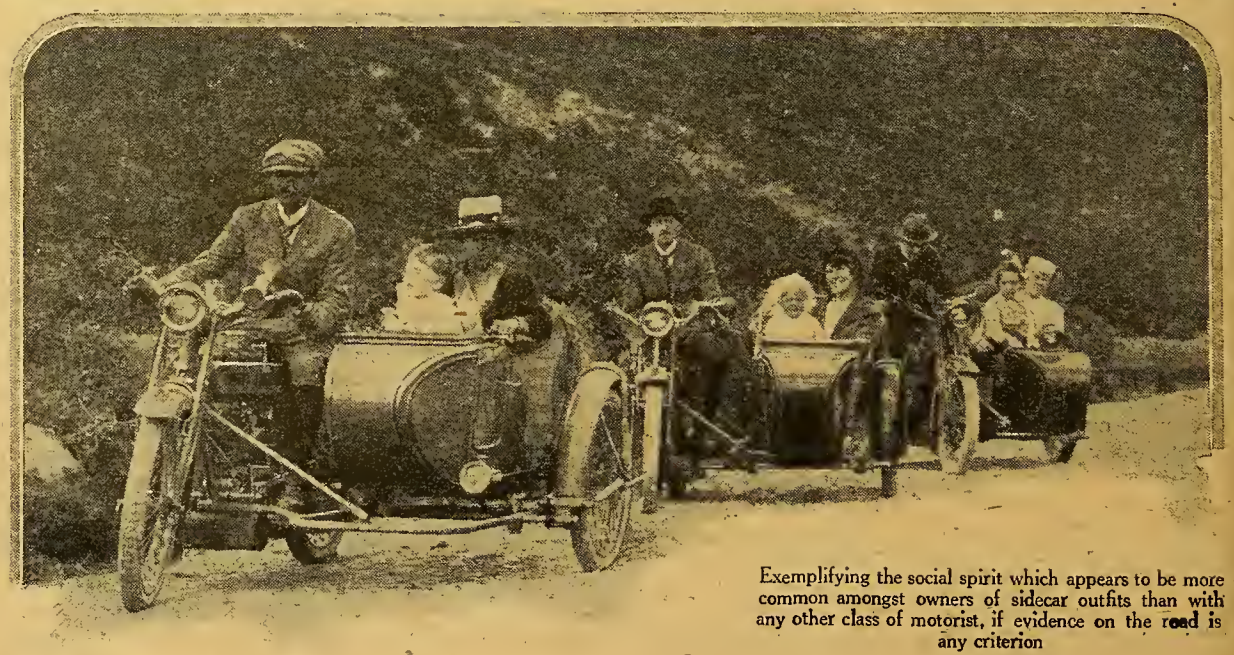
Now if 8,000 miles a year were covered, the cost would be well under ½d. per mile per passenger.

Instead, therefore, of making the sidecar run a special treat, set out on every possible occasion.

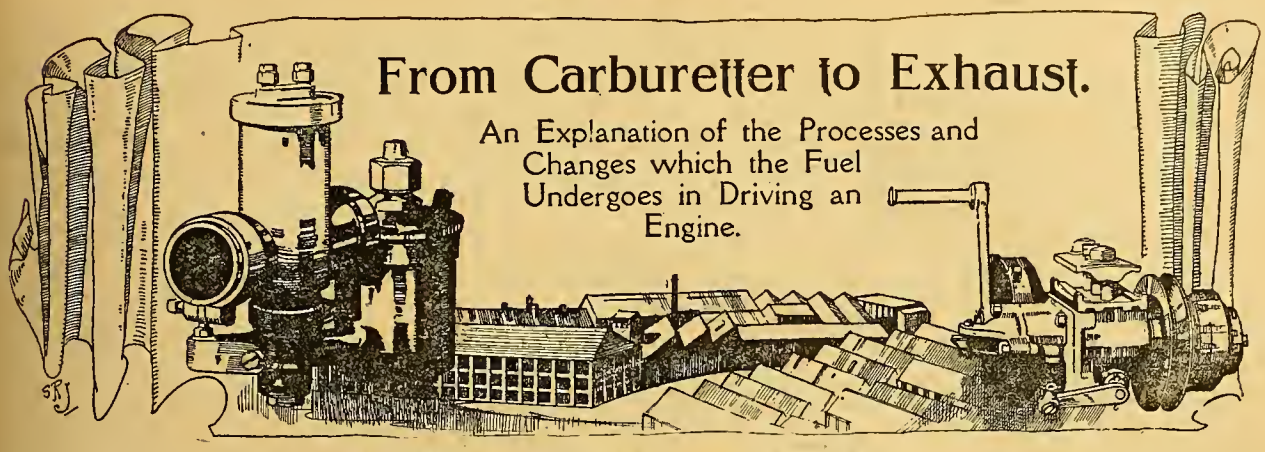
In order to cut expenses to the minimum, all meals should be of the *al fresco* variety; hotels can be ignored if one carries vacuum flasks and luncheon baskets.

Insurance against third party risks, fire, and theft alone need be effected if the owner is a careful driver (and all family men should be).

Naturally, a heavily-laden machine must be kept in good condition; covers, inner tubes, and chains must all be watched to guard against a sudden failure which, when away from headquarters, would incur an hotel bill for six people.



Exemplifying the social spirit which appears to be more common amongst owners of sidecar outfits than with any other class of motorist, if evidence on the road is any criterion



From Carburetter to Exhaust.

An Explanation of the Processes and Changes which the Fuel Undergoes in Driving an Engine.

By HAROLD J. POOLE, B.Sc. (London), A.I.C., F.C.S.

IT is very easy to some people to pour petrol into a tank and hear it end up at the exhaust and to leave the matter at that.

By most, however, a little knowledge is desired as to what happens in between and why, and it is for these that the following description has been written, to throw some light on the business with the aid of recent research on similar problems in other fields.

Carburation.

Since all motor cycle carburetters are now of the jet type, we will confine our attention to this kind only. The mechanical principles involved in this apparatus are so well known that elaboration is unnecessary, but a little illumination on the inner mysteries of vaporisation might not be unwelcome.

It must be borne in mind that no carburetter can supply an indefinite amount of vapour immediately at

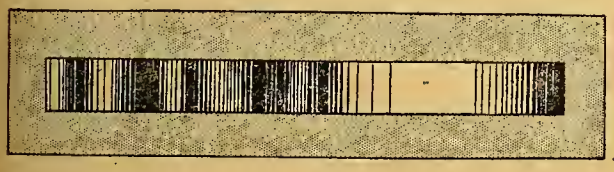


Fig. 1.

the jet; it simply produces a more or less fine spray which may or may not change into vapour subsequently, according to the conditions of temperature and velocity. Now, since it is the vapour that is needed for ignition, the efficiency of a carburetter will depend on the completeness with which the atomised charge is vaporised in a normal engine.

Vaporising the Fuel.

The main factors governing the evaporation of the fuel will be seen from the following conditions:—

(*a*) The fineness of the spray increases with the velocity of the gas past the jet.

(*b*) The rate of evaporation of the fuel is dependent on: the surface exposed by a given volume of the liquid in the spray state, the vapour pressure of the fuel, and the temperature of the air.

This last condition is even more complex still on inspection, because the temperature of the air varies from moment to moment; it is lowered proportionally to the amount of evaporation going on at any point; it is raised by the work done on it during compression and by the hot cylinder walls. The vapour pressure of the fuel depends also on the temperature of the drops and, to a smaller extent, on their size.

All these factors have to be brought into play in a very short space of time, viz., the time of one revolution of the engine, and it would seem that a speed limit would be imposed from the nature of things. We have seen, however, that the fineness of the spray increases with the air speed over the jet, so that the matter is to some extent automatically compensated, since a fine spray evaporates more quickly than a coarse one. But the two do not go in strict proportion, and it is conceivable that the flattening of the power curve of many engines at high speed is due as much to the slow inflammation of unevaporated spray as to air resistance. At any rate, it is, as will appear later, the only tenable explanation of "popping in the carburetter."

Effect of Humidity.

It is often stated that the presence of much water-vapour in the air induces better running, and it seems a fitting place here and now to discuss this effect and to clear up prevalent ideas concerning it.

In the first place, no more than a trace of moisture is necessary to catalyse the combination of petrol vapour and oxygen; secondly, an excessive amount is detrimental *as vapour*, because it is occupying space that might have been filled with air.

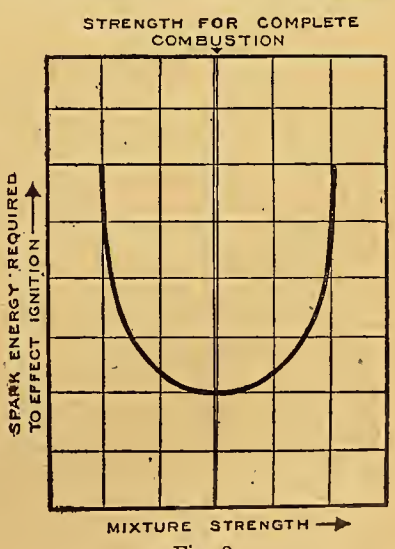


Fig. 2.

From Carburetter to Exhaust.—

Where it is undoubtedly beneficial is when it is present in a cold atmosphere, as mist, and lowers the explosion temperature by its latent heat of evaporation, and at the same time tends to straighten the expansion line of the indicator diagram. On theoretical grounds, at any rate, the use of "humidifiers" of the type where a coarse spray is sucked into the engine is strongly advised.

Igniting the Charge.

A very great deal of valuable work has been done in recent years on the ignition and explosion of inflammable gases, and while, in the main, this work has been devoted to problems connected with the safety of coal mines, yet there is much in it that is directly applicable to internal-combustion engines.

Since all motor cycle engines are electrically ignited, we will consider this in some detail. If the spark from an induction coil or a magneto be photographed on a rapidly revolving film, so that the picture is drawn out into a strip, we get in general an appearance such as is illustrated in fig. 1 on the previous page.

The explanation of this is that the first part of the discharge is rapidly vibratory, and resembles the discharge of a Leyden jar, while the last part is continuous, and resembles the "break-flash" or arc which occurs when a wire carrying a current is broken. The first part is known as the "capacity component," and the last as the "inductance component" of the spark. It has been very definitely shown that the portion of the spark responsible for igniting the mixture is the capacity component, and that the inductance component is largely inoperative. This is probably due to the much greater time-concentration of energy which occurs in this part of the discharge.

The Explosion.

It is in relation to the actual combustion that the most interesting research has been done. It has been shown, first of all, that the ignition of an inflammable gaseous mixture at atmospheric pressure is followed by three phases of transmission; first, a relatively slow uniform movement at about one foot per second, which gradually develops into a vibratory motion, which in turn develops into a detonation wave travelling at various speeds up to the velocity of sound. The work in question was carried out in connection with mining problems, and the question of compression naturally did not arise. It would seem safe to assume, however, that at the higher pressures utilised in internal combustion engines the same sequence of events would obtain, but that the speeds would probably follow a "square" law of pressure (except the detonation wave, of course).

The reasons for the existence of three phases are fairly simple. On ignition the gas round the plug points burns, and so raises the temperature of the surrounding layer of gas to its ignition temperature, and so on, so that there is a gradual inflammation spreading away from the igniting point at a speed

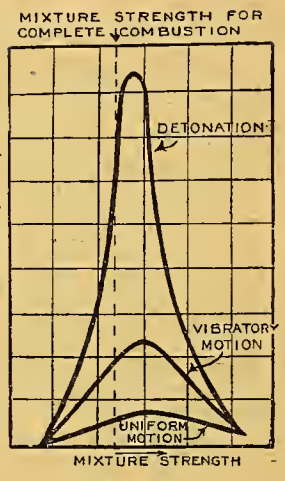


Fig. 3.

largely determined by the thermal conductivity of the gas. This cannot proceed very far before the cylinder walls are reached, and a certain amount of "bounce" is imparted to the gas, causing a vibratory motion. As this vibratory motion becomes stronger and stronger turbulence sets in, and the molecules of the gas are jumbled together with such force as to cause what I will loosely call "frictional ignition," which proceeds with velocities up to that of sound.

From this it will be seen that the real reason for advancing the spark considerably past top dead centre is to enable the slowest part of the ignition to be effected before the piston reaches the top of its stroke. It will be apparent also that, from the point of view of obtaining a fast-running engine, there should be a certain amount of turbulence in the cylinder, so that the "uniform movement" is reduced to a minimum.

Mixture Strength and Ignition.

All strengths of mixtures are not ignited with equal facility by an electric spark. The general rule so far observed is that the most easily ignited mixture is that in which the combustible gas is just completely burnt without any excess of air.

The manner in which the two vary together is shown in the curve, fig. 2, where the minimum strength of the capacity component of the spark is plotted against the mixture strength that it just ignites. The lowest point on the curve is near the theoretical mixture to obtain complete combustion. It will be seen that both very weak mixtures and very rich ones are equally difficult to ignite.

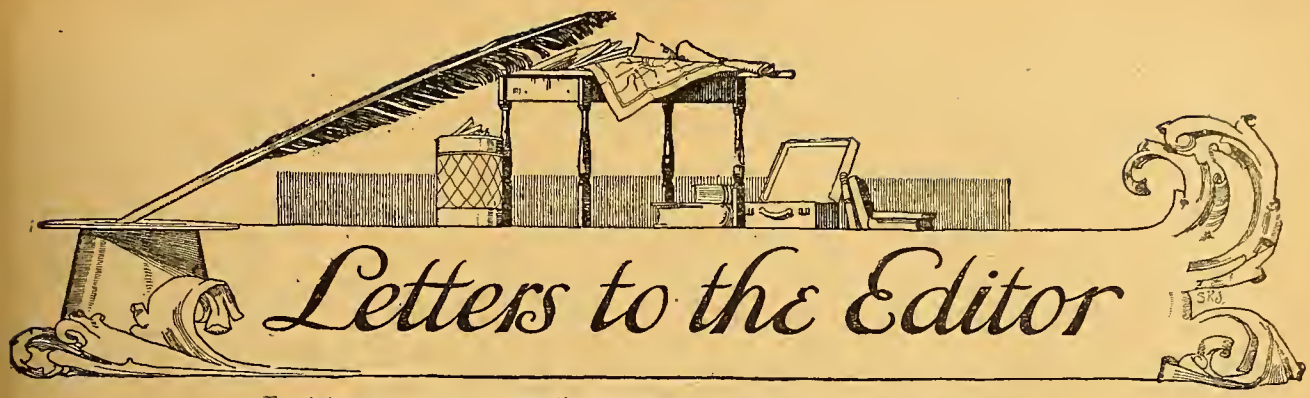
It has been shown how complex are the phenomena of ignition and inflammation, and it will be readily realised that the variations of the latter with changing mixture strengths are more complicated still. A typical case is illustrated in the curves in fig. 3, where the rates of the three phases are co-ordinated with the mixture strength.

The fastest rate, it will be seen, is obtained with a mixture somewhat richer than that which gives the greatest thermal efficiency. The reason for this is that the oxygen of the air is very much diluted with nitrogen. In an atmosphere of pure oxygen the highest rate would be obtained with the "correct" mixture. The inference to be drawn from this is, of course, that for very high engine speeds the carburetter should be set to give a richer mixture than for normal work.

THE MOTOR CYCLE

SPECIAL SHOW NUMBERS.

Next Thursday, Nov. 23rd. FORECAST AND GUIDE.
Nov. 30th. .. .. The Show Report.



The Editor does not hold himself responsible for the opinion of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

SCRAP THE LOT!

Sir,—I suggest that every motor cyclist visiting Olympia and seeing a motor cycle with a front rim horseshoe type brake, lay his hand on it and say to the salesman, "Scrap it!" C.T.P.

Birmingham.

ACCIDENTAL TUNING.

Sir,—It is a pity "Bemsist" keeps the secret of his magic touch; perhaps he had a hand in tuning "Zenooth's" 'bus?

I once added 15 m.p.h. to a 1911 Rover by a very simple alteration, but I give my secret to all and sundry for what it is worth.

Whilst decarbonising I accidentally knocked a piece off the skirt of the piston as large as a penny (with a King Dick!). As it was a sturdy piston, I assembled the engine with it in this condition and found it not worse, but many miles an hour better, and the old handle-bar vibration missing. I had accidentally perfectly balanced the old engine.

At some speed trials I astounded even myself by doing the flying ½ mile in 20⅘ secs. with a 5 to 1 gear. Somewhere about 58 m.p.h. and a good 3,000 r.p.m. I trust none of "Ixion's" pet novices will adopt this as a tuning hint, but will give then a good tip. Fit a 28in. wheel speedometer on a 26in. wheel machine and it sends the speed up nicely. That's how my Squirrel does 72 m.p.h.

Liss. "BEMOOTH."

MINIATURE SPARKING PLUGS.

Sir,—In your October 26th issue of *The Motor Cycle* I see a paragraph about miniature plugs. I may say I have had two Bosch plugs of this type since long before the war was over—and was offered, not once, but many a time, 10s. each for them. But I would not part.

T. WALKER.

BALLACHULISH FERRY.

Sir,—With reference to Mr. E. M. Wright's article in *The Motor Cycle* of the 2nd inst., I travelled on the roads he mentions several times during the early weeks of October. The distance from the north to the south side of the ferry is 25 miles, so that the detour is a considerable one, and is not worth while for cars, as the road on the north side is extremely narrow and steep.

I think the expense of making a feasible motor road from Fort William to Kinlochleven would be enormous.

On the whole, I fancy unless a bridge is constructed across the very narrow part of Loch Leven, the ferry will function for many a year to come. At the same time, chars-a-bancs did go round the existing road this summer.

DUNSTAN READ.

RACE TRACKS OF LIMITED USE.

Sir,—"Nortical" strikes a dismal note in his letter respecting the new race track at Derby. I believe the first consideration for building the track was the very commendable one of finding work for the unemployed. One of Nottingham's unemployment schemes is to make the river Trent navigable to the sea. Consideration for the ratepayer prevents the scheme being developed to allow for the passage of ocean liners. Most of the unemployment schemes fall short of the ideal for the same reason. If, as "Nortical" suggests, the only likely users of the track will be private owners, using sports models, surely this in itself should justify the building of it. I can assure "Nortical" that private owners are becoming "fed up" at padding competitions for the benefit of riders using freak machines, the makers of which immediately announce their success over so-and-so many starters. The use of freak machines is always denied, but we have it on the authority of the editor of a technical journal that the efficient life of a sprint engine on full throttle would probably be well under 100 miles. This fact cannot be too widely advertised.

I cannot agree with "Nortical" that the Derby track will provide only a third-rate show. In Clipstone Drive, Notts., we have one of the fastest straight stretches in the kingdom, and upon which on two occasions this year the flying half-mile has been covered under 18 secs. To the keen enthusiasts the performances were thrilling, but to the bulk of the 4,000 spectators, bored stiff by a repetition of single runs against the watch for hours on end, the brilliant performances were not appreciated. For this reason I consider that the Derby track, even allowing for slower times but enabling the spectators to "spot the winners," will prove a thorough success. J. SIMMONDS,

President, East Midland Centre A.C.U.

T.T. SPEEDS ON THE ROAD?

Sir,—I thank all my incredulous critics for their gentlemanly remarks. ZENOOTH.

Banstead.

Sir,—Being a rider of a 249 c.c. sports Velocette, it would be foolish of me to claim high maximum and average speeds; I have to be content with 45-50 m.p.h. and 27-32 m.p.h. respectively.

However, recently on a journey of 120 miles I passed fifteen machines up to 1,000 c.c. and was passed by only two myself, one being of 988 c.c. and the other 349 c.c.

My average was 29 m.p.h., and it is only natural that I should wonder where these speedmen, such as "Zenooth," take their daily jaunts; I have never met them.

A. H. HAWES.

Sir,—"Zenooth" seems to have roused a hornet's nest of doubters around his head regarding his average speeds. In consequence I feel obliged to champion the cause of the oppressed, and express the view that his speeds are quite within the grounds of possibility.

On several occasions I have covered the distance from Newcastle to Edinburgh (*via* Berwick, 120 miles) in three hours, *i.e.*, 40 m.p.h. on a 500 c.c. N.U.T. (touring) laden with various impedimenta in the form of Tan-Sad, suit case, and box, etc.

On one occasion I did 80 miles at an average speed of 46 m.p.h., allowing for a compulsory interview with the police, and ended up in the ditch with a large hole in the

back tyre, since when I have restricted myself to more careful driving.

Another "average" may interest your readers. I set out from the Lake district to Newcastle, accompanied by a friend mounted on a prehistoric two-stroke, which fell to pieces on the least provocation. Being one of the diehard brigade, he steadily refused to be towed, or adopt any other means of locomotion. The journey (90 miles) occupied 27 hours—average 3.3 m.p.h. Is this a record?

R. STANLEY ROBINSON.

Sir,—I think we must congratulate "Zenooth" on his marvellous imagination, if only because he draws forth such an excellent example of humour. I confess I looked forward to *The Motor Cycle* of November 2nd because I knew he would get it in the neck. I rather fancy he was pulling our legs. If not, then he deserved more than he got.

Preston. 20 MILE AVERAGER.

Sir,—I think that it is quite possible that "Zenooth" averaged nearly 50 m.p.h. from Barnet to Cambridge. In spite of its improbability, I make this statement for three reasons.

Firstly, I know "Zenooth" personally; secondly, I have ridden the Zenith in question myself; and thirdly, I have several times ridden pillion on it with "Zenooth" driving.

The Zenith was a standard twin sports model, but I can definitely say that I think it was considerably faster than most other machines of similar make and type. Anyway, in the days of its youth it did well over 70 m.p.h., reckoned both by Bonniksen and by timing by four people.

Epsom. H. 9941.

Sir,—If "Zenooth" happens to be the rider I saw pass the "Red Lion," Hatfield, at about 40 m.p.h. a few months ago, I quite believe his statements to be true, provided the machine is capable of over 65 m.p.h. on the level.

I cannot quite agree with "Bunseam," as I would rather meet a rider like "Zenooth" than some of the week-end, summer riders who potter about and need to think twice in an emergency. C. B. BICKELL.

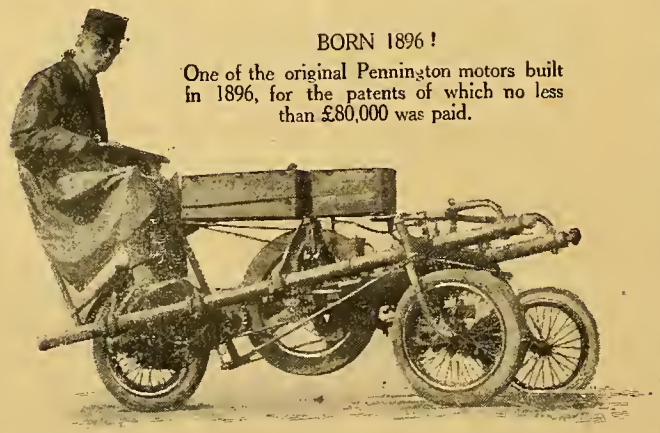
TOOL KITS ON SPORTING MACHINES.

Sir,—"Ixion," being privileged, airs a grievance *via* his "Occasional Comments" anent the paucity of tools in the one-tool-bag machine, and, lest such stinginess embitter *The Motor Cycle's* readers against all machines fitted with one tool bag only, I dash to protect the makers of the long-stroke Sunbeam from any such animadversion, and append a list of the tools contained in their solitary tool box:—

1 Lucas girder spanner.
3 ring spanners.
Set box spanners and tommy bar.
Pliers.
Screwdriver.
Chain adjusting spanner.
Valve cap and exhaust pipe spanner.
Magneto sprocket withdrawal tool.
Magneto spanner.
3 tyre levers.
Spare carburetter jets.
1 open-ended set spanner.
1 gudgeon removal tool.
A grease gun.

The spanners really *fit* all the nuts on the machine, and the only necessary additions are a thin set spanner for the tappets and a chain rivet extractor. Customary disclaimer.

A. G. WILLIAMS.



THE ETHICS OF HANGING-ON.

Sir,—Oh! Benedict, why damn a perfect case in ethics with scientific inexactitudes? Sure, tractive resistance is *expressed* as so many pounds per ton, but it is not overcome so easily. You take on one of the unemployed to "push up against the wall" of the garage for a day, and if he hasn't moved it—never mind his feelings—give him nothing at the end of it, because he won't have done any *work*. You'll win the resulting case at the local court. Work is quite another thing to force, and is only done when the point of application of the latter is moved; energy is the capacity for performing this feat, and power the rate at which you perform it. The rest follows as easy as you please.

The tractive force acting against your cyclist persecutor is a constant right enough, but double his speed—then the rate at which he overcomes this is doubled, his energy output is doubled, and so is the power he is called upon to expend, and "the guts" of a cyclist (or a motor or an earwig) is judged by the magnitude of this power and its stamina, by the length of time for which it can keep it up. SCHNAPS.

Schiedam.

CASTROL OIL FOR TOURING.

Sir,—What effect has Castrol oil on bearings, piston, cylinder, etc., when the machine is used for touring? I have recently started to use Castrol "R" in a 349 c.c. A.J.S. which is used for fast touring and the running results seem to be very good, but several people have warned me that I might expect trouble with the working parts of my engine by using this oil for fast touring. A. H.

We submitted this letter to the makers of the oil in question, Messrs. C. C. Wakefield and Co., Ltd., who have replied as follows:—

> "If fast touring consists of tearing along the road all-out, there is very little doubt that Castrol 'R' is the safest oil to use on this particular engine. In so doing, however, we express a pious hope that the oil will not be pumped into the engine at the same rate as the engine is travelling. One takes it that if a rider can blind along all-out without spoiling his engine he knows when it requires oil, and does not give it any until it requires it. With Castrol 'R,' 'limit the feed and eliminate the carbon.' With Castrol 'C' a bigger feed can be given, but with 'R' it is better to limit the feed because it will lubricate better with a little than with a lot.
>
> "C. C. WAKEFIELD & CO., LTD.,
> "E. A. EVANS, Chemist."

THREE-WHEELERS IN THE SIDECAR T.T.

Sir,—With a few exceptions, it was rather significant that the replies to the query with reference to the inclusion of the three-wheeler in the sidecar T.T. should have been abruptly in the negative, and as this was followed by no attempt to explain why, it seems to leave the impression that it is either too formidable an opponent, or that its roadworthiness in such an event would be a source of danger.

It cannot be said that this class of vehicle has ever shirked competing on equal terms with the sidecar, and the English Six Days Trials have proved conclusively that it can hold its own both for speed and reliability against all comers in such events, and as regards hauling and its attending dangers, I do not think the three-wheeler has been the chief offender in this respect.

Undoubtedly in such a race and such a course as the I.O.M. circuit, cornering would call for careful and skilful driving, but where the element of danger is concerned, I would much prefer being the passenger in a three-wheeler than in a sidecar.

This brings us down to the subject of the aims of such events. If purely to supply the public's lust for sensation, why not make it so by every means possible, but if the objective is to supply data "to improve the breed," then let it be the means of showing up the advantage and disadvantages of the types.

Although speed would be the deciding factor, it should be borne in mind that where this is obtained at the expense of the passenger and regardless of the exposure to which

he is subjected, some limitations in this respect would be necessary, otherwise sidecars similar to those we see at speed and hill-climbing events would be included.

As regards the limitations of capacity, the big twin will always hold its own in point of favour regardless of the question of economy where speed, comfort, and reliability are the aims, and I feel confident that much disappointment would be felt if this type of vehicle is left out of a class in which it has so ably maintained its reputation.

W. A. CARR.

Sir,—It is a well-known fact that on Brooklands Track three-wheeled cycle cars are unsafe owing to the way they swerve about, and as the track is 100 feet wide, I need hardly pass any comments on what is likely to happen if these cars are included in a race for sidecars on the narrow and winding roads of the Isle of Man.

D. R. O'DONOVAN.

Sir,—Thinking motor cyclists will do well to follow carefully and note the opinions of the more prominent personalities in the trade on the sidecar T.T.; the only to be expected divergence of expert opinion on the question of admitting the three-wheeled cycle cars could not be other than highly instructive. At the same time, the broader view taken by Mr. F. W. Giles (A.J.S.) and Mr. F. W. Barnes (Zenith) will go farther favourably to impress and give confidence to all of the unbiassed motor cycling public, and the great unplunged—a public more concerned with obtaining a high standard of comfort and service at a comparatively low cost than upholding a tribal fetish, whether it be sidecar or cycle car.

Such personalities as Mr. Giles, who does not fear, come what may, for the reputation of the progressive A.J.S., and highly successful inventive engineers like Mr. Barnes, whose eye is ever watchful for the slightest movement on the horizon of progress, mean much in the life of the everyday motor cyclist. For it is certain that if the race be not crabbed by the hidebound at the outset, and the A.C.U. attune its ear to the faint, though consistent, murmur of the multitude, there is much to be learned. And it is also most likely that whatever the motor cyclist of 1924 may have the good fortune to find himself on (or in), his thanks will be turned to one or other of those firms that had given the best hitherto.

EX. D.R.

Bournemouth.

AUTOMATIC SIGNALLING.

Sir,—As a motor cyclist, and also an engineer, who has made a study of automatic railway signalling for several years, I cannot see how you arrive at the conclusion that automatic signalling has only met with limited success on railways. There are several thousands of miles of railways in the U.S.A. and Canada equipped with automatic signals, also there is a law in several States in the U.S.A. compelling the railways to install these signals

I might also point out that it has been found to date that it is impossible to install automatic signals where two railways cross one another. Interlocking plants are used at these points, which are manually operated, but probably electrically locked.

C. D. BROADBENT.

STILL LESS EASY PAYMENTS.

Sir,—Referring to "Zenith's" letter on the subject of easy payments (for pedal cycles), I suggest that he check the figures of his example.

My rough figures are:—Cash price, £13 9s. 6d. Deposit, £1 7s. 5d.; 12 payments (monthly), £1 7s. 5d.; total payments £17 16s. 5d.

This means that £4 6s. 11d. interest is paid on a loan of £12 2s. 1d. If the principal were constant the interest would be about 36 per cent. as stated by "Zenith," but as the principal is diminished by £1 7s. 5d. per month the rate of interest is really about 86 per cent.

"PENMAN."

Dumfries.

ORGANISATION OF AN OPEN TRIAL.

Sir,—As a trade entrant in the Cheshire Centre A.C.U. Open Trial, I should like to endorse the remarks of your correspondent Mr. H. A. Leach about the organisation of this event.

JOHN W. MOXON.

Sir,—I feel I cannot help but endorse the remarks of your correspondent, Mr. H. A. Leach, about the organisation of the Cheshire Centre Open Trial.

The sooner the A.C.U. wakes up to some of these organisers of open trials the better. When one sees the Reliance Cup Trial, run by the Liverpool club, which has been an open event for years, run as a closed event, and then sees the Cheshire Centre Open Trial, one comes to the obvious conclusion that the governing body is neglecting its job.

ADSUM.

Birkenhead.

COMPOSITION OF CARBON DEPOSIT.

Sir,—The article by Mr. G. Middleton dealing with the composition of engine "coke" is interesting.

May not a fair proportion of the iron have come in through the carburetter also, since road dust would consist mainly of an iron-contaminated silica?

It would be interesting to perform a similar analysis of the carbon deposit from an aluminium alloy piston, etc. This might give an idea of the wear of some of the "hotstuff" engines.

INTERESTED.

Essex.

60 M.P.H. 350 c.c. MACHINES.

Sir,—I read with interest the letter from your correspondent, Mr. G. Rosekelly, on "The Charm of the 1,000 c.c. Solo Mount," but feel I must voice a protest against the belittling of the 350 c.c. bus.

I own a 1922 350 c.c. side valve single and feel quite sure that its standard of performance is not only "up to the performance of even an old 500 c.c.," but *superior* to many *modern* 500 c.c. mounts, and there are many "350's" that can equal it.

A "standard" machine in all respects, I find it comfortable, clean, neat, and as far as speed goes I think it does all an ordinary rider requires, *i.e.*, 60 m.p.h.

If "even an old 500 c.c. single" (standard) has a higher standard of performance than many "350's" I have in mind I shall feel inclined to eschew all matters motor cycling and subscribe to *Fur and Feather* or *Weldon's Home Journal* It's safer!

KURUMBA.

Northumberland.

EYE PROTECTION FOR THE SPECTACLED RIDER.

Sir,—It may interest some of your readers to know that, after having tried several makes and methods, we have quite satisfied a number of our customers by supplying them with the Willson goggles, style A1, fitted with their lenses.

The advantages are, that the correct centres can be got, a stock lens can be used (they will just take a 47 mm. lens, which is the largest stock lens made), the cost, in consequence, is not too great, and lastly, the metal case they fit is very compact. Usual disclaimer.

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REVERSING BRAKING PRACTICE.

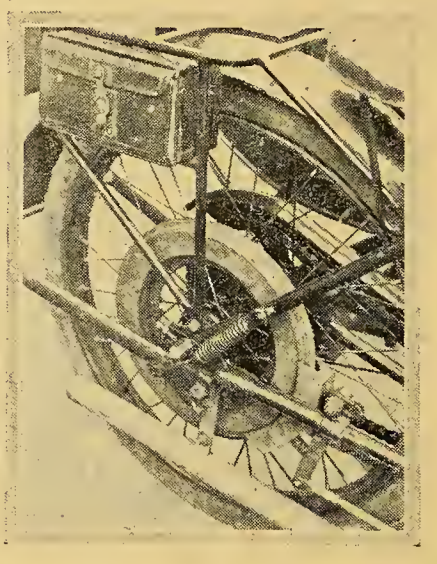
Fixed Metal Shoe and Revolving Friction Element for Brakes. Patent Granted to Motor Cycle Research Association.

A RADICAL alteration in motor cycle brake design has recently been patented which may have considerable bearing on future productions.

This new brake takes the form of a belt rim brake with the materials of its principal members reversed, that is to say, that in place of the dummy belt rim a Fibrax drum is employed and is clipped to the wheel spokes; this drum is V-shaped in section near its periphery, the V engaging in a correspondingly shaped metal brake-shoe.

To Decrease Wear.

Perhaps the chief advantage of this arrangement lies in the fact that the large surface of friction material exposed to the air prevents over-heating and consequent glazing, while the actual area available for braking purposes can, of course, be made the same as with the normal type of brake. In addition, the full diameter drum is naturally less subject to wear than a comparatively short shoe lining of the same fabric. The efficacy of this brake is beyond doubt, and we have had an opportunity of testing it in action on a 490 c.c. Norton sidecar and of making some comparatively severe tests.



An experimental brake with a metal block engaging a fibre drum.

Even when travelling at high speeds the machine can be pulled up quickly but smoothly without any symptoms of harshness or heating of the block. It is, however, on long hills that the new system shows to its greatest advantage, for it is claimed that there is no perceptible decrease in efficiency, however long the descent.

Our photograph shows the arrangement of the experimental brake, which can, of course, be applied to either front or rear wheels. Although neat in appearance even at this early stage, both drum and shoe will be improved in this respect without impairing the efficiency of the brake.

The brake is the patent of the Motor Cycle and Cycle Car Research Association, by which body it has been extensively tested.

This device is the first practical evidence of the activities of the Research Association, which promises to be of great assistance to its members, among whom are many of the best-known motor cycle manufacturers.

Presumably inventions patented by the Association will be available under licence to all its members.

SIMPLE FRAME SPRINGING.

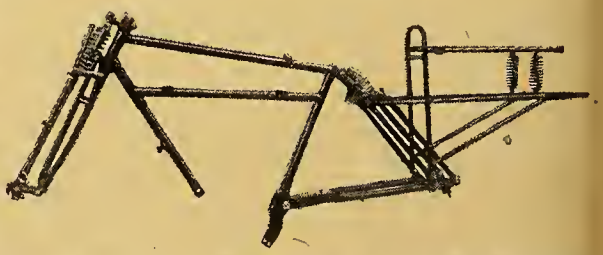
Re-designed Warner Device for Front or Rear Suspension.

OPERATING on the parallel ruler principle, a simple spring frame has been devised, and will be marketed in the near future, under the name Warner.

In essentials the frame is not new, since it has been produced previously in the form of an attachment for existing machines. Some difficulty was found in the early stages in making the attachment in any way universal, and, though quite a number of conversions have been in use with every satisfaction, it was decided to redesign the frame so that it might be fitted to almost any machine.

In its latest form both the complete frame and forks, working on a similar principle, are manufactured. The wheels are carried by separate girders linked to the main forks at top and bottom. A compression spring is employed to absorb the shocks, and the amount of compression is variable, to suit the weight of the rider, by means of a simple adjustment. In addition to this, the links are carefully designed in order to exclude dust, and lubricators are fitted wherever necessary.

The carrier also is hinged at the front end and sprung on coil springs at the rear, though the rear mudguard may be rigidly attached to the frame members at all necessary points of support. Both forks and rear frame may be obtained as separate units if desired, the address of the manufacturers being the Vowels Engineering Co., 237a, Corporation Buildings, Foleshill, Coventry.



Parallel link action for front and rear forks springing is employed in the Warner springing, which can be adapted to existing frames.

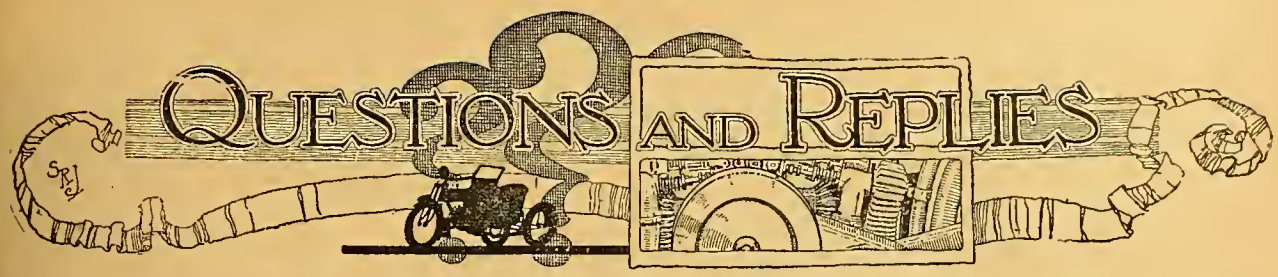
FOUR-STROKE VINDEC LIGHTWEIGHT.

CONSIDERING that the Vindec motor cycle is marketed by the well-known firm of Brown Bros., it is not so well known to the present-day motor cyclist as it deserves to be.

While not departing a great deal from conventional lines, the 1923 lightweight model has a very distinctive appearance, as visitors to the forthcoming Olympia Show will appreciate. Its engine is a J.A.P. of 292 c.c., the bore and stroke being 70 and 76 mm. respectively, and is accommodated in a neat frame having a sloping top tube. The equipment includes an Amac carburetter, M-L magneto, Druid forks, Sturmey two- or three-speed gear box, and 26×2¼in. Dunlop tyres.

Large aluminium footboards turned up at the front ends and exceptionally wide mudguards are fitted.

NEXT THURSDAY! "THE MOTOR CYCLE" FORECAST AND GUIDE TO THE OLYMPIA SHOW.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

NEW VALVE SPRINGS.

? The mileage of my machine is about 4,600. Should you think new valve springs are necessary? The engine has done about 1,000 miles since last being decarbonised.—E.S.B.

Although the running would probably be improved by new valve springs, they should not be necessary unless those now in use show distinct signs of having been overheated.

USE OF PROFESSIONAL NAME.

? Am I in order in having my driving licence in my professional name, which I have now used for two years? It is not legally my real name, but I have a banking account in it.—N.B.

A driving licence should be in the applicant's correct name, and not in his professional or trade name. A driving licence is essentially a personal matter, and anyone who drives, for example, on behalf of a firm or company would have his own licence to drive, in his own name, although possibly the firm might pay for it. The form requires that the applicant's full name must be given, and this means his real name, and not an assumed or trade name.

NOTIFYING CHANGE OF OWNERSHIP.

? Ten days after purchasing a second-hand machine I was summoned for not having notified the registration authority of the change of ownership before using the machine; it was registered for the year, and everything else was in order, and the summons was issued after my own admission that I did not notify the registration authority till five days after purchase. Rule eight on the registration book does not state *when* the purchaser need notify the registration authority; moreover, there is no penalty mentioned for omitting to do so, though it specifically warns the seller of such penalty. Is there any ruling on this point? I should be extremely glad if you would give me your opinion, as I cannot see any justice in being fined for one's own honesty. Even now I have not had the registration card sent, and it is two weeks since the purchase.—H.R.L.

The regulation dealing with the registration of motor cycles states that on a change of ownership, either the old or new owner shall give particulars of such change to the authorities. If the old owner gave notice cancelling the registration and the new owner did not immediately apply to have it continued, the registration would be cancelled altogether. The regulation also states that notice of such change may be given before the change is actually completed, to take effect from that date. If these regulations are not complied with the registration is void. After you had purchased the machine you should have at once applied to have the existing registration continued. If you did not do so you are liable to be fined, unless the vendor did it. No time is mentioned, and it is a question for the justice whether five days delay is reasonable or unreasonable.

Important Dates.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London–Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.

"THE AUTOCAR" THE COMPLETE JOURNAL.

Every phase of automobilism is embraced by "The Autocar," the sister journal of "The Motor Cycle."

Light, medium and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interest of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

EVERY FRIDAY . . . . . FOURPENCE.

SPEEDING UP A FLAT TWIN.

? Wishing to tune my 348 c.c. Douglas for speed, do you think that aluminium pistons and drilled connecting rods would effect an improvement? If so, would it be necessary to re-balance the engine? The carburetter is an Amac. Could I obtain special parts for it, and do you think that the machine would stand a higher gear than that at present fitted, *i.e.*, top 5½ to 1, low 8½ to 1?—J.R.

Tuning for speed is a matter for continual experiment and test, and although use of aluminium pistons and drilled connecting rods, special cams, etc., is generally made by speed men, it does not follow that you will get the results you desire without a vast number of experiments, some of which may be far from successful. With a flat twin it might not be necessary to re-balance after fitting lighter pistons and connecting rods, especially if the variation in weight from the standard fittings is not very great. You should fit the biggest jet possible in the carburetter, and obtain a speed model cam from the makers of the engine; also gear up as high as possible, experimenting with different ratios; time the spark, again by experiment, to the maximum advance possible.

STARVED ENGINE.

? My engine runs perfectly up to 26 m.p.h., but over that, or if I come to a small hill, it misfires and will not pull, but it goes better as soon as I close the throttle a shade. If I have anyone on the pillion seat it is much worse. The machine is a 1916 349 c.c. A.J.S., and everything seems to be in good condition; compression is good.—A.W.

Judging from the description you give, which is not very detailed, we should be inclined to recommend a thorough overhaul of the engine. The symptoms indicate also a restriction to the fuel supply, either at the jet (which may be too small) or in the delivery system. See that the petrol pipe, tap, and carburetter, and any gauzes or filters, are quite clear

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"G.F.L." (Surbiton).—Paragon folding sidecar: safety and detachability.

"A.B." (King's Lynn).—Enfield twin, 1919 model: suitable lubricant.

"J.W.R." (Edinburgh).—998 c.c. Indian, 1914 single gear and clutch model: suitable economical carburetter, speed, tuning hints.

"A.B." (Shipley).—225 c.c. Royal Enfield: reliability as an all-weather mount, controllability.

"D.S." (Barton-on-Humber).—750 c.c. 1919 Rudge Multi: ease of cornering, tendency to knock, magneto adjustment.

"H.M. 2765" (Forest Gate).—292 c.c. Allon: speed, consumption, steering.

"L.W.B." (Croydon).—348 c.c. Douglas, 1921 three-speed: Amac carburetter, care of gears.

"P.A." (Brigg).—Carden, 1921 model: cleanliness, tyre wear.

"H.R." (Hulme).—348 c.c. Douglas, 1915 model: tuning hints and suitable carburetter (other than Amac) for speed.

"H.J.B." (Tottenham). — 596 c.c. Indian Scout and 500 c.c. N.U.T.: performance with sidecar.

"A.S.P." (Wilts.).—Binks three-jet carburetter on 976 c.c. Bat sidecar: slow running; acceleration; consumption.

"A.W." (Birmingham).—Extra air tap to prevent four-stroking on two-stroke machine.

"G.P." (Wimbledon Park).—998 c.c. Harley-Davidson, electric model: mechanical and driving hints.

"J.V.S." (Newcastle-on-Tyne). — 349 s.c. sports A.J.S.

"L.L." (Brondesbury).—Johnson's carbon remover.

"F.H." (York).—633 c.c. Norton sc., 698 c.c. Raleigh sc., 799 c.c. A.J.S. sc., 654 c.c. Quadrant sc., 598 c.c. Beardmore-Precision: performance in hilly district with "three up" (30 st.); suitable carburetter.

"S.S." (Cambridge).—486 c.c. Scott Squirrel: speed hints; most suitable plugs.

SPARKLETS

British Single's Success in Canada.

A well-known Canadian rider, Geo. Orange, captured the five miles open amateur championship recently at Ontario on a 499 c.c. Triumph.

Gear Box Efficiency.

On the occasion of his recent successful record-smashing attempts, H. Le Vack used a Sturmey-Archer gear box on his 998 c.c. Zenith-Jap.

Speed Trials Amendment.

We are asked to state that in speed trials held last month by the Stalybridge and District M.C., C. M. Needham was first and second respectively in the standing and flying start classes.

Plugs for Hot Engines.

Ninety-nine per cent. nickel electrodes, not 90 per cent., are used in the Hobson sparking plug, recently described "Among the Accessories." The price also has been reduced from 5s. to 4s.

Explaining the Magneto.

"How your Magneto Works" is the title of a well-written instructive folder published by the M-L Magneto Syndicate, Ltd., Coventry. The working of the new M-L magnetos is very lucidly explained therein.

A Chapter of Accidents.

In spite of the fact that he collided with straying cattle, and later broke a frame tube as a result of the collision, Christian Andersen, riding a three-speed Rudge machine, was the winner of a 613 km. road race held recently in Denmark.

In the Channel Islands.

New Imperial motor cycles have scored conspicuous successes in the island of Jersey. A 293 c.c. machine of this make gained second place in the Easter Reliability Trial, and in Le Pulec hill-climb similar machines took first and second places, while in the Autumn Trial they won the challenge cup. Many other successes stand to their credit.

Improving Appearance.

Used on a sidecar body a preparation recently submitted to us, and known as Accordian Auto-Shine, proved to be effective, not only reviving the varnish, but in bringing up the pegamoid upholstery in a remarkably efficient manner. It is sold by The Avondale Manufacturing Co., Avondale Works, Chippenham, Wilts, at 2s. a bottle.

Mechanical Lubrication.

Some amplification is required in the prices of Showell pumps, as described recently. 16s. 6d. is the price of the conversion set for machines with Best spring-loaded pump, and detachable sight; 25s. 6d. is for a similar conversion, but using the Showell sight valve; and 37s. 6d. is the cost of the complete lubricating set.

Non-Inflammable Celluloid.

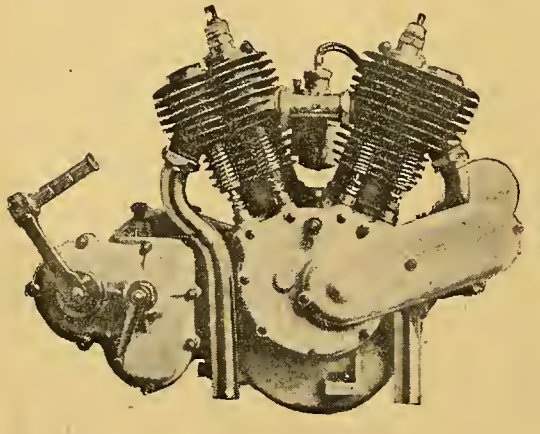
Known as Celastoid, a non-inflammable celluloid was amongst the exhibits at the Olympia Car Show. It should also be invaluable for motor cycle screens, and its makers, the British Cellulose & Chemical Manufacturing Co., Ltd., 8, Waterloo Place, London, S.W.1, possess testimony from the chief officer of the London Fire Brigade to the effect that it is practically flame-proof.

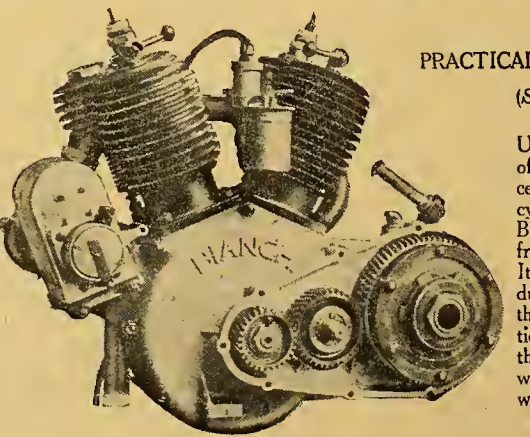
Coming of Age.

It is not only the M.C.C. which celebrates its twenty-first birthday this year. The Camping Club, which is as valuable to campers as the A.C.U. is to motor cyclists, will celebrate its coming of age at the Manchester Hotel, Aldersgate Street, London, E.C., on Saturday, November 25th. The club's president, Lt.-Gen. Sir Robert Baden Powell, Bart., will take the chair.

American Works Methods.

In *Engineering Production* of October 5th, 1922, a journal emanating from the same publishers as *The Motor Cycle*, there appears an interesting article entitled "An American Motor Cycle Factory: The Plant and Methods of The Hendee Manufacturing Co." Numerous riders of Indians may like to know how their favourite machines are made, and a reprint of the article can be obtained on application from The Hendee Manufacturing Co., Ltd., 366, Euston Road, London, N.W.1.

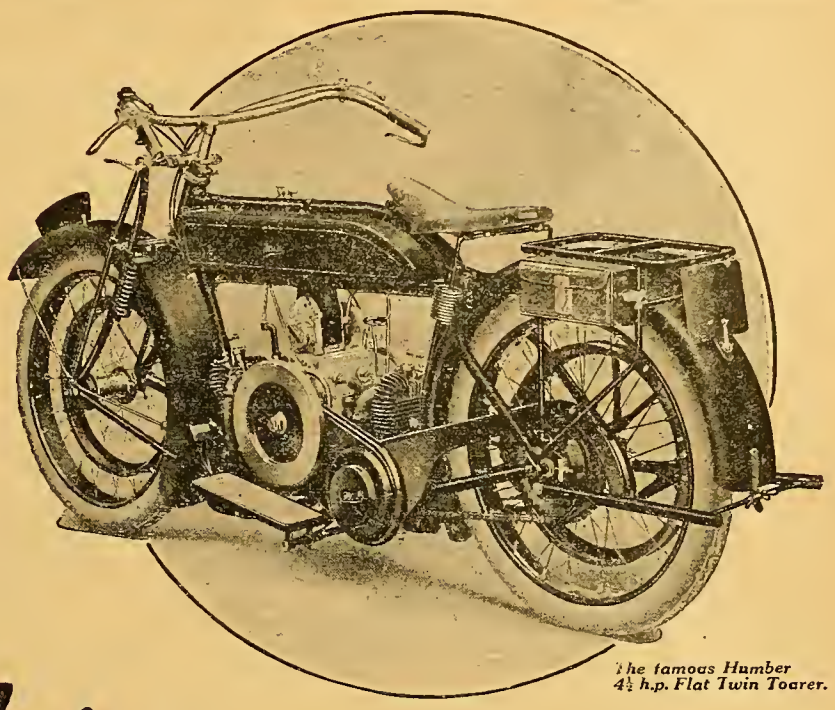




PRACTICAL ITALIAN DESIGN.

(*See page* 706.)

Unit construction is a feature of which the Italians are exceptionally fond in their motor cycle engine design. The Bianchi engine, which hails from Turin, the home of Italy's best automobile productions, is a fine example of this practice. Primary reduction to the countershaft is through enclosed spiral gear wheels. Excellent finish and workmanship has made Italian productions world famous.



The famous Humber 4½ h.p. Flat Twin Tourer.

Humber

A Reminder.

We cordially invite Motor Cyclists to make a note of the number of the Humber Stand at the Olympia Show—Nov. 25th to Dec. 2nd. On Stand 126 we shall be showing a full range of 1923 motor cycles, including Combination Outfits, Sports and Touring Models; also a sturdy Light Weight of 2¾ h.p. A concentrated study of each of these models, side by side with the prices, will convince you of the exceptional value offered.

Every attention will be given to visitors by our Representatives at the Stand.

STAND

126

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ity Showrooms : *32, Holborn Viaduct, E.C.1*

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epoir Works : *Canterbury Rd., Kilburn, N.W.6*

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Look out for

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The Smartest and Most Efficient of Ultra :: Lightweight Motor Cycles ::

ALSO

The "Coventry B. & S."

The notable 2¾ h.p. 4 Stroke Lightweight Model. Barr & Stroud Engine! Burman 3-speed Gear Box, Clutch and Kick-starter.

AGENTS WANTED EVERYWHERE. DO NOT FIX UP YOUR SEASON'S CONTRACTS UNTIL YOU HAVE SEEN THESE, THE BEST SELLING PROPOSITIONS OF THE YEAR.

On Show Nov. 25th to Dec. 2nd, at 1, MACLISE ROAD (Adjoining Olympia, and exactly opposite Addison Road Station).

Managing Director: Mr. F. T. DOWNES, *Late of* Hobart Cycle Co., Ltd.

COVENTRY BICYCLES LTD., COVENTRY.

Works Manager: Mr. T. ROBERTS, *Late of* Hobart Cycle Co., Ltd.

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MODERATE PREMIUMS.

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Telegrams: "Perpend, Ave. London." Telephone: London Wall 5306 (4 lines).

"The Policy that Pays."

Notice to the Trade & Public

Trewso Pat. No. 10,677. 1912.

One or two firms have put on the market imitations of the "Ritchie" Patent Motor Cycle Split Overall. Proceedings have been taken against these firms for infringement of the patent, and the trade are warned against purchasing these imitations. After this formal announcement the purchaser, as well as the seller, is liable in damages for the infringement.

These imitations are much inferior in make and finish to the genuine article. Every genuine "Ritchie" Patent Split Overall bears a label with the patent No. 10,677.

The Patentees and Sole Manufacturers are:

THE IMPERVIOUS RUBBER CO., Ltd.,

38, FALFIELD STREET, GLASGOW.

Elite Covers eclipse all others. *Elite Covers eclipse all others.*

ELITE SUPER NON-SKID

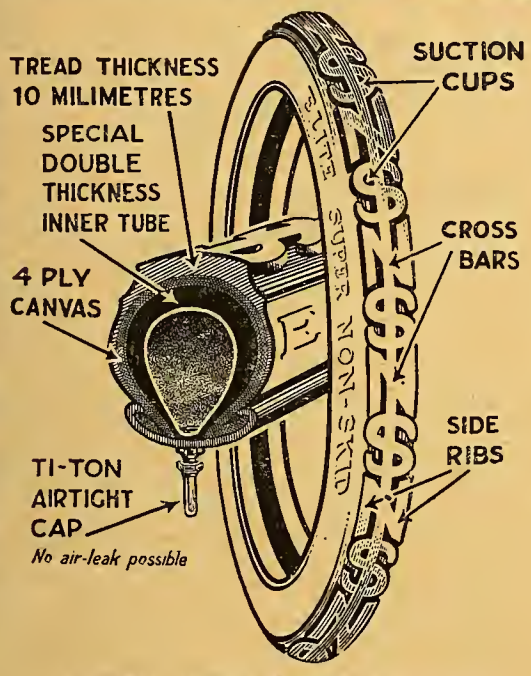
Tyres that save you money

The tyre that *is different.*

The *"no trouble"* tyre.

Tyres that save you money

THE BEST TYRE *you can fit to Perfection*



This illustration represents a 28 × 3 Elite Super Non-Skid Cover showing section with special thickened inner tube.

ELITE SUPER NON-SKID

EXTRA HEAVY MOTOR CYCLE COVER

has been designed to withstand the kick of any motor cycle engine yet made, and to last out any other make. Guaranteed to give you at least 33⅓ per cent. more mileage, this cover embodies all the true principles that go to make a real rubber non-skid. The illustration shows this cover fitted with a special thickened inner tube which practically eliminates the risk of punctures and "nipping" when fitting.

The Elite Super Non-skid and special thickened inner tube are a combination of everything that is best in tyre manufacture.

In addition, we supply all our tubes with the wonderful Ti-Ton Dust Cap, which absolutely prevents any air leakage from the valve—a trouble so common to all other makes.

To introduce these special thickened tubes, to all purchasers of an Elite Super Non-skid with inner tube we are prepared to allow a special discount of 50 per cent. off the list price of the tubes at the following prices :—

Size.	Elite Cover. £ s. d.	Special Tube. s. d.
26 × 2¼	1 8 0	6 3
26 × 2½ × 2¼	1 15 0	7 0
28 × 3	2 5 0	8 0
700 × 80	2 4 0	8 0

Special thickened inner tubes may be had separately at the undermentioned prices :—

26×2¼ ... 12/6 26×2½×2¼ ... 14/- 28×3 ... 18/-
700×80 ... 16/-

Opportunities for Motor Cyclists to purchase their requirements at Bargain Prices are here. Below is just A FEW OF OUR SPECIAL CLEARANCE LINES.

MOTOR CYCLE TUBES.
24×2, 4/9 ;
26×2, 4/9 ;
26×2¼, 5/9 ;
26×2½, 6/- ;
26×2¼×2¼, 6/9 ;
26×2½, 6/9 ;
28×3, 7/11 ;
700×80, 7/6.

Size.	Make.	Our Price.	List Price.
24×2	Palmer, ribbed	16/6	29/6
„	Clincher de Luxe, ex. heavy.	17/6	26/-
24×2¼	Clincher de Luxe, ex. heavy.	22/6	27/6
26×2	Clincher de Luxe, ex. heavy.	18/6	27/9
„	Elite, 3-ribbed, ex. heavy ..	24/6	—
26×2¼	Clincher de Luxe, ex. heavy.	18/9	28/3
„	Dunlop, heavy, rub. std. ..	22/6	26/9
„	Bates, spec. hvy, beaded ..	25/-	40/-
„	Palmer, cord	25/-	43/4
„	Bates, spec. hvy., wired-on..	26/9	—
„	Palmer, cord, heavy	30/-	47/9
26×2½	Clincher de Luxe, ex. heavy.	21/-	31/6
26×2¾	Dunlop, heavy, rub. stud...	25/-	30/-
„	Elite 3 ribbed ex. hvy ...	27/6	—
„	Dunlop, ex. heavy, rub. std.	30/-	35/6
26×2¼ | ×2¼ /	Clincher de Luxe, ex. heavy.	23/3	34/9
	Clincher, Dreadnought	29/6	38/9
26×2½	Clincher de Luxe, ex. heavy.	25/-	33/6
28×3	Clincher de Luxe, ex. heavy.	30/-	45/-
„	Ajax, Road King	35/-	—
„	Goodyear, All-weather	37/6	45/3
650×65	Clincher de Luxe, ex. heavy.	28/6	33/9
„	Goodrich, safety tread	35/-	67/6
700×80	Clincher de Luxe, ex. heavy.	35/-	43/6

MOTOR CYCLE BELTS.
In Standard Lengths.
Per foot ⅝in. 1/-,
¾in. 1/1.
⅞in. 1/5.
1in. 1/9.
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'Grams. "Tyrelidav, London."

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to where all post orders should be addressed.
And at 44, Surbiton Road, Kingston-on-Thames.
Telephone—Kingston 3355.

Steele Publicity.

Specify Ferodo Brake Blocks on your new mount.

Prior to the introduction of Ferodo Brake Blocks for motor cycles, one set of blocks lasting throughout a long race was practically unknown.

Now it is the usual thing for riders in the big races to use only one set of Ferodo Brake Blocks for both practice runs and the actual race.

This is because Ferodo Blocks are made with the same care as Ferodo Friction Linings. They give the same efficient service—the same remarkable wear—and they never split in use.

Ferodo Brake Blocks can be fitted without any alteration to the shoes, and they are made for many standard models.

FERODO
Registered

BRAKE BLOCKS for MOTOR CYCLES

Blocks for a number of standard models are in stock. Present owners should write to us for a list. If you contemplate purchasing a new mount specify Ferodo Brake Blocks.

Sole Manufacturers:

FERODO, Ltd.———— CHAPEL-EN-LE-FRITH.

1922 A.C.U. SIX DAYS TRIALS.

"BONNIKSEN"

AGAIN AMONGST THE PRIZES.

23 GOLD MEDALS.
2 SILVER MEDALS.
1 BRONZE MEDAL.
2 CERTIFICATES.

THE RELIABILITY PREMIERSHIP.

Acknowledged to be the most accurate and reliable Speedometer on the market and a boon to Competition Riders.

PRICES:

MOTOR CYCLE TYPE

Trip	Non-Trip
£5 0 0	£4 10 0

(Rear Drive for American Machines 10/- extra)

CAR and CYCLECAR TYPE

Trip	Non-Trip
£6 10 0	£6 0 0

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The NEW CYKELAID

A MASTERPIECE OF ENGINEERING INGENUITY AND SKILL.

Ideal for riders of both sexes.

The *New Models* will be on view at the CYCLE SHOW, OLYMPIA, from November 5th to December 2nd.

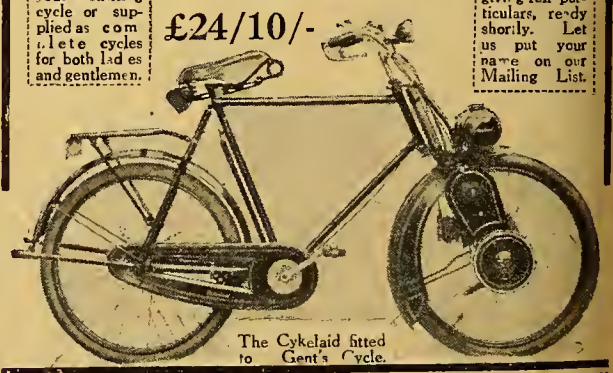
VISIT STAND No. 158

and inspect them for yourselves.

Can be fitted to your existing cycle or supplied as complete cycles for both ladies and gentlemen.

PRICES from £24/10/-

Catalogues, giving full particulars, ready shortly. Let us put your name on our Mailing List.



The Cykelaid fitted to Gent's Cycle.

Sole Makers The SHEPPEE MOTOR CO., Ltd., 59, Thomas St., YORK

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the road on the darkest night winding along before you, gliding beneath your wheels like a broad, shining ribbon of light, mile after mile. A good and reliable light makes night riding positively exhilarating. That is the experience of thousands of users of Dissolved Acetylene.

Let us add your name to the list.

STAND No. 240 MOTOR CYCLE SHOW OLYMPIA Nov. 25—Dec. 2.

A-L Motor Cycle Lighting Outfits

A-L Lamp		£1 17 6
Cylinder containing 4 cub. ft. of Dissolved Acetylene (and no larger than a generator)		£1 17 6
Standard brackets		8 6
Cylinder Holder		4 0
Complete Outfit as illustrated		£1 7 6

Charges of Dissolved Acetylene for these cylinders 2/- each at works.

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CLUB BLACK ENAMEL
Special Hard Drying ... ars 11½d. & 1/6

CLUB COLOURED ENAMEL.

Dries in 24 hours. Does not crack or chip.	Motor Cycle size Tins	1/9
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CLUB ENGINE BLACK.
For Radiators Exhaust Pipes ... Tins 1/- & 1/6

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IN ALL COLOURS. (See Above 1/9 & 3/-

SOLE MANUFACTURERS:
SILICO ENAMEL CO.——STRATFORD, LONDON.

TRADE MARK

Miracle Oil
For All Motors

Unequalled for upper lubrication.

THE FINEST INVESTMENT EVER OFFERED TO THE PUBLIC.

A Startling Fact!

After you have bought your first 32 ounce tin of Miracle Oil for 12/6, you may continue to buy and use Miracle Oil year by year and it will not cost you another shilling.

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In addition to the above you have the **superlative pleasure** of a sweet-running engine.
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"KING DICK" at Olympia

TRADE MARK — KING DICK

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The reputation which Abingdon "King Dick" Motor Cycles hold the world over is due to the quality of the service they have always given. Three models: 3¼ h.p., 4¼ h.p., and 6/7 h.p. (twin).

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A 6-7 h.p. twin cylinder engine for chain drive. "One of the Best"; "A standing testimonial to British Workmanship." Bore, 73 mm.; Stroke, 95 mm.; c.c. 795.

On Stand No. ***284*** *Gallery.*

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British made from solid steel drop forgings and capable of infinite adjustment. Always grip and never burr the nuts. Made in four sizes: 3 in., 4 in., 6 in., and 9 in.

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The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 3½h.p., practically new, 1914 type, built this year for racing, 2-speed, heavy Hutchinson tyres, Renold chain, all perfect; any trial or inspection; £35, or exchange lower power and cash.—Dowell, Pyrford, Woking. [1480

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In a show number where advertisers vie with each other in taking increased space we seize the opportunity to achieve distinction by confining

OUR SPLASH

WITHIN THE LIMITS OF OUR USUAL COLUMN

GODFREY'S have already achieved the distinction of being beyond reproach in their methods of business. A distinction earned by years of the most painstaking interest in the requirements of each individual customer.

Whenever you are in need of either a

MOTOR CYCLE
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Remember that Godfrey's can supply you with any make of Motor Cycle or Light Car either for

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For such well-known machines as

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And are selling agents for all the best makes.

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'Phone: LANGHAM 1300

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MOTOR CYCLES FOR SALE.

A.B.C.

£58!—1921 3h.p. A.B.C. and sidecar, tax paid, perfect, very fully equipped, many spares; any trial.—86, Fitzjohns Av., Hampstead, N.W. (D) [1458

Spare Parts

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0964

A.E.L.

AT Edwards.—1922 2¾h.p. A.E.L., J.A.P engine, Burman 3-speed gear box, kick-starter and clutch, brand new, unregistered; 37 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1147

A.J.S.

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries. —Clifford Motories, Eastwood, Notts. [9957

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

A.J.S. 1914-15 Combination, good condition, any trial; £45.—L. Hack, Damehill, East Grinstead. [1221

F.O.O.H. invite inspection; A.J.S. and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1375

A.J.S. 2¾h.p. Standard Sports, brand new, cannot take delivery; nearest offer £85.—Chalmers, 28, Fort St., Ayr. [9392

AT Edwards.—1914 2¾h.p. A.J.S., 2-speed, clutch, good condition; 20 guineas.—101, Great Portland St., W.1. [1854

A.J.S. 2¾h.p., 1922, model B.2, 1,000 miles only, good order; £75, or nearest.—Jackson, Eton House, Tonbridge. [1216

A.J.S. 1922 2¼h.p. Sports Model, not ridden 300 miles; exceptional bargain, £60.—The Layton Garages, 90, High St., Oxford. [1846

A.J.S. Combination, 1916, fully equipped, electric lighting, good condition throughout; £65.—Milwards Garage, 45a, West Hill, S.W.18. [8539

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

A.J.S. Combination, 6h.p., lamps, horn, speedometer, taxed, Tan-Sad, windscreen, Binks, many spares; £48, or exchange.—3, Stamford Brook Rd., Hammersmith. [1799

2¾h.p. A.J.S., 6 months old, the personal property of W. Brandish, Jnr., guaranteed before purchase 65 m.p.h.; best offer over £60.—W. Brandish and Sons, Coventry. [9865

A.J.S. 1921 7h.p. Combination, Lucas dynamo lighting, electric horn, hood, screen, spare wheel, etc., excellent condition; £110.—P. J. Evans, John Bright St., Birmingham. [1369

AT Edwards.—1922 2¾h.p. A.J.S., Sports model, Lucas equipment, large Terry spring saddle, excellent condition; 57 guineas; exchanges.—101, Great Portland St., W.1. [1852

SPLENDID A.J.S Combination 1920, new condition, fully equipped, insured, Lucas electric lighting; £120; exchange T.T. sports Sunbeam and cash.—Derrett, Orwell Rd., Clacton-on-Sea. [1326

1921 A.J.S. Combination, spare wheel, speedometer, hood, screen, electric lighting set, unscratched; £95. Ditto 1919; £75.—Hillier, 127, St. Mark's Rd., North Kensington. [1543

1915 A.J.S. 4-5h.p. Combination, fully equipped, lamps, screen, etc., very sound condition; cash, exchange, instalments; £47/10.—Elco, Ltd., 13 15-16, Bishopsgate Av., E.C.3. 'Phone: Avenue 5548. [0066

1923 Models.—Wauchope's, 9, Shoe Lane, London. 'Phone: Central 5168.—A.J.S. lightweights and combinations on extended payments and exchange; second-hand machines taken in part payment; full market value allowed; free tuition. [1732

SOUTHPORT.—1922 (August) stripped sports A.J.S., almost unused, Lucas lamps and horn, speedometer, brand new condition, 67 guineas; 1922 B1 combination, Lucas electric lighting, speedometer, polished aluminium sidecar, gift, 72 guineas; most luxurious 1922 B1 combination, A.J.S. sidecar, Lucas electric lighting, Lucas horn, Cowey trip, Baby Easting, brand new condition, 82 guineas; 1916 A.J.S 6h.p. combination, fully equipped, new sidecar body, gift, 52 guineas; exchanges.—Kents, 417, Lord St., Southport. [1456

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Enling. [4806

Alldays.

ALLON 294 c.c. cylinder re-ground, new piston bearings, etc., 2-speed copper exhaust, equipped, taxed; seen by appointment; £25; Levis wanted.—Brown, 25, Bower St., Maidstone. [1574

MOTOR CYCLES FOR SALE.

Alldays.

ALLON 2-stroke, 2-speed, lamps, horn, Tan-Sad, licensed; £24.—95, Ashburnham Rd., Luton. [1559

£32.—1921 2¾h.p. Allon, 2-speed, clutch and K.S., equipped, in very nice condition; evenings.—4, Elm Gardens, Hammersmith. [1824

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £38.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [1878

ALLDAY' Allon 2¾h.p. 1922, 2 speeds, clutch, kick-starter, brand new; £50, approval.—Eagles and Co., 275, High St., Acton, London. [1686

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

ALLDAYS' Allon, 2-stroke, 2-speed, clutch, new condition, original tyres, unpunctured left works 7/10/1919; not used till March, 1921; best offer secures.—153, Manor Rd., West Ham, London, E.15. [1582

Ariel.

1922 3½h.p. Sports Ariel, fully equipped, taxed, new; £60.—51, Upper Richmond Rd., East Putney. [1843

ARIEL 1920 5-6h.p. Combination, 3-speed, electric lighting, perfect; 68 guineas; exchanges; photograph.—Below.

ARIEL 1920 3½h.p., 3-speed, as new, 52 guineas; with sidecar, 62 guineas; exchanges; photograph.—Below.

ARIEL 3½h.p. 3-speed Coachbuilt Combination; 52 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1115

£38.—Ariel Combination, countershaft, 3-speed, with all accessories.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [1554

1921-22 7h.p Ariel Combination, magnificent turnout, unscratched, owner must sell; 65 guineas.—67, Fernlea Rd., Balham. [1813

ARIEL Combination, 3½h.p., 1920, lamps, horn, tools, pillion seat, fine condition; £60.—Mumford, 337, King St., Hammersmith, W.6. [1170

ARIEL.—All models cash or gradual payme. Spares supplied from stock.—West Central Agency Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0701

1920 6-7h.p. Ariel Combination, fully equipped, speedometer, Eastiog windscreen, excelleot condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., Sonth Keosington. [1856

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage, Broadway, Mnswell Hill, N.10. [0804

Bat.

BAT, 1921, October, under 500 miles, 6h.p., 3-speed, chain drive; £52; bargain.—7, Exhibition Rd., S.W.7. [1156

BAT 8h.p. 1922, special competitioos combination.—Price and particulars, Leonard, 46, Chaucer Rd., S.E.24, late sales manager Bat Co. [1299

8h.p. Bat-Jap, good condition, Cowey speedometer, reliable sporting macbine. 75 m.p.g.; bargain, £45 cash.—179, Earlsfield Rd., Wandsworth. [1226

Beardmore.

BEARDMORE, Barr and Stroud engine, used only for a few demonstrations, as new; £60.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1714

BEARDMORE-PRECISION 1922 4¼h.p. Combination, cantilever spring frame, light car tyres, fully eqnipped including Ortho hood and screen, insured; cost £170 in April; owner going abroad; £120.—Wyatt, 76, Old Read West, Gravesend, Kent. [1227

Blackburne.

1920 Blackburne 4h.p. and C.B. Sidecar, completely equipped, and in excellent condition; £55.—The Layton Garages, 30, Holywell St., Oxford. [9701

1920 2¾h.p. Blackburne, sports engine, 3-speed, close ratio gear box, spare piston, knee-grips, fully equipped, good condition; 39 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1855

Bradbury.

BRADBURY Combination, 1915, all chain, countershaft, C. and K.S., equipped, taxed; £32.—103, Moore Park Rd., Fulham. [1503

BRADBURY 1914 4h.p. Combination 2-speed. £25; ditto solo, Philipson, £15; both excellent condition.—7, Exhibition Rd., S.W.7. [9304

AT Edwards.—1922 2¾h.p. Bradbury, 2-speed, clutch, K.S., equipped, tax paid, indistingnishable from new; 45 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [8401

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed vear, fully equipped, indistinguishable from new; £68; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

A FAIR EXCHANGE

May Help You to Solve THE PROBLEM OF A NEW MACHINE FOR 1923

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'Phone: Walthamstow 160 (2 lines).
New Car Hire Department, Walthamstow 418.

GT. PORTLAND STREET, N.W.1,
(Opposite Met. Station).
'Phone: Museum 4978.

MOTOR CYCLES FOR SALE.

Bradbury.

SOUTHPORT.—1921 4h.p. Bradbury combination, all chain, 3-speed, K.S.; 49 guineas; exchanges.—Kents, 417, Lord St., Southport. [1454

BRADBURY 4h.p., good tyres, lamps, runs well; 18 gnineas; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [1774

BRADBURY Late 1920 4h.p., 3-speed, clutch, kick-starter, all chain, handsome sidecar, lamps, horn, apron, Tan-Sad, etc., tax paid, cost without sidecar, £141/4/3; our price £48.—Delancey St. Garage, Camden Town, N.W.1. [1459

Brough.

BRAND New 3½h.p. Brough 1922 Sports T.T.; list price £115, our price £80.—Pioneer Motors, Grindlay St., Edinburgh. [9534

49 Guineas.—Late 1921-22 5-6h.p. Brough, smartly equipped and licensed, first ridden last London-Exeter, condition as new; evenings.—4, Elm Gardens, Hammersmith. [1820

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

SOLE Agents for London and thirty miles radius.

THE Sporting Rider's Ideal. Immediate delivery of Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination, £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h., £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended payments and exchanges.—9, 10, 11, Roya Parade, West Croydon. 'Phone: 2450-1. 'Grams Track, Croydon. [073

BROUGH SUPERIOR Mark II. Combination, taxed, equipped, absolutely new; £105.—51, Upper Richmond Rd., East Putney. [184

BRAND New 1922 Brough Superior, Mark I. model, side valve; list price £130, our price £125.—Pioneer Motors, Grindlay St., Edinburgh. [953

BROUGH SUPERIOR, 1921, 8 h.p. super sport engine, lamps, horn, spares, etc.; £115; with three months' old Canoelet semi-sports sidecar and screen £135; appearance and condition perfect; Dunlop Magnums all round.—Rees, Glen Logan, Pontypool Rd Mon. [118

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [083

Brown.

£25.—Brown 2¾h.p., nearly new, take pedal cycle part.—57, Kenbury St., Camberwell, London. [156

3½h.p. Brown, B. and B., Bosch, countershaft; 2 speed gear, etc.; bargain, £12.—Fisher, Spring well Rd., Heston, Hounslow. [175

B.S.A.

SHOP-SOILED 6-7h.p. B.S.A. Combination, Magdyno, £140; H2 sports, £80.

COUNTY Cycle and Motor Co., Ltd., Broad St Birmingham. [701

B.S.A. 1922 4½h.p. Combination, as new, screen lamps; £90.—Jodille, Bampton, Oxon. [126

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. Model Sport £70.—Clifford Motories, Eastwood, Notts. [995

B.S.A. 1920 4¼h.p. chain combination, taxed, accessories; £75.—Will, 769, Romford Rd., Manor Park, London, E.12. [187

1920 B.S.A. Combination, 4¼h.p., 3-speed, kick starter, fully equipped, perfect condition; £90.—Randell, Maldon, Essex. [124

BRAND New 3½h.p. B.S.A. Touring Model, all-chain drive; bargain, quick sale, £79.—Pioneer Motors, Grindlay St., Edinburgh. [953

£55.—B.S.A., late 1920 4¼h.p. C.B. sidecar, lamps etc., new tyres, excellent condition.—Moss, 4 Varna Rd., Birmingham. [149

B.S.A. 6-7h.p. Twin and No. 3 Sidecar, new, shop soiled; list price £164, must clear, £120.—Huckbridge, 133, Sloane St., Chelsea, S.W.1. [140

B.S.A. K2 4¼h.p., 1922, shop-soiled, special price £72, or fitted with B.S.A. No. 3 sidecar, £97.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [17

B.S.A. Fine Coachbuilt Combination 4h.p., 3 speed 39 guineas; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [17

B.S.A. 4¼h.p., Model H, with Burberry coachbuilt sidecar, hood, screen, lamps, and spares; bargain 70 gnineas.—S.M. Anderson, R.A.F., Netheravon. [14

B.S.A. 1921 K2, No. 3 sidecar, Easting Royal, electric lamps, Bonniksen, Lucas horn, mechanica and appearance perfect; £90, or near.—22, Rosslyn A Barnes. [14

MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. 1916 4¼h.p. Combination, all-chain model, accessories, tax paid, in splendid condition; £42, exchange.—A., 30, Thorusett Rd., Earlsfield, London, S.W. [9992

BARGAIN.—B.S.A. 4¼h.p., 3-speed, all-chain, coach-built sidecar, 35 guineas; solo, 29 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1868

B.S.A., 3½ h.p., Armstrong 3-speed hub, Bosch, B. and B., splendid order, all worn engine parts renewed, good tyres; bargain, £34/10.—MacKinnon, Lyle, Ross-shire. [1390

B.S.A. 4¼h.p 1922, model H2, chain drive, 3 speeds, Millford sidecar, Lucas accessories, tax paid; £72; deferred payments.—Eagles and Co., 275, High Rd., Acton, London. [1684

1921 4¼h.p. All-chain B.S.A., with sidecar, Easting screen, perfect appearance and mechanical condition; any examination; low mileage; £84.—Write, Owner, 85, Hewitt Av., N.22. [1628

1922 B.S.A Light 6-7h.p and No 4 sidecar, shop soiled demonstration model, maker's guarantee, £95 guineas; exchanges or deferred.—Edwards, 50, Harrington Road South Kensington [5454

1922 B.S.A. Model K2, brand new, 3-speed, showroom soiled only; list price £107, special unrepeatable offer for cash, only £65.—The Layton Garages, 30, Holywell St., Oxford. [9706

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168.—B.S.A., any model supplied on exchange and deferred payments; generous terms always; prompt delivery; tuition free. [1733

1919 B.S.A. 4¼h.p. Combination, fully insured; £75, or near offer; all accessories, Tan-Sad, screen, lamps, tools, splendid condition, comfortable sidecar.—Fenger, 16, Waterloo Rd., Highgate. [1237

I HAVE seen the 2¾h.p. B.S.A. at £57/10 and the 3½h.p. Sports at £70, and I consider them the goods for 1923. The demand will be terrific, so order these and other models at once with Pitts, of Redditch. [1760

1916 4¼h.p. B.S.A. Combination; £55, or near offer; completely overhauled, entire framework re-stove enamelled, bright parts re-nickelled, sound machine, trial run, privately owned.—Connaught Coach Works, London Rd., Dover. [1264

1922 B.S.A. 8h.p. Model F Combination, spare wheel, Magdyno lighting set, electric horn, Cowey speedometer, hood, screen, luggage grid, complete, mileage 600, unscratched; offers.—Chinn, 18, Bath Parade, Cheltenham. [1328

1921 B.S.A. 6h.p., fitted with Canoelet side-by-side 2-seater sidecar with coupe top, dynamo lighting, spare wheel, speedometer, and all accessories, splendid order throughout; £115.—W. T. Dunn, Rd., 326, Enston Rd., London, N.W.1. 1693

B.S.A. late 1920, 4¼h.p. all-chain De Luxe Combination, specially fitted Lucas dynamo lighting, and every conceivable accessory, condition and appearance as new; accept £70, or near offer.—Oaklands, Ye Grove, Finchley, N.3. 'Phone: 868. [1747

B.S.A., 1918 model, 4¼ h.p. Combination, coach-built sidecar, overhauled, new cylinder, in splendid condition, complete with accessories, lamps, horn, etc., tax paid; bargain, £60. By appointment after 6 p.m.—G. Halter, 61, Golden Lane, E.C. [1406

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4805

B.S.A. Spares definitely by return, post free, trade supplied.—Pitts, B.S.A. Service, Redditch. [1761

B.S.A.—Herbert Robinson, Ltd., Green St., Cambridge. —All parts in stock, no waiting. Trade supplied. [1284

B.S.A. Spares can be had by return, post free, from Jones' Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [0805

THE B.S.A. Specialists.—On the spot. Give our unrivalled Spares Service a trial; catalogue free.—Daly Cycle and Motor Co., Ltd., Broad St., Birmingham. [7011

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all B.S.A. spare parts always in stock. Write for free spare part list, stating year of manufacture [0750

Calcott.

CALCOTT 2¾h.p., C.S. 2-speed, excellent condition, take 2, all on; 28 guineas.—Particulars, 56, Hastings Av., Margate. [1662

Calthorpe.

'18.—Calthorpe, 2-stroke, 2-speed, all on; after 6.—9, Raynham Rd. Garage, Hammersmith. [1272

CALTHORPE-J.A.P. 2¾h.p. 1915, 2-speed, nice condition; £25.—Parkes, 46, Camberwell Green, S.E.5. [1255

CALTHORPE-J.A.P. 2¾h.p., 2-speed, good condition; £25.—United Services Club, Stanford Le Hope, Essex. [1188

CALTHORPE 1915 model, 2¾h.p. J.A.P., new back cover, all accessories, perfect order; £25.—Ashmere Grove, Brixton. [1509

A POSTCARD

will bring you our latest list of New, Second-hand, and Shop-soiled Machines. Don't delay.

EXCHANGES. DEFERRED PAYMENTS.

A few of this week's S.H. Bargains.

Deposit.		12 Instalments of			Cash Price
	SCOTT.				
£20	1919, 3¾ h.p. Comb., lamps, horn, speedometer, Easting, taxed, like new	£4	0	8	£65
£15	**ROYAL ENFIELD** 6 h.p. Combination, equipped, good condition	£2	13	9	£45
£25	**JAMES.** 1919, 5-6 h.p., Combination, fully quipped, Cameo Screen	£4	9	7	£75
£25	**TRIUMPH.** 1921, Combination, lamps, horn, spee ometer, Easting, taxed	£5	16	6	£90
	NEW HUDSON. 1913-14, 3½ h.p. equipped good order		cash		£20
£35	**SUNBEAM.** 3½ h.p., 3-speed, Henderson sidecar, fully equipped, screen, taxed	£5	7	6	£95
£25	**INDIAN.** 1920, 7-9 h.p., electrically equipped, speedometer, excellent condition	£4	0	8	£70
£15	**LEVIS.** 2½ h.p., 2-speed, fully equipped, tax paid, as new	£1	15	10	£35
£10	**PRECISION.** 3½ h.p., Combination, 3-speed, equipped, taxed	£1	8	8	£26
£15	**DIAMOND-J.A.P.** 1921, 2¾ h.p., 3-speed, clutch, and kick-start, fully equipped, taxed	£3	13	9	£45
£20	**RUDGE.** 1920, 3½ h.p. I.O.M. model, fully equipped, tax paid	£3	2	9	£55
£35	**MATCHLESS.** 1920, 8 h.p., M.A.G., dynamo lighting, spare wheel, screen, i-grid, taxed	£7	3	4	£115
£15	**HOBART.** 1920, 2½ h.p., 2-speed, fully equipped	£1	12	3	£33
£15	**ALLDAYS-ALLON.** 1920, 2¾ h.p., 2-speed, clutch and K.S., fully equipped, tax paid	£2	4	10	£40
£15	**ENFIELD.** 1920, 2¼ h.p. model, 2-speed, clutch, fully equipped, tax paid	£2	1	3	£38
£15	**RUDGE.** 1919, 3½ h.p. multi, equipped, tax paid, good condition	£2	4	10	£40
£25	**RUDGE.** 1922, I. O. M. model, fully equipped, tax paid, unscratched	£3	19	8	£69

PARKER'S

DEPOTS.

BOLTON & MANCHESTER

BRADSHAWGATE. Tel. 1348. **246-52, DEANSGATE.** Tel. 864 Ceo.

MOTOR CYCLES FOR SALE.

Calthorpe.

AT Edwards.—1922 2¾h.p. 2-stroke Calthorpe, equipped with lamps and horn, tax paid, condition practically as new; 27 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1146

Campion

1920 4h.p. Campion-Jap Combination, electric light, speedometer, Easting, etc., excellent condition; £55, or near offer.—Dickinson, Chemist, Stamford. (D) [1634

Cedos.

CEDOS 1922 Model, 2¼h.p., 2-speed, shop-soiled; bargain, £35.—Fowler and Brigden, 130, Euston Rd., King's Cross. [0962

CEDOS 2½h.p., late 1921, beautiful condition, 2 speeds, T.T. bars, fast, photograph; £25/10.—Decourcy, Frankfort St., Birmingham. [1322

AT Edwards.—1920 2½h.p. Cedos, 2-stroke, 2-speed, countershaft, equipped lamps, horn, in good order; 29 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1148

Clyno.

£25.—Clyno 1920 2¼h.p., 2-speed and clutch, accessories, tax paid.—Delancey St. Garage, Camden Town, N.W.1. [1460

CLYNO 2-stroke, 2-speed, clutch, equipped, believed 1920; £28; exchange.—Simpson, Orchard Rd., Sunbury-on-Thames. [1621

1918 Clyno Combination, detachable wheels, etc., perfect condition; genuine bargain, £35.—51, Upper Richmond Rd., East Putney. [1844

CLYNO 1920 2-stroke, 2 speeds, clutch, accessories, tax paid, as new, little used; £29.—A., 30, Thornsett Rd., Earlsfield, London, S.W. [9994

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4802

Connaught.

1923 Connaughts.—Wauchope's, 9, Shoe Lane, London. Exchange and extended payments. [1734

BRAND New 2¾h.p. Connaught, 2-speed model; list price £54, our price £40.—Pioneer Motors, Grindlay St., Edinburgh. [9532

BRAND New 2¾h.p. Connaught, single-speed model; list price 36 guineas, our price £32 10s.—Pioneer Motors, Grindlay St., Edinburgh. [9536

Cotton

1923 Cottons, all models, prompt delivery from the man on the spot.—Gibb, Northgate, Gloucester. [0968

Coulson

COULSON B, late 1921, 2¾h.p. Blackburne engine, 2-speed, spring frame, lamps, Cowey speedometer, Lucas horn, insurance, tax paid; excellent condition; £38.—Penny, Post Office Rd., Cobham, Surrey. [1500

Coventry Eagle

1922 Coventry Eagle-Jap, 2¾h.p., K.S., clutch, 2-speed, Sturmey-Archer, run 200 miles; forced disposal; all on; £64, or near.—Mack, Chesterford, Essex. [1209

AT Edwards.—1922 (September) 2¾h.p. Coventry Eagle, super-sports J.A.P., 3-speed close-ratio box, electric lighting, fitted Watsonian aluminium sports sidecar, absolutely as new; 70 guineas; or solo, 60 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1851

Coventry Victor.

COVENTRY VICTOR 7h.p. Flat Twin Combination (late 1921), splendid condition; must sell; out of situation; what offers?—Elmcroft, Tottenham Lane, opposite Inderwick Rd., Hornsey. [1246

De Luxe.

£17/10.—De Luxe 2¾h.p., nearly new; approval against cash.—Particulars, Dent, Farm, Beechburn, Crook. [1321

Diamond

DIAMOND, 2 speeds, kick-start, late 1920, racing cam, first-rate condition; £40.—Keal, Oakham. [1603

ROBERTSON'S Motors, Ltd., are the London and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P. engines.—157b, Great Portland St, W.1. [5931

Douglas

1916 2¾h.p. Douglas, tax paid; £30.—Ross, 86, High Rd., Lee. [1397

1920 4h.p. Douglas Combination, full accessories; £65.—Ross, 86, High Rd., Lee. [1394

£26.—Douglas 2¾h.p., 2-speed, new Palmers, spares.—102, Cleveland Gdns., Barnes, S.W.13. [1618

£85.—1922 3½h.p. o.h.v. Douglas, perfect condition, mileage 1,400, insured.—2, West Drive, Brighton. [1249

1921-22 2¾h.p. Douglas, 2-speed, unscratched, must realise; 38 guineas.—19, Valnay St., Tooting. [1807

DOUGLAS 1921, all on, taxed, perfect; £45.—R. B Clark and Co., 7, Exhibition Rd., S.W.7. [5851

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue B59
Motor Cycles advertised by private owners are, when desired, marked (P)

MOTOR CYCLES FOR SALE.

Douglas.

F.O.C.H. juvite inspection; Douglas and other makes; bargains.—5, Heath St., Hampstead (near Tube). 1373

1918-19 Douglas Combination, very nice order, guaranteed; 45 guineas.—67, Fernlea Rd., Balham. [1814

1918 4h.p. Douglas Combination, bulbous back sidecar, all in good condition; £35.—Walbro, Ely, Cambs. [1282

1923 Douglases, just arrived, 2-speed and 3-speed; why wait. — Gibb, Northgate, Gloucester. 'Phone: 852. [0967

1920 Douglas 2¾h.p., 3-speed, fully equipped, and a bargain at £40.—The Layton Garages, 30, Holywell St., Oxford. [9705

4h.p. 1921 Douglas Combination, infl accessories, Royal Easting windscreen, tax paid; £80.—Ross, 86, High Rd., Lee. [1391

1920 2¾h.p. Douglas, 3-speed, clutch, kick-start, fully equipped, guaranteed; £40.—51, Upper Richmond Rd. East Putney. [1841

1915 Douglas 2¾h.p., just been overhauled, new pistons, tank repainted, first-class condition, must sell; £28.—Walbro, Ely, Cambs. [1283

DOUGLAS Combination 1917, mechanically perfect, Cameo, Klaxon, legshields, licence, Binks; £45.—69, Kingston Rd., New Malden. [1557

1915 2¾h.p. Douglas, in tip-top condition, not W.D., lamps, horn, legshields; £25.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [1423

2¾h.p. Douglas 1921, 3 speeds, clutch, kick-starter, fully equipped, new condition; £52; instalments.—63, Solon Rd., Brixton. [1537

1920 Douglas Combination, countershaft, fully equipped, taxed; £65.—William, 769, Romford Rd., Manor Park, London, E.12. [1876

1920 Douglas 4h.p. Combination, fully equipped, and in very excellent order; £65.—The Layton Garages, 30, Holywell St., Oxford. [9702

1916 2¾h.p. Douglas, 2-speed, excellent condition, fully equipped; seen any time; £25.—Pride, 156, Stockwell Rd., Brixton, S.W.9. [1482

£25.—Exceptionally smart 1916-18 2¾h.p. Douglas, equipped and licensed, in perfect condition; evenings.—4, Elm Gardens, Hammersmith. [1823

AT Edwards.—1918 2¾h.p., 2-speed Model, fully equipped, excellent condition, new tyres and belt; 37 guineas.—101, Gt. Portland St., W.1. [7505

2¾h.p. Douglas, 3-speed, 1920, footboards, undershield, L. exhaust, perfect order; sacrifice £45.—Cook, High St., Ashwell, near Baldock, Herts. [1174

1917-4h.p. Douglas Combination, fully equipped, Eesting, speedometer, luggage grid, etc.; £55, or near.—Wood, 38, Burlington Gardens, Acton, W.3. [1319

DOUGLAS 1916 2¾h.p., 2-speed, fully equipped, licensed, condition perfect; £24.—The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [1664

1921 2¾h.p. Douglas, 3-speed, clutch, K.S., fully equipped, as new, Watford speedometer; offers.—Cornwall House, Westgrove, Hersham, Walton-on-Thames. [1412

1922 2¾h.p. Douglas, 2-speed, new June, tax paid, perfect; £45; or see Exchange.—Blackwell, Landsdowne Rd., East Croydon, Surrey. 'Phone: 338. [1535

1918 Douglas Combination, 4h.p., fully equipped, perfect condition; £37/10 cash.—Elce, Ltd., 13-15-16, Bishopsgate Av., E.C.3. 'Phone: Avenue 6548. [0065

BARGAIN.—1920 Douglas 2¾h.p., 2-speed, perfect, 29 guineas; ditto, 1914, 23 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1869

4h.p. Douglas, 3-speed, K.S., less crankshaft, connecting rods and pistons, and few minor parts; £30.—Montague's Motor Mart, 85, London Rd., Manchester. Central 7745. [1361

1922 Douglas 2¾h.p., fully equipped, licensed year, insured, indistinguishable from new; exchanges or deferred; 45 guineas.—Edwards, 50, Harrington Rd., South Kensington. [6623

1918 Douglas 2¾h.p. 2-speed model, excellent condition, new tyres and belt; 37 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1141

DOUGLAS 1918 Combination, 4h.p., new condition, little used, special engine, climb anything; winter price £56, all on.—Sullivan, 17, Mountford Rd., Norfolk Rd., Dalston, N.E. [1225

1922 Douglas, 3½h.p., o.h.v., fully equipped, licensed, indistinguishable from new, three months' guarantee; 80 guineas; exchanges or deferred.—Edwards, 50 Harrington Rd., South Kensington. [1140

4h.p. Douglas Combination, Easting, Tan-Sad, hood, speedometer, lamps, mirror, legshields, tools, new tyres, owner-driven under 6,000 miles, machine in perfect condition, very carefully used; cost nearly £200; accept £85; buying car; after 7 p.m., or appointment.—113, Kenilworth Av., Wimbledon. [1832

CASH AND DEFERRED PAYMENT PRICES FOR 'GUARANTEED' SECONDHAND MACHINES.

MATCHLESS, 1921, 8 h.p. Combination £95
Or £24 14s. down and 12 instalments of £6 3s. 6d.
RUDGE-MULTI, 1922, 3½ h.p., I.O.M. Model..... £65
Or £16 18s. down and 12 instalments of £4 4s. 6d.
TRIUMPH, 1919, 4 h.p., Model H, 3 speeds, clutch and kick-starter £65
Or £16 18s. down and 12 instalments of £4 4s. 6d.
DUNELT, 1922, 4½ h.p. Combination, D.A. lighting £75
Or £19 10s. down and 12 instalments of £4 17s. 6d.
ROYAL ENFIELD, 1920, 5 h.p. Combination £78
Or £20 5s. 6d. down and 12 instalments of £5 1s. 5d.
MATCHLESS, 1921, 8 h.p. Combination, dynamo ltg. £105
Or £27 6s. down and 12 instalments of £6 16s. 6d.
MATCHLESS, 1921, 8 h.p. Combination, 2-seater.. £90
Or £23 8s. down and 12 instalments of £5 17s.
A.B.C., 1922, 3 h.p., 4 speeds, clutch and kick-starter, dynamo lighting £68
Or £17 14s. 6d. down and 12 instalments of £5 5s.
ROYAL ENFIELD, 1922, 8 h.p. Combination, accessories, etc., as new £105
Or £27 6s. down and 12 instalments of £6 16s. 6d.
ROVER, 1921, 4 h.p., 3 speeds, kick-starter, all-chain drive and Canoelet Touring sidecar..... £85
Or £22 2s. down and 12 instalments of £5 10s. 6d.
DOUGLAS, 1922, 4 h.p. Combination £110
Or £28 12s. down and 12 instalments of £7 3s.
ROVER, 1921, 3½ h.p., T.T. Model, Phillipson Pulley, lamps, etc..... £55
Or £14 6s. down and 12 instalments of £3 11s. 6d.
NEW IMPERIAL, 1922, 2¾ h.p., 3 speeds, clutch and kick-starter, all-chain drive £58
Or £15 1s. 6d. down and 12 instalments of £3 15s. 5d.
MATCHLESS, 1920, 8 h.p. Combination, dynamo ltg. £95
Or £24 14s. down and 12 instalments of £6 3s. 6d.
ARIEL, 1920, 3½ h.p. Combination, 3 speeds, clutch and kick-starter £70
Or £18 4s. down and 12 instalments of £4 11s.
JUNO, 1918, 2½ h.p., 2-stroke, Villiers engine £25
Or £6 15s. down and 12 instalments of £1 13s. 9d.
DOUGLAS, 1920, 4 h.p. Combination £85
Or £22 2s. down and 12 instalments of £5 10s. 6d.
N.U.T., 1920, 3½ h.p., 3 speeds, clutch, kick-starter, Lucas magdyno lighting, tax paid..... £75
Or £19 10s. down and 12 instalments of £4 17s. 6d.
RUDGE-MULTI, 1920, 3½ h.p., I.O.M. Model and sc. £50
Or £13 down and 12 instalments of £3 5s.
B.S.A., 1919, 4½ h.p., Model K and Millford sidecar £75
Or £19 10s. down and 12 instalments of £4 17s. 6d.
ROVER, 1921, 4 h.p., 3 speeds, clutch and kick-starter, all-chain drive..... £68
Or £17 13s. 5d. down and 12 instalments of £4 8s. 5d.

We are offering a few
NEW 1922 MODELS
AT
REDUCED PRICES.
May we send you particulars?

LOVETT'S LIMITED,
THE EASTERN CARAGE,
418, ROMFORD ROAD, FOREST GATE, E.7.
'Phone: East Ham 490. 'Grams: "Egaraco, London."

MOTOR CYCLES FOR SALE.

Douglas

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Douglas. Prompt delivery of any model; exchanges and extended payments; full market value allowed for second-hand machines; tuition free. [1735

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish. — Jones Garage, The Broadway, Muswell Hill. [0786

4h.p. Douglas Combination, makers' blue, looks and goes like new, grand order, guaranteed, £65; another nearly as good, £60. Both are quite exceptional bargains; cash or deferred.—Marlborough (Motor House), 20, Finchley Rd N.W.8 [6559

DOUGLAS 4h.p. Combination, 1918, in perfect condition, just been overhauled, sidecar repainted and upholstered, electric light, speedometer, tools, and many spares, tax paid end of year; £70.—241, High St., Kensington. 'Phone: Western 4978. [9584

DOUGLAS 1921 4h.p. Combination, specially fitted with Canoelet sporting sidecar, P. and H. lamp set, sidecar and tail lamps, with separate generator, all tools, Lucas horn, etc.; the outfit is in practically brand new condition, and has been little and carefully used, original tyres in perfect condition, enamel and plating as new; open to any examination and trial; accept £65 cash.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [1484

Spare Parts:

DOUGLAS Spares.— Immediate delivery.—Kays, 8 Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones Garage, The Broadway, Muswell Hill, N.10. [0806

DOUGLAS.—Herbert Robinson, Ltd., Green St., Cambridge. The Douglas Specialists. Trade supplied. Complete illustrated spare part list of the 2¾h.p. and 4h.p. 6d., post free. [1285

DOUGLAS Spares.—Large stocks of new genuine Douglas speres at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927

Economic

ECONOMIC.—Do not fail to visit Stand 45, Olympia Motor Cycle Show, and see the Economic Motor Cycle. [1407

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0893

Edmund.

NEW shop-soiled 2¾h.p. spring framed Edmund; £65.—Ross, 86, High Rd., Lee. [1392

NEW 1922 Edmund 2¾h.p. J.A.P., clutch, K.S., never ridden, list price £75; sacrifice, £65.—Millard, Altogan, Llantilio Croesenny, Mon. [1830

EDMUND-J.A.P. 1920-21 2¾h.p., 2-speed, splendid condition, Runbaken, Amac, good tyres (Duulops), head lamp, taxed; £35.—Went, Abbey-cwm-Hir, Rads. [1349

Elswick.

ELSWICK 2¾h.p., 2-speed gear box, fully equipped; £20.—153, Knollys Rd., Streatham. [1332

Enfield.

1919 6h.p. Enfield Combination and £10 for Matchless, or sell, offers.—3, Brampton Grove, Hendon, near "Bell." [1658

PRACTICALLY new dynamo Enfield Combination, run few miles; £95; exchanges.—24, Balliol Rd., North Kensington. [1610

1922 Enfield Combination, practically new, Magdyno, hood, windscreen, Watford; £120, bargain.—5, Warwick Rd., Manor Park. [1303

1920 Enfield 8h.p. Combination, electric outfit, splendid condition; any trial; £90, or offers.—14, Oannonbury Rd., Ramsgate. [1425

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [6600

1916 Enfield 3h.p., 2-speed, accessories, condition perfect, engine tight, sound, little used, tax; bargain, £37.—31, Perrers Rd., Hammersmith. [9915

ENFIELD Combination, believed 1918, very nice outfit, complete throughout, taxed; £48, or exchange.—3, Stamford Brook Rd., Hammersmith. [1800

ROYAL Enfield Combination, 1922, mileage 1,000, as new, many extras, insured, tax paid; sacrifice £120.—Mashford, 7, Park Rd., Kingston Hill. [1511

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD-VICKERS.—Large selection of 1922 8h.p. combinations, fully equipped, from £80 to £120. —Fowler and Brigden, 130, Euston Rd., King's Cross. [0961

ROYAL ENFIELD Combination, fully equipped, will exchange for solo; cash adjustment; any trial given.—7, Gainsborough Rd., Hackney Wick. Tel.: 388 East. [1885

ENFIELD 1922 models, slightly shop-soiled only; 8h.p. combination, £120: 2¼h.p. 2-speed, £45; write for shop-soiled bargain list.—P. J. Evans, John Bright St., Birmingham. [1367

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Royal Enfields, solos and combinations; exchanges and extended payments; tuition free; delivery when required. [1726

90 Guineas.—8h.p. Enfield Combination, dynamo lighting, hood, screen, etc., absolutely new condition, mileage under 4,000; must sacrifice.—18, South Bruton Mews, Bond St., W. Mayfair 4282. [9383

1921 Enfield Combination, 8h.p., Lucas dynamo lighting, hood, screen, speedometer, etc., absolutely unscratched, guaranteed; £115; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1762

ENFIELD Combination, 1921, 2-seater sidecar, 8h.p. J.A.P., dynamo, new tyres, electric Klaxon and Lucas horns, Bonniksen, spring handle-bars, Terry saddle, guaranteed perfect condition; £90.—Marks, 3, Shoe Lane, E.C.4. Central 3118. [1235

1920 Enfield Combination, Lucas Magdyno lighting, 700×80 Palmer tyres, speedometer, horn, extra air, hood, screen, side curtains, luggage grid, other extras, spares, tools, carefully used, new appearance, perfect; £85, lowest, cash.—Trent, "Winn Lodge," Lee, S.E. 'Phone: Lee Green 1234. [1463

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD.—Herbert Robinson, Ltd., Green St., Cambridge. All engine parts in stock. Trade supplied. [1286

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

1923 Excelsior lightweight Villiers, 2 speeds, wonderful power; £28/10; new.—Keen, Leominster. [1228

1920 Excelsior, 2-speed, fully equipped, guaranteed perfect; £25.—51, Upper Richmond Rd., East Putney. [1842

1921-22 Excelsior 2-stroke, 2-speed Sturmey-Archer, clutch, K.S., must realise; 31 guineas.—67, Fernlea Rd., Balham. [1809

F.N.

F.N. Lightweight 2½h.p., 2 speeds, clutch, shaft drive, lamps; 23 guineas; easy terms.

F.N. 5-6h.p., 4 cyls., shaft drive, dropped frame; 19 guineas; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [1775

4-CYL. F.N. 7h.p., 2 speeds, low frame, £18 repairs, etc., kick-starter, H.C. clutch, adjustable jet; nearest £40; exchanges.—Box 4664, c/o *The Motor Cycle*. [1270

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langton's, 37, Cricklewood Broadway, London, N.W.2. [1353

Gamage

GAMAGE Popular 2-stroke, 2½h.p., good condition, economical, £11.—10, Barcosmead Rd., Bromley. [1590

Grigg.

1922 2¾h.p. Grigg, Sturmey-Archer 2 speeds, clutch, kick-start, brand new, taxed, equipped; £55.—51, Upper Richmond Rd., East Putney. [1845

Harley-Davidson

£55.—Genuine 1919 Harley Combination, perfect.—9, Church Rd., Harlesden. [1546

7-9h.p. Harley-Davidson Combination, 1918, excellent condition; no dealers.—Baily, "Poplars," Glastonbury. [1219

1920 Harley-Davidson Combination, electric 7-9h.p.; £69/10.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [1694

1922 Harley-Davidson Combination, low mileage, every accessory; £90; exchanges.—24, Balliol Rd., North Kensington. [1615

£45.—Harley-Davidson, 1918, never licensed, paint as not scratched, any trial.—Clark, Spring Rd., Littlemore, nr. Oxford. [1635

HARLEY-DAVIDSON 1920 Combination, all accessories, 7-9h.p., perfect, original owner; price £95.—5, Julian's Rd., Stevenage. [1443

HARLEY-DAVIDSON Combination, 1915, 7-9h.p., 3-speed, lamps, splendid condition, very powerful; £6, or near offer.—Hope, Forthill, East Grinstead. [1200

The HALIFAX MOTOR EXCHANGE

25, HORTON STREET HALIFAX.

'Phone: 1400. 'Grams: Perfection

1923 MODELS.

COVENTRY PREMIER, 10 h.p., 4-cyl., 2-sr.	230 gns.
CALTHORPE, 10 h.p., 4-cyl., 2-seater ...	28S gns.
DEEMSTER, 10 h.p., 4-cyl., 2-seater	£280 0
LAGONDA, 11.9 h.p., 4-cyl., 2-seater	280 gns.
SINGER, 10 h.p., 4-cyl., 2-seater	£395 0
STONELEIGH, 8-9 h.p., 3-seater.....	£185 0
LEVIS, 2¾ h.p., single gear	£38 0
LEVIS, 2¾ h.p., single gear, 2-speed.....	£48 0
EDMUND-BLACKBURN, 2¾ h.p., 3-speed .	£7S 0
MARTINSYDE, 6 h.p. combination.....	£130 0
NEW IMPERIAL, 2¾ h.p., 3-speed	£65 0
NEW IMPERIAL, 8 h.p., 3-speed comb. ..	£125 0
SCOTT 3½ h.p. Squirrel	£89 0
O.K. JUNIOR, single gear	£38 0

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ALLDAYS-MATCHLESS, 3½ h.p.....	£22 10
BLACKBURN, 1921, 4 h.p., 3-speed.....	£59 10
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HARLEY, 1918, 7-9 h.p., 3-speed, all-chain	£67 10
HUMBER, 3½ h.p., 2-speed, free engine ..	£27 10
NORTON, 1922, Big Four, new.....	£90 0
REX-ACME, 1922, 2¼ h.p. demonstration m/c.	£42 10
ROYAL RUBY, 1922, 3 h.p., 3-speed, like new	£55 0
RUDGE-MULTI, 1921, 3½ h.p., like new..	£52 10
RUDGE-MULTI, 1920, 7-9 h.p.	£65 0
TRIUMPH, 1913, 3½ h.p., clutch model....	£29 10
VELOCE, 1920, 3½ h.p., 3-speed.....	£52 10

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ACE, 1921, 4-cyl. comb., tax paid.....	£97 10
B.S.A., 1919, 4½ h.p., all-chain comb.	£75 0
B.S.A., 1921, 6 h.p., all-chain comb.....	£119 10
COVENTRY EAGLE, 1921, combination ..	£62 10
COVENTRY VICTOR, 1921, S-7 h.p. comb.	£79 10
HARLEY, 1919, electric comb., extra good	£97 10
MATCHLESS, 8 h.p. comb., belt drive....	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£79 10
NEW IMPERIAL, 8 h.p., 3-speed comb. .	£69 10
REX, 1913, 6 h.p., coach comb.....	£42 10
RUDGE-MULTI, 1920, S-6 h.p. comb....	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb.	£7S 0
SCOTT, 3⅜ h.p., 2-speed comb., tax paid ..	£49 10
SCOTT, 1920 comb., screen, etc., tax paid..	£79 10
TRIUMPH, 3½ h.p., 2-speed comb., tax paid	£39 10
VELOCE, 1920, 3½ h.p., 3-speed, new sc...	£67 10

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H.F.G., 1920, 8-10 h.p., 2-seater, dynamo .	£97 10
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CLYNO, 6 h.p., 2-speed, coach comb.	£35 0
MATCHLESS, 8 h.p. comb., belt drive	£45 0
MARTINSYDE, 1920, 6 h.p. comb.	£79 10
NEW HUDSON, 6 h.p., 3-speed comb.....	£49 10
NEW IMPERIAL, 8 h.p., 3-speed comb. .	£69 10
REX, S-6 h.p., 2-speed, and sidecar	£29 10
REX, 1913, 6 h.p., coach comb.	£42 10
RUDGE-MULTI, 1920, 5-6 h.p. comb.....	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb.	£7S 0
SCOTT, 3⅜ h.p., 2-speed comb., tax paid ..	£49 10
SCOTT, 1920 comb., screen, etc., tax paid .	£79 10
TRIUMPH, 3½ h.p., 2-speed comb., tax paid	£39 10
WILKIN BLACKBURN, 1921, 4 h.p., 3-speed, good	£59 10

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY 7-9h.p. Combination, like new, guaranteed, give any trial; £49.—28, Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [1593

£58.—Harley-Davidson Combination, 1918 Montgomery sporting sidecar, fully equipped, licence, splendid condition.—63, Solon Rd., Brixton. [1538

1918 Harley-Davidson Combination, Bosch magneto, Amac carburetter, gas lamps, Cameo windscreen, disc wheels, just overhauled; bargain, £58.—Walbro, Ely, Cambs. [1261

BARGAIN.—1921 4h.p. flat Twin Harley-Davidson, 3 speeds, perfect; 55 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1870

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [1031

1920 Harley-Davidson Combination, 4h.p. flat twin, 3 speeds, C. and K.S., all lamps, horn, speedometer, absolutely as new, guaranteed; £75; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1764

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4804

HARLEY-DAVIDSON.—We have a very large stock of second-hand spares of these well-known machines, and on receipt of a post-card stating your requirements we will, by return, quote you very competitive prices; our stock comprises practically all parts.—Maudes', 100, Great Portland St., W.1. [1691

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

Hawker.

1923 Models.—Hawkers on extended payments.—Wauchope's, 9, Shoe Lane, London. [1727

BRAND New 2¾h.p. Hawker, 3-speed, clutch, kick-start, Blackburne engine; list price £84, our price £65.—Pioneer Motors, Grindlay St., Edinburgh. [9535

Henderson.

ROBERTSON'S Motors, Ltd.—1922 De Luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [2350

BRAND New Henderson De Luxe, with Millford De Luxe sidecar, most luxurious outfit; list price £175, our price £110.—Pioneer Motors, Grindlay St., Edinburgh. [9541

1921 Henderson 4-cyl. Combination, special fittings and sidecar, dynamo, just as new; sell £140, or exchange 1919-20 model and cash, solo preferred.—13, Victoria Rd., Sheffield. [1385

BARKER'S Motors, the Henderson specialists and authorised agents. Overhauls and repairs carried out; all spares in stock; deferred payments.—194, Balham High Rd., S.W.12. 'Phone: Latchmere 4441 [1028

HENDERSON, late 1921, model K, De Luxe Combination, electric lighting, etc.; the whole outfit fitted regardless of cost; has only done 700 miles, and is as new; accept £120, or near offer.—Oaklands, The Grove, Finchley, N.3. 'Phone: 868. [1748

Hobart.

NEW shop-soiled 2¾h.p. Hobart; £65.—Ross, 86, High Rd., Lee. [1393

1919 Hobart-Villiers, 2-speed, fully equipped, licensed; any trial; 26 guineas.—Fisher, 48, High St., Chelmsford. [1208

Humber.

3½h.p. Humber 2-speed Combination, as new; trial; £20.—17, Heaton Rd., Mitcham. [1471

1923 Models.—Humbers; exchanges and extended payments; generous terms.—Wauchope's, 9, Shoe Lane, London. [1728

SPORTS model 1922 4½h.p. Humber, flat Twin, brand new; to clear £79.—Shepherd, Enfield Highway. 'Phone: Waltham X 31. [1672

HUMBER 3½h.p. Combination, 2-speed, Bosch, B. and B., excellent order; must sell, £27/10.—Hart, Botesdale, Diss, Norfolk. [1449

HUMBER 1920 4½h.p. Combination, speedometer, lamps, splendid condition, trial by appointment; £50, bargain.—Hunt, 29, Alfred St., Bow, E. [1311

1922 Humber Flat Twin Combination, completely equipped, equal to new; cost £145, accept £90 cash.—The Layton Garages, 30, Holywell St., Oxford. [9704

1922 Humber; special offer of our last remaining standard touring model, brand new; list price £110, special cash price £80.—The Layton Garages, 30, Holywell St., Oxford. [9714

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Indian.

RED Indian, T.T., clutch model, 7-9h.p. twin, lamps; only 29 guineas; easy terms.

INDIAN, latest 1921, almost new, dynamo lighting, big valve, Powerplus, 3 speeds, everything fitted; 69 guineas; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [1776

£22.—7-9h.p. 1915 Indian, clutch model, splendid running order.—King, Egrove, Oxford. [1427

1916 Powerplus Indian Combination, dynamo lighting; £50.—Ross, 86, High Rd., Lee. [1396

INDIAN, 1922, Scout, like new, taxed, 68 guineas. R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1920 Indian 7-9h.p. Combination; £60; 3 months' guarantee.—21, Marlborough Crescent, Chiswick. [1176

INDIAN Combination, electric lighting, splendid condition; £55.—6, Princess Mews, Belsize Park, N.W.3. [1477

1914 Indian Combination, 9h.p., 2-speed, K.S.; bargain, £40.—Captain Collins, Sunbury-on-Thames. [1626

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Indians; exchanges and extended payments. [1729

1923 Indian Scouts.—Full particulars and exchange quotations from "Parwood," Indian agents, 89, East Hill, Wandsworth. [1524

7-9h.p. Indian, 2-speed, clutch, Binks, Bosch magneto, excellent condition, lamps, horn, tax paid; £25.—P. Willcocks, Datchet, Bucks. [1419

INDIAN 1914 7h.p., good condition, 2-speed, K.S., spring frame; £35, or offer; trial.—58, Acacia Rd., St. John's Wood, N.W.8. [1859

1916 Indian 7-9h.p., 3-speed gear Combination, T.T. bars and discs, very smart, in perfect condition; going abroad; offers.—Crabb, Stormont, Leven, Fife. [1183

CHEAPEST Indian 7-9h.p. Combination, first-rate condition, electric lighting, Easting screen, Stewart speedometer; £45 the lot.—Buntings' Exchange, Wealdstone. [1783

BARGAIN.—Indian 7-9h.p., 2-speed, coachbuilt combination; 35 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1871

LATE 1920 electrically equipped Powerplus Indian and special Mills-Fulford sidecar, magnificent condition; £100, a bargain.—Hancock, Manor Rd., St. Albans. [1408

£57, exchange.—1919 Indian Powerplus combination, 3 speeds, K.S., spring frame, lamps, windscreen, luggage grid, splendid condition.—76, Neate St., Camberwell. [1493

7-9h.p. Indian 1919, Binks, good condition, any trial, sidecar optional; sell or exchange late 2¾h.p. A.J.S. or o.h.v. Blackburne.—Gaskell, Woodlea, Orrell Rd., Wigan. [8581

85 Guineas, offers, exchanges.—1921 7-9h.p. Indian combination, very smart, many extras, electric light, little used, fast; exchanges, cash either way.—Ewers, Newton Rd., Burton-on-Trent. [1639

INDIAN 1920 7-9h.p. Powerplus Combination, Millford sidecar, spring frame, dynamo lighting, windscreen, Tao-Sad, new battery, chains and tyres, mileage 5,500, perfect condition; £80.—Grant, 21, Ashburton Rd., Croydon. [1212

THE best value is undoubtedly the Indian. See what you get; no trouble, dynamo lighting, electric horn, a first-class speedometer, a real automatic carburetter, reliable mechanical oil feed, the original and best bristling with improvements, Scout model; solo, £96/10; dynamo lighting, £113; Standard solo, £123; Chief solo, £132; let me have your order for any of the models; when you buy one off me I shall look after your interests; largest stock of Indian parts in the provinces.—Horswill, Indian Specialists, 42, Bridge St., Chester. 'Phone: 943.

BEAUTIFUL latest model Indian Chief Combination, demonstration model, August, dynamo lighting, Princess sidecar, scuttle dash, and Triplex windscreen, domed legshields, in lovely condition throughout; £132/10.

LATEST Scout model, brand new; £92/10.—Horswill, Indian Specialists, 42, Bridge St., Chester. 'Phone: 943. [1278

Spare Parts:

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [3787

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1919	3½ h.p. **P. & M.**, 2-speed, clutch and K.S., horn, a gift	£38
1920	8 h.p. **MATCHLESS** comb., fully equipped, spring frame, etc.	£80
1920	6 h.p. **A.J.S.** comb., fully equipped, as new, many extras	£110
1920	5-6 h.p. **ZENITH**, electric lamps, speedometer, etc.	£50
1920	7-9 h.p. **INDIAN** comb., dynamo, speedometer, etc.	£55
1920	7-9 h.p. **INDIAN** comb., dynamo, electric horn, screen, etc.	£68
1920	7-9 h.p. **AMERICAN-EX.**, 2-seater sidecar, lamps, etc., etc.	£65
1921	4½ h.p. **ARIEL** comb., all-chain drive fully equipped	£75
1921-22	8 h.p. **ENFIELD** comb., 2-seater, electric lamps, hood, etc., etc.	£90
1922	3½ h.p. **RUDGE**, 3-sp., clutch and kick-start, all-chain, as new	£68
1922	2¾ h.p **DOUGLAS**, lamps, horn, knee-grips, etc., as new	£50
1922	2¾ h.p. **WOLF-BLACKBURNE**, O.H.V. engine, fully equipped	£58
1922	4 h.p. **TRIUMPH** comb., all-chain drive, fully equipped, as new	£115
1922	8 h.p. **ENFIELD** comb., lamps, horn, screen, etc.	£100

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Spare Parts:

FOR Indian spares and overhauling try Horswill, Indian Specialist, over 10 years' experience, 42, Bridge St., Chester. [1277

Ivy.

29 Guineas.—Ivy 1920, Sturmey-Archer 2 speeds, clutch and kick-start, as new.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [1555

Spare Parts:

IVY.—Engine Spares from stock.—Mandes', 100, Great Portland St., W.1. [1689

James.

1919-20 James 4¼h.p. Combination, all accessories, perfect order; bargain, 55 guineas; only wants seeing.—91, Bellenden Rd., Peckham. [1802

AT Edwards.—1922 3½h.p. Sports James, equipped, tax paid, indistinguishable from new; 72 guineas. Deferred payments and exchanges.—101, Great Portland St., W.1. [4521

1922 Practically Brand New James 2¾h.p., 2-speed, clutch, kick-starter, fully equipped, cost £68; accept £36; must sell quickly.—The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [1665

Spare Parts:

JAMES Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9449

WHITBYS.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. Lightweight, tax paid, good running order; £10.—Norman, Kneeshaw, Slingsby, Yorks. [1193

Lea-Francis.

A BARGAIN.—1921 3½h.p. Lea-Francis, 2-speed, clutch, guaranteed perfect; £60; owner bought car.—Jones, Croydon St., High Wycombe. [1242

LEA-FRANCIS, 3½h.p. J.A.P. twin, 2-speed, clutch K.S., fully equipped, excellent condition; combination, £40; solo, £35, or offers.—38, Lordship Lane, S.E.22. [1180

AT Edwards'.—1920 3½h.p. Lea-Francis, M.A.G. engine, fully equipped, lamps, horn, speedometer, perfect order; 48 guineas. Exchanges or deferred.—101, Great Portland St., W.1. [9326

58 Guineas.—Lea-Francis, 1922, 3-speed, clutch, kick-starter, enclosed chain drive, actual gold medal winner Scottish and English Six Days Trials, new tyres.—Delancey St. Garage, Camden Town, N.W.1. [1461

LEA-FRANCIS 1922 3½h.p., 3-speed, M.A.G. engine, electric lighting, speedometer, Brooks cantilever saddle, 2 horns, mileage 1,297, condition as new, all spares; £70.—Hucklebridge, 133, Sloane St., Chelsea, S.W.1. [1465

Levis.

PREMIER Motor Co., the Levis specialists.

IMMEDIATE Delivery of 1923 Levis Models; also the last few 1922 models at further greatly reduced prices. 2¼h.p. Popular, single gear, £35. Model S, 2¼h.p., 2-speed, clutch, kick-start, £44. Model G2, 247 c.c., 2-speed, clutch, kick-start, £50, deferred payments 4% extra; sent on approval.—Premier Motor Co. Aston Rd., Birmingham. [9597

£19.—1919 Levis, dynamo lighting, new Dunlops, licensed.—89, East Hill, Wandsworth. [1523

1923 Models.—Wauchope's, 9, Shoe Lane, London. Levis; exchanges and extended payments. [1730

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone 852. [0981

1921 Levis Popular, Lucas head and rear lamps, Stewart horn, licensed, Dunlop, condition like new; bargain, £26.—Walbro, Ely, Cambs. [1271

1922 Levis, 2 speeds, Sturmey hand clutch, brand new; reduced to £48; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1761

Spare Parts:

LEVIS.—Herbert Robinson, Ltd., Green St., Cambridge. All parts in stock. Trade supplied. Illustrated list post free. [1281

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

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MARTINSYDE Combination 1921, electric lighting, very fully equipped, in excellent condition; £90.—Hellier and Co., 5, Williams Mews, Lowndes Square, S.W. Victoria 2595. [0951

ROBERTSONS Motors, Limited, are the London Martinsyde Service agents; trial runs arranged; 1923 models now available at the new prices, spares stocked.—157B, Gt. Portland St., W.1. [1151

1922 Martinsyde 6h.p. Combination, complete with Milford sidecar, cost £160, has only been used a few times; a gift at £130; cash or deferred.—Marborough (Motor House), 20, Finchley Rd., N.W. [6501

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Martinsyde.

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones' Garage, The Broadway, Muswell Hill, London, N.10. [0918

Matchless.

1919 Matchless, Victory model, Easting, Tan-Sad, spare wheel; £58, or near offer.—73, High St., Deptford. [1206

1912 Matchless twin, C.B. sidecar, 1921, running order; cheap.—Wood, 17, Ashton Terrace, Harehills, Leeds. [1340

1919 Matchless Combination, in good condition, all on, must sell; £65.—Adams, 9, Belmont Hill, Lewisham, S.E. [1196

1931 Model H Matchless Combination, every possible accessory; £82; exchanges.—24, Balliol Rd., North Kensington. [1608

6h.p. Matchless, 2-speed, good condition, fast, equipped, £28; sidecar, £6/10; exchange 3½h.p. single.—Bishop, Fernbank Rd., Ascot. [1269

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Matchless combinations; exchanges and extended payments. [1731

MATCHLESS-GREENWICH 1923 latest models in stock, inspection invited.—See Sam. E. Clapham at the Show, Matchless, Stand 71, Olympia.

1923 Programme. All leading makes of motor cycles and light cars.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich. [1867

MATCHLESS, all models, 1923 prices; best exchange allowances; deferred.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [1155

1921-22 Model H Matchless Combination, spring frame, spare wheel, absolutely as new; bargain, 88 guineas.—67, Fernlea Rd., Balham. [1812

MATCHLESS Combination, 8h.p., 2-speed, lamps, horn, etc., overhauled, good running order; 40 guineas.—Edwards, 50, Harrington Rd., South Kensington. [1142

MATCHLESS, brand new, Model H2, M.A.G. engine, spring frame, Lucas lamps, horn, screen, shields, etc.; £130, only one at this price.—Mason's Garage, Lotchworth, Herts. [1660

8h.p. Matchless Combination, 1922, with spare wheel, hood screen and speedometer, dynamo lighting and horn, tax paid; best offer secures.—33, New Bedford Rd., Luton. [1587

£50.—Sporting 1920 5h.p. twin J.A.P. engined Matchless, engine just returned from being overhauled and replated by makers, new tyres, new Bosch, Binks, Lucas lamps.—H. M. Lillywhite, Enham, Andover. [1329

AT Edwards.—1919 8h.p. Victory Matchless Combination, Lucas lamps, Bonniksen speedometer, spare wheel, new condition throughout; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1150

1914 8h.p. Matchless Combination, 2-speed, clutch, kick-start, lamps, horn, Easting, splendid sidecar, enamelling, plating original good; £38; exchange solo.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [1596

MATCHLESS-J.A.P. H2 Combination 1922, bought from manufacturers last month, Lucas Magdyno, spare wheel, Easting, etc.; £125; kindly write for appointment.—Walton, 23, Percy Rd., South Norwood, S.E.25. (P) [1355

1921 Model H Matchless Combination, dynamo lighting, spare wheel, speedometer, hood, screen, small mileage; £95. Ditto, late 1920 M.A.G., dynamo lighting; £85.—Hillier, 127, St. Mark's Rd., North Kensington. [1542

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1923 Matchless Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

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Metro.

1920 Metro-Tyler Sports Models, excellent order; £25; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1765

Minerva.

MINERVA 2¾h.p., m.o.v., Bosch, excellent running; £8; stamp.—17, Heaton Rd., Mitcham. [1472

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P. & M., 1922, 4½ h.p. de Luxe Combination	£120
QUADRANT, 1922, 4½ h.p. Combination	£95

SECONDHAND SOLOS.

A.J.S., 1922, 2¾ h.p. Model B.1	£68
CALTHORPE, 1922, 2½ h.p., 2-stroke, 2-speed, clutch and kick-starter	£35
IVY, 1921, 2½ h.p., 2-stroke, 2-speed	£50
LEA-FRANCIS, 1919, 3½ h.p., lamps, etc.	£50
SUNBEAM, 1921, 3½ h.p., Semi-Sports	£85
SUNBEAM, 1922, 3½ h.p., Semi-Sports	£95
TRIUMPH, 1918, 4 h.p., with lamps, etc.	£50
TRIUMPH, Baby 1920, 2½ h.p., lamps, etc.	£35

SECONDHAND COMBINATIONS.

A.J.S., 1919, 6 h.p., with spare wheel, horn	£95
A.J.S., 1922, 2¾ h.p., Model B	£85
A.J.S., 1922, 2¾ h.p., Model B.1, equipped. Special demonstration model	£88
A.J.S., 1920, 6 h.p., with spare wheel, hood, electric lighting, speedometer, horn	£100
A.J.S., 1920, 6 h.p., spare wheel, horn, etc.	£100
A.J.S., 1921, 7 h.p., dynamo lighting, Cowey speedometer, spare wheel, child's dickey seat, hood and cover	£135
A.J.S., 1920, 6 h.p., 2-seater sidecar, screens, spare wheel, electric lighting	£105
B.S.A., 1921, 6-7 h.p., detachable wheels, lamps, horn, etc.	£120
CEDOS, 1921, 2½ h.p., Canoelet sidecar, electric equipment, horn, tools, etc.	£75
***HARLEY-DAVIDSON,** 1919, 7-9, and accessories	£85
***HENDERSON,** 1921, 11 h.p. C. & M. sidecar, dynamo lighting, speedometer, etc. Cost over £340	£140
MATCHLESS, 1921, 7-9, M.A.G. engine, spring frame model, spare wheel, speedometer, lamps, etc.	£99
ROVER, 1919, 3½ h.p., special sporting sidecar, lamps, horn, etc.	£70
SUNBEAM, 1916, 3½ h.p., Henderson sidecar, speedometer, etc.	£80
TRIUMPH, 1918, 4 h.p. Watsonian sidecar, fully equipped	£75
ZENITH, 1921, 8 h.p. clutch model, fully equipped, as new	£110

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1922 Ner-a-Car, slightly shop-soiled, ready for road; reduced to £57.—South Eastern Garage, Herne Hill, London, S.E.24. [1743

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NEW HUDSON-J.A.P. 4h.p., less back wheel; £10.—Kennard, 78, Yerbury Rd., Holloway, N.19. [1388

£17.—1914 3½h.p. New Hudson, 3-speed, clutch, good running order, taxed.—King, Egrove, Oxford. [1428

£25.—New Hudson, 2-stroke, splendid order, take pedal cycle part.—57, Kenbury St., Camberwell, London. [1562

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1920 4h.p. New Hudson Combination, as new, 3-speed countershaft, clutch, kick-start, legshields, speedometer, magnificently equipped; bargain, £62/10; Easting, etc.—Rmind and Co., Stone Place, Rusholme, Manchester. [1377

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1922 New Imperial-Jap, 2¾h.p., 3-speed, clutch, K.S.; £45.—24, Balliol Rd., North Kensington. [1616

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NEW IMPERIAL 8h.p. Combination, October, 1919, fully equipped, excellent condition, licensed, insured, privately owned; £80; including spare tubes, etc.—Harrison, 345, Ley St., Ilford. [1262

1922 Imperial 2¾h.p. 3-speed, clutch, K.S., all-chain, lamps, horn, speedometer, done 2,000 only, guaranteed sound order and condition; real bargain, £46.—38, Claverton St., Bath. [1586

1918 8h.p. New Imperial Combination, all-chain drive, electric lamps, tax paid, Easting windscreen, splendid running order; £55.—D. and S. Autocar Co., 33, The Parade, Golders Green. [9148

AT Edwards.—1921 8h.p. New Imperial Combination, all-chain drive, 3-speed, kick-starter and clutch, electric lighting, horn, Easting Royal windscreen, pillion seat, legshields, perfect condition throughout, tax paid; 81 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1151

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£28 1921 O.K. 2-speed, take 2, brand new.—38, Hemans St., Wandsworth Rd. [1571

O.K. 2-stroke, excellent running order; bargain, £15.—Fisher, Springwell Rd., Heston, Hounslow. [1755

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AT Edwards'.—1921-22 2½h.p. O.K. Junior, 2-speed, kick-starter, and clutch, fully equipped, discs, knee-grips, tax paid, perfect order; 34 guineas. Exchanges or deferred.—101, Great Portland St., W.1. [9327

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OMEGA-J.A.P. 1919, 2-speed, Tan-Sad, tax, insurance, good condition, reliable; £28.—136, Wanstead Park Avenue, E.12. [1304

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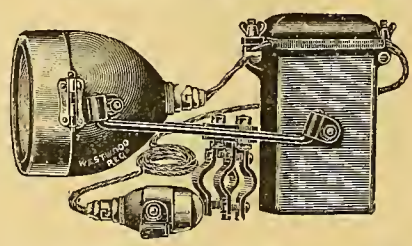

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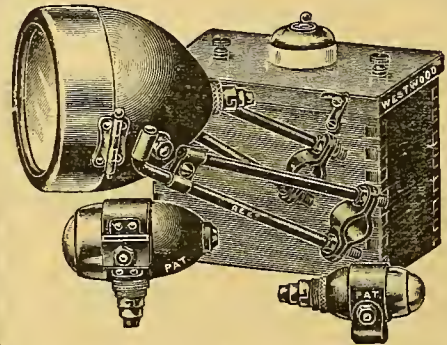

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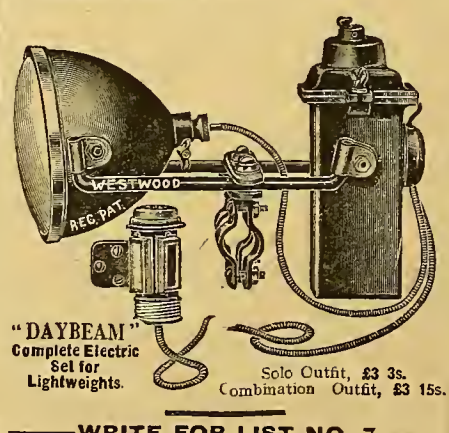

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P. and M. Combination, 1918 hood, lamps, taxed, perfect condition; £45.—50, Haverstock Hill, N.W.3. [1573

£35.—P. & M. Combination, hood, screen, speedometer, electrics, perfect.—Arthur Shore, Aldbury, Tring. [1495

3½h.p. P. and M., late model, good condition, fast, must sell; £38, offer.—Cullinane, London Aerodrome, Croydon. [1350

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P. and M. B.A.F., 2-speed, K.S., new tyres, aluminium chain cases, requires assembling, all parts perfect; £25.—1, Springfield Park Crescent, Catford, S.E.6. [1624

P. and M. 1918 Combination, new and exceptional condition, screen, etc., fully equipped, guaranteed; £47/10.—51, Upper Richmond Rd., East Putney. [1839

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PREMIER Combination 3½h.p., 3-speed, countershaft, kick-start, any trial; 38 guineas, take lightweight part.—57, Kenbury St., Camberwell, London. [1563

PREMIER 3½h.p. and sidecar, 3-speed, clutch, K.S., licensed, fine condition, insured; £26.—Kinsey, 23, Pemberton Gardens, Junction Rd., Upper Holloway, N.19. [1817

PREMIER 1915 3½h.p. Coachbuilt Combination, 3-speed, countershaft, kick-start, enamel and plating as new, lamps, speedometer, thoroughly reliable; £27/10.—1, Priory Rd., Kew. [1826

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AT Edwards.—2¾h.p. Priory 2-stroke, 2-speed, brand new; £36.—101, Gt. Portland St., W. [7503

1922 Priory, 2¾h.p., J.A.P., 2-speed, clutch and kick-start, brand new and unused, three months' guarantee; £50; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1143

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1921 P.V., spring frame, 2¾h.p. Villiers engine, 2 speeds, clutch and kick-starter, dynamo lighting, electric horn, knee grips, etc., exceptionally nice condition, guaranteed perfect; £37/10; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1766

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£55.—1921-22 Quadrant combination, accessories.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1838

£90, or reasonable offer.—Brand new 1922 Quadrant combination.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1837

BRAND New 4½h.p. Quadrant, 1922 model; bargain, quick sale, list price £105, our price £90.—Pioneer Motors, Grindlay St., Edinburgh. [9539

Spare Parts:

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RALEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £56.—7, Exhibition Rd., S.W.7. [3588

RALEIGHS.—1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [9960

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5-6h.p. Rex Combination, Bosch, B. and B.; £16.—Gough, Kidbrook, Forest Row, Sussex. [1490

1923 Rex Models.—Wauchope's, 9, Shoe Lane, London. Exchanges and extended payments. [1724

4h.p. Rex, needs slight attention, dropped frame, O.A.V., Sensprag, £12, or offer.—E. W. Griffin, Farcet, Peterborough. [1256

REX 5-6h.p. Combination, in perfect running order, any trial; bargain at 28 guineas, or nearest.—48, Erskine Park Rd., Rusthall, Tunbridge Wells. [1338

Roper.

£12.—3½h.p. Roper, Dunlop studded, Bosch, running order.—186, Mitcham Rd., Tooting. [1251

Rover.

1920 5-6h.p. Rover and sidecar, perfect; £62/10; exchanges.—89, Spence Place, Leeds. [1607

1921 3½h.p. Rover Combination, as new; £55.—24, Balliol Rd., North Kensington. [1612

5-6h.p. Rover 1919; £60; in splendid running order; officer ordered abroad.—Apply Linington, 54, Commercial Rd., Portsmouth. [1339

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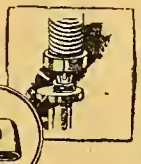

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£30, Offers.—1914 T.T. Rover, sidecar, Philipson, new valves, tyres, equipped, separate; also 6h.p. Davis V twin engine, Simms magneto, £8; exchanges.—Beadle, St. Albans Rd. Bridge, and 19, Lowestoft Rd., Watford. [1442

AT Edwards.—1920 3½h.p. Rover, all-chain drive, equipped with electric lighting, horn and speedometer, absolutely indistinguishable from new; 55 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1149

BARGAIN.—Rover 3½h.p., 3 speeds, hand clutch, kick-start, 29 guineas; also Rover 3h.p. 3-speed combination, Rover sidecar, 38 guineas; exchanges; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1118

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ROVER Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9445

Royal Ruby.

8h.p. Royal Ruby and sidecar, as new; £65.—Ross, 86, High Rd., Lee. [1398

1919 Royal Ruby 8h.p Combination, fine condition, perfect; £47/10.—9, Church Rd., Harlesden. [1545

ROYAL RUBY.—Latest 2¾h.p. sports model, little used; £40.—Fowler and Brigden, 130, Euston Rd., King's Cross. [0962

1919, October, Royal Ruby Combiantion, 8 h.p. J.A.P., three-speed, fully equipped, tyres good mileage 2,500, guaranteed throughout, reason health; nearest £100.—Wilkinson, Broadway, Maidstone. [1191

1922 8h.p. Royal Ruby spring frame combination fully equipped, shop-soiled only; cash offers invited to clear before the Show.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [1861

Rudge.

I.O.M. Rudge, 1922 models, new; £60.—Ratcliffe Bros., 20, Gt. Portland St., W.1. [1712

PRACTICALLY new I.O.M. Rudge, run few miles; £45.—24, Balliol Rd., North Kensington. [1613

RUDGE-MULTI, fast, lamps; £30; would consider exchange.—Slaughter, 36, Park Rd., Spalding. [1132

1923 Rudge Models.—Wauchope's, 9, Shoe Lane, London. Exchanges and extended payments. [1725

RUDGE 3½h.p., clutch model, new condition; £18; lamps, tools.—68, Gloucester Rd., Camden Town. [1550

£48.—1920 7-9h.p. Rudge-Multwin coachbuilt combination, had little use.—King, Egrove, Oxford. [1430

3½h.p. Rudge-Multi, late, smart, superabundantly powerful, £22.—99, Tynemouth Rd., Mitcham. [1507

3½h.p. Rudge-Multi, equipped, and very smart; first cheque for £17/10 secures.—67, Fernlea Rd., Balham. [1811

SOUTHPORT.—1921 I.O.M. Rudge, splendid condition; 39 guineas; exchanges.—Kents, 417, Lord St., Southport. [1452

£33.—1921 I.O.M. Rudge, Lucas lamps, appearance and condition excellent; evenings.—4, Elm Gardens, Hammersmith. [1825

RUDGE-MULTI 1921, fully equipped, fast, perfect, little used, unpunctured, taxed; £40.—Multi, Inverteign, Teignmouth. [1257

1921 7-9h.p. Rudge-Multi Combination, in first-class condition; first £65 secures.—Wilkinson, Dalehead, nr. Clitheroe, Lancs. [1252

RUDGE-MULTI 1919 3½h.p., mechanically sound, Bosch, lamps, tyres as new, licensed; bargain, £30.—11, Parr St., Kendal. [1439

RUDGE 1915 Combination 3½h.p., 3 speeds, clutch, Easting, Stewart, fully equipped, good condition; £45.—Atwill, Axbridge, Somerset. [1353

RUDGE-MULTI 1921, T.T. model, lamps, pillion, tools, practically new tyres, guaranteed absolutely perfect; £43.—28, Alexandra Rd., Windsor. [1327

AT Edwards.—1921 Rudge-Multi, fully equipped, speedometer, splendid condition; 42 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1850

1921 Rudge Coachbuilt Combination 5-6h.p., hood, lamps; 59 guineas; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [1778

SHOP-SOILED Brand New 5-6h.p. Rudge Solo, £69; also ditto combination, £87/10; also ditto 7-9h.p. combination, £97/10.—Shepherds, Enfield Highway. Tel.: Waltham X 31. [0925

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Sarolea.

£25.—Sarolea Combination, in good running order, tax paid.—Ford, Bourton, Nr. Rugby. [1752

Scott.

SCOTT, engine, makers' overhaul, and sidecar; sound, £35.—725, Chester Rd., Erdington. [1515

SCOTT 3¾h.p., first-class condition, any trial, tax paid; £65.—1, Lower Sandgate Rd., Folkestone. [1306

1923 Scott Models.—Wauchope's, 9, Shoe Lane, London. Exchanges and deferred payments; tuition free. [1717

SOUTHPORT.—Instant delivery latest 1923 Scott Squirrel, new improvements; £89; exchanges.—Kents, 417, Lord St., Southport. [1453

SCOTT 3¾h.p. 1920, excellent condition, tax paid, £55; similar machine, 1915 model, £35.—P. J. Evans, John Bright St., Birmingham. [1370

SCOTT Service Depot, Cathedral Motor Works, Liverpool.—Scott motor cycles and Scott Sociables; 1922 Scott Sociables at 158 guineas. [9980

SCOTT Squirrel 3½h.p., discs, T.T., new chains, P.H. horn, spring footboards, good order; £20, or near.—Woods, 64, Marlborough Rd., Bedford. [1342

EXCEPTIONAL Opportunity.—Brand new, specially tuned Scott Squirrel, special engine, 70 miles per hour guaranteed, unpacked; first £80 secures; the mount for the speed merchant; no offers.—Green, 7, Brewery St., Chesterfield. [1211

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WARD Motors, Ltd., 32, Hustler St., Bradford, for sound second-hand Scott parts at less than half-price; satisfaction guaranteed. List by return. [0889

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Singer.

1913 3½h.p. Singer, everything perfect; £18.—Bernard, Shepherdswell, Dover. [1745

£12.—Singer lightweight, enclosed Bosch, splendid running order, taxed.—King, Egrove, Oxford. [1431

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GENUINE Singer Parts.—Let me quote you.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [1645

Spark.

NEW 1922 Spark, 2¾h.p. Villiers, Starmey-Archer 2-speed, clutch, K.S., list price £52/10; sacrifice, £45.—Millard, Altogan, Llantilio Croesenny, Mon. [1531

Sun.

1919 Sun-Villiers, good condition, all on, tax paid; £19.—Millard, Altogan, Llantilio Croesenny, Mon. [1532

BARGAIN.—Sun-Villiers 2-stroke, single speed; 15 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1873

1921 Sun-Vitesse, 2-speed, excellent condition, recently overhauled, good tyres, taxed, reliable machine; £34.—Marcen, Binfield, Berks. [1326

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Sunbeam.

SUNBEAM, latest 2¾h.p., 1923, all other models.—Clifford Motories, Eastwood, Notts. [9959

1920 3½h.p. Sunbeam and Millford sidecar, complete, lamps, etc.; £90.—Cross, Effingham Sq., Rotherham. [1704

1920 8h.p. Sunbeam Combination, spare wheel, electric lighting; £120.—69, West Cliff Rd., Ramsgate. [1598

SUNBEAM 1921 3½h.p., new condition, Lucas acetylene, speedometer, taxed, 26×3; £85.—7, Exhibition Rd., S.W.7. [5618

SUNBEAM 1921 3½h.p., lamps, horn, speedometer, spares, taxed, excellent condition; £85.—Ogle, Digswell, Welwyn. [1181

SUNBEAM late 1916 Combination, excellent condition; £65, or best cash offer.—41, St. Edmunds Rd., Northampton. [1580

1921 3½h.p. Sunbeam Combination, spare wheel, screen, apron, Lucas lamps and horn, licence, in exceptionally good condition; a bargain at £120; bought car.—R. Turner, Ambleside, Station Rd., Newport, Salop. [1661

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SUNBEAM 1922 4¼h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £128, 7, Exhibition Rd., S.W.7. [5619

SUNBEAM 1920 3½h.p. Semi-sports, lamp, horn, speedometer, in very good condition.—Offers to T. M. Jones, 26, High St., Bala. [9416

SUNBEAM Combination 3½h.p., 1921, not registered until May this year; 110 guineas.—J. Williams, 93, Merridale Rd., Wolverhampton. [1437

1923 Sunbeam Models.—Wauchope's, 9, Shoe Lane, London. Central 5163. Exchanges and easy terms; delivery from works if preferred. [1720

3½h.p. Sunbeam, November, 1919, splendid condition, best Lucas and Cowey, footboards and footrests; £45.—May Villa, Failsworth, Manchester. [1185

1914 3½h.p. Sunbeam, 3-speed, overhauled, and in excellent running condition; £50.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [1847

1921 8h.p. Sunbeam Combination, dynamo lighting, spare wheel, speedometer, watch, mileage 3,140, licensed, all in splendid condition; £115.—Walbro, Ely, Cambs. [1280

1920 Sunbeam 3½h.p. Sports Combination, completely equipped and licensed, excellent condition; £90.—The Layton Garages, 30, Holywell St., Oxford. [9707

1922 T.T. Sunbeam, special machine, not done 2,000, Bonniksen speedometer, lamp, horn; £98, cost £140.—Millard, Altogan, Llantilio Croesenny, Mon. [1529

SUNBEAM Combination, 8h.p., December, 1919, spare wheel, acetylene lamps, mileage 5,000, overhauled by makers March, 1922; £95, no offers.—Dr. Wilson, Mile End Hospital, Bancroft Rd. [1601

1921 Sunbeam 8h.p. Combination, most luxuriously equipped, dynamo, spare wheel, hood, etc., many spares, as new; £130, nearest.—James, c/o Pradmores, 482, Harrow Rd., Paddington. [9974

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SWIFT (Ariel) 3½h.p., 1913-14, variable gear, pedal start and clutch, good tyres, fully equipped, licensed; any trial; £19.—E. D. Dowell, Pyrford, Woking. [1479

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PREMIER Motor Co. for Triumph Bargains.

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CROSS, Effingham Square, for the Trusty Triumph in Rotherham. [1703

TRIUMPH, 1913, all on, clutch, good bargain; £15.—1, Priory Rd., Kew. [1827

1921 Triumph Combination, as new; £62.—24, Balliol Rd., North Kensington. [1611

£35.—1921 Triumph Junior, done under 500 miles, as new.—King, Egrove, Oxford. [1432

1911 3½h.p. Triumph, guaranteed running order; £15.—Ross, 86, High Rd., Lee. [1399

TRIUMPH 3½h.p., 1913, clutch, £18; 1912 model, £13.—17, Heaton Rd., Mitcham. [1470

1918 Countershaft Triumph; £40. Ditto, 1920; £52.—24, Balliol Rd., North Kensington. [1614

MUST sell, Triumph Model H, not ridden 100 miles; £80 cash.—Francis, 106, Station Rd., Harrow. [1784

4h.p. Triumph, Millford sidecar, new condition; £50; would separate.—120, Sutherland Rd., Croydon. [1658

1919 Triumph Combination, equipped; £50.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [1696

£27, bargain.—T.T. Triumph, Philipson, decompressor, fully equipped.—89, East Hill, Wandsworth. [1523

1918 Triumph 4h.p. Countershaft, sound condition; £40.—Mumford, 337, King St., Hammersmith, W.6. [1220

1921 Triumph H 4h.p. licence paid; 65 guineas.—Williams, Bright View, Hadley Rd., New Barnet. [1514

TRIUMPH, chain drive, 1922 models; at £85; fully guaranteed.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1711

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1920 Triumph Combination, fine condition; £62/10. M. Hillier, 216, Portobello Rd., North Kensington, W. [9906

1922 Triumph 4h.p. model H, new, fully equipped, all accessories, guaranteed.—134, Lincoln Rd., Peterborough. [1314

TRIUMPH Model S.D., just delivered from Triumphs, brand new; £85.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [1787

£42.—1918 Triumph, fully equipped, licensed, in very nice condition; evenings.—4, Elm Gardens, Hammersmith. [1821

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1918 Triumph, 58920, fully equipped, perfect; £43.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9976

1922 Triumph Model H, in excellent condition and fully equipped; £65.—The Layton Garages, 30, Holywell St., Oxford. [9711

1920 Triumph, aluminium sidecar, disc wheels, legshields, speedometer, guaranteed; £70.—98, Magdalen Rd., Oxford. [1312

£65.—Triumph, 1921, all-chain model, practically as new, accessories, tax paid.—Delancey St. Garage, Camden Town, N.W.1. [1462

TRIUMPH 1919 4h.p., 3-speed, clutch, K.S., perfect condition, any trial; £60, or nearest offer.—193, Brentwood Rd., Romford. [9394

1920 Model H Triumph, insured to June, aluminium piston, fast, all accessories; £50.—Mosa Side, Manchester Rd., Ashton-under-Lyne. [1671

TRIUMPH 4h.p. 1922, model H, 3 speeds, brand new; £80; deferred payments.—Eagles and Co., 275, High St., Acton, London. [1685

TRIUMPH 4h.p. Countershaft, November, 1918, accessories, licence, new throughout; £52; instalments.—63, Solon Rd., Brixton. [1539

TRIUMPH 3½h.p., variable gears, new Binks, Bosch magneto, new tyres; bargain, £25.—Rhind and Co., Stone Place, Rusholme, Manchester. [1378

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7 Exhibition Rd., S.W.7 [3599

EXCEPTIONALLY Good 1918 4h.p. Countershaft Triumph, Sunbeam sidecar; £50.—2, Fortune Gate Rd., Harlesden, N.W.10. (D) [1834

1923 Triumph Models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Exchanges and easy terms; tuition free; generous terms. [1718

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

£75.—Triumph Combination, late 1919, electric lighting, perfect condition; seen Saturday 2, Sunday.—90, Gloucester Crescent, Regent's Park. [1416

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THE Hackford Eng. Co. have four more renovated countershaft Triumphs at £45. Cash or extended payments. Do not miss this opportunity. Call, write, or 'phone Brixton 3062.—33, Hackford Rd., Brixton, S.W.9. [1831

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

NEW 1922 Triumph, S.D., all-chain (maker's guarantee), list price £115; spot cash, £84.—Harry Nash, 391, King St., Hammersmith. [9973A

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1921 Triumph Junior, in extra good condition, a beauty, fully equipped; £40; open to offer.—Horswill, Indian Specialist, 42, Bridge St., Chester. [1275

TRIUMPH, Model H, brand new and unused, listed at £105; our price £88; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

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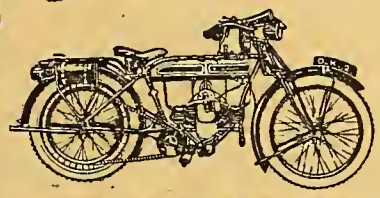

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TRIUMPH 1922 models, slightly shop-soiled only; type H, £80; type S.D., £85; write for shop-soiled bargain list.—P. J. Evans, John Bright St., Birmingham. [1366

1922 Triumphs.—Showroom soiled only; Type H, £80; Type SD, chain drive, £85; Ricardo models, £90.—The Layton Garages, 30, Holywell St., Oxford. [9715

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [9653

1922 Trimph-Ricardo, 3½h.p. o.h.v. engine, brand new but shop-soiled; £105; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1767

1921 Triumph Combination, complete, lamps, hood, screen, tools, spares, little used, machine equal new; bargain, £100, nearest offer; Coventry.—Box 4665, c/o *The Motor Cycle*. [1271

TRIUMPH late renovated Combination, as new, beautiful outfit, Cameo, lamps, 2 horns, tax paid, insured year, all accessories; £80, offer.—56, Brookville Rd., Fulham. [1231

1919 Triumph Combination, 3-speed, Sturmey-Archer countershaft, conchbuilt sidecar, in splendid condition; £65, exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [1376

TRIUMPH 1918, not W.D., as new, 3-speed, hand clutch, with handsome coach aluminium sidecar, fully equipped· £49.—28. Woodford Rd., Forest Gate. 'Phone: Maryland 2598. [1594

TRIUMPH Combination, just overhauled, all new parts, sidecar almost new, lamps, tax paid, etc.; £45.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W. 'Phone: Brixton 1585. [1400

NEW 1922 Triumphs, all-chain drive, and Junior models; cash offers invited to clear. Write, call, or 'phone Greenwich 751.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [9331

TRIUMPH, 1921, 4h.p., 1922 improvements, lamps, speedometer, spring footboards, plated exhaust, aluminium numbers, air intake, insurance, perfect; offers.—Bonniwell, 61, St. Quintin Avenue, North Kensington. [1189

TRIUMPH 4h.p. 1921 all-chain model combination, Cowey horn, sidecar screen and apron, luggage carrier, all lamps, etc., nice condition; bargain, £85.—Mabes and Mabes (Est. 1893), 144, Gt. Portland St., W.1. 'Phone: Langham 2230. [1681

LATE 1921 Triumph-Gloria Combination for Sale, all-chain, full equipment, excellent condition throughout, Easting screen, Tan-Sad, Stewart speedometer, only run about 2,900 miles, open to offer; seen by appointment.—A.B., Rose Nook, Hillcrest Rd., Purley. [1515

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SOUTHPORT.—1922 modal S.D. Triumph, Gloria, Lucas Magdyno combination, spring wheel, Triumph legshields, Lucas electric horn, Easting luggage carrier, superb condition, unpuncture; colossal bargain, 108 guineas; 1921 sports model H Ricardo cars, very fast, excellent, specially tuned, 87 guineas; exchanges.—Kents, 417, Lord St., Southport. [1451

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TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

ALL Triumph Spares from 1914 to 1918.—Day, Arch 23, Walmer Rd., W.10. Park 3296. [1803

CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

TRIUMPH Spares, second-hand or new; goods sent per return service.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [1644

TRIUMPH.—Herbert Robinson, Ltd., Green St., Cambridge. Spare part Service Agents. Trade supplied. Complete illustrated list post free. [1291

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TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0809

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa [7361

Trump.

BRAND New 2¾h.p. Trump-Jap, 2-speed model; list price £60, our price £47.—Pioneer Motors, Grindlay St., Edinburgh. [9533

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FURTHER Startling Reductions in showroom-soiled 1922 models; E2, 2-speed, £52; E3, 3-speed, £55; these prices are £10 below makers' 1923 prices; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [9091

1923 Velocette Models.—Wauchope's, 9, Shoe Lane, London. Exchange and extended payments; tuition free. [1719

1920 Velocette 2¼h.p., 2 speeds, fully equipped, condition perfect; £35.—The Layton Garages, 30, Holywell St., Oxford. [9710

Werner.

£22.—Werner 4h.p., low, fast, powerful, take pedal cycle part.—57, Kenbury St., Camberwell, London. [1560

Wolf.

1922 Wolf-Villiers, 2-speed, as new; 25 guineas.—19, Valnay St., Tooting. [1808

1922 Wolf, 2-speed, as new, mileage 100, all accessories; cost £85; sacrifice £38.—7, Wymering Mansions, Maida Vale, London. [1534

Wooler.

29 Guineas.—Wooler 1920, as new, fully equipped.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [1556

Zenith

5h.p. Zenith, fast, all on; £38, near offer.—24, Wilton Crescent, Wimbledon. [1858

£20.—3½h.p. Zenith-Gradua, in splendid running order.—King, Egrove Farm, Oxford. [1433

F.O.C.H. invite inspection; Zenith and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1374

1920 8h.p. clutch model Zenith Combination, full accessories, tax paid; £78.—Ross, 86, High Rd., Lee. [1395

ZENITH - BRADSHAW, 1922, all-chain, fully equipped, as new; £65; exchanges.—2, Madrid Rd., Barnes. [1576

3½h.p. Zenith Combination, perfect running order; what offers?—Write, Newson, 16, Staines Rd., Hounslow. [1384

1920 Zenith 5-6h.p., equipped and licensed, perfect order, little used; £45.—The Layton Garages, 30, Holywell St., Oxford. [9708

ZENITH-BRADSHAW, 1922, lamps, tax, speedometer, as new; £65; exchanges.—2a, Eleanor Grove, Hoggers Corner, Barnes. [9756

ZENITH-BRADSHAW 3½h.p. twin 1922, Gradua gear, unused, £70; deferred payments.—Eagles and Co., 275, High St., Acton, London. [1687

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ZENITH-BRADSHAW-GRADUA, new April, 800 miles, tuned by Gruzelier, perfect; sell, exchange lightweight, combination, or Morgan.—85, Wiverton Rd., Sydenham. [1836

YOUR Motor Cycle or Combination taken in part payment for a Zenith, any model; deferred payments.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. [1030

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SOLO. SECONDHAND (guaranteed).

HARLEY-DAVIDSON, 4 h.p., 1922, as new	£75
NEW HUDSON, 3-speed, hub, 1914	£25
NORTON, B.R.S. Racer, 1921	£55
N.U.T., 3½ h.p., 1922, Electric	£79
SCOTT, 1919, 3⅜ h.p., lamps, horn	£49
SUNBEAM, 1922, 3½ h.p., detachable wheels	£95
P.&M., 1916, 3½ h.p., 2-speed, Kick Start	£32

1922 COMBINATIONS (shop soiled).

MARTINSYDE, 6 h.p. Sports	£118
BEARDMORE, 4½ h.p., spring frame	£1 4
BRADBURY, 6 h.p. Twin	£128
NEW SIDECARS for Spring Frame Indians	£23

SECOND-HAND COMBINATIONS (guaranteed)

CAMPION, 8 h.p., 1919	£69
JAMES, 1919, 4½ h.p.	£65
SCOTT, 1916, 3⅜ h.p., lamps, horn	£45
HARLEY-DAVIDSON, 1920, Electric	£79
DOUGLAS, 4 h.p., 1920, speedometer, windscreen, as new, exceptional	£85
DENE, 8 h.p., with Milford Sidecar	£59

1922 LIGHT CARS (shop soiled).

LITTLE GREG, 9 h.p., 4-cylinder, 3-speed	£198
COVENTRY-PREMIER, 8 h.p., 2-3-seater	£195
NEW HUDSON, Runabout, 3-wheeler	£195
CALTHORPE, 2-seater, all-weather de Luxe	£299

LIGHT CARS. SECONDHAND.

CALTHORPE, 1920, 10 h.p. 4-seater, Electric Lighting & Starting	£200
LAGONDA, 1920, Coupe 2-seater, Electric Lighting & Starting, repainted	£165
G.N., 1921, 2-seater, Electric	£85
TRUMBULL, 14 h.p., 2-seater, Electric	£58

Our **WIRELESS** dept. is now open under the management of experts.

We can supply any make of apparatus at lowest market prices. Demonstrations daily on the premises.

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in particular should get in touch with us at once—we have a splendid proposition to offer.

MOTOR CYCLES FOR SALE.

Miscellaneous.

4h.p. all-chain coach Combination, lamps, Easting, Triumph engine; £38.—Gill, 51, Nassington Rd., Hampstead. [1541

NAYLOR and Kirk offer the following bargains, each item being better value for money than advertised elsewhere:

1921 Enfield Combination, 8h.p., Lucas dynamo lighting, fully equipped in every way, unscratched, the whole outfit as new, any trial; £79.—Below.

1922 Rudge-Multi Combination, fully equipped, lamps, Tan-Sad, speedometer, exceptionally smart sidecar, small mileage, a snip; £43.—Below.

1918 2¾h.p. Douglas, 2-speed, thoroughly overhauled and renovated as new, fully equipped, Bosch magneto; £26.—Below.

1920 Connaught-Villiers, 2-speed, fully equipped, fast and reliable, a snip; £25.—Below.

1919 Harley-Davidson Solo, 3-speed, K.S., exceptionally smart and mechanically sound, fully equipped; £42.—Below.

1918 Harley-Davidson Combination, Canoelet sidecar, brand new Easting screen, fully equipped, any trial; £52.—Below.

1918 James 4¼h.p. Combination, 3-speed, K.S., the most fully equipped possible, hood, screen, speedometer, legshields, and many spares; £43.—Below.

1920 A.B.C., 4-speed, machine not been used for over 12 months, enamel unscratched; £47.—Below.

3½h.p. P. and M., 2-speed, powerful engine and good appearance, trial willingly; £26.—Below.

4h.p. Precision, 1916 engine, 2-speed, up to date in every way, fast machine; £14; a snip.—Below.

3½h.p. B.S.A., free engine, clutch, appearance and mechanical condition perfect, for real hard work; £24.—Below.

1919 Sunbeam Combination, 8h.p., Lucas dynamo lighting and horn, speedometer, Sunbeam sidecar, screen and hood, spare wheel, any trial; £75; exchanges on any of above entertained.—Below.

NAYLOR and Kirk, 406, Garratt Lane, Earlsfield, S.W.18. 'Phone: Wimbledon 2041. [1673

F.N., 4-cyl., £10; 1911 Triumph, free engine model, £15/10; 4h.p. Condor, £11; all good order.—Syd. Pearson, Cheylesmore, Coventry. [1880

MILLFORD Sidecar, £2/10; 1920, 3-speed, C.S., K.S. chain-drive for 8h.p. J.A.P. less engine; £25.—19, Wood Lane, Shepherd's Bush. [1861

COMBINATION, twin, 2-speed, coachbuilt sidecar, good order; £16/10; letters for appointment.—H. R. Hall, High Rd., Whetstone, London. [1238

JONES Garage, The Broadway, Muswell Hill, N.10.—London's lowest prices; cash or deferred terms; every machine guaranteed 3 months.

JONES Garage.—1914 Humber 3½h.p. Combination, 3-speed, kick-starter, etc., fully equipped, perfect condition and silent, special bargain of the week; £32/10 only.

JONES Garage.—4h.p. Triumph, renovated (purchased from Triumphs 1920), completely equipped, looks and runs absolutely as new; £45.

JONES Garage.—1918 4h.p. Triumph outfit, 3-speed, K.S., fully equipped, large, roomy sidecar; £48.

JONES Garage.—1920 3½h.p. Ariel (standard model), 3-speed, K.S., etc., as new; £47/10.

JONES Garage.—New Indian Scout 1922 4h.p., list price £112; our price £90.

JONES Garage.—New Stanger 5h.p. twin, 3-speed, spring frame, K.S. and hand clutch, list price £97/10; our price £75.

JONES Garage.—New Sports Douglas, o.h.v., listed £115; our price £87/10.

JONES Garage.—New 2¾h.p. Sun-Jap, 2-speed, hand clutch, K.S., listed £63; our price £52/10. All above 1922 models.

JONES Garage.—1914 8h.p. Matchless Combination, countershaft gear, kick-start, hood, screen, all lamps, 2 generators, horn, tax paid, excellent tyres, new Binks carburetter, luggage grid, Gloria spring-wheel sidecar, tools, pump, etc., powerful and perfect condition; £42/10.

JONES Garage.—Any machine tested on Muswell Hill, free tuition, large selection, unbiassed advice, list free, deferred terms.—Jones Garage, The Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [1792

F.O.C.H. for New and Second-hand Cycles, cars, etc.; bargains; cash or easy payments; exchanges arranged. 5, Heath St., Hampstead (near Tube). [3864

HALIFAX.—1922 New Imperial and Royal Enfield sports model from stock; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [1295

20h.p. J.A.P., Lucas magneto, Cox carburetter, Avon tyres, perfect order throughout, plenty of spare parts, several gears; £60.—George Baker, 368, Moseley Rd., Birmingham. [1790

MOTOR CYCLES FOR SALE.

Miscellaneous

BOOTHS Motories, Blackpool.—Shop-soiled 1922 models: £185 Ruby combination, £159/10; £70 Ruby lightweight, £57/10; £180 Rudge combination, £125/10; £60 Bradbury lightweight, £49/19/6.

BOOTHS Motories, Blackpool.—Four 2-speed P. and M.'s; £17/10/6, £29/10/6, £32/10/6, £39/10/6.

BOOTHS Motories, Blackpool.—3½h.p. Triumph, Philipson pulley, £18/10/6 Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; Sun, 2-speed, £25/10/6.

BOOTHS Motories, Blackpool.—Lady's 3-speed motor cycle, £16/10/6; 6h.p. Rex combination, £17/10/6; 3½h.p. Humber, £19/10/6.

BOOTHS Motories, Blackpool.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Premier, £22/10/6; 5h.p. Rudge, 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.

BOOTHS Motories, Blackpool.—Singer, 2-speed countershaft, £24/10/6; 2h.p. lightweight, magneto, £11/10/6; 2-speed Douglas, £24/10/6.

BOOTHS Motories, Blackpool.—1921 Rudge-Multi, dynamo lighting, £52 10/6; 4h.p. Douglas, £55/10/6; 1920 Douglas, 3-speed, clutch, £52/10/6; 5h.p. Indian, 2-speed, £29/10/6; 7h.p. Indian, £29/10/6; 3h.p twin Enfield, £34/10/6.

BOOTHS Motories, Blackpool.—1920 Martinsyde combination, £85/10/6; 1919 Indian, aluminium sporting sidecar, dynamo lighting, £85/10/6; 1920 Matchless combination, £85/10/6; 3½h.p. New Hudson combination, £39/10/6; 8h.p. Premier combination, £39/10/6; Enfield combination, £39/10/6.

BOOTHS Motories, Blackpool, 1921 New Hudson, 2 speeds, kick-starter, £39/10/6; 1920 Douglas combination, £59/10/6; £90 Ruby spring frame lightweight, fully equipped, £55/10/6.

BOOTHS Motories, Blackpool.—8h.p. Carden Cycle Car, £32/10 6 Zehre light car, 4-cyl., electric lighting and starting, detachable wheels, £175/10, cost £345. Several others, cheap. Push cycles taken in exchange.—Booths Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [8294

"NOZEY Parker."—Offers wanted for this unique hogbus, guaranteed speed 60 with sidecar, 35 on second, in touring trim, special M.A.G. engine, aluminium pistons, S.A. gear box, all-chain drive, spares obtainable for every part, mechanically perfect, a really fast sporting combination; Surrey district.—Box 4680, c/o *The Motor Cycle*. [1654

TRIUMPH 4h.p., variable gears, etc., £25; 1920 Elite combination, Easting, etc., clutch, K.S., 2-speed, countershaft, £47/10, equipped; 1920 New Hudson, double seater sidecar, £62/10; 1919 Triumph combination, as new, £65; 3½h.p. Twin Lea-Francis combination, 3 speed countershaft combination, £55; cars and motor cycles, etc., bought, sold, or exchanged.—Rhind and Co., Stone Place, Rusholme, Manchester. [1379

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

OUR Terms are most favourable. Send for full particulars, solo or combination.—Maudes', 100, Gt. Portland St., London. [0960

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

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EDWARDS and Co.,

101 Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027 [0870

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500 COMBINATIONS and Solos, any make, guaranteed for prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [0948

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SOLOS, combinations, cycle cars. If in town, write, 'phone, or call. If country, send to London ermious. We collect free and send best cash offer.—V. T. Dano, Ltd., 326, Euston Rd., London. Museum 391. [0332

£10 offered for motor cycle.—Letters only to 20, Usk Rd., S.W.11. [9648

GOOD 8h.p. Combination, cheap for cash.—186, Southgate Rd., Hackney, N.1. [1263

UP to £15 offered for best motor cycle.—26, Lonsdale Rd., Barnes, S.W.13. [1575

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OUR NEW WINTER ILLUSTRATED LIST AND PATTERN BUNCH OF CLOTHS, TOGETHER WITH SELF-MEASUREMENT FORM, WILL BE SENT ON TO YOU POST FREE, AND WITHOUT ANY OBLIGATION, ON RECEIPT OF YOUR NAME AND ADDRESS.

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GUARANTEED WATERPROOF

SPECIFICATION

MADE from hard-wearing double texture fawn material with an interlining of Rubber. Double Breasted Jacket, with all-round Belt and Leather Buckle, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof.

Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the trousers to be pulled off in a moment.

The suits are newly manufactured, and every care is taken with details so that the garment will meet the severest test.

We give full guarantee that this suit is thoroughly waterproof and impervious to the most drenching & continuous downpour.

THESE SUITS ARE NEWLY MADE FROM FRESHLY PROOFED MATERIAL BY EXPERIENCED WORKMEN, AND NOT HALF PERISHED CLEARANCE LINES OR W.D. SURPLUS.

PRICE

35/-

NO EXTRA CHARGE FOR CARRIAGE.

State chest measurement and height when ordering.

SUIT WITH SEATLESS TROUSERS (as above)	42/-
JACKET ONLY	25/-
SEATLESS TROUSERS ONLY	18/-
OVERALLS ONLY	12/6

MONEY REFUNDED IN FULL IF NOT PERFECTLY SATISFIED & GARMENTS RETURNED TO US IN 7 DAYS

NOTE

SIZES 34", 36", 38", 40", 42"-44" in stock. Special sizes can be made in 5 DAYS, and no extra charge made if you decide to avail yourself of this opportunity

Send your measurements today. We guarantee a perfect fit in every way.

We are the actual Manufacturers:—

Martin Waterproof Co.,

208, Oldham Rd., New Cross, Manchester.

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PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing at 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale, a nominal auction fee is charged—for motor cars, 20/-; motor cycles under £50 value, 6/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [1737

WANTED, cheap motor cycle, about £10, cash.—Box 4674, c/o *The Motor Cycle*. [1435

2-STROKE all-chain, Levis preferred, 26in. wheels; cheap.—26, Howard Rd., Bromley, Kent. [1498

SECOND-HAND Sunbeam and cash for new 1922 light solo Sunbeam.—Dosser, Slingsby, Yorks. [1195

WANTED, 2¾h.p. New Imperial, Omega, similar, about £20, late model.—King, Egrove, Oxford. [1434

GOOD Solo or Combination wanted for cash.—Write F. Lacey, 115, Engadine St., Southfield, S.W.18. [1629

WANTED, several second-hand motor cycles; must be cheap.—Derrett, Orwell Rd., Clacton-on-Sea. [1335

£40 cash waiting for best 3½h.p. Twin James offered.—Holder, 13, First Avenue, Acton Vale, W.3. [1512

CHEAP Motor Cycles, any quantity, cash on the spot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0947

WANTED, New Imperial or other light weight, 2-speed; cheap.—Lane, 40, Belgrave Rd., Wanstead. [1581

P. and M., complete or parts; must be good condition and cheap.—E. Wilson, 28, Arthur St., Dingle, Liverpool. [1679

WANTED, Quantity of Motor Cycle Combinations. —Write particulars, "Motomessengers," 26, Charing Cross Rd [1199

TRIUMPH Countershaft, condition immaterial, lowest price and full particulars.—Mason, Nursery Cottage, Dunkeld. (D) [1169

WANTED, 5-6h.p. combination, 1918-20, cheap for cash, or exchange Ruby 2-stroke.—Day, Woodland Villa, Meopham, Kent. [1417

GOOD Combination Wanted, must be cheap.—Send full particulars by letter only to A. Green, Station Approach, West Byfleet. [1863

COMBINATION, high-powered, roomy sidecar, Harley preferred.—Full particulars and price, Compton, Bucksteep Manor, Hailsham, Sussex. [1409

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

WANTED, Triumph Combination or Solo machine, 1920 or 1921 manufacture; state lowest cash price and full particulars.—17, Tyndale St., Leicester. [1677

GENUINE Cash Buyers.—Motor cycles, combinations; bring or send.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [1781

BUNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [0828

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition. —Call, write, or 'phone, Short and Glass, Ltd., 485-495, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

LONGMAN Bros., 17, Bond St., Ealing, are requiring a number of first-class machines and combinations for spot cash, or sale on commission. Representatives will be sent to inspect after preliminary negotiations.—Write, 'phone, or call. 'Phone: Ealing 689. [6555

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SEND your motor cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting; cash offer telegraphed immediately on receipt; nearest station Wimbledon; we will collect from London station; machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [1739

MOTOR SCOOTERS.

A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £20; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

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YOUNG motor with Young special cycle, perfect order, less magneto; £8.—Box 4620, *The Motor Cycle*. [1194

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W.J.C.—Sidecar hoods from 30/-; 2-seater, 45/-; best quality double textnre material, guaranteed waterproof.

W.J.C. Adjustable Windscreen, complete with apron, 25/-; other screens at 30/- and 35/-.

W.J.C. Fit Celluloid Panels, new aprons, side curtains, etc., in a few hours. Your present screen taken in part exchange.

W.J.C.—All above brand new goods and guaranteed by us to be perfect. Money returned if not satisfied.

W.J.C. Motor Exchange, 5, Addison Av., Holland Park, W.11. Park 2071. Business hours, 8.30 to 8, including Saturday. [1797

HIGH-GRADE Hoods, polished hoops, brass fittings, 30/-; hoops, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [1096

BEST quality sidecar hoods, 35/- and 45/-; celluloid, 1/6, 2/6, and 3/6 sq. ft.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham [0855

BASTONES for Windscreens.—Sandum windscreen with apron, 55/-; Easting, £3/18.—228, Pentonville Rd., King's Cross, London, N.1. [8396

CELASTOID Stroog Windscreens, 50×10 7/-, 25×20 7/-, 16×10 2/6; thinner quality, for poultry houses, 50×20 5/-, 10×10 1/-; post paid.—B. Smith and Son, Woodhouse Lane, Leeds. 'Phone: 22576. [1331

A FEW shop-soiled Bower adjustable windscreens, complete with coverall apron, manufactured under Patents Nos. 108,334 of 1916 and 109,601 of 1916, carriage paid on approval, at 25/- each. Only a limited number.

A FEW shop-soiled Easting and Sandbam windscreens. Clearing this season's stock. All makes of screens repaired. New panels fitted from 12/-. Aprons supplied from 10/-. Hoods, complete, 30/-. Catalogue.

MOTOR CYCLE SHOW.—We are exhibiting at 115, Hammersmith Rd., opposite Cadby Hall. We invite inspection.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [1404

BRISTOL Windscreens, will fit any sidecar, adjustable any angle, neat and efficient, Popular 37/6, De Luxe £2/12/6; Bristol face and chest screen for motor cyclists, being fitted to the rider does not affect steering, instantly attached, price 21/-; send for illustrations.—Patentees and Manufacturers, Bristol Sidecar Co., Stokes Croft, Bristol. [1791

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TO Clear, we are offering a few more special contract bodies, bulbous back, completely upholstered in best leatherette, sprung back, spring seat, locker at rear; any width or length supplied; only require finishing coat of paint; £4/15 each. Also a few shop-soiled bodies, complete finished, £5/5. Two-seater body, genuine Millford, complete hood, windscreen, aprons, etc., beautiful condition, painted red, upholstered red to clear, £9. Shop-soiled 2-seater body, £7/10. Several shop-soiled Lightweights, from £3 Illustrated catalogue. Bodies repaired, etc.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [1402

2-SEATER Body, modern, small, for cyclecar; 30/-. H. R. Hall, c/o Green Man Hotel, Whetstone, London. [1240

SIDECAR Body, off B.S.A. combination, hood, windscreen, child's seat; £5/10.—9, Iowood Av., Hounslow. [1857

PROJECTILE Shape Sidecar Body, off Triumph, good condition; 25/-; room wanted.—120, Sutherland Rd., W. Croydon [1659

BASTONES for Sidecar Bodies, latest models in stock. Call and inspect before purchasing elsewhere. All at low prices.

BASTONES.—Great clearance of sidecar bodies (stock-soiled), semi-sporting lightweight, £2/15 each; ditto, not painted or upholstered, 20/- each. touring models, 70/- each; ditto, not painted or upholstered, 30/- each.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [8398

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BODIES.

DOUGLAS Type Bulbous Bodies, painted lead colour, trimmed in Rexine, nicely padded; £4/15; trade supplied; stamp, photo.—Stock and Sons, 107, Coningham Rd., Shepherd's Bush. [1519

BURTON Sidecar Bodies cannot be beaten for value. All latest designs. Write for our 1923 catalogue, it will interest you. Sporting models, £3/7/6 to £5/10; touring from £4, finished complete and carriage paid.—Sidecar Co., Broadstairs [9382

COBB Speedman Sidecar Bodies.—An unlimited quantity of bulbous-backed coachbuilt bodies to fit any chassis from £3/5 each, carriage paid; others from £2; lockers and sprung seat and back; 12 months' guarantee.—Cobb Speedman Sidecars, Nottingham Rd., Burton Joyce, Notts. [1351

SIDECAR Body Desigos for the trade only. Working, coloured pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Designing Dept., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—Dorset House, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

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FOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Our pre-war prices were the talk of the last Show. Make sure and see us at Stand No. 170, at Olympia.

SANDUM (V-shaped) windscreen, a hood, screen and apron. The Popular £2/15, and the Standard £3/18. Write for list.

SANDUM (V-shaped) windscreen. Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

SANDUM Dual-purpose Sidecar (patented). The only sidecar of reasonable length capable of carrying two adults in comfort. Bodies supplied separately if required

SANDUM exhibit at Olympia, Stand No. 170, will include our full range of sidecar specialities.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0019

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TO Clear, we are offering Plus One chassis, complete with fittings for any American machines; wonderful offer, £12/15; or complete with first-class coachbuilt body, £20; with 2-seater body, £22/10. Three Harley outfits complete, shop-soiled, £18; with 2-seater body, £20. 4h.p. Chassis, brand new, complete with fittings, less tyre, £8/10. Lightweights new, £6. Extended payments taken.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [1403

£2, sidecar complete, perfect; sound chassis, 35/.—Shade, 16, Mason St., Walworth. [183

BASTONES for Sidecars.—No better or cheaper house; all latest models in stock.

BASTONES.—End of season. Great reductions

BASTONES.—Montgomery sports model, stock soile only; list price £23/10; to clear, £18/10.

BASTONES.—Montgomery, Model No. 1, stoc soiled only; list price £28/10; to clear, £23/1

BASTONES.—Montgomery, Model No. 1, 192 models, Triplex screen fitted; to clear, £21/1 each.

BASTONES.—Complete sidecar to fit any machin £11; ditto sports model, £16/19; touring bulbou back sidecars, £17/7/6. Several models in stock.

BASTONES.—If you are buying a sidecar, kind inspect our stock before purchasing elsewher and save money.—228, Pentonville Rd., King's Cros London, N.1. Tel.: 2481 North [839

SIDECARS.—Several second-hand, cheap, room wante —57, Kenbury St., Camberwell, London. [156

LIGHTWEICHT Wicker Sidecar, side door, goo tyre; £3/10.—112, Glebe Rd., Norwich. [120

BOOTHS Motories, Blackpool.—New coach bodie full size, with locker, £5/17/9; usually £9/1

BOOTHS Motories, Blackpool.—New step-patter coach bodies, £5/17/6; sporting bodie £4/17/6.

BOOTHS Motories, Blackpool.—Canoelet chassi like new, £5/19/6; shop-soiled £25 sidecars suit Triumph, B.S.A., £16/10/6; second-hand sid cars, cheap; springs, mudguards, hubs, lug fittings; state requirements.—Booths Motories, 29 Waterloo Rd., Blackpool. [82

SWAN Sporting Sidecar, new August; nearest £1 Triumph finish.—Swain, Greenecroft, Lanchest Durham. [12

SIDECAR, coachbuilt, complete; £6, or exchan 6-volt dynamo lighting set.—32, Huntsmoor R Wandsworth. [12

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SUNBEAM Sidecar, all fittings, in excellent condition; cheap for cash; evenings.—4, Elm Gardens, Hammersmith. [1822

COACHBUILT Body, newly upholstered, £3/10; light chassis, £3/10.—Kennard, 78, Yerbury Rd., Holloway, N.19. [1387

P. and M. Sidecar Chassis, complete, perfect, attachments; £4; only 15 left.—Simpson, Orchard Rd., Sunbury-on-Thames. [1620

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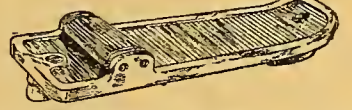

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1921 Cardeu, like new, has not run 1,000 miles; £50 cash; tax paid.—Neale, 3, Sturges Rd., Ashford, Kent. [1260

38 Guineas.—Tamplin 1921 8h.p., 3-speed, perfect; exchanges.—2A, Eleanor Grove, Hoggers Corner, Barnes. [1577

ROVER Eight 1923 models from £180; motor cycle exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7517

1920 G.N. Standard Model, 5 interchangeable wheels, perfect condition, electric lighting; £87/10.—Below.

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A.V. Monocar 1920, 8h.p. J.A.P. engine, condition good; £90.—Ayton, Woodstone Terrace, Fencehouses, Co. Durham. [1316

THREE-WHEELER Crouch twin, wants assembling; £14; write for appointment.—H. R. Hall, High Rd., Whetstone, London. [1239

A.V. Monocar, 1920, 8h.p., excellent running order, fully equipped; £60, or exchange Solo.—12, Crescent Rd., Wimbledon. [1504

G.N., October, 1921, Car, model De Luxe, mileage 5,000; price 110 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [1849

TAMPLIN 8-10h.p. J.A.P. 1920, new tyres and belt, spares, acetylene lighting; £50.—C. Hammerton, Star Hotel, Hoyland Common, Barnsley. [1214

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MORGANS.—Hall, 91, St. Peter's St., St. Albans, can give early delivery of this famous runabout; Grand Prix £160, De Luxe £165, Family Model £170. [0935

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MORGAN A.C. M.A.G. (1918), guaranteed perfect throughout, any trial; £100 equipped, or 1921 Sunbeam Combination.—Foster, 24, Stourport Rd., Kidderminster. [1505

A.V. Monocars, 1920, 8h.p., dynamo, £55; 1920 6h.p., accumulator, £40; exchanges, cash either way.—A.V. Specialist, 2A, Eleanor Grove, Hoggers Corner, Barnes. [1678

SOUTHPORT.—1917 Grand Prix Morgan, J.A.P., Aero body, primrose and black, all on, recent £30 overhaul; 79 guineas; exchanges.—Kents, 417, Lord St., Southport. [1485

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MORGAN G.P. 1920 8h.p., perfect going order and good condition throughout, just overhauled, licensed, and well equipped; £105, nearest.—Tait, c/o Earl St. Garage, Maidstone. [1173

G.N. 1922 ¾ Coupe, all-weather model, dynamo lighting, 5 detachable wheels, new condition; price 130 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [1848

1921 Model G.N. special new body, dickey seat, and spare wheel, etc.; £150; exchange all-weather car not earlier 1914.—Montague's Motor Mart, 85, London Rd., Manchester. Central 7745. [1363

AT Edwards.—1921 Bleriot Whippet, electric light, spare wheel, hood, screen, hand-starter and reverse gear, perfect order; 62 guineas; exchanges or deferred.—101, Great Portland St., W.1 [1154

G.N. (June, 1921), dynamo, speedometer, 5 interchangeable disc wheels, new hood, perfect, just overhauled by makers, tax paid, any trial; £110.—14, Edgehill, Wimbledon. 'Phone: 1896. [1354

1922 Latest De Luxe Rover, peacock blue, many extra fittings, tax paid and insured, indistinguishable from new, £160; another, £150.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9977

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MORGAN, G.P. model, 10h.p. Blackburne w.c. engine, fully equipped, brand new, for immediate delivery; £160; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1768

1923 Morgan De Luxe Model, w.c. J.A.P., dynamo lighting, all-black hood, aluminium dash and beading; delivery from stock; cash or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1771

1922 Morgan G.P., 8h.p. w.c. J.A.P., Lucas dynamo lighting, discs, speedometer, etc., absolutely as new, guaranteed; £140; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [1769

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CARDEN Monocar, 5-6h.p., J.A.P., any trial, 16 guineas; also 1919 Tamplin-Carden 2-seater, staggered seats, 8h.p. J.A.P., Sturmey-Archer 3-speed gear box, any trial, £35; also 1921 Carden 2-seater, 7h.p. 2-stroke engine, any trial, £45; approval, deposit; cash or exchanges.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [1516

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6h.p. Rover 2-seater, excellent order, rough body; £22.—17, Heaton Rd., Mitcham. [1473

ROVER 1921 8h.p., good condition; £115.—Ratcliffe Bros., 200, Gt. Portland St., W. [1715

HORSTMAN 10h.p. 1922 Saloon; £195.—Dr. Hyne, 2, Bromfelde Rd., Clapham, S.W.4. [1700

RICHARDSON 1921, 2-seater, dickey, excellent condition; £68.—7, Exhibition Rd., S.W.7. [9305

8H. Humberette-A.C., overhauled; trial; £58.—Dewy, Chargrove, St. Marks, Cheltenham. [1210

ROVER, 1921, repainted, etc., perfect condition; £125.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [1716

£55.—Ford chassis, rebuilt, perfect condition guaranteed, one only.—Hockerill Works, Bishops Stortford. [9099

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ERIC CAMPBELL, late 1921, dynamo lighting, spare wheel, speedometer, clock, dash, lamp, all aluminium body, small mileage; £175, or exchange Combination and cash.—Hilliler, 127, St. Mark's Rd., North Kensington. [1544

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ROVER Cars at 1923 prices: Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

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A WIDE Selection of Second-hand Machines, most makes of new ones supplied immediately on payment to suit buyer's convenience; getting our terms incurs no obligation.—Marlborough (The Motor House), 20-22, Finchley Rd., N.W.8. [8391

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6h.p. Twin; £4/15, offer.—1A, Morton Terrace, S.W.1. [1236

8-10h.p. Twin Humber, water-cooled, external flywheel, clutch; £8, bargain.

8h.p. J.A.P., believed 1920, dissembled, less pistons, connecting rods; £14.—Captain Collins, Sunbury-on-Thames. [1625

200h.p. Clerget w.c. V Engine, cost £1,200, quite new; £30.—77, Acre Lane, S.W.2. [1701

2¾h.p. Minerva, C.A.V., B. and B., complete, £5/10; cycle, complete, £11.—91, Grove Rd., N.7. [1517

BARGAIN.—3h.p. Humber Engine, A.I.V., good condition; £3.—112, Glebe Rd., Norwich. [1203

ORBIT 2¾h.p. brand new engine; £6/19/6, bargain.—44, Washwood Heath Rd., Birmingham. [1213

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(Just the thing for Motor use).

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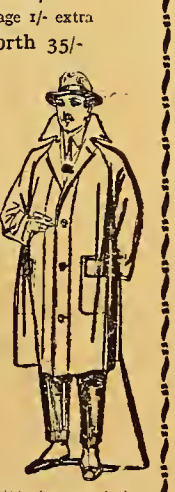

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6h.p. Complete Unit by A.C., Bosch enclosed, Binks, practically new; £10.—887, Lea Bridge Rd., Walthamstow. [1410

ARMSTRONG Mark V. 3-speed Clutch Wheel, all controls, perfect; £4/15.—Wardman's, High St., Cheltenham. [1583

NEW 1922 Chater-Lea 2¾h.p. 2-stroke engine, £8/10; ditto 2-speed gear box, £4.—Murrays, 37A, Charles St., Hatton Garden, Holborn. [1324

REX 3½h.p., m.o.i.v., £5; Minerva 5h.p. twin, m.o.i.v., £5/10; 2½h.p. Minerva, m.o.i.v., 50/-; N.S.U., 2½h.p., 35/-. Heaps of engines, 2 or 4-stroke; exchanges.—Syd. Pearson, Chcylesmore, Coventry. [1881

ENGINES, brand new, 180°, 2-stroke 2¾h.p., 70×70, made by T. G. Johns, Coventry; roller bearings, floating gudgeon pin, magneto, chain case, exhaust pipe, plated flywheel, etc.; £5 each. Terms to trade, or offers taking the lot with spares, etc.—C. S. Spring, 254, Wilton St., Lozells, Aston, Birmingham. [1179

BRITNELL BROS. for Engines.—8h.p. J.A.P., £15; 5h.p. Clyno, £9; 2¾h.p. Union, £9; 3h.p. Belgian, £3; 2¾h.p. Broler, £15; 3½h.p. P. and M., £5; 3½h.p. Rudge and gear, less cylinder, £8; 4h.p. J.A.P., £10; 4¼h.p. B.S.A., £15; 3½h.p. B.S.A., £5; stamped envelope reply.—43-45, High St., Fulham. 'Phone: Putney 1652. [1415

HEPPELTHWAITE'S.—8h.p. Brown (twin), with carburetter, £6/15/; 5-6h.p. A.I.V. Jap, £5/10; 8h.p. Twin Precision, £9; 5-6h.p. O.H.M.V. Rex (very hot lot), £8; 3½h.p. Precision, £4/10; 5-6h.p. unassembled Rex A.I.V., £3/10; 5-6h.p. N.S.U., £4/10; 7-9h.p. Peugeot, £5/10; 4h.p. Bradbury and frame, £7/10; list upon request. See Old Man Hep. in Spare Parts Column. Stamp please. 'Phone: 1958 Brixton.—17-19, Wilcox Rd., South Lambeth, London, S.W.8. [1675

IGNITION, LIGHTING, ETC.

A REAL Bargain

IN Magnetos can be secured from the Marble Arch Motor Exchange.

600 Motor Cycle Magnetos to be cleared.—Below.

PLEASE note (particularly) our stock consists of genuine motor cycle magnetos, all variable ignition and guaranteed not converted or reconstructed aeroplane starter magnetos.

WE guarantee we can supply you a (genuine) magneto cheaper than anyone.

SINGLE-CYLINDER anti-clock, M.L., 45/-; C.A.V., 35/-; U.H. 35/-; Dixie large type, 30/-; all above suitable for Triumph, B.S.A., etc.—Below.

SINGLE-CYLINDER Clock, Dixie, 30/-; Berling, 30/-.—Below

180° Anti-clock, C.A.V., 36/-; Splitdorf, 35/-; Dixie, 30/-.—Below.

180° Clock, Thomson-Bennett, 38/-; Splitdorf, 35/-.—Below.

42°, 50°, 55° Thomson-Bennett, Splitdorf or Dixie; all the above are guaranteed variable ignition and perfect; sent on approval against cash.—Below.

SPARES.—Brand new C.A.V. contact-breakers, anti-clock, 11/-; brush holders, 1/9; brushes, 6d. each.—Below.

PLEASE note, carriage on all above extra.—Below

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H.B. for new and second-hand magnetos; all spares stocked.

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P.M., J.A.P., Douglas, 2-stroke engines, etc.; £3.

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RELIANCE Magneto Repairing Co.

RELIANCE for repairs, new magnetos and spare parts.

RELIANCE have the largest and most up-to-date repair factory in London.

RELIANCE carry out all repairs on the premises, including armature winding.

RELIANCE have one of the most modern winding plants and test rooms in the country, and can therefore offer you the following advantages.

TIME.—All work within 8 to 48 hours, and a solid 12 months' guarantee in writing to back it up.

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OUR Offer.—We shall be pleased to allow you to see your magneto on test after repair at our works. How many others can make the same offer?

RELIANCE have the following magnetos in stock, all fully guaranteed.

THOMSON-BENNETT.—Singles and twins, new, any degree, waterproof, variable, suit any engine; price 65/-.

C.A.V. singles and twins, new, ideal for any lightweight, 2¾h.p. and 4h.p. Douglas; 55/-.

BOSCH type Z.A.2, second-hand, enclosed, waterproof, variable, latest pattern, for Douglas 2¾h.p. and 4h.p.; £4/10.

ACCUMULATORS, best makes only, for all purposes, any voltage, charged and uncharged, always in stock; send for prices.

BOSCH enclosed, waterproof type D.A.L. magnetos, Government surplus, any degree, ready to fit on Indian, Harley, J.A.P., or any big single or twin. We guarantee these to give you slow running and easy starting, and they are in every way ideal for the big machine; price, carriage paid, £4/10.

GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors. List sent post free upon application.

RELIANCE were established in 1914, since when we have enjoyed a reputation which is second to none for straight and fair dealing.

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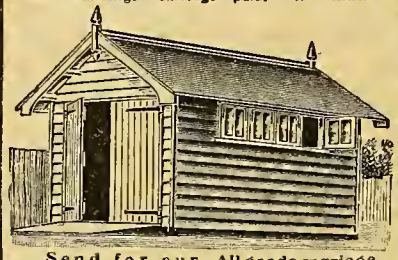
at this and compare prices and quality. Invitation to inspect before purchasing.

All Buildings carriage paid. No extras.



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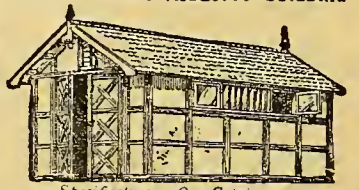

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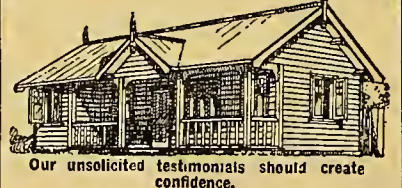
Delivered with iron roof complete. Fire-proof and sound-proof.



Our unsolicited testimonials should create confidence.

Sheen Park Lawn Tennis Club,
May 22nd, 1922.

Dear Sir,

I am instructed by my Committee to say they are very pleased with the Pavilion you erected for them.

Yours faithfully, JOHN O. GRIFFITS.

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Mr. Brodrick,
The South-Western Appliance Co.

Dear Sir,

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We erected it on Wednesday and it went together like clockwork. I am very pleased we left the order with you, as all who have seen it think the value is remarkable and admire the artistic appearance. Trusting and believing it will get you further orders from this district.

Yours faithfully,
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PLEASE Note, the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

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READY to fit on your machine; there are no alterations to make.

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, supplied by Magdynamo, beat all other Magnetos.

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ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch XA2 magneto now, price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P. and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

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TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it: we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

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JEBRON, registered 291298, greatly superior to platinum for blades, screws, etc.; cures misfiring; Jebron screws, fit Bosch magnetos, 10/6 pair; old screws, any make, Jebronised, 4/9 each, return post.

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IGNITION, LIGHTING, ETC.

COUNTY of London Engineering Works, Ltd.

MAGNETO Factors and Repairers.

ALL Magneto Spares Stocked.

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M.L. Single, enclosed, waterproof, variable ignition; £3/15

THOMSON-BENNETT, single or twin, enclosed, waterproof, variable ignition, all degrees; £2/15 each.

THOMSON-BENNETT, large type, single or twin, enclosed, waterproof, variable ignition, all degrees; £3/10.

C.A.V., single or twin, enclosed, waterproof, variable ignition; £2/15 each.

RUTHARDT, single, enclosed, waterproof, variable ignition; £2/5 each.

BERLING, single, enclosed, waterproof, variable ignition; £2/5.

SPLITDORF, single, enclosed, waterproof, variable ignition; £2/5.

DIXIE, single or twin, enclosed, waterproof, variable ignition; £2.

ANY of the above single-cylinder magnetos can be supplied with the special long driving spindle, suitable for Rudge

THESE Magnetos are fitted with leads and base plates, ready to be immediately fitted; sprockets can be supplied if required Please state make of engine when ordering

GUARANTEE.—We guarantee all our magnetos for 12 months, and will willingly replace or repair any that should prove defective within that period.

ALL Repairs Guaranteed Send your magneto to us for quotation. It will pay you. We can despatch all repairs within 3 days, and, if required, 24 hours, and guaranteed for 12 months.

SPECIAL Terms to Trade.- Write for list.

COUNTY of London Engineering Works, Ltd., 27, Stockwell Rd., London, S.W. (1 min. from Stockwell Underground Station). T.A.: Ignitionac, Clapham Road, London Tel.: Brixton 2841 [2717

36/6.—C.A.V. magnetos, singles and 180° twins, variable, guaranteed new and perfect; approval against cash; state rotation required.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [8388

SURPLUS Magnetos, with written guarantee one year, M-L single, 35/-; B.L.I.C. ditto, 42/-; Bosch ditto, 45/-; C.A.V. single or twin, 50/-; Thomson-Bennett ditto, 60/-.—We specialise in repairs and spares for all makes. Lists, 2d. stamp. Deal with experts and avoid certain disappointment.—Whitdale Magneto Service, Cherry Orchard, Croydon. 'Phone: Croydon 1625. [8661

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EUSTON Ignition Co., sole representative for the Splitdorf Electrical Co.—Repairs, spares service to Splitdorf magnetos, dynamos, Dixie magnetos, etc. We have the factory, plant and experience. Official Indian electrical service station. Thomson-Bennett repairs and spares; spares and repairs to all makes of magnetos; all repairs are tested on an approved A.L.D. test bench before dispatch, and carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London. Twins, all degrees, charged accumulators, all voltages always ready. We stock everything electrical for the motorist. We give you real live service always —Euston Ignition Co., 329, Euston Rd., N.W.1 'Phone: Museum 5034. T.A.: Magdynu, Euroad, London. [0263

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MAUDES' have a very large stock of clearance covers in all sizes, and a post-card stating your requirements will bring a reply by return.—Maudes', 100, Great Portland St., W.1. [1692

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PALMER Covers, 26×2½, O.S.; 19/6.—Bright and Hayles, 78, Church St., Camberwell, London. [1570

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RUDGE-MULTI
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Each is a sound British proposition, and our knowledge, experience and service will enable you to obtain the finest results. We will gladly meet you by appointment at any Stand in the Show.

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BASTONES.—24×2¼ Hutchinson T.T., rubber-stud, 21/-; Dunlop rubber-stud heavy, 26/-.

BASTONES.—26×2¼ Hutchinson T.T., 18/6; Dunlop rubber-stud heavy, 26/9; Michelin Semille, 20/-; Goodrich safety tread, 27/-; Clincher De Luxe extra heavy, 18/9; Spencer-Moulton steel-stud, 24/-.

BASTONES.—26×2⅜ Hutchinson T.T., rubber-stud, 19/6; Clincher De Luxe heavy, 21/-; Bergougnan rubber non-skid, 23/-; Palmer cord heavy, 28/-.

BASTONES.—26×2½×2¼ Goodrich safety tread, 31/6; Clincher Dreadnought extra heavy, 29/6; Dunlop rubber-stud heavy, 33/-; Dunlop rubber-stud extra heavy, 39/9; Hutchinson Pass. rubber-stud, 56/-; Dominion Usco rubber non-skid heavy, 23/-.

BASTONES.—26×2½ Michelin fine ribbed, 15/-; Hutchinson T.T. rubber-stud, 24/-; Goodrich safety tread, 35/-; Spencer-Moulton steel-stud, 25/-.

BASTONES.—650×65 Goodrich safety, 38/6; Clincher Dreadnought, 34/-; Dunlop cord, 44/9.

BASTONES.—700×80 Dunlop Magnum, 41/3; Goodyear all-weather tread, extra heavy, 37/6; Goodrich safety tread, 37/6; Firestone rubber non-skid extra heavy, 42/-; Clincher De Luxe extra heavy, 30/-; Clincher Dreadnought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson, and Red-Fox tubes: 24×2 and 24×2¼, 3/9; 26×2¼ and 26×2½, 5/6; 700×80 and 28×3, 7/3.

ALL the Above New and Clearance Covers and Tubes are sent on approval against remittance.

BASTONES, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [1874

25 Per Cent. Reduction.—26in. tyres now cost only 15/- to retread, 3-ribbed or cross-grooved, 3,000 miles wear.

BURST tyres and broken away beads remoulded like new, best work in the country; send for list.—Melton Rubber Works, Melton Mowbray. [0347

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [5836

BULL'S.—All sizes in bargain covers and tubes. If your size is not below, write or telephone us. Gerrard 1347.—See below.

26×2¼ Palmer cord, 30/-; Wood-Milne and Avon, 22/6; Stepney roadgrip, 27/6.—Below.

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26×2½×2¼ Wood-Milne 4-ply, 25/-; Palmer cord heavy, 30/-; Beldam 3-ply, 22/6.—Below.

26×2⅜ Palmer cord, 30/-; Wood-Milne and Beldam, 22/6.—Below.

28×3 Clincher sidecar, 30/-; Avon Druid, 20/-; Beldam R.N.S. or Wood-Milne keygrip, 30/-.—Below.

650×65 Palmer cord heavy, 37/6; Clincher R.N.S., 30/-; Wood-Milne, 22/6.—Below.

TUBES, all sizes, 4/6 each; all goods on approval against remittance; postage 1/- extra.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, W.C.2. Gerrard 1347. [0869

SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 436, Argyle St., Glasgow. List post free. [9831

REAL Good reliable second-hand motor cycle tyres, all sizes and makes; 10/- each, plus 1s. carriage. See displayed advertisement.—H. Emanuel and Co. [0832

TOOTING.—Goodrich Tyres, brand new, in maker's wrappings, fully guaranteed, 27×3½ (fit 650×65 and 700×80), 32/6; 28×3, 35/-; 29×3½, 47/6.—Below.

TOOTING.—700×85 Dunlop steel stud, new goods, wrapped, 32/6; 700×85 Dominion rubber non-skid, 40/-.—Broadway Motor Co., 998, Garratt Lane, Tooting, S.W.17. [1491

DUNLOP extra heavy, 26×2⅜ (fit 2¼), all new, not clearance, must be sold; 25/- each (list price £2); carriage paid on two or more.—Hurst, 26, Tulse Hill, Brixton, S.W.2. [1785

MASONS.—Always leading. Dunlop! Dunlop!! 26×2¼, extra heavy ribbed, 31/-; 650×65, ditto, 30/-; rubber studded, heavy, 24×2¼ 26/-, 26×2¼ 26/9, 26×2½×2¼ 33/-; heavy fluted, 26×2½ 21/6, 26×2¼ 18/6; perfect, maker's guarantee; 650×65 Dunlop extra heavy, rubber studded, soiled; 25/-.

MASONS.—Cheapest and best. Wood-Milne Key-Grip, 4-ply Covers.—26×2½ 24/6, 26×2⅜ 25/-, 26×2¼ 23/6, 26×2½×2¼ 25/-. 650×65 26/-. 3-ply Covers.—24×2¼ 18/-, 700×80 28/6, 28×3 (American) 27/6, 28×2½ (American) 24/6.

MASONS.—Great Offer Moseley Cable Cord, large studded, perfect.—26×2½×2¼ 30/-, 28×3 (American) 38/6. Large studded, fabric, heavy.—24×2¼ 19/6, 26×2¼ 22/6, 26×2⅜ 23/6, 25×2½×2¼ 25/-, 26×2½ 26/-. Approval against remittance, carriage paid.—Masons, The Tyre House, Ipswich. [0916

TYRES.

ECONOMIC Tyre Co.—The following new blemished and clearance covers and tubes sent on seven days' approval against remittance, per passenger train, carriage paid.

ECONOMIC.—24×2 Clipper Ideal, 14/6; tubes, 4/6; 24×2¼ (also fit 2in. rims) Dunlop heavy, 26/-; Clincher Junior, 16/9

ECONOMIC.—26×2¼ Dunlop heavy, 26/9; Firestone extra heavy, 22/6; tubes, 4/9; 26×2⅜ Dunlop heavy, 30/-; extra heavy, 35/9.

ECONOMIC.—26×2½×2¼ Goodyear Diamond, 30/-; Avon extra heavy, rubber stud, 25/-; Palmer tubes, 5/6

ECONOMIC.—26×2½ old standard Clipper extra heavy, 27/6; Redfern, rubber stud, 25/-; tubes, 5/-.

ECONOMIC.—28×3 Goodyear Diamond, 42/6; Goodrich Safety, 39/6; Firestone non-skid, 39/6, tubes, 6/6.

ECONOMIC.—650×65 Goodrich Safety, 34/6; Steney road grip, 34/6; Clipper extra heavy, 27/6; tubes, 5/9.

ECONOMIC.—700×80 Goodrich Safety, 39/6; Beldam extra heavy, 44/3; Goodyear, 44/3; Goodyear cord, 58/-.

ECONOMIC.—Dunlop rubber stud, fully warranted 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26×2¼, 18/6.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14 'Phone: New Cross 1393. [7428

500 NEW Beldam Covers, 26×3, 2½, 2⅜, 2¼ and 2, 15/ each to clear. postage 1/6 extra.—Homerton Rubber Works, 11, Upper St Martin's Lane, W.C.2; and Brooksby's Walk, Homerton E.9. [0331

TANKS.

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9240

TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9239

TANKS for Humber, 1921 pattern, to fit 1910-19: 35/-.—Coventry Tankers. Ltd., Hearsall Works, Coventry. [9241

I SPECIALISE in Repairs, re-builds, and tanks to measure. Enamelling to any pattern. Quick delivery.—Below.

DOUGLAS Pattern Tanks, new and enamelled, complete with all fittings and B. and L. pump; 55/-; folder with photo on request.—G. Day, 85, Cheapside, Birmingham [6602

TANKS Re-enamelled Maker's Colours, with transfers; 15/6 Bright and Hayles, 78, Church St., Camberwell, London. [1569

TANKS Made or Repaired, re-enamelled, lined, transferred, handle-bars, etc., plated, estd. 30 years.—Attwoods, 25, Pentonville Rd., London, N.1. [9451

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [9238

TANKS re-enamelled to pattern, high-class work only 16/6; special terms to trade.—Jenkins and Sons, Richard St., Atkinson St., Deansgate, Manchester Established 25 years. [1027

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry 'Phone 1774 [0896

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

TANKS.—All makers, latest improved models supplied. Old tanks in part payment. Partition, leakage, and all repairs undertaken. Re-enamelling makers' colours, designs, and transfers guaranteed.—Park Tank Works, 1a, Paradise Rd., Highbury, N 5 [9850

MANUFACTURERS and Enamellers.—Old tanks overhauled, repaired, and re-enamelled equal to new, complete. 27/6; tested under pressure; new tanks, any make, made by experts; satisfaction guaranteed.—Green Bros., 19a, Teneriffe St., Gt. Clowes St., opp. Broughton Baths, Manchester. 'Phone: 727 Hr. Broughton. [1670

BELTS.

BALATA and Chrome Belts.—A client writes to say the advantages of these belts are absence of slip in wet weather, indestructibility of its wearing surfaces where rubber would peel off in shreds; price per foot, ¾in. 1/4. ⅞in. 1/6, 1in. 1/9, 1⅛in. 2/-; fasteners 9d each, postage 1/-.—Sole manufacturers, Pollin and Son Hollington. St. Leonards-on-Sea. [4877

BELTS.—Clincher clearance, not W.D., ⅝in., 6ft 6in., 8/2; 7ft. 6in., 9/5; ⅞in., 7ft. 6in., 9/5; 8ft. 10/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft 6in., 11/8; 1⅛in., 8ft., 16/-; Bates' short lengths, ¾in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

STANLEY BELTS AND FASTENERS.

MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

A BOX OF STANLEY SPARES is a complete belt equipment outfit—the best and cheapest insurance you can effect against belt trouble on the road. It contains

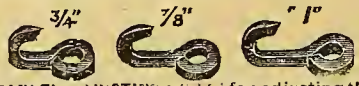
1/2 *each*

The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins

1/1

The STANLEY SPARE LINK which is the best belt length adjuster yet invented. Saves time, trouble & money. Saves the cost of a new belt

The STANLEY SHIELD which protects the belt fastener prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. 9d.



STANLEY ADJUSTING HOOKS for adjusting the length of your belt in one second. Set of 3, 6d.

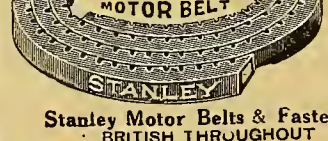
"Never be without a box of Stanley Spares."

Price 3/6 post free. Send size of belt when ordering.

The LION FASTENER, guaranteed for 6,000 miles—11d.

Our goods are World-renowned for their Reliability

A STANLEY FASTENER free with each belt.



BeltPunches 1/8 Adjustable Punches 2/- Per tt.	
⅝"	1/2
¾"	1/5
⅞"	1/6
1"	2/-
1⅛"	2/9

Stanley Motor Belts & Fasteners
BRITISH THROUGHOUT
(STANLEY WEBB, inventor or the original Hook Belt Fastener and other Practical Belt Aids.)
32, London Road,
BROMLEY KENT
Phone, Bromley 540.

JULIANS

Delivery from Stock of

1923

LEVIS

Model S, 2-speed, Kick Start and Clutch.

£48

Order To-day.

Phone: 1024.

84, BROAD ST.,

READING.

BELTS.

BELTS.—John Bull, 7ft. 6in.×⅞in., 12/6; 7ft. 6in.×1⅛in., 16/-; Dunlop, Avon, and Pedley cut to order, 1⅛in. 2/-, 1in. 1/9, ⅞in. 1/6, ¾in. 1/4 per foot; all brand new and guaranteed. Sent on approval against cash.—Maude Rubber Co., 58, Praed St., W. [1273

CARBIDE.

CARBIDE.—Highest grade Norwegian 18/6 cwt., 11/6 ½-cwt; immediate delivery.—Kemp's Garage, Importers, Louth. [1267

CARBIDE, finest quality, ½in., 19/6; larger mesbes, 18/6 cwt., f.o.r. nearest depot; coated, 25/-, ex Bristol only.—Hodge and Co., Warwick Rd., Bristol. [1605

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 21/6, ½-cwt. 12/6, 28 lb. 7/6, drums free. (Depots in all parts.)—Young, Importers, Misterton, Somerset. [1316

CARBIDE.—Guaranteed to British Acetylene Association's standard, coated and uncoated, in 1 lb., 2 lb., 4 lb., 7 lb. and 14 lb. lever top canisters; get our price at once; in 1 and 2 cwt. drums, ex 22 stock depots 18/- cwt.; immediate delivery.—Elico Cycle Works Gedney Drove End, Wisbech. [8077

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [4808

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672 [7917

H. N. and W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E., Associate I.E.E., etc.; W. S. Skerrett, A.I.E.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

PATENTS, EXPERIMENTAL WORK, ETC.

EXPERIMENTAL Work.—My tool room, engineering works, drawing office, and laboratory are devoted entirely to experimental engineering; secrecy guaranteed. —Leopold Ward, B.Sc., A.C.G.I., Harmood Place, Chalk Farm, N.W.1 'Phone: Hampstead 7559 [0945

THE Owners of British Patent No. 157,392, entitled, "Improvements relating to Motor Cycles," desire to dispose of the Patent or to enter into working arrangements with a firm likely to be interested. —Particulars may be obtained from Hertford Record Co., Ltd., of Lindsey House, 59, Lincoln's Inn Fields, London, W.C.2. [1198

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate 3d. per word, minimum 3/-.

AGENCIES.

REQUIRED, Solo Buying Agents with good connection to take up our pillion seats, everywhere, state territory.—Write, Manufacturers, 59, Court Rd., Balsall Heath, Birmingham. [9456

INSURANCE.

£3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Holborn 328. [0005

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

SITUATIONS VACANT.

LOCAL Representative wanted, with or without experience.—Tynesider Pillion Seat Works, Union St., North Shields. [0907

MOTOR Accessories Manufacturers require traveller at present calling on the trade for (a) West of England, (b) South Wales, (c) South Coast, (d) Home Counties, (e) Eastern Counties, (f) Midland Counties; good commission basis, exclusive territory; motorists preferred; applicants can be interviewed in Birmingham or at the Motor Cycle Show.—Box 4673, c/o *The Motor Cycle.* [1382

SITUATIONS WANTED.

MOTOR Cycle, cycle car, or accessory trade.—Motor engineer with 20 years thorough practical experience, seeks post in above; successful competition rider, well known in the trade in Yorkshire, Lancashire and the North; exceptional chance for firm requiring real live representation.—Box 4676, c/o *The Motor Cycle.* [1647

WELL-KNOWN Engineer, F.R.Ae.S., M.I.Mech.E., M.I.A.E., M.I.Ae.E., expert organiser, technical direction, etc., at present general manager to one of the highest class and successful firms manufacturing motor cycles and combinations, will be at liberty shortly to take up similar position.—Box 4671, c/o *The Motor Cycle.* [1372

THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motocycle Coventry." *Telephone:* 10 Coventry (6 lines).
BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.
MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

The Forthcoming Show.

OF all the motor cycle exhibitions since the war the forthcoming Olympia Show gives promise of being the most interesting, both from the point of view of novelties and as regards possibilities of trade.

Many who wander round the Show in a casual manner will say that design has altered but little, yet this is not the case, for the past year has witnessed great strides in almost every branch of the industry.

The most outstanding feature of the 1922 exhibition is the introduction of a 350 c.c. solo machine by almost all the leading makers who have hitherto specialised on big machines of the double-purpose or passenger type. Next comes the evidence of a growing production of ultra lightweight models of approximately 150 c.c. capacity; this is highly important, and foreshadows the development of the light and moderately-priced two-wheeler which is to become the means of effortless and inexpensive transport for the multitude.

Welcome Price Reductions.

Prices in all classes of motor cycles have dropped until they are within measurable distance of pre-war figures; in fact, considering the improved specification of the modern machine they are in some cases actually lower. It is necessary to emphasise the matter of prices, for, combined with the recent drop in fuel, oil, tyre and accessory prices, it forms a great incentive to an increase in trade, while there are signs of a steady revival of industry throughout the country.

By these reductions in cost of the established types of machines, the lowering of maintenance charges, and the introduction of new models specially designed for small first cost and economical maintenance, the motor cycle is automatically brought within the reach of a spreading field of potential users.

There are more exhibitors at Olympia than ever, and consequently a wider choice is placed before the public, which has the opportunity of examining machines from 100 c.c. capacity to over 1,200 c.c.

In the accessory departments, the motor cycle industry has not rested on its laurels since the last Show. New ideas in equipment, lighting and ignition apparatus abound. Still greater efforts are being made to give improved protection from the elements.

Technical Progress.

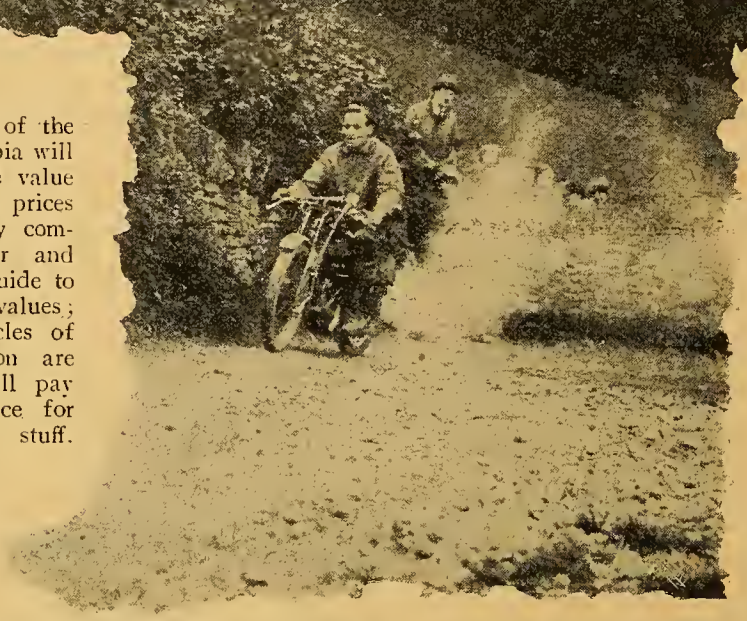
British big twins have once again sprung into the forefront, both as regards speed and general reliability. A wide choice of the popular 500 c.c. models is offered, and almost every firm of repute is producing a 350 c.c. model, while engines of even smaller capacity have been proved to be thoroughly reliable and even capable of sidecar work. Overhead valves have made some progress; unit, engine, and gear construction has gained a secure footing, backed by more than one leading firm. Four-speed gears are on the increase, and there is a steady tendency to design gears to suit the engine rather than to employ a standard box for all sizes. Chain drive is almost universal, except on low-priced models. The entirely enclosed engine and transmission has made its appearance, and mechanical lubrication has gained new adherents; but, if we are to register one small complaint, it lies in the fact that the present tendency to reduce prices to the uttermost has not encouraged the use of larger tyres on some of the cheaper lightweight models.

No motor cyclist who can possibly manage to reach Olympia should miss the opportunity of examining what will prove to be the finest display of motor cycles that has ever been staged.

An index to the advertisements in this issue will be found on page xlii of Supplement.

OCCASIONAL COMMENTS

BY "IXION."



Value.

THE keynote of the 1922 Olympia will certainly be value for money. The prices of such everyday commodities as beer and tobacco are no guide to motor cycle values; where most articles of daily consumption are concerned we still pay an increased price for the same old stuff. Motor cyclists still pay rather more than the 1914 figure for any type of machine or accessory. Value comes in because we don't pay these prices for the same old stuff. I often wonder whether other industries of which I possess no inside knowledge have made the same kind of miraculous advance which the motor industry has recorded.

During the war the industry was dead. Four years before the war I won a lot of the most coveted competition medals on a machine which was then regarded as extremely posh. I adjusted its tappets every morning. I inserted new con.-rod bushes after each big trial. I punctured every day in the trials, and often several times a day. I carried spare valves as a matter of course, and used them at short intervals. My bottom gear was ratioed at the sort of figure which occasionally wins an open hill-climb nowadays, so that hills were anxious work, and it took four variable gears to see me through a season. Four years have now elapsed since the war. If any of these mishaps had befallen me in 1922 my pen would have singed holes in the paper. We pursue our hobby in a fundamentally different atmosphere. No! It is certainly not the same old stuff.

Engines.

IT is naturally in the engine that progress is most apparent. We see veteran and impecunious brethren chug-chugging about on 1911 editions of our favourite 1922 make, and we fail to realise that our engine differs from theirs as the brain of a Marconi differs from the brain of a Kaffir. I once owned a four-cylinder F.N. It carried me well. Not being of recent date, it was not terrifically vivacious; and I had minor difficulties on occasion with its valves and ignition. Some weeks ago a colleague took me out for a lively day on a little modern car—the 8 h.p. Talbot. Though its power unit was only fractionally more capacious than that of my old motor cycle, the spirited little vehicle transported over half a ton load in two separate moods. In traffic it slid along like a flapper exhaling cigarette smoke. On the open road it attempted to outstrip the wireless waves with which the ether was doubtless sizzling. The same applies to motor cycle units. You can get more power out of a modern 500 c.c. than you dare use more than twice a year—my 1922 o.h.v. Triumph has never yet been all out on the road on top gear. I can get enough power out of 350 c.c. to propel me and ma' gal—except when ma' taste in gals temporarily resembles Lobengula's, and runs towards adipose tissue in lumps. I can get enough power out of 250 c.c. for all rational solo work. And the 1923 Olympia opens a new era in which 150 c.c. is going to satisfy quite a lot of people.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

And Gear Boxes.

THERE are not many items in which the motor cycle has the motor car down and taking a count, but the gear box is certainly one. Quite juvenile readers can recall the date when our gear boxes consisted of imitation alarm clocks, built into the rear wheel. You adjusted the control after breakfast. You injected a rather special oil at lunch. If you did not, towards 3 p.m. there would be a sickening scrunch, after which you might conceivably get home by roping the belt rim to the wheel spokes, and walking all hills. Alternatively, you possibly used a variable belt drive. If so, trying to catch a well-buttered eel swimming in Castrol would be child's play to the ascent of Amulree in a *pukka* Scots mist.

Occasional Comments.—

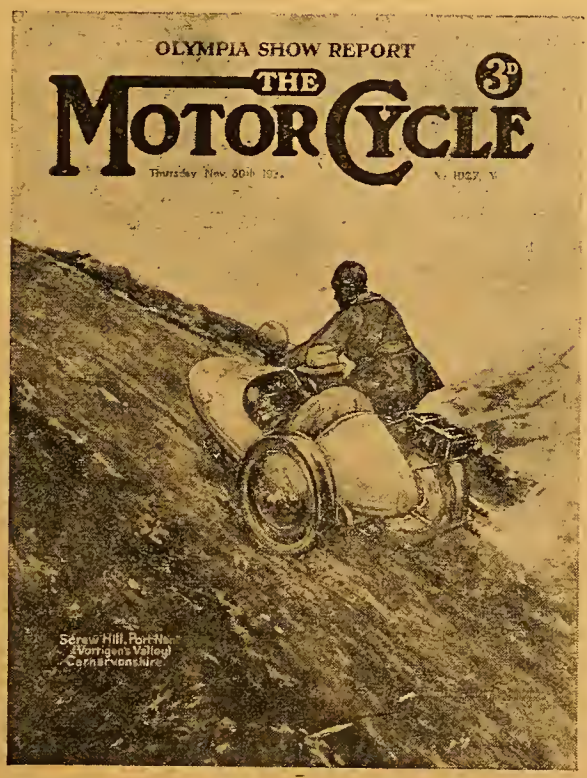
Even these gave trouble. I never climb Porlock without recalling a famous rider, who went west in the war, as he sat below the first bend, using language which made passing exhausts smell like may-blossom, and throwing out on to the road with both hands innumerable bits of a belt gear which had collapsed, and which he couldn't reassemble in the right order. One still has trouble with a car box on occasions. But not with motor cycle gears. Moreover, it is less bother to change from top to bottom at 40 m.p.h. on most cycle boxes than it is to effect a leisured silent change from third to second at 18 m.p.h. on many a car. On one of my 1922 mounts gear changing is as easy as taking out the clutch on a car. On the other, gear changing reminds me of Kipling:

> There are nine and ninety ways
> Of composing tribal lays,
> And every single one of them is right

For on this machine I can change gear by foot or hand, on the clutch, on the throttle, or on the valve-lifter, and each method ensures me a sure and silent change.

And Other Components.

THIS improvement of which I speak so feelingly applies to the whole machine. I have a pair of tyres which have done 7,000 miles this year without a puncture and with—I think—only one mild addition of pressure. I have valves which have not required re-grinding, and I have chains which are nearing the 10,000 mark and are still hearty and hale—indeed, one of them has only been adjusted twice. I have brakes which have run all year without being re-lined and only need adjustment when their wheels are re-set. I have one machine on which no part, however tiny, has ever worked loose or shaken off or needed tightening. I have a plug which was fitted last February to a hot-stuff engine, has run perennially in a blue fog (to judge from the slow running exhaust), and yet has neither overheated nor sooted nor burnt its gap too wide. I have a carburetter which has not been cleaned since it left the works last December; it has never choked a jet, never failed to start from cold within two digs, and has consumed petrol, benzole, fifty-fifty, and every sort of fuel without ever furnishing a bad mixture or delaying me for a single moment on the road.



THE SHOW REPORT. The coloured cover on next week's issue will depict a scene on the Screw Hill, North Wales.

Bring Weights Down.

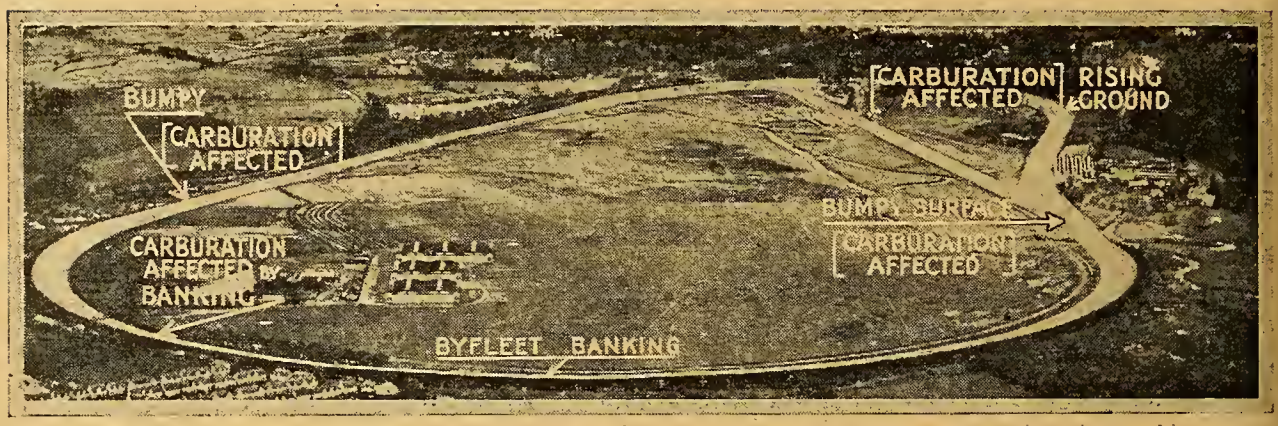
I DO not think or mean that weight reduction of existing models is being tackled as wholeheartedly as it might be. The tendency rather is to ginger up the power output of a given engine and add gadgets which increase the dead weight, leaving the performance the same or a little better. But by accepting an engine one size smaller, any rider who likes something which he can lead out of its stall with one hand may usually satisfy his whim. This summer, when I wished to conserve energy, I took out a machine scaling less than 198 lb.

Joyous Discomfort.

NOTHING amazed me more at the car Olympia than the conviction, embodied in so much coachwork, that the man (and especially the woman) of moderate means will tolerate acute discomfort. Some of the bodies variously known as "chummies," "occasional four-seaters," and—by the highbrows—as "single shells," were nominally designed to convey Papa, Mamma, little Bertie, and little Gussie. But we all know that they will very seldom be utilised for their designed load. You will see these "chummies" at the golf links with four slim lads in plus fours aboard. You will see them at the tennis courts with two men and two girls in white. You will see them on the Portsmouth Road with another square party—the two males in tan helmets and the two girls in—well, *I* don't know what they call them, but they're fetching. I am afraid that we motor cyclists are responsible for the genesis of these appallingly uncomfortable bodies. Do we not utilise sidecars designed to carry two folk in comfort for the conveyance of three or four adults in gross discomfort? Bill, on the saddle, is as much at the mercy of the elements as a weathercock. Lily, on the carrier, with her champagne silk ankles visibly shivering in a nor'-easter. Helen in the sidecar, nursing the luncheon or the tennis kit or the twins, as the gods decree. I really think designers would do better *to make it impossible for any vehicle to carry more than a rational load.* Spikes on the flat part of our carriers. Broken glass set in concrete on the tail of the small car. For the sad truth is that we don't like these surplus loads; but we haven't the pluck to be churlish when Helen says, "Oh, do let's take Lily along!" And Lily puts her head on one side and peeps at us through her eyelashes.

RECORDS AND THEIR MEANING.

The Freak Machine Bogey. Brooklands Difficulties. Records as Visible Signs of Progressive Engine Design.



Brooklands from the air showing where the natural and artificial conditions of the course affect the speed of a machine.

THE week or so prior to the Show is always a busy time at Brooklands track. In accordance with hallowed custom, manufacturers whose machines are in the van as regards speed capabilities strain every nerve to capture a few records, and one recalls how, in years before the war, the most coveted "selling point" at the Show was possession of the 500 c.c. hour record.

Many ordinary motor cyclists, it is to be feared, regard record-breaking as something which does not greatly concern them. They have an ineradicable impression that the machines upon which records are made are nothing more nor less than freaks—machines which could never be duplicated as a marketable proposition. Such an opinion, however commonly held, is not entirely correct.

Prepared Standard Models.

Although it cannot be gainsaid that occasionally a short-distance record has fallen to a machine which could not have lasted, in its "super-tuned" condition, for one complete lap of the track, such occurrences are less frequent than successes gained with engines which do not depart radically from standard design. Indeed, it is an undoubted fact that the majority of existing long-distance records have been accomplished with engines that, although they may have been most carefully prepared, are identical with the production models, even to the compression ratio and the valve timing.

It is not difficult to imagine the incredulity of the average rider who reads the foregoing passage. It is, moreover, a remarkable fact that if a rider strange to Brooklands were presented with a machine which had broken records and were timed round the track, his speed would be several m.p.h. below that which the engine had previously achieved. Many people are aware that riders who have carried all before them at speed events in different parts of the country have met with nothing but failure at Brooklands.

The fact is that Brooklands track is by no means the ideal speedway that it is popularly imagined to be. On the authority of D. R. O'Donovan—a rider who has probably spent more time on Brooklands than any motor cyclist living—the maximum speed that a machine will attain on the track may be as much as 4 m.p.h. less than that which it could record in identical time on a smooth, flat road. Proof of this was recently afforded by C. G. Pullin, who attained 94.79 m.p.h. in the Bois de Boulogne, Paris, on a 346 c.c. Douglas, when his previous maximum on the same machine at Brooklands had been less than 92 m.p.h.—and Pullin's knowledge of Brooklands is not slight.

The reason for this lies in the peculiar atmospheric conditions which prevail at different parts of the huge track and which have considerable effect upon carburation. Further, any wind, from whatever direction, enhances this effect, apart from its retarding influence upon the machine. The increasing number of inequalities in the surface of the track, too, add to the atmospheric disturbance upon carburation. According to the two riders named, some means of balancing pressure in the float chamber and the tank, as has been used by Pullin for a long time past, is of benefit in counteracting this effect.

Aids to Speed.

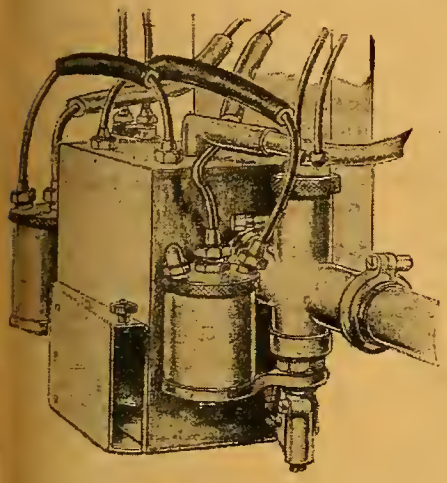
The foregoing passages serve to show that record-breaking calls for specialisation on the part of the rider, and should make it clear that some of the devices seen on successful racing machines at the track are not freakish aids to speed, but are attempts to normalise the Brooklands conditions. It also indicates why it occasionally happens that riders who are more or less invincible on the track are not necessarily successful away from Brooklands, just as a Harley Street specialist might not be the ideal general practitioner.

Records have—or should have—a real meaning for every motor cyclist. Perhaps it is a trifle unfortunate that the maximum speed records invariably receive more publicity than others which are of greater genuine value to the progress of design upon the sanest lines, but such a thing is inevitable. There is a human

Records and Their Meaning.—

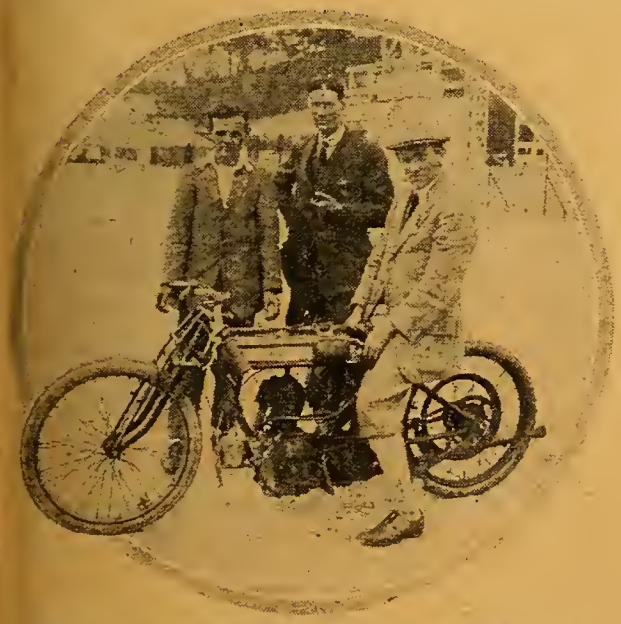
element in the attainment of a speed which has never before been reached, even though many riders of the same make of machine would be perfectly content if they could exceed half the record figure. Most people realise, however, that the machine which covers the flying kilometre at a hitherto "impossible" speed would be totally unsuitable for touring purposes, if only on account of its excessive compression ratio.

The introduction of the mean speed record was a move in the right direction. It eliminated the possibility of freak records put up by a machine specially



Twin carburetters with variable jets controlled from the handle-bar and a special air-intake are fitted to some of the Douglas racing machines. Caused by the speed of the machine a balanced air pressure is created on the petrol in the tank and in the float chambers.

tuned and geared to take advantage of some abnormal condition, such as a following gale. (A mean speed record consists of one run each way of the course, the second run to start within ten minutes of the commencement of the first run, and no alteration to the machine to be permitted between the two runs.) Mean speed figures, over the kilometre and mile distances, have, since the beginning of 1921, been the only ones recognised as world's records.



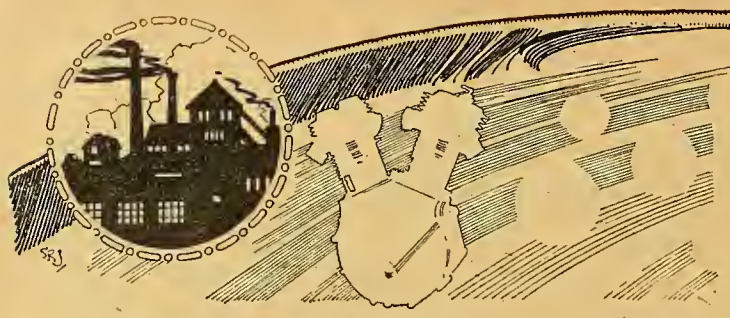
A trio of riders who have proved that standard engines, with super tuning, are well-nigh invincible. From left to right they are R. N. Judd, V. Horsman and D. R. O'Donovan—all Norton exponents. O'Donovan is one of the oldest and most experienced track men, with a helping hand for all whose Brooklands difficulties seem insurmountable.

When every second is valuable—filling up with petrol during an attempt at record breaking.

Records of upwards of 50 miles and one hour afford, perhaps, the best proof of a machine's capabilities. Over long distances at high speeds the engine parts cannot be lightened excessively, nor can the compression ratio be raised unduly. Such record attempts are real tests of the whole machine—engine, gear box, and frame—and when a sidecar combination is concerned the test is even more strenuous. In long-distance record attempts good design of certain components, such as cylinder, connecting rod, timing gear, and frame—which are almost invariably standard—counts for much, and it can be taken for granted that if imperfections are discovered in the progress of the attempt they will most probably be remedied on future standard models. No test can be so searching as, say, six hours at practically full speed.

Records and Progress.

Records, therefore, should be considered in the light of visible results of progress in research rather than as tuning achievements on freak machines. It is obvious that the efficiency of standard engines is increasing steadily, year by year, and that performances on Brooklands which to-day are considered phenomenal may in due time become quite within the scope of the ordinary production model. Three years ago 75 m.p.h. on a 500 c.c. machine had been attained by one or two "super men": to-day anyone can purchase a machine which, in reasonably expert hands, will do that speed, and more. But, better still, it will cover mile after mile at a reasonably high speed without the mechanical unreliability formerly associated with sustained pace. Records, therefore, should be valued at their true worth.



AN OPEN LETTER TO THE TRADE.

Importance of Export Trade. Increased Durability. Simplified Dynamo Lighting an Urgent Want. Sidecars or Cycle Cars? Service Depots.

GENTLEMEN,—It is my annual privilege, by the courtesy of the Editor, to write you, on the eve of the Show, a letter as a self-elected but typical representative of your great and grateful army of customers.

It is very pleasant for us all to recognise a change in the trade atmosphere. Trying to sell motor cycles during the last year or so has felt rather like trying to grow orchids at the North Pole. Now we are all beginning to feel like dormice in spring; the air is growing more genial, we are uncurling ourselves and stretching our legs and wagging our tails; and before long we trust things will begin to move. Prices have come down, money is growing more fluid. Given sensible government and peaceful neighbours abroad, commerce bids fair to re-establish itself; and then the queen of hobbies will enjoy full scope.

For a year or more your troubles and anxieties have been more than paralleled by those which beset your customers. It is very trying for a private owner when successive price reductions cut the value of a machine which he tends as carefully as if it were mother's first baby. It is no less trying when he tires of it and desires a new mount, to find that the cut prices of dumped over-production stuff render his year-old machine practically unsaleable. I know one ex-officer who spent his gratuity (nearly £300) on an excessively posh four-cylinder outfit, complete with every conceivable gadget. When the slump came, he attempted to unload. He began by asking £200, worked down by easy stages to £75, and eventually took £50. Buying can never be brisk when canny men foresee such shattering losses. So our present optimism is firmly founded on the fact that *prices are at last stabilised very near the datum line.* You have had your troubles. We have had ours. They are very nearly over, let up hope.

Keen and Too-Keen Competition.

I can clearly foresee that your next anxiety will arise out of throat-cutting competition. Traders meet competition in various ways. A certain steamer line once had a monopoly and abused it. Bad boats. Slow passages. High fares. Heavy freights. General callousness about their passengers' interests. A rival syndicate started to run boats in opposition. Fierce competition arose. Tickets were cut down to 'bus fare levels. They gave you free grub on the boats, and if choppy seats prevented any passenger from devouring the comestibles, he had a coupon available at a restaurant when he landed. One of the companies cracked under this pressure. The survivor regained the monopoly, and proceeded to grind the faces of its passengers once more.

The Paying Policy.

Or again. On the water front at 'Frisco there are a lot of cheap eating houses which compete for the custom of seafaring men. At times competition becomes acute. But one small restaurant always thrives. It keeps its charges down to the lowest economic level. It never provides frozen meat. Its coffee is never brewed from bad barley. It eschews the sort of sour-faced waitress who chucks your food at you with a snarl after keeping you waiting for ten minutes or more.

Honest Value. Minimum Prices. Good Service. These are the thing which tell. In the course of time they always defeat the dishonest trader, who sends out dud stuff, however cheap, and forgets all about you when once he has cashed your cheque. It is odd how incompletely these elementary maxims are grasped by some commercial engineers. At an earlier crisis in the industry I particularly remember two firms. Jones had a design which was dull, commonplace, and only just roadworthy. Smith had a genuinely brilliant layout. Smith called in a receiver, and Jones is still paying fat dividends. The explanation was that Jones limited himself to first-class material, employed the best labour obtainable, tested and inspected all through as hard as ever he could, and in the rare event of any client meeting trouble, met him on the doorstep with open hands. Smith was a friend of mine. He sent me down a sample of his new model. It went through three gear boxes in as many weeks. Soft stuff. Slung together anyhow. No tests. No inspection. And absurd charges for replacements. He has started again with some more money which somebody provided, and ever since those days he has had to spend thousands in advertising, trying to steal new customers; for his old ones won't touch his stuff with a barge pole.

Maintain Quality.

The competition that lies ahead will bring violent temptation to many firms whose post-war manufacture has been inspired by the highest engineering and trading principles. In the old days, when the golf

An Open Letter to the Trade.—

caddies at St. Andrews were definitely trained, they used to ask the aspiring kiddies: "What would you make a tee with?" The usual answer was "With sand." But the boy who replied "With brains" went up a place on the list. The same applies to a motor cycle. It is easy to cheapen a motor cycle by using dud stuff, or cheap labour, or simplifying inspection, or neglecting tests, or hardening up the service organisation. But the only policy that pays is to maintain the quality, and to cut the cost by sheer intellectual *tours de force*.

Wonderful Performance and Reliability.

Technically, we have had a splendid year. Your machines are internationally recognised as invincible—the envy and despair of all other manufacturing nations. You get more out of a 350 c.c. four-stroke than your rivals can squeeze from 500 c.c. Your baby two-strokes are as full of kick and wear as the full touring layouts of other nations. Even the big twin, which is only a sideline with us, has, thanks to Le Vack and J.A.P., surpassed American achievements on the track. The stock shelves have accurately reflected the shop window. Behind your competition successes stand a great host of satisfied private owners. Indeed, their satisfaction is so deep founded that it begins to make trouble for you. Riders keep their machines longer than is healthy for an industry which hardly possesses any export trade. The quick recovery of that export trade is one of your chief problems. In the old days you had no special cause to cultivate it. It fell by default first to the Neckarsulmer people of Germany, and later to America. You just accepted that share which came your way automatically, without going out to look for more. To-day the aftermath of war has shorn off most of it. Meanwhile many riders are keeping their excellent 1922 mounts for 1923, and perhaps for 1924 as well. Export is indispensable.

Roads aren't quite what they used to be, are they? I commend, to your temporary notice at any rate, the claims of the big tyre. No doubt the spring frame is the ideal. But it is neither easy to design nor cheap to make. Tyres are at last really cheap. Three-inch tyres confer an incredible addition of comfort, plus reduced upkeep charges and an amazing immunity from road stops. Very, very few makers of small or medium machines yet list them, even as an option.

Cycle Cars and Sidecars.

It is alleged that your big sidecars are seriously threatened by some of the new cycle cars. I have not seen a cycle car which I regard as dangerous. I think the alarmists overlook two factors. It is perfectly true that the little 8 h.p. Rover car, for example, is now down to £180, and has an enviable reputation. Even at that, one swallow does not make a summer, and the 8 h.p. Rover is not a typical motor cyclist's vehicle. There is nothing sporting about it; and most motor cyclists are at least semi-sportsmen. Moreover, the price is not low enough to compete with us. The "J" model Matchless sidecar outfit, for instance, a fine machine of considerable popularity, is priced at £50 less. And between £180 and £130 there is a great gulf fixed in the motor cycle world, as anybody who has sold machines on easy payments is well aware. We may not be able to posh up our big sidecars quite as much as we used to do, but there are stacks of life in them yet; and if their knell is ever sounded, the 500 c.c. and 600 c.c. and 750 c.c. outfits will still be quick sellers. I fancy I heard the O.K. people murmur something about 250 c.c. at this juncture?

Sport and Transport.

The shadows of two approaching changes in the industry are just visible, though neither of them is as yet vital. Ten years ago the essence of motor cycling was "sport." Ten years hence its essence will be "transport."

Transport is an economic matter. The same change has already passed over the pedal cycle industry. At 1900 period I bought a new push-bike every year. I bought my last push-bike in 1911, and it still looks well and is in perfect order. Durability of mechanism, and not less of external finish, counts more every year. An "all black" Sunbeam push-bike is handsome when it is five years old. Sooner or later we shall all want motor cycles capable of the same miracle. With the accompanying reduction in home sales, due to a slower consumption rate, export trade will become annually more and more vital to the industry. Simultaneously, we cannot apply the word "transport" to a machine which is never put on the road in winter or after dark. When motor cars had no hoods, no windscreens, and dashboards about 6 in. high, they stayed in their stables from October till April, barring an occasional sunny afternoon. When their lamps were fed by crude gas generators or paraffin reservoirs, they sped home towards sunset, just as the birds do. Then scuttles and all-weather bodies relieved the driver of all yearnings for China goat-skins, and dynamos solved the illumination problem. The car was moved from the sphere of sport into the sphere of transport, and sales multiplied exceedingly. A similar process must occur with motor cycles, though it will be less smooth and easy.

Protection and Lighting.

I notice that various experimentalists are already busy. I hear that there will be three full screen systems for motor cycles at Olympia. Dynamos we have already seen offered for some seasons; but, my dear sirs, the price! They have often added £30 to the cost of a £120 machine. Now a man may be willing to pay £2,100 for a 40 h.p. six-cylinder saloon; but where will you find the man to expend £700 on a lighting set for it? I fully admit the difficulty of providing satisfactory electric lighting as a £10 extra. But the need will create the supply. It is a vital element in the switch-over from "sport" to "transport." In the meantime, those firms who are trying to acquire a big trade in lighting sets will pave the way to good business in so far as they render their dynamos transferable from one machine to another. I am at present using generator lighting (which I loathe), simply and solely because there is no cheap dynamo which is designed to take off my 1922 'bus and go straight on to my 1923 'bus.

An Open Letter to the Trade.—

I think you will find your local agents no less grateful than your auxiliary industries if you contrive to simplify the subsequent attachment of such important gadgets as dynamos, speedometers, and the like. Keen agents are a great asset to the manufacturer. Even now, when every rider who can afford to do so buys a new mount every year, there is not an awful lot in a small motor cycle agency. The commission is not great, and an inpecunious buyer without liberal notions of business expects a lot of gratis service or cheap service. He is often as much of a nuisance to the supplying agent as a profit and a joy. In years to come, when the poor agent is selling a machine at £50 to last five or ten years, his lot will be worse. Comfort and enrich that agent by encouraging your inpecunious clients to order valuable accessories every now and then, making the deal a source of income to the agent. After all, your buyer has a papa and a sweetheart. Christmas comes every year, and every man has a birthday. Why not a dynamo set (just a bolt-on job) at the first birthday after purchase? A speed indicator (integral drive being arranged for) at the following Christmas. At the present time lots of invaluable accessories do not find the market they deserve, first because they are so awkward to fit, and secondly because their fitting, never having been allowed for in the design, spoils the clean lines of what was an engineering job till they were added.

Better "Service" Needed.

It has been my misfortune or privilege to reside in widely separated parts of England, and I know what a big country it is. It is one thing to own a motor bicycle if you live in Leamington. Quite another if your lines are cast in Penzance, or Aberystwith, or Dundee. The "service" which is so prompt and simple at a radius of twenty miles from the factory seems so slow and awkward if you are 300 miles away. Particularly if—as often happens—you are in the middle of your short annual holiday when something goes.

Surely the time is coming when the big firms of the industry should have established service depôts capable of rendering in the remoter counties the same efficient attention which Coventry and Wolverhampton can supply in their own neighbourhood? Take, for example, the man who goes to Devon in August with a big sidecar outfit. He sustains a mildish crash. His holiday is terminated, and also ruined. He has to choose between sending the outfit bodily 200 miles or so by train, and re-collecting it at a week-end three weeks later, all of which entails a stupendous expense for an income of his class. Or, alternatively, he has to entrust it to some local worthy, who may or may not be efficient. I have known cases where a machine, locally repaired in such an alternative, was never the same again; and a disgusted owner unloaded it angrily a few months later. But if his maker had a service depôt at Exeter, or Bristol, or Plymouth, the wreck would be put in the nearest train; a night staff might possibly start work on it in the same day.

"Free in the Land."

Greedy people we motor cyclists, aren't we? Always grasping what you offer with both hands, and yelling for more? But the main fact of our common relations is that you have inspired us with such appreciation of your courtesy, your readiness to meet all our wants, and your ability to accomplish the impossible that we regard you with the naïvest confidence. Still, I should not represent public feeling if I failed to conclude with a heartfelt expression of our thanks for the key of the open road which you have put in our hands. At an absurdly small cost and with remarkably few and petty interruptions, we find ourselves made free of these glorious islands, which we now know and enjoy in a manner which would have been absolutely impossible without your skilled and kindly assistance. We hope our pleasures are duly reflected in your profits; and we intend to support you in 1923 as you have always supported us.

I am, gentlemen, yours very faithfully,
B. H. DAVIES.

THE CLUB RUN. A recollection of the sunny days of summer. Despite the dust, riding in close company up a hill is good fun and provides instructive opportunities for comparing the performances of touring models. Buckhaw Brow, near Settle in Yorkshire is the hill depicted.

DIRECT BELT DRIVE'S FASCINATION

Thoughts Provoked by a Ride on a Single-geared Big Twin. How much have Motor Cycles Improved?

EVERY sphere of life has its "good old days"; to the motor cyclist, if we are to believe what we hear, the phrase is particularly applicable to the pre-gear box era.

Probably so. Certainly most so-called veterans have happy memories of some fine piece of riding on a direct belt-driven machine, some feat that nowadays would surely call for second, perhaps for low, gear. We all talk glibly of the wonderful amount of enjoyment there is to be extracted from a good single-geared motor cycle, of how only thus are the full niceties of driving exercised, and then we order the latest chain-driven mount complete with three- or four-speed gear box and clutch.

Are we getting soft, or are the joys of direct belt drive considerably exaggerated? It was with some idea of answering the riddle that I accepted recently the offer of a ninety-mile trip on Mr. A. D. Draper's old twin Matchless. I had only once been on a single-geared machine since August, 1914, and that not for long, so I approached the experiment in the proper spirit of critical apprehension, thoroughly spoiled by many thousand gear- and clutch-assisted miles.

An Old Machine Modified.

The machine deserves a word or two of description. It was made in 1907, but a great deal of its components are considerably younger. For example, it has been re-bored and Ricardo pistons have been fitted; the valve timing has been altered, and the carburetter has been set to give an exceptionally strong mixture at low speeds. 4 m.p.h. to 60 m.p.h. is its speed range, figures not reached by many a so-called sports model of 1922. Last, but not least, it has a spring frame and spring forks of Mr. Draper's own design, which was illustrated in *The Motor Cycle* of November 2nd.

I took it over at Staines, with Uxbridge first and then Coventry as my objectives. To say it was a bit funny at first may be trite, and may be bad English, but it exactly describes my sensations. The controls worked in the reverse way to those of my machine, and the brake was not notably effective. For a dozen miles we plunged more or less haphazardly through the bye-lanes in an endeavour to strike the Oxford Road, Mr. Draper on my machine setting a healthy pace.

However, there were few controls to master, and as soon as I realised that neither the air nor the spark lever was a mere ornament all went well. It was worth it, if only for the satisfaction of trickling through the Saturday afternoon crowds in High Wycombe and then roaring up the long hill a few miles further on, on the same 4 to 1 gear.

Comfort on Rough Roads.

We short-circuited Oxford, not because I feared it, but because I wished to learn the alternative route. By the time, creditably short, that the outskirts of Coventry were reached I felt ready to traverse London from north to south. The spring frame proved rather remarkable. It acted. Furthermore, there was none of the usual bounce of the usual frame. Hitting a pot-hole did not mean a series of cushioned bumps instead of one jar. The sensation resembled that of a rigid frame on dead level roads. Which is what a spring frame ought to give. The Matchless handlebars are of the sit-up-and-beg type, but the steering was excellent.

To return, however, to our original theme. Has the single-gear machine any fascinating element which the best chain-driven variable-geared machines of to-day lack? Frankly, I think not. Its sole fascination lies in the fact that it has only a single gear. And that may be rather valueless satisfaction at times.

Mr. Draper's Matchless is an exceptionally fine example of its type—lively, vibrationless, and flexible, yet, cutting the suspension system out of the discussion, my own chain-driven single, thanks to a well-balanced engine and a most efficient transmission shock absorber, is just as pleasant to drive under any circumstances whatsoever. Motor cyclists are not growing soft; motor cycle design has made more progress than most of us realise.

A. McL.

THROUGH FEMININE GOGGLES.

The Lightweight as a Hack.

By MABEL CORSELLIS.

WHEN a woman buys a motor cycle she usually wants to be able to utilise it for a variety of purposes. It is of little benefit to the average woman to possess a machine which will perform miracles on Brooklands if it is awkward to drive in traffic or is too high in the frame to allow a short skirt to be worn on occasion.

From Pedal to Motor Cycle.

In 1915 I was still riding an ordinary bicycle, as were most other girls, and everywhere I went my bicycle went too as a matter of course. I used to carry innumerable parcels on it—my tennis racquet, golf clubs, bathing kit, pic-nic basket, or whatever I required at the moment.

In 1916 I bought my first motor cycle—a 1914 T.T. Ivy—for £14. At first it would not run, but by the time I had fitted another magneto it went very well indeed. I could not, however, do the things I did on my old push bike. That Ivy had the petroil system, no gears, no kick start, no clutch, and T.T. handle-bars. The frame was too high for skirts, so I could only use it when breeches were permissible. Still, it was a good 'bus, and I once safely carried a dozen eggs in a basket on the handle-bars for 10 miles over a fairly bad road!

So much for my first mount. My last lightweight was a Cedos, and I had it nearly a year before a dealer in Euston Road swallowed it up.

Lightweight on the T.T. Course.

Next to the discarded push bike, the Cedos (known to my family as The Fuzz-Box) was the most useful machine I have had, and very reliable. I had it for six months in the Isle of Man, and thought nothing of the T.T. course, which is a pretty good test for a small engine. When I was a marshal at Craig-na-baa corner during the practices eighteen months ago, I had to rise at the chilly hour of four and ride about 5 miles, all uphill. I never had any difficulty in starting, in spite of the cold, and often took a passenger on the carrier. Slight belt-slip going up the mountain was the only trouble.

I once came home to Douglas from Ramsey over the mountain road with a T.T. Scott and a Scott sidecar. It was slightly foggy (which, with the atmosphere at that altitude, suits the Cedos carburetter very well), and I astonished myself and the others by doing the journey in 25 minutes—about 16 miles. Which shows that one *can* have a sprint occasionally, though I don't advocate "hogging." I always used the Cedos for going to tennis, but found it safer to carry my racquet strapped to the carrier than under my arm, and for this purpose I wore a short skirt and loose coat, which was rather uncomfortable, but practicable.

A Gear Control Alteration.

I had one rather drastic alteration made to the machine. From the very beginning I had trouble with the gear, which was operated by a cable from the left handle-bar. The gears had an incurable habit of jumping out of top into neutral, which at any speed produced much roaring from the engine. Also, neutral was very difficult to find when wanted. So I had the whole thing taken off and a tank lever and quadrant fitted, after which I had no difficulty.

Another slight drawback which was noticed by a T.T. rider during a trial run was the small clearance under the footboards—they were apt to catch when leaning over for a sharp corner, particularly if the ground was uneven.

A Tractable Machine.

Later in the year I brought the Cedos to London and found it just as tractable in traffic as on my own mountainous island. The acceleration was good, yet if necessary it would potter along at about 3 m.p.h.

Economical on fuel and oil, with good spring forks and easy balance and steering, the Cedos, I consider, is a most suitable machine for the woman who wants a *real* motor cycle and one that at the same time can be used as a hack machine, while the modern accessories of clutch and kick starter obviate any great exertion.

THE MOTOR CYCLE

SHOW REPORT.

Next week's issue of "The Motor Cycle" will prove worthy of preservation for months to come. It will be greatly enlarged, profusely illustrated, and will embody a stand-to-stand description of the Motor Cycle Exhibits at Olympia.

ON SALE DURING THE SHOW.

. . . . . THREEPENCE. . . . . .

Passenger Machine Topics

Costs and Upkeep Once More; Where the Three-Wheeler Scores; An Old Sidecarist's Disappointment at the Car Show.

By "FRIAR JOHN."

A WEEK or two ago I wrote about the comparative production costs of an orthodox small four-wheeler and a powerful sidecar outfit. I maintained, and still maintain, that the former is not likely to affect the sidecar market. Amongst the several interesting comments on the subject is one from Mr. Frank Philipp, of the Scott Autocar Co., Ltd. He considers that this phantom car so many people have been talking about will have to possess more important advantages over the sidecar than those of orthodox appearance and silence if it is to drive the three-wheeler from the road; he also says that I had overlooked other important requirements in my arguments. Before I touch on Mr. Philipp's views I ought to say that I purposely endeavoured to set out that on manufacturing costs alone the sidecar could always meet small car competition. I refrained purposely from discussing the advantages of the sidecar from economical and other standpoints and from making the question triangular by dragging in the three-wheeler. If it should ever come to arguing that the three-wheeler might eventually kill the big sidecar, I could make quite a good case for the former. But it has not come to that.

Mr. Philipp, to quote his letter, says: "Even assuming, for the sake of argument, that a little car may eventually be produced at a figure competitive with that of the high-powered sidecar outfit, before the sidecarist is going to abandon his well-proved vehicle, the four-wheeler will have to offer more than merely conventional outline, silence, or even complete weather protection.

"It will have to prove, first of all, that it is capable of giving the same road performance as the average high-powered sidecar outfit. Having satisfied this requirement, it must show that the running costs and upkeep are the same.

"In the first place: Will this little car ever be capable of giving the same road service (always bearing in mind that by 'little car' is meant a four-wheeled vehicle, costing approximately the same as a high-powered sidecar outfit and having an engine of approximately the same capacity)? Take the small cars at present on the market which most nearly approach this definition. Chiefly on account of their extra weight (9 or 10 cwt., against 5 or 6 cwt.), they are inferior at hill-climbing, acceleration, and speed on the level—probably to the extent of at least 10 miles per hour in average speed.

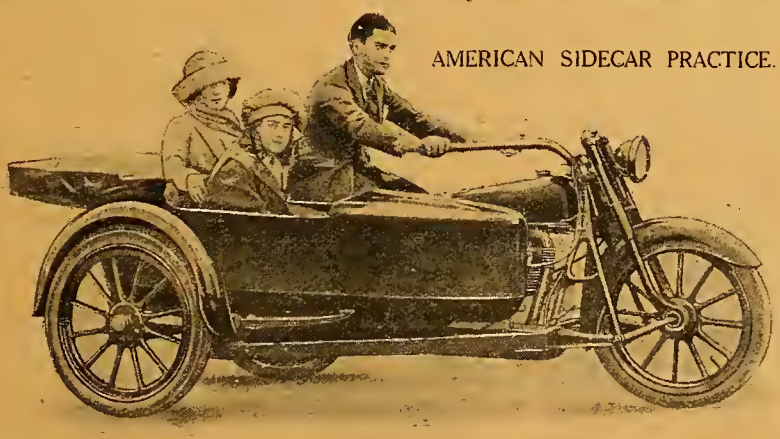
"They are undoubtedly inferior in their ability to hold the road at speed over indifferent surfaces—probably on account of their four-point suspension against the three-point road suspension of the sidecar outfit. Their mobility is vastly inferior and they are more liable to skid.

"Turning to the question of running costs and upkeep. In the case of the little car the petrol and oil consumption will be probably 50% higher (it is not logical to expect the same fuel consumption with a vehicle of nearly double the weight).

"As regards tyre wear, there will be probably not much to choose between the two types, as the extra weight of the car will be more or less compensated for by the driving load being distributed over two wheels.

"A very important point, however, which is often overlooked is the question of housing accommodation. The extra two or three feet of overall length of the little car mean, in many cases, that it cannot be stored in the existing accommodation without expensive and sometimes impossible alterations, and must be kept in a public garage—with all the attendant inconvenience and extra cost which that involves."

AMERICAN SIDECAR PRACTICE.



This sturdily constructed sidecar fitted with an artillery wheel is thoroughly in keeping with the heavy four-cylinder Militor to which it is attached, but the design may not appeal to British tastes.

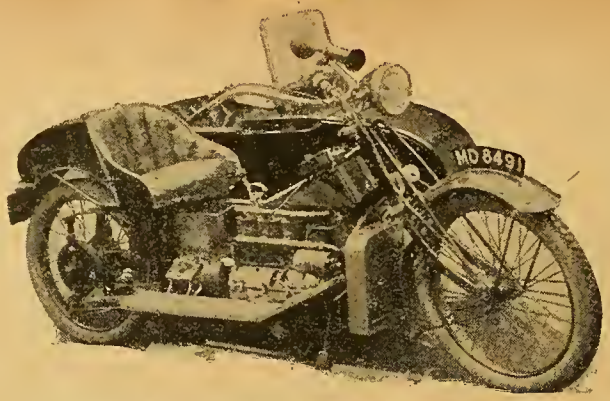
THE above arguments are irrefutable and are sufficient to indicate that a little car, even at sidecar price, would not have all its own way in this particular market. On the question of hill-climbing, a good

Passenger Machine Topics.— three-wheeler is undoubtedly faster than the majority of little cars costing £50 or £60 more than the most expensive sidecar.

A light small car certainly does not hold the road at 40 m.p.h. as well as a sidecar. Cost of accommodation is an item which—as Mr. Philipp emphasises—is often overlooked. For instance, I store one sidecar outfit at a garage for 1s. 9d. per week; the charge for a car like the Singer or cheap Rover at the same place is 6s. 6d. per week. I take up about half the space needed for a car.

Then take the question of taxation: the cost to run a car is £5 or £6 a year more than for a three-wheeler. In fact, at every turn the cost is greater. Garaging and tips in connection with a tour, say, of 600 miles would, I should estimate, be four times greater with a car than with a sidecar.

In fact, I have met very few people who dream of contending that sidecaring is as expensive as car driving. But I *have* met these people, and sooner or later they will find out their mistake.



LUXURY ON AN OLD MACHINE. A four-cylinder T.M.C. sidecar outfit which has seen many years of service. Its owner has lately equipped the machine with a C.A.V. dynamo lighting outfit.

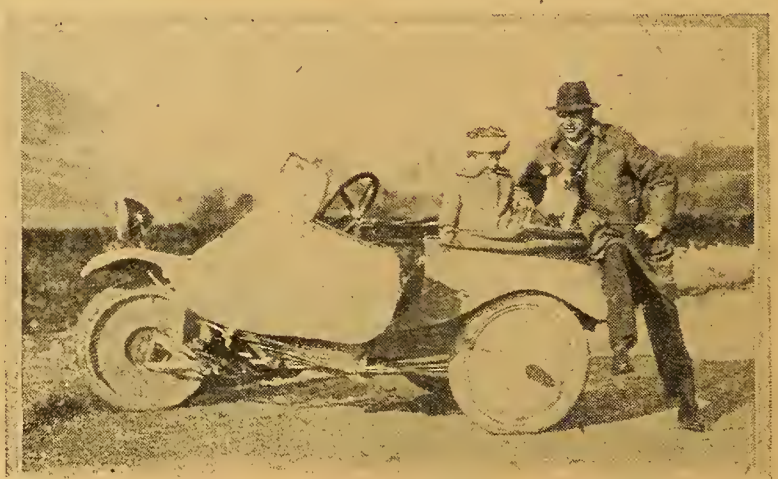
THE natural sequence of Mr. Philipp's letter was, of course, a reasoned argument in favour of the three-wheeler. Speaking particularly of the Scott Sociable, he says;

"Here you have a vehicle which embodies the chief practical advantages of the little car over the sidecar, weather protection, comfort, and sociability, and at the same time retains the particular features of the sidecar outfit which render it superior to the car.

"It is undoubtedly unorthodox in appearance, but then, Friar John, judging from his third paragraph, does not expect an orthodox car to be produced as cheaply as a sidecar outfit, especially if it is to be equally as refined in detail.

"Finally: Is it essential that a vehicle must be orthodox in appearance provided that it fulfils all requirements in other directions? The unorthodox appearance of the sidecar outfit has not prevented it becoming the most popular passenger-carrying machine on the road."

Even though it is naturally a biassed opinion, I consider it a sound and embracing summing up of the virtues of the three-wheeler.



THE SCOTT SOCIABLE ON THE ROAD. Although its unconventional design produced much comment when it was first introduced, the Scott Sociable is now so familiar as to attract little notice.

Whatever may be said against the three-wheeler (as apart from the sidecar), there is no questioning its superior comfort for the driver. We all know that. Yet, in face of the unbroken success of the Morgan, a runabout which has survived scores of experiments, the big sidecar has not been swept from the road. Tell me this: If manufacturers give us an increased assortment of three-wheeler runabouts equal in every respect to the big sidecar, will the latter still hold its own?

Now I've said enough about the poor old powerful sidecar.

AN acquaintance of mine, an old sidecarist, has this year turned car owner. He came to the Car Show and was disappointed. It was not the exhibits or the Exhibition that disappointed him, but something difficult to define. He missed the enthusiasm of the motor cycle fraternity, the goodwill and occasional hilarities. There was lacking that keen nosing after mechanical details with the majority of visitors, and, as I say, he came away disappointed *after ordering his £180 car.* I had known him long enough to say "It serves you jolly well right," and asked him if he really expected to get enthusiastic in ordering the very cheapest "cut line" in the Show. How can a man enjoy looking round superlative cars and then trudge to the very bottom of the class to give his order?

THERE lives to-day in a little village not far from Lincoln a man who built a motor cycle and sidecar. He started with an old J.A.P. engine (*circa* 1908) and after a year's toil built a sidecar outfit. On several occasions I have met the vehicle on my way to Skegness. I learn now that the owner—a carpenter who has run the machine for ten years—has *sold it* and has ordered a Scott outfit. What manner of man, I wonder, has bought the ancient sidecar, and what will be the feelings of the old owner on taking over his new outfit after trundling his old chaff-cutter round for ten years?

THE OUTLOOK

Messages from the North, South, East and West on the Further Expansion of the Motor Cycle Movement.

THOSE who are familiar in only a small degree with motor cycling as a movement realise that, large though it may be, it is at the moment small when compared with what it will become in the very near future. A glance at the Ministry of Transport Returns gives one a useful indication of conditions. Economic conditions have tended lately actually to reduce the number of motor cycles in use, but I feel convinced that this is only a temporary state of affairs.

The motor cycle is the poor man's vehicle, but its general excellence, the very high grade work put into it, and its extraordinary capacity for transport make of it also a vehicle for any individual, be he poor or rich. As a consequence, the use of this vehicle must and will increase very largely indeed. I look forward to the day, not so very far distant, when, with economic conditions improved and employment and markets more stable, a million motor cycles will be on the road.

If and when this position has been brought about, I think we should give credit to those who have helped to its attainment. Undoubtedly the constant striving after improvement on the part of the manufacturers goes a long way to make the movement more and more attractive. The steady betterment of our roads is another factor. Nor should one lose sight of the constant work of such journals as *The Motor Cycle*, the columns of which are of great value to the motor cyclist, and that of such organisations as the A.C.U., with which I have the pleasure to be connected. For these indubitably foster the movement.

Col. F. S. Brereton, C.B.E., Chairman of the A.C.U., who in this message states that he considers the motor cycle movement will progress at a rate which will astonish its oldest votaries.

For the young man and the young woman the motor cycle, in my view, provides the finest method of progression. The club movement gives him and her wonderful opportunities of friendship and of sport, while the trusty motor cycle and its sidecar attachment offer to the family man and to those no longer in their first youth a cheap, exceedingly reliable, and wonderfully comfortable method of seeing and knowing this beautiful country.

Given a more stable political situation, a peaceful outlook, and stability of purpose, I firmly believe that the motor cycle movement will progress at a rate which will astonish its oldest votaries, and will bring well-earned grist to the mill of those manufacturers who have so steadily persevered in good times and in bad. The manufacturers will then reap the reward they deserve for their efforts towards improvement.

NORTH OF THE TWEED.

SCOTLAND is a land of great distances. Draw a line from Stirling across to the shores of Loch Lomond, and north of that line are the Highlands, consisting for the most part of one gigantic deer forest and grouse moor.

Here the larger towns are mere specks upon the infinite, each far separated from the rest by many miles of winding, wind-swept road, each with its own industry, its own individuality, its own people. Thus such club life as exists over this vast area—and every town of note in Scotland has its motor cycle club—operates under conditions which seldom or never prevail in England. Each is a little self-contained community, self-supporting in every way, dependent entirely on the keenness of its own members, and entirely lacking the stimulus of healthy rivalry.

H. Mortimer Batten, F.Z.S., who writes on the outlook in Scotland.

Edinburgh and Glasgow have, of course, their prosperous clubs and their well-known annual events, and the great distances often covered by teams from outlying clubs to participate in these events are sufficient indication of the keenness of Scottish motor cyclists. But there is no doubt that Scottish club life stands in need of more competitive events. Barring the annual Callander Meet, there is practically no event by which the smaller clubs can hope to rise to distinction. This year

The Cut out.—

the cup in connection with the Callander Meet, which is on much the same lines as the Richmond Meet, went to the East Lothian Club in its first year.

One cup per year, however, is not enough. There are, of course, one or two team trials, but what is wanted in Scotland is something in the form of a Highland centre, where more events of a kind in which small clubs can participate could be organised. How many provincial clubs numbering short of thirty members can hope to obtain distinction in the way of winning a team prize organised by such powerful institutions as Edinburgh and District Motor Club, Ltd., or either of the Glasgow clubs? The team would probably be called upon to travel a distance at least equal to that covered by some of the English teams competing in Scottish events, and from so small a selection of riders it is impossible generally to pick from the men who are free the right kind of entrant. The keenness is there, and motor cycling as a pastime is increasing enormously in Scotland. There exist among the farmers' sons alone many able and hardy riders who would be keen and ready to participate in club events if such things were possible; but what Scotland undoubtedly lacks more than anything is the necessary element of publicity.

As regards the less isolated motoring bodies in Scotland, each year finds more and more importance attached to the better known events they organise. This year's St. Andrews Speed Test, including the Scottish Speed Championship, was more comprehensive than ever before. For the first time in its history the cream of English trade riders came to advance the standard. The speeds were higher than hitherto. For this the visiting competitors were not entirely responsible, as the championship gave us a Scottish win. There is undoubtedly a great future for the St. Andrews Trials, while, of course, the Highlands will ever stand unrivalled for competition routes.

Light car manufacturers, as well as motor cycle manufacturers, have obtained much valuable experience from the Scottish trials, especially as regards engine cooling and transmission layout. It will perhaps be recalled that on the first day of the recent Scottish Two Days not a single one of the several cars entered, nor even one of the large touring cars carrying the officials, survived a certain portion of the route without boiling, and one can imagine, therefore, that the test was outstandingly severe for air-cooled engines. Not many roads in the British Isles, barring bonnie Scotland, can produce thirty miles of steady collar work, terminating with a Devil's Elbow of the real knock-out variety.

In Scotland the motor cycle affords an even greater adjunct to field sports than in England. Taking the major portion of North Britain, fishing, shooting, and the game the Scotch knock "L" out of, are the outstanding pastimes, and from all these the motor cycle is inseparable. Thus Scottish riders are, as a whole, a very sporting crowd, while the conditions of their country tend to produce efficient riders, apart from the mechanical inclinations characteristic of Northern blood.

Were it not for the great distances which shut many Scottish riders off from the industry or from the centres of general activity, distances invariably backed by questionable weather conditions, the region north of Stirling and Glasgow would produce many more famous motor cyclists than can at present be mustered. Even as things stand, Scotland is extraordinarily well represented by such well-known names as those of the brothers Alexander, Downie brothers, Fairley brothers, George Grinton, Graeme Walker, Alf Lindsay, R. W. Stanfield, the Scott exponent, and R. J. Braid; while as regards Scottish productions, the sleeve-valve Barr & Stroud engine and the rotary valve of the G.R.I. are at any rate worthy of a place in the achievements of the present era.

CONFIDENCE IN THE MIDLANDS.

EVERYTHING points to the coming year being a boom year for motoring, and particularly motor cycling.

In the Midlands 1922 has been a good year for motor cyclists, albeit the weather conditions have not been too kind. The competitions organised by the clubs in the Midland Centre of the A.C.U., which now number close on twenty (including all the principal ones in the Midlands between Shrewsbury on the west, Rugby on the east, Burton on the north, and Kidderminster on the south), have been very well supported.

The sporting spirit has not abated in the least, so far as Midland motor cyclists are concerned, and there is every reason to believe that the open competitions organised by the Midland Centre, as well as those of the individual clubs in the centre thrown open to other clubs, will be even better supported in 1923.

R. Vernon C. Brook, O.B.E., A.M.I.E.E., M.I.A.E., Chairman of the Midland Centre A.C.U., expresses the Midland view.

The falling prices of motor cycles, and the already much reduced cost of petrol, tyres, etc., together with an improvement in trade, lead one to believe that there will be a much bigger demand for motor cycles than there has been since 1919, especially as so many ultra-simple machines are being introduced. Midland factories are all preparing big programmes, and the perfecting of the 350 c.c. machine for solo work and the 500-800 c.c. types for sidecar duties brings motor cycles within the reach of many who could not previously afford to take them up.

The power-assisted pedal cycle, too, will doubtless claim numerous adherents, many of whom will in time become fully fledged motor cyclists. Motor cycling is one of the most exhilarating and health-giving pastimes; at the same time it is of an educative value. Also, it is not nearly so expensive to follow as many sports which offer far fewer benefits.

The Outlook.—

Motor cycling in this country, unlike many foreign countries, is indulged in by men and women belonging to every class of the community, and no doubt we shall see many more women motor cyclists in the future.

The modern motor cycle requires a minimum of attention. It is reliable in use, and as safe as a pedal cycle if ridden with an ordinary amount of care. Motor cycle accidents do occur, but actually the number is small compared with the number of machines in use. The prospective motor cyclist has nothing to fear as regards his safety, for there is no more reliable piece of mechanism than the modern motor cycle.

My message to the would-be but hesitant motor cyclists is :—

"Buy your motor cycle now, whilst prices are low. Do not hesitate to obtain your mount for next year, and take advantage of the many fine days we shall have between now and next summer to enjoy the glories of the open road."

To those who are already motor cyclists, I say :—"Combine ; join some motor organisation : the Auto Cycle Union, the local motor cycle club, or the A.A., and help to bring about reasonable and less inequitable legislation for motorists generally, so that the pleasures of motoring may be pure, unadulterated, and unalloyed pleasure from start to finish."

OBSERVATIONS FROM THE NORTH-WEST.

T. R. Rutherford, Consul for the Northern Centre A.C.U., who sends observations from Cumberland and Westmorland.

MOTOR cycling in the A.C.U. Northern Centre embraces the area extending from Carlisle to Barrow-in-Furness, taking in Lancaster and Alston, on the southern and eastern boundaries.

A look at the map and the contour of the country generally will quickly reveal that we motor cyclists in this area are exceedingly fortunate in our training ground, and to-day we are prepared to take on and challenge to a reliability test any other centre with, say, a dozen riders. By that we do not mean the selection of a course which requires a mount representing something between a motor bicycle and a submarine, but just a plain, honest, sporting course such as we delight in in this area when we go out with our pillion passengers for an afternoon's outing!

We have in our area a big number of riders totally unknown to fame, and I judge it is only modesty which has, up to now, kept them from being read about. I have seen some of these modest people on Wrynose, Blae Tarn, Honister, Hard Knott, and numberless more "stunt" hills which at the moment I am not disclosing, and the way our boys stick to their machines can only be likened to a squirrel sticking to a tree in a storm. If the bit of timber does come down, as sometimes happens, you will always find Mr. Squirrel somewhere with his tail up!

The Cumberland County Motor Cycling Club is admittedly the premier club of the centre, but can by no means boast of a monopoly of the sporting talent. The Westmorland men can always produce some of the finest reliability riders in the country. The same applies equally to Workington or the western section of the C.C.M.C.C. Then, again, we have the Barrow, Lancaster and Alston Clubs, which brave the worst of elements to take part in what they term "a bit of an outing."

We are all anxious to see the English Six Days Trials coming to our area for 1923, because we are convinced that the more southern latitudes are not geographically suited for carrying out valuable tests of the modern motor cycle. Furthermore, in the comparatively thickly populated Home Counties and Midlands trials must always be encroaching, metaphorically speaking, on somebody's back garden. And, pray tell me, where is a better testing ground than the Lake District?

Not long ago I saw a report in which a rider claimed to have made the first ascent of Skiddaw. As a matter of fact, it is years since this little pimple was vanquished by our local motor cyclists. Even a little single-geared 240 c.c. O.K. accomplished the feat entirely unaided as far back as 1913. This was done by the late George S. Rutherford, and previously the ascent had been made by T. B. Westmoreland, R. Drinkall, C. B. Little, and R. Braithwaite—all on single-geared machines. To-day, with our up-to-date mounts, we would hardly think it worth while wasting time on what we now regard as a merely picnicking jaunt. Even the mighty Helvellyn has been conquered by some of our local riders.

However, we are getting along wonderfully, even on our half-throttle method. One day we may come to open out and be a little less shy.

OPTIMISM IN YORKSHIRE.

IT is somewhat early to indicate the prospects for 1923 in Yorkshire, but the dawn of the New Year will at least find the usual optimism prevailing. A splendid standard of efficiency was achieved during 1922, and organisers will have to go "all out" to improve upon past successes.

I prefer, however, to comment on the events of this year in the hope that many motor cyclists who are not members will become interested and join the various clubs, and so help to make them more successful than before.

In 1921 I missed only one important Yorkshire Trial (Saltburn), and during the 1922 season I was present at every one in some official capacity (from A.C.U. steward down to "chief puller out" at water-splashes), so perhaps I am qualified to pass an

The Outlook.—

opinion. Good fellowship and good sportsmanship are prevailing features of all Yorkshire events, and successes are achieved by whole-hearted co-operation of all concerned.

The Open Reliability Trial, held in June, was organised on new lines, *i.e.*, ten classes, with a silver cup the premier award in each and with smaller cups for second and third (all won outright). A feature of this trial was that the organisers (the Centre Board) announced the complete results the same day, and immediately afterwards sent a complete printed schedule of results to all entrants, competitors, and helpers.

The York Club made its annual success of Sutton Bank, and this would have been more pronounced but for a week's postponement due to bad weather. Staxton (the Scarborough Club's Easter event) was well supported and organised, and witnessed by a big crowd. Complete with brass band, the Bradford M.C. and L.C.C. attracted a big crowd of riders and spectators to the "freak hill" (Rosedale Abbey), where Capt. Fraser Nash made two thrillingly fast ascents. The Sheffield and Hallamshire Club's Centre Event was marred by pouring rain. The organisation was splendid, the course being roped from end to end, and the system of telephones used between the starting and finishing lines was the finest I ever saw.

The Middlesbrough Club has a magnificent playground on Saltburn Sands, and some splendidly organised races were provided. Doncaster's "Petrol St. Leger" (alongside the famous racecourse) was very well organised and very well supported. Backed by a very progressive Townsmen's Association, the Scarborough Club took advantage of its good fortune in a perfect day, and a course flanked on one side by the sea and on the other by cliffs which formed a grand stand for the largest and most orderly crowd I ever saw at a motor cycle event in Yorkshire. The "setting," like the whole event, was great. The re-formed Bridlington Club also "ran" speed trials which were very successfully organised.

Alex. Dovener, Hon. Sec. of the Yorkshire Centre A.C.U. and the Bradford M.C. and L.C.C., who here attributes the success of Yorkshire clubs to the good fellowship and sportsmanship of their members.

The Harrogate Club made a huge success of the Centre Team Trial for the "Haggas" Shield. The Ilkley Club introduced a novel idea of "bogey" timing on hills in its Centre Reliability Trial. This event was not well supported, but I think the lateness of the season was partly accountable. Of a different type was the 24 Hours' Trial organised by the Bradford M.C. and L.C.C. in July, to London and back, which secured 82 competitors for five trophies, four of which were won outright. Invitations to join in were accepted by Dewsbury, Wakefield, Leeds and District, and Hull Motor Clubs, so that altogether well over 100 riders took part.

All the above-mentioned clubs have had their own successful speed and reliability events, as have also the following: Wombwell, Goldthorpe and Thurnscoe, Hull Auto Cycle, Keighley, Darlington, and Leeds University. The Bradford Gipsy Motor Cycle and Car Club has had a very successful season indeed, catering well for the "social" rider, as has also the Leeds Motor Union. Affiliated clubs are also to be found in Barnsley, Mexborough, Rotherham, Ripon, Stocksbridge, and Wath-on-Dearne, though, unfortunately, these clubs do not actively support the Centre. Unaffiliated clubs are in existence at Skipton, Pontefract, Halifax, Shepley (near Huddersfield), and Knaresborough, whilst there is also another club in Sheffield. The Board of the Centre, I know, looks forward to the time when all the Yorkshire clubs are banded together for the good of motor cycling generally and clean, good sportsmanship.

WEST COUNTRY ENTHUSIASM.

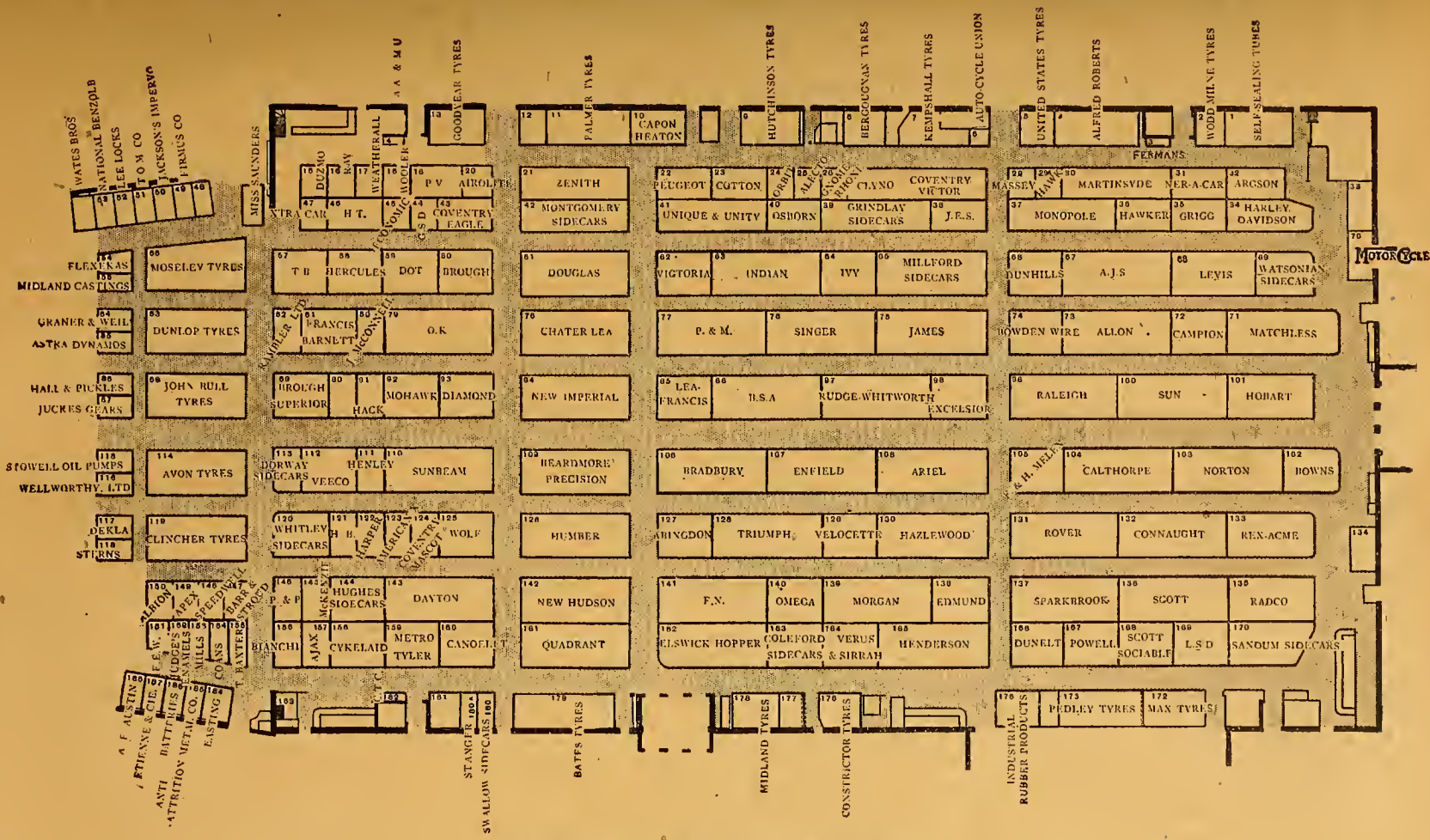
"JOIE de vivre" (according to an official of the Wessex Centre A.C.U.) aptly expresses the feeling of motor cyclists in the West. For 1923 a still more rosy future is predicted, with a general reduction of costs all round, a new A.C.U. Centre (Wessex), complete unity, co-operation and harmony. What more can the followers or members of club organisations of the cities of Bath, Bristol, Gloucester, and Wells and the many towns of Wessex desire. Hope is shown all around; enthusiasm abounds. Even the old "have-beens" are re-appearing; great vows are being registered, and mighty schemes are in the embryonic state.

The past has been good, but the future will be better. All clubs have been very active on the social and sporting side, and still greater activity is foreshadowed in every way. It is even whispered that there will spring into being a general Country Club House, where all creature comforts will be supplied in addition to the provision of every facility for the votaries of tennis, golf, fishing, boating, music, dancing, etc.

Optimism is the key-word of the West, and rightly should it be so. The strength of twenty clubs totalling nearly 1,200 members is calculated to make the most confirmed pessimist pause for reflection upon the ever-extending growth of the motor cycle movement.

For the seekers after trophies of silver and discs of gold, silver, and even of bronze, varied programmes are in course of formation. The freak hill climber, speedman on flat and hill, gymkhana devotee, night rider, and those desirous of pitting their strength against the wintry elements, all will be catered for. The right men for the right place have been found, and with such organisers and promoters as are in the clubs of Avalon (Wells City), Bath, Southwick, Bristol, Kingswood, Swindon, Devizes, Marlborough, Yeovil, Barnstaple, Taunton, and Exeter, success is bound to reward the efforts which will be put forward and maintained throughout the coming year.

A GUIDE TO THE EXHIBITS AT OLYMPIA.



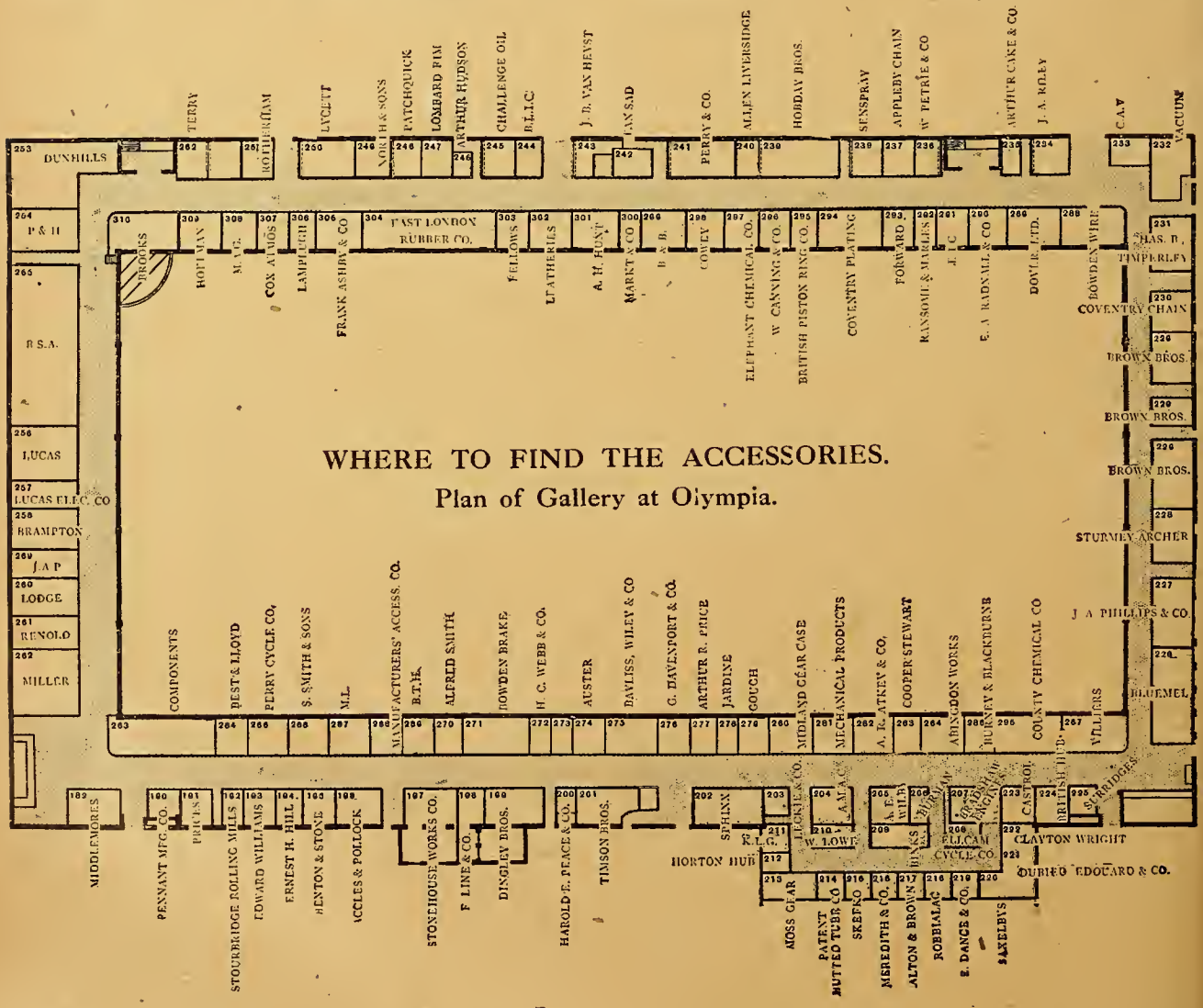
Plan of Stands in the Main Hall.

AN ALPHABETICAL LIST OF EXHIBITORS AT THE 1922 SHOW.

	Stand No.
Abingdon Works, Ltd.	127/284
Accles and Pollock, Ltd.	196
Ajax Motor Mfrs., Ltd.	157
Albion Eng. Co., Ltd.	150
Alfred Appleby Chain Co., Ltd.	237
Alldays and Onions, Ltd.	73
Allen Liversidge, Ltd.	240
Amac, Ltd.	204
Anti Attrition Metal Co., Ltd.	185
Apex Inflator Co., Ltd.	149
Argson Eng. Co., Ltd.	32
Ariel Works, Ltd.	106
Armstrong Cycles, Ltd.	90
Ashby, Frank and Co.	305
Astra Dynamo Co.	85
Atkey, A. R., and Co., Ltd.	282
Auster, Ltd.	274
Austin, A. T.	188
Automobile Assn. and Motor Union	14
Auto Cycle Union	6
Avon India Rubber Co., Ltd.	114
Baker, F. E., Ltd.	109
Barr and Stroud, Ltd.	147
Bates, W. and A., Ltd.	179
Batteries, Ltd.	186
Baxter, T.	155
Bayliss, Wiley and Co., Ltd.	275
Benton and Stone, Ltd.	195
Bergougnan Tyre Co.	8
Best and Lloyd, Ltd.	264
Bianchi Motors	156
Binks (1920), Ltd.	209
Bluemel Bros., Ltd.	226
Bordesley Eng. Co., Ltd.	132
Bowden Brake Co., Ltd.	271
Bowden Wire, Ltd.	74/288
Bowns, Ltd.	102
Bradbury and Co., Ltd.	108
Brampton Bros., Ltd.	258
British Hub Co., Ltd.	224
British Lighting and Ignition Co., Ltd.	244
British Oil and Turpentine Corporation, Ltd.	148
British Piston Ring Co., Ltd.	295
British Thomson-Houston Co., Ltd.	269
Brooks, J. B., and Co., Ltd.	310
Brough, Geo.	89
Brough, W. E., and Co.	60
Brown Bros., Ltd.	229
Brown and Barlow, Ltd.	299
B.S.A. Cycles, Ltd.	96/255
Burman and Sons, Ltd.	206
Burney and Blackburne, Ltd.	285
Butterfields, Ltd.	68
Cake, Arthur and Co., Ltd.	235
Campion Cycle Co., Ltd.	72
Canning, W., and Co., Ltd.	296
Capon, Heaton and Co., Ltd.	10
Cedos	80
Challenge Oil Co., Ltd.	245
Chater Lea, Ltd.	78
Clayton Wright, Ltd.	222
Clyno Eng. Co. (1922), Ltd.	27
Coan, Robert W.	154
Coleford Motors, Ltd.	163
Collier, H., and Sons, Ltd.	71
Components, Ltd.	263
Constrictor Tyre Co.	176
Cooper-Stewart Eng. Co., Ltd.	283
Cotton Motor Co.	23
County Chemical Co., Ltd.	286
Coventry Chain Co., Ltd.	230

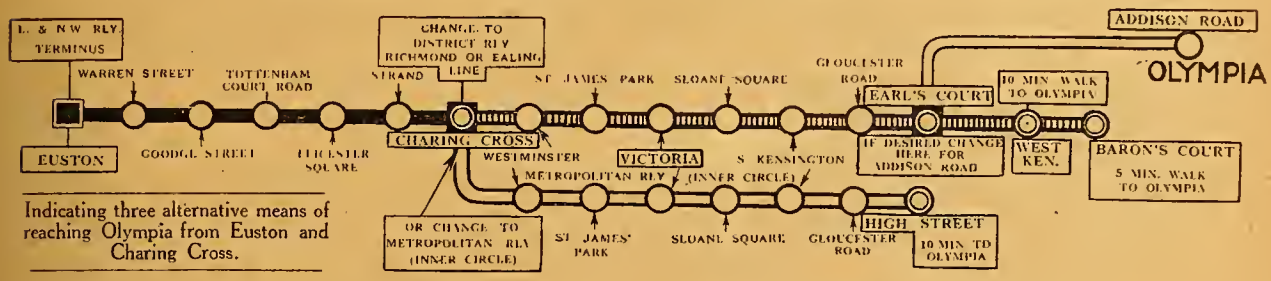
LIST OF EXHIBITORS (continued).

	Stand No.
Coventry Eagle Cycle Co.	43
Coventry Maseot Cycle Co., Ltd.	124
Coventry Victor Motor Co., Ltd.	38
Cox Carburetters, Ltd.	307
Dederich-Wooler Eng. Co.	18
Dekla, Ltd.	117
D. F. and M. Eng. Co., Ltd.	93
Dorway Sideear Co.	113
Dot Motors	59
Douglas Motors, Ltd.	61
Dunford and Elliott, Ltd.	166
Dunhills, Ltd.	66/253
Dunlop Rubber Co., Ltd.	83
Easting Windscreens, Ltd.	184
Edmund, C., and Co. (1920), Ltd.	138
Efficiency Motor and Eng. Co.	87
E.I.C. Magnetos, Ltd.	291
Enfield Cycle Co., Ltd.	107
Excelsior Motor Co., Ltd.	98
Fellows Magneto Co., Ltd.	303
"F.N." (England), Ltd.	141
Forward Sparking Plug Co.	293
Francis and Barnett, Ltd.	81
Grant, R. E. D.	44
Green, W. J., Ltd.	140
Grigg Motor and Eng. Co., Ltd.	35
Grindlay (Coventry), Ltd.	39
Hack Eng. Co., Ltd.	91
Harley Davidson Motor Co., Ltd.	34
Harper, R. O.	122
Hawk Eng. and Sidecar Mfg. Co.	29a
Hawker, H. G., Eng. Co., Ltd.	36
Hazlewoods, Ltd.	130
Heudee Mfg. Co.	63
Henderson Motors, Ltd.	165
Henley Eng. Co., Ltd.	111
Hill Bros.	121
Hobart Cycle Co., Ltd.	101
H. T. Motor Cycle Co.	46
Hughes, Thomas and Son	144
Humber, Ltd.	126
Humphries and Dawes, Ltd.	79
Hunt, A. H., Ltd.	301
Iliffe and Sons Ltd.	70
Inter-Continental Eng. Co., Ltd.	31
James Cycle Co., Ltd.	75
Jardine, John, Ltd.	278
Jenson and Nicholson, Ltd.	218
Kempshall Tyre Co., Ltd.	7
Lamplugh, S. A., Ltd.	306
Lea and Francis, Ltd.	95
Leatherics, Ltd.	302
Leckie, John, and Co., Ltd.	203
Lee Lock, Ltd.	52
Leicester Rubber Co., Ltd.	88
Lodge Plugs, Ltd	260
Lucas, Joseph, Ltd.	256
Lycett Saddle Co., Ltd.	250
M.A.G. Engine Co., Ltd.	308
March, Newark and Co., Ltd.	161
Markt and Co. (London), Ltd.	300
Marston, John, Ltd.	110
Martinsyde, Ltd.	30
Massey Motor Co., Ltd.	29
McKenzie, Geo.	145
Mead and Deakin	160
Melchior, Armstrong and Dessau	123
Melen, F. and H., Ltd.	105
Metro-Tyler Co., Ltd.	159
Miller, H., and Co., Ltd.	262
Mills-Fulford, Ltd.	65
Minstrel and Rea Cycle Co., Ltd.	104
M-L Magneto Syndicate, Ltd.	267
Mohawk Cycle Co., Ltd.	92
Monopole Cycle and Motor Co.	37
Montgomery, W., and Co.	42
Morgan Motor Co., Ltd.	139
Moss Gear Co., Ltd.	213
New Hudson, Ltd.	142
New Imperial Cycles, Ltd.	94
Newman, S. A., Ltd.	64
New Rover Cycle Co., Ltd.	131
North British Rubber Co., Ltd.	119
Norton Motors, Ltd.	103
Orbit Motors, Ltd.	24
Osborne Eng. Co., Ltd.	40
Packman and Poppe	146
Palmer Tyre, Ltd.	11
Peugeot (England), Ltd.	22
Phelon and Moore, Ltd.	77
Powell Bros.	167
Powell and Hanmer, Ltd.	254
Prestwich, J. A., and Co., Ltd.	259
Pugh, Chas. H., Ltd.	238
P. V. Motor Cycles, Ltd.	19
Radnall, E. A., and Co.	135/290
Raleigh Cycle Co., Ltd.	99
Raven, W. H., and Co., Ltd.	16
Renold, Hans, Ltd.	261
Rex Motor Mfg. Co., Ltd.	133
Robinhood Eng. Works, Ltd.	241
Rotherham and Sons, Ltd.	251
Rudge-Whitworth, Ltd.	97
Sandham Eng. Co., Ltd.	170
Scott Autocar Co., Ltd.	168
Scott Motor Cycle Co., Ltd.	136
Sheppee Motor Co., Ltd.	158
Showell, E., and Sons, Ltd.	115
Small Engines Co.	20
Smith, J. E.	38
Sparkbrook Mfg. Co., Ltd.	137
Sphinx Mfg. Co., Ltd.	202
Stanger Engine Co.	180a
Stevens, A. J., and Co., Ltd.	67
Sturmey-Archer Gears, Ltd.	228
Sun Cycle and Fittings Co., Ltd.	100
Swallow Sideear Co.	180
Sykes and Sugden, Ltd.	169
Tan-Sad, Ltd.	242
Terry, H., and Sons, Ltd.	252
Thompson Bros. (Bilston), Ltd.	57
T. O. M. Co., Ltd.	51
Triumph Cycle Co., Ltd.	128
Vandervell, C. A., and Co.	233
Veloce, Ltd.	129
Victoria Motor and Cycle Co.	62
Villiers Eng. Co., Ltd.	287
Wallace, John	15
Watsonian Folding Sideear Co.	69
Weatherell and Co., Ltd.	17
Whitley Mfg. Co., Ltd.	120
Whitmee Eng. Co., Ltd.	25
Wiseman, Alfred, Ltd.	164
Wulfruna Eng. Co. (1920), Ltd.	125
Xtra Cars, Ltd.	47
Zenith Motors, Ltd.	21

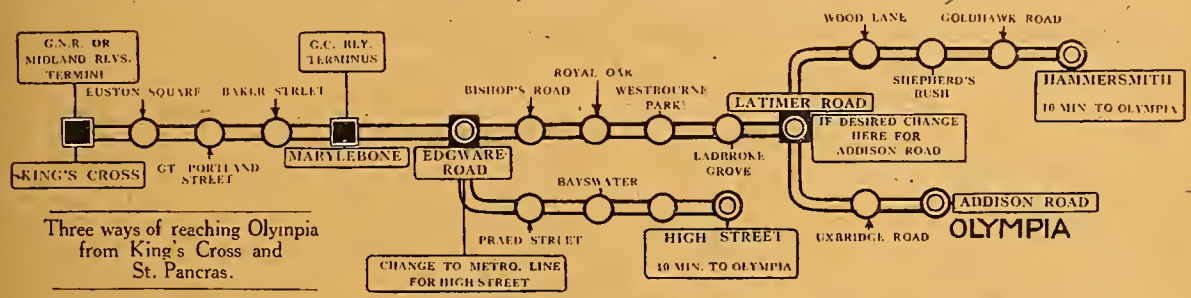


TRAIN AND BUS ROUTES TO THE SHOW.

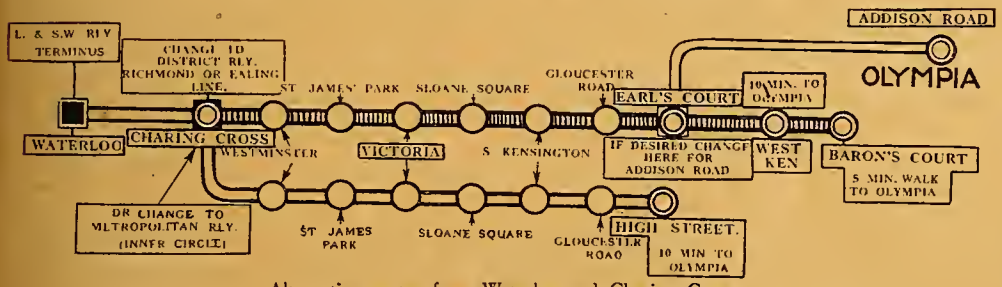
Connections Between Main Line Termini and Underground Train Services.



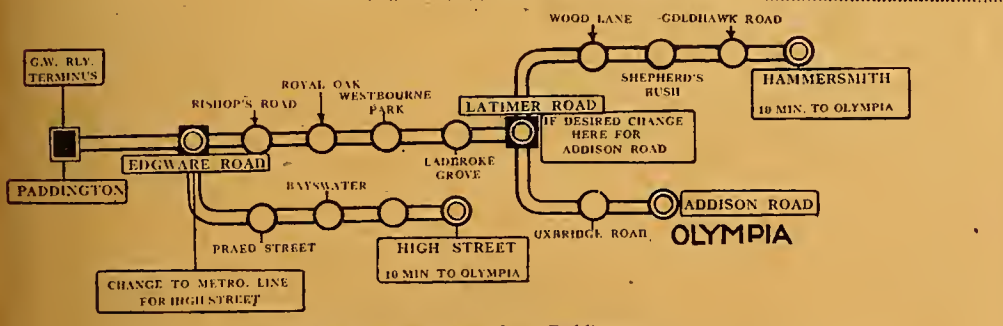
Indicating three alternative means of reaching Olympia from Euston and Charing Cross.



Three ways of reaching Olympia from King's Cross and St. Pancras.



Alternative routes from Waterloo and Charing Cross.



Showing quickest routes from Paddington.

OTHER TRAIN ROUTES.

FENCHURCH STREET (L.T. & S. & G.E. Rys.). By District Railway (Mark Lane Station) via Charing Cross, then proceed as shown in first plan.

LIVERPOOL STREET (G.E. Ry.). Central London Railway to Shepherd's Bush, changing there to motor 'bus Nos. 49, 49a.

VICTORIA (L.B. & S.C. & S.E. & C. Rys.) By District Railway to Addison Road, changing at Earl's Court, or on Inner Circle train to High Street Kensington, or on Richmond or Ealing train to Baron's Court.

LONDON BRIDGE (L.B. & S.C. & S.E. & C. Rys.). By District Railways from Monument Station to Addison Road, changing at Earl's Court, or on Inner Circle train to High Street Kensington, or on Richmond or Ealing train to Baron's Court.

(Note: Addison Road Station is not so frequently served from Earl's Court as Baron's Court.)

'BUS ROUTES TO OLYMPIA.

By those who prefer to travel all the way to Olympia by motor 'bus, the following particulars of the services available should be studied :—

BAKER STREET (Metropolitan Ry.). 'Bus service Nos. 27, 27b, 27c.
BROAD STREET (L. & N.W. Ry.). No. 9.
CANNON STREET (S.E. & C. Ry.). No. 13 to Piccadilly Circus, thence by No. 9 or No. 33.
CHARING CROSS (S.E. & C. Ry.). No. 9 or No. 33.
EUSTON (L. & N.W. Ry.). No. 73.
FENCHURCH STREET (L.T. & S. & G.E. Rys.). No. 23 to Oxford Circus, then by No. 73.
KING'S CROSS (G.N. Ry.). No. 73.
LIVERPOOL STREET (G.E. Ry.). No. 9.
LONDON BRIDGE (L.B. & S.C. & S.E. & C. Rys.). No. 13 to Piccadilly Circus, thence by No. 9 or No. 33.
MARYLEBONE (G.C. Ry.). Nos. 27, 27b., 27c.
PADDINGTON (G.W. Ry.). Nos. 27, 27b, 27c.
ST. PANCRAS (M. Ry.). No. 73.
ST. PAUL'S (S.E. & C. Ry.). No. 9 from Ludgate Circus.
VICTORIA (L.B. & S.C. & S.E. & C. Rys.). Nos. 16, 25, 25a, 25b, 38, 38b, to Hyde Park Corner, then by Nos. 9, 33, or 73.
WATERLOO (L. & S.W. Ry.). Nos. 1, 48, 67, or 68 to Strand, thence by Nos. 9 or 33.
HOUNSLOW, 27b.
LEWISNAM. Motor 'bus No. 49a runs to Shepherd's Bush *via* Holland Road, serving also Catford, Forest Hill, Upper Sydenham, Crystal Palace, Beulah Hill, Streatham Common, Tooting Bec Road, Trinity Road, Northcote Road, Falcon Road, Battersea Bridge.

Forecast and Guide to OLYMPIA

An Advance Review of the Motor Cycles at the Exhibition Opening on Saturday next. A Stand-to-Stand Forecast of the Exhibits so arranged as to form a Guide to the Show.

In addition to the forecast of 1923 models contained in this issue, "The Motor Cycle" for several weeks past has contained detailed descriptions of new machines. The issues in which these appeared were as follows:

Alecto	Nov. 16	Chater-Lea	Nov. 16	Grigg	Nov. 2	Martinsyde	Nov. 16	Quadrant	Oct. 5
American X.	Nov. 16	Calthorpe	Nov. 16	G.S.D.	Oct. 12	Metro-Tyler	Nov. 16	Rudge	Nov. 16
Ariel	Nov. 9	Coventry Mascot.	Nov. 16	Harley-Davidson.	Nov. 16	Matchless	Sept. 21	Radco	Nov. 16
A.J.S.	Nov. 2	Croft	Nov. 2	Henderson, U.S.A.	Nov. 16	and	Nov. 16	Raleigh	Sept. 28
Allon	Oct. 26	Connaught	Oct. 26	Hawker	Nov. 16	New Imperial	Nov. 9	Sheffield-	
Bianchi	Nov. 16	Campion	Sept. 28	Hazlewood	Nov. 9	and	Nov. 16	Henderson	Nov. 16
Bradbury	Nov. 16	Cedos	Sept. 28	Hagg	Nov. 9	Norton	Nov. 2	Sunbeam	Nov. 2
Beardmore-		Douglas	Nov. 16	Humber	Oct. 12	Ner-a-car	Nov. 2	Sirrah and Verus	Oct. 26
Precision	Nov. 9	Dot	Nov. 16	Henley	Sept. 21	New Hudson	Oct. 26	Triumph	Nov. 9
B.S.A.	Oct. 26	Duzmo	Nov. 16	Ivy	Nov. 9	Orbit	Nov. 16	and	Nov. 16
Brough-Superior	Sept. 28	Dunelt	Oct. 26	James	Nov. 16	O.K.	Nov. 2	Triple H.	Oct. 12
Brough	Sept. 28	Dorway Sidecar	Oct. 19	J.E.S.	Nov. 9	Omega	Oct. 19	Velocette	Nov. 2
Cykelaid	Nov. 16	Economic	Nov. 2	J.D.	Sept. 28	P.V.	Nov. 16	Wolf	Oct. 26
Clement	Nov. 16	Edmund	Oct. 19	Kenilworth	Nov. 16	Powell	Nov. 16	Wooler	Sept. 21
Coventry-Victor	Nov. 16	Excelsior	Oct. 19	Levis	Oct. 19	P. & M.	Oct. 26	Zenith	Nov. 16
Coventry-Eagle	Nov. 16	Francis Barnett	Oct. 26	Lea-Francis	Oct. 26				

Stand **DUZMO.**

15. When the Duzmo was introduced to the public there were comparatively few sports models on the market, and it occupied quite an important niche in the motor cycle world. To-day it is uncommon to find any make of motor cycle that is not available in some kind of sporting form, but this does not lessen the appeal of a machine the primary aim of which is to attract the youthful enthusiast.

A 496 c.c. o.h.v. engine and a close ratio Sturmey gear box are the most important items of the standard specification; reversing usual practice, a wide ratio box is supplied optionally for passenger work. Clearance for the overhead valve gear is helped by the inclined setting of the engine, one of the distinctive features of the design.

Stand **RAY.**

16. Nottingham is rapidly becoming an important centre in the motor cycle industry, and one of the comparatively few absolutely new makes at the Show hails from that city. Manufactured by the firm of W. H. Raven and Co., Ltd., the machine referred to is a well-designed miniature with a 198 c.c. four-stroke engine and two-speed gear box and clutch in one unit. Final transmission is by chain, and generally the detail work is carried out in exemplary fashion for so small a machine. A flywheel magneto is used, and no difficulty is experienced with the superfluous spark on the exhaust stroke.

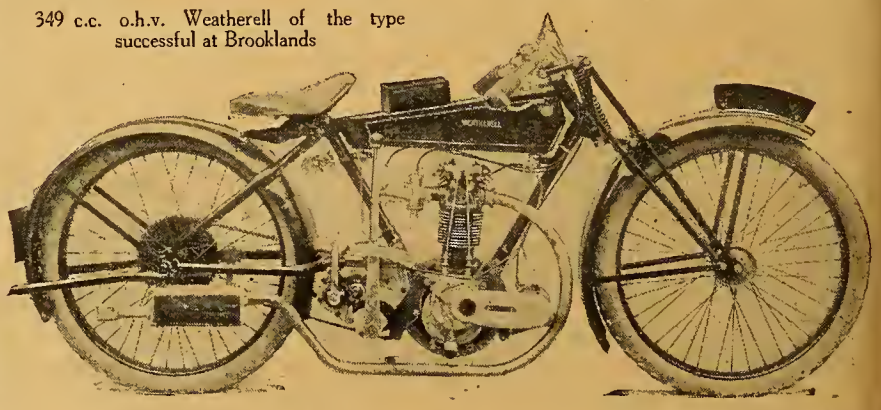
Stand **WEATHERELL.**

17. Consistently good performances on Brooklands track have done much to bring Weatherell motor cycles before the public eye. Perhaps this make's biggest success was to win the 100 miles Giant Handicap this year, but it has given a good account of itself at every meeting during 1922.

Three main models will constitute the 1923 range, all being fitted with Blackburne engines (250 c.c., 350 c.c., and 696 c.c.). Side valve or o.h.v. editions of each will be available.

Perhaps the most interesting machine is the smallest, which has a fully triangulated frame of neat design,

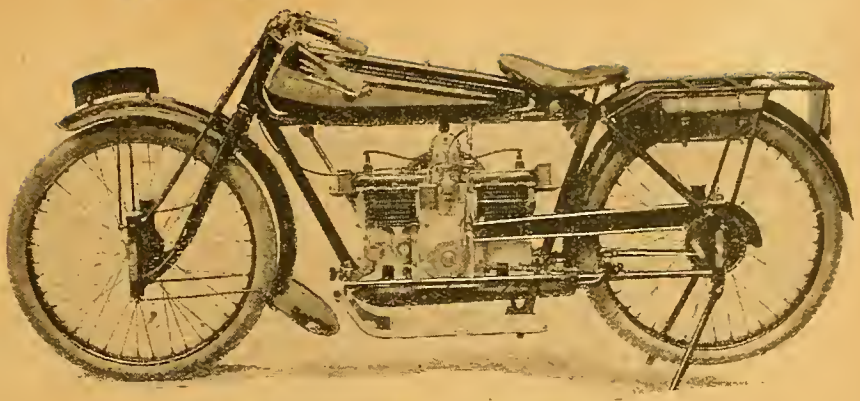
349 c.c. o.h.v. Weatherell of the type successful at Brooklands



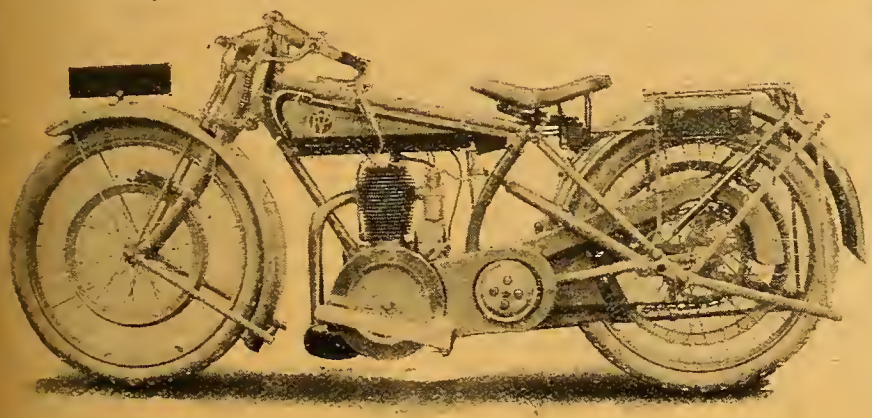
Forecast and Guide to Olympia.—

Stand **WOOLER.**

18. Although beset in the past by various difficulties, the makers of the Wooler have never adopted the line of least resistance to a motor cycle manufacturer and marketed an assembled machine embodying proprietary components. Their 1923 models supply ample justification for their attitude, the designs being full of practical originalities. Flat twin engines are exclusively fitted. The chief types shown will be 350 c.c. and 500 c.c. touring models and a 350 c.c. sports model with an unusual form of semi-overhead valve gear. The larger Wooler is intended for sidecar work. Chain transmission from a gear-driven gear box in the crank case is employed on the three-speed models.



350 c.c. sporting Wooler, which has a re-designed high efficiency engine.



Sleeve-valve Barr and Stroud-engined P.V. spring frame machine.

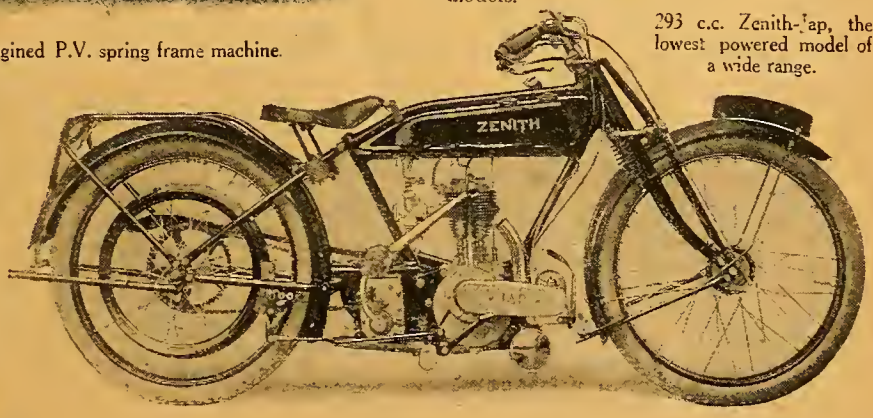
Stand **P.V.**

19. Comfort is naturally the slogan of the manufacturers of the P.V. For many years now a simple spring frame has given every satisfaction to riders of this machine, and the very choice of engines fitted to the various models has obviously been based with the idea of gaining smooth running and even torque. Only the smaller sizes are single-cylinders (250 c.c. Villiers, 350 c.c. Villiers, 293 c.c. J.A.P., or 350 c.c. Barr and Stroud), the larger sports solo or dual-purpose machines being fitted with 496 c.c. and 654 c.c. J.A.P. V-twins. With the super-sports type of smaller twin engine the P.V. presents a very attractive combination of liveliness and luxury.

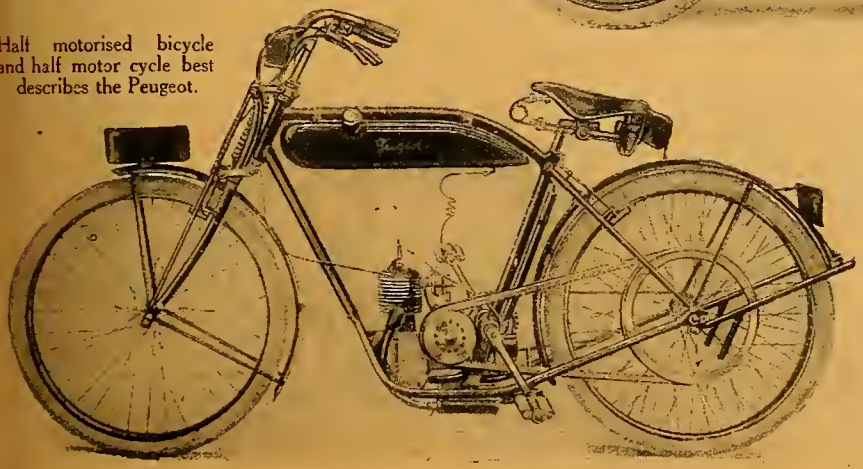
Stand **ZENITH.**

21. 100 m.p.h. records by Le Vack have done much to impress the name Zenith on the average motor cyclist's mind, but in case of pre-war riders there is little necessity, for the Zenith and its Gradua gear attained much fame in the days when 60 m.p.h. was marvelled at. With the decline in popularity of the belt drive the firm has gradually increased its range of chain-driven models, which now comprise 976 c.c. J.A.P., 496 c.c. oil-cooled flat twin Bradshaw, 348 c.c. J.A.P., and 293 c.c. J.A.P. engined models.

293 c.c. Zenith-Jap, the lowest powered model of a wide range.



Half motorised bicycle and half motor cycle best describes the Peugeot.



Only the 656 c.c. Gradua-geared touring model will remain on exhibit, but the equivalent sports machine and its larger edition will still be marketed.

Stand **PEUGEOT.**

22. Miniatures on the border-line of the motorised bicycle will be shown by the famous French firm of Peugeot. First exhibited at the Paris Salon, the machine employs a proprietary French two-stroke engine specially designed for its purpose and a two-speed gear, final drive being by belt over large pulleys. Proper girder-type spring forks and a sloping top tube (on the standard model) follow motor cycle practice, but a good deal of the specification and the general appearance are distinctly reminiscent of the pedal cycle.

Forecast and Guide to Olympia.—

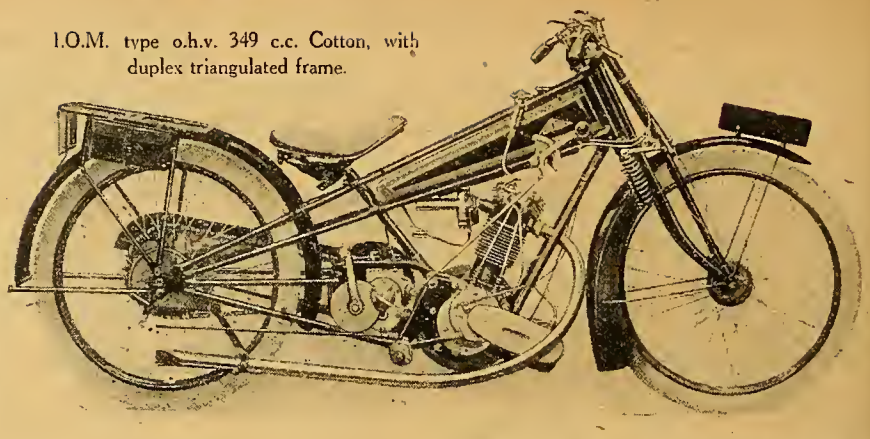
Stand **COTTON.**

23. In this year's Junior T.T. race the Cotton demonstrated what thinking motor cyclists must have realised for many years—that its triangulated frame and low centre of gravity possess distinct advantages over more conventional designs in road-holding and cornering abilities.

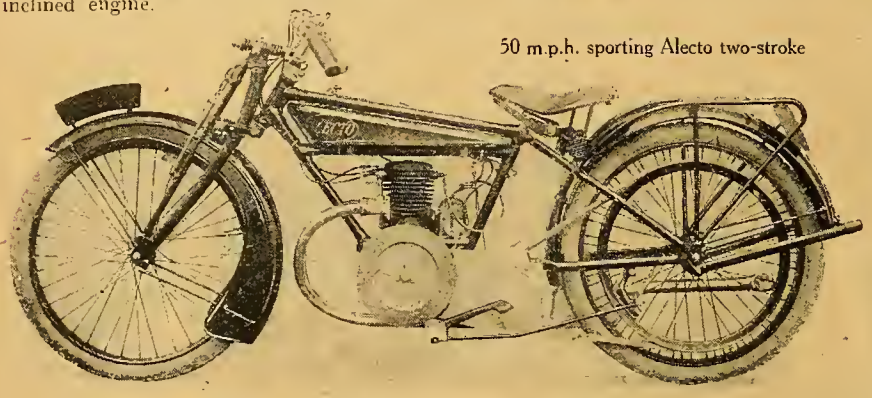
250 c.c. and 350 c.c. Blackburne engines (in the second case, side-valve or o.h.v.) are fitted to the main models, final chain drive being incorporated in the larger model. A 250 c.c. Villiers engine may be substituted for the 250 c.c. Blackburne at a saving of some £10.

Silencing arrangements and fork construction have been improved for 1923; and naturally the o.h.v. model follows the lines of the I.O.M. machine in having an inclined engine.

I.O.M. type o.h.v. 349 c.c. Cotton, with duplex triangulated frame.



50 m.p.h. sporting Alecto two-stroke



Stand **ORBIT.**

24. Every one of the four Orbit models on show, although all between 250 c.c. and 350 c.c., will be fitted with a different type of engine. These are 265 c.c. Orbit two-stroke, 349 c.c. Barr and Stroud sleeve-valve four-stroke, 349 c.c. o.h.v. Blackburne four-stroke, and 349 c.c. oil-cooled Bradshaw four-stroke. The same frame takes all these units, and the general specification—Burman three-speed gear box, chain drive, etc., is identical.

Stand **ALECTO.**

25. For some years now the makers of the Alecto have specialised in the evolution of the 350 c.c. two-stroke, with the result that the 1923 edition of this make in a sports form is said to be capable of 50 m.p.h. as delivered.

The latest Alecto engine is 346 c.c. (76×76 mm.), and is chiefly notable for the very complete system of oil ways provided to ensure adequate lubrication of every working part.

Various forms of transmission, with two- or three-speed Burman gear boxes, will be used on the models shown, and several detail improvements have been effected to the cycle parts.

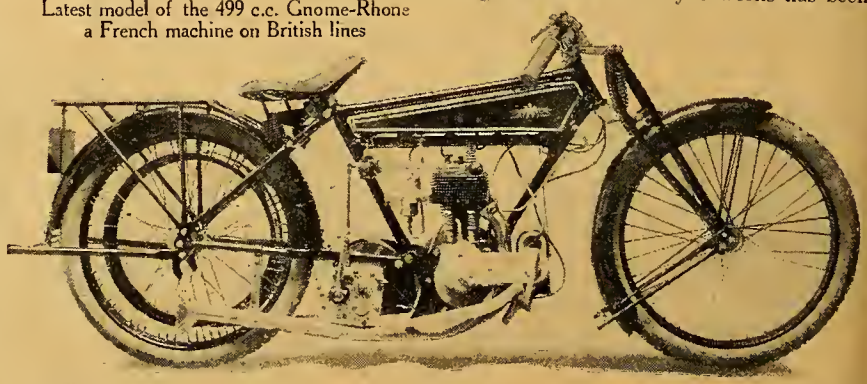
Stand **GNOME-RHONE.**

26. Designed by an Englishman, the Gnome-Rhone is built in France by a famous aircraft firm. It has a straightforwardly laid-out four-stroke engine of 499 c.c. (85×88 mm.), which drives to a Sturmey-Archer three-speed gear box and thence to the rear wheel by belt.

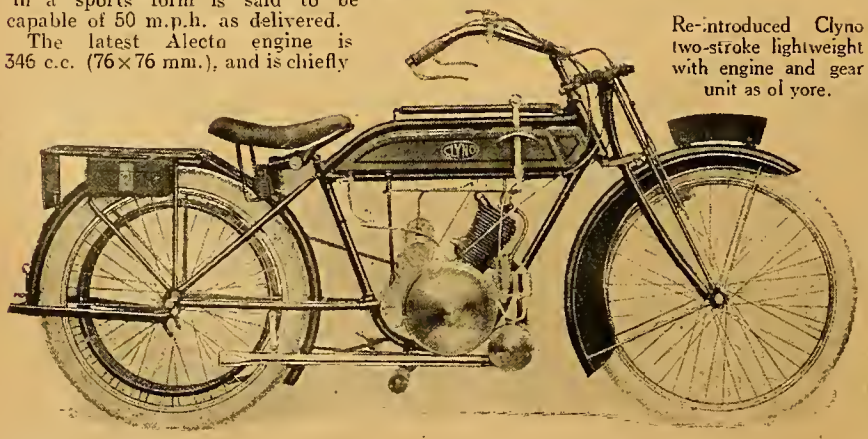
Stand **CLYNO.**

27. Since last Show a complete reorganisation of the Clyno works has been

Latest model of the 499 c.c. Gnome-Rhone a French machine on British lines



Re-introduced Clyno two-stroke lightweight with engine and gear unit as of yore.



made, and models of the 925 c.c. spring-frame sidecar outfit and 269 c.c. two-stroke will appear, embodying several improvements. The passenger model, by reason of its luxurious specification, is not far from the top of its class, and it has not been found necessary to modify it to any great degree. A steel and phosphor-bronze plate clutch has, however, been substituted for the cork insert type previously used.

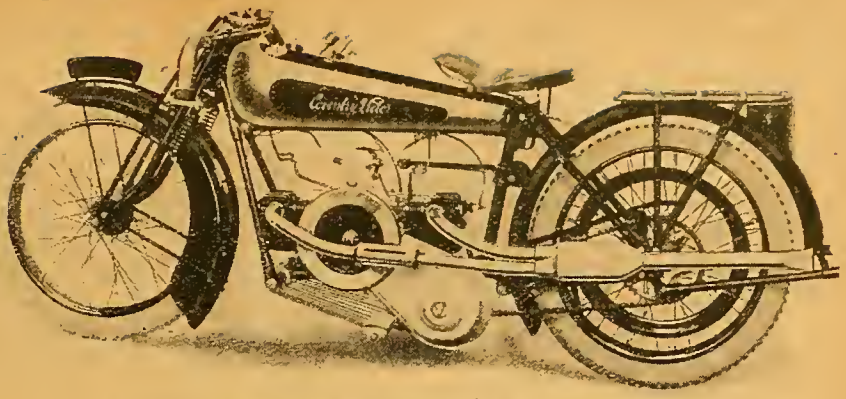
Outwardly the lightweight also remains unchanged, which is not surprising in view of the satisfactory service which it has given to owners since its inception some years ago. It will be recalled that the engine and two-speed gear are combined in one unit of the very simplest nature. Final belt drive and "petroil" lubrication are two features that give a keynote to the whole scheme of the design.

Forecast and Guide to Olympia—

Stand **COVENTRY VICTOR.**

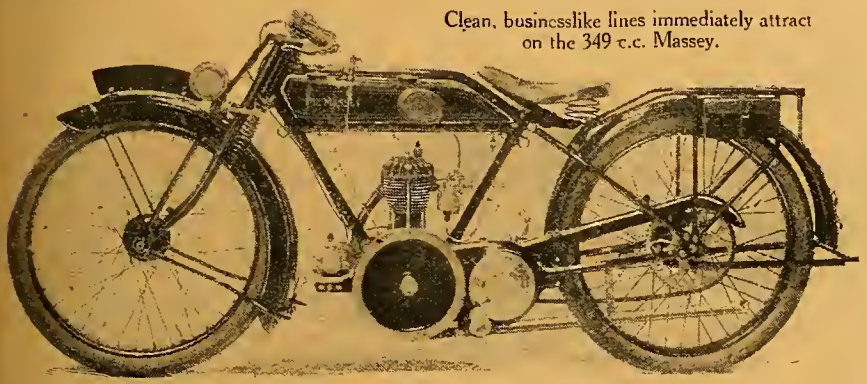
28. Since it won its class in the 500 mile race in 1921 the 688 c.c. flat twin Coventry Victor has steadily gained favour with the speedman; and realising this the makers have introduced a super-sports model for next year. Although the specification is in every way suitable for a touring machine, the new model will be supplied with an 80 m.p.h. speed guarantee at a slight extra charge. Two Cox Atmos carburetters supply the mixture to the cylinders, and a system of balanced air-pressures in float-chambers, fuel tank, and induction pipe has been adopted.

Ordinary sporting and touring (solo or sidecar) models are, of course, retained, chain drive *via* a Sturmey gear box being common to all.



80 m.p.h. is the guaranteed speed of the "Super-Six" Coventry Victor.

Clean, businesslike lines immediately attract on the 349 c.c. Massey.



Stand **MASSEY.**

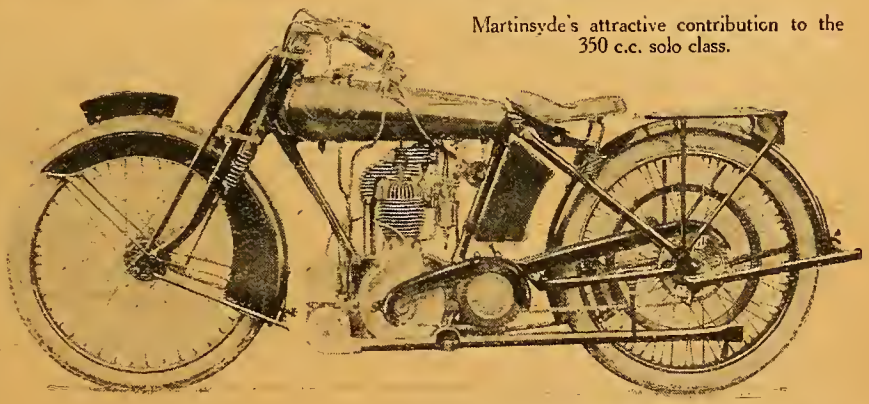
29. One of the neatest machines to make its appearance this year is the Massey. (It was introduced to the public in July.) Proprietary units are used, Blackburne engines being fitted throughout, but the appearance of the whole machine, besides being extremely pleasing, indicates that considerable thought has been expended on the design. Details of frame construction are particularly well carried out. For example, the steering head has very large ball races with special lubricators; the handle-bars are celluloid-covered, and an auxiliary bar is provided for carrying instruments, etc. The bottom bracket lug is also a good example of light but sturdy design. Excellent mudguarding, internal expanding brakes, and chain drive (neatly enclosed on its primary portion) are features of all Massey machines.

Stand **MARTINSYDE.**

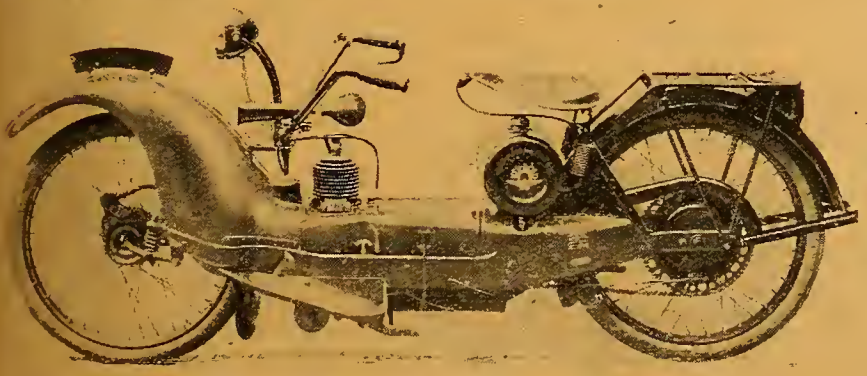
30. In company with a great many others, the manufacturers of the Martinsyde have introduced a 350 c.c. single for next year; however, they differ from most firms by designing an entirely new model instead of employing a proprietary engine or adapting one of their existing designs to meet the new requirement.

The latest Martinsyde follows the bigger twins in having an overhead exhaust valve, but the valve gear is novel and, it is claimed, silent. The valve rocker pivots on an inverted knife edge, and an external leaf spring replaces the conventional coil.

Martinsyde's attractive contribution to the 350 c.c. solo class.



Little change has been made to the 678 c.c. standard and sporting models.



Improved mudguard construction is a 1923 Ner-a-car improvement.

Stand **NER-A-CAR.**

31. When the Ner-a-car was first introduced its sponsors would not admit that it was a motor cycle at all. Perhaps it is not; but, nevertheless, it finds its way into the Motor Cycle Show and appeals to quite a number of motor cyclists, as well as to the car-owner or non-motorist *clientèle* which it was designed to attract. Its general lines are now too well known to need detailed description; suffice it to say that it is extremely low built, and almost self-steering and non-skidding. For 1923 its two-stroke power unit has been increased in capacity from 211 c.c. to 285 c.c.

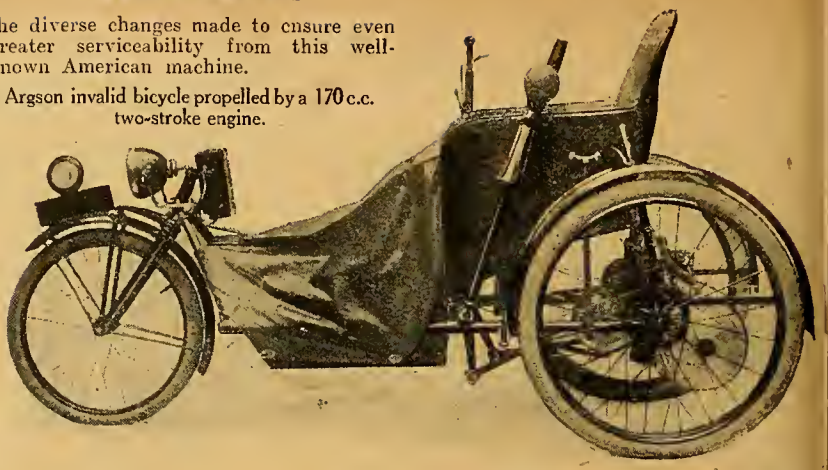
Forecast and Guide to Olympia.—

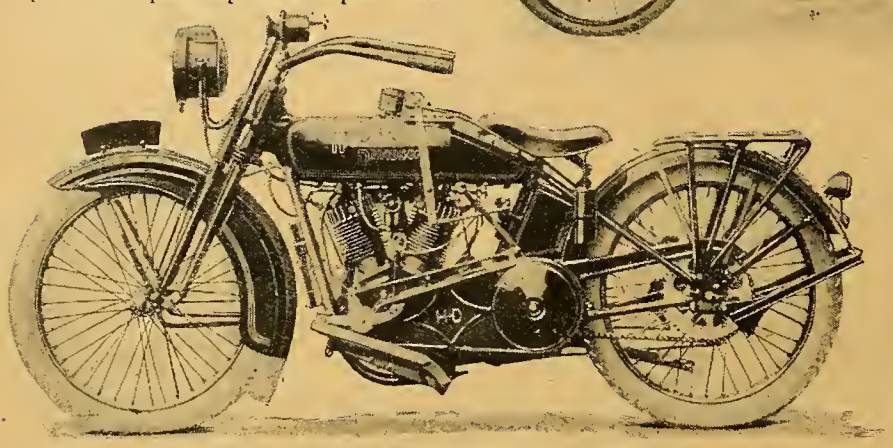
Stand **ARGSON.**

32. Argson invalid tricycles will occupy very much the same position in the motor cycle show as did the Dunkley motor perambulators at the car exhibitions.

Normally they do not interest the motor cyclist except as curiosities, but they are a great boon to the many helpless sufferers left us by the war, and therefore fill an important gap in the world of wheels. The tricycle itself is on the lines of the hand-propelled vehicle bearing the same name, but a well-designed 170 c.c. two-stroke engine of the firm's own construction supplies the power for speeds up to 25 m.p.h. The diverse changes made to ensure even greater serviceability from this well-known American machine.

Argson invalid bicycle propelled by a 170 c.c. two-stroke engine.





989 c.c. Harley-Davidson with gas-lighting equipment in lieu of a dynamo.

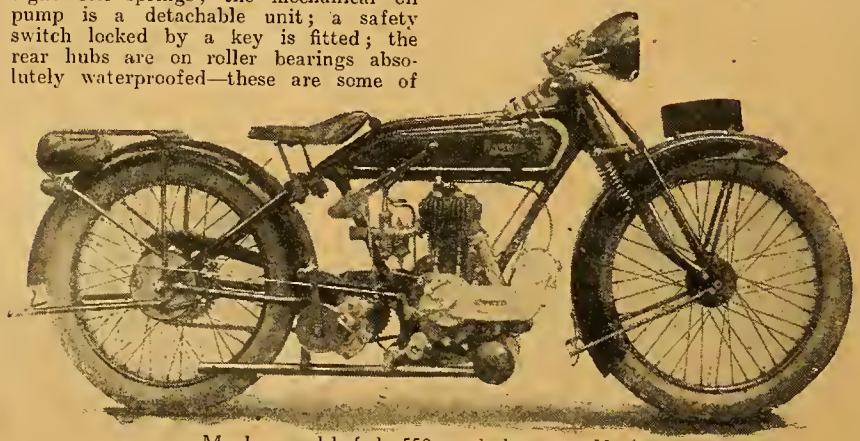
controls are of the simplest nature, a Mills single-lever carburetter and a fixed ignition Villiers flywheel magneto being used.

Separate engine units suitable for miniature motor cycles will also be shown.

Stand **HARLEY-DAVIDSON.**

34. Perhaps the most interesting item to the average man who visits the Harley-Davidson stand will be the new 1,208 c.c. model. But this is not really a new machine—it has long been common in the U.S.A.—and the detail improvements to existing models deserve just as close attention.

The front forks now carry no less than eight coil springs; the mechanical oil pump is a detachable unit; a safety switch locked by a key is fitted; the rear hubs are on roller bearings absolutely waterproofed—these are some of



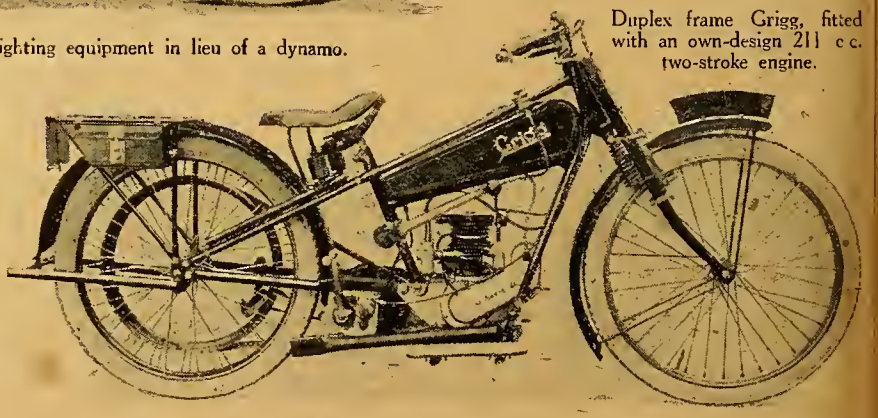
Magdyno model of the 550 c.c. dual purpose Hawker.

The three main models are: 584 c.c. flat twin, 989 c.c. V-twin, and 1,208 c.c. V-twin; attached to the last-mentioned will be shown an imposing double-seater sidecar.

Stand **GRIGG.**

35. Grigg lightweights are considerably more attractive than their name. Three models will comprise the 1923 programme: (1) a duplex frame machine with a 347 c.c. Villiers engine, (2) a similar model with a 211 c.c. Grigg two-stroke engine, and (3) an o.h.v. four-stroke 181 c.c. miniature. Two-speed Sturmey gear

Duplex frame Grigg, fitted with an own-design 211 c.c. two-stroke engine.

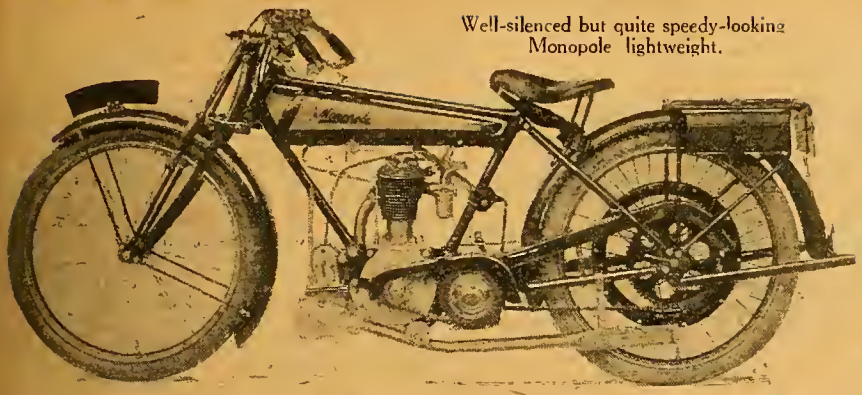


boxes are fitted in the first two cases, a two-speed Chater-Lea box on the miniature and a three-speed Sturmey box on a sidecar edition of the largest machine.

Stand **HAWKER.**

36. Frame improvements in the Hawker tend to render it more conventional in appearance than hitherto. A dropped top tube allows a lower saddle position with a considerable gain in ease of steering. This applies particularly to the larger model, which uses a 550 c.c. Blackburne engine, a Burman three-speed gear box, and equally well-known proprietary units for carburation, ignition, etc. Transmission is by chains guarded on their top runs and both front and rear brakes are of the internal expanding variety. The remaining models are fitted with 350 c.c. Blackburne (side or overhead valve) engines.

Forecast and Guide to Olympia.—

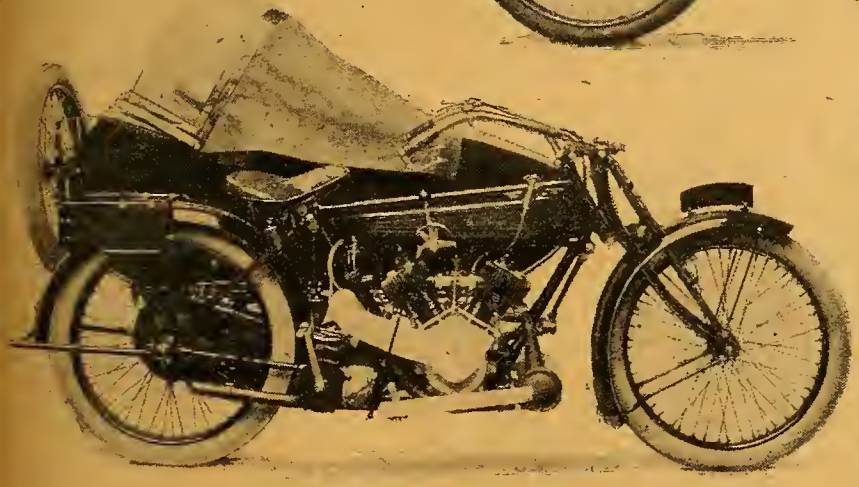


Well-silenced but quite speedy-looking Monopole lightweight.

Stand **MONOPOLE.**

37. With one exception all the Monopole models are fitted with single-cylinder J.A.P. engines, and generally speaking have been little altered since last Show.

A chain-driven 348 c.c. super-sports J.A.P. engined lightweight represents an entirely new model. It has a three-speed gear box, and is quite an attractive little machine without being in any way unconventional. A touring lightweight, a sidecar outfit to very much the same specification, a 293 c.c. chain-driven sporting machine, a chain-cum-belt 293 c.c. touring model, and a 247 c.c. Villiers engined direct belt two-stroke, complete the range.



Standard O.E.C.-Blackburne sidecar outfit.

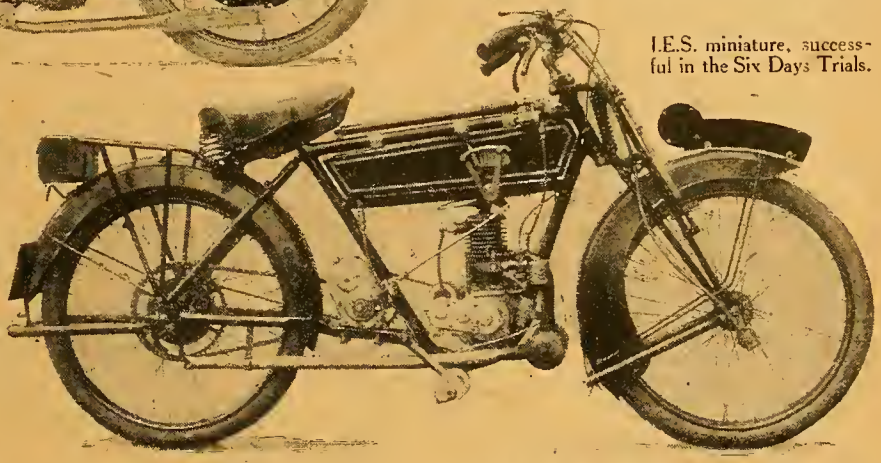
Stand **J.E.S.**

38. Three examples of the two main J.E.S. models will be shown—a single speed belt-driven miniature, a three-speed chain-driven miniature, and a four-speed, chain-driven 247 c.c. lightweight. The last-mentioned is new, and, after the historic performance of the four-speed 169 c.c. machine in the English Six Days Trials this year, it will be inspected with more than ordinary care. The engine is a straightforward three port two-stroke, but the gear box is on a principle uncommon to motor cycles, but often incorporated on machine tools, *i.e.*, of the sliding key constant mesh type. Engine lubrication is automatic.

Stand **O.E.C.-BLACKBURNE.**

40. For four years the Osborn Engineering Co., Ltd., made the Blackburne motor cycle, which it now markets under the name of the O.E.C.-Blackburne.

At last year's Show a minor sensation was caused by the O.E.C.-Blackburne sidecar taxi, with wheel steering. This model will again be shown; it is engined by a 1,098 c.c. Blackburne twin. Incidentally the wheel steering is readily adaptable to any make of motor cycle, and is recommended for use with sidecars that foul the handle-bars at full lock.



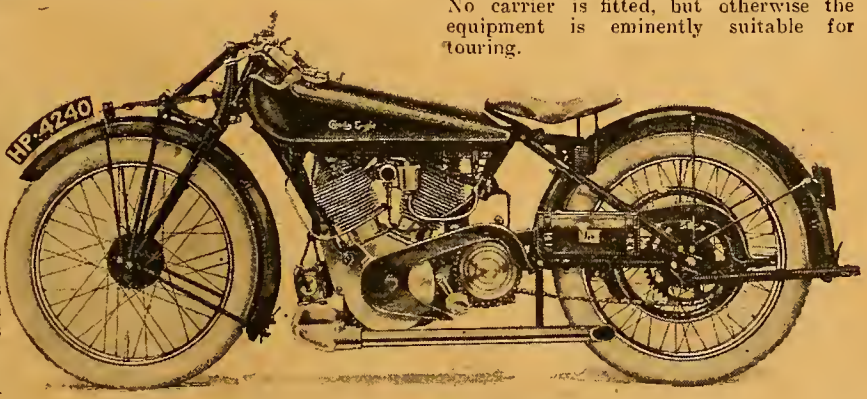
J.E.S. miniature, successful in the Six Days Trials.

More conventional single and double-seated sidecars will be staged, the two smaller twin and the largest single Blackburne engine being used.

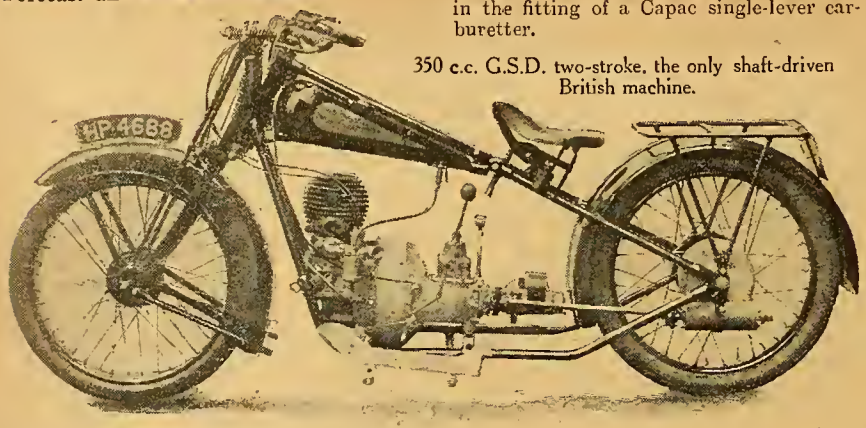
Finally there will be examples of a representative range of solo singles below 350 c.c.

Stand **COVENTRY EAGLE.**

43. Additions have been made at both ends of the extensive range of Coventry Eagle machines. An attractive miniature with a 147 c.c. Villiers two-stroke engine represents a worthy new supporter to the ever-growing class of ultra lightweight, and a super-sporting 976 c.c. twin similarly joins the ranks of luxurious solo mounts. The twin carries the super-sports J.A.P. engine in a very compact fashion, and generally speaking its very lines shout of speed and power. No carrier is fitted, but otherwise the equipment is eminently suitable for touring.



Super-sports 976 c.c. J.A.P. engined Coventry Eagle solo machine.



350 c.c. G.S.D. two-stroke, the only shaft-driven British machine.

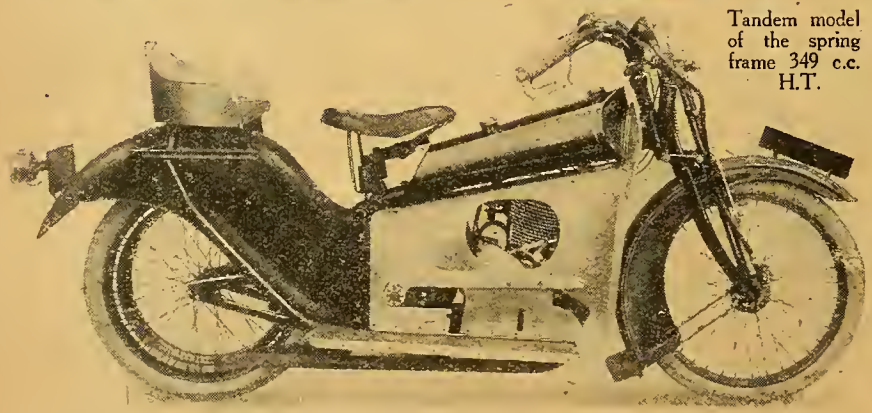
Stand **G.S.D.**

44. Notable if only as the sole British shaft-driven motor cycle, the G.S.D. embodies other advanced features in its design, including a transversely set engine in one unit with a four-speed gear box and a duplex frame.

A 350 c.c. White and Poppe two-stroke engine is normally used, but an additional model will be shown with a V-twin 976 c.c. J.A.P. unit.

An underslung worm conveys the power to the back wheel, which is easily detachable, although tyre repairs may be still more quickly effected by utilising the provision made for removing the inner tube.

26×3in. tyres and internal expanding brakes on front and rear wheels are features common to both models. Mudguarding has received considerable attention.



Tandem model of the spring frame 349 c.c. H.T.

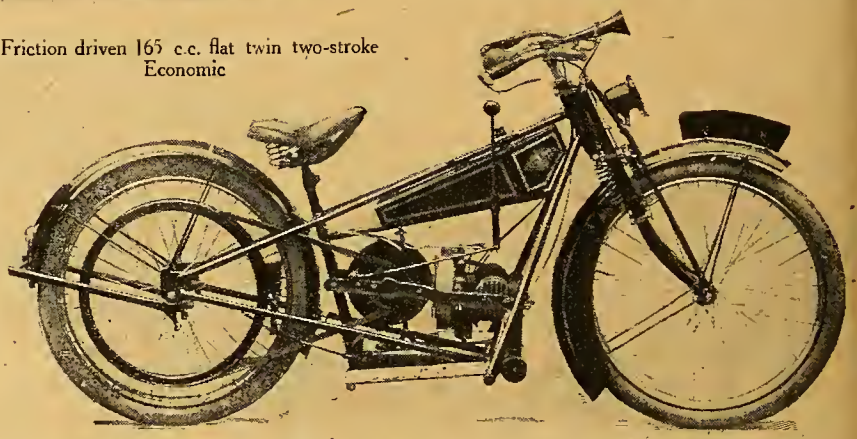
Stand **ECONOMIC.**

45. Last year the Economic was almost in a class by itself, both as regards price and engine capacity. To-day it is far from being alone in these respects, but the fact that it has a flat twin two-stroke engine and friction transmission prevents it from losing entirely its attributes of distinction. The capacity of this engine is 165 c.c.

Nine speeds are given by the friction gear, but these are necessarily within fairly confined limits, actually from 6 to 1 to 19 to 1. Final drive is by belt.

Improvements for next year have been made in the finish—black and gold—and in the fitting of a Capac single-lever carburetter.

Friction driven 165 c.c. flat twin two-stroke Economic



Stand **H.T.**

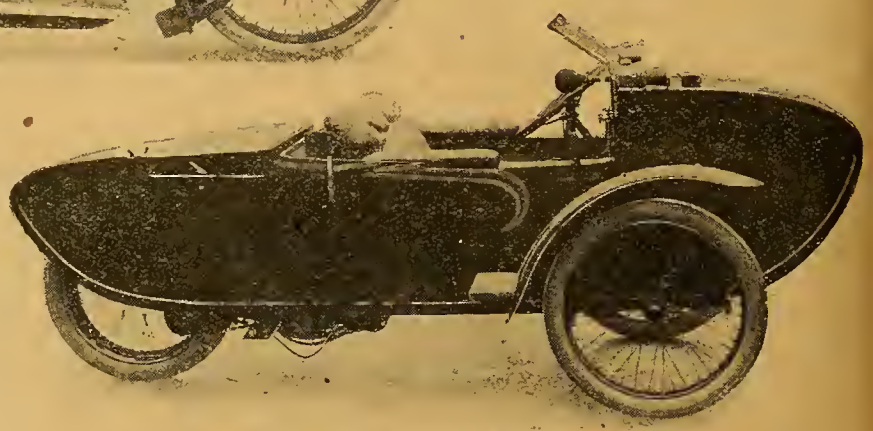
46. Known previously as the Hagg Tandem, the H.T. machine is now marketed in two forms, one a simple semi-stripped sporting motor cycle of conventional design, and the other a double- or single-seated two-wheeler, elaborately protected, and intended to attract the elderly comfort-seeking rider.

Barr and Stroud sleeve-valve engine and Burman two-speed gear box are common to both, but otherwise they are as the poles apart. The tandem has a well-tested spring frame and shields enclosing the entire mechanism.

Stand **XTRA CAR.**

47. No vehicle built offers such a remarkable choice of power units, while otherwise remaining essentially the same as the 1923 Xtra car. A two-seater model has been evolved; in the runabout form, it is fitted with a 347 c.c. Villiers engine and costs £105; in the "touring" form a 976 c.c. V-twin J.A.P. is substituted, when the price is increased to £122 17s., incidentally the lowest priced two-seater three-wheeler on the market.

On this unconventional vehicle, two pairs of transverse springs act as front axles and carry car type stub axles on pivot pins. Rear springing is by two quarter-elliptic springs. The body also acts in the same capacity as a chassis on a normal car.



New two-seated Xtra-car, with 347 c.c. Villiers engine.

Forecast and Guide to Olympia.—

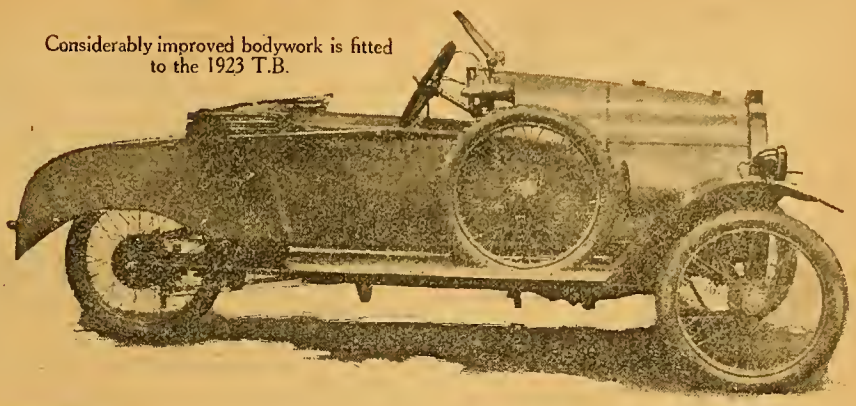
Stand **T.B.**

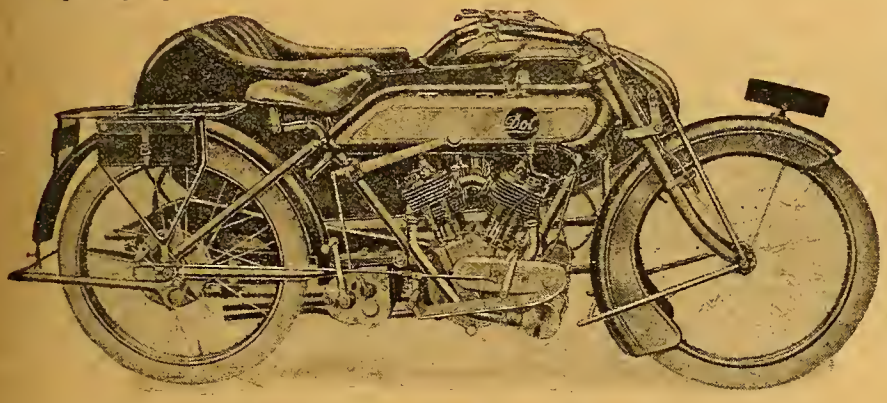
57. Except in the engine the T.B. three-wheeler follows car practice; it embodies a three-speed gear box and reverse, final shaft drive, semi-elliptic springing in front, and a form of cantilever suspension at the rear.

The standard model employs an air-cooled J.A.P. engine, while a water-cooled V-twin of the same make is fitted to the *de luxe* model. Finally, there is an aluminium-bodied sporting machine using the super-sports air-cooled J.A.P. engine.

Full equipment of horn, screen, hood, lamps, tools, and jack is supplied in every case, a spare wheel and electric lighting being included on the *de luxe* and sporting types.

Considerably improved bodywork is fitted to the 1923 T.B.





Touring Dot sidecar outfit, finished in cerise

Stand **DOT.**

59. Dot motor cycles have been on the market now for twenty years, which fact alone should carry considerable weight with the visitor to Olympia.

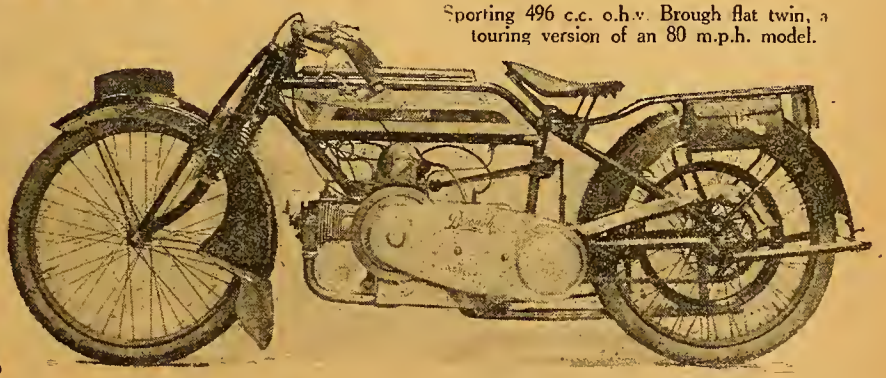
For next year all the machines have been thoroughly modernised, and, following the fashion of the day, are offered in sporting and touring guises. A 976 c.c. super-sports J.A.P.-engined 80 m.p.h. model deserves premier attention, but the 346 c.c. J.A.P.-engined sporting solo machine is also a good example of its class. Three-speed Sturmey-Archer and Albion gear boxes respectively are used, final drive being by chain. Adjustable handle-bars are a minor but useful refinement. 350 c.c. o.h.v. Blackburne, 250 c.c. J.A.P., or 350 c.c. Bradshaw engines may be fitted to the lightweight.

Stand **BROUGH.**

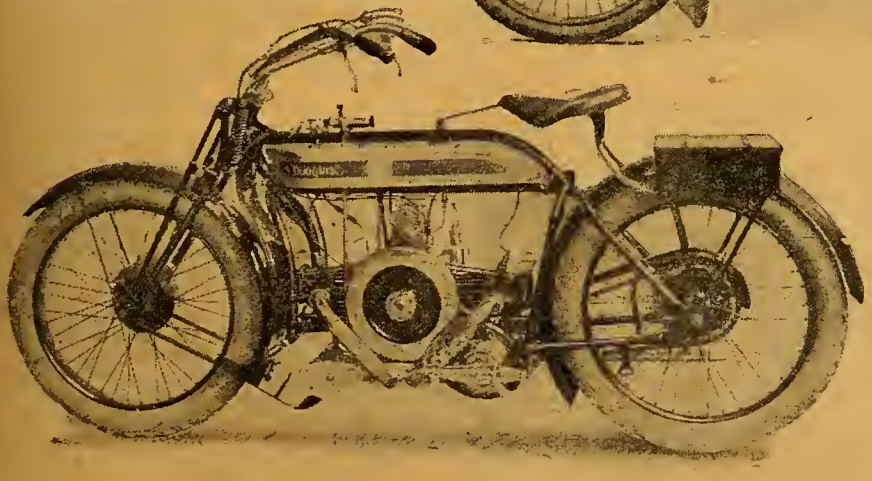
60. Considering that the speed model flat twin Brough is only 496 c.c., it is very remarkable that it should be supplied with a guarantee to exceed 80 m.p.h. This requires a specially-tuned engine, but the standard speed model is capable of 70 m.p.h. Overhead valves are employed, and aluminium alloy pistons and roller bearings for the crankshaft and the big ends also find a place on this model.

A touring model with a side-valve engine of the same size is also supplied for

Sporting 496 c.c. o.h.v. Brough flat twin, a touring version of an 80 m.p.h. model.



solo or sidecar use; a side-valve 682 c.c. dual-purpose machine completes the exhibit.



733 c.c. o.h.v. Douglas in a solo touring form.

Stand **DOUGLAS.**

61. Extensions have taken place to the famous range of Douglas flat twins, mainly in the form of additional models of existing types. For example, the familiar 348 c.c. Douglas may now be obtained with chain transmission and external contracting brakes on both wheels; the 595 c.c. model (which was virtually re-designed last year) is also offered with alternative transmissions; and the o.h.v. 733 c.c. machine is standardised as a sports solo as well as sidecar mount.

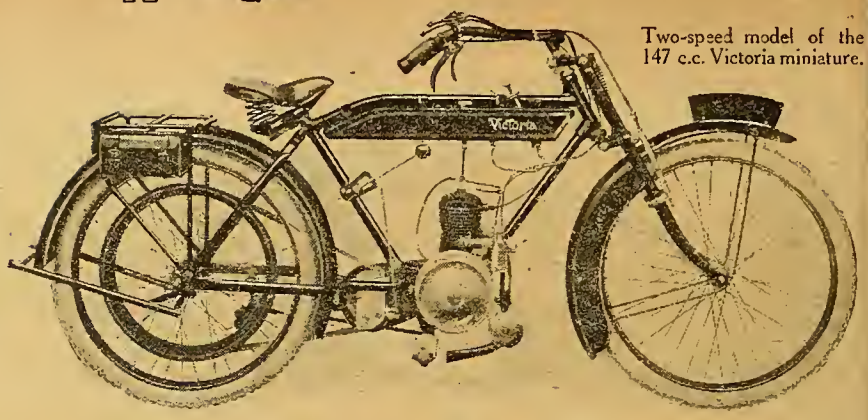
Perhaps least change of all has been made to the 494 c.c. o.h.v. Douglas, but even here considerable improvement has been effected in the transmission.

Forecast and Guide to Olympia.—

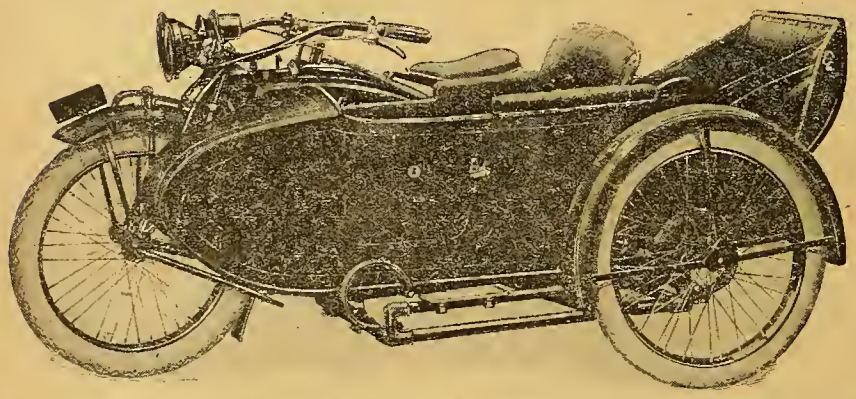
Stand **VICTORIA.**

62. Always noted for moderate price combined with sturdy design, the Scottish-built Victoria machines are offered in five main models for 1923. There are two-strokes using the three different sizes of Villiers engine—147 c.c., 247 c.c., and 347 c.c.—the remaining pair employing 348 c.c. and 550 c.c. J.A.P. engines respectively. Three-speed gear boxes are fitted in all but the two smallest types.

With a two-speed gear, the miniature is priced at £28, the other models ranging upward to £90 for the complete 550 c.c. sidecar outfit.



Two-speed model of the 147 c.c. Victoria miniature.



Imposing two-seated sidecar designed for the oversize 1,234 c.c. Indian Chief.

Stand **INDIAN.**

63. To be known as the "Super-Chief," a 1,234 c.c. Indian has been introduced to the British public for next year. In the main it is similar to the ordinary Chief (998 c.c.), which made its first appearance at the last Show, and is, of course, retained.

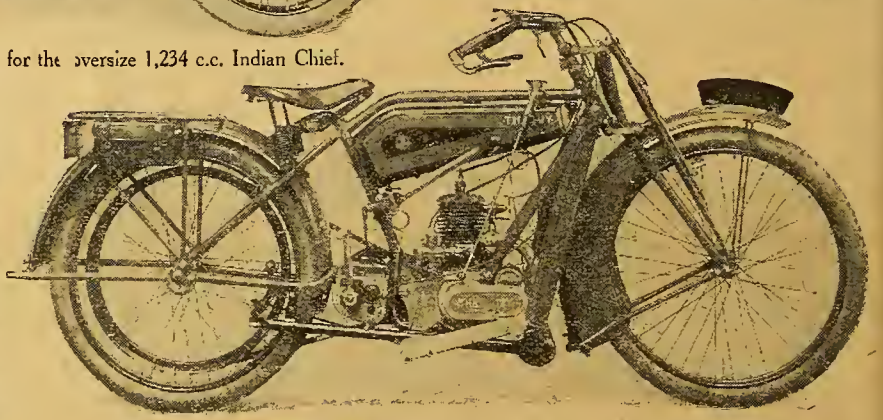
With a double-seated sidecar of the Princess type it makes an outfit capable of high-speed touring "three up"; full electrical equipment is included in the price of £167.

The electrically equipped solo models of the 998 c.c. Chief, 998 c.c. spring frame machine, and 596 c.c. Scout are respectively £132, £123, and £113. Suitable sidecars are available for all.

Stand **IVY.**

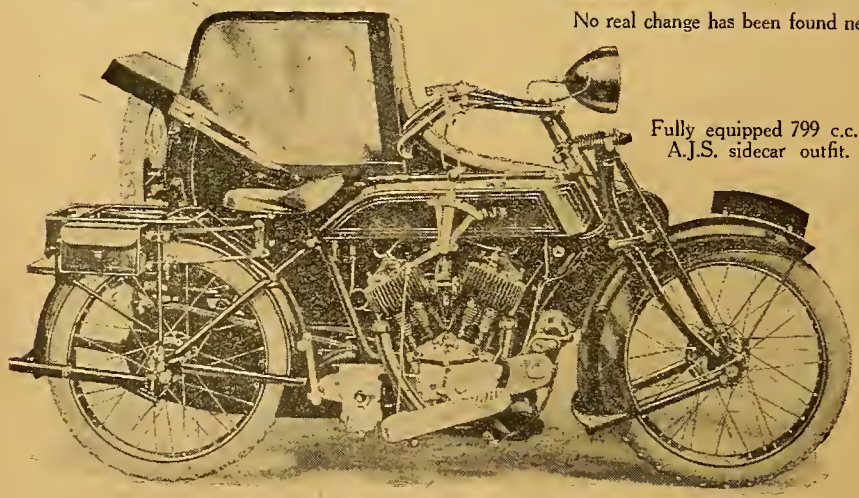
64. Chief interest on the Ivy stand will probably centre round the new 349 c.c. four-stroke, the design of Mr. H. C. Newman. There is, however, nothing startling or unconventional about the new engine, which is built on straightforward, common sense lines. It has very deep radiating fins, a detachable cylinder head, and an outside flywheel.

The main change on the two-stroke models is an oval transfer port which allows the piston ring bridge pieces to



No real change has been found necessary on the 250 c.c. Ivy.

be dispensed with. An open frame lady's model will be shown.



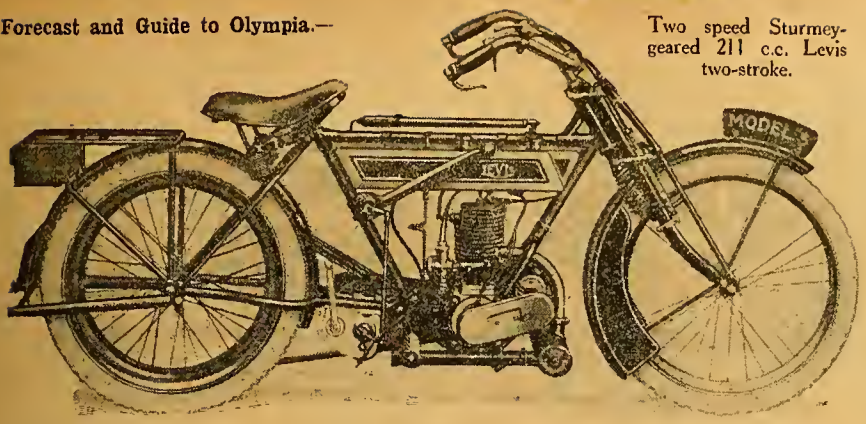
Fully equipped 799 c.c. A.J.S. sidecar outfit.

Stand **A.J.S.**

67. The marketing of the o.h.v. 349 c.c. A.J.S., of T.T. fame, will draw huge crowds to this stand. In effect, the new model is practically a replica of the I.O.M. machines, although one or two modifications have been incorporated to ensure a longer life to vital parts of the engine. For example, the valve guides are longer. An aluminium piston is now fitted, but the arrangement of four narrow rings above the gudgeon pin is retained. The radiating fins on the head have also been modified.

The side-valve 349 c.c. machines are retained with improved mudguarding and aluminium pistons, alterations which have also been made to the 799 c.c. sidecar outfits.

Forecast and Guide to Olympia.—



Two speed Sturmey-geared 211 c.c. Levis two-stroke.

Stand **LEVIS.**

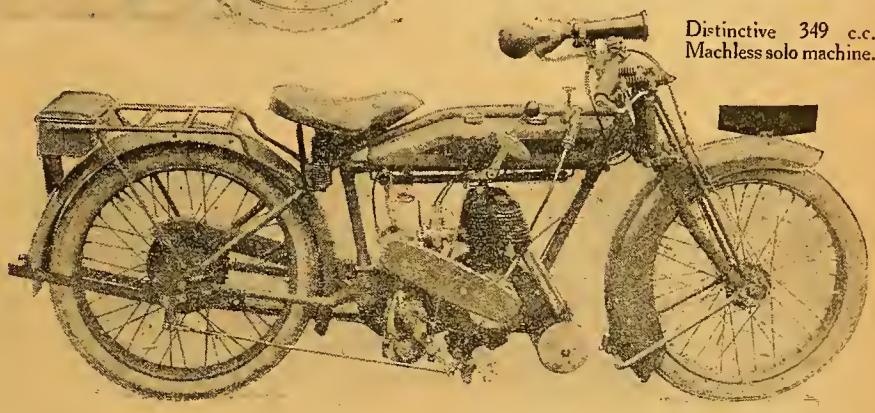
68. By winning the lightweight classes in the T.T., and the French Grand Prix, as well as a team prize in the Six Days Trial, the Levis has this year accomplished an unparalleled achievement in the annals of motor cycle competition.

Four models will be shown, three embodying the 211 c.c. engine, and one—at £68, the most expensive—the 247 c.c. unit with a three-speed Sturmey-Archer gear box, all-chain drive and two internal expanding brakes in the rear wheel. Two of the 211 c.c. machines have chain-cum-belt transmission, but differ in gear box (Sturmey-Archer two-speed with clutch and kick-starter, and Burman ditto), and in frame design (parallel top tube or sloping top tube).

At £38 the single-geared machine represents an excellent combination of simplicity and proved reliability.

Stand **MATCHLESS.**

71. In 1923 the makers of the popular Matchless sidecar outfit will attack the solo market in a thorough style. They will offer a 349 c.c. Blackburne-engined machine and a 976 c.c. super-sports J.A.P. engined big twin, both with a specification to attract the soloist, including Sturmey gear boxes, T.T. bars and foot-rests. The smaller model is sensibly designed, with adequate mud-guarding, silencing, and tyres (650 × 65 mm. on voiturette rims), and a Lucas Magdyno may be fitted without structural alterations.

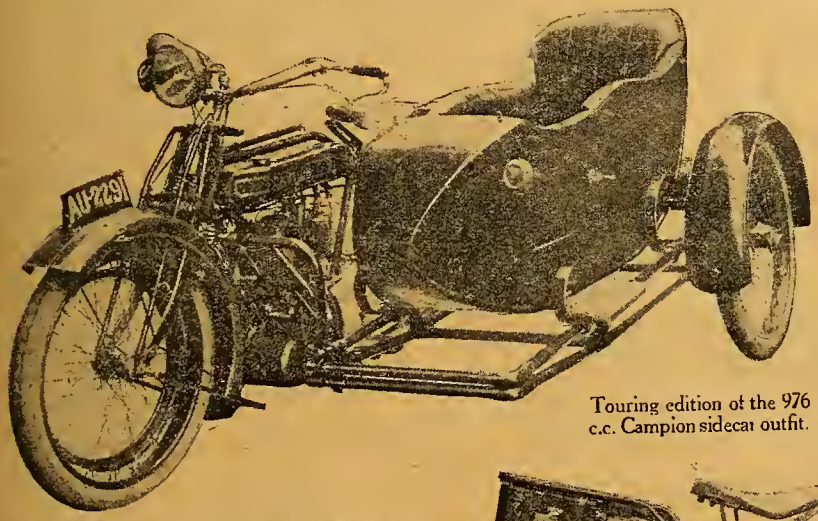


Distinctive 349 c.c. Machless solo machine.

Stand **CAMPION.**

72. Of the seven Campions to be shown, probably the most striking is a sporting sidecar outfit with a super-sports 976 c.c. J.A.P engine and a Jardine four-speed gear. Two touring outfits also have J.A.P. engines, but employ a Sturmey-Archer three-speed gear. One of the touring outfits and the sporting model have interchangeable wheels.

Intermediately there is a workmanlike 550 c.c. solo single with Sturmey gear and chain drive; and at the other end of the scale are three lightweights with various power units (J.A.P., Blackburne, and Villiers), and transmissions.



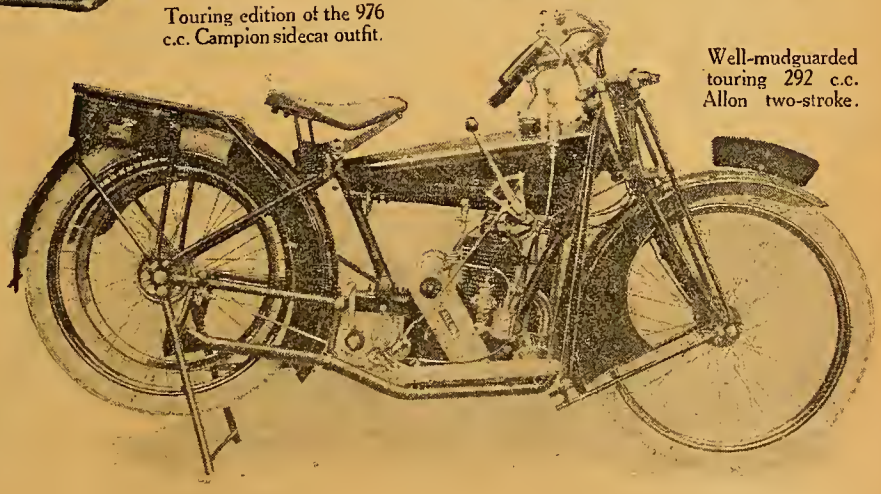
Touring edition of the 976 c.c. Campion sidecar outfit.

Stand **ALLON.**

73. In this year's Six Days Trials the Allon team made a very fine performance. Although of only 292 c.c. capacity this two-stroke has proved that it can compete with 350 c.c. machines on most points desired by the average rider, *i.e.*, reliability, hill-climbing, etc.

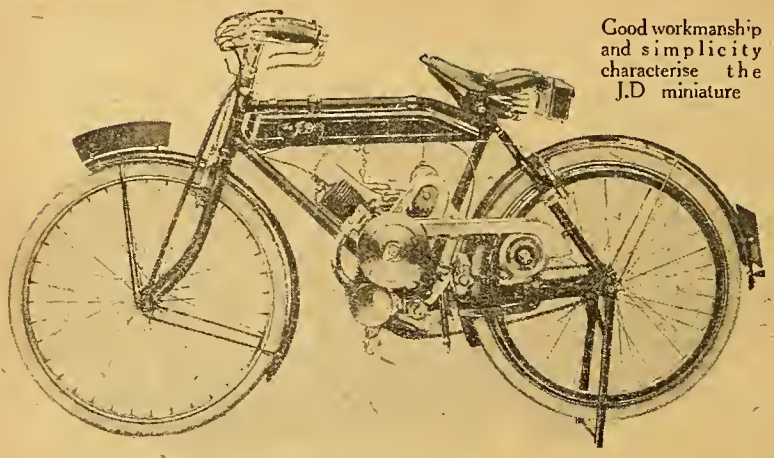
Ignition on the two stroke will be, as before, by Villiers flywheel magneto, but the engine, of course, is of Allon manufacture.

An entirely new model employs a 348 c.c. four-stroke J.A.P. engine in a very similar frame.



Well-mudguarded touring 292 c.c. Allon two-stroke.

Forecast and Guide to Olympia.—

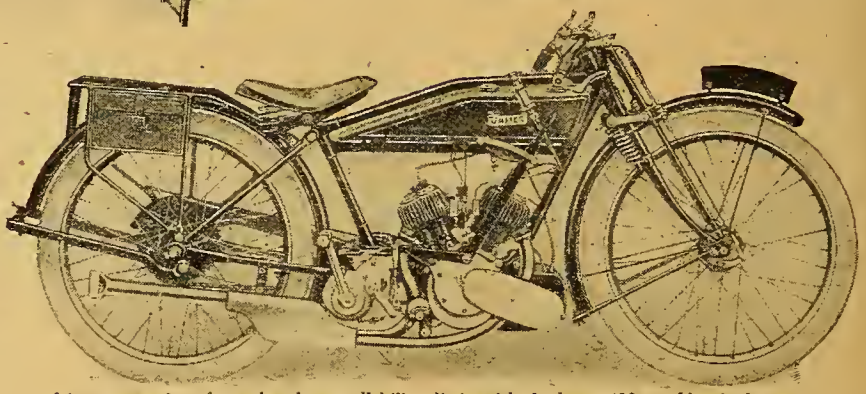


Good workmanship and simplicity characterise the J.D miniature

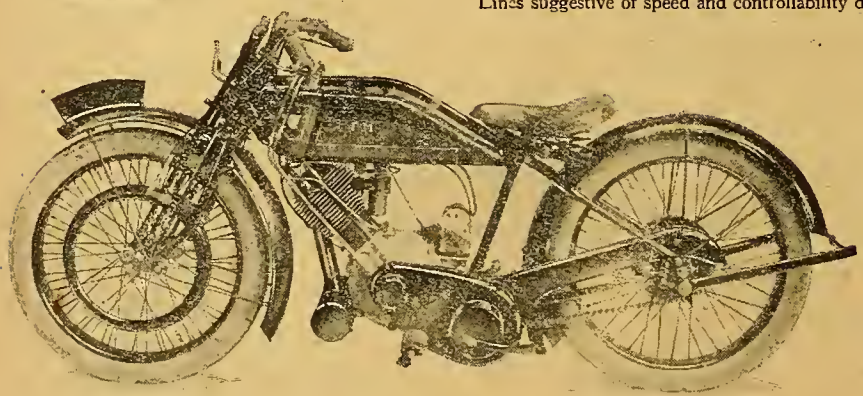
Stand **J.D.**

74. In evolving the J.D. miniature, quite the most elaborate and high-class single-gear machine of its type, the firm of Bowden Wire, Ltd., has attempted to interest a new market. An appeal is made to the confirmed pedal cyclist who desires the help of an engine in a vehicle as simple and yet as reliable and well-finished as his bicycle.

The 116 c.c. two-stroke engine is well made and powerful enough for ordinary use; it transmits its power to the rear wheel *via* a fool-proof friction pulley drive, capable of being used as a clutch by means of handle-bar controlled Bowden mechanism.



Lines suggestive of speed and controllability distinguish the latest 498 c.c. V-twin James.



To give speed and comfort is the aim of the P. & M. "Panther."

Stand **JAMES.**

75. Interest on the James stand will be divided between the new 350 c.c. single, which made a creditable first appearance in the Six Days Trials, and the redesigned 598 c.c. twin.

Perhaps the latter deserves premier attention for it is one of a very small class nowadays, but a particularly attractive example. Detachable cylinder heads, a frame on the lines of the 350 c.c. model —*i.e.*, with a much sloping top tube—and various engine modifications making for greater efficiency are the chief improvements.

The 350 c.c. single is likewise a worthy example of its class, an ever-growing class in this case.

Only slight modifications have been made to the 749 c.c. sidecar outfit and to the lightweight two-stroke.

Stand **P. & M.**

77. With the introduction of a sporting model the makers of the P. & M. cater for a class of motor cyclist not hitherto greatly attracted by the sterling qualities of reliability and long life for which this machine is noted.

High road performance *plus* comfort has been the aim, and to this end a new frame has been evolved giving a low riding position with an excellent ground clearance. Various changes such as the substitution of an aluminium piston have been made to the 555 c.c. to increase its efficiency.

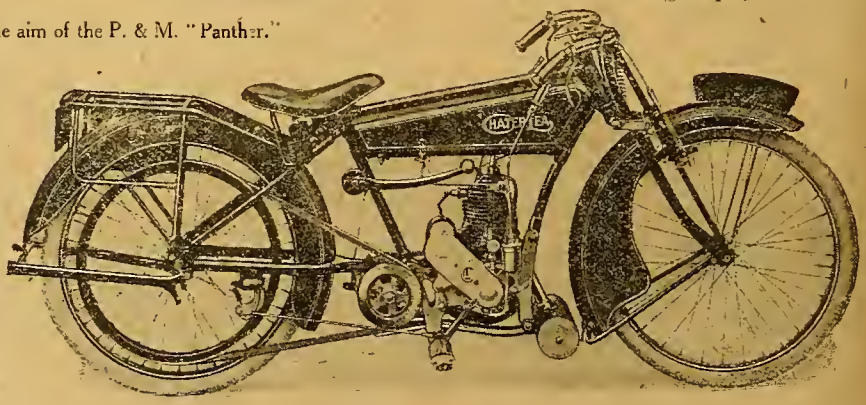
The P. & M. four-speed gear is a valuable feature.

Stand **CHATER-LEA.**

78. Next year's range of four Chater-Lea motor cycles is comprehensive without being too extensive.

A 976 c.c. twin, a 545 c.c. single and a 269 c.c. two-stroke are fitted with the firm's own engines, while a 348 c.c. sporting model uses a Blackburne unit of the o.h.v. or side-valve type.

The 545 c.c. single is typical of the four, being a substantially built but neat looking dual-purpose mount with a three-speed Sturmey gear box, chain transmission and internal expanding brakes on both wheels. One of its novel features is the method of driving the magneto from a sprocket on the mainshaft, a two to one reduction being employed.



Symmetrically designed and well mudguarded Chater-Lea two-stroke.

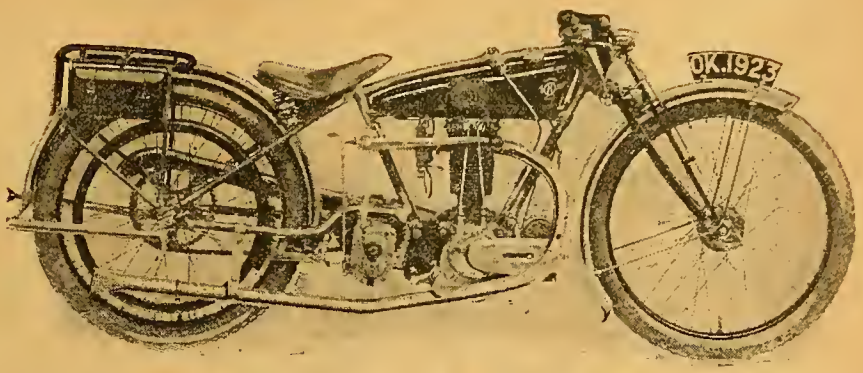
Forecast and Guide to Olympia.—

Stand **O.K.**

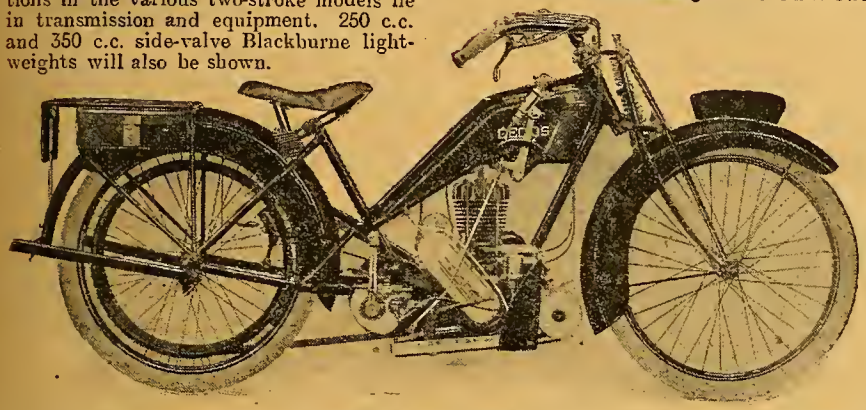
79. Many successes have been scored by a 250 c.c. o.h.v. O.K.-Blackburne in important races and speed events this year, and the marketed replica of this model will inevitably command much attention.

On this and all other O.K. models the frame has been redesigned, the top tube curving gradually downwards from the steering head. Brampton forks are now fitted, a racing type on the o.h.v. model.

Three of the exhibits will be fitted with the 292 c.c. O.K. two-stroke engine, following the same lines as the machines that won the 350 c.c. team prize in the Six Days Trials this year. The variations in the various two-stroke models lie in transmission and equipment. 250 c.c. and 350 c.c. side-valve Blackburne lightweights will also be shown.



Race-winning 250 c.c. o.h.v. O.K.-Blackburne in its marketed form.



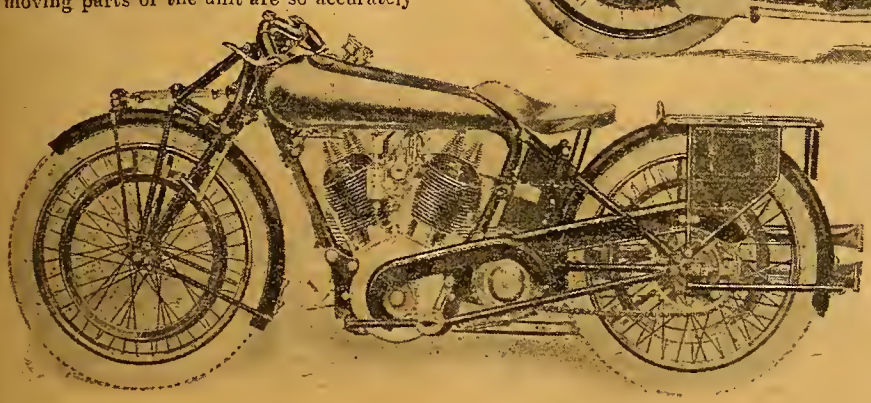
One of the most popular machines with lady motor cyclists is the 247 c.c. Cedos open frame model.

Stand **CEDOS.**

80. Cedos two-stroke motor cycles have always had an excellent reputation for clever design, reliability, and good workmanship, and when their manufacture was temporarily discontinued owing to external reasons it was not long before a new company recognised their possibilities.

Considerable improvements have been made in the 1923 design. Two models are being concentrated upon—a standard, with 26in. wheels, and a lady's, with 24in. wheels—both employing the same 247 c.c. engine.

The cylinder, which has a detachable head, has been evolved with a view to avoiding heat distortions. Again, the moving parts of the unit are so accurately ground to size that it is unnecessary to balance each engine individually.



Guaranteed 80 m.p.h. but docile as a lightweight "S.S. 80" Brough Superior.

Stand **FRANCIS-BARNETT.**

81. Belt drive has been entirely abandoned by the makers of the Francis-Barnett, a J.A.P.-engined lightweight, notable for its finish and detail design.

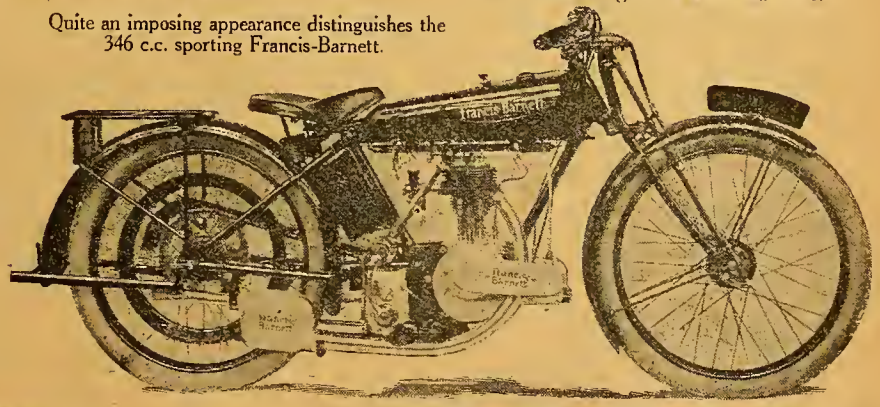
The chief model is fitted with a 346 c.c. J.A.P. single, and is obtainable in touring, sporting, and sidecar forms. All three are attractive in appearance, the sports model particularly so, being finished in grey and mauve. Sturmey-Archer three-speed gear boxes and saddle tanks are salient features.

When a 292 c.c. J.A.P. engine is used a choice of two- or three-speed gear boxes is allowed.

Stand **BROUGH SUPERIOR.**

89. In a very short space of time the Brough Superior has earned a name for itself that conjures up the most luxurious form of solo motor cycle. It was the first serious attempt to produce a *de luxe* British big twin solo machine.

Quite an imposing appearance distinguishes the 346 c.c. sporting Francis-Barnett.



The "S.S.80," a new type employing the super-sports J.A.P. engine, made its first appearance in the Six Days Trials, when it gained a gold medal and earned more bonus marks in the speed test than any other machine.

The o.h.v. J.A.P. and smaller M.A.G. models are retained.

Stand **HACK.**

117. In effect the Hack is a scooter with a seat, but that it is quite a practicable proposition is illustrated by a recent test, officially observed by the A.C.U., in which two machines covered 100 miles at an average speed of 16.3 m.p.h. The two-stroke engine is 110 c.c. and the tyre size $20 \times 1\frac{3}{4}$ in

Forecast and Guide to Olympia.—

Stand **MOHAWK.**

92. So far as solo mounts are concerned, the chief specialities of the Mohawk Cycle Co. are a 293 c.c. J.A.P.-engined machine and a 350 c.c. sports model, both fitted with a Sturmey-Archer two-speed gear boxes. A standard 350 c.c. machine has chain transmission.

Passenger enthusiasts have not been neglected, since the company also produces a useful 680 c.c. J.A.P.-engined sidecar model fitted with a three-speed gear and chain transmission.

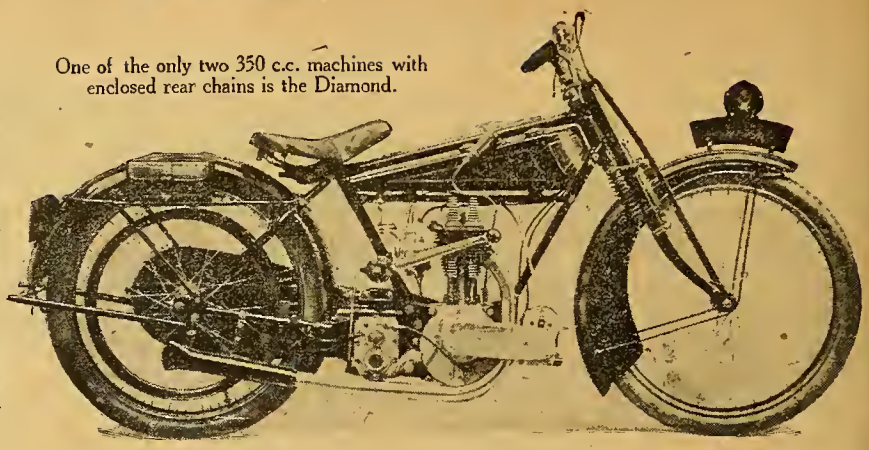
Stand **DIAMOND.**

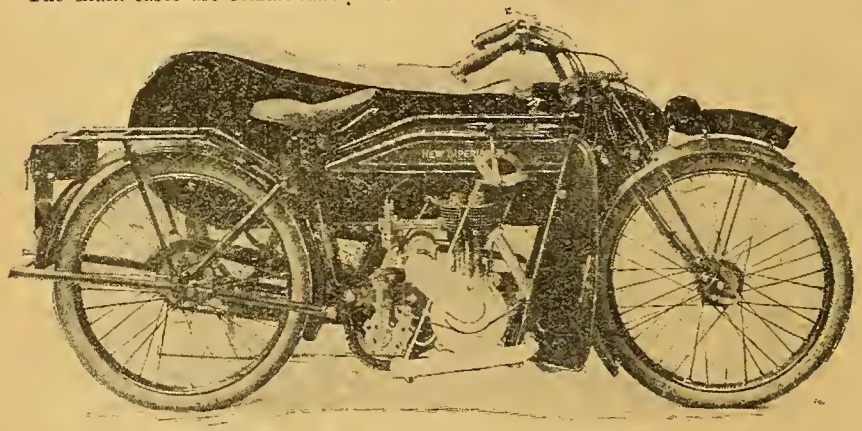
93. Particularly neat frame design and a number of examples of fully enclosed chain transmission are the chief characteristics of the Diamond motor cycles.

The chain cases are commendably clean in appearance, and instead of detracting from, probably add to, the beauty of the machine.

J.A.P., Villiers, and Barr and Stroud engines are employed.

One of the only two 350 c.c. machines with enclosed rear chains is the Diamond.





New light touring 349 c.c. New Imperial sidecar outfit.

Stand **NEW IMPERIAL.**

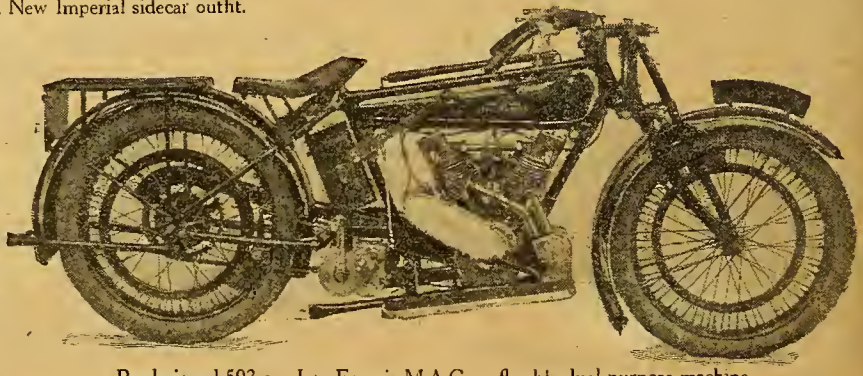
94. In view of the discussion regarding noisy motor cycles, it is notable that great attention has been paid to the silencing of the New Imperial sports models, but otherwise little change has been found necessary. The chief single-cylinder models are 248 c.c. sports, 293 c.c. light touring, and 348 c.c. sports and touring. A special sidecar which is remarkable for its roominess and comfort has been evolved for the last mentioned model.

Some improvements have also been made in the big twins, which now have loop frames on similar lines to the lightweights.

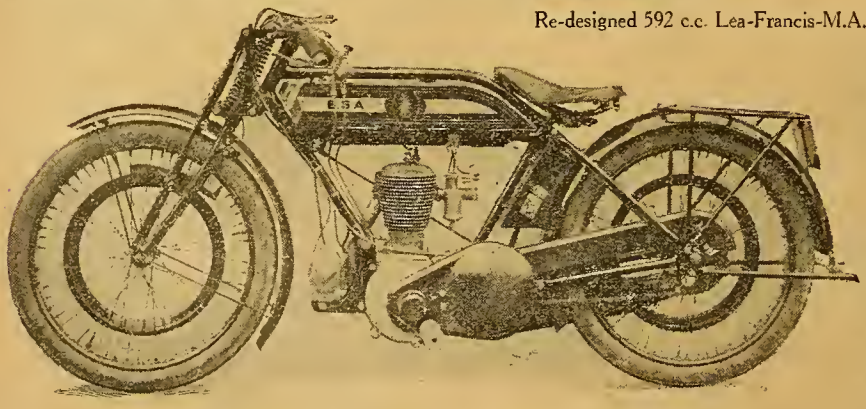
Stand **LEA-FRANCIS.**

95. For many years Lea-Francis motor cycles have enjoyed a reputation for very excellent finish and, while retaining this trait for 1923, they have been thoroughly modernised, particularly the frame design.

Two models only are specialised on, both being fitted with V twin M.A.G. engines, and both suitable for solo or sidecar work. Although the two are alike in some respects, they differ considerably in specification. The smaller (496 c.c.) machine has a Lea-Francis three-speed gear box, Druid forks, and 26×2½in. tyres, while the larger (592 c.c.) has a Burman gear box, Brampton forks, and 26×3in. tyres.



Re-designed 592 c.c. Lea-Francis-M.A.G., a flexible dual-purpose machine.



Sturdy simplicity is the keynote of the 493 c.c. sporting B.S.A.

Stand **B.S.A.**

96. Famous throughout the world for excellent finish, solidity and reliability, the B.S.A. is made by a company that is not content to rest upon its laurels. It has introduced an entirely new 493 c.c. sports model with mechanical lubrication, as well as a 349 c.c. machine, which is to a certain extent a small edition of the first named. Both models are chain driven, and great attention has been paid to mudguarding, legshields being included in the equipment of the 349 c.c. machine

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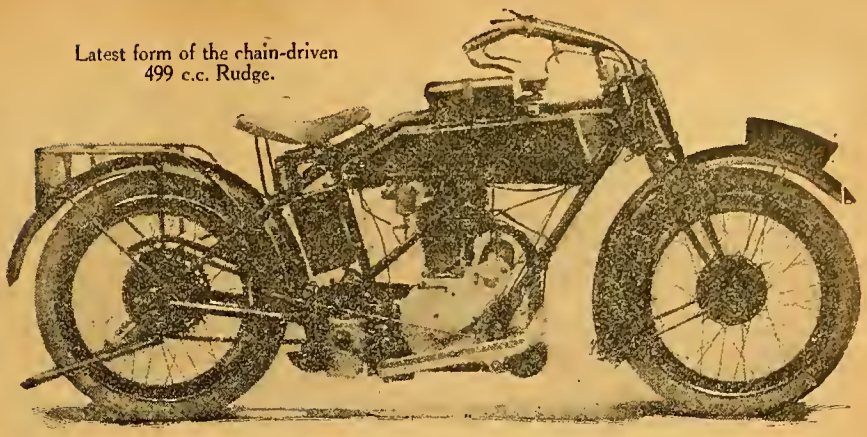
Stand **RUDGE.**

97. Popular on account of its liveliness, ease of steering and steadiness, the chain-driven Rudge has not undergone serious modifications for 1923. The alterations are an improved toolbag on the top tube, and a slight change in colour. Some improvement has also been made in the domed mudguards, which are now 6 in. across. Both the single and twin cylinder models will be available with a new four-speed gear box.

Worthy of note is the ingenious construction of the new sidecar chassis, which consists of a tubular hairpin, one side of which runs parallel with the centre line of the machine. The frame is very rigid owing to the construction of the rear axle, which is a straight tube with massive forgings at both ends. This axle may be easily unclipped and reversed so that the chassis may fit the other side of the machine.

Latest form of the chain-driven 499 c.c. Rudge.

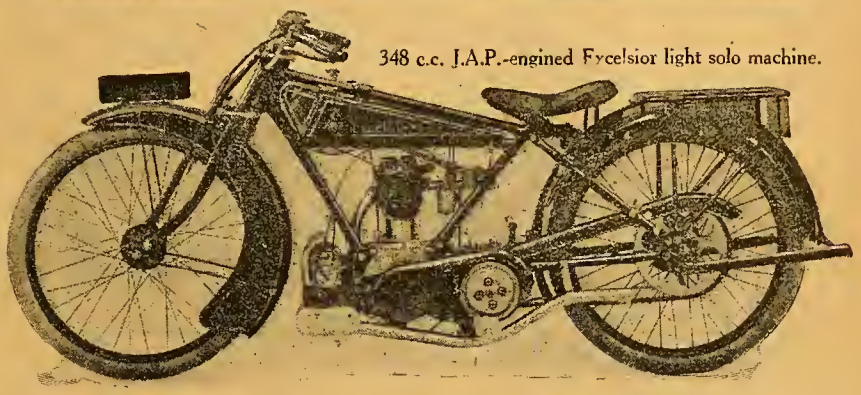


Stand **EXCELSIOR.**

98. Extending from a 147 c.c. Villiers-engined lightweight at £28 10s. to a 976 c.c. J.A.P.-engined sidecar outfit at £123, the Excelsior range of models caters for extreme tastes without reaching extremely high prices. In between are another Villiers model (247 c.c., £48), a 348 c.c. J.A.P. (£67), and a 349 c.c. Blackburne (£67).

The miniature is fitted with a plain two-speed gear box, the remaining two-stroke has the same ratios, but a clutch and kick-starter, and the larger machines have three-speed boxes with all-chain drive. For £3 7s. 6d. extra the 147 c.c. model may be fitted with a clutch and a lighting set.

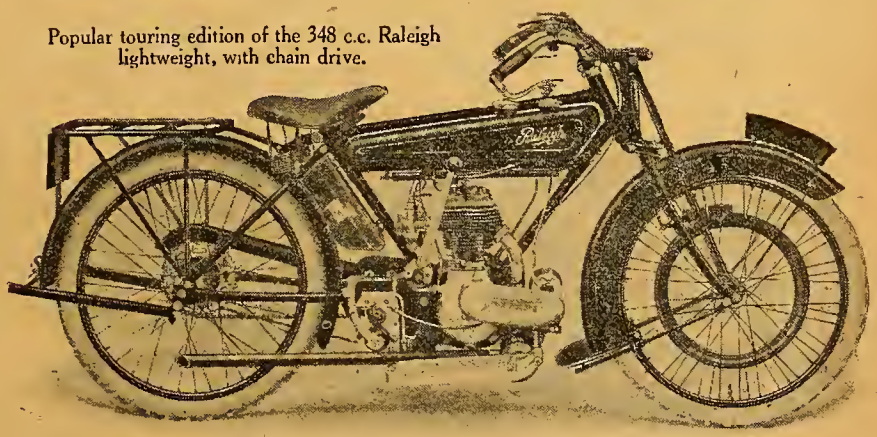
348 c.c. J.A.P.-engined Excelsior light solo machine.



Stand **RALEIGH.**

99. One way in which the Raleigh engine differs from many others is that it has a scoop on the big end to pick up oil from the crank case. The chain-driven machine is of attractive appearance, and can be fitted with a 348 c.c. or 398 c.c. engine; for the latter a special sidecar and tradesman's carrier have been designed. An internal expanding rear brake of large diameter has been embodied. The finish of the Raleigh is, of course, without reproach, while its performances in reliability trials at home and abroad are very much to the credit of its makers. Sixty-five m.p.h. is claimed for a sports model.

Popular touring edition of the 348 c.c. Raleigh lightweight, with chain drive.



Stand **SUN.**

100. Since the makers of Sun motor cycles have always specialised in lightweights, it is only natural that they should turn to meet the growing demand for workmanlike miniatures.

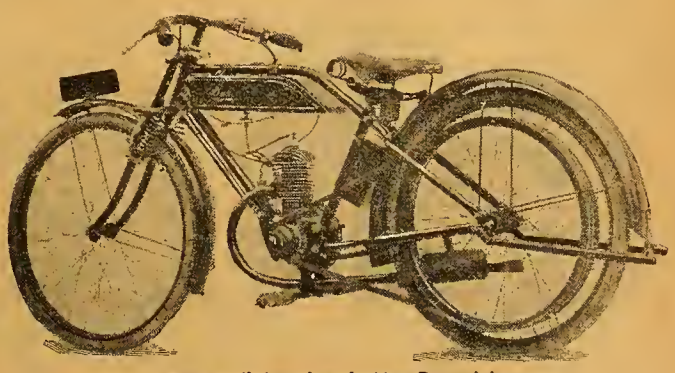
Absolutely the simplest lines are followed by the new ultra-lightweight (a two-stroke), but spring forks are fitted and pedalling gear is dispensed with.

Stand **HOBART.**

101. No Hobart for next year will exceed 350 c.c., the exhibit consisting of five lightweights and two examples of a new miniature to be marketed at a very moderate price.

Three of the lightweights, 348 c.c. sports J.A.P., 348 c.c. touring J.A.P., and 349 c.c. Blackburne models, have final chain drive, 249 c.c. Blackburne and 293 c.c. J.A.P.-engined machines having chain-cum-belt transmission.

The miniature is a two-stroke of the simplest description, which the makers anticipate will arouse great interest.



Lightly built but clean-looking Sun miniature.

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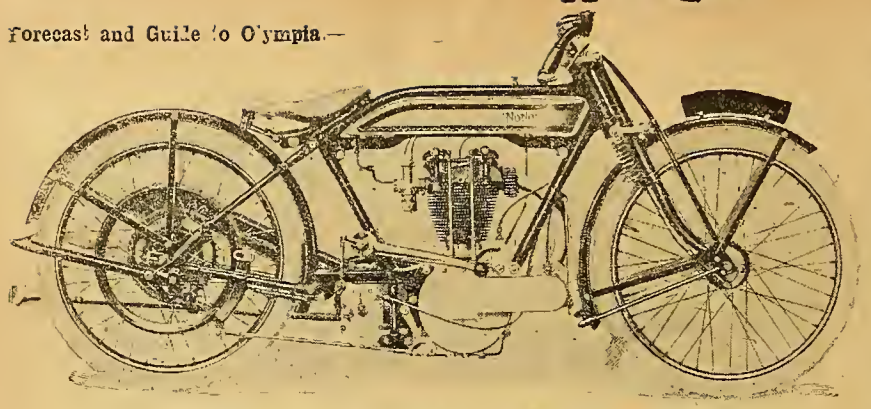
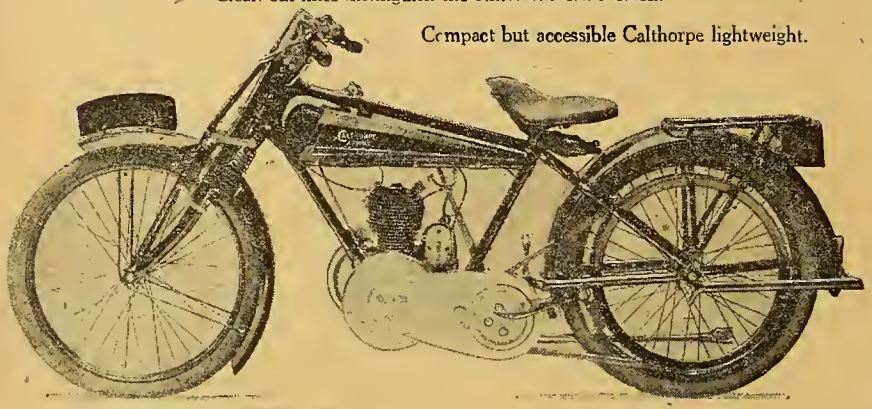
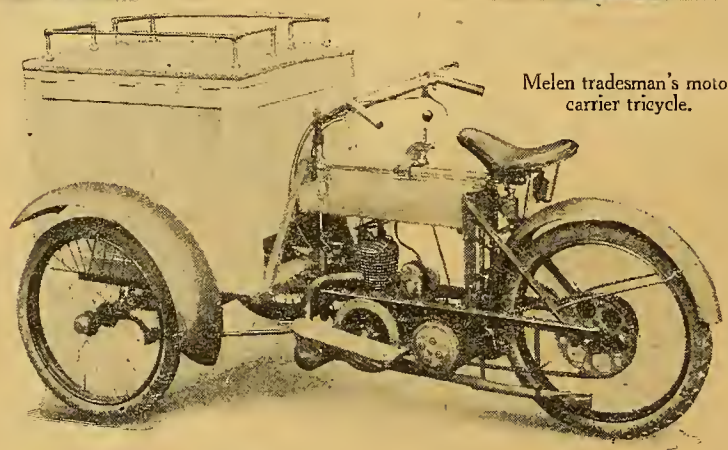


Clean cut lines distinguish the o.h.v. 490 c.c. Norton.

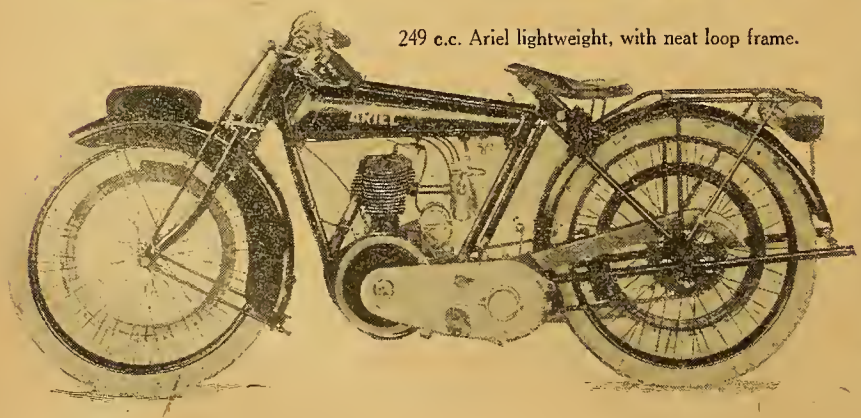
Compact but accessible Calthorpe lightweight.





Melen tradesman's motor carrier tricycle.

249 c.c. Ariel lightweight, with neat loop frame.



Stand **BOWN.**

102. There are three main models of the Bown lightweight, fitted respectively with 349 c.c. Blackburne, 348 c.c. J.A.P., and 247 c.c. Villiers engines.

Various forms of transmission (final belt or chain) and gear box (two or three speed) are offered, thus multiplying considerably the actual number of models available.

Also on show will be an ultra lightweight, embodying the 147 c.c. Villiers two-stroke engine, and direct belt drive, or a two-speed gear box and chain and belt transmission.

Stand **NORTON.**

103. Norton machines have long held an enviable reputation not only for speed but for reliability. The overhead valve model is very nearly an ideal fast touring or competition mount, but although it has now reached production form, and was shown at the Paris Show, it has not yet become well known, and its exhibition at Olympia will be looked forward to with interest.

Naturally the 490 c.c. side-by-side valve-engined machine will also be shown; it is now fitted with wide, flat mudguards, footrests, and legshields.

Finally there is the 633 c.c. Big Four, mainly for sidecar haulage, but sometimes used solo.

Stand **CALTHORPE.**

104. For next season there will be three Calthorpe models: a 250 c.c. single-geared machine; a two-speed model with a new engine, the power of which has been considerably improved, fitted with a Burman two-speed gear with clutch and kick-starter; and a 350 c.c. sidecar outfit. It is worth recording that the Calthorpe Motor Cycle Co. has done much towards popularising economical sidecar outfits, for the engine fitted was one of the first 350 c.c. two-strokes to be a practical proposition for passenger work.

Stand **MELEN.**

105. Tradesmen and others with a lot of light delivery work will be interested in this exhibit, which consists of a self-propelled carrier tricycle.

The framework is very strongly carried out, and the vehicle, although retailing at a moderate price, is in no sense a motorised pedal carrier. A 297 c.c. Union engine is used.

Stand **ARIEL.**

106. From the earliest days the name Ariel has figured in motor-cycle history. Though they were pioneers of the lightweight machine in the days of the surface carburetter, its makers have recently been better known for medium- and heavyweight machines, and only this year have they reverted to a 249 c.c. machine.

A chain-driven 498 c.c. mount is also a new model.

For those who want plenty of power there are 796 c.c. and 993 c.c. engined machines, as well as the familiar 665 c.c. single-cylinder sidecar outfit. Belt drive is retained only on the 498 c.c. sports model.

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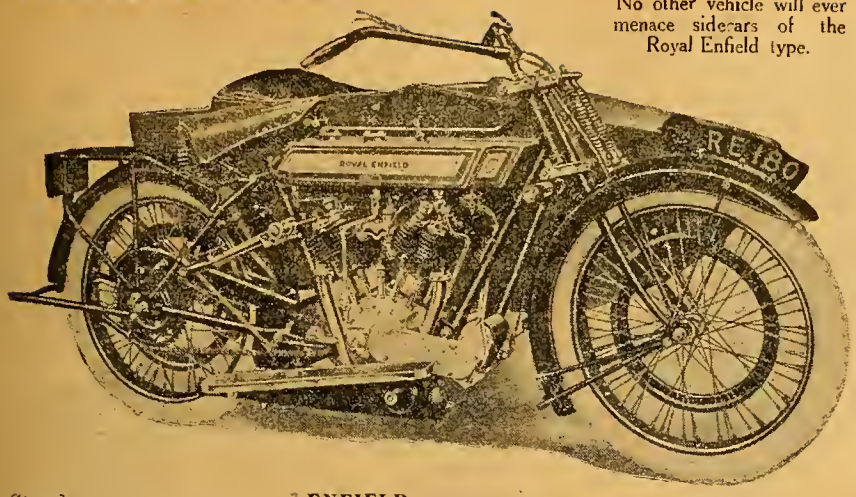


No other vehicle will ever menace sidecars of the Royal Enfield type.

Stand **ENFIELD.**

107. It is not difficult to discover the reason, or reasons, for the great popularity of the 976 c.c. Enfield sidecar outfit. Not only is it moderately priced, but it has a high road performance, an attribute helped by a light and simple two-speed gear, instead of the more common but heavier three- or four-speed box. The average man, who does not wish to climb freak hills, does not notice the absence of a third ratio.

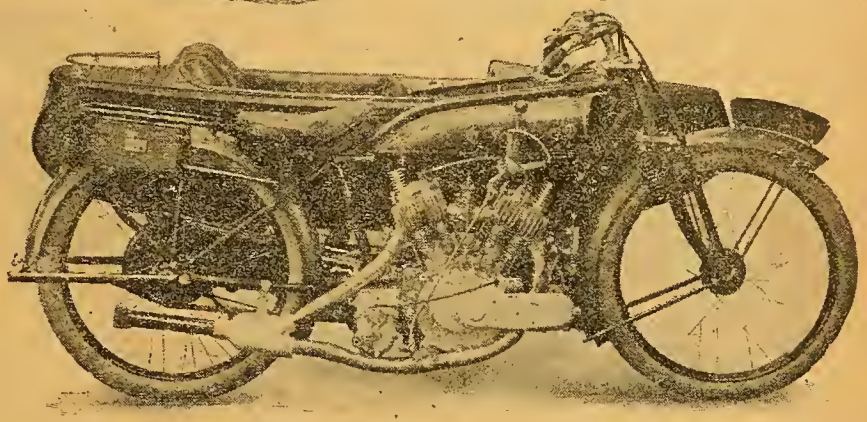
Innovations for next year are a foot-operated front brake and a locking device for the rear brake. The tools are now accessibly carried in a wallet on the sidecar door.

No extra charge is made for a kick-starter on the 225 c.c. two-stroke, which is retained in its touring and sporting forms.

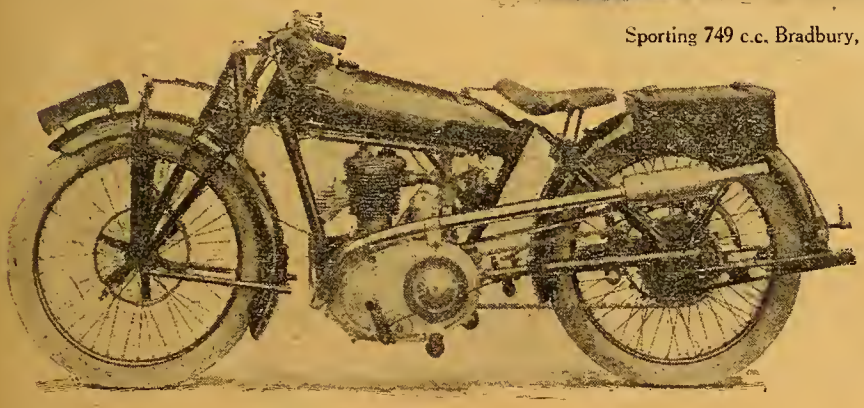
Stand **BRADBURY.**

108. Recent successes at Brooklands have proved that the new Bradbury is speedy as well as reliable. The lines of the machine have been greatly improved, and are now really attractive.

Three principal models are: a 350 c.c. single, a 554 c.c. single, and a 749 c.c. twin. All these have four-stroke engines made throughout by Bradbury and Co., Ltd. It is also worthy of note that the silencing arrangements have received careful study.



Sporting 749 c.c. Bradbury, with attractive Canoelet sidecar.



New sporting 496 c.c. Beardmore on the lines of the I.O.M. machine.

Stand **BEARDMORE-PRECISION.**

109. One of the chief novelties of the Beardmore range of machines is a 346 c.c. four-stroke with side by side valves, and an outside flywheel.

There is also a 500 c.c. machine equipped with a modification of the T.T. engine, eminently suitable for fast solo riding. The 598 c.c. big single remains largely unaltered.

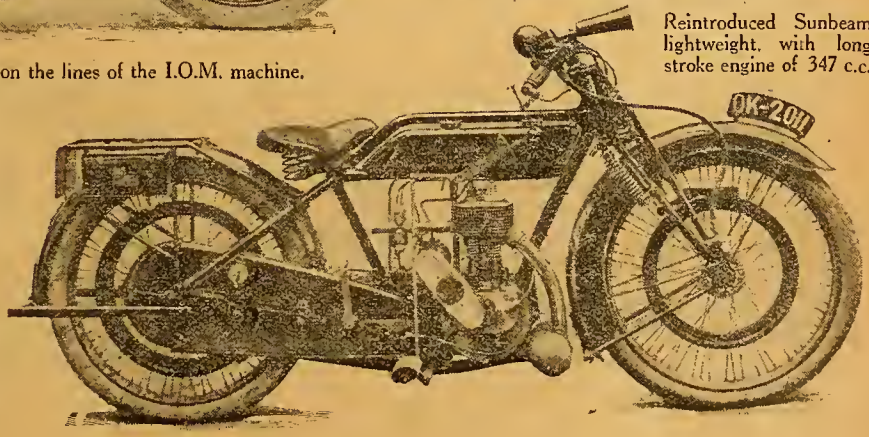
Pressed steel construction has been a feature of Beardmore-Precision motor cycles during the last four years, and it is now even further developed as the back stays are steel pressings in the latest models.

Stand **SUNBEAM.**

110. Pronounced successes in important competitions continued to go to Sunbeam motor cycles during 1922, as in previous years, but even had Sunbeam riders abstained absolutely from trials and races there are enough features of note on the design of the machines to attract crowds to this stand at Olympia.

Furthermore, there is a new 347 c.c. machine to attract the man who considers 500 c.c. too much. The engine may be described as a replica of the long-stroke T.T. unit. Two types will be shown—a roadster with footboards, totally enclosed chains and touring gears, and a sporting model with footrests, aluminium piston, higher compression, close ratio gears, and a guard over the rear chain.

The 492 c.c., two 499 c.c., 596 c.c., and 976 c.c. models remain unaltered.



Reintroduced Sunbeam lightweight, with long stroke engine of 347 c.c.

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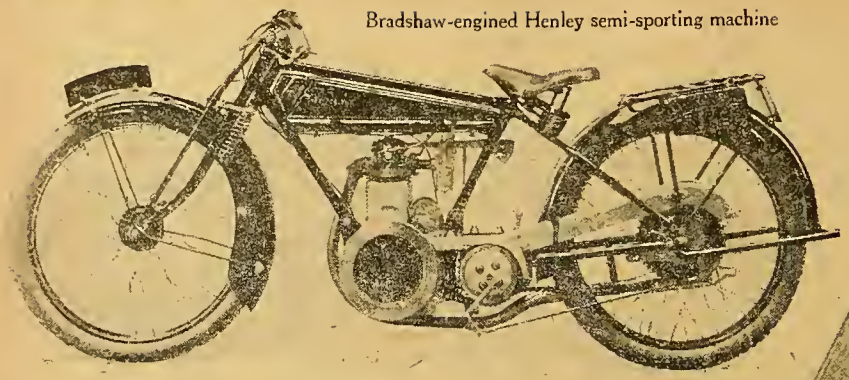


Bradshaw-engined Henley semi-sporting machine

Stand **HENLEY.**

111. 350 c.c. lightweights are the most important models bearing the name Henley, which makes its first appearance at Olympia, although by no means new to the road.

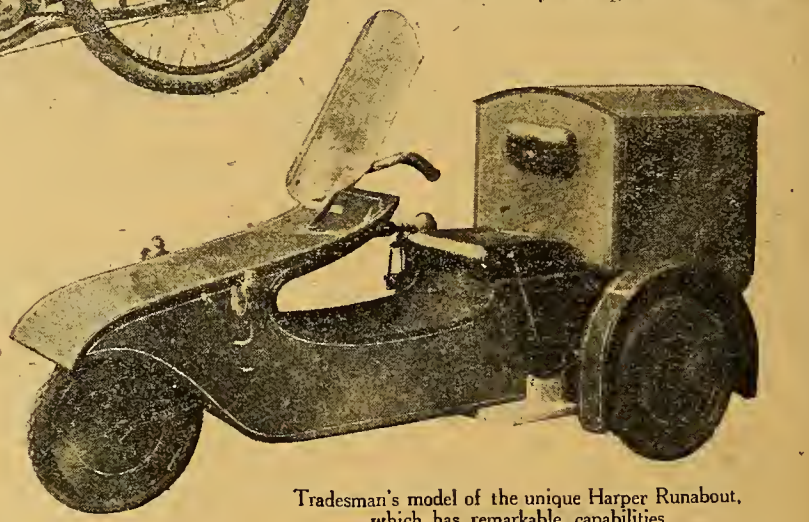
A Bradshaw-engined chain-driven machine is particularly neat.

Stand **H.B.**

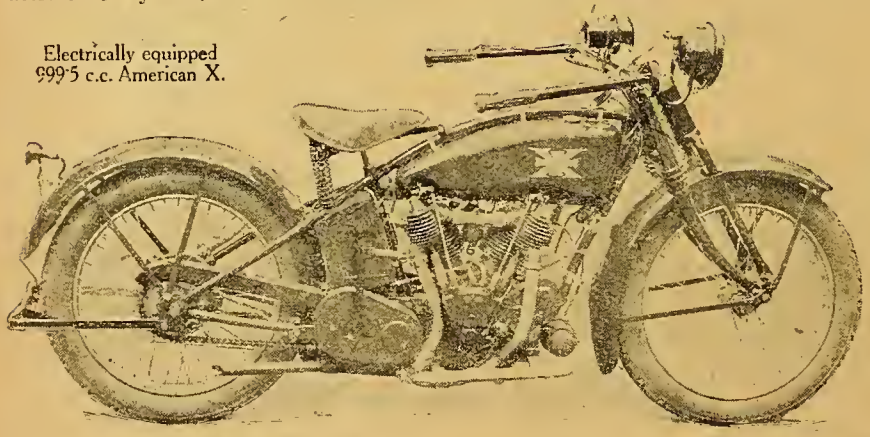
121. Three variations of one type of machine will be shown on the H.B. stand. It is a three-speed (Burman), chain-driven, 349 c.c. Blackburne-engined mount, with mechanical lubrication, internal expanding brakes on both wheels, and several like refinements in equipment and construction.

The different models are side-valve touring, side-valve sports, and o.h.v. sports.

Dunlop cord 650 × 65 mm. tyres are fitted in every case.



Tradesman's model of the unique Harper Runabout, which has remarkable capabilities.



Electrically equipped 999·5 c.c. American X.

Stand **HARPER RUNABOUT.**

122. Although the Harper runabout has been primarily designed as a tender to a car and for general knock-about purposes, its showing in the Scottish Six Days Trials was such as to cause those who witnessed it to respect it as a workmanlike, mountain-climbing touring vehicle with quite an extraordinary turn of speed.

A 269 c.c. proprietary two-stroke engine is fitted, the cylinder of which has been re-designed by the makers of the three-wheeler. Three separate chains provide three direct speeds. Detachable and interchangeable wheels are used.

Various constructional improvements have been made for 1923.

Stand **HENDERSON and AMERICAN X.**

123. Extremely moderate prices are characteristics of the Henderson and American X motor cycles for next year that should attract considerable attention to this stand.

Solo, with complete electrical equipment, the 999.5 c.c. American X is only £105; with sidecar it is £131 5s.

Similarly the four-cylinder Henderson, electrically equipped, is £137 solo and £172 with a complete sidecar—in which forms it will be shown.

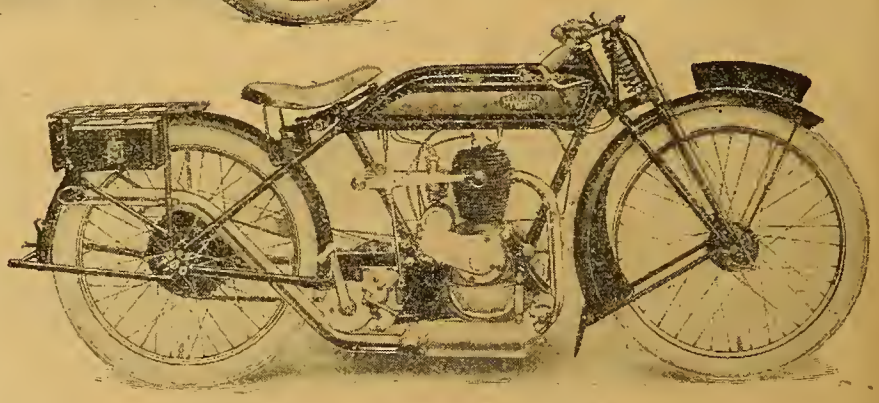
These sturdy examples of American design are now produced by the same company, and several of their parts are interchangeable, thus facilitating the distribution of spares.

Stand **COVENTRY MASCOT.**

124. Sleeve-valve (Barr and Stroud) or oil-cooled (Bradshaw) 350 c.c. four-stroke engines are fitted to the 1923 Coventry Mascots, well-proportioned solo machines embodying various gear boxes and final belt or chain transmission.

Quite a novelty on the stand will be a machine with a watersplash-proof exhaust pipe, *i.e.*, an exhaust pipe with its final and only exit in the neighbourhood of the pannier tool-bag.

(*Continued on page 764.*)



Watersplash-proof Coventry Mascot-B. & S.

SIDECARS AT THE SHOW.

The Appeal of the Proprietary Attachment. Where to see the Latest Designs.

IT is not difficult to justify the existence of the proprietary sidecar.

Despite the fact that the motor cycle manufacturer who markets a sidecar outfit almost invariably supplies the attachment as well—either his own or a proprietary make—there is a certain type of enthusiastic buyer who chooses a machine and then chooses a sidecar separately. This procedure is often followed by the very keenest motor cyclists, who like to make their own choice in all things.

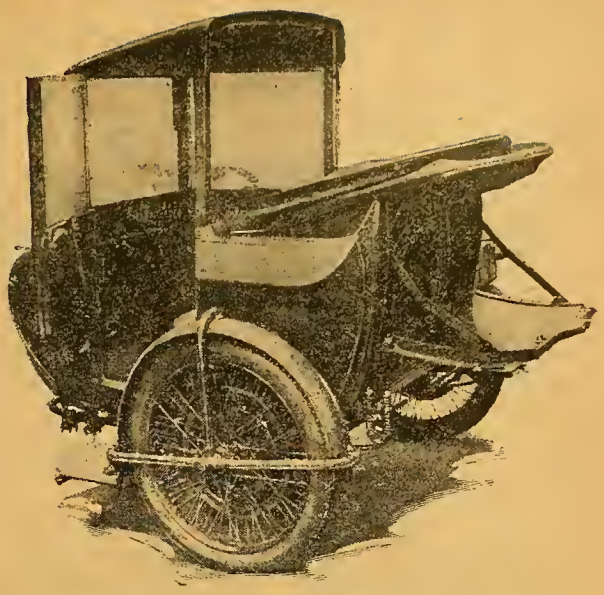
Then there is the man who already possesses a solo machine and comes to the Show to buy a sidecar for it.

An important and discriminating class is thus formed. The sidecar manufacturers, on their part, will stage a wonderful range of their products.

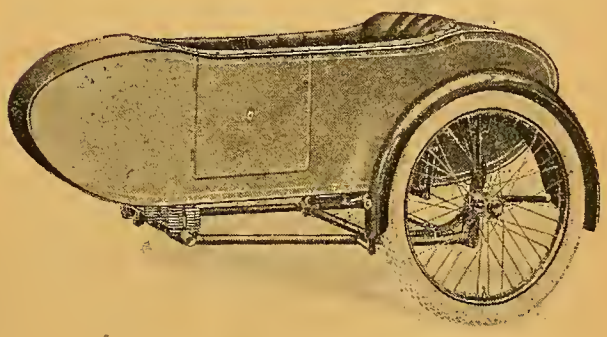
On this and the following two pages will be found representative models; ten times as many pages of *The Motor Cycle* would be required to illustrate every type, for each maker has realised that requirements in sidecars vary just as much as they do in motor cycles.

As a guide to the visitor to Olympia, the following stands are devoted wholly or mainly to sidecars, and every one of them is worth a visit:

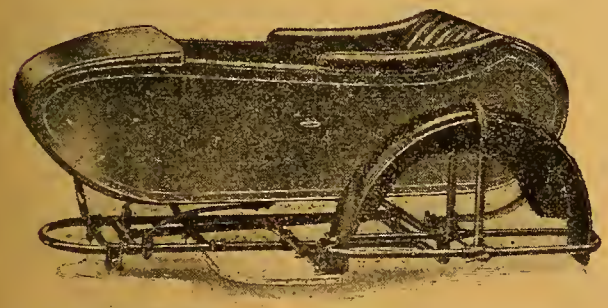
29A. Hawk.	120. Whitley.
39. Grindlay.	144. Hughes.
42. Montgomery.	163. Rideezi.
65. Millford.	165. Sheffield-Henderson.
66. Dunhill.	170. Sandum.
69. Watsonian.	180. Swallow.
113. Dorway.	



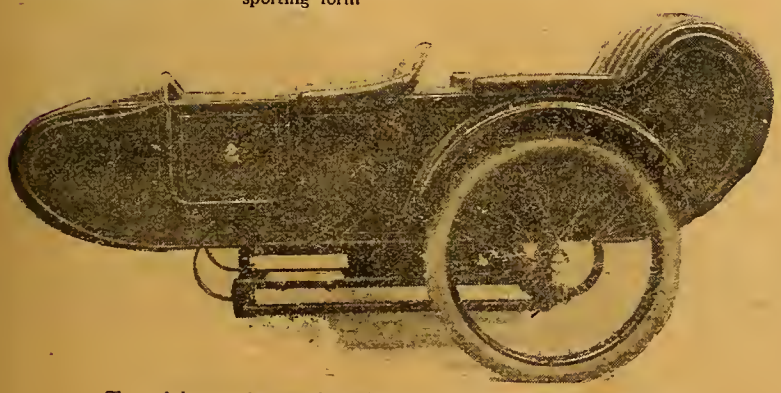
Canoelet taxi sidecar built for the County Cycle and Motor Cycle Co.



Roomy Watsonian touring model



Comfortable touring Canoelet perhaps better known to-day in its sporting form

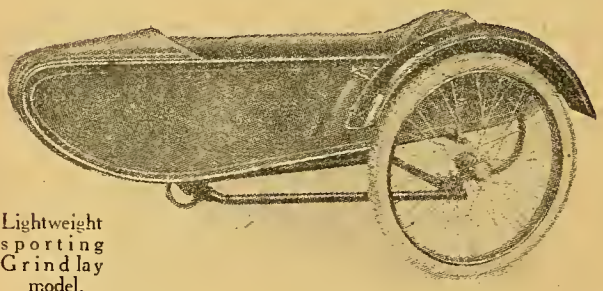


Two adults may be seated comfortably in the Millford tandem body.

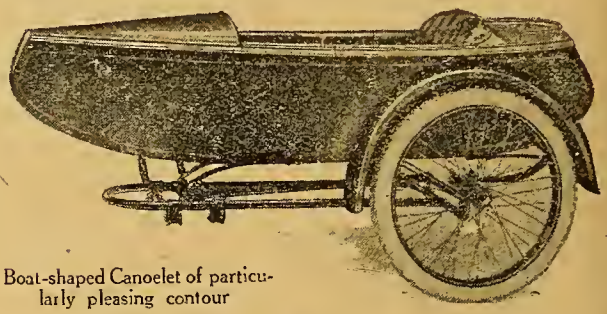
Chassis of the Dorway folding sidecar in the closed position.

PROPRIETARY SIDECARS AT OLYMPIA.

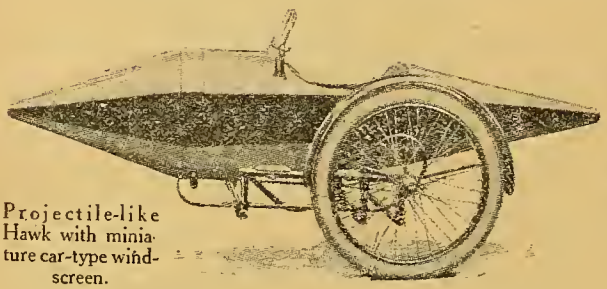
Light attachments for fast motor cycles.



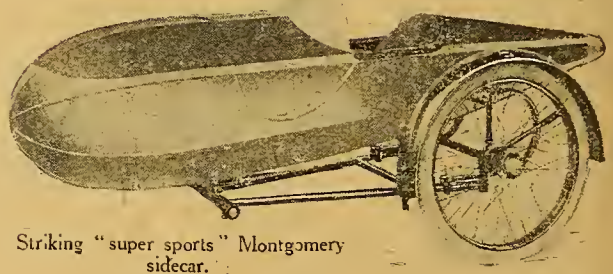
Lightweight sporting Grindlay model.



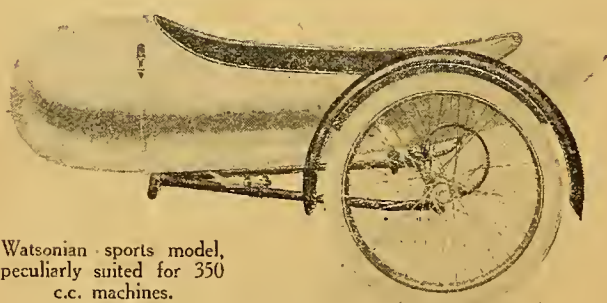
Boat-shaped Canoelet of particularly pleasing contour



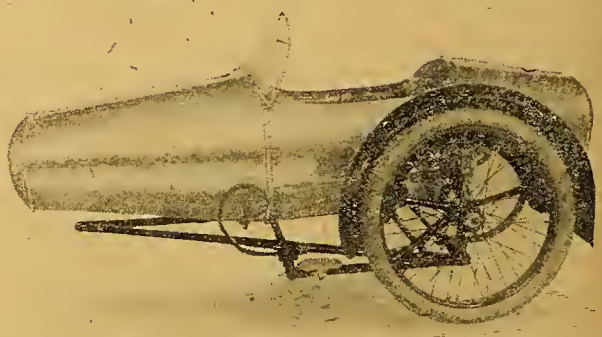
Projectile-like Hawk with miniature car-type windscreen.



Striking "super sports" Montgomery sidecar.

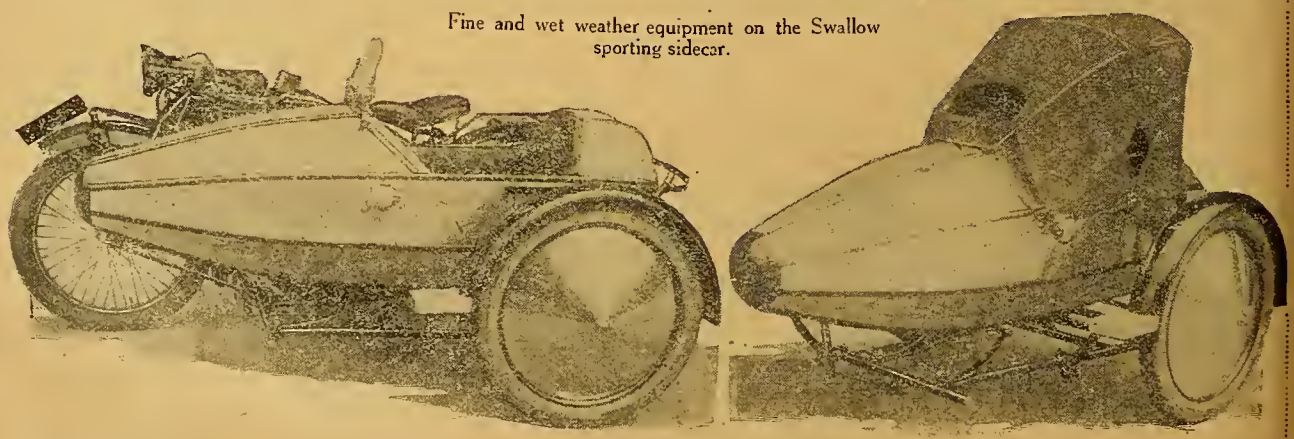


Watsonian sports model, peculiarly suited for 350 c.c. machines.



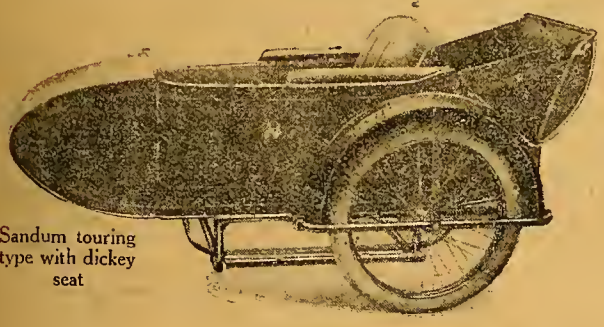
Dunhill blunted cigar-shaped aluminium body of the well-known triangulated chassis.

Fine and wet weather equipment on the Swallow sporting sidecar.

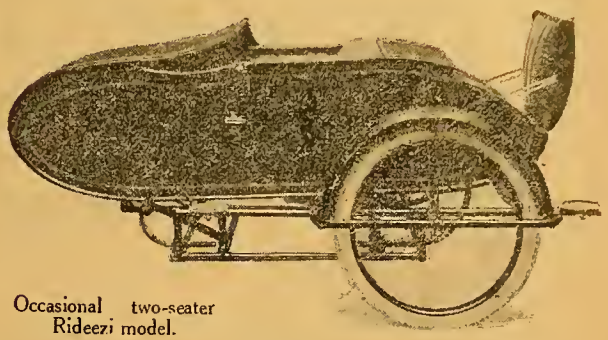


SIDECARS FOR ALL TYPES OF MACHINES.

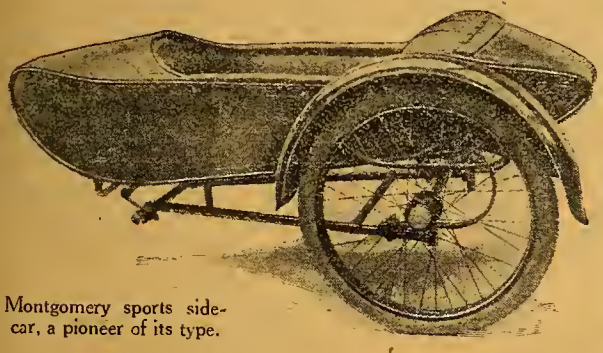
Wide Range of Models to be Exhibited at Olympia.



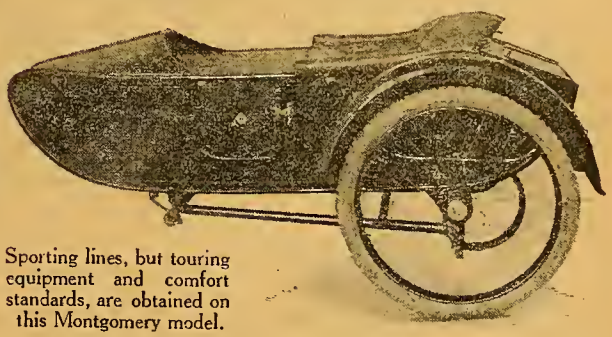
Sandum touring type with dickey seat



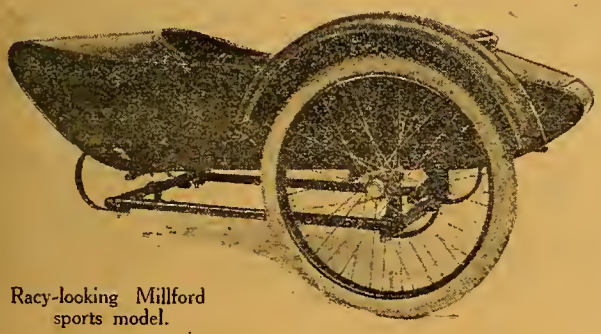
Occasional two-seater Rideezi model.



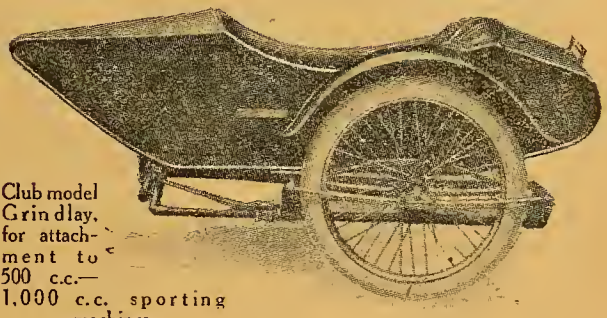
Montgomery sports sidecar, a pioneer of its type.



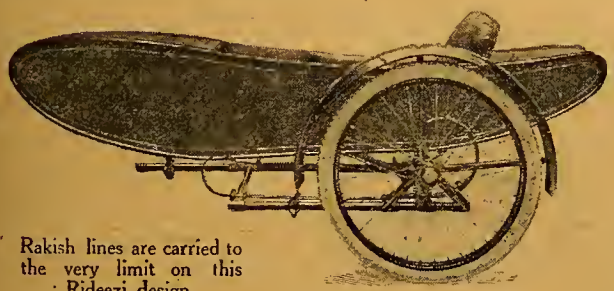
Sporting lines, but touring equipment and comfort standards, are obtained on this Montgomery model.



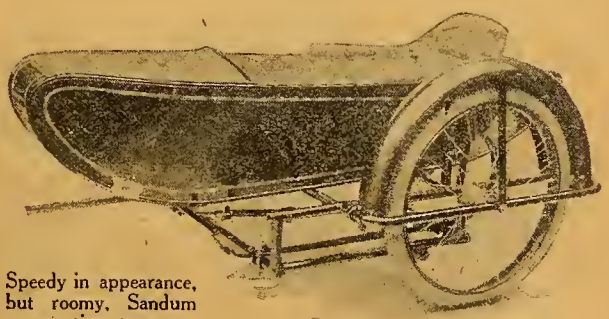
Racy-looking Millford sports model.



Club model Grindlay, for attachment to 500 c.c.—1,000 c.c. sporting machines.



Rakish lines are carried to the very limit on this Rideezi design.



Speedy in appearance, but roomy. Sandum sporting type.

Forecast and Guide to Olympia.—

(Continued from p. 760).

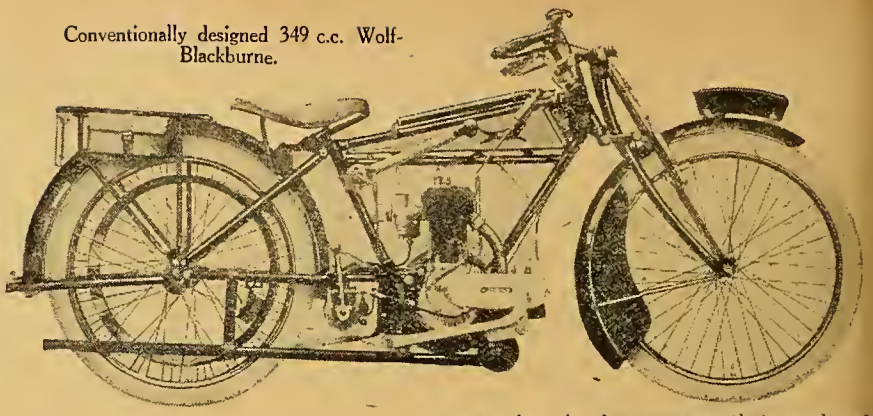
Stand. **WOLF.**

125. Seven Wolf motor cycles will be shown, ranging from a single-geared 147 c.c. Villiers-engined miniature to a 550 c.c. Blackburne-engined dual purpose mount in a solo form.

In between are 247 c.c. and 347 c.c. Villiers, 293 c.c. J.A.P., o.h.v. 250 c.c., and side-valve 350 c.c. Blackburne models, all displaying good finish for their moderate prices.

Well-known component gear boxes, etc., are used in every case.

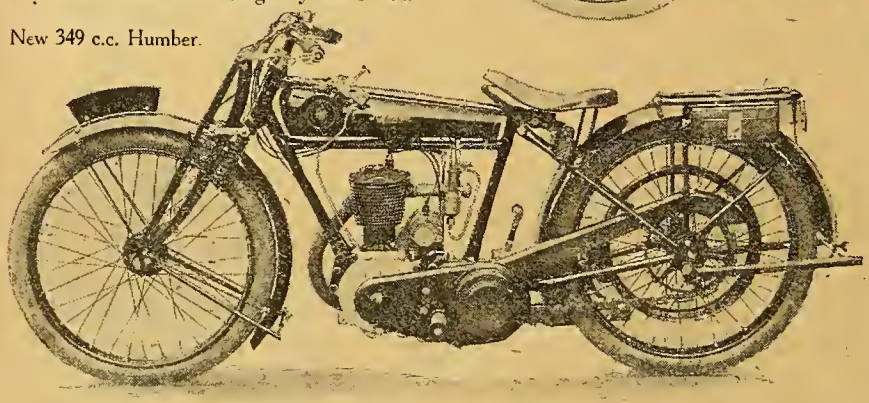
Conventionally designed 349 c.c. Wolf-Blackburne.



Stand **HUMBER.**

126. The Humber name was originally associated with single-cylinder machines, but flat twins gradually ousted the former type. The latest production once again brings Humber, Ltd., into the single-cylinder field.

New 349 c.c. Humber.



The new engine has a bore and stroke of 75×79 mm. (349 c.c.). Both valves are located at the side of the head, which is not detachable; the ports are well ribbed and have ample air spaces between the walls. Each adjustable valve tappet is operated directly by its cam without the interposition of rockers, and the tappet guides are a press fit in the timing case, being held in position by a clamp.

The Humber three-speed gear box, with clutch and kick-starter, is attached to the bottom bracket, and a positive adjustment is provided for the front chain. The internal mechanism of the gear box is the same as that employed on the well-known flat-twin Humber, which will also be shown.

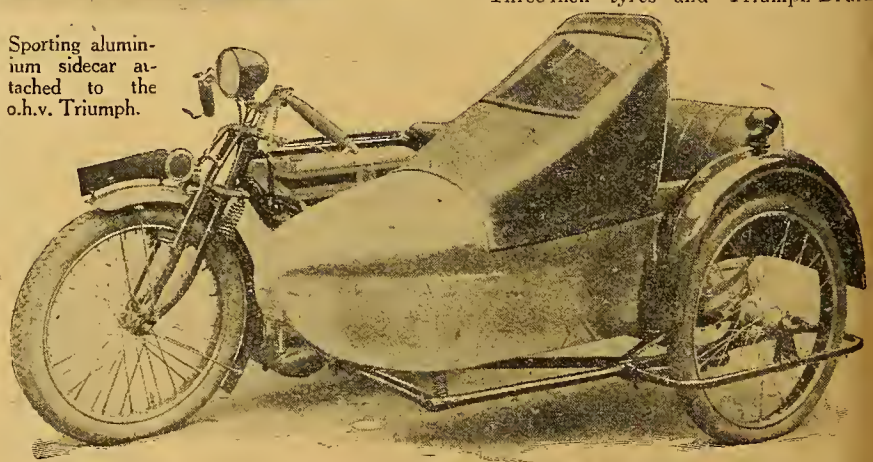
Stand **TRIUMPH.**

128. One of the novelties of the year is the new unit engine and gear box 350 c.c. Triumph, and, although deliveries will not commence until April, it is certain to attract much public attention. To say that it bristles with clever engineering design is not to exaggerate.

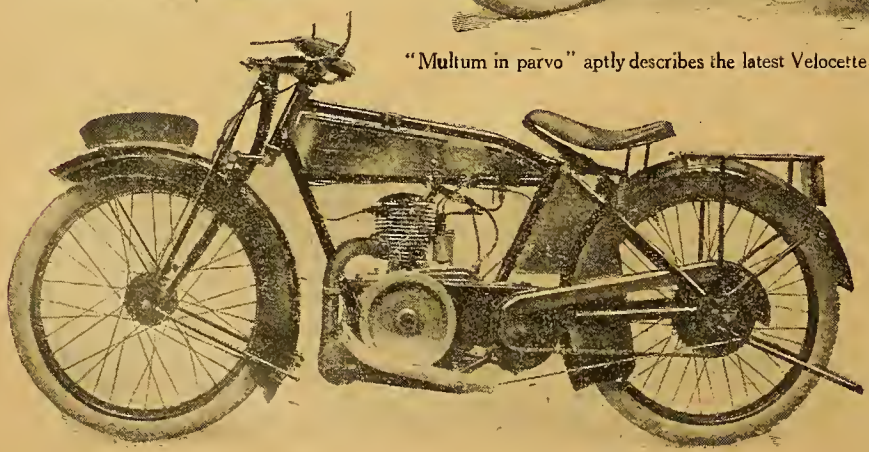
One or two small but important modifications have been made to the 499 c.c. four-valve fast touring machine, and a particularly attractive sporting sidecar has been designed for it.

Three-inch tyres and Triumph-Druid forks are now fitted to the 550 c.c. chain-driven machine, and the two-stroke has an increased engine capacity and a clutch and kick-starter.

Sporting aluminium sidecar attached to the o.h.v. Triumph.



"Multum in parvo" aptly describes the latest Velocette.



Stand **VELOCETTE.**

129. Those interested in two-stroke design should make a point of inspecting the latest Velocette engine, which has been re-designed on the lines of the record-breaking and T.T. machines.

Two separate exhaust ports of a shape that allows a gradual escape of the gases are spaced widely apart in the cylinder wall, a cooling draught of air thus impinging on what is normally the hottest point.

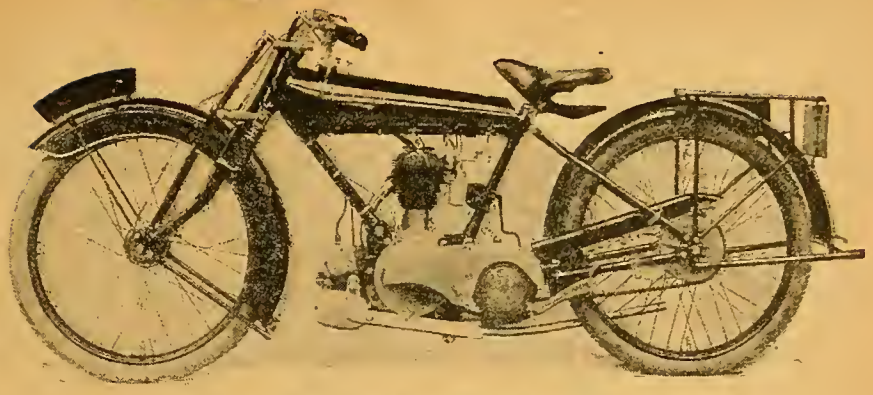
Attention has also been given to the matter of silence, and all the silencer joints are particularly carefully made to prevent leakage. Mudguarding has been further improved.

Fo-ecast and Guide to Olympia.—

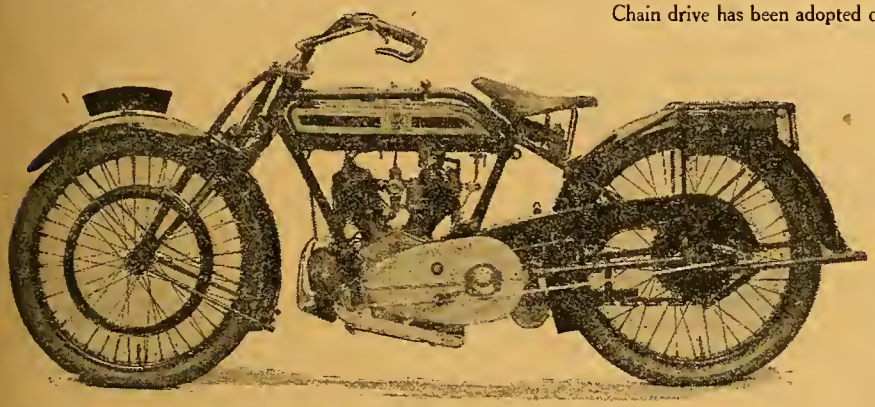
Stand. **HAZLEWOOD.**

130. Possessing an old-established reputation for sturdiness, Hazlewood motor cycles are typical of the better class of makes using proprietary components in a sensible manner, but employing parts to the firm's own design when this course appears advisable.

Lightweight solo machines and medium weight and heavyweight twin sidecar outfits will be shown. J.A.P. engines are used in every case, and chain-cum-belt or all chain transmission is employed according to price. Two *de luxe* sidecar outfits retain the well-known Hazlewood spring seat pillar and have well-designed rear internal expanding brakes.



Chain drive has been adopted on the Hazlewood lightweight.



No great change has been made to the 654 c.c. V-twin Rover-Jap

Stand **ROVER.**

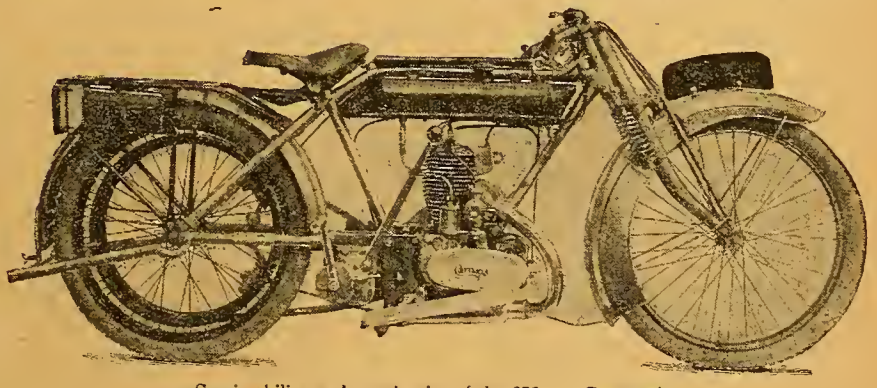
131. Although a very novel Rover model will make its first appearance at the Show, we are not at liberty to disclose details until next week. Few changes of importance have been made to the 654 c.c. twin or to the 499 c.c. single.

Stand **CONNAUGHT.**

132. Various modifications and improvements have been made to the two-stroke Connaught, which is one of the pioneers of its class, and therefore worthy of close attention.

Special cast aluminium exhaust manifolds have been designed for the standard and the sporting 348 c.c. engines, and the silencing arrangements on both are thoroughly adequate. Brake operation has been made more easy, and lubrication, by a Showell mechanical pump, has received careful attention regarding the internal distribution of the oil.

A new sidecar, made by the firm, will also be staged, as well as examples of the 293 c.c. models modified in some respects like the larger machines.

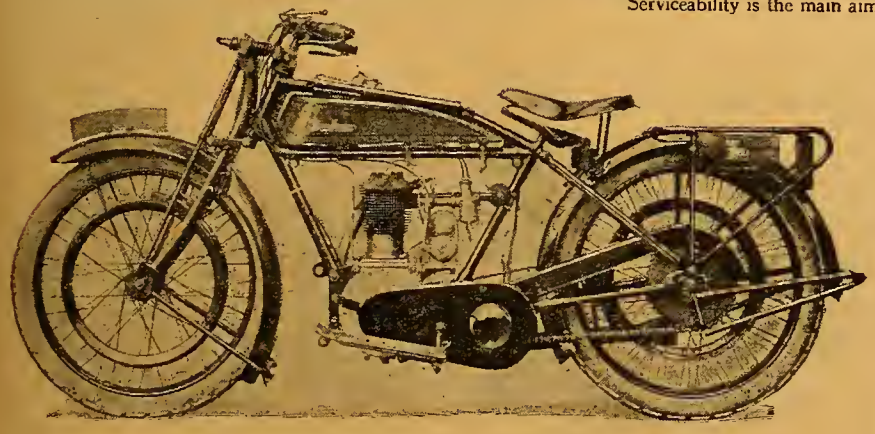


Serviceability is the main aim of the 293 c.c. Connaught.

Stand **REX-ACME.**

133. One of the first machines to adopt the 500 c.c. Barr and Stroud engine is the Rex-Acme, and a model so fitted will be staged. Externally it resembles the 500 c.c. "Impy" model which will be shown as a sidecar outfit.

Other Rex-Acmes employ 350 c.c. B. & S., 250 c.c. and 350 c.c. Blackburne, and 239 c.c. J.A.P. engines. Chain transmission is standard except on the two smallest machines and on a new two-stroke miniature making its first appearance.



Largest J.A.P. engined Rex-Acme, familiarly known as "Impy."

THE MOTOR CYCLE

SHOW REPORT.

Next week's issue will embody a complete report of the Annual Olympia Motor Cycle Exhibition Line drawings by our own artists and photographic reproductions will be a feature of an enlarged issue full of interest.

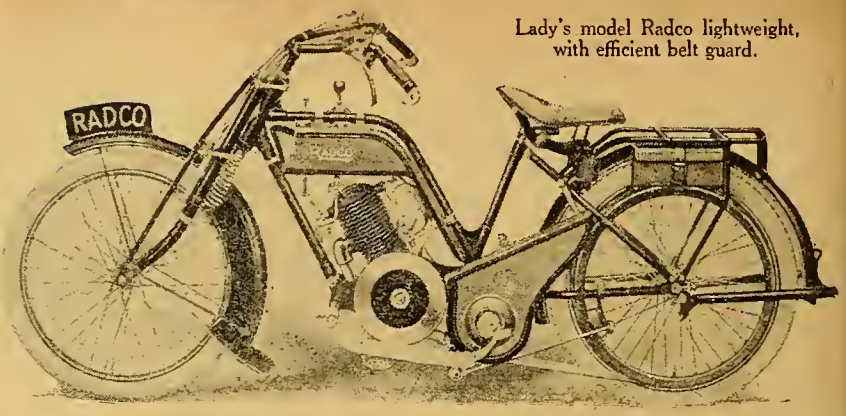
ORDER YOUR COPY TO-DAY!

Forecast and Guide to Olympia.—

Stand **RADCO.**

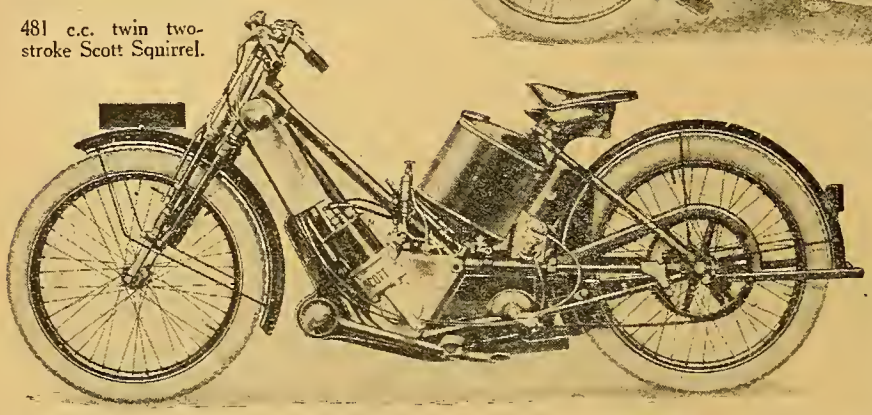
135. Two interesting departures have been made by the manufacturers of the Radco two-stroke. Chain drive has been adopted for the sporting model, and a spring frame of somewhat unusual action has been designed. With disc wheels and an external contracting brake the 247 c.c. sporting model is a workmanlike product, embodying many years' experience in the construction of two-stroke lightweights.

Wider mudguards, foot-boards instead of footrests, and a brake improvement are the chief changes on the belt-driven machines.



Lady's model Radco lightweight, with efficient belt guard.

Various forms of transmission, from direct belt drive and single gear to all-chain drive with a three-speed box, are offered, and the prices are moderate.



481 c.c. twin two-stroke Scott Squirrel.

Stand **SCOTT.**

136. For years Scott enthusiasts have been asking for a three-speed gear, and although the water-cooled two-stroke twin "pulls" very well on a comparatively high ratio, the request was probably justifiable from the sidecarists.

Next year the standard 532 c.c. Scott will be definitely obtainable with a three-speed gear, but the 481 c.c. Squirrel remains very much as before. However, the performance of the latter machine in the T.T. (when it finished 3rd and 4th) proved that there is not much to complain about with it in its standard form. The new three-speed model is described fully elsewhere.

Stand **SPARKBROOK.**

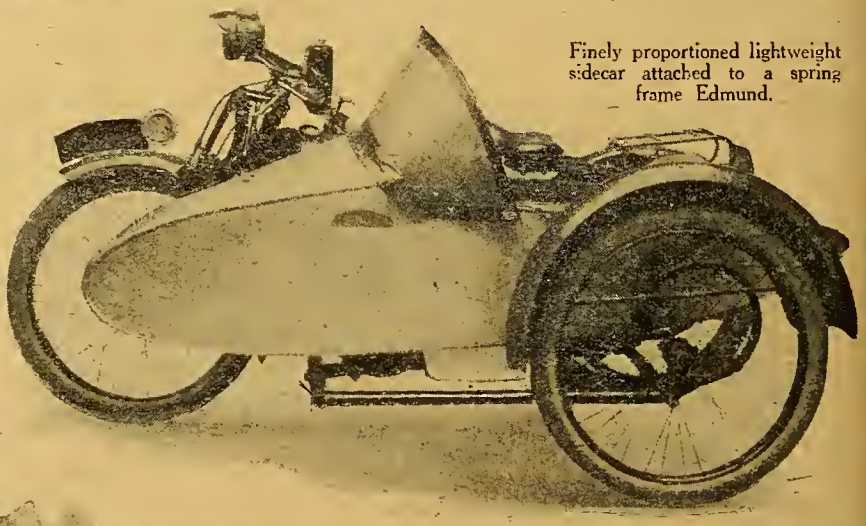
137. 250 c.c. and 350 c.c. lightweights are the speciality of the Sparkbrook Manufacturing Co.

Four well-known proprietary engines are employed in the various models—247 c.c. and 347 c.c. Villiers, 348 c.c. super-sports J.A.P., and 349 c.c. sleeve valve Barr and Stroud.

Stand **EDMUND.**

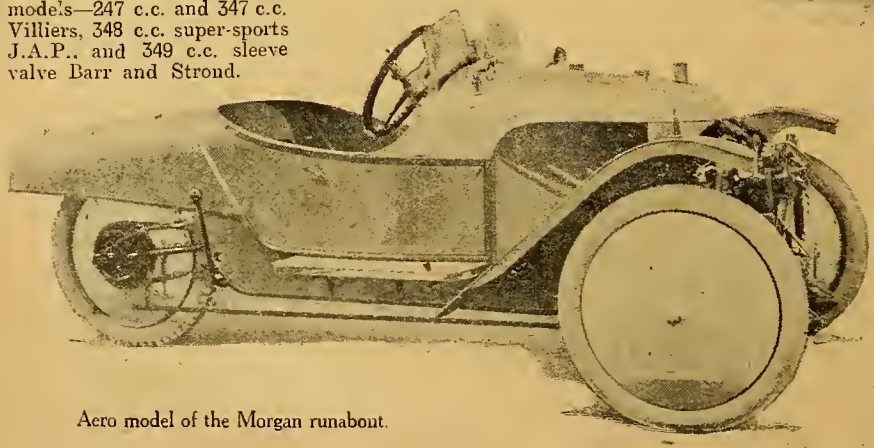
138. The Edmund has a system of suspension which gives the advantages of a spring frame without many of its disadvantages. Only the rider is sprung, the saddle and footboards or footrests being inter-connected and free to move up and down against a long leaf spring.

Extreme neatness in appearance is a feature of the design that makes the Edmund one of the handsomest lightweights of to-day.



Finely proportioned lightweight sidecar attached to a spring frame Edmund.

Side-valve and o.h.v. Blackburne engines are chiefly used, and a very attractive sporting sidecar outfit will be staged.



Aero model of the Morgan runabout.

Stand **MORGAN.**

139. There is little need to comment on the Morgan, which is practically unchanged for next year—except in price. It occupies very nearly a class by itself, and its owners are almost invariably enthusiasts regarding its capabilities.

1923 prices have been announced as follows: Standard, £135; *de luxe*, £155; family, £165. Water-cooled Morgans, including the racy-looking Grand Prix type, cost slightly more, the prices enumerated being for air-cooled J.A.P. or Blackburne engines.

Forecast and Guide to Olympia.—

Stand **OMEGA.**

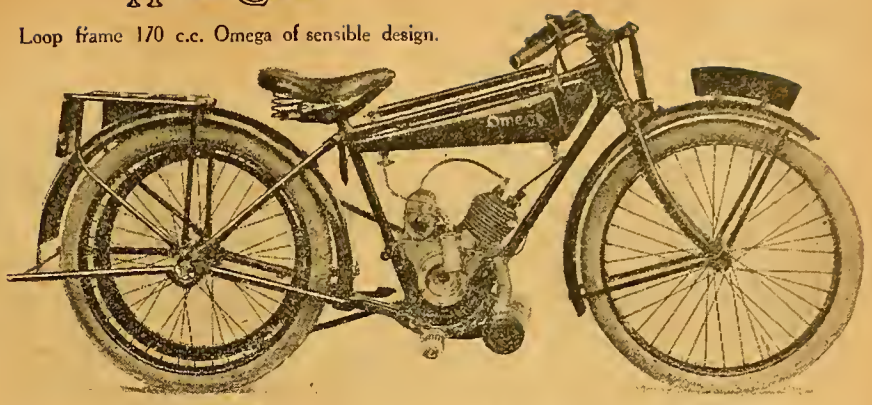
140. Quite one of the most attractive of the heavy 1923 crop of miniatures is the 170 c.c. Omega, which has a well-designed two-stroke engine, made by the manufacturers of the machine. Two examples will be staged, one with a two-speed gear box and clutch.

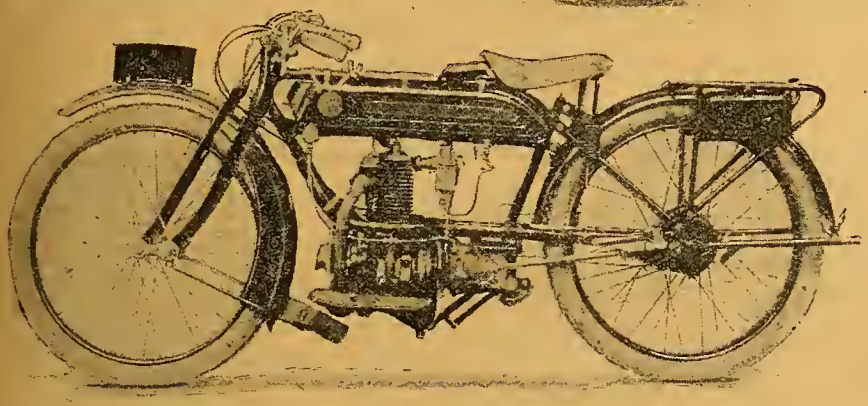
Four of the now well-known 350 c.c. duplex-frame two-stroke lightweights, one with a suitable sidecar, will also be on exhibition, the points of difference being in gears and transmission.

Finally, there will be a 292 c.c. J.A.P.-engined utility mount.

Prices, solo, range from £25 to £69.

Loop frame 170 c.c. Omega of sensible design.





286 c.c. F.N., with transversely set engine and shaft drive.

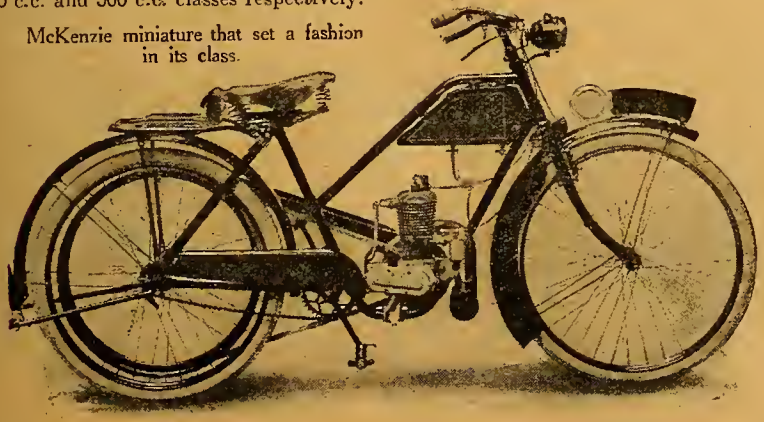
Stand **F.N.**

141. Built in one of the largest continental small-arm factories, F.N. products are famed for their excellent design, good material, and lasting qualities. The 748 c.c. four-cylinder is a machine which is built entirely on car lines, equipped with an engine which was entirely re-designed last year, and includes the very latest car practice, such as overhead inlet valves and mechanical lubrication. The single-cylinder 286 c.c. model, the engine of which is placed across the frame, also has propeller shaft transmission, and remains unaltered.

Stand **NEW HUDSON.**

142. Extending from a 211 c.c. two-stroke to a 1,098 c.c. three-wheeler of advanced design, the New Hudson range has been made still more representative by the introduction of two solo singles in the 350 c.c. and 500 c.c. classes respectively.

McKenzie miniature that set a fashion in its class.



The engines of the new models are designed for efficiency with long life, and have plain bearings throughout. An interesting constructional detail is that the oil and petrol tanks are entirely separate members. Neatly guarded chain transmission, *via* a three-speed gear box, is employed, and internal expanding brakes are fitted to front and rear wheels. In appearance both models, which are very much alike, leave little to be desired.

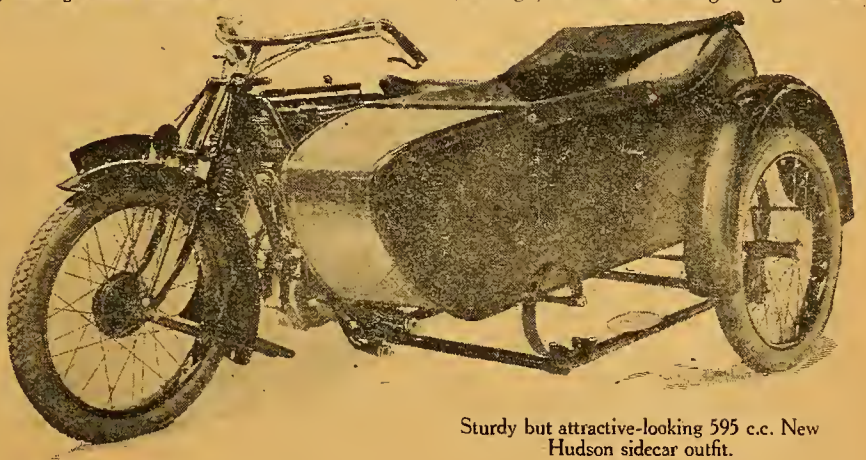
One or two detail refinements (including a new silencer) have been made to the popular 595 c.c. sidecar, which is now additionally obtainable in an attractive sporting form.

Stand **McKENZIE.**

145. Introduced almost exactly a year ago, the McKenzie lightweight made its first appearance before the public in an A.C.U. observed trial, in which it acquitted itself creditably. Since that time it has increased enormously in popularity.

Several modifications have been made to this model as a result of experience obtained during the past year with a very large output. Among these is an improved frame, which, however, is still of the loop type; it is more convenient for lady cyclists.

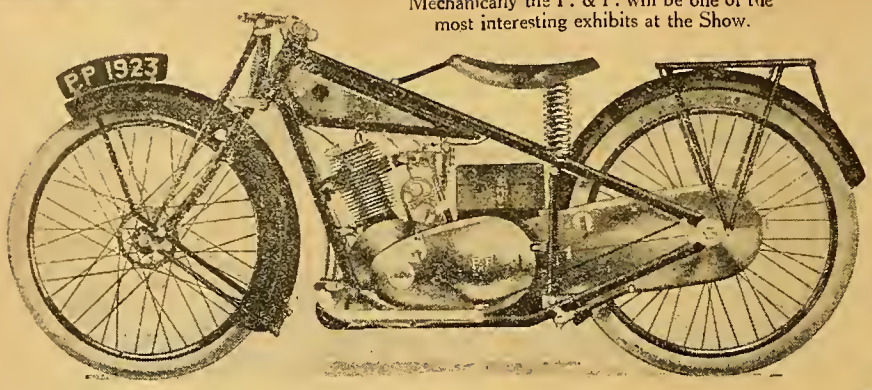
A new McKenzie has been designed fitted with the same 169 c.c. engine, but built on true motor-cycle lines. This engine is built into a motor cycle frame with a straight top tube, has a two-speed gear box, Druid forks, 24×2 in. tyres, weighs 120 lb., and costs £33 18s. complete with all accessories.



Sturdy but attractive-looking 595 c.c. New Hudson sidecar outfit.

Forecast and Guide to Olympia.—

Mechanically the P. & P. will be one of the most interesting exhibits at the Show.



Stand **P. & P.**

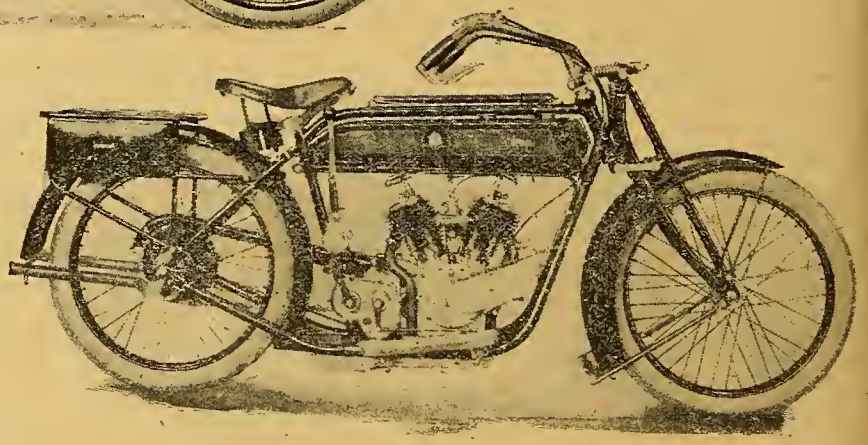
146. There are at least as many details of interest on the P. & P. as on any other machine in Olympia. Briefly, it may be summarised as an attempt, and apparently a successful one, to make an absolutely silent and completely protected motor cycle.

A Barr and Stroud engine and a Sturmey-Archer gear box are employed, but otherwise the design—duplex frame, revolving back axle, etc.—is quite original.

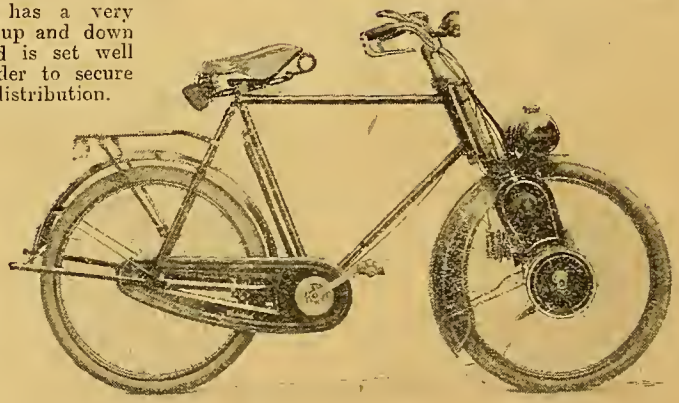
Side-shields may be fitted entirely hiding the engine, and mudguarding, saddle suspension and riding position have received careful attention.

Internal expanding brakes are fitted front and rear.

The saddle has a very wide range of up and down movement, and is set well forward in order to secure good weight distribution.



Italian built 600 c.c. V-twin Bianchi, with primary gear drive.



Cykelaid motorised front wheel on a standard pedal cycle.

Stand **BIANCHI.**

156. It is not often that British motor cyclists have the opportunity of studying Italian motor cycle design, but this year they will have a chance of inspecting the Bianchi, which is the production of one of the leading motor car manufacturers of that country.

Unit construction is a feature of this interesting machine; there are two models, a 600 c.c. twin and a 488 c.c. single-cylinder.

Stand **CYKELAID.**

158. By no means an entirely new and untried design, the Cykelaid motor attachments for pedal cycles with reappear at Olympia in a revised form. The complete unit consists of a specially built front wheel and spring forks, carrying a 55×56 mm. two-stroke engine, the whole to replace the forks and front wheel of an ordinary pedal cycle. Transmission is by chain, and a cork insert clutch is provided.

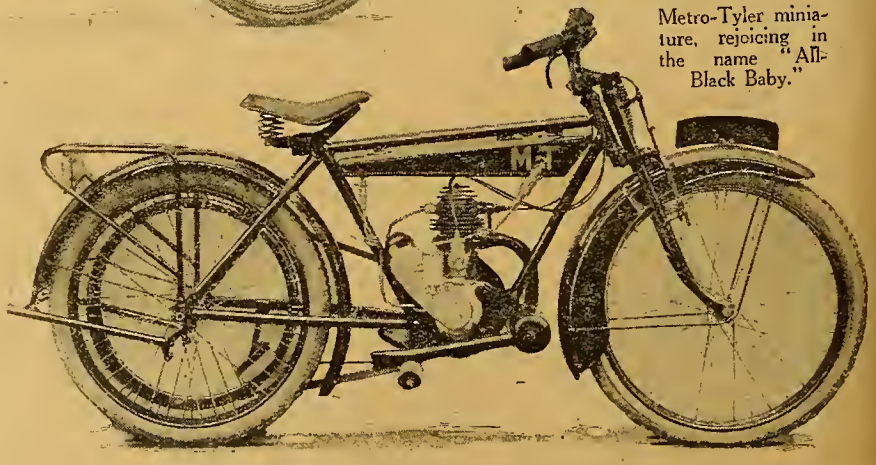
There is a good deal to be said in favour of this method of motorising a pedal cycle. It is simple and strong enough to stand its own stresses; steering is good; and the rider's clothing does not come into contact with the mechanism.

Stand **METRO-TYLER.**

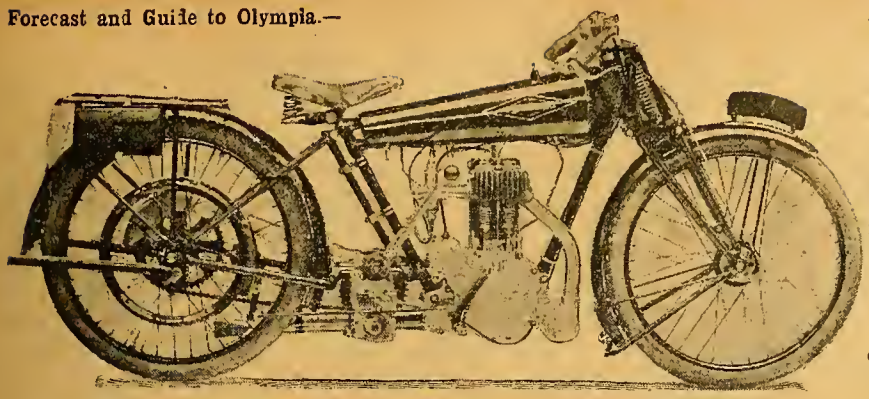
149. The makers of the Metro-Tyler are among those firms who cater for all classes of riders. In the case of the "All-Black Baby," they have designed a machine suitable for the beginner, which can be bought cheaply, is of simple design, and yet will go almost anywhere. A two-speed gear can be added at a small cost, and it can also be obtained as a sports model. All the engines are fitted with an aluminium radiator on the top of the cylinder.

The more advanced rider is catered for by the 348 c.c. Blackburne-engined machine, which can be had with either the overhead valve or side valve engine. The all-enclosed Metro-Tyler two-stroke is still retained, as well as the 698 c.c. Blackburne-engined twin.

Metro-Tyler miniature, rejoicing in the name "All-Black Baby."



Forecast and Guide to Olympia.—

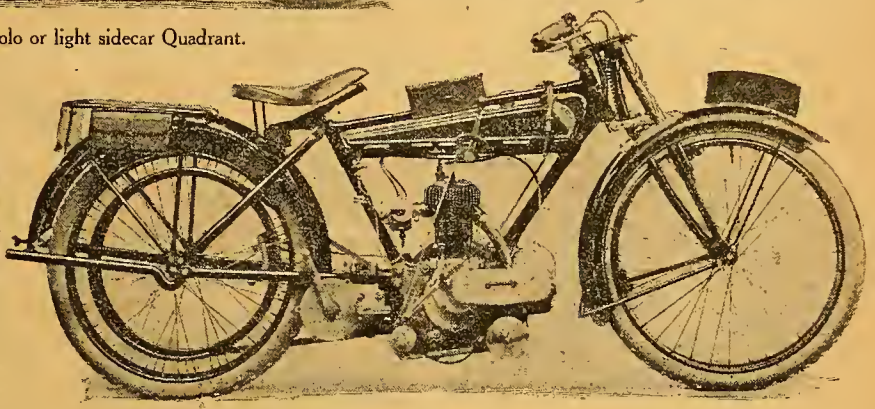


Semi-sporting 490 c.c. solo or light sidecar Quadrant.

Stand **QUADRANT.**

161. Perhaps the most interesting Quadrant is the new 490 c.c. single-cylinder model, introduced in early October. This machine, which is of pleasing appearance, has a side-by-side valve engine with a detachable head. Transmission is by chain *via* a Sturmey three-speed gear box. An internal expanding band brake is fitted to the front wheel, the rear brake being a fibre block working in a dummy belt rim. The price, solo, is £63, and, with a light sidecar, £80.

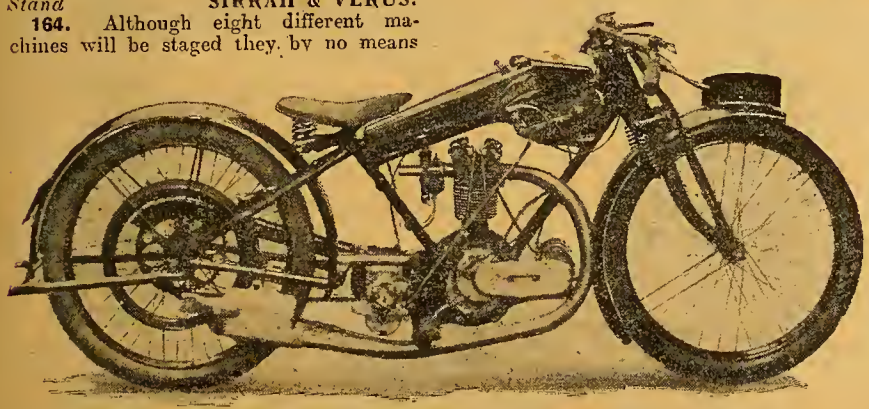
The 654 c.c. chain-cum-belt and chain-driven dual-purpose machines have been even further reduced in price, £90 being the cost of the cheapest outfit.



Conventionally designed 349 c.c. Verus-Blackburne.

Stand **SIRRAH & VERUS.**

164. Although eight different machines will be staged they by no means fully represent the very complete range of Sirrah and Verus motor cycles. None of the types shown is of a greater capacity than 350 c.c.



Guaranteed 70 m.p.h. semi-stripped 349 c.c. Sheffield-Henderson.

Bearing the Verus transfer will be a two-speed touring 349 c.c. Blackburne-engined mount and two three-speed models with the o.h.v. engine of the same make and capacity, and a side-valve 348 c.c. J.A.P. respectively.

The Sirrahs range from the 150 c.c. o.h.v. Weaver motorised bicycle to the 292 c.c. Union-engined two-stroke sidecar outfit. Excepting the miniature and a 248 c.c. Blackburne model, all the Sirrahs are two-strokes.

Broadly speaking, the Verus is the *de luxe* model of the Sirrah.

Stand **DUNELT.**

166. Chain-drive is employed in a new model of the Dunelt, a big single-cylinder (499 c.c.) two-stroke of proved capability for sidecar work. The wheelbase of the latest addition is shorter than hitherto, and the silencing arrangements have been much improved.

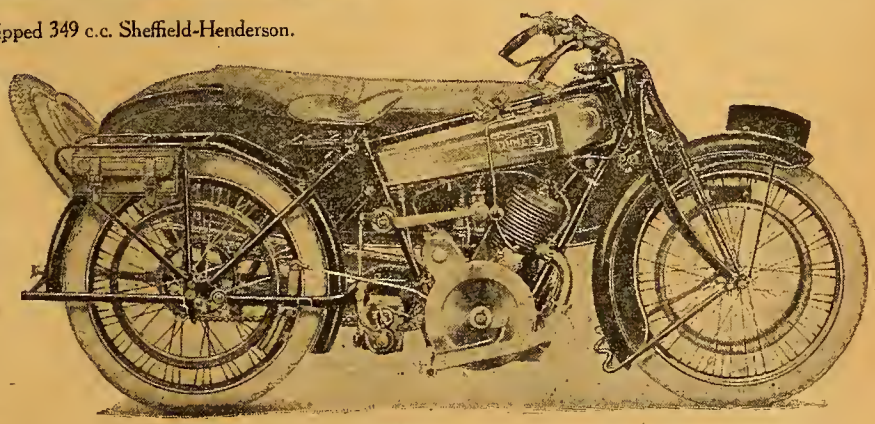
One or two modifications have also been made to the engine, which, it will be recalled, has a double diameter piston. Greater fuel economy has been obtained from a special type of Amac carburetter which also gives an appreciable increase in power.

Prices vary from £75 for the chain-cum-belt solo model to £117 for the chain-driven sidecar outfit with detachable and interchangeable front and sidecar wheels.

Stand **SHEFFIELD-HENDERSON.**

168. Successes in various speed events, including the T.T., have brought the Sheffield-Henderson very quickly into the limelight. The 349 c.c. o.h.v. Blackburne-engined model of this make was also one of the first machines to be offered with a definite speed guarantee—70 m.p.h., in this case.

Touring and sporting side valve Blackburne, sporting o.h.v. Blackburne, and dual-purpose Bradshaw models—all in the 350 c.c. class—comprise the Sheffield-Henderson range, and all have chain transmission and three-speed Burman



Chain-driven model of the 499 c.c. Dunelt two-stroke sidecar outfit.

gear boxes. Their curious but not unattractive-looking frame construction is now familiar to most people.

Stand **POWELL.**

167. Although the Powell has not competed in a great many reliability trials, it has invariably put up a good show on the occasions it has been entered—and these have usually been pretty stiff events.

The 547 c.c. dual-purpose model is now available with either final belt or chain drive, and has not undergone any radical alteration for next year.

The introduction of a 247 c.c. Villiers-engined lightweight, however, is interesting. Conventional lines are followed throughout, transmission being by chain and belt *viâ* an Albion two-speed gear box. It is also obtainable single-geared.

Stand **SCOTT SOCIABLE.**

168. As befits a design which was evolved and tested for five or six years before it reached the public, only the smallest details are likely to be altered on the Scott Sociable. During the present year the transmission has been strengthened, and an aluminium body has been adopted. For 1923 a greater ratio of engine movement to the traverse of the starting lever has been provided, and instead of the single headlamp on the front wing-cum-petrol tank, two headlamps have replaced the side lamps which were mounted on the dash. A considerable price reduction has been effected, which brings it more favourably into competition with the more elaborate sidecar outfits which it was frankly designed to replace, following as it does the layout of a sidecar outfit.

Stand **L.S.D.**

169. Hailing from Huddersfield, the L.S.D. is an exceptionally strongly constructed three-wheeler using various forms of the air-cooled J.A.P. engine in identical chassis.

A two-speed reverse gear and shaft and chain drive is employed; detachable and interchangeable wheels are used.

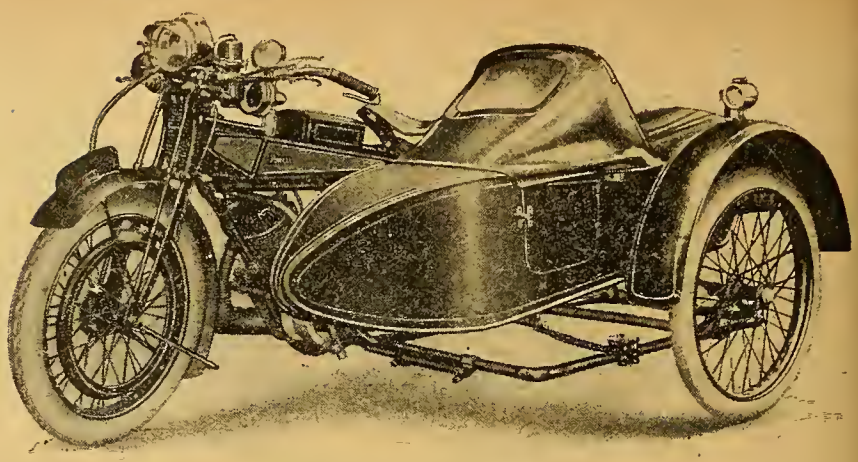
Bodywork has been considerably improved for next year, and a family model has been added to a range that now meets every need.

THE MOTOR CYCLE

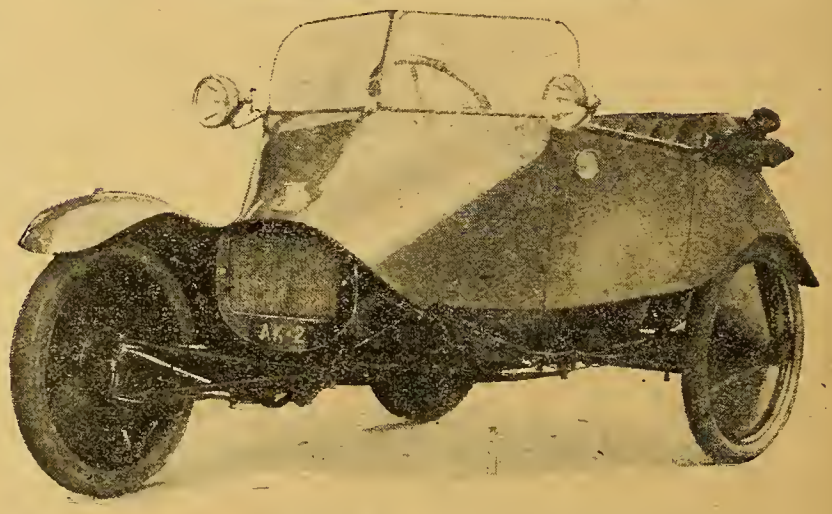
SHOW REPORT.

Next week's issue will embody a complete report of the annual Olympia Motor Cycle Exhibition. Line drawings by our own artists and photographic reproductions will be a feature of an enlarged issue full of interest.

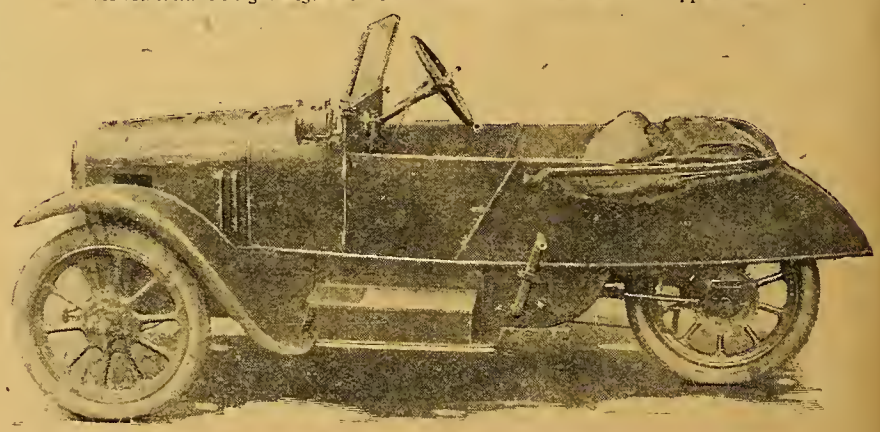
ORDER YOUR COPY TO-DAY!



Completely equipped 547 c.c. Powell sidecar outfit.



Viewed from the right angle the Scott Sociable is not unattractive in appearance.



Family model of the L.S.D.

IMPROVEMENTS TO THE PARAGON FOLDING SIDECAR.

INVENTED in 1912 and exhibited at Olympia in 1913, the Paragon folding sidecar has had continued success.

The demand has steadily increased year by year, for more and more motor cyclists wishing to avoid garage fees and keep their machines at home, are turning to the folding sidecar as a solution to their problems.

Important improvements have been made in the attachment of the body to the chassis. It is fitted almost instantaneously and requires the least amount of effort. When attached it is held securely by trigger bolts in a rigid rectangular frame which serves to stiffen the collapsible portion and to hold it securely without fear of rattle.

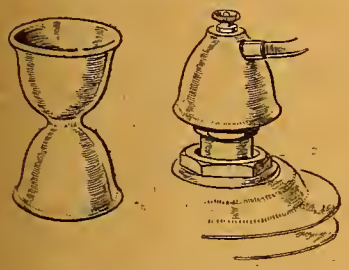
IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Umbreilas for Sparking Plugs.

WHETHER "Notron," who submits this idea got his inspiration after a raid on the kitchen or whether he came by it and the materials in a visit to the domestic bazaar, is unknown, but it is quite good.

Briefly, this reader suffered from water on the high-tension terminal and insulation of his sparking plug, and so devised a plug cover from one of those spun aluminium egg-cups which consist of two similar hemispherical pieces joined together. The sketch is itself explanatory, and only one half the egg-cup was used. "Notron" found that this cured his troubles, and also kept the plug electrode cooler by conduction and radiation; what a pity he couldn't sign himself "Nagrom" or "Salguod," and so use both halves of the egg-cup.



Part of an egg cup as a plug protector.

Removing Gummed Piston Rings.

IT is very often possible to remove the most obstinately "stuck" piston rings by the following process:—

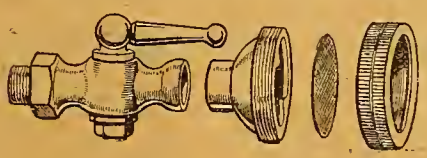
First, with the point of a pocket knife, remove as much carbon as possible from between the split of the ring; then heat the ring and piston by playing on it with a small flame from either a gas blow-pipe or a petrol blow-lamp. Care should be taken to heat the ring uniformly all round by applying the flame with a continuous motion all along the surface of the ring; when the ring and piston have reached such a temperature that they are *just uncomfortable* to handle, immerse in a bath of paraffin. It should now be possible with a narrow knife point to raise one end of the ring by inserting the knife blade between the slit and prizing gently outwards. Immediately the ring shows a tendency to move repeat the heating process, but with the variation that the flame should only be applied to that portion of the ring immediately adjacent to the end which has been raised; on reaching the temperature already referred to, apply paraffin from a small oilcan through the slit so that it reaches the back of the ring; again with the knife prize the ring up a little farther; it should then be possible to insert a small strip of metal between the ring and the piston. The heating and the paraffin application should still be continued and the inserted strip gradually worked right round the ring until the whole is quite free of its groove.

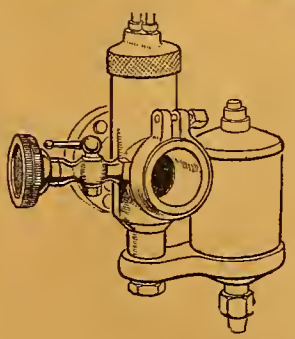
The greatest care should be exercised in working the strip forward, and under no circumstances should great force be applied, or fracture will inevitably result.

C. C. R.

Filtered Extra Air.

THE dodge of fitting a drain tap in the induction pipe to act as an extra air valve is by no means new, but "C.E.P." (Old Hill, Staffs) goes a little further with the idea. Obtaining the base of a small electric lamp-holder, he solders this on to the open end of the tap and secures a piece of gauze by the flanged ring ordinarily used to secure the bayonet socket of the fitting.



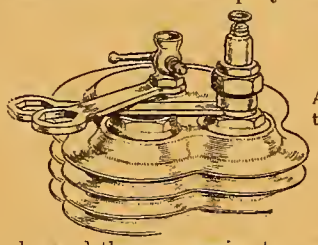


Fitting a substitute for an extra air valve.

Incidentally, there is no need to do any soldering if a tap is chosen with $\frac{1}{8}$in. gas thread, which will screw into the usual cord nipple orifice of the small bulb-holder threaded $\frac{3}{8}$in. brass; the differences in diameter and pitch of these two threads are negligible.

Resource.

TO be a long way from home and have a valve cap blow out, completely stripping its thread, is to be in a rather awkward predicament. However, "W. M.," of Tredegar, got out of the difficulty with the help of two spanners held down over the cap by the sparking plug and the compression tap respectively in the manner shown clearly in the accompanying sketch. Some compression loss was, of course, inevitable, but the main thing was that it was possible to get home under power.



An ingenious temporary repair.

Scott Tips.

THE following simple wrinkles are not yet the universal property of Scott riders:—

To replenish the frame tubes with oil in the least possible time, use a thin oil or heat a sluggish oil till it runs freely. Then use a funnel with a very narrow spout, and insert it well into the frame tube. The air present in the tubes can then escape through the filling basin, and no bubbling occurs.

To ensure a rapid start from cold next morning, stop the engine overnight by closing the air lever. This will drag lots of petrol into the crank case—so much, in fact, that a quick restart the same night is practically impossible.

In the event of a Scott engine refusing to start when hot from excess of petrol (*e.g.*, if the carburetter has stupidly been flooded with the engine warm, or if engine, when warm, was stopped as described above), take out the carburetter slides and operate the kick-starter to exhaust the rich mixture inside the engine and replace it with air. As soon as the engine fires, use the cut-out to stop it, replace the slides, and all will be well. The special difficulty of "ventilating" a two-stroke engine lies in the fact that its cylinders are very slowly and imperfectly scavenged by turning the engine round when it is not firing.

When adjusting chains get the tension on the high gear side correct; an enormous amount of slack is permissible in the low gear chain, and there is no fear of it jumping the sprockets.

B. H. D.

"HINTS AND TIPS FOR MOTOR CYCLISTS"—gives hundreds of useful "wrinkles." Price 2s. 3d. post free from "The Motor Cycle" Offices, Dorset House, Tudor Street, London, E.C.4.

INSURANCE PROBLEMS

A Special Feature in which Insurance Questions are Answered and Discussed.

It is now generally accepted that insurance is a vital necessity in the case of every motor cyclist. The number of communications received on insurance matters, too, indicates that readers are very keenly interested in this subject; some of the questions require expert advice, and this feature has been formed to deal impartially with the various problems that are presented to us.

The close associations of "The Motor Cycle" and our sister journal, "The Autocar," with the Autocar Fire and Accident Insurance Co., Ltd. (a company evolved from the old Autocar Insurance Department, founded 18 years ago) enable "The Motor Cycle" to keep in very close touch with all matters pertaining to insurance—an undoubted advantage to our readers.

Enquiries will be welcomed and should be marked "Insurance" on the left-hand corner of the envelope and addressed to "The Motor Cycle," Dorset House, Tudor Street, E.C.4.

Unlicensed Rider. A reader from Bristol asks whether an insurance company would pay for damage to a motor cycle and compensation to third party if the machine, ridden by an unlicensed rider, was fully insured.

The ordinary motor cycle policy would not indemnify the owner in the event of an accident occurring whilst the machine is being driven by an unlicensed person.

* * * *

Blowing off the Cylinder Head. N. Wallace, Long Eaton, on the question of mechanical breakdown, says: "Recently a friend of mine had the misfortune to blow the cylinder head off his engine. It happened that he was not insured, but if a similar thing occurred to a person who was insured, under what clause would this accident be stated?"

The accident as described would not be considered as coming within the cover granted by the ordinary insurance policy, the damage coming under the heading of "Mechanical Breakdown," which is excluded. It will be realised that an insurance policy is not intended to guarantee the machine withstanding the ordinary running strains.

* * * *

Excessive Charge. An Ashbourne reader writes: "On the 17th of August I filled up a proposal form with a view to insuring my 650 c.c. motor cycle. The price of the premium was £7 16s., myself paying the first 50s. of any accident. Shortly after the 13th of September, before any policy or any further communication came to hand, I wrote cancelling the insurance because owing to financial pressure I was unable to meet the cost. In reply the insurance company wrote asking payment of £3 16s. 6d., due, it was stated, because I was covered from the date I filled up the proposal form until I wrote cancelling it. Is the company entitled to this amount?"

If you completed and signed a proposal form for an insurance and received a cover note or some intimation that the insurance was agreed in force, we should say that the full amount of the premium is then due to the insurance company, but if at a later date you wished to cancel the insurance effected, the company would appear to be entitled to charge for the time on risk, according to its advertised prices for short term policies. As, however, you do not give the name of your company, we are not able to advise you as to whether the amount demanded is on the above lines. If you did not receive any cover note, or acknowledgment of your proposal form, we do not consider that the insurance company would have been responsible to you in the event of an accident, and therefore it can have no claim for payment of the premium.

Deferred Payments. Frederick Jones, New Brighton, raising a query on deferred payments, writes: "I bought on the deferred payment system a 269 c.c. outfit, and deposited £28, which included £6 10s. for insurance. I would be very glad if you could let me know for how long my machine is covered, and what risks, as I have no records here. I am still paying instalments."

We cannot give you the information required without seeing either the policy or the cover note in respect of the insurance, but from the amount of the premium it would appear that the insurance is probably a "Comprehensive" one for twelve months. In a case of purchase on deferred payment system, the original or the duplicate of the policy should be sent to the purchaser, and we suggest that you make an application for a duplicate in order that you may see exactly how you are insured.

* * * *

Refusing Liability. "E.B.", of Erith, on the question of liability, writes: "I met with an accident whilst riding my sidecar, and in sending a claim to the insurance company, stated that my handlebars had shifted whilst rounding a bend in the road. The company refused to accept liability, on the ground that the accident was a mechanical breakdown. Would you advise me as to my position? Also, when the policy was issued a mistake in the number was made. I informed the company of this three times, and after a delay of five weeks was informed that I had been running under a false registration, which is contrary to the rules of the policies; therefore, the policy is valueless. The company now wants to cancel the policy. Could you tell me if I can claim back my years' premium, considering it was not my mistake that rendered the policy valueless?"

You do not state the nature of the accident which occurred, or any particulars of the damage caused, but if your machine came into collision with some object, or was overturned, the damage resulting therefrom would be covered under the ordinary policy. From the second part of your letter we understand that your machine is properly registered and numbered, but that by a clerical error the number is shown on your policy in an incorrect way. If this is so, we do not consider that the company would be entitled to refuse your claim on account of the clerical error in the policy, nor can we understand any insurance office of repute taking up this attitude. If you will send us further particulars asked for regarding the accident, and at the same time forward your policy for perusal, we shall be pleased to advise you further in the matter.

CURRENT CHAT

Times to Light Lamps.

Nov. 23rd	.. ..	4.30 p.m.
„ 25th	.. ..	4.28 „
„ 27th	.. ..	4.26 „
„ 29th	.. ..	4.24 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

A Big Industry.

Over a hundred different makes of motor cycles will be staged at Olympia.

Olympia.

On Saturday Olympia again opens as a motor cycle exhibition, with more exhibitors than ever.

Scottish Motor Show Space Booked.

Already the whole of the space at the Scottish Motor Show, which opens on January 25th, 1923, has been booked up.

Refinement.

As will be seen from the forecast of the Show on pages 744 to 770, motor cycle design tends towards greater and greater refinement.

This Issue of "The Motor Cycle."

In addition to a forecast of the motor cycle, sidecar and runabout exhibits which will be at Olympia next week, this issue contains a large number of those special features which are so popular with our 120,000 regular readers.

1923 Brooklands Programme.

Five members' meetings of the B.M.C.R.C. will be held at Brooklands next year (on April 7th, May 6th, June 2nd, August 18th, and September 22nd). July 21st has been allotted for the 500 mile race, and October 20th for the usual championship meeting.

An Anglo-French Production.

The address of the designers of the Beatty-Claxton shaft-driven motor cycle, described last week, is 27, Rue de Mauheuge, Paris, 9eme. Incidentally it should be made clear that the capacity of the engine is 292 c.c., and Hyatt bearings are fitted in the gear box only.

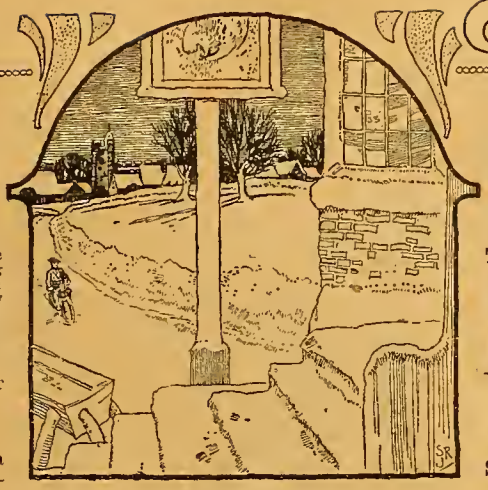
The Highway in Mid-November.

Sidecars of all sizes and all ages were on the road last week-end. Owners took advantage of the remarkable weather for mid-November, many taking out the last quarter's licence on the Saturday morning in the certain hope of at least one good day's run.

Next Week's Report Number.

The Motor Cycle complete report of the Olympia Show will appear next week, and will be on sale during the exhibition. Besides describing the whole of the motor cycle exhibits, a feature of interest will be a detailed survey of design, with graphic illustrations showing the trend. Order your copy to-day to prevent disappointment!

6-12



Motor Cyclists and Taxation.

Motor cyclists are strong in their condemnation of those who maintain that the petrol tax is an impossible proposition.

Collecting Petrol Tax.

If tax can be collected on packets of cigarettes and bottles of wine, why should there be difficulty in gathering a petrol tax?

Miniatures.

If the keen interest shown in the ultra-lightweights is any criterion, trade in these miniatures should be good next year.

Newcastle Road Repairs.

As the High Level bridge between Newcastle and Gateshead is temporarily closed an alternative route will be signposted by the Association. Patrols will be detailed for special duty from 9 a.m. to 8 p.m. The bridge is to be re-opened in about a month's time.

REAL LIGHT-WEIGHT DEMONSTRATED.

An illustration that exemplifies the ease of handling the modern lightweight—a machine quite distinct from the ultra light motorised bicycle. This little two-stroke, the 147 c.c. Rebro, will be amongst the new makes available in 1923.

Special Features.

GUIDE TO THE OLYMPIA SHOW.
OPEN LETTER TO THE TRADE.
PRE-SHOW ACTIVITY AT BROOKLANDS.

The Hero—

An aged gentleman with pedal cycle and Auto-wheel, riding down the Strand into Trafalgar Square at nine o'clock on election night.

—and His Reward.

'Bus drivers, taxi-men, newsboys, revellers, policemen, postmen, etc., with one voice: "Be-e-e-eaver!"

Show Admission Tickets.

The charge for single admission to the Motor Cycle Show, November 25th to December 2nd inclusive, is 2s. Season tickets costing 7s. 6d. can be obtained on application to the Secretary, The British Cycle and Motor Cycle Manufacturers' and Traders' Union, Ltd., The Towers, Warwick Road, Coventry.

Not Due to Alcoholism.

On being called upon for a speech at the B.M.C.R.C. dinner, after he had been presented with the Aggregate Cup for the best performance during the 1922 track-racing season, H. Le Vack said that his success must not be attributed to alcohol, which would not work on his engine as it made the pistons tight.

Competition Machine Stolen.

R. Boxer, the well-known competition rider, has had his Matchless stolen. A reward of £25 is offered by the Provident, Accident and Guarantee Co., Ltd., 61-62, Coleman St., London, E.C.2, for the recovery of the outfit, the engine and frame numbers of which are 2C9 AS63368 and J77 respectively.

D.R.s' Reunion Dinner.

3rd Army D.R.s are advised that their fourth annual dinner will be held at the Trocadero on Friday, December 1st; tickets 11s. each. Any R.E. D.R. who used to run to the section will be welcome. Particulars are obtainable from Mr. D. Jarvis, 51, The Avenue, Beckenham, Kent.

A Seasonable Change.

In order to widen the district covered by the club, the Dewsbury and District Motor Cycle Club has found it desirable to alter its title. It will, in future, be known as the Yorkshire Heavy Woollen District M.C.C. We imagine that the club will be well represented in the forthcoming London-Exeter event. [Note to comic artists: Only the very best drawings of the start of the club's winter trial can be entertained.—ED.]

D 7

147 c.c. CONQUERS BWLCH-Y-GROES.

Splendid Performance of Excelsior Lightweight Machines on Famous Welsh Hill.

DURING the past few years motor cycle designers have been devoting their energies to producing machines of light weight and small engine capacity, but none the less capable of dealing with all road conditions encountered by the average rider.

For the ultra-lightweight there exists a very extensive market, composed largely of the people who at present ride ordinary bicycles.

It is extremely difficult to convince these prospective motor cyclists that this class of machine possesses the power and stamina necessary effectively to perform the work that it will be called upon to do.

With a view to providing proof that every confidence could be placed in these Lilliputians, a very severe trial took place on Saturday, arranged by the Excelsior Motor Co., Birmingham.

A Two-Mile Hill.

Bwlch-y-Groes was chosen as the testing ground, and, to the reader who is not familiar with this famous Welsh hill, it may be stated that the total length is some two miles; the average gradient is approximately 1 in 6, and the steepest portion has a gradient in the neighbourhood of 1 in 4.

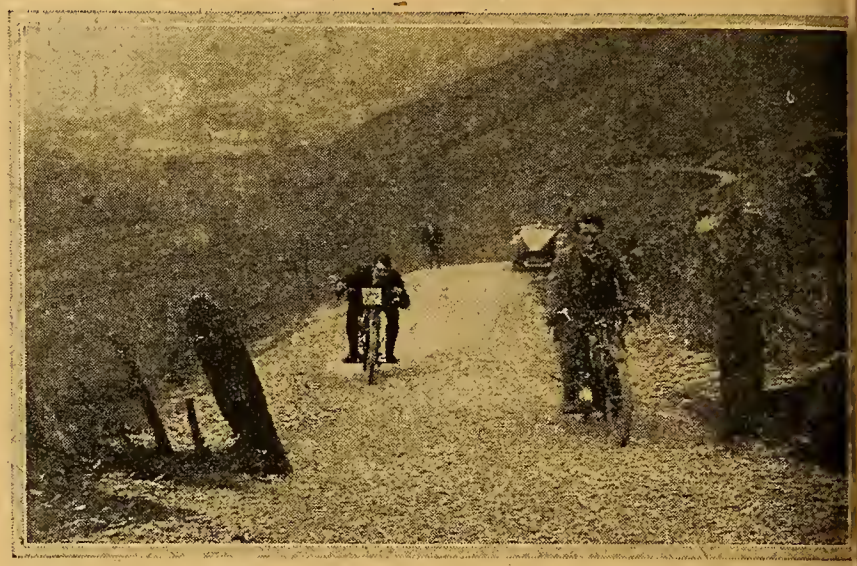
Excelsior Junior machines were those to be tested over this formidable stretch of mountain road. A Villiers engine having bore and stroke of 55 mm. × 62 mm., giving a cubic capacity of 147 c.c., supplies the power, the Villiers flywheel magneto and a Mills carburetter being fitted. A chain transmits the power to an Albion two-speed gear box, the final drive being by belt. Top and bottom gear ratios of 9 to 1 and 14¾ to 1 respectively were employed; the total weight was 112 lb.

It was hardly to be expected that so diminutive a machine would make a clean ascent of so stiff a gradient. Nevertheless, the Excelsior made no fewer than ten absolutely clean and comparatively fast climbs, and apparently it would have gone on doing so indefinitely.

It must be borne in mind that the machines were not specially tuned for the event; indeed, two of the three used had not previously been on the road. One of these had to be robbed of its piston to replace another through the top of which a hole had been knocked by the inadvertent fitting of a long reach plug.

Good Ascents.

Neville Hall, V. Hawkins, and R. Scott-Walford were the three riders who took part in the event. *The Motor Cycle* representative also drove one of the machines in one of the climbs mentioned, and the manner in which it toyed with the gradient was astounding. Once on the move, top gear was engaged and held on to, until the steepest portion was reached. Then, after travelling for about 150 yards in bottom gear, top gear was again engaged and the little engine easily vanquished what remained of the hill, despite the presence of a strong head wind.



No longer can a rider boast of climbing the formidable Bwlch-y-groes on a 500 c.c. machine, for these two 147 c.c. Excelsiors made several clean ascents.

A Splendid Performance.

To R. Scott-Walford goes the honour of being the first to climb Bwlch-y-Groes on a machine of less than 150 c.c. capacity, and we cannot emphasise too greatly the importance and magnitude of this performance. *The Motor Cycle* has many times voiced its opinion that a great future awaits the ultra-lightweight. This new Excelsior model will do much to popularise this class of machine, and all concerned are to be congratulated on producing a mount of such tiny proportions that is capable of rendering so good an account of itself.

Making light of a famous Welsh test hill. One of three 147 c.c. Excelsiors going well on Bwlch-y-groes which has an average gradient of 1 in 6.

PRE-SHOW ACTIVITY AT BROOKLANDS.

Records by Le Vack, Emerson, Horsman and Longman after a Week of Fog.

THERE should have been a busy week amongst the record-breakers at Brooklands last week. It was, however, a case of man proposing and the weather disposing, for thick fog enveloped the track and compelled inactivity during the first four days of the week.

On Friday morning the thick fog thinned to a haze, and Le Vack brought out his big Zenith-J.A.P. with an eye to the 50 miles, 100 miles, and one hour records in class E. He has equipped his machine with one of the largest—and certainly the best supported—tanks yet seen at the track. It holds five gallons, and is carried on a platform brazed to the undertank tube. Constructed in two separate compartments, the twin tanks are bonded together by metal straps.

The atmosphere was rather damp, and about as bad as it could be from the point of view of carburation, with the result that Le Vack's lap speeds were hardly ever in excess of 90 m.p.h. In consequence, he failed to secure the 50 miles record, but the 100 miles and one hour records fell to him as follows :—

100 MILES.—1h. 6m. 43.4s.
=89.92 m.p.h. (144.68 km.p.h.).
1 HOUR.—89 miles 1,591 yards
=89.90 m.p.h. (144.71 km.p.h.).
PREVIOUS RECORDS.—100 Miles, C. F. Temple (Harley-Davidson), 87.76 m.p.h.; 1 Hour, C. F. Temple (Harley-Davidson), 87.52 m.p.h.

The following day (Saturday) was a day of bad luck, although the weather conditions were slightly more favourable.

A famous speedman at Brooklands. H. Le Vack examining the cylinder of his machine after many gruelling circuits of the track.

J. L. Emerson started the proceedings about 9.30 a.m. by setting out in quest of Class C records up to six hours on his 494 c.c. Douglas. He went well for about an hour and a half, when trouble developed with the valve gear of his back cylinder; he had, however, improved on the existing 100 miles record by 32 secs., his time being :—

100 MILES.—1h. 20m. 14.22s.
=74.77 m.p.h. (120.33 km.p.h.).
PREVIOUS RECORD.—R. N. Judd (490 c.c. Norton), 73.88 m.p.h.

Emerson's ill-luck was shared by others. Le Vack started on his big machine to go for the 50 miles record which he had missed on the previous day, and for many laps he made a really brilliant showing. He led off by a standing start lap at 85.07 m.p.h., and followed it up by averaging 97.25 m.p.h. over the second lap. Then he settled down to a steady lap average of about 95 m.p.h., whilst observations were taken of his course in connection with the controversy recently aired in *The Motor Cycle* regarding the calculation of motor cyclists' speeds on a basis of the 10 foot line. At no point of the course did Le Vack approach within 75 feet of the inner edge of the track.

When only five laps remained to be covered the engine manifested a mysterious "drying up," and Le Vack pulled in to change the plugs. Once again he settled down to 95 m.p.h. laps; but still he could not out-distance bad luck, which overtook him on the 17th lap, when the exhaust valve cap (of aluminium) blew out of the rear cylinder. This caused him to abandon his attempt on the big machine for the day : all he secured for his exhausting effort was the standing ten-mile record, as follows :

STANDING 10 MILES.—6m. 26.90s.
=93.04 m.p.h. (149.74 km.p.h.).
PREVIOUS RECORD.—H. Le Vack (998 c.c. Zenith-Jap), 91.56 m.p.h.

However, Le Vack had his 350 c.c. New Imperial and sidecar ready, and, after a brief rest, he started out to attack the standing ten-mile record in Class B/S. His luck was even worse this time, for he did not complete a single lap. Gear box trouble developed, and, when he reappeared at the timing box, he was being towed.

Next, C. G. Pullin thought he would try *his* luck on a 350 c.c. Douglas outfit, but the fickle goddess likewise refused to smile on him, and he was laid low very soon after the start with frame trouble.

Victor Horsman brought a very imperfect day to a more favourable close by lowering the standing ten-miles record in Class C on his overhead valve 490 c.c. Norton. Making a really excellent start, he covered the standing lap at 81 m.p.h., and put up the following record :—

STANDING 10 MILES.—7m. 5.79s.
=84.55 m.p.h. (136.06 km.p.h.).
PREVIOUS RECORD.—G. Dance (499 c.c. Sunbeam), 82.69 m.p.h.

On Monday last efforts were continued in the same high pitch, and several short-distance records were quickly broken, as under :—

CLASS F (600 C.C. SIDECARS).
V. Horsman (Norton sc.).

	Time. Secs.	Speed. M.p.h.	Km.p.h.
Flying kilometre ...	27.55	81.19	130.67
Mean speed, flying kilometre	27.87	80.24	129.15
Flying mile	44.55	80.81	130.05
Mean speed, flying mile	45.05	79.91	128.60

Horsman also broke the standing start mile record at 63.75 m.p.h.

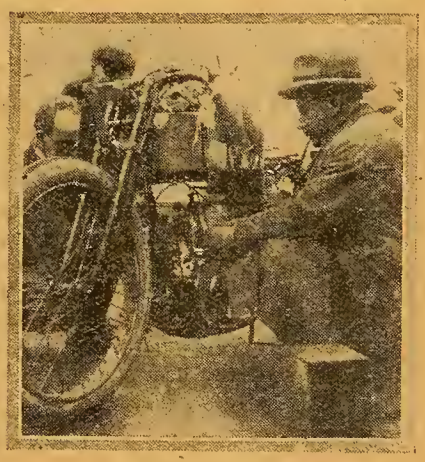
CLASS E (500 C.C. SIDECAR).
V. Horsman (490 Norton).

	Time. Secs.	Speed. M.p.h.	Km.p.h.
Flying kilometre ...	23.75	94.18	151.58
Mean speed, flying kilometre	23.90	93.59	150.62
Flying mile	38.45	93.63	150.62
Mean speed, flying mile	38.82	92.72	149.21

CLASS B (350 C.C. SOLO).
F. A. Longman (349 A.J.S.).

	Time. Secs.	Speed. M.p.h.	Km.p.h.
Standing start, kilometre	36.05	62.06	99.86
Standing start, mean speed, kilometre ...	36.47	61.33	98.68
Standing start, mile ...	53.75	66.97	107.77
Standing start, mean speed, mile ...	54.85	65.63	105.62

Electrical timing was used for all the last-mentioned records.



After every successful record attempt careful measurements are taken of the engine. A. V. Ebblewhite busy examining a record-breaker's mount.

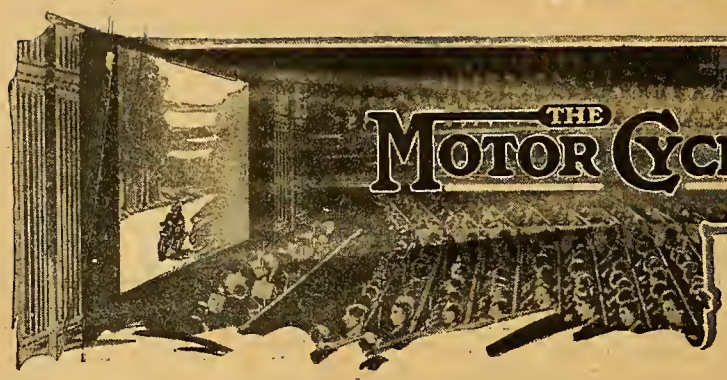
YORKSHIRE CENTRE DINNER.

A GATHERING of 80 members and guests, with a sprinkling of ladies, attended the second annual dinner of the Yorkshire Centre (A.C.U.) on Saturday, the 18th inst. Proceedings were of a friendly and cheerful nature, and the speeches, not without humour, were interspersed with prize-giving and music.

There were present amongst the guests Major Dixon Spain (A.C.U.), Mr. B. Jeffreys (Chairman, Northern Centre), representatives of the daily and technical Press, and many well-known riders.

The Yorkshire centre numbers thirty-two clubs, and is justly proud of its large membership and good trials organisation, which were attributed to the keenness and efficiency of the club officials. Fourteen of the incorporated clubs were represented.

It was pointed out that the nature of the surrounding country facilitated the laying out of thoroughly sporting courses, and members were assured that, in spite of the difficulties of 1922 trials routes, the limits in this direction had not yet been reached, for the officials had in mind new hills, new colonial sections, and new water-splashes.



THE MOTOR CYCLE FILM

Next Week's Release in London. Provincial Clubs Rapidly Booking Dates.

INSTITUTED last year, *The Motor Cycle* film was a huge success. Over one hundred clubs availed themselves of our offer of its loan, and it was thus the means of bringing a pictorial survey of the year's motor cycle activities before that vast body of motor cyclists which is unable to attend the important events which take place in Great Britain, the Isle of Man and France.

Planned with the definite intention of improving upon the previous effort, *The Motor Cycle* film of 1922 events has been made more comprehensive, and its wider range will appeal to all.

After the film has been shown in London (its exhibition at the Broadway Cinema, Hammersmith, terminates on the evening the Show closes) it will start on its journey among the provincial clubs for their Cinema Nights during the winter months. No payment is required from the clubs.

The time occupied to show the film is about forty minutes; it includes incidents in the Senior and Junior Tourist Trophy Races in the Isle of Man, the Motor Cycling Club's Team Trial for *The Motor Cycle* Cup, the M.C.C. London-Land's End Trial (Beggar's Roost), the M.C.C. London-Edinburgh Run ("The Struggle" on Kirkstone Pass), the Motor Cycle and Car Grand Prix Races at Strasbourg, and some amusing examples of American hill-climbing and speed events. The performances of the heavy American twins on a hill so steep that when a rider fails the machine falls over backwards are particularly thrilling.

Actually, two identical films will be in circulation, one touring the southern districts of Great Britain and the other the North of England and Scotland.

Many applications for dates have been received, and it is urgently hoped that when dates are allotted secretaries of clubs will reply by return of post to say if these are convenient. It is most essential that, should a club need the film for more than one night, early application should be made.

A feature of the circulation of the last film was the smoothness of its transfer from one club to another; it was only by strict adherence to time-table and forwarding instructions on the part of all who handled it that its successful tour was assured. Every club secretary concerned earned our admiration on this score.

Already a great many applications have been received, and some thirty-six clubs have been allotted definite dates. The following clubs will be exhibiting the film during the week after the Show :—

(S) Thursday, December 7th. Aberdare and District M.C.C. Maggar's Kosy Kinema, Market Street, Aberdare.
(S) Friday, December 8th. Blaina and District M.C.C. Gaiety, Blaina.
(N) Thursday, December 7th. Widnes M.C. Co-operative Hall, Widnes.
(N) Saturday, December 9th. County High School Old Boy's Club, 16, Market Street, Altrincham.

THE MOTOR CYCLE FILM.

There will only be one appearance o "The Motor Cycle" film in London before it is released to clubs.
For one week, commencing November 27th (Show Week), the film will be shown at

The Broadway Cinema, Hammersmith.
(Five minutes from Olympia).

Prices of Admission: 2s. 4d., 1s., and 8d.
2s. 4d. seats may booked in advance. Tel. No.: Hammersmith 718.

INADEQUATE SCOTTISH ROADS.

THAT there are some 230,000 miles of main and secondary roads in Scotland carrying 4,500,000 passengers and 1,200,000 tons of goods annually—three times the amount borne by the railways—was emphasised by Mr. Thomas Pearson, A.M.I.E.E., in a paper before the Scottish Engineers' Association in Glasgow on November 16th, entitled: "Some Highways and History of Scotland."

The North-Western Highlands of Scotland, it is not always realised, are perhaps the oldest part in the geography of Europe. The curious configuration of the country is due to shrinkage and swelling of the earth's crust, so that a great many parts of what is now the Highlands were once at the bed of the ocean, and *vice versâ*. There is a record of fossil shells having been found on the mountains far away from the sea as long ago as 500 B.C. This does not mean that the ocean level was necessarily higher than it is to-day, but that the hills have been forced up. No doubt the sea levels and depths have gone down. In Scotland the roads are scarce and they follow the great valleys of the country. They have served their day and generation. The advent of heavy modern traffic has changed everything. As the old roads failed when coaches were first put upon them, so are the present roads failing to stand up to modern traffic.—E. M. W.

A SURPRISING PERFORMANCE.

Harper Runabout (269 c.c. Three-wheeler) covers 42½ Miles in the Hour at Brooklands.

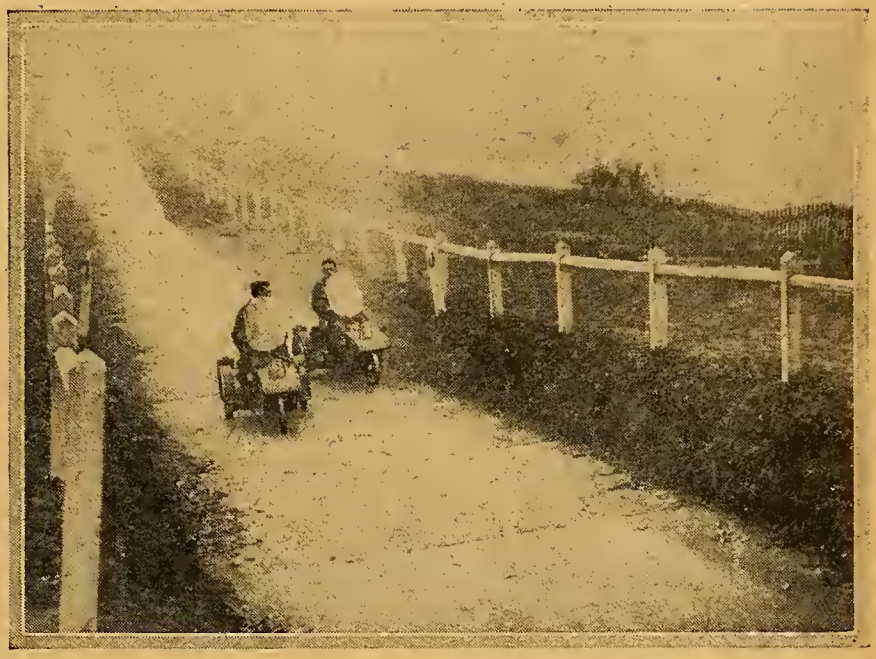
IN this year's Scottish Six Days Trials the remarkable capabilities of the little Harper Runabout were the subject of much comment. But even so, few riders of ordinary motor cycles would have credited its ability to cover over forty miles in one hour on Brooklands track.

Actually, on November 16th, R. O. Harper, on a standard machine in full touring order, equipped with windscreen, electric and acetylene lighting, spare wheel and tyre, tools, and spare tin of oil (total weight, with driver, 534 lb.), covered 42½ miles in the hour, under A.C.U. observation. The fastest lap was run at the rate of 43.16 m.p.h., and the 269 c.c. Villiers engine ran faultlessly throughout, driving the little three-wheeler at a speed not equalled by many touring motor bicycles of similar capacity.

Efficient Transmission.

Much of the success of the Harper Runabout may be ascribed to its excellent springing and the efficiency of the transmission; the former quality in particular being invaluable, as the wheels do not bounce and spin when passing over irregularities in the road or track.

After the one-hour run at speed the machine made two ascents of the test hill from a standing start, the second climb being with an extra adult passenger.



After making nearly sixteen circuits of Brooklands track in one hour (42½ miles), R. O. Harper (269 Harper Runabout) made several clean ascents of the test hill with and without a passenger. Two of the machines ascending the hill in company.

MOTOR CYCLES AT OLYMPIA.

The Various Types of Motor Cycles Classified.

ULTRA LIGHTWEIGHTS.

	Stand		Stand
Bown	102	J.E.S.	38
Coventry-Eagle	43	McKenzie	145
Cykelaid	158	Metro-Tyler	149
Diamond	93	Omega	140
Economic	45	Peugeot	22
Excelsior	98	Ray	16
Grigg	35	Sun	100
Hack	117	Victoria	62
Hazlewood	130	Weaver	164
Hobart	101	Wolf	125
J.D.	74		

TWO-STROKE MOTOR CYCLES (200 to 250 c.c.).

Bown	102	Metro-Tyler	149
Calthorpe	104	Monopole	37
Campion	72	Ner-a-car	31
Cedos	80	New Hudson	142
Cotton	23	P.V.	19
Coventry-Eagle	43	Powell	167
Enfield	107	Radco	135
Excelsior	98	Sirrah	164
Grigg	35	Sparkhrook	137
Hobart	101	Sun	100
James	75	Velocette	129
J.E.S.	38	Victoria	62
Levis	68	Wolf	125

FOUR-STROKE MOTOR CYCLES (Not exceeding 250 c.c.)

Ariel	106	New Imperial	94
Campion	72	O.K.	79
Cotton	23	Rover	131
Dot	59	Sirrah	164
Hobart	101	Weatherell	17
Metro-Tyler	149	Wolf	125

TWO-STROKE SINGLES. (251 c.c. to 350 c.c.).

Alecto	25	G.S.D.	44
Allon	73	Ivy	64
Calthorpe	104	O.K.	79
Chater-Lea	78	Omega	140
Clyno	27	Orbit	24
Connaght	132	P.V.	19
Grigg	35	Victoria	82

FOUR-STROKE SINGLES. (251 c.c. to 350 c.c.).

	Stand.		Stand.
A.J.S.	67	Massey	29
Allon	73	Matchless	71
B.S.A.	96	Mohawk	92
Beardmore	109	Monopole	37
Bown	102	New Hudson	142
Bradbury	108	New Imperial	94
Campion	72	O.E.C.	40
Chater-Lea	78	O.K.	79
Cotton	23	Omega	140
Coventry-Mascot	124	Orbit	24
Diamond	93	P.V.	19
Dot	59	P. and P.	146
Edmund	136	Quadrant	161
Excelsior	98	Raleigh	99
F.N.	141	Rex-Acme	133
Francis-Barnett	81	Sheffield-Henderson	167
H.B.	121	Sparkhrook	137
H.T.	46	Sun	100
Hawker	36	Sunbeam	110
Hazlewood	130	Triumph	128
Henley	120	Verus	164
Hobart	101	Victoria	62
Humber	126	Wolf	125
Ivy	64	Weatherell	17
James	75	Zenith	19
Martinsyde	30		

SINGLE-CYLINDER MOTOR CYCLES (500 c.c.)

Ariel	106	Quadrant	161
B.S.A.	96	Rex-Acme	133
Beardmore	109	Rover	131
Duzmo	15	Rudge	97
New Hudson	142	Sunbeam	110
Norton	103	Triumph	128

V-TWIN MACHINES (Under 600 c.c.).

Indian	63	Martinsyde	30
James	75	P.V.	19

SINGLE-CYLINDER MOTOR CYCLES (Over 500 c.c.).

	Stand.		Stand.
Ariel	106	New Hudson	142
B.S.A.	96	Norton	103
Beardmore	109	P. and M.	77
Bianchi	156	Powell	167
Bradbury	108	Rex-Acme	133
Campion	72	Sunbeam	110
Chater-Lea	78	Triumph	128
Hawker	36	Victoria	82

FLAT TWINS.

Brough	60	Humber	126
Coventry-Victor	28	Raleigh	99
Douglas	61	Wooler	18
Harley-Davidson	34	Zenith	19

V-TWINS (Over 600 c.c.).

A.J.S.	67	Hazlewood	130
American X	123	Indian	63
Ariel	106	James	75
B.S.A.	96	Lea-Francis	95
Bianchi	156	Martinsyde	30
Bradbury	108	Matchless	71
Brough Superior	89	Metro-Tyler	149
Campion	72	Mohawk	92
Chater-Lea	78	O.E.C.-Blackburne	40
Clyno	27	P.V.	19
Coventry-Eagle	43	Rover	131
Dot	59	Rudge	97
Enfield	107	Sunbeam	110
Excelsior	98	Victoria	62
G.S.D.	44	Weatherell	17
Harley-Davidson	34	Zenith	19

OTHER MOTOR CYCLES.

Dunelt (500 c.c. two-stroke single)	166	Henderson (4-cyl.)	123
F.N. (4-cyl.)	141	Scott (two-stroke twin)	136

THREE-WHEELERS.

Harper	122	New Hudson	142
L.S.D.	169	Scott Sociable	168
Melen	105	T.B.	57
Morgan	139	Xtra Car	47

FLOATLESS AUTOMATIC CARBURETTER.

Ingenious Pilot Jet and Choke in Wheeler Design.

FLOATLESS carburetters are by no means common, but, as was mentioned at the time, Engineer-Commander S. G. Wheeler, R.N., who this year won the Arbuthnot Trophy Trial, made use of one.

The carburetter which he employed was the invention of Mr. H. D. Wheeler, 1, Henley Road, Norwich, who is endeavouring to place it on the market.

Variable Streamline Choke Tube.

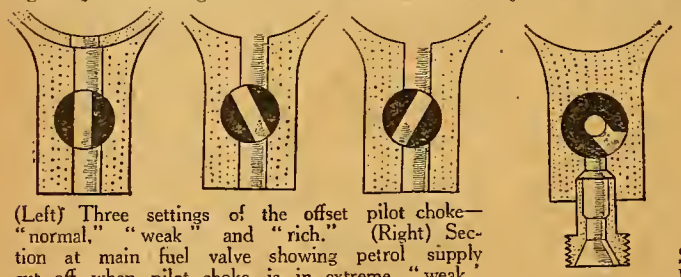
By using a variable streamline choke tube in conjunction with a variable jet controlled by a single main throttle the automatic and correct adjustment of the mixture is obtained at varying throttle openings and varying engine speeds, while a small pilot choke is provided for slow running in neutral. The real choke is formed by a venturi-shaped liner fixed in a straight barrel along which is slid a conical-headed streamline plunger which finds its seating in the venturi liner, and also acts as the throttle. As this plunger is withdrawn from its seating on the liner an annular passage of regularly increasing cross-sectional area is left between the two surfaces. This forms a variable choke, and the effective area at the throat of the venturi tube ranges from nothing when the plunger is in to full bore when it is fully withdrawn. Air is admitted round the base of the plunger through suitable orifices.

Partially vaporised petrol mixed with a small amount of air is supplied through a ring of distributing jets disposed round the throat of the main venturi and forming a diffuser. These jets are fed from the small pilot choke, while the main variable jet leads into the same choke. The jet is regulated by a needle valve carried from a bracket on the plunger or throttle and moving in unison with it, consequently its effective area is varied automatically in proportion to that of the main venturi. The ring of distributing jets or diffusers is placed so that the jets are just not sealed by the plunger when it is home on its seating, thus supplying sufficient mixture for slow running.

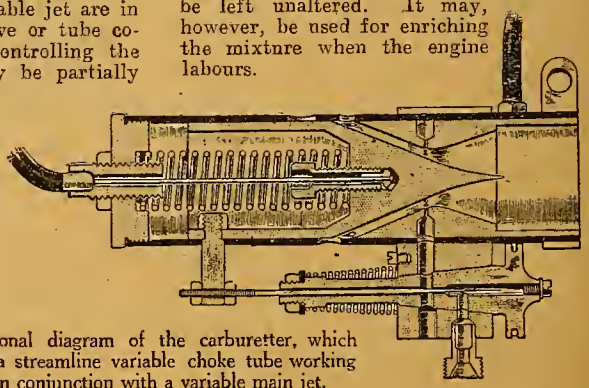
The pilot choke and variable jet are in the nature of a rotary valve or tube coaxial with the needle controlling the main jet. This tube may be partially rotated and is so arranged that when turned in a certain direction the pilot choke is throttled mainly at its outer end, increasing the suction on the jet and enriching the mixture. If the tube is turned in the other direction, the pilot choke is throttled mainly at its inner end, thus decreasing the suction on the jet and weakening the mixture, or if turned still further in this direction, the supply of petrol is cut off. This prevents leakage when the engine is standing and also permits of the opening of the main throttle for supplying air to the engine when coasting downhill.

Automatic Action.

In ordinary use the carburetter is automatic and is worked by the main choke control only. The mixture control lever should be set to "rich" position for starting the machine from cold and brought back to normal or weak when the engine is warmed up, and it can then be left unaltered. It may, however, be used for enriching the mixture when the engine labours.



(Left) Three settings of the offset pilot choke—"normal," "weak" and "rich." (Right) Section at main fuel valve showing petrol supply cut off when pilot choke is in extreme "weak" position.



Sectional diagram of the carburetter, which has a streamline variable choke tube working in conjunction with a variable main jet.

B.M.C.R.C. MEMBERS' DINNER.

FOUNDED thirteen years ago, the British Motor Cycle Racing Club possesses the distinction of being the sole motor cycle club in England the object of which is to develop track racing. It has had a wonderful career, and has done valuable work towards the development of motor cycles. It must not be forgotten that the present classification of motor cycles in competitions is due to its foresight and enterprise.

Last week the club held its annual members' dinner at the Holborn Restaurant, where the chair was occupied by Prof. A. M. Low, D.Sc. There were only three speeches, and as a good entertainment was provided the evening was a bright and merry one, despite the foggy conditions outside, which doubtless interfered with the attendance.

After proposing the toast of "The King," the chairman in a brief but witty speech proposed "The Club," which, he had been told by Mr. Ebblewhite, held 144 out of the total of 149 world's records. (These British successes will probably be reduced in number if the recent Garelli Italian records are passed by the F.I.C.M.)

Response to the toast was made by Mr. D. H. Noble. Later during the evening the principal prizes won during the 1922 season were presented.

It was announced by Mr. T. W. Loughborough. hon. sec., that the 1923 Aggregate Cup would be presented by Mr. Geo. Pettytt. A generous offer was made by Mr. A. Mellano of a 250 guinea cup for a race at Brooklands next year, the conditions to be decided later.

ITALIANS CLAIM WORLD'S RECORD.

CONTINENTAL nations have begun to realise the value of a good track to the motor industry, and it is only since the building of the Italian Motodrome at Monza that serious attempts have been made to lower the English records. This has been done by the Garelli firm, which claims several world's records. The machine used was the same which won the International Grand Prix on the occasion of the opening of the Monza track. The riders were Visioli, who won the 350 c.c. class in the French Grand Prix this year, and Ferragni, who came in second in the 350 c.c. class in the Italian Grand Prix.

Timing was carried out by the official timekeeper of the Italian M.C.C., and the course was measured by the official measurer.

500 Miles at 63 m.p.h.

The following are the results of the attempts :

		Average speed.
100 Km. ...	59m. 17⅘s. ...	62.84 m.p.h.
100 Miles ...	1h. 36m. 10s. ...	62.408 m.p.h
200 Km. ...	1h. 59m. 21s. ...	62.817 m.p.h.
300 Km. ...	2h. 59m. 47.4s. ...	62.112 m.p.h.
200 Miles ...	3h. 12m. 40⅕s. ...	62.232 m.p.h.
400 Km. ...	3h. 0m. 59.45s. ...	62.104 m.p.h.
300 Miles ...	4h. 47m. 37s. ...	62.722 m.p.h.
500 Km. ...	4h. 57m. 24s. ...	62.874 m.p.h.
600 Miles ...	5h. 55m. 15⅗s. ...	63 m.p.h.
400 Miles ...	6h. 19m. 58s. ...	63.18 m.p.h.
700 Km. ...	6h. 51m. 28s. ...	63.4 m.p.h.
800 Km. ...	7h. 50m. 3s. ...	63.4 m.p.h.
500 Miles ...	7h. 52m. 45s. ...	63.4 m.p.h.

If these records are allowed the Garelli will have beaten the 350 c.c. world's records for 300, 400, and 500 miles, and four, five, and six hours, as well as the 400 and 500 miles in the 500 c.c. class.

THREE-SPEED SCOTT AT LAST.

Constant-mesh Gear Box, with Clutch and Kick-starter; Quickly Detachable Rear Wheel; Internal Expanding Brakes.

FOR some time the three-speed Scott has been spoken of, and it has been mentioned in our pages in reports of various north country trials this year.

At last it is to be marketed (£110 solo, £135 with sidecar), and it will be on view at Olympia next week.

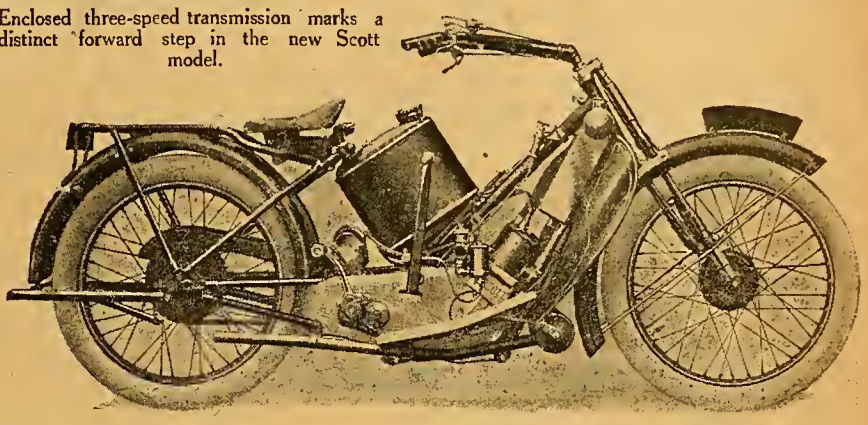
Unaltered in main details, the twin two-stroke (73×63.5 mm.=532 c.c.) engine is bolted rigidly to a well-ribbed aluminium tray, on which is carried the three-speed gear box, clutch, and kick-starter. The box is of the constant mesh gear type having a single moving sleeve and an overhung dog on middle gear. This dog, however, is particularly well supported on a large bronze bush.

Unusual Lay-out.

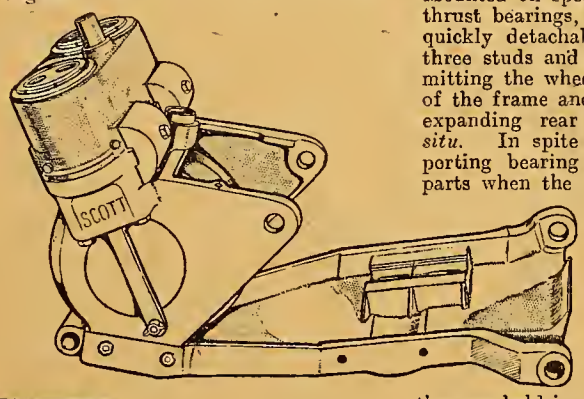
The most unusual feature in the new gear unit is that the driving sprocket for the rear chain—which lies outside the primary chain—is mounted in a large radial ball bearing carried in an aluminium support bolted to the tray and separate from the box. This sprocket is splined to its shaft, and its support must be slacked off when the gear box is moved for the purpose of adjusting the chain. This, however, is a remarkably simple matter, since the nuts are easily accessible.

Working through the layshaft and primary constant mesh wheels, the kick-starter is very light in action, and it is difficult to realise that one is starting a powerful twin engine. On top of the gear box and driven from a sprocket forming part of the clutch housing is the magneto, the chain tension being easily adjustable, while room is left for a Magdyno if required.

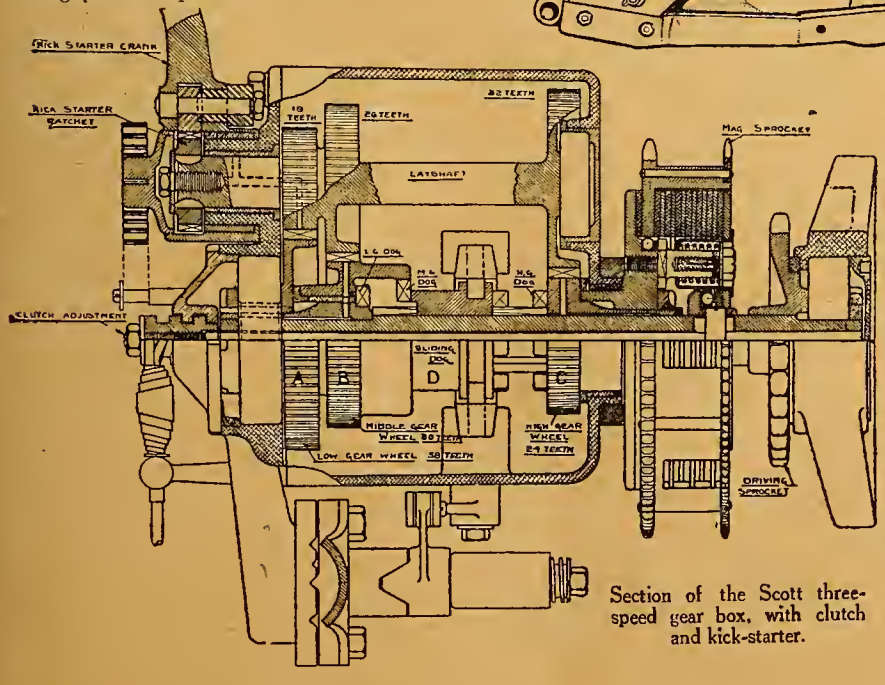
Enclosed three-speed transmission marks a distinct forward step in the new Scott model.



Slight modifications to the frame have been necessitated by the new gear box, but though it is wider behind the engine it retains the characteristic Scott lines. It is still constructed of straight tubes throughout.



Base plate mounting for the gear-box and engine on the three-speed Scott. The new transmission has not necessitated engine modifications.



Section of the Scott three-speed gear box, with clutch and kick-starter.

Both hubs are entirely new, and an extra large Webb expanding brake is included in the front wheel, the anchor plate being arranged to slide off its stop when the front wheel is withdrawn. Mounted on special Hoffmann radial and thrust bearings, the rear wheel is of the quickly detachable type, the removal of three studs and a knock-out spindle permitting the wheel to fall away well clear of the frame and mudguards, leaving the expanding rear brake and sprocket *in situ*. In spite of this there is no supporting bearing for the last mentioned parts when the wheel is withdrawn, and they are held in place chiefly by the brake anchorage. Re-erection of the wheel is simple, an arrangement of tapers making the spindle self-centring. The ball bearings are packed with grease, and a special method of refilling is provided, though this should not be required for five or six thousand miles, since the hubs are very well protected by felt washers.

Considerable improvements have been made in the mudguarding, though the previous Scott models have lacked little in this respect.

In addition to the seven-inch flat guards with gutters on either side, the legshields have been carried further up and reach to the very top of the radiator tank. The footboards also are neater and are carried on a new type of spring which is claimed to be unbreakable. A new oil filler has been introduced extending forward to a more convenient position, and allowing oil to be poured in at a reasonable rate, and the petrol capacity has been increased to three gallons.

On the road the new three-speed Scott with three-inch tyres is the very height of luxury; it is smooth to a quite extra

Three-speed Scott at Last.—ordinary extent, the new gear appearing to dissipate the slight snatch which is sometimes apparent in the two-speed model when running slowly "on top." Steering is as near perfection as can be desired; the gear change is convenient, and the clutch is sweet in action, though in the case of the machine we tried it was inclined to drag to a slight extent. On middle gear of approximately 6 to 1 we easily surmounted a hill of 1 in 6 with no preliminary rush, and the 12 to 1 low gear gives one a feeling of confidence on the freakiest of freak hills. For solo use a top of 4.1 to 1 is fitted, but slightly lower ratios are fitted for sidecar work. Both front and rear brakes are smooth and powerful enough for a passenger outfit or any gradient.

The Scott Squirrel, except for a slight inclination of the sparking plugs to allow clearance for the radiator, remains unchanged. The price is now £89.

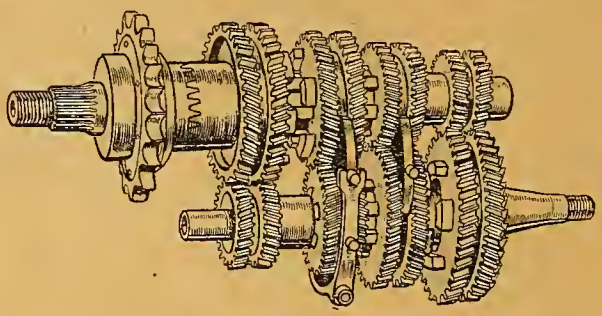
RUDGE FOUR-SPEED GEAR.

New Box Available on 499 c.c. and 998 c.c. Chain-driven Models.

IN the future both the twin and single-cylinder Rudge machines will be available fitted with a four-speed gear box. Neatness and compactness of design characterise the new box.

Double helical teeth are employed, all gears being constantly in mesh, and ball and roller bearings are fitted to all parts, with the exception of one end of the kick-starter shaft, which runs in a plain steel bush.

Eight pinions are used in the box. One is fixed on the driving sprocket sleeve, and it meshes with one fixed on the layshaft. On the other side of the main shaft is fixed a small pinion meshing with another running freely on the layshaft. Between these two pairs of wheels are two other pairs of pinions sliding on splines which are suitably removed from those parts of the shafts on which the wheels must run free in certain gear positions. Both sets of wheels slide in pairs.



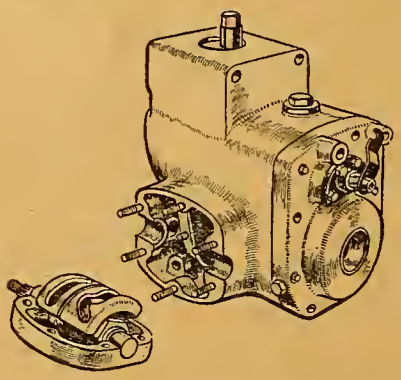
Main and layshafts of the Rudge four-speed gear; the kick-starter mechanism and clutch are not shown. The use of double helical pinions is unusual in motor cycle practice; it should be conducive to extremely silent running.

Selective Action.

Top gear is obtained by bringing the left pair to the extreme left, and the main shaft wheel engages the dogs of the sprocket sleeve pinion, giving a solid drive. By sliding the pinions to the right the layshaft wheel engages splines on the layshaft, and the fixed wheel thereon drives the sprocket sleeve pinion through its fixed wheel; this is the third speed.

When second speed is needed, the left pair of pinions return to their midway neutral position, and the second pair is brought to the extreme left, both pinions being on splines. Moved half-way to the right, the main shaft pinion comes on to a free portion of the spindle, and a pinion dogs engage those on the layshaft free pinion and the low gear drive is obtained from the main shaft fixed wheel to the layshaft fixed wheel and the sprocket sleeve.

The selectors are two segments in which are cut cam slots so arranged that one is in neutral while the other moves the gears, and *vice versa*. Each cam slot engages a pin and roller on the forks which move the striking plates inserted in the grooves between the teeth of the sliding pinions. By removing a cover plate the selector mechanism is readily accessible.



On the Rudge four-speed gear box the selector mechanism may be removed with the inspection cover while the box is in position on the frame.

Carried in the hollow layshaft is the kick-starter shaft, which is well supported by roller bearings at one end and a plain steel bush at the other. All the kick-starter mechanism is enclosed.

Control Mechanism.

Mounted on a bracket brazed to the front down tube of the frame is a gate change and lever, which is adjustable for position. Running from this bracket is a long connecting rod which operates a bell crank on a bracket mounted on the seat tube. This bell crank in turn actuates a link connected to a lever on the selector shaft.

Standard gear ratios employed on the single-cylinder machine are: 16.3 to 1, 11 to 1, 7.15 to 1, and 5 to 1. On the 998 c.c. twin the gear ratios are: 13 to 1, 8.8 to 1, 5.7 to 1, and 4 to 1.

A LIGHTWEIGHT CARRIER TRICYCLE.

Melen Tradesman's Delivery Outfit with 297 c.c. two-stroke Engine.

THOSE tradesmen, who desire a vehicle that is capable of handling light goods at a minimum cost, will be attracted by the three-wheeler produced by F. and H. Melen, Ltd., Sherlock Street, Birmingham.

Two sections of angle steel, bridged at intervals by cross members, form the frame. The side members are splayed outwards at the front to accommodate the box carrier. The saddle is mounted on an upright structure at the rear, a similar structure carrying the handle-bar.

The steering pillar extends downwards below the frame where it is linked to two arms which are attached at their forward extremities to the tie rod, the latter being carried on the steering arms on the swivel joints at each end of the front axle. This axle is suspended from the frame by four coil springs which insulate the carrier box from road shocks.

The wheels have 24in. × 2½in. tyres, and the mudguards are of wide section.

Two brakes are fitted both operating on the rear driving wheel. The foot brake is an external contracting band, while the hand brake consists of a pad operating on the inside of the drum. The power unit is a union two-stroke of 297 c.c. equipped with an Amac carburetter and a C.A.V. magneto. The primary drive is by chain to a three-speed Burman gear box with clutch and kick-starter. The final drive is also by chain. A point of interest is that the engine and gear box may be removed from the frame by merely removing four bolts.

A large capacity box is mounted forward of the handlebar, its carrying capacity being in the neighbourhood of 1½ cwt. An illustration appears on p. 758.

CLUB NEWS

Dewsbury and District M.C.C.

In future the above club will be known as "The Yorkshire Heavy Woollen District M.C.C." Mr. F. Bray, 64, Warren Street, Savile Town, Dewsbury, still remains hon. secretary.

Bristol M.C.C.

Results of the motor cycle classes of the handicap hill-climb, held recently (the subject of a recent article), are as follows:—

SECTION I., TIME.

CLASS 1.—1, K. J. Woods (348 Wilkin).

CLASS 2.—1, J. James (249 J.A.P.); 2, F. Chapman (211 Royal Enfield). 3, H. Alford (211 New Hudson).

CLASS 3.—1, G. Tucker (349 Cotton); 2, A. Tutton (349 Massey-Arran) tied with R. Lawson (348 Douglas); 3, A. R. Passey (348 Douglas).

CLASS 4.—1, A. Tuttnn (349 Massey-Arran); 2, R. Lawson (348 Douglas); 3, B. New (348 Monopole).

CLASS 5.—1, C. Sgonina (499 Sgonina Special); 2, E. W. Spencer (494 Douglas); 3, R. Houghton (492 Sunbeam).

CLASS 6.—1, R. Houghton (492 Sunbeam); 2, E. C. Collins (490 Norton); 3, R. A. Rioch (492 Sunbeam).

CLASS 7.—1, C. Sgonina (499 Sgonina Special); 2, V. Anstice (494 Douglas); 3, E. W. Spencer (494 Douglas).

CLASS 8.—1, R. Honghton (492 Sunbeam); 2, E. C. Collins (490 Norton); 3, R. A. Rioch (492 Sunbeam).

CLASS 9.—1, V. Anstice (494 Douglas); 2, E. W. Spencer (494 Douglas); 3, C. Sgonina (499 Sgonina Special).

CLASS 10.—1, R. Houghton (492 Sunbeam); 2, E. C. Collins (490 Norton); 3, R. A. Rioch (492 Sunbeam).

CLASS 17 (*Sidecars*).—1, V. Anstice (494 Douglas sc.); 2, G. Tucker (490 Norton sc.).

CLASS 18 (*Sidecars*).—1, S. Hodges (398 A.B.C. sc.); 2, F. Cooke (499 Sunbeam sc.); 3, R. Fowcraker (492 Sunbeam sc.).

CLASS 19 (*Sidecars*).—1, V. Anstice (494 Douglas sc.); 2, G. Tucker (490 Norton sc.); 3, Gerrish (976 Brough-Superior sc.).

CLASS 20 (*Sidecars*).—1, Gerrish (976 Brough-Superior sc.); 2, H. N. Walker (490 Norton sc.); 3, H. Jacobs (976 Zenith sc.).

SECTION II., HANDICAP.

1, F Calleja (349 Excelsior-Blackburne), time improved by 2⅕s. Committee Challenge Cup and gold medal; 2, H. Alford (211 New Hudson) tied with Gerrish (976 Brough-Superior sc.), time improved by 1⅗s., silver medals; 3, R. Lawson (348 Douglas), time improved 1s.

A gold medal for fastest time of the day was awarded to C. Sgonina in Class 7, Section I.

The club's 6-hour trial for the Hutchinson and Ferrson Cups which, after two postponements, was to have been held on October 21st, has been put off indefiuitely, as it was found impracticable to tackle two very bad hills after dark; it has been suggested that the event be held on Boxing Day.

South-West London M.C.C.

The annual dinner will be held at Anderton's Hotel, Fleet Street, on the 14th prox., at 7.30 p.m. Morning dress will be worn. Tickets are obtainable from the hon. social secretary, Mr. C. F. Morgan, 3, Stockwell Avenue, S.W.9.

North Derbyshire M.C.C.

The sixth annual dinner and prize distribution of the above club will take place to-night (Thursday) at 7 p.m., in the Hotel Portland, Chesterfield. Tickets may be obtained from Messrs. J. W. Damms, R. B. Green, A. Adams, A. W. Webb, or from the hon. sec., Chas. Ullyatt, 75, Hunloke Avenue, Boythorpe, Chesterfield.

Bedford and District M.C.

A successful paper chase, combining a distance-judging and observation test, was held on 5th inst. over a course of 47 miles. Fifteen objects of a humorous nature were distributed on the course, and of these the winners observed eleven. The run was followed by a tea at club headquarters. Provisional results:—Solo, A. Swift (Zenith). Sidecar, R. B. Bates (976 Royal Enfield sc.).

The championship trial was held over a sporting course in the Chilterns on 15th inst., and included stooping and restarting test on Whipsnade Hill. The distance for the final part of the trial had to be estimated by competitors. Provisional results:—Club Championship, Mayor's Cup and gold medal, N. M. Bligh (749 A.J.S.); runner-up, T. French (Sunbeam sc.). Allen Cup and silver medal.

Burton M.C. and L.C.C.

The Burton, Tamworth, and Lichfield clubs held very successful speed trials recently. Times over the half-mile course were made as follows:

CLASS 1 (TIME).

650 c.c. SIDECARS.—1, P. B. Chesterton (490 Norton sc.), 34s.; 2, B. Rushton (633 Norton sc.), 38⅖s.

CLASS 2 (TIME).

300 c.c. SOLO.—1, C. Jones (249 Diamond), 35²⁄₅s.; 2, S. T. Ridgway (249 Diamond), 35⅘s.

CLASS 3 (TIME).

350 c.c. SOLO.—1, A. L. Baldock (350 Beardmore-Precision), 33s.; 2, V. F. Trevor (349 A.J.S.), 33⅕s.

CLASS 4 (TIME).

650 c.c. SOLO.—1, B. Fidgeon (490 Norton), 28³⁄₅s.; 2, B. Rushton (633 Norton), 30⅕s.

CLASS 5 (TIME).

UNLIMITED SOLO.—1, B. Fidgeon (490 Norton), 27⅕s.; 2, V. Poynton (998 Indian), 28s.

CLASS 6 (FORMULA).

UNLIMITED SOLO.—1, S. T. Ridgway (249 Diamond); 2, W. Aston (249 Diamond).

CLASS 7 (TIME).

1916 OR EARLIER MACHINES, UNLIMITED.—1, S. Barrett (348 Douglas), 38⅕s.

Silver medals were awarded for 1st and 2nd place in each class.

SILVER CUP FOR FASTEST TIME OF DAY.—B. Fidgeon (490 Norton), 27⅕s.

Luton and South Beds A.C.

It was decided, owing to the much regretted decease of the club's President, Lord Ludlow, that the annual dinner arranged for the 18th inst. should be postponed. A revised date will be announced later.

Gainsborough M.C. and L.C.C.

A gold and two silver medals were competed for in a reliability trial held on the 4th inst. in and around Gainsborough. The gold medal was won by F. Pullan (499 Triumph), who gained 85 per cent. of the total marks. L. Dady and C. F. Batt were second and third respectively. The next trial will be held on the 2nd prox., and will be an open event; particulars may be obtained from Mr. W. R. Adair, 2, Allred Street, Gainsborough.

Croydon and District M.C.C.

Excepting only the team prizes, no awards were gained in a 100-mile trial held on the 5th inst. This was partly accounted for by the inclusion of "Old Chalkey" in the route. Mr. Hagen's prize was taken by the Wallington Club's solo team, consisting of Reg. Green (490 Norton), E. C. Gordon (499 Triumph), and S. Lavy (492 Sunbeam). Owing to the arduous nature of the route special bronze medals are to be awarded to the eleven finishers.

North-West London M.C.

About forty members spent a very pleasant and informal evening on the 4th inst. After a supper party at Golders Green a visit was paid to the local hippodrome, where a revue was much appreciated. It is hoped to arrange a similar function soon after Christmas. Members are reminded of the Sunday afternoon run to the White Horse, Shenley, on the 26th inst.

Fixtures for the coming winter season have been made as follows:

November 26th.—Run to the "White Horse," Shenley. Members should meet for tea at 4 p.m., wet or fine.

January 9th.—Annual dinner at Holborn Restaurant.

January 25th.—Annual general meeting.

Dates for *The Motor Cycle* film and a whist drive will be fixed later.

Taunton and District M.C.

Thirty competitors entered for the Taunton Autumn Trial, which was run over a circular course of 120 miles, including Stout Hill, near Taunton. The Bath competitors declared this hill to be unclimbable, but W. G. Churchill accomplished the ascent on a 350 c.c. Beardmore B. and S. Results: Autumn Challenge Bowl, W. G. Churchill (350 Beardmore B. and S.); Taunton Traders' Bowl, T. W. Drayton (Salmson car); Team Challenge Cup, Taunton and District M.C. and L.C.C. team, P. V. Hare (494 Douglas), I. F. Anderson (293 Connaught), and L. Pearce (595 Douglas); 350 c.c., 1, I. F. Anderson (293 Connaught) and C. Fletcher (Hewin Experimental); Unlimited, 1, L. G. Morrish (492 Sunbeam) and P. V. Hare (494 Douglas).

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

ALT-Y-BADY.

Sir,—No doubt "J.W.B." is not aware that I earn my living by competition riding, which must be my excuse for taking any notice of his inference that my proposed second-gear climb of Alt-y-Bady, in last year's Reliance Cup Trial, was throwing away all chances of a clean climb.

I should like to make it quite clear that my original letter was written with the full consent and knowledge of the firm concerned, Messrs. Powell Bros.

"J.W.B." states that he cannot see why any man should fail to make 99 clean ascents out of a 100; will he meet me at Alt-y-Bady at any time most convenient to himself, and demonstrate the truth of this? If so, I will have great pleasure in taking either a standard Powell or the sports Powell up in second for his benefit—if I can!

Finally, I consider no ascent of Alt-y-Bady clean if the feet are moved from the rests (or footboards).

J. WESTWOOD WILLS.

CASTOR OIL IN ENGINE LUBRICATION.

Sir,—I have read with no little astonishment Mr. Evans' reply to "Kemist's" letter in your issue of November 9th. Would Mr. Evans kindly explain just what he means by saying that the application of the term paraffin to mineral oils alone is "incompatible with scientific practice"? This I can tell him—its application to oils other than mineral is incompatible with a knowledge of chemistry! Is he aware that it would be essentially unscientific to apply the term paraffin (*i.e.*, inactive) to vegetable and animal oils, as these compounds are exceedingly active, entering readily into combination with a variety of substances and being easily decomposed daily in soap works by the simple process of boiling with alkalis!

To apply the term "unfortunate" to "Kemist's" statement that mineral oils cannot give rise to fatty acids is both meaningless and absurd. What Mr. Evans means by "the chemistry of lubrication" I know not, but if he is acquainted with a process by which he can produce the fatty acids from the saturated hydrocarbons he has, indeed, made a discovery in the science of chemistry, and I, for one, should like to see a chemical explanation of the reactions involved.

Of course, I am well aware that, say, methane can be converted into acetic acid by a series of involved reactions, but that is a different proposition from the conversion of a mixture of the higher hydrocarbons to fatty acids by combustion in an engine cylinder. "CATALYST."

Edinburgh.

SECRETS OF TUNE.

Sir,—Mr. R. Landon finds it difficult to give credence to my remarks in regard to increasing the speed of standard Rudge machines. I do not doubt him for one moment.

In view of no little experience of tuning a considerable number of this make of machine, I find it difficult to give credence to some of his remarks, particularly when I note the peculiar method of argument of which he makes use.

The maximum of the *average* Rudge-Multi (against the stop watch) in good standard tune is certainly not over 55 m.p.h. in still air and normal level road, *not* 58 *m.p.h.*, as Mr. Landon would have it. We are referring to average machines, not particular ones. A range of 52 to 55 m.p.h. would cover most of the Rudge-Multis on the road. Now, adding to these the range of increase which I mentioned previously (11 to 14 m.p.h.), we find by the alterations which I have in mind, that the new maximum range is 63 to 69 m.p.h., which statement of affairs is as I have found it.

It is Mr. Landon's assumption that the alterations are "simple." I made no comment on them!

The I.O.M. Rudge-Multi is no heavier than many 500 c.c. machines; it weighs 233 lbs. Moreover, weight makes very little difference to speed where a case of maximum is under consideration; it certainly affects the distance taken to attain the maximum, and also the average, but not the figure under review to any considerable extent.

In regard to the question of scored cylinders in effect upon speed, I had a Rudge in 1920, which with one alteration and a badly scored cylinder (due to a gudgeon getting adrift) earned a certificate for 65.4 m.p.h. on the level road; I must admit though, that the pulling was somewhat affected, which is as might be expected. "BEMSIST."

Bexley Heath.

HEAVY ENTRY FEES IN CENTRE TRIALS.

Sir,—I have noticed that the A.C.U. Yorkshire Centre competitions, especially the last two events, have not had the support which they should have had.

The reason, in my opinion, is not far to seek, as I have had it pointed out to me by several riders that the entrance fees charged are prohibitive, and I find that these competitions appeal to many who honestly cannot afford to enter them and their own club events as well. The expense does not end with the entrance fee. I think a smaller fee would attract a larger entry, make the competition keener, and at the same time make very little difference on the financial side. WM. E. ASQUITH,

Hon. Secretary, Leeds and District M.C.

CELLULOID EYE SCREENS AT NIGHT.

Sir,—May I take the liberty of writing you in reference to "Awahawakawoo's" letter, since it has again raised a question of general interest to motorists?

He has purchased a celluloid *windshield*, for which purpose it is admirably suited, and although "Ixion's" comment is true generally, your correspondent has fortunately secured a specimen having very little selective absorption.

Now celluloid is incapable of transmitting light without destroying the clearness of any object seen through it. This defect can, and will, only be intensified with wear, and its continual use can only be detrimental to one's eyes.

Your correspondent also wishes to know why he cannot recommend the article for night riding. When riding at night, the eyes are straining to utilise every fraction of available candle-power. Now celluloid about 0.02in. thick of good quality absorbs 11.5 per cent. of the total light falling upon it. This reduction is a very serious matter indeed, and secondly, the bad defining power as mentioned above will be more apparent at the low intensity.

One must remember that with glass goggles absorbing only 3 per cent. very few riders care to wear them for night riding. Celluloid is at the very best about four times as bad as glass! "ROVER."

London, N.19.

PILLION RIDING IN SAFETY.

Sir,—In Holland pillion riding is the rule rather than the exception, and one seldom sees a rider without a passenger "up" behind him. Yet there is no outcry against its dangers here. We think this is due to the fact that all pillion passengers, without exception, both male and female, sit astride the pillion seat. It will be found, we imagine, that the custom of sitting sideways is the dangerous factor in pillion riding. It merely requires a press campaign in favour of the more sensible, if less graceful, position to get rid of the menace of popular alarm and panic legislation. P. G. WILSON

Amsterdam. (B.C.A., LTD.).

Sir,—Although your contributor expresses what I believe to be the opinion of the majority of motor cyclists on pillion riding, I beg to differ.

In the course of about 15,000 miles' riding with pillion passenger, I have come to the conclusion that in emergencies the passenger can always alight more easily when seated side-saddle, and thus only the rider may come to grief.

I have touched 58 m.p.h. with passenger side-saddle, without any lack of control.

Your readers' views would be interesting. A. B. C.

Bristol.

Sir,—I feel bound to agree with you that more security is felt by the driver with his pillion passenger seated astride.

This has led me to assume that if a saddle with its special shape has been designed for the motor cyclist as the proper thing, it ought to follow, as day follows night, that a similar fitting is the proper thing for the pillion rider. H. KILLINGBECK.

HUMIDITY AND POWER OUTPUT.

Sir,—May I suggest that "J.H.H." cannot conveniently bring the barometer into the discussion, for the changes of this instrument depend, primarily, according to modern notions, on variations of pressure in the atmosphere, and the resulting rain (or drought) follows as a result, and is not itself the cause of the pressure variations. Has "J.H.H." ever heard of a marked difference between the barometer readings taken (1) close to the grass during dew-fall, and (2) higher in the air, during the same evening?

"M.B.B.H.'s" explanation seems to be backed up by the statement that one or more persons have introduced the steam from their radiators (on cars) to the engine, *viâ* the carburetter, and have found an increase of power; also by the fact that many an engine (I believe?) shows far more liveliness during the first few miles than later, when the petrol is warmed up and therefore less dense.

This being so, would not an ether mixture be advantageous? Ether is very heavy.

With regard to the adequate mixing of the vapour and air, has anyone tried fixing: (1) a fine gauze; (2) a light, tiny fan, in the induction pipe? I think "M.B.B.H." has sounded a very important note.

Belfast. RESEARCH THE CARBURETTER.

Sir,—I would like to state that even the humble push cycle runs better at night, while the difference between a man walking with and without a little internal humidity is truly remarkable. Witness the numerous "filling stations" on the average road. MAEBNUS.

Oxford.

Sir,—I quite agree with Mr. P. F. Jarrold's first remarks, but am not by any means convinced by his explanation.

On an average, humidity is at its highest around sunrise, and at this time temperature is at its minimum. I have been "privileged" to do much riding at dawn, and cannot claim that my big single has tended to "super-Rudge."

In my opinion much of the extra power is imagined, as one thinks that the 'bus is travelling much faster at night when the only objects seen are those within the very limited range of the lamp. 49867.

Ashford.

Sir,—Your correspondent, Mr. P. F. Jarrold, is young, and, although wisdom does occasionally emanate from the mouths of babes and sucklings, he has yet a little more meteorology to learn.

He is, of course, quite correct in stating that relative humidity has little effect on barometric readings, but he seems to concur with "M.B.B.H." in assuming that water vapour increases the density of the air. The fact is that, other things being equal, an increase in moisture content would cause a decrease in the atmospheric density.

Moreover, Mr. Jarrold appears to think that the density of the atmosphere varies only as the pressure, hence his apparently overwhelming argument that in an "anticyclone" a baby two-stroke should have the kick of a Brough Superior. He is wrong; atmospheric density is not only dependent on pressure, but also on temperature, and it is a recognised fact that the average density of the air in a "depression" is very little different from that in an "anticyclone." Mr. Jarrold can substantiate this statement for himself from standard meteorological publications.

With regard to the superior running of a machine at night, I myself have experienced the feeling that my engine has more than its normal supply of "pep," but I am almost convinced that it is a delusion consequent on the extra caution of the rider, rendered imperative by the impaired visibility. W. ANDREWS.

H.P. OR FUEL TAX?

Sir,—As Mr. Collyer doubtless knows, the motor tax was introduced to pay for the upkeep of the roads, and it therefore seems only fair that the amount of tax paid by a vehicle should be in strict proportion to the damage done to the roads by that vehicle. The present system does not provide for this, as Smith, who only runs a sidecar outfit on Saturday afternoons and has a total mileage of, say, 3,000, pays the same tax as Jones, who runs an outfit every day and has a total mileage of 20,000.

If the petrol tax was re-introduced the heavy lorry or car with a high petrol consumption would pay more than the lighter motor cycle. Also the total amount payable would vary directly with the mileage. L. HOLMES.

Sir,—Evidently Mr. R. Collyer has not studied the matter of fuel tax.

For the sake of explanation let us suppose "A" rides 300 miles per week for a year, making a total of 15,600 miles. If 80 m.p.g. is taken as an average, he uses 195 gallons of petrol. If there is a tax of 2d. per gallon the rider pays £1 12s. 6d., against £1 10s. (or £3 as the case may be). which is not a great fortune.

Further, not *so* many riders average 300 per week, so the new tax tends to come in cheaper. M.S.M. 233.

Sir,—I cordially agree with your correspondent, Mr. R. Collyer, and, while he remarks that the h.p. tax is too heavy, I do not think many would complain if only the income derived from it was used for road improvements as intended, but I am afraid it mostly goes to provide a horde of officials with fat salaries.

I maintain that any man or woman who can afford to pay £50 for a solo, or £150 for a sidecar outfit, which is used *solely for pleasure*, can afford an additional 30s. or £4 per year.

Take my own case, and there are thousands like me. I average 300 miles every week of the year. I ride through rain, hail, and snow, over main roads, secondary roads, and cart tracks, and very often at the end of the week I find that my earnings have just about covered my expenses.

It stands to reason that any man who does 15,000 miles per annum must have heavy tyre bills, to say nothing of other replacements such as chains, belts, etc., while the pleasure rider can probably go a whole year without a single replacement.

It is said that we commercial motor cyclists use the road more than the pleasure riders. We do. 'Tis true, and pity 'tis, 'tis true. A good many of us wish we didn't. But motor cycles and sidecars cannot damage roads.

Bury St. Edmunds. XR 3296.

FEW SIDECAR SUBSTITUTES.

Sir,—Very few indeed of the cars shown at the Paris Salon, Olympia, or the White City, have conformed to the definition of a cycle car, "engine under 1,100 c.c., and weight under 7 cwt." At Olympia and the White City the vogue of the light four-cylinder car, which cannot possibly be classed as a cycle car, was apparent. At the Salon the twin cylinder was hardly in evidence. A French paper complained that "the quest of the very cheap machine has not fulfilled the hopes of its numerous *clientèle*," and that "the so-called cycle car of to-day is simply a car which pays 100 fr. tax"—happy car!

The apostasy, as you call it, of the G.N. is a heavy blow to the popularity of the simple four-wheeler in England. I note in a contemporary a list of 33 cars costing £200 and under, but of these only 12 have been, or will be, shown this year, and of the dozen, five are three-wheelers. The Tamplin is, I believe, the only four-wheeler shown which is priced as low as £150; the Morgan three-wheeler will be sold at £128.

A good deal has been written lately on the question "Will the three-wheeler survive?" If it does not (a very unlikely contingency) the true cycle car, the rival of the heavy sidecar, is indeed "moribund"; but, even so, I should be inclined to write as its epitaph, "Resurgam," not "Requiescat in pace." H. GEORGE MORGAN.

HARDIER NORTHERNERS?

Sir,—May I, as a Londoner who is proud of it, be allowed to say a few words to "Ixion"?

To begin with, I am afraid that "Ixion," in spite of his undoubted experience, must go about with his eyes shut, or he could not possibly make such an absurd statement as ". . . . most Southern motor cyclists take jolly good care to return home before dark." Anyone who has ever ridden on the Bath Road, the Great North Road, or any of our great highways after dark can hardly have failed to note the constant stream of motor cyclists proceeding Londonwards. Possibly, however, "Ixion" takes jolly good care himself to be home before dark?

He practically admits that Northerners are mostly splendid imitations of particularly surly hogs. It is also unnecessary for him to state that he is a "Lancashire lad," for no Southerner would take the trouble to insult gratuitously thousands of motor cyclists simply because they have the good fortune to be born in a part of the country where people are actually civil to one another!

Of course, one realises that those less fortunately situated than the Londoner may be inclined to be envious, but "Ixion" should not give way to it.

So the Southerner would not ride at all if he lived in the North!

I ride a single-geared two-stroke, winter and summer alike (*and* after dark!), which in my opinion takes more doing than humming along on a 500 c.c. 'bus with three-speed, clutch, chain drive, and every other refinement, as belt-slip is certain on a really wet day. And that I am no exception to the majority is proved by the hundreds of motor cyclists to be found on southern roads winter and summer alike. A SOUTHERNER.

London, N.W.6.

Sir,—"Ixion" recently championed the cause of Northern riders; who are blessed (it is alleged) with entrails of a far longer and tougher nature than we "Southerns."

It is to be regretted that such an old friend should excommunicate himself from us by a few indiscreet and positively untruthful sentences, and no doubt this reply will only be a tiny portion of the colossal howl of protest and execration which will rise from ten thousand exhausts, and converge on London as a real "pea-souper."

I do not know if superfluous election passions, or an unfavourable circulation record are to blame for this outbreak; whatever the reason, such an indictment cannot pass unchallenged. In the first case the apparent superiority of the North is only obtained by the nature of the reports published, and being the centre of the industry (for economic reasons only) it is only to be expected that, to many, motor cycling is a stern reality of existence, and not the pastime we are pleased to consider it; as a direct result, trade questions, I fear, crop up even in the den of venerable "Ixion," who openly confesses to his Lancastrian origin.

Again the geographical position favours the North, as slag heaps are not tacked on to our back doors like mudscrapers, and taken as medicine which we pretend we like, as they cannot be dodged—we are unable to dodge anything more formidable than super-tuned policemen, who migrate here in vast numbers, and find it so bracing—and profitable.

No, "Ixion"! whilst taking off our hats to certain of the northern stalwarts, as typified by George Dance, we certainly have no intention of laying down and being run over by them, and until more forceful arguments are brought up in proof I for one will not forsake our country for coal-mines, or macadam for the mud-holes which you seem to regard as something of an acquisition.

A. E. JESSOP,
Hon. Trials Sec., West Kent M.C.

NONE TOO EASY PAYMENTS.

Sir,—The following are the easy payment terms for a certain lightweight: Price of motor cycle, £24 3s.; terms, £5 down and 12 monthly payments of £1 17s. 6d. = £27 10s. This works out at 17½% interest by the most favourable calculations, but taking into consideration that 37s. 6d. is being paid monthly, I should think it is actually nearer 30%, if not more. Why should those who have little be charged this exorbitant sum? NOT LIKELY.

West Hartlepool.

Sir,—The question of "easy payments" raised by Lt.-Col. Le Mesurier seems of sufficient importance to merit further attention, as your subsequent correspondents do not appear to have grasped the real point of his letter, viz., the effect of payment by monthly instalments on the rate of interest.

In your issue of 2nd November, "Zenith" draws attention to an instance which shows, he states, a charge for interest at the rate of 36% per annum. It is really at a much higher rate. If the £16 9s. were to be paid in one sum at the end of the twelve months his figure would be correct, but the debt of £12 2s. 1d., plus interest £4 6s. 11d., is to be paid off by equal monthly instalments of £1 7s. 5d., which makes the charge for interest at the rate of about 60% per annum. [A correspondent last week calculated this rate to be approximately 86%.—ED.] Similarly the case mentioned by "Shylock" in your issue of 12th October would work out, not at 17% as stated, but at 33% or thereabouts.

It is to be hoped that purchasers on these terms are fully aware of the charge made for the accommodation granted to them. On the other hand, the risk of loss incurred by the sellers in such transactions, unless security be obtained, must be borne in mind. S 8688.

Midlothian.

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A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

A MIXED OUTFIT.

Would a Scott sidecar fit on to a 1910-11 Triumph machine? There being no top tube on the Scott I wonder if it will affect the fixing of the sidecar in any way.—H.A.H.

If the sidecar is a standard Scott model it would be possible to fit it to an old Triumph machine with a little modification of the connections; this would be a matter for experiment, but any good mechanic should be able to carry out the work.

WON'T GO ON TOP GEAR.

I possess an old four-stroke Calthorpe two-speed (foot operated) machine, and have recently had both valve seatings rebuilt and machined. The machine gives every evidence of good compression. Upon taking it on the road, however, it will not go on top gear, owing to some inexplicable reason. I have had the engine to pieces, and as far as I can judge there are no defects, with perhaps the possible exception of loose connecting rod bearings. The belt is also worn. Would these defects cause the strange lack of power when the cycle is in top gear? I have never been able to get the engine to smoke. Is this anything to do with it?—L.J.H.

It is difficult from your description to diagnose the exact cause of your trouble, as many factors may combine to produce such results. Loose connecting rod bearings and a worn belt should not have the effect of reducing your power appreciably, provided that the play in the former is not excessive, and that the latter is still capable of gripping the pulley flanges without slipping. Your remark regarding failure of the engine to smoke encourages the idea that the lack of power may be due to faulty lubrication, and we should recommend a thorough overhaul of the oiling system. Of course the large combined gear box and crankcase on this machine allows a greater quantity of oil to be pumped in without causing smoking than the average engine will take. Make quite sure that the valve and ignition timing is correct. The magneto, if fixed ignition, should be set so that the spark occurs about four millimetres before top dead centre.

Important Dates.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.

REMOVING A PINION.

How is the half-time pinion which operates the exhaust valve cam wheel removed from the crankshaft on an old twin Rex engine which has automatic inlet valves?—E.B.H.D.

You do not give the date of your engine, but if it is of the 1908 to 1910 variety, the small timing wheel on the main shaft is a pressed fit (parallel shaft) and it is located by a small grub screw half in the shaft and half in the pinion. A sprocket drawer should be used to remove it or perhaps the hook ends of two long tyre levers could be used to prize it off.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

OILED-UP REAR CYLINDER.

On a 1921 770 c.c. twin B.S.A. (solo) I find that the back plug is unduly prone to oil-up, particularly on short hilly runs, necessitating changing plugs or taking out the plug in use to clean it. The front plug gives no trouble, merely carrying a light deposit of dry carbon which does not impair its working power. Is this defect due to the oiling system or could it be caused by over-oiling? If the latter, should not the front plug also suffer?—(I.D.710).

Over-oiling of the rear cylinder of a V-twin engine used to be quite a common fault, and you will probably overcome the trouble if you curtail the oil supply slightly. If this is not effective it might be possible to arrange the oil pipe inlet to the crank case in a different position, say at the back of the front cylinder. Consult the makers as to modifications on later models; yours appears to be an isolated case, however. If you cut down the oil supply drastically, add a little oil to the petrol for the benefit of the valves and pistons.

"WITH CASH ADJUSTMENT."

About two months ago I agreed to effect an exchange of my sidecar for a solo machine and cash to value of £24 10s.; the other party paid down £12 and signed an agreement to forward £8 in cash within twenty-four hours, and the remaining £4 10s. within one month. He sent the £8 as agreed, but did not send on the £4 10s. when the month had expired. I wrote on three occasions asking for the balance, but he said he refused to pay any more as the sidecar was faulty. As a matter of fact the machine was in splendid condition when he took it over, and I wished the following day I had not parted with it. What is the best way for me to obtain redress?—S.D.W.

From the facts stated, the person who took over your machine should have satisfied himself as to its condition before he agreed to the bargain, and if he did not do so, it is his own fault. As you cannot obtain the balance of £4 10s. you should commence County Court proceedings for its recovery, especially as the purchaser made a further payment of £8 on account without making any complaint after the machine was in his possession.

OCCASIONAL MISFIRE.

[?] I have a 595 c.c. 1920 Douglas. The engine has recently been cleaned and valves ground in. I now find that an occasional misfire occurs at intervals. It is rather peculiar inasmuch as it is worse on top gear, occurring about every 300 to 500 yards, while on second gear it does not seem to miss at all, or very occasionally. The magneto and plugs have been tested, and I have cleaned the carburetter. Valve clearances are correct—in fact, everything seems mechanically perfect. In appearance the trouble would seem to be an occasional short circuit somewhere, but if it were so, why does it appear only on top gear and not on second or third? Therefore to me it does not seem anything to do with the sparking system.—C.E.M.

From your description, which does not reveal any actual defect, we should be inclined to attribute your trouble to a sticking inlet valve. It is possible that one of the valve stems is rather tight in the valve guide, possibly due to congealed oil which occasionally prevents the valve from operating correctly. Thoroughly cleaning and polishing with fine emery cloth is the remedy. Make sure that the contact breaker rocker (or roller, according to the make) is quite free.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

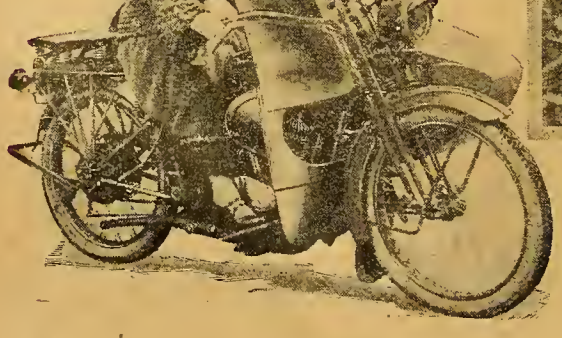
"J.M." (Ross).—350 c.c. De Luxe Barr and Stroud, Model D.

"J.W.M." (London).—Gibbons cycle car with Coventry-Victor engine; belt wear.

"W.A.F." (Wellingborough).—Carden, 1921 or earlier model.

"H.B." (Manchester).—Scott Sociable with wheel steering: suitability for driver with partially-disabled left hand.

"J.L.F." (York).—Cure for persistent valve breakages on 398 c.c. A.B.C.; suitable jet, fitting of two-lever carburetter or extra air valve.



SPARKLETS

Accommodation During the Show.

Provincial members of the A.C.U. may obtain information at Stand No. 6 at Olympia, as to the accommodation available to them during their visit to London.

Discontinued.

The Coventry Chain Co., Ltd., advises us that it no longer has any interest in the production of the chain rivet extractor which we illustrated on p. 662 of our November 9th issue. It is now marketed by Saxelbys, Ltd., of Coventry.

A New Rubber Compound.

Containing an admixture of mica which gives properties making it resistant to the deleterious effects of heat, a variety of rubber known as Mintite Finished will be included amongst the products of A. Roberts & Sons, Ltd., and W. A. Bates, Ltd., at Olympia.

A Wanderer.

Not long ago Zenith Motors, Ltd., had a letter from a dispatch rider at Cologne asking for spare parts for a Zenith Gradua; by the frame number they were able to identify the machine as one made for the Russian Army and shipped through the Ministry of Munitions in 1916. The rider writes: "I have toured 12,000 miles under all sorts of conditions in Poland, Upper Silesia, and Germany, and have never had to stop for any sort of trouble except for the tyres, which are of German make."

Experienced T.T. Riders Only.

Several riders with T.T. experience are needed by a well-known manufacturer in 1923. Letters should be addressed to "Tourist Trophy," c/o The Editor, *The Motor Cycle*, Dorset House, Tudor Street, London, E.C.4.

Range of Friction Gear Ratio.

In our description of the friction-driven Economic lightweight, the range of ratios provided was stated to be between 6 to 1 and 9 to 1. The makers, however, state that the low gear is 19 to 1, thus the range is extremely wide.

Wireless on a Sidecar.

It is not generally known that the Metro-Tyler Co., Ltd., Banister Road, Kilburn Lane, London, N.W.10, are manufacturers of wireless outfits and at the Olympia Show they will exhibit a sidecar saloon body fitted with wireless installation and frame aerial.

Efficiency and Silence.

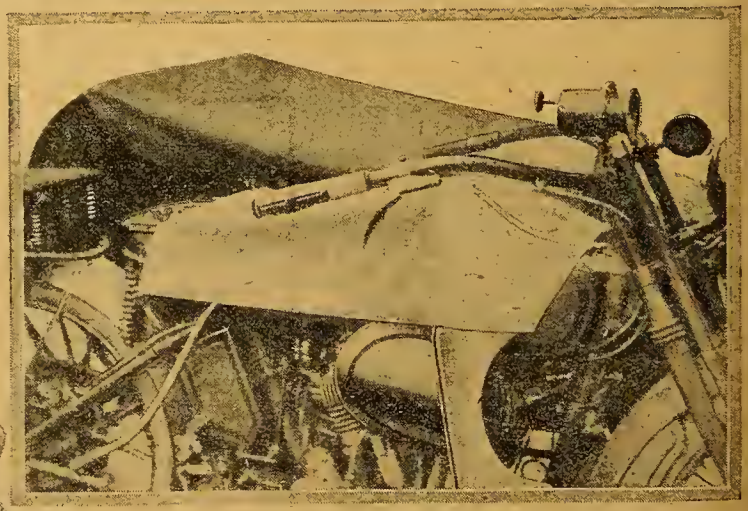
In reference to the impression which may be current that the quieter running G.N. engine is not so efficient as the older type, the makers claim that despite a heavier body the new side-valve twin models are equal to the overhead inlet type in general performance.

Catalogue Received.

The Athol Engineering Co., Peru Street, Higher Broughton, Manchester: Particulars of celluloid sheeting such as is used for sidecar windscreens.

Catalogues Wanted.

Catalogues of motor cycles, cycle cars, and accessories which will be exhibited at the Motor Cycle Show at Olympia, are urgently needed by the Auto-Cycle Union. They should be addressed to The Secretary, 83, Pall Mall, London, S.W.1.



PROTECTION FOR THE DRIVER.

Not only does the T.O.M. Shield provide the equivalent of a high dash, which is surmounted by a small aero type windscreen, but wind scoops are incorporated which deflect the rush of air on to the cylinders. The shield can be folded down to cover the saddle when the rider is dismounted, thus keeping the machine dry. When in use, great protection from the elements is afforded

NEW PRICES for 1923

Rudge Motor Bicycles & Sidecars

(Dunlop Tyres)

25th NOVEMBER, 1922

	Last Season's Prices £	New Prices. £ s. d.
3½ h.p. Rudge Multi T.T. Racer, with or without pedal starter - - -	77	65 0 0
Rudge Light Sidecar - - -	20	15 0 0
	£97	£80 0 0
3½ h.p. Rudge, Chain Drive - -	94	85 0 0
Rudge Sporting Sidecar - - -	20	20 0 0
	£114	£105 0 0
7/9 h.p. Rudge Twin, Chain Drive -	113	100 0 0
Rudge Touring Sidecar, with Spring Grid	30	25 0 0
	£143	£125 0 0

Rudge IT! CARRIAGE PAID. AGENTS EVERYWHERE.

Ask for Pocket Catalogue.

Divided Payments arranged.

STAND 97 OLYMPIA

RUDGE-WHITWORTH Ltd.

(Dept. 600) - COVENTRY.

LONDON: 230, Tottenham Court Road, W.1

The Ruby Cycle Co., Ltd., in voluntary liquidation.

FOR SALE IN ONE LOT AS A GOING CONCERN

F. S. AIREY, ENTWISTLE & CO.
IN CONJUNCTION WITH
Messrs. LOMAX, SONS & MILLS

have received instructions to offer for SALE BY AUCTION at the Thatched House Hotel, Manchester, on TUESDAY, DECEMBER 12th, 1922, at 2.30 o'clock in the afternoon prompt, subject to conditions,

MODERN WORKS known as the

ROYAL RUBY CYCLE WORKS

situate at ALTRINCHAM, near Manchester, and the FIXED AND LOOSE MACHINE TOOLS, DEPARTMENTAL PLANTS, Electric Power Plant, Office Furniture, Loose Tools, Jigs, Patterns, Drawings, and Goodwill of the Business. Also THE STOCK-IN-TRADE, WORK-IN-PROGRESS, New Cycles and New Stores, Three Motor Vehicles, and Manager's House.

THE LAND forming site of the Works and held in connection therewith contains a total area of 19,724 sq. yds. and is freehold and free from chief rent (about 6,000 yards are vacant in addition to the Yard space).

THE BUILDINGS ARE MODERN, the major portion being completed in 1920, whilst the older parts were erected in 1915 and 1910 and contain a total floor area of over 8,600 sq. yds., mostly of lofty one storey Shed construction, withadministrative block two storeys high, having suitable elevation to Moss Lane, with excellent suite of General and Private Offices, etc.

THE MOTIVE POWER is electricity, the current being derived from the Altrincham Electric Supply Co., Ltd., and the Plant includes: 8 Transformers, 14 Electric Motors, and about 800 ft. of Shafting.

THE MACHINE TOOLS AND PLANT embrace about: 140 MACHINE TOOLS suitable for the Cycle Trade, fully equipped departments for Lining, Enamelling, Plating, Brazing, Polishing and Sand Blasting, together with all Loose Tools, 220 Fitters' Vices and Benches, Gas Producer Plant and Dust Extractor Plant for the Polishing Shop, Office Furniture, etc.

Manager's Dwelling House known as "Rosslyn" situate in Bentinck Road, Altrincham, subject to Chief Rent of £5 per annum.

The Works were in full or part operation up to a few weeks ago and are capable of an output of about 2,500 Motor Cycles and about 10,000 ordinary Cycles per annum.

Schedules of the Plant and Stocktaking may be inspected and other information regarding the trading of the Company may be obtained from the Liquidator by appointment.

Printed particulars, Conditions of Sale, and orders to view the Works may be had from F. S. Airey, Entwistle & Co., Auctioneers and Valuers, 10, Norfolk Street; the Liquidator, Mr. R. H. Lord (Messrs. J. B. Boyd, Wrigley & Co.), Chartered Accountant, 53, Brown Street; Messrs. Lomax, Sons & Mills, Auctioneers and Valuers, 2, Booth Street; or from MESSRS. SALE & CO., Solicitors, 29, Booth Street, all of Manchester.

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Stand 64—Olympia

The New 2¾ H.P. (Four Cycle) Ivy will be on show — in addition to our well-known 2½ and 3 H.P. Two Stroke Models.

A substantial reduction has been made in prices but the quality has not been reduced.

S. A. NEWMAN, Ltd.

Ivy Motors,

Lichfield Road, Birmingham.

STAND 64—Olympia

London: Maude's Motor Mart, Gt. Portland St.

We are open to appoint agents where not represented.

for

SIDECAR & PILLION SEATS

SEE these wonderful AIR CUSHIONS AT STANDS

J. A. WOOD & Co.

and

9, Hammersmith Road, Olympia.

SEE these wonderful AIR CUSHIONS AT STANDS

LEO SWAIN, GAMAGES, ELLISON & Co.

For the Motor Cycle or Sidecar Owner, THE MORLEY SELF-CONTROLLED AIR CUSHION is a splendid adjunct, as it is for Light Cars, Morgans, Runabouts, Sidecars and Dickey Seats, being as safe and comfortable as it is most decidedly economical. ORDER a MORLEY SELF-CONTROLLED AIR CUSHION, POSH BAG, MOTOR CAR SEAT, or PILLION SEAT, Full Sized or Single Bed NOW, and you'll never have anything else. *Enquiries may be addressed, or orders sent direct, to THE SELF-CONTROLLED AIR CUSHION CO., LTD., or through any Garage, House Furnisher, Motor Accessory Dealer, or Department Store.*

This patent method of making Seats, Cushions, Beds, etc., is revolutionising an Industry, and the big Motor Car and Shipping Firms, Hospitals, and similar Institutions, have quickly perceived the many advantages of this Controlled Air-System.

HOW TO ORDER.

FIRST make a paper pattern to the EXACT size of the seat bottom required, making sure that the corners are given correctly. Also distinctly mark on the pattern which is the front edge of the Cushion.

SECONDLY, give the depth of Cushion desired at the FRONT ONLY. We can then make to fit your seat perfectly.

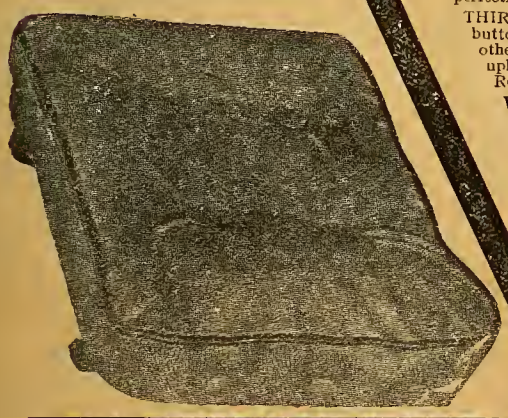
THIRDLY, state whether a pleated, plain, or buttoned seat is required. This is necessary; otherwise we send the buttoned seat. Can be upholstered in any shade of either Leather, Rexine or Bedford Cord.

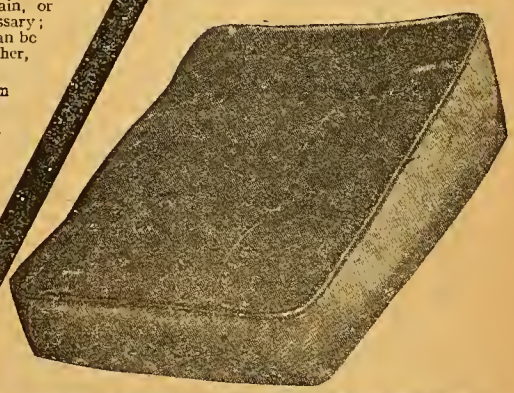
We send quotations immediately on receipt of Pattern.

ANY SEAT SENT ON APPROVAL AND CASH RETURNED IF UNSATISFACTORY.

Every Cushion Guaranteed 5 Years.

DURING SHOW WEEK THESE CUSHIONS ON VIEW 9, HAMMERSMITH ROAD, opposite Olympia.





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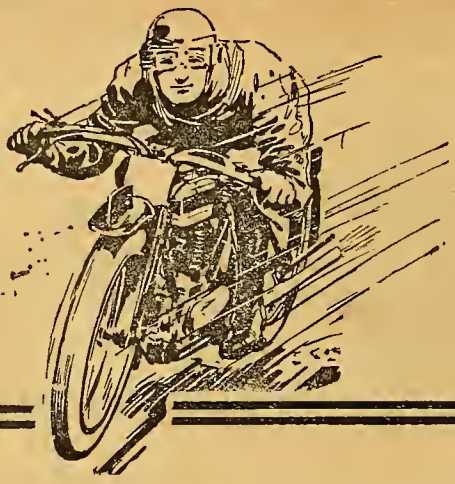


50%

of motor cycles awarded "firsts" at Brooklands this year were fitted with "M-L" Magnetos.

First machine to lap at over 100 miles per hour (M. Le Vack riding a Zenith Jap) was fitted with an "M-L" Magneto.

The Magneto which stands up to the Brooklands Track work will give you the efficiency and reliability you want.

See the

Cobalt Steel Magneto

at Stand No. 267 Olympia.

All enquiries and correspondence relating to overseas trade and to retail and trade business in this country should be addressed to Messrs. S. Smith & Sons (M.A.) Ltd., Central Works, Cricklewood, N.W.2. Sole Makers: The M-L Magneto Synd. Ltd., Coventry, to whom all enquiries from manufacturers should be sent.

If it's an "M-L"—you can rely on it.

At Stand 252 OLYMPIA.

Patented at home and abroad.

Illustration with part of the felt and Rexine cover cut away to show construction of saddle.

You will see the wonderful floating

"TERRY"

spring seat saddle.

We invite you to come and see it, sit on it, test it, and discover its real good qualities—so you may have it on your 1923 model.

If you cannot visit the Show, write now for literature describing the saddle and its successes —post free.

Herbert Terry & Sons, Ltd., Manufacturers, Redditch, Eng. Est 1855.

TRADE MARK.

I.

Just a line to let you know the benefit I have received from your spring seat saddle. I have had 3 operations for internal trouble, and had been compelled to give up riding. I bought one of your saddles and have done thousands of miles without further trouble.

G.K.

II.

From Tanganyika, E. Africa.

Whilst home on leave I purchased a spring seat saddle. It has been a perfect 'God-send' on the terrible up-country roads here, than which there are none worse. It is the admiration of all riders.

A.W.F.

III.

Selections from many similar appreciations.

You will be pleased to hear that the "O.K." team in the recent "6 Days" was awarded the Team Prize (350 class) and 3 Gold Medals. We all used your spring seat saddles. They make an uncomfortable job comfortable.

N.H.

THE MILLS PATENT.

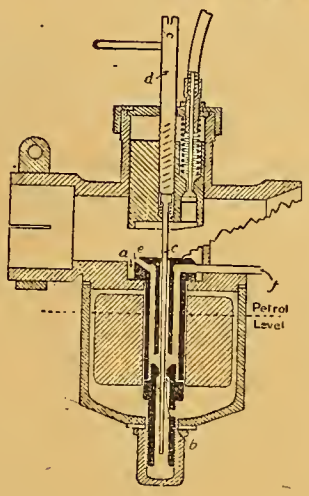
Fully Compensating CARBURETTER

Price £3 Any Size.

A very easy start is obtained by pressing float tickler, which creates a well of petrol at "*a*" which, by having throttle open only a little, is drawn into cylinder at first kick, so giving practically a petrol injection.

Opening and closing throttle enlarges and reduces jet "*b*" by means of tapered needle "*c*." A rich mixture for accelerating from cold is obtained by turning bar of needle adjusting rod "*d*" to the left (anti-clockwise looking at top of carburetter); one complete turn raises or lowers needle one-quarter of an inch, so enlarging or reducing the jet.

The carburetter compensates itself for different speeds of the engine as follows: As engine speed rises, the suction on outlet jet "*e*" increases, but, owing to the fact that air offers less resistance than petrol, air is drawn down orifice "*f*," brought from outside of carburetter by means of the compensating tube, and so causes a gradually weakening mixture.



As engine speed falls when hill climbing, so the suction on jet "*e*" falls, but as the jet "*b*" is below petrol level the same amount of petrol is flowing, but less air is drawn down orifice "*f*," causing a gradually enriched mixture to be supplied.

It will be clearly seen that at no time does neat petrol issue from jet "*e*." At all throttle openings and speeds of engine, air is drawn from "*f*," which mixes with petrol from "*b*," issuing from "*e*" in the form of petrol vapour. This gives us a real "atomised spray" carburetter at all throttle openings and speeds, including "pilot."

The petrol level has no influence on the working of the carburetter so long as it is above the lowest part and below the highest part of the tube or passage connecting primary jet "*b*" with secondary jet "*e*."

The jet being in centre of float chamber, the tilting of machine either uphill or downhill does not alter mixture in any way, and machine has to be laid down almost horizontal before flooding occurs.

If correct needle has been fitted, carburetter will give correct mixture at all positions of throttle and all speeds of engine.

Messrs. MARTINSYDE write:—

"Referring to the Mills Carburetter we have on trial, we are pleased to tell you that we have obtained excellent results in slow running, acceleration, power, and speed; the petrol consumption appears to be normal, and the mixture even throughout the full range of throttle opening."

Messrs. VELOCE, makers of the "Velocette," write:—

"The small carburetter gave us great satisfaction."

The *Daily Mail*, May 18th, 1922, criticising the Calthorpe motorcycle fitted with a Mills Carburetter, says:—

"A large part of the engine's good running I attribute to the Mills automatic compensating carburetter; never once, even downhill, did the engine four-stroke. The engine seemed to get a perfect mixture at all throttle openings. It gave easy starting, good power and speed, steady slow running, and good consumption."

Messrs. EXCELSIOR MOTOR COMPANY (per Mr. Carson) write:—

"The carburetter fitted on to the twin machine has been tested in Devonshire and Somerset over a something like 400-mile journey. It has proved exceedingly satisfactory, and we can in no way suggest any improvement. It is the most satisfactory carburetter that we have tested. On a vehicle weighing 6 cwt., and carrying 30 stone of passengers and luggage, averaged 50 miles per gallon in hilly country. The engine starts quite easily, and the machine is most simple to control. The writer understands, on inquiring, that the lightweight carburetter is giving equal satisfaction on the Villiers engine."

Mr. R. O. CLARK, of Norwich, winner of the Junior T.T. Race (250 Class) 1920, writes:—

"With regard to the carburetter, I am pleased to state that I am very satisfied with this."

Mr. DAN BRADBURY, the Norton specialist of Sheffield, writes:—

"I beg to state that the Mills Carburetter is giving every satisfaction, and is excellent in every way."

A large number of motorcycle manufacturers are fitting it, including B.S.A., Norton, James, Excelsior, Calthorpe, Radco, Sun Vitesse, Alldays & Onions, etc., whilst any maker can fit it without extra cost if you specify it.

For one month from November 22nd we will allow up to 20/- for your old carburetter. If new condition, 20/-; if good condition, 15/-; if fair, 10/-; if old but usable, 5/-.

If you will try our carburetter, send along full particulars of engine, enclosing £3 as deposit, when carburetter will be sent on 14 days' trial. If you return it, we refund your deposit less any damage and out of pocket expenses, minimum 5/-. If you want to keep it and would like an allowance for your old carburetter, send it along, and we will send P.O. to value as above.

AGENTS WANTED IN EVERY TOWN.

OLYMPIA, Stand No. 153.

MILLS CARBURETTERS — Farnham, Surrey.

Radco

THE KING OF LIGHTWEIGHTS.

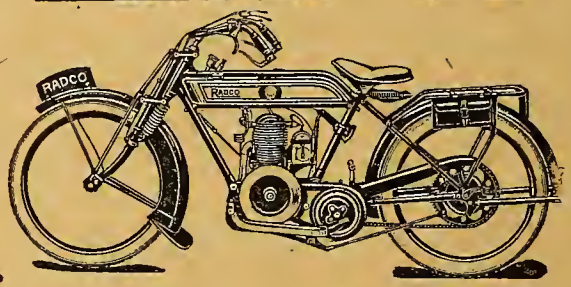
WRITE FOR BOOKLETS

SEE OUR 1923 MODELS

STAND No. 135

WILL INCLUDE—

ALL-CHAIN DRIVE,
IMPROVED MUDGUARDS
AND
TANK SUSPENSION.
NEW BAND BRAKE, Etc.



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Only one Machine entered in each Trial and each one guaranteed Standard.

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1¾ h.p. Two Stroke

IMMEDIATE DELIVERY.

SEND FOR 1923 CATALOGUE.

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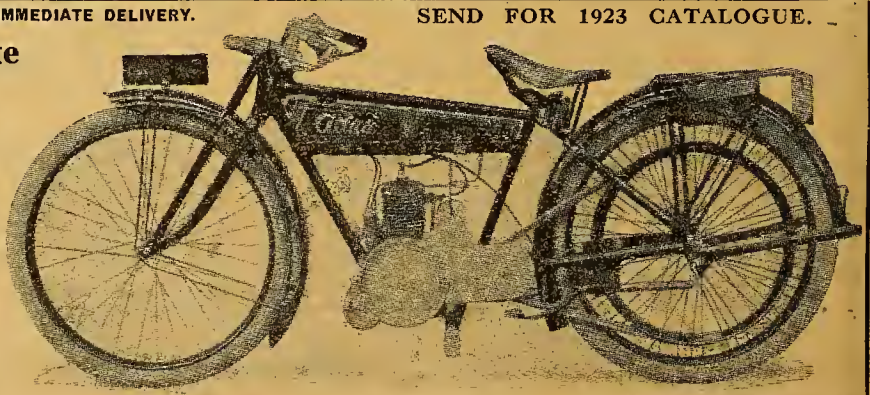
SINGLE SPEED COUNTERSHAFT (as illustration) **26** GUINEAS.

TWO-SPEED GEAR BOX **29** GUINEAS.



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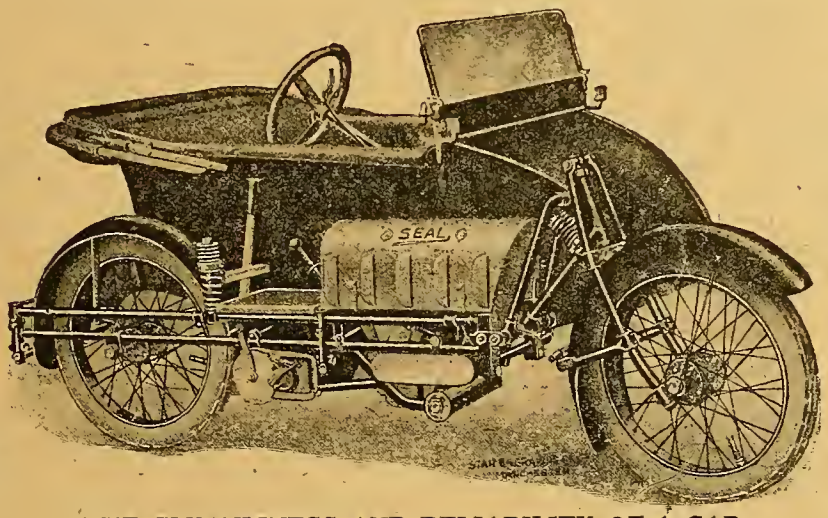

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THE CLEANLINESS AND RELIABILITY OF A CAR, AT MOTOR CYCLE COMBINATION PRICE.

DO NOT BE MISLED BY THE TERM 3 WHEELER AS THE SEAL HAS PATENTED MECHANICAL ADVANTAGES THAT OVERCOME ALL THEIR DIFFICULTIES BY CARRYING THE LOAD THROUGH THE MAIN FRAME TO THE OFFSIDE OF THE DRIVING WHEEL.

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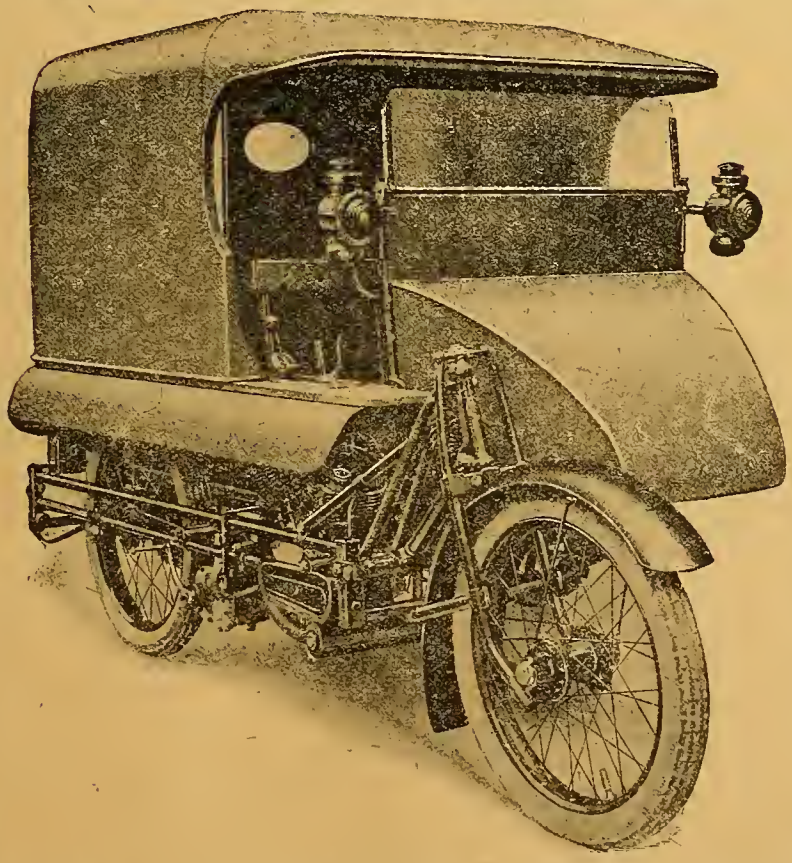

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THE IDEAL OUTFIT FOR LIGHT DELIVERY.

SOLE LONDON & DISTRICT AGENTS for

OMEGA JUNIOR MODELS £25 to £31
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Buy Direct and Save Pounds.

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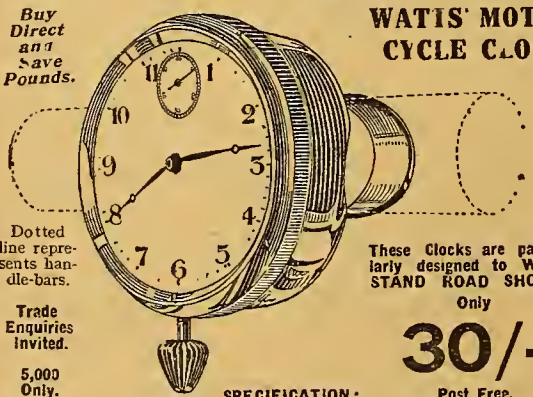

Dotted line represents handle-bars.

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5,000 Only.

These Clocks are particularly designed to WITHSTAND ROAD SHOCKS.

Only **30/-**

SPECIFICATION: Post Free.

Fully Jewelled KEYLESS LEVER MOVEMENT ACTION, PERFECT TIMEKEEPER, FITTED WITH PATENT RELEASE ACTION and CANNOT possibly be OVER-wound. FULLY GUARANTEED for 5 YEARS. Fitted with patent device for attaching to handle-bar (as diagram). SOLID NICKEL CASE, ABSOLUTELY DUST, DAMP & WATERPROOF.

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Our West End Office and Showrooms (Dept. M.C.)
WATTS, SON & CO., 327, Oxford St., London, W.1.

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By the Staff of
"The Motor Cycle."

Second Edition
(Revised)

THIS useful and interesting treatise should be studied by all to whom the fascinating two-stroke makes an appeal. It fully describes the engine and other units and shows how the rider may get the best results on the road. Numerous illustrations are included.

Price 2/6 net. By Post, 2/9.

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The BRAMPTON Bi-Flex SPRING FORK

A Motor Cyclist recently wrote us that, since fitting the "BRAMPTON" Bi-Flex Spring Fork, the comfort of his machine has been trebled, and it steers itself almost without assistance.

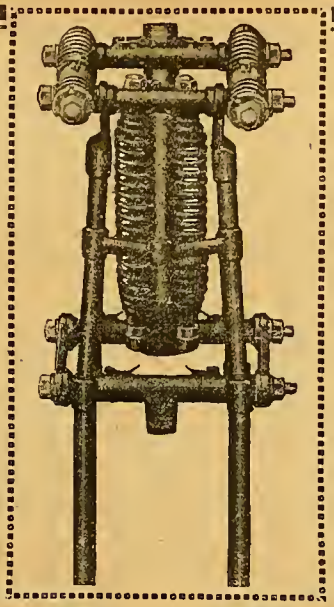
Whilst the above unsolicited testimony most adequately represents the unanimous opinion of all users, the forthcoming Motor Cycle Show will provide further indisputable evidence of the universal popularity of the "BRAMPTON" Bi-Flex Spring Fork by the large number of machines exhibited in which this Fork is incorporated as a standard fitment.

An opportunity will also present itself for Motor Cyclists to inspect the various models which we make at our Exhibit on

STAND No. 258, GALLERY

where a cordial invitation is extended to all visitors to the Exhibition.

——BRAMPTON BROS. LTD.——
Oliver Street, Birmingham.



The BRAMPTON
(Shock Absorbing)
SPRING CHAIN

This Chain combines and affords the advantages of both Chain and Belt without the disadvantages of either. Whilst positive in its action, it is as resilient as a belt, transmitting the power generated by the power unit with minimum loss, and completely absorbing all shocks from engine impulse which are transmitted to the driven wheel.
The "BRAMPTON" Spring Chain thus affords a maximum of comfort for the rider and a minimum of wear on his tyres. All the bearing parts of the Chain are cushioned by springs, as indicated in the illustration below, and can only be brought into contact as the resistance of the springs is overcome. There is, therefore, no hammering of parts, and as a result the life of the Chain is enormously increased.
Conspicuous successes were achieved by Motor Cycles fitted with this transmission during the past season, and it is now to be seen incorporated in some of the best known makes of machines. It will be exhibited, among other types of Chains of our manufacture, on

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Your inspection is invited.

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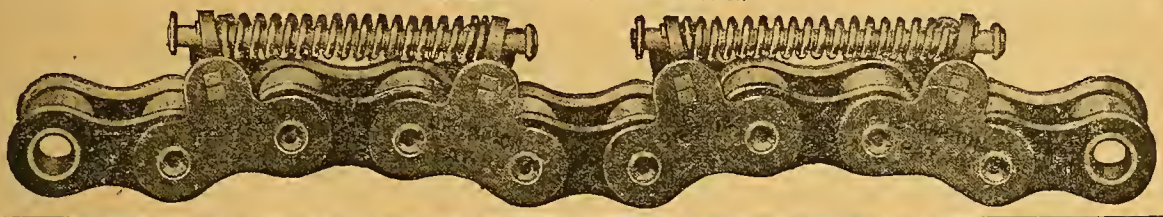
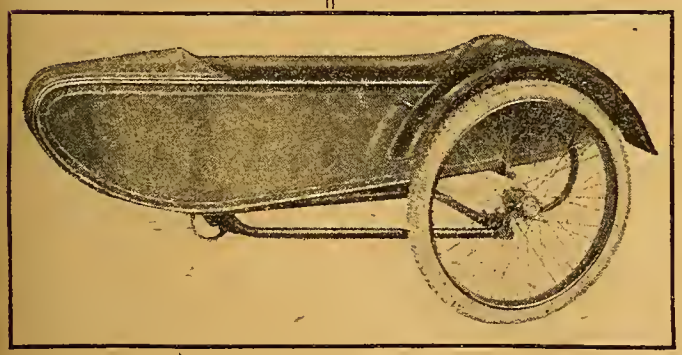
Oliver Street, Birmingham.



The New



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Light-Sporting Side-Car

For Lightness with Strength.

NEW PRICES for 1923

Tourist No. 1	£31 10	Club	£30 0
" " 2	25 0	Sports Superb	24 10
" " 3	23 0	Light Sporting	16 15
" " 4	21 0	Light Touring	16 15

The new Grindlay sports sidecar weighs but 80 lbs. complete, yet has an ample margin of strength, and is extremely comfortable, like all Grindlay models.

A full range of models on view at Olympia.

All prices include free carriage in U.K.

PRICE Completely equipped, **£16.15.0**

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GRINDLAY (COVENTRY), LTD.
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1923 MODELS

IF you want full satisfaction—that's where you get it. Your 1923 model will be delivered to you immediately, and easy payment terms to suit your convenience will be arranged. Every assistance and advice will be given you, and the Allen-Bennett upkeep Service will be at your disposal.

What more can you wish for? Get in touch with an Allen-Bennett representative, and have a chat with him—you'll find him on the three stands mentioned below.

Whatever make of motor cycle or light car you select—your present machine will be taken in part exchange.

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Our representatives will be in attendance on above stands, also on—

MORGAN MATCHLESS DUNELT

or any other stand by appointment.

We have over 100 shop-soiled and second-hand machines in stock. Why not call and see whether any of these meet your requirements?

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All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House Tudor Street, London, E.C.4. *Readers who reply to Box No advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6 and on all transactions over £100, ½%. All deposit matters are dealt with at Dorset House, Tudor Street London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

1920 T.T. A.B.C., perfect throughout, engine overhauled by Sopwiths costing £20, fully equipped, Watford, tools, spares, 1922 cylinders; £50, or exchange Indian Scout.—34, Amwell St., Hoddesdon, Herts. [2294

THE SIGN OF G GOOD SERVICE

B.S.A.

VALUE

SPEAKS FOR ITSELF

B.S.A. MOTORCYCLES,

	£	s.	d.
2¾ h.p. Lightweight	57	15	0
3½ h.p. Sports	70	0	0
4¼ h.p. Touring, chain-belt	72	0	0
4¼ h.p. Touring, all chain	75	0	0

The above are single cylinder models each fitted with three speed gear box, hand controlled clutch and kickstarter.

	£	s.	d.
6 h.p. Light Tourist	85	0	0
8 h.p. Light Tourist	90	0	0
6 h.p. Model de Luxe	90	0	0
8 h.p. Model de Luxe	107	0	0

The above are twin cylinder machines of special design for sidecar work, each with three speed gear, hand controlled clutch and kickstarter.

SIDECARS.

	£	s.	d.
Sports Model	20	0	0
Touring for 4¼ h.p. m/cs.	25	0	0
Heavy Touring for 6 & 8 h.p. m/cs.	33	0	0
Two seater	37	0	0

There is sure to be an immense demand for these 1923 Models.

GODFREY'S HAVE A SELECTION OF THE LATEST B.S.A. MODELS IN STOCK FOR IMMEDIATE DELIVERY. PLACE YOUR ORDER AT ONCE TO AVOID DISAPPOINTMENT.

CASH. EASY PAYMENTS EXCHANGES.

WHATEVER YOUR REQUIREMENTS YOU CANNOT DO BETTER THAN GET IN TOUCH WITH GODFREY'S.

GODFREY'S LTD.

208, GT. PORTLAND STREET, LONDON, W.1.

'Phone: LANGHAM 1300 (2 lines)

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1921, Lucas dynamo set, perfect order, new tyre; £65; speedometer, tax.—S. Dale, College, Mirfield, Yorks. [2279

1921 A.B.C., fully equipped, oversize tyres, overhauled by makers; £43.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [2170

OCTOBER, 1922 3h.p. A.B.C. combination, dynamo lighting, Easting Royal, speedometer, 500 miles only, perfect; bargain, £95.—7, Dennan Rd., Tolworth. [2056

1922 A.B.C. Special Sporting Combination, electric light, voltmeter and switchbox in sidecar, complete equipment, as new; £75.—Reynell, 23a, North Hill, Highgate, N.6. [2638

A.B.C. 1921, T.T. handle-bars, copper exhaust pipes, fitted with baffle plates, speedometer, tyres good, seen by appointment; £47/10.—Harding, 1, Clayto Avenue, Wembley. [1969

Spare Parts.

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0564

Ace.

ACE 10h.p. 4-cylinder Combination, Milliord bulbous sidecar, original tyres, etc.; 90 guineas, exchange entertained.—7, Cowdrey Rd., Wimbledon. [2116

1922 Electric Model Ace, with new Plus One sidecar, very little used, tax paid; nearest £150 secures; bargain.—217, Park St., Luton, Beds. [2157

A.J.S.

1923 A.J.S. models for immediate delivery.—Premier Motor Co., Birmingham. [2577

BRAND New 2¾h.p. A.J.S. Touring Model; £73.—Cross, Agent, Rotherham. [2434

NEW 1922 2¾h.p. A.J.S. B1, soiled only; £67/10. —391, King St., Hammersmith. [2215

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries. —Clifford Motories, Eastwood, Notts. [9957

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

F.O.C.H. invite inspection; A.J.S. and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1375

1921 A.J.S. Combination, excellent order; dynamo lighting; £115.—Bartlett's, 93, Gt. Portland St. [1637

1922 2¾h.p. A.J.S. Touring model, equipped, unscratched, perfect; 70 guineas, exchange.—284, South Lambeth Rd., S.W.8. [2342

A.J.S. June, 1922, 2¾h.p. touring model, mileage 300, lamps, horn, tools, like new; £60.—Stockdale, 4, Mount St., Brierfield, Lancs. [1981

1916 A.J.S., sidecar, excellent condition, Lucas lamps, horn, speedometer, tyres good, all spares; £60.—Gowring, London Rd., Reading. [1927

A.J.S. Combination, 5-6h.p., lamps, horn, windscreen, speedometer, oversize tyres, taxed; £48.—3, Stamford Brook Rd., Hammersmith. [2457

A.J.S. 2¾h.p. 1922 Touring, Lucas equipment, mileage negligible, superb condition everywhere; 85 guineas; licensed.—24, South St., Newport, Wight. (D) [2074

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [C785

A.J.S. 6h.p. 3-speed Combination, Gloria sidecar, hood, 2 screens, tax and insurance paid, mechanically sound, any trial; £55.—8, Boscastle Rd., N.W.5. [2139

AT Edwards.—1922 2¾h.p. A.J.S., Sports model, Lucas equipment, large Terry spring saddle, excellent condition; 57 guineas; exchanges.—101, Great Portland St., W.1. [1852

A.J.S. 1919 6h.p. Combination, completely equipped with lamps, horn, spare wheel, etc., tax paid, excellent condition; bargain, £75.—P. J. Evans, John Bright St., Birmingham. [2092

A.J.S. 7h.p. Combination 1921, hood, hood cover, screen and side screen, spare wheel, 3 Lucas lamps, horn, all extras, licence paid; £100, special bargain.—Marston, 31, Bridge St., Chester. [2010

1920 6h.p. A.J.S. Combination, dynamo lighting, equipped with speedometer, hood, screen, spare wheel, and electric horn, engine just overhauled; the whole machine in perfect condition; a bargain, £80.—Kays, 8-10, Bond St., Ealing. [2181

SOUTHPORT.—1922 (August) stripped sports A.J.S., almost unused, Lucas lamps and horn, speedometer, brand new condition, 67 guineas; 1922 B1 combination, polished aluminium sidecar, gift, 69 guineas; most luxurious 1922 B1 combination, A.J.S. sidecar, Lucas electric lighting, Lucas horn, Cowey trip, Baby Easting, brand new condition, 82 guineas; 1916 A.J.S. 6h.p. combination, fully equipped, new sidecar body, gift, 52 guineas; exchanges.—Kents, 417, Lord St., Southport. [2265

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 1916 5-6h.p. Combination, excellent condition, spare wheel, luggage carrier, lighting set, oversize tyres; £47/10; cash, exchange, instalments.—Elce, Ltd., 13-15-16, Bishopsgate Avenue, Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.J.S. 1921 7h.p. Combination, with dynamo lighting, spare wheel and all accessories, very good order, £120; another similar outfit with Lucas battery lighting set, in exceptionally good condition. £115; exchanges.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [2440

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

1921 Alldays Allon, 2-speed, clutch, kick-start, as new; 27 guineas.—67, Fernlea Rd., Balham. [2611

ALLON 2¾h.p., 2-speed, all on, good condition; £21 or near.—Honchin, 189a, High St., Peckham, S.E.15. [2238

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

American X.

AMERICAN X; £25; sidecar, £6; tax.—Skelton, 333, Acton Lane, Acton. [1934

Ariel.

1922 Ariel Sports, new; £57/10.—51, Upper Richmond Rd., East Putney. [2620

£8.—Ariel 2½h.p., dropped frame, Bosch, B. and B. —Fisher, Springwell Rd., Heston, Hounslow. [2368

1921-22 7h.p. Ariel Combination, as new; bargain, must be sold, 68 guineas.—67, Fernlea Rd., Balham. [2612

ARIEL 1920 5-6h.p. Combination, 3-speed, electric lighting, perfect; 68 guineas; exchanges; photograph.—Below

ARIEL 1920 3½h.p., 3-speed, as new, 52 guineas: with sidecar, 62 guineas; exchanges; photograph.—Below.

ARIEL 3½h.p. 3-speed Coachbuilt Combination; 52 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1115

ARIEL 3½h.p. Combination, 3-speed, clutch, windscreen, Tan-Sad, good condition; £60.—Waterloo House, North Cheam. [2290

ARIEL 3½h.p. and sidecar chassis, 2-speed, countershaft, running order; £20; exchange entertained. —Cobb., Longham, Dorset. [2191

GENUINE Offer.—Late 1920 3½h.p. Ariel countershaft, guaranteed perfect and absolutely reliable, all on; £39.—17, Dock Rd., Lytham. [1988

ARIEL Combination 4h.p., countershaft, 3-speed, clutch, kick-start, sporting sidecar; £28.—Ward, South Western Garage, New Malden, Surrey. [2557

ARIEL 1919 3½h.p. 3-speed Combination; £59.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [2441

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Winevale Co., Ltd., 236, High Holborn, W.C.1 [0780

1918 6h.p. 3-speed Ariel Combination, thoroughly overhauled, lamps, windscreen, guaranteed perfect; £36.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [2169

1920 6-7h.p. Ariel Combination, fully equipped, speedometer, Easting windscreen, excellent condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1856

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0804

Bat.

BAT 1920, October, 8h.p., fully equipped, excellent condition, small mileage; offers.—18, Fulham Place, Paddington, W.2. [1989

Beardmore.

BEARDMORE, brand new, spring frame; £45.—S. E. Porter and Co., Whitchurch, Salop. [2509

BEARDMORE 3½h.p. Sports, late 1921, S.A. 2-speed, oversize tyres, first-class condition; £39. —Chirney, Harpenden. [2187

BEARDMORE (Barr and Stroud engine), used only for a few demonstrations, as new; £60.—Ratcliffe Bros., 200, Gt. Portland St., W. [2393

BEARDMORE 1921 3½h.p., Precision-engined combination £55; list of 30 combinations, free on request.—Newnham Motor Co., 223 and 245, Hammersmith Rd. W.6. 'Phone: Hammersmith 1325. [2442

Spare Parts:

BEARDMORE-PRECISION Spares. Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

EXCHANGE WITH US.

We are making the best allowances for Second-hand Motor Cycles and Combinations in part Exchange for

NEW MACHINES AND LIGHT CARS.

EVERY MAKE SUPPLIED.

Our Light Car Agencies include—

MORRIS-COWLEY, MARSEAL, ROVER, MORGAN, RHODE, COVENTRY PREMIER, Etc.

LAMB'S Ltd

WALTHAMSTOW.
151, HIGH ST., E.17.
(Car Hire Dept. Phone 418.)

WOOD GREEN.
50, HIGH ROAD, N.22.

EUSTON ROAD or GT. PORTLAND STREET STATION.

MOTOR CYCLES FOR SALE.

Blackburne

4h.p. Blackburne, engine bought March, speeds, clutch, K.S., accessories, spares, licensed; £65.—40, Wellington Rd., N.W.8. [2032

BLACKBURNE 1922 8h.p. Combination, absolutely as new, £110; full particulars of this and 50 other machines free on request; exchanges.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [2443

Bradbury.

4h.p. Bradbury, fully equipped, superb condition; £10.—17, Heaton Rd., Mitcham. [2317

6h.p. Bradbury Combination, not done 1,000 miles; what offers?—100, Etherstone St., Leigh, Lancs. [2358

BRADBURY Combination, 2-speed, countersmart, K.S., reliable; £27/10.—Swift, 4th Tanka, Wareham. [1953

1914 4h.p. Bradbury, 2-speed, clutch, lamps, horn, tools, taxed, perfect order; offers; must sell.—Box 4773, c/o *The Motor Cycle*. [2148

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £68; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

SOUTHPORT.—1922 2¾h.p. Bradbury, 2-speed, brand new condition, 37 guineas; 1921 4h.p. Bradbury combination, all-chain, 3-speed, K.S., 49 guineas; exchanges.—Keats, 417, Lord St., Southport. [2265

BRADBURY 1920 6h.p. Combination, mileage 4,300, appearance as new, mechanically perfect, completely equipped, Tan-Sad, roomy sidecar; £75.—Percy, Vicarage, Chandlers Ford, Southampton. [2161

1914 Sports Model 4h.p. Bradbury, Bosch magneto, special exhaust fitted, engine tuned, done up as new, in makers' colours, cost £12 overhauling; sacrifice, £16; very fast machine.—7, Southgate St., King's Lynn. [2367

Brough

45 Guineas.—1921 Brough Combination, 5-6h.p., Sturmey 3-speed, clutch, K.S., coachbuilt sidecar, Easting, equipped, licensed.—2a, Eleanor Grove, Hoggers Corner, Barnes. [2231

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

SOLE Agents for London and thirty miles radius.

THE Sporting Rider's Ideal. Immediate delivery of Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination, £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h., £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended payments and exchanges.—9, 10, 11, Royal Parade, West Croydon 'Phone: 2450-1 'Grams: Track, Croydon. [0733

BROUGH SUPERIOR 8h.p., J.A.P. side-valve super sports, dynamo lighting, Bonniksen, Montgomery, etc., small mileage, new condition; £137/10. —51, Upper Richmond Rd., East Putney. [2822

BROUGH SUPERIOR 8h.p. overhead, fitted 1922 tank, benzol-proof finish, 1922 oiling, aluminium discs, head, rear lamps, generator, horn, special luggage carrier, 27×3½ rear tyre, taxed to December, beautiful condition, property well-known agent now abroad; £112.—108, Manchester Rd., Oldham. [1913

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

B.S.A.

PROMPTEST Deliveries of 1923 Models.—The B.S.A. specialists.

COUNTY Cycle and Motor Co., Ltd., Broad St., Birmingham. [7010

B.S.A. 4¼h.p. Combination, hood and Easting, 3-speed; £40.—Woods, 5, Duke St., Richmond. [1928

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. Model Sports, £70.—Clifford Motories, Eastwood, Notts. [9958

B.S.A. 4½h.p. all-chain, late 1920, mileage 6,000, condition perfect; £48.—Chirney, Harpenden. [2188

B.S.A. 1920 4¼h.p. chain combination, taxed, all accessories; £75.—Will, 769, Romford Rd., Manor Park, London, E.12. [1877

1919 B.S.A. 4¼h.p., Millford sidecar, screen, Tan-Sad, accessories; £54.—Attfield, South Cottage, York Rd., Weybridge. [2164

B.S.A. 1920 4¼h.p. Combination, K.S., 3-speed, Easting, splendid condition; £65.—Hughes, 36, Hartington St., Chester. [1915

1920 B.S.A. Combination, all on, excellent condition; £50; exchanges.—Maynard, 161, Bowes Rd., Bowes Park, N.11. [2165

MOTOR CYCLES FOR SALE.

Enfield.

1923 Enfield for immediate delivery; huge price reductions.—Premier Motor Co., Aston Rd., Birmingham. [2579

1917 Enfield Combination and cash for later model, or sell £58.—16, Verran Rd., Balham Grove, Balham, S.W.12. [2225

ENFIELD 2-stroke with kick-starter and accessories, as new; £38.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [2397

ENFIELD 1921 2-stroke, 2-speed, splendid condition; £39 or near offer.—90, Leathwaite Rd., Clapham Junction, S.W.11. [1963

1920 Enfield Combination for Sale, cheap, D.A. lighting; exchange lightweight and cash.—49, Mallinson Rd., Battersea, S.W.11. [2044

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [5600

1920 Enfield 8h.p. Magdyno Combination, hood, screen, perfect condition, little used; £85.—12, Union St., Maidstone. 'Phone: 564. [2046

ENFIELD, 1921 model, 8h.p. twin, with sidecar and screen, oversize tyres, in excellent mechanical condition; £80.—Wrynams, Romsey, Hants. [2430

ENFIELD-VICKERS.—Large selection of 1922 8h.p. combinations, fully equipped, from £80 to £120. —Fowler and Brigden, 130, Euston Rd., King's Cross. [0961

ENFIELD 6h.p. Combination, late 1918, hood, screen, speedometer, Lucas accessories, tools and spares, in excellent condition; £65.—Kendrick, Westbury, Wilts. [1976

£78.—1921 Enfield-Vickers Combination 8h.p., lamps, horn, Cowey speedometer, luggage grid, pump, tools, tax paid, trial, bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [2199

ENFIELD 1922 8h.p. Combination, slightly shop-soiled only, £115; 2¼h.p. 2-speed, £45; write for shop-soiled bargain list.—P. J. Evans, John Bright St., Birmingham. [2088

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168.—Royal Enfields, solos and combinations; exchanges and extended payments; tuition free; delivery when required. [2482

ENFIELD 2¾h.p., twin M.A.G. engine, 2-speed, mechanically perfect throughout, all accessories, tax paid; must sell, sacrifice £27/10.—Foster, 31, Clissold Rd., Clissold Park, London, N.16. [2627

1921 Enfield Combination, 8h.p., Lucas dynamo lighting, hood, screen, speedometer, etc., absolutely unscratched, guaranteed; £105; exchanges.—"Homac's," 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2469

1921 Enfield Combination, 8h.p. Vickers engine, Lucas acetylene lamps, Royal Easting, new Dunlop Magnum cord, mileage 3,000, insurance to May, perfect condition; £108.—Broad, 12, Queen St., Stamford, Lincs [2130

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

1923 Excelsior lightweight Villiers, 2 speeds, wonderful power; £28/10; new.—Keen, Leominster. [1228

F.N.

£20.—4-cyl. F.N., too heavy, C.A.V. magneto.—See Exchanges. [1961

£20.—F.N. combination, 4-cyl.; bargain. Write or call.—Saracen's Head, Braintree. [2059

F.N. 1922 8h.p. Combination, hood, screen, lamps, shop-soiled only; £140.—Bartletts, 93, Gt. Portland St., W. [2462

F.N. 1922 2¼h.p., 2-speed clutch, kick-start, shaft drive, brand new; £42.—Bartletts, 93, Gt. Portland St., W. [2463

F.N., 4-cyl., 3-speed, all on, thorough order; another, single-speed, overhauled; £40 the two; Surrey.—Box 4777, c/o *The Motor Cycle*. [2372

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

G.L.

CHEAPEST Combination in England.—G.L.-J.A.P., late 1919, 5h.p. twin, Sturmey-Archer 3-speed, clutch, kick-starter, all-chain drive, luxurious skiff sidecar, detachable wheels, spare wheel and tyre, cantilever saddle, dynamo lighting, 3 lamps, Lucas switchboard with volt and ampere meters, apron, Easting windscreen, Stewart mechanical horn, Cowey speedometer, pump, and tools, tax paid; 59 guineas.—Delancey St. Garage, Camden Town, N.W.1. [2417

Grigg.

1922 2¾h.p. Grigg, Sturmey-Archer clutch, kick-start, equipped, brand new; £35.—51, Upper Richmond Rd., East Putney. [2624

LOVETTS AT THE SHOW.

By courteous permission of the respective manufacturers our Salesmen will be in attendance at the Olympia Show on the following Stands—

RALEIGH
Stand No. 99.

MATCHLESS
Stand No. 71.

NEW IMPERIAL
Stand No. 94.

We shall also have other representatives available to meet customers by appointment at any other stand and assist them in the selection of a motor-cycle to suit their requirements.

Our contracts for the 1923 Season will as usual embrace all the best motor-cycles, and we are therefore able to supply the machine of your choice.

LOVETTS LIMITED,
THE EASTERN GARAGE,
418, ROMFORD RD., FOREST GATE, E.7
'Phone: East Ham 490. 'Grams: "Egaraco, London."

MOTOR CYCLES FOR SALE.

Grigg.

GRIGG 1922 Lightweight, 2-speed, clutch, kick start, lamps, etc., perfect, competition winner; bargain, £29/10.—187, Elm Rd., New Malden. [2121

Harley-Davidson.

7-9h.p. Harley-Davidson Combination, 1918, excellent condition; no dealers.—Baily, "Poplars," Glastonbury. [1219

1920 Harley-Davidson Combination, electric; £70.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [2497

HARLEY-DAVIDSON 1920 Combination, all accessories, 7-9h.p., perfect, original owner; price £95. —15, Julian's Rd., Stevenage. [1443

HARLEY-DAVIDSON 1920-21 Combination, dynamo lighting, mileage under 7,000, all in first-class condition.—Scrase, 234, Battersea Park Rd., S.W.11. [1892

LUXURIOUS Harley-Davidson Combination, 7-9h.p., new last June, run few miles, unscratched; sacrifice £90; exchanges.—24, Balliol Rd., North Kensington. [2327

BARGAIN.—1921 4h.p. flat Twin Harley-Davidson, 3 speeds, perfect; 55 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1870

1922 Harley De Luxe Combination, new; reason for sale, doctor's advice; bought car; first reasonable offer; no dealers.—Phillips, 20, Wightman Rd., Harringay. [2242

1920 Harley-Davidson 7-9h.p., speedometer, hood, Easting, Tan-Sad, lamps, luggage grid, spares, overhauled makers (£16); bargain, £83.—"Audley," Basing Hill, Golders Green. [1932

45 Guineas; exchange.—1915 Harley, 3 speeds, clutch, K.S., roomy coachbuilt sidecar, fully equipped, nice condition, any examination.—Seabridge, 35, Haeseler Rd., E. Dulwich. Sydenham 2452. [2590

1920 Harley-Davidson Combination, 4h.p. flat twin, 3 speeds, C. and K.S., all lamps, horn, speedometer, absolutely as new, guaranteed; £75; exchanges. —"Homac's," 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2470

HARLEY-DAVIDSON.—We have a large stock of second-hand spares of these machines; on receipt of postcard stating your requirements we will, by return, quote you competitive prices; our stock comprises practically all parts.—Maudes', 100, Great Portland St., W.1. [2642

1922 Harley-Davidson Combination 7-9h.p., new last July, full equipment, insurance and tax paid, cost £209; will accept £140 or near offer; a genuine bargain, owner will bring the outfit to any prospective buyer's house on receipt of P.C. or 'phone message. G. H. Pay, 143, Bethnal Green Rd., E.2. 'Phone: Bishopsgate 1163. [1912

ARE You Visiting Olympia? If so, call and see us on Stand No. 34, where we shall be pleased to give you full particulars of the Harley-Davidson motor cycle and combination We are the authorised agents for this machine; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal., London. [2527

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4804

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

Hawker.

1923 Models.—Hawkers on extended payments.—Wauchope's, 9, Shoe Lane, London. [2483

Henderson.

HENDERSON Combination, 10h.p., gears, clutch, lamps, has been stored; £50.—670, Holloway Rd. [2053

1921 11.5h.p. Henderson Combination, as new; bargain, £95; exchange.—89, East Hill, Wandsworth. [2250

ROBERTSON'S Motors, Ltd.—1922 De Luxe Henderson motor cycles in stock at the new reduced figure of £137.—157b, Gt. Portland St., W.1. [2350

BRAND New Henderson De Luxe, with Millford De Luxe sidecar, most luxurious outfit; list price £175, our price £140.—Pioneer Motors, Grindlay St., Edinburgh. [9541

ARE You Visiting Olympia? If so, call and see us on Stand No. 123, where we shall be pleased to give you full particulars of the luxurious 4-cyl. Henderson motor cycle. We are the authorised agents for this machine; cash, deferred payments or exchanges. —Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal., London. [2526

MOTOR CYCLES FOR SALE.

Humber.

HUMBER 3½h.p., 3 speeds, in good condition; £35. —97, Sandling Rd., Maidstone. [2352

1923 Models.—Humbers; exchanges and extended payments; generous terms.—Wauchope's, 9, Shoe Lane, London. [2484

1922 4½h.p. Flat Twin Humber, lamps, etc., mileage 1,100 as new, beautifully kept; £72.—31, Thursby Rd., Northampton. [2102

SPORTS model 1922 4½h.p. Humber, flat Twin, brand new; to clear £79.—Shepherd, Enfield Highway. 'Phone: Waltham X 31. [1672

BARGAIN, quick sale.—2¾h.p. Twin Humber, excellent condition, 3 speeds, fast; offers.—1a, Richardson Rd., Eccles. [2204

3½h.p. Humber 3-speed Combination, clutch and kick-starter, good running order; £25, or offer —12, Wollaston Rd., Dorchester [2259

HUMBER, 3½h.p., with sidecar, Sturmey-Archer 3-speed, clutch, handle starter, tyres nearly new, splendid condition; £50.—Caldwell, c/o Miller, Bramley, Hants. [2110

HUMBER 1921 4½h.p. Combination, Grindley sidecar, lamps, horn, windscreen, Brooks cantilever saddle, exceptionally fine condition; bargain, £85.—P. J. Evans, John Bright St., Birmingham. [2091

Indian.

1922 7-9h.p. Indian Combination, dynamo.—2, Mounsey Rd., Bamber Bridge. [1996

5-6h.p. Indian, 2-speed, equipped, excellent order; £22.—17, Heaton Rd., Mitcham. [2315

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1919 Indian Combination, complete; £50.—J.B. Motors, Peckford Place, Brixton Rd., S.W.9. [1906

INDIAN Powerplus, electric lighting, perfect; £45. Norfolk, Dorset Mews, Dorset Rd., Clapham, S.W. [2261

£16.—1915 5-6h.p. Indian, 2-speed, clutch, spring frame, good appearance.—King, Egrove, Oxford. [2306

INDIAN 7-9h.p., clutch, late 1918, Amac, ride away; £25; exchange.—Gale, 33, Penrith Rd., Basingstoke [2209

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168.—Indians; exchange and extended payments. [2485

POWERPLUS Indian Combination, Binks, equipped, discs taxed; £39.—10, College Slip, Bromley, Kent. (P) [2275

1923 Indian Scouts, new; exchange quotations from Parwood Garage, Indian Agents, East Hill, Wandsworth [2252

1916 7-9h.p. Indian Combination, 2-speed gear box, K.S., fully equipped; £35.—11A, Dafforne Rd., Upper Tooting. [1925

£55.—Indian Powerplus combination, 1918-19, fully equipped, splendid condition; instalments.—63, Solon Rd., Brixton. [2283

INDIAN 7-9h.p. Twin, T.T., clutch, re-enamelled, fully equipped, any trial; £20.—Ward, South Western Garage, New Malden, Surrey. [2558

1915 7-9h.p. Indian, clutch model, splendid condition and appearance, £14 worth new parts; £30.—108, Ladysmith St., Shaw Heath, Stockport. [1946

1922 Indian Scout, electric lighting, horn, speedometer, not done 3,000 miles, taxed, equal to new; 70 guineas.—Klaveness, Balliol College, Oxford. [2038

BARGAIN.—Indian 7-9h.p., 2-speed, coachbuilt combination; 35 guineas; photograph; exchangea.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1871

GENUINE 7-9h.p. Indian, 2-speed, foot and hand clutch, Binks English controls, lamps, Klaxon, all on, appearance and condition equal new; £85.—Beanfront Gardens, Camberley, Surrey. [2115

LANGFORD'S, Indian specialists, for the wonderful 1923 models; highest price allowed for your present machine, liberal easy-payment terms; write, call or 'phone for particulars.—Langford's, 37, Cricklewood Broadway, London, N.W.2. Hampstead 8616. [2574

Spare Parts:

FOR Indian spares and overhauling try Horswill, Indian Specialist, over 10 years' experience, 42, Bridge St., Chester. [1277

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [3787

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MOTOR CYCLES FOR SALE.

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INVICTA-BROWN 2¾h.p., nearly new; £25; ta pedal cycle part.—57, Kenbury St., Camberwe London. [21

AT Edwards.—1921 2¾h.p. Invicta, 2-speed, fu equipped, excellent condition; 27 guineas; changes or deferred.—101, Gt. Portland St., W.1. [25

Ivy.

IVY 3h.p., 1922, 2-speed, clutch, kick-starter, wi Watsonian polished aluminium torpedo sidec dynamo lighting, 3 lamps, mechanical horn, legshield apron, Easting windscreen, mat, Watford speedomet and tool kit, tax paid, practically brand new and o of the prettiest outfits in England; 69 guineas. Delancey St. Garage, Camden Town, N.W.1. [24

Ixion.

1920 Ixion brand new, fixed gear, £35; 1921 Ixio 2-speed, £45.—Saunders, 32, High St., Hum stead. [25

James

JAMES 4¼h.p. Combination, 1917, little used, sple did condition; £50.—Garrod, High St., South No wood. [23

AT Edwards.—1922 3½h.p. Sports James, equippe tax paid, indistingnishable from new; 72 guinea Deferred payments and exchanges.—101, Great Portla St., W.1. [45

£49/10.—James late 1920 4½h.p., 3-speed, clutc kick-starter, enclosed chain drive, 28×3 wheel with Henderson lightweight sidecar, and accessorie tax and insurance paid.—Delancey St. Garage, Camde Town, N.W.1. [24

Spare Parts

JAMES Spares.—Immediate delivery.—Kays, 8 an 10, Bond St., Ealing. [94

WHITBY'S.—James spares, expert service.—7, Th Vale, Acton, W.3. 'Phone: Chiswick 1513. [97

Lea-Francis

LEA-FRANCIS Combination, 1916, fully equippe £35, or exchange.—887, Lea Bridge Rd., Walthar stow. [21

LEA-FRANCIS-J.A.P. Twin 3½h.p., all chain, speed, clutch, kick-start, lamps, tools, etc., goo hill-climber; £35.—"Hillside," Chelwood Gate, Ea Grinstead. [23

AT Edwards'.—1920 3½h.p. Lea-Francis, M.A engine, fully equipped, lamps, horn, speedomete perfect order; 48 guineas. Exchanges or deferred.- 101, Great Portland St., W.1. [93

Levis.

PREMIER Motor Co., the Levis specialists.

IMMEDIATE Delivery of 1923 Levis Models; als the last few 1922 models at further greatly re duced prices. 2¼h.p. Popular, single gear, £35 Model S, 2¼h.p., 2-speed, clutch, kick-start, £44 Model G2, 247 c.c., 2-speed, clutch, kick-start, £50 deferred payments 4% extra; sent on approval.- Premier Motor Co. Aston Rd. Birmingham [95

LEVIS Popular model, all on, any trial; £15.- 51, Ahinger Rd., Deptford. [25

1923 Models.—Wauchope's, 9, Shoe Lane, Londo —Levis; exchange and extended payments. [24

1923 Levis, 2-speed, kick-starter, clutch; £48, jus delivered.—Gibb, Northgate, Gloucester. 'Phone 852. [09

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., Londo W.1.—Complete stock of all Levis spare part always in stock. Write for free spare part list, statin year of manufacture. [07

Martinsyde

MARTINSYDE 1921 6h.p. Combination, lamps, etc. £75.—Bartletts, 93, Ct. Portland St., W. [24

MARTINSYDE 6h.p., 1922, with Montgomery sport sidecar, Lucas equipment and speedometer, mile age negligible; £105.—Ratcliffe Bros., 200, Gt. Port land St., W.1. [23

ROBERTSONS Motors, Limited, are the Londo Martinsyde Service agents; trial runs arranged 1923 models now available at the new prices, spare stocked.—157B, Gt. Portland St., W.1 [11

1922 Martinsyde 6h.p. Combination, complete with Milford sidecar, cost £160, has only been used a few times, a gift at £130; cash or deferred.—Marl borough (Motor House), 20, Finchley Rd. N.W.8 1656

ARE You Visiting Olympia? If so, call and see u on Stand No. 30, where we shall be pleased t give you full particulars of the Martinsyde motor cycle and combinations. We are agents for this machine cash, deferred payments, or exchanges.—Barker Motors, 194, Balham High Rd., S.W.12. 'Phone: 444 Latchmere. 'Grams: Pushfully, Bal., London. [252

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones' Garage, The Broadway, Muswel Hill, London N.10. [091

MOTOR CYCLES FOR SALE.

Matador.

DIFFERENT but better, that's the Matador!!

OUR Experience of Bradshaw engines, and the wonderful results obtained, have decided us to take up this machine without hesitation.

FOLLOW the decision of the men who know from experience and buy one. Its success in the coming year is assured, and we will help you to success if you are a competition rider, and to the joy of comfortable no-trouble touring if you require a machine for this purpose.

IT is 2¾h.p., with o.h.v. Bradshaw engine. The oiling is automatic and cannot get out of order, it cannot overheat, the three-speed Burman gear box is delightful, and with 700×80 tyres road shocks are oil. Speed!! Well, 70 m.p.h. on the Sports. The price is right, too; £75.

IT will not be at Olympia, but very close to it; don't leave it to the last minute; see us to-day about it.

MATADOR! Matador! Matador!!—Keep it in mind and look for the man with the Allan Gruzelier badge at Olympia.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W. [2451

Matchless.

CROSS, Effingham Sq., is Agent for Matchless for Rotherham district. [2437

1919 Victory Model Matchless, D.A. lighting, spare wheel; £60.—J.B. Motors, Peckford Place, Brixton Rd., S.W.9. [1905

1923 Models.—Wauchope's, 9, Shoe Lane, London. Central 5168.—Matchless Combinations; exchange and extended payments. [2487

MATCHLESS 1921 8h.p. M.A.G., 2-seater sidecar, hood, screen, dynamo lighting; £110.—Bartletts, 93, Gt. Portland St., W. [2459

MATCHLESS 1921, hood, screen, spare wheel, Binks, M.A.G., D.A., new tyres, condition perfect; £100. Markin, 90, High St., Notting Hill Gate. [1982

MATCHLESS, all models, 1923 prices; best exchange allowances; deferred.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [1155

TWO 1921 Model H Matchless Combinations, both as new, 1 dynamo, £87; other £82/10; any trial; exchanges.—24, Balliol Rd., North Kensington. [2328

1914 2-speed 8h.p. Matchless Combination, lamps, Easting, licensed, perfect condition; £30.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [2172

1921-22 Matchless Combination, M.A.G., spare wheel, spring frame, absolutely as new; cost over £200, bargain, 86 guineas.—67, Fernlea Rd., Balham. [2606

MATCHLESS Combination, 8h.p., 2-speed, lamps, horn, etc., overhauled, good running order; 40 guineas.—Edwards, 50, Harrington Rd., South Kensington. [1142

1922 Matchless Model H 2-seater Combination, 8 h.p., 2 screens, J.A.P. engine, electric light, done 500 miles only; £135.—Kent, Lynton Park Lane, Congleton. [2403

MATCHLESS, brand new, Model H2, M.A.G. engine, spring frame, Lucas lamps, horn, screen, shields, etc.; £130, only one at this price.—Mason's Garage, Letchworth, Herts. [1660

1921 Model H Matchless, dynamo lighting, spare wheel, hood, hood cover, speedometer, electric horn, sidescreen, etc., perfect; any trial; £98.—51, Upper Richmond Rd., East Putney. [2623

1921 Matchless Combination, 8h.p., dynamo lighting, hood, screen, spare wheel, speedometer, tyres, splendid condition throughout; £110.—Whitingham, Baker, Newdigate, Surrey. [2051

T. Edwards.—1919 8h.p. Victory Matchless Combination, Lucas lamps, Bonniksen speedometer, spare wheel, new condition throughout; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1150

1921 Model H Matchless Combination, dynamo lighting, spare wheel, hood, screen, M.A.G. engine, speedometer, small mileage, £90; ditto, late 1920-21, dynamo lighting, £80.—Hillier, 127, St. Mark's Rd., North Kensington. [2322

JULY, 1920, Matchless Combination, fitted with 8h.p. J.A.P. engine, 4 interchangeable wheels, tyres as new, Lucas dynamo lighting set, Watford speedometer, Klaxon horn, spare tubes and full kit, will do 60 miles to gallon with three passengers; price £125.—Can be seen any time at 146, High St., Chesham, Bucks. [2008

1923 Matchless Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

MATCHLESS Solos or Combinations. Before ordering your 1923 mount, consult our representatives on the Matchless stand at Olympia, who, being practical agents and riders, will be pleased to discuss and advise the most suitable model. Demonstrations. Instruction and tuition free.—Guiver and Baston, Broadway Motor Depot, Fleet, Hants. [2143

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3½ h.p.	Sports, O.H.V.	£*
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8 h.p.	Combination	£130 5

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3½ h.p.	Sports	£70
4¼ h.p.	Combination	£92

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MATCHLESS 1922 2-seater Combination, with dynamo lighting, spare wheel, legshields, speedometer, 2 screens, electric and bulb horns, scarcely used, recently cost £240, accept £145; also 1920 spring frame combination with dynamo lighting, £105; 1920 spring frame combination in perfect condition, accessories, £100; 1920 spring frame combination, J.A.P. engine, £105; 1919 Victory combination, with spare wheel, etc., £75. Full list of these and 50 other machines post free on request; exchanges and deferred payments.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [2444

Spare Parts:

MATCHLESS Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9446

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones' Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

McKenzie.

McKENZIE, new July, taxed, mileage 800, good order; £20.—Mills, 51, Swaby Rd., Earlsfield, S.W. [1930

McKENZIE motor cycle, only done 100 miles, complete, licensed, only wants seeing; £20/10.—Hillier, 68, Lower Addiscombe Rd., East Croydon. [1944

Metro.

1920 Metro-Tyler, tax paid, discs, lamps, shop-soiled; £40.—Saunders, 32 High St. Hampstead. [2501

1920 Metro-Tyler Sports Model, excellent order; £25; exchanges.—"Homac's," 243, Lower Clapton Rd., N.E. Phone: Dalston 2408. [2471

Minerva.

MINERVA 2¾h.p., Bosch, Druids, good tyres, perfect; £8.—17, Heaton Rd., Mitcham. [2318

Motosacoche.

£9.—Motosacoche 2½h.p., Bosch, B.B., perfect, every accessory.—Guimchard, 179, York Rd., N. [2239

Ner-a-Car.

NER-A-CAR, Nov., 1921, good condition; £45.—Waterloo House, North Cheam, Surrey. [2288

£27.—1922 Ner-a-Car, slightly shop-soiled only, a bargain.—South Eastern Garage, Herne Hill, S.E.24. [2402

New Hudson.

£17.—1914 3½h.p. New Hudson, 3-speed, clutch, splendid running order.—King, Egrove, Oxford. [2307

2½h.p. New Hudson, 3 speeds, clutch; bargain, £16.—Fisher, Springwell Rd., Heston, Hounslow. [2369

1920 4h.p. New Hudson Combination, magnificently equipped; bargain, £62/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [2094

3½h.p. New Hudson Combination, 3-speed, clutch, good order; £30 or near offer.—Honchin, 189a, High St., Peckham, S.E.15. [2237

1920 New Hudson, 2-speed, re-enamelled, tax paid, all on; £29.—Manton, c/o Shepherds, Enfield Highway. 'Phone: Waltham Cross 31. [0971

NEW HUDSON Combination, 1916, 6h.p., countershaft, fully equipped, splendid condition; £50; exchange.—5, Hall Rd., East Ham, E.6. [2136

1920 New Hudson 4h.p. Combination, lamps, speedometer, screen; £60; taxed.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9975

1919 2¼h.p. New Hudson motor cycle, 2-speed, 2-stroke, completely equipped, excellent order; £30.—E. W. Roberts, Blencathra Garage, Keswick. [0973

NEW HUDSON 2¼h.p. 1920 De Luxe, straight handle-bars, aluminium discs, footplates, copper exhaust, electric lighting, brand new heavy Dunlops, thoroughly overhauled and guaranteed, with all accessories; £38.—283, Wightman Rd., Hornsey, N. [1899

New Imperial.

NEW IMPERIAL, brand new, 3-speed; £45.—S. E. Porter and Co., Whitchurch, Salop. [2508

NEW IMPERIAL-J.A.P., 2-speed; £20.—J.B. Motors, Peckford Place, Brixton Rd., S.W.9. [1907

1921-22 2¾h.p. New Imperial-Jap, 2-speed, clutch, K.S., as new; 34 guineas.—67, Fernlea Rd., Balham. [2609

249 c.c. New Imperial, close box, 70 m.p.h., guaranteed perfect; £47/10.—43, Avenue, Egham. [2219

NEW IMPERIAL, 1922, 2¾h.p., all-chain, 3-speed, taxed, practically unused; £55.—Clark, 7, Exhibition Rd., S.W.7. [5856

MOTOR CYCLES FOR SALE.

New Imperial.

1923 New Imperial models.—Wauchope's, 9 Shoe Lane, London. Extended payments and exchange. [2488

NEW IMPERIAL 2½h.p. J.A.P., 2 speeds, accessories, tax paid, splendid condition; £24.—A., 136, Ravensbury Rd., Earlsfield, London, S.W. [9995

1919 8h.p. New Imperial Combination, lamps, horn, tools, screen, A1 condition; £55, or near offer.—70, Royal Hospital Rd., Chelsea. Kensington 7878. [2449

1917 2¾h.p. New Imperial-Jap, 2-speed, overhauled and in first-class condition; 22 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 639. [2591

£31/10.—New Imperial Combination, 3h.p. J.A.P., 1917, 2-speed fully equipped, perfect throughout, go anywhere; offers, or separate.—Barnes, 83c, Trinity Rd., Balham, S.W.17. [2141

1921, August, New Imperial-Jap 2¾h.p., 2-speed, brand new condition and guaranteed perfect, lamp, horn, etc., tax paid, any trial; £35/10.—Harvey, 47, South Lambeth Rd., S.W.8. [2523

AT Edwards.—1921 8h.p New Imperial Combination, all-chain drive, 3-speed, kick-starter and clutch, electric lighting, horn, Easting Royal wind screen, pillion seat, legshields, perfect condition throughout, tax paid; 81 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1151

Spare Parts.

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NEW IMPERIAL Spare Parts.—London stockists, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 6 p.m., 1 o'clock Saturdays. [0855

Norton.

PREMIER Motor Co. for Norton Bargains.

SPECIAL Offer of a few brand new 1922 Nortons at astounding reduction; Model 16H 3½h.p., 3-speed, list price £115, reduced to £80; Model No. 1 Big 4, 3-speed, list price £120, reduced to £85; deferred payments 4% extra; free delivery.—Premier Motor Co., Aston Rd., Birmingham. [9087

1923 Norton Models.—Wauchope's, 9, Shoe Lane, London. On easy terms and exchange. [2489

EAST Suffolk.—Norton, single speed, perfect condition, quick sale.—Turner, Mendlesham, Stowmarket. [1924

NORTON T.T., No. 9, 1921, excellent condition; £53.—Brown, Bungalow, Marehay, Derbyshire. [2249

1922 Norton, 16 H, perfect condition, accessories; offer by letter.—25, Brook Green, Hammersmith. [2648

SOUTHPORT.—1922 16H Norton, brand new, unridden; 79 guineas; exchanges.—Kents, 417, Lord St., Southport. [2266

NORTON 3½h.p. 16H, 3-speed, absolutely new 1922 model; list price £115, will accept £78.—Marston, 31, Bridge St., Chester. [2014

NORTON, 1921, Philipson, lamp, horn, taxed, very fast, splendid condition; £46, or exchange.—3, Stamford Brook Rd., Hammersmith. [2458

1922 Model 16H Norton, fully equipped, taxed, new tyies, splendid condition and appearance; genuine bargain; any trial; £69.—Crawley, Chatteris, Cambs. [1896

75 m.p.h. Norton, 3½h.p., 3-speed, 1921, under 2,000, Ricardo piston, specially balanced engine, racing gear box, tax paid; £70.—Sissons, St. Mary's Rd., Sheffield. [1175

THE Famous Norton—it surprises, And wins all the cups and prizes; If you wish to purchase one, Enquire of R. F. Alderton.—Stand No. 103, or Hardwicke Rd., Reigate, Surrey. [2118

1921 Big Four Combination, Norton De Luxe, sidecar, Klaxon horn, F.R.S. lamps, 700×80 tyres, guaranteed perfect, new condition, tax paid, any trial; £82.—Harvey, 47, South Lambeth Rd., S.W.8. [2522

NORTON 3½h.p., B.R.S., engine No. 20609, Sept., 1920, Brooklands certificate, lamps, horn, Bonniksen, spares, full tool kit, mileage under 5,000, splendid condition; £56.—Ray and Sons, 66, Church Rd., Hove. [1933

1921 Norton Big Four, Lucas lamps, speedometer, Klaxon, knee grips, watch, mileage 500, indistinguishable from new, guaranteed perfect throughout; 75 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington [9310

1921-2 Big 4 Norton Combination, electric lighting, speedometer, horn, mirror, disc, Canoelet sidecar, apron, practically indistinguishable from new, small mileage, fully insured, tax paid; cost £180, sacrifice, £78.—100, Riversdale Rd., Highbury, N.5. [2535

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N.S.U. Motor Cycle, 2-speed, coachbuilt sidecar, hood, screen; £27/10, or offer.—109, High Rd., Chiswick. [2153

N.U.T.

SPORTING N.U.T. 2¾h.p., o.h.v., tax, fast, perfect, any examination; offers, must sell.—Harrison, 46, Liverpool Rd., London. [1922

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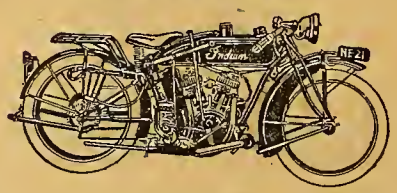

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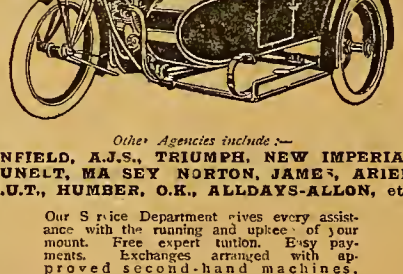

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N.U.T

1921 N.U.T. 3½h.p. Combination, dynamo lighting, etc., only run 5,000 miles; £80, or near offer.—Particulars, R. Arnold, "Ravenslea," Oatlands Park, Weybridge. [1916

O.K.

1920 O.K. 2-stroke, very nice condition; bargain, 19 guineas.—67, Fernlea Rd., Balham. [2607

O.K. 1916, 2-speed, fitted 1922 2¾h.p. engine and magneto, guaranteed perfect order; £16.—8, E. Porter and Co., Whitchurch, Salop. [2506

1922 O.K.-Villiers, excellent condition, full equipment; snip, £27; ride 100 miles to purchaser.—Wigley, Walgrave, Northamptonshire. [2221

Omega.

OMEGA, 1922, new model, No. 3 £51, model No. 2B £50.—Ratcliffe Bros., 200, Gt. Portland St., W. [2395

OMEGA 1922 3h.p. Combination, 3-speed, etc., brand new; to clear, £75.—Bartletts, 93, Gt. Portland St., W. [2466

1920 Omega-Jap 2¾h.p., 2-speed, clutch, kick-start, fully equipped, as new; £30.—99, Cannon Hill Lane, Merton, S.W. [2171

P. and M.

P. and M., 2-speed, K.S., R.A.F. less controls; £18.—1, Springfield Park Cres., Catford, S.E.6. [2340

1918 P. and M. Combination, excellent; £30.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [2498

P. and M. Combination, 1918, hood, lamps, taxed, good lot; £45.—38, Sherriff Rd., West Hampstead. [2186

P. and M., R.A.F., perfect order and complete lamps, horn, etc.; £35.—S. E. Porter and Co., Whitchurch, Salop. [2505

1918 P and M., 1921 sidecar, excellent condition; bargain; terms considered.—Write, Evaleon, Elm Rd., Evesham. [2589

P. and M. 3½h.p., 1918, sidecar, 2 speeds, lamps, licence reground, new piston; £48.—George, Station Garage, Pershore. [2335

1920 P. and M., 2-speed, K.S., lamps, horn, etc., good condition, £50; solo combination coachbuilt sidecar, £60.—Luxmoore and Hubbard, Ilfracombe. [1919

P. and M. Combination, 2-speed, K.S., recently overhauled and enamelled, fine order, bulbous back sidecar, any trial; £35.—1, Springfield Park Cres., Catford, S.E.6. [2341

1923 P. and M. Combination, actually in stock, De Luxe model; £105; exchanges invited.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch. 'Phone: Padd. 1177. [2405

BARGAINS.—P. and M. Combination, 1920, as new, 53 guineas; also 1917 P. and M. combination, 36 guineas; solo, 29 guineas; photographs; exchanges.—Peter Gordon Ltd., 110, Upper Richmond Rd., East Sheen. [1872

AT Edwards.—1918 3½h.p. P. and M. Combination, equipped lamps and horn, painted in maker's latest colours, in very nice condition throughout; 40 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1853

P. and M. Combination, R.A.F., new carburetter, front brake, chains, tyres nearly new, engine overhauled, sidecar repainted and upholstered, genuine bargain; £50, or near.—H., 32, Topsham Rd., Upper Tooting, S.W.17. [2045

P. and M.—We have a large stock of second-hand spares of these machines; on receipt of postcard stating your requirements we will, by return, quote you competitive prices; our stock comprises practically all parts.—Maudes', 100, Great Portland St., W.1. [2641

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ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

FOR Complete and Satisfactory P. and M. Spares Service, get in touch with the Authorised Agent Specialists, Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch. Padd. 1177. [2410

Premier.

3½h.p. Premier Combination, 2-speed, kick-start, licensed; £35.—George, Station Garage, Pershore [2334

PREMIER Combination 3-speed countershaft, kick-start; £38; take lightweight part.—57, Kenbury St., Camberwell, London. [2183

PREMIER 1915 3½h.p. Coachbuilt Combination, 3-speed, countershaft, kick-start, enamel and plating as new, lamps, speedometer, thoroughly reliable; 25 guineas.—1, Priory Rd., Kew. [1826

Spare Parts:

PREMIER Spares.—I have a large consignment of genuine parts purchased direct from the makers. Write for quotation.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [2504

MOTOR CYCLES FOR SALE.

Sunbeam.

1921 Sunbeam 8h.p. Combination, most luxuriously equipped, dynamo, spare wheel, hood, etc., many spares, as new; £130, nearest.—James, c/o Bradmores 482, Harrow Rd., Paddington. [9974

EXCEPTIONAL Bargain.—Sunbeam 1922 4¼h.p., and Watsonian sidecar, Dunlops, Easting screen, Klaxon, tax paid, only done about 300 miles, absolutely like new; £119/10, just cost £172; inspection invited; opposite Motor Cycle Show.—Wilkins, Simpson, opposite Olympia, Loudon. [2545

8h.p. Sunbeam Coubination, purchased March, 1920, most luxuriously equipped, with dynamo lighting, Blumel windscreen, luggage grid, spare wheel, new sidecar body recently fitted, and also four new oversized tyres, in absolutely first-class condition, and open to any inspection; £100 for quick sale, no offers.—Kitchen, The Gateway, Hawkhurst Rd., Kenley, Surrey. [2002

Triumph.

PREMIER Motor Co. for Triumph Bargains.

SPECIAL Offer of a few brand new 1922 type SD, 4h.p. all-chain drive Triumphs, at £85; makers' current list price, £115; sidecars to match, Millford £20, Montgomery sporting £18; carriage paid to any address; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [9595

CROSS, Effinghsm Sq., is Agent for the Trusty Triumph for Rotherham. [2435

TRIUMPH, clutch, fast, sporty, reliable; £20, gilt.—Highman, Bimport, Shaftesbury. [1909

£15.—3½h.p. Triumph, clutch and gears, good running order.—King, Egrove, Oxford. [2309

1920 Triumph Combination, Easting, all lamps, etc., perfect condition; 60 guineas.—Below.

1920 Triumph-Gloria, fully equipped; 60 guineas; exchanges.—Maynard, 161, Bowes Rd., Bowes Park, N.11. 'Phone: Palmers Green 19. [2166

TRIUMPH Combination, fully equipped; £70.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [2399

TRIUMPH, 1913, clutch, equipped, £18; 1912 model, £12.—17, Heaton Rd., Mitcham. [2316

59 Guineas.—1921 all-chain Triumph, fully equipped, perfect condition.—40, Aynhoe Rd., W.14. [2224

1921 4h.p. S.D. Triumph and Gloria Sidecar; £85.—E., 48, St. George's Sq., Forest Gate, E. [2358

TRIUMPH 1920, splendid condition, guaranteed; snip, £55 cash, or extended payments.—Below.

THE Hackford Eng. Co. have four more renovated countershaft Triumphs at £45. Cash or extended payments. Do not miss this opportunity. Call, write, or 'phone Brixton 3062.—33, Hackford Rd., Brixton, S.W.9. [2629

1920 Triumph Combination, excellent; £60.—Goud, 122, Maida Vale. 'Phone: Maida Vale 1353. [2499

1918 Countershaft Triumph, £40; ditto, 1922, as new, £62.—24, Balliol Rd., North Kensington. [2332

1921 Triumph H 4h.p., licence paid; 68 guineas.—Williams, Brightview, Hadley Rd., New Barnet. [2291

4h.p. Triumph, Millford sidecar, enamel and plate equal to new; £50.—120, Sutherland Rd., Croydon. [2404

TRIUMPH 1914, splendid condition; take 3-speed cycle part.—25, Ravensbourne Rd., Catford, S.E. [2551

1921 Triumph Junior 2¼h.p., 2-speed, condition as new; £35.—44, Longfield St., Southfields, S.W.18. [2514

1921 Triumph Combination, condition as new; first cheque for 59 guineas secures.—67, Fernlea Rd., Balham. [2603

TRIUMPH Chain Drive 1922 models at £85, fully guaranteed.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [2390

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TRIUMPH 1918-19, countershaft, guaranteed perfect order; £45.—S. E. Porter and Co., Whitchurch, Salop. [2507

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

1922 Baby Triumph, 2-speed, new October, never ridden, a bargain; £45; cost £65.—10, Castle St., Cirencester. [2055

TRIUMPH Combination, 3½h.p., 2-speed clutch, perfect; £30; exchange light van.—Highman, Bimport, Shaftesbury. [1910

3½h.p. Triumph, Philipson pulley, Binks, tyres as new; £22/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [2095

1918 Countershaft Triumph, Lucas lamps, horn, etc, tyres and condition good; 45 guineas.—Streeter, 61, South St., Reading. [1926

TRIUMPH 1919 4h.p., 3-speed, clutch, K.S., perfect condition, any trial; £60, or nearest offer.—193, Brentwood Rd., Romford. [9397

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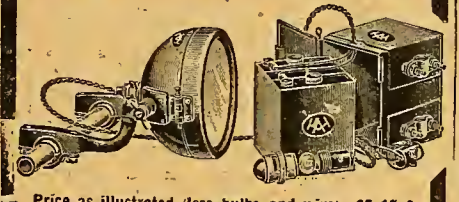

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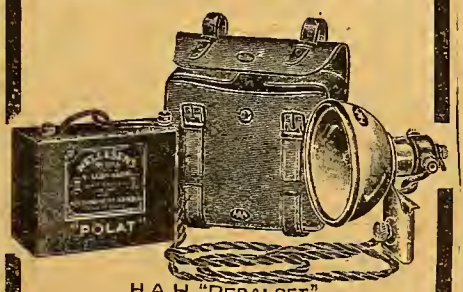

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TRIUMPH Combination, model H, Easting, new tyres, fully equipped, perfect; £52.—51, Upper Richmond Rd., East Putney. [2619

1919 4h.p. Triumph Combination, overhauled and as new; £60, bargain exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [2093

1923 Triumph models.—Wauchope's, 9, Shoe Lane, London. Central 5168. Exchanges and easy terms; tuition free; generous terms. [2495

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3589

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

TRIUMPH-RICARDO 1922, absolutely as new, Lucas lamps, horn, tax paid and fully insured; sacrifice £70.—Bates, 19, Albany Rd., Coventry. [2065

26 Guineas; exchange.—1913 Triumph, coachbuilt sidecar, nice condition, fully equipped, any examination.—76, Neate St., Camberwell. [2589

1919 Triumph Combination, as new; exchange 2-seater 10h.p. car, cash difference.—Rhind and Co., Stone Place, Rusholme, Manchester. [2559

TRIUMPHS, 1922 models, new and unused; type H, listed £105, cash £82; Junior, listed £65, cash £55.—Laffeaty, 308, King's Rd., Chelsea. [2061

1920-21 Triumph Combination, splendidly equipped, lamps, everything as new; £60.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [2168

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

TRIUMPH, Model H, brand new and unused, listed at £105; our price £88; exchanges or deferred. Edwards, 50, Harrington Rd., South Kensington. [4533

TRIUMPH 4h.p., Model H, new last month, equipped, taxed; no reasonable offer refused; private owner.—4, Chalk Farm Rd., Camden Town, London. [2385

TRIUMPH 1922 4h.p. type S.D., slightly shop-soiled only, £85; type H., £80; write for list of shop-soiled bargains.—P. J. Evans, John Bright St., Birmingham. [2089

£48.—Countershaft Triumph, 1918, 4h.p., engine No. 58653; also another; 40 guineas.—Smith's, 86, Chalk Farm Rd. Opposite Chalk Farm Tube Station. [2521

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [9653

£68, sacrifice.—1921 Triumph, all-chain model, and sidecar, electric and acetylene lamps, fully equipped, taxed, as new.—143, Ravensbury Rd., Earlsfield, S.W. [2454

TRIUMPHS. S.D. all-chain, condition particularly good, £75; also 1 new S.D. all-chain, £95; and 1 new type H, chain-cum-belt, £85.—Marston, 31, Bridge St., Chester. [2020

1922 Ricardo-Triumph, 3½h.p. o.h.v. engine, brand new, but shop-soiled; £105; exchanges.—"Homac's," 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [2473

1921 Triumph H Combination, Gloria sidecar, Easting, luggage grid, many extras, few miles only, fully guaranteed; £87/10.—51, Upper Richmond Rd., East Putney. [2621

AT Edwards.—1921 Triumph Combination, all-chain, Gloria sidecar, lamps, screen, speedometer, excellent condition; 85 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [2582

£70.—Triumph-Gloria Combination, 1921 model, tax paid, numerous accessories; deferred terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2429

1917 Countershaft Triumph, renovated with 75% brand new parts last month, Lucas lighting, Watford speedometer; £45; exchange considered.—60, Barrington Rd., S.W.9. [9782

RICARDO-TRIUMPH, 1922, guaranteed perfect condition, Lucas equipment, 4 spare sprockets, tyres, etc., successful trials machine; 85 guineas.—Knight, Rynall Cardens, Evesham. [1897

£95.—Triumph Combination, 1922, all-chain drive, used for demonstration, complete with every accessory, tax paid; terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2428

1920 Triumph, Gloria sidecar, Easting windscreen, lamps, speedometer, horn, luggage and petrol carriers, exceptionally fine condition, privately owned; £65.—Chimes Garage, 253, Streatham High Rd., S.W.16. 'Phone: 2948. [1978

1921 type S.D. Triumph-Gloria Combination, Lucas electric lighting, windscreen, Bonniksen speedometer, Hutchinson super-studded tyres nearly new, specially picked machine, carefully driven by an expert; original cost £205, guaranteed as new throughout; a real bargain at £110.—Premier Motor Co., Aston Rd., Birmingham. [2581

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TRIUMPH 1920 model H, fully equipped, Montgomery touring sidecar, Easting screen, carefully driven machine, mechanical condition excellent; £65; inspection by appointment.—Mrs. Beamont, Brooklyn, Private Rd., Enfield. [1975

£82.—Triumphs, new 1922 all-chain S.D. models, £82; these are in stock at Hammersmith, near Olympia; maker's full guarantee.—Harry Nash, Contracting Agent, 391, King St., Hammersmith. 'Phone: 2837 Hammersmith. [2212

SOUTHPORT.—Triumph-Gloria 1922 model, all-chain combination, Lucas Magdyno, spring wheel, Lucas electric horn, Triumph legshields, Easting, luggage carrier, petrol carrier, Tan-Sad, superb condition, unpunctured; snip, 105 guineas; exchanges.—Kents, 417, Lord St., Southport. [2268

Spare Parts:

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CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

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TRIUMPH Spares, every part in stock, no waiting, prices right.—Ward and Co., 51, Upper Richmond Rd., East Putney. 'Phone: Putney 2754 [1135

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free. gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [080-

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FURTHER Startling Reductions in showroom-soiled 1922 models; E2, 2-speed, £52; E3, 3-speed, £55; these prices are £10 below makers' 1923 prices; all with clutch and kick-start, carry makers' full guarantee; easy payments 4% extra.—Premier Motor Co. Aston Rd., Birmingham. [9091

1923 Velocette models.—Wauchope's, 9, Shoe Lane London. Exchange and extended payments tuition free. [2496

66 M.P.H. Guaranteed, super-sports Velocette, full racing spares, winner numerous events; £55.—Particulars, Marshall, Grand Theatre, Mansfield. [2344

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WILLIAMSON Combination, 8h.p. Douglas engine, Canoelet sidecar, lamps, horn, tools, tax paid, very smart appearance, perfect condition; must sell owing to financial circumstances; £42, or nearest offer. —P. Davison, 14, Holmesdale Rd., Bristol. [2159

Wolf.

WOLF 1916, 2¾h.p., 2-stroke, 2-speed, clutch, overhauled, good order; £17—2, Worthing Rd., Horsham. [2142

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F.O.C.H. invite inspection; Zenith and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1374

ZENITH (new March, 1922), 5-6h.p. countershaft, kick-starter, mileage 1,400 unscratched, full equipment, taxed; £66/10.—391, King St., Hammersmith. [2213

58 Guineas.—1922 (late) Zenith-Bradshaw 3½h.p., 3-speed, clutch, K.S., all-chain drive, speedometer, lamps, licensed, practically indistinguishable from brand new.—2a, Eleanor Grove, Hoggers Corner, Barnes. [2232

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N.U.T., 3½ h.p., 1922, Electric	£79
SCOTT, 1919, 3¾ h.p., lamps, horn	£49
SUNBEAM, 1922, 3½ h.p., detachable wheels	£95
P.&M., 1916, 3½ h.p., 2-speed, Kick Start	£32

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Zenith.

ZENITH 1919 8h.p. Sports, very fast, speedometer; £55, nearest offer.—Warwick, 11, Abbey Rd., N.W.8. [2274

ZENITH-BRADSHAW 3½h.p., oil cooled, Gradua gear, £70; also all-chain 3-speed model, £85.—Marston, 31, Bridge St., Chester. [2021

PRACTICALLY brand new, latest 8h.p., all-chain, countershaft Zenith Sports Combination, super-sports J.A.P. engine, magnificent outfit, run few miles; sacrifice £110; exchanges.—24, Balliol Rd., North Kensington. [2330

Spare Parts:

ZENITH Spares.—Immediate delivery.—Kays, 8 and 10, Boud St., Ealing. [9447

Ladies' Motor Cycles.

LADY'S Douglas, 1915, 3-speed, kick-start, clutch, good condition; £35.—Miss Headlam, Highfield, Liphook. [1891

DOUGLAS (lady's model) 2¾h.p., 2-speed, clutch, and K.S., licensed, just overhauled, new frame and tyres; £33.—Rev. P. Lewis, St. Alban's, Westgate-on-Sea. [1938

Miscellaneous.

3½h.p. J.A.P., good condition; £17/10; week-ends. 2 —54, Gowan Rd., Willesden Green. [2040

NAYLOR and Kirk will entertain any kind of exchange with any of the following bargains below, all tax paid:—

NAYLOR and Kirk.—1918 Enfield Combination, 8h.p., perfect condition; £46.—Below.

NAYLOR and Kirk.—1918 7-9h.p. Harley Combination, nice condition, fully equipped with lamps, horn, speedometer, etc.; £49.—Below.

NAYLOR and Kirk.—1919 Harley solo, 7-9h.p., painted blue, good appearance and condition, equipped; gift at £40.—Below.

NAYLOR and Kirk.—B.S.A. 4½h.p., clutch, free engine, in splendid condition; £22. 3½h.p. Precision, 2 speeds, all on; £14. P. and M., 1918, fully equipped and powerful; £25.

NAYLOR and Kirk.—1920 Connaught, 2 speeds, excellent condition and appearance, equipped; £25.—Below.

NAYLOR and Kirk.—1918 2¾h.p. Douglas, 2-speed, renovated throughout; £26.—Below.

NAYLOR and Kirk can supply any new machine, top prices being allowed on present mount.—Below.

NAYLOR and Kirk, 406, Garratt Lane, Earlsfield, S.W.18. 'Phone: Wimbledon 2041. [2572

HALIFAX.—1923 New Imperial, Douglas and Levis models from stock; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [2024

F.O.C.H. for New and Second-hand Cycles, cars, etc.; bargains; cash, or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube). [3864

BOOTHS Motories, Blackpool.—Shop soiled 1922 models: £185 Ruby combination, £159/10; £70 Ruby lightweight, £57/10; £150 Rudge combination, £125/10; £60 Bradbury lightweight, £49/19/6.

BOOTHS Motories, Blackpool.—Four 2-speed P. and M.'s; £17/10/6, £29/10/6, £32/10/6, £39/10/6.

BOOTHS Motories, Blackpool.—3½h.p. Triumph, Philipson pulley, £18/10/6 Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; Soo, 2-speed, £25/10/6.

BOOTHS Motories, Blackpool.—Lady's 3-speed motor cycle, £16/10/6; 6h.p. Rex combination, £17/10/6; 3½h.p. Humber, £19/10/6.

BOOTHS Motories, Blackpool.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Premier, £22/10/6; 5h.p. Rudge, 2-speed, £25/10/6; 5h.p. Rudge, 3-speed, £27/10/6.

BOOTHS Motories, Blackpool.—Singer, 2-speed countershaft, £24/10/6; 2h.p. lightweight, magneto, £11/10/6; 2-speed Douglas, £24/10/6.

BOOTHS Motories, Blackpool.—1921 Rudge-Multi, dynamo lighting, £52/10/6; 4h.p. Douglas, £55/10/6; 1920 Douglas, 3-speed, clutch, £52/10/6; 5h.p. Indian, 2-speed, £29/10/6; 7h.p. Indian, £29/10/6; 3h.p. twin Enfield, £34/10/6.

BOOTHS Motories, Blackpool.—1920 Martinsyde combination, £85/10/6; 1919 Indian, aluminium sporting sidecar, dynamo lighting, £85/10/6; 1920 Matchless combination, £85/10/6; 3½h.p. New Hudson combination, £39/10/6; 8h.p. Premier combination, £39/10/6; Enfield combination, £39/10/6.

BOOTHS Motories, Blackpool, 1921 New Hudson, 2 speeds, kick-starter, £39/10/6; 1920 Douglas combination, £59/10/6; £90 Ruby spring frame lightweight, fully equipped, £55/10/6.

BOOTHS Motories, Blackpool.—8h.p. Cardeo Cycle Car, £32/10/6 Zebre light car, 4-cyl., electric lighting and starting, detachable wheels, £175/10, cost £345. Several others, cheap. Push cycles taken in exchange.—Booths Motories, 294, Waterloo Rd., Blackpool. 'Phone: 1451. [8294

MOTOR CYCLES FOR SALE.
Miscellaneous

WANDSWORTH Motor Exchange, London's old-established firm, has finest selection motor cycles in London. Easy terms.

WANDSWORTH Show Bargains.—While visiting Olympia, don't forget to come and see our show.

WANDSWORTH.—No need to compare prices; you can see who's the cheapest.

WANDSWORTH.—Easy terms. Weekly payments taken on any motor cycle or combination.

WANDSWORTH.—1922 Douglas 2¾h.p., 3 speeds, lamps, practically new; 55 guineas; weekly payments.

WANDSWORTH.—1922 Royal Enfield 2¼h.p., 2 speeds, mostly soiled; 38 guineas; weekly payments.

WANDSWORTH.—1922 A.J.S. 2¾h.p. sports model, dynamo lighting, special; 59 guineas; weekly payments.

WANDSWORTH.—1922 Triumph, brand new, unused, 4h.p., 3 speeds; 85 guineas; weekly payments.

WANDSWORTH.—1922 Sunbeam, brand new, unused, 3 speeds, clear; 85 guineas; weekly payments.

WANDSWORTH.—1922 B.S.A., brand new, unused, 4¼h.p., 3 speeds; 82 guineas; weekly payments.

WANDSWORTH.—1922 F.N. 7h.p., 4 cyls., 3 speeds, lamps, opportunity; 65 guineas; weekly payments.

WANDSWORTH.—1922 magnificent Indian, dynamo lighting, Powerplus, speedometer, new; 75 guineas; weekly payments.

WANDSWORTH.—1921 Henderson, lovely machine, dynamo lighting, 10h.p., gift; 69 guineas; weekly payments.

WANDSWORTH.—1921 Diamond-Jap 2¾h.p., Enfield, enclosed gear, beauty; 39 guineas; weekly payments.

WANDSWORTH.—1921 Royal Enfield, almost new, 2¼h.p., 2 speeds; 35 guineas; weekly payments.

WANDSWORTH.—1920 Indian Powerplus, dynamo lighting, 3 speeds, beauty; 59 guineas; weekly payments.

WANDSWORTH.—1921 Scott Squirrel, 3¾h.p. twin, water-cooled, as new; 56 guineas; weekly payments.

WANDSWORTH.—1920 Rudge-Multi, Isle of Man T.T., clearance; 39 guineas; weekly payments.

WANDSWORTH.—1921 Triumph, 2¼h.p., 2 speeds, lamps, nearly new; 35 guineas; weekly payments.

WANDSWORTH.—F.N., latest 5-6h.p. made, clutch model, as new; 43 guineas; weekly payments.

WANDSWORTH.—1921 A.B.C. 3h.p. twin, 4 speeds, spring frame; offers; weekly payments.

WANDSWORTH.—1921 Rudge coachbuilt combination, 5-6h.p., hood, screen, lamps; 59 guineas; weekly payments.

WANDSWORTH.—Harley-Davidson coachbuilt combination, 7h.p., 3 speeds, lamps; 49 guineas; weekly payments.

WANDSWORTH.—B.S.A. coachbuilt combination, 4h.p., 3 speeds, lamps; only 39 guineas; weekly payments.

WANDSWORTH.—Premier, beautiful coachbuilt bulbous combination, 3½h.p., 3 speeds; 36 guineas; weekly payments.

WANDSWORTH.—Scott, rebuilt, sports model, water-cooled, very fast; bargain, 35 guineas; weekly payments.

WANDSWORTH.—Enfield 2¾h.p. twin, 2 speeds, chain drive, lamps, hooter; 26 guineas; payments.

WANDSWORTH.—Triumph sporting machine, 3½ h.p., good tyres; who wants? 25 guineas; weekly payments.

WANDSWORTH.—Ariel 3½h.p., 3-speed gear box, runs well; 25 guineas; weekly payments.

WANDSWORTH.—P. and M. 3½h.p., 2 speeds, kick, renovated, new tyres; 29 guineas; weekly payments.

WANDSWORTH.—Clyno 5-6h.p. twin, 3 speeds, kick, nice machine; 29 guineas; weekly payments.

WANDSWORTH.—Triumph 3½h.p., magneto, good tyres, lamps; only 19 guineas; weekly payments.

WANDSWORTH.—Motosacoche lightweight, 2½h.p., variable gear, lamps, runs splendidly; 19 guineas; weekly payments.

WANDSWORTH.—Bradbury 4h.p., good tyres, lamps, hooter, runs well; 18 guineas; weekly payments.

WANDSWORTH. — F.N. 5-6h.p., shaft drive, dropped frame, smooth running; 19 guineas; weekly payments.

WANDSWORTH.—Humber 3½h.p., 2-speed, handle starting, lamps, hooter; 23 guineas; weekly payments.

WANDSWORTH Motor Exchange, Ebner St., York Rd., Wandsworth (Town Station). 'Phone: Latchmere 4686. [2512

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BEAT THE MARKET HOLLOW.

THESE ARE ALL BRAND NEW LATEST TYPE 1922 MODELS AND IN MOST CASES IDENTICAL WITH 1923 MODELS. BUT HURRY UP TO SECURE ONE AS WE HAVE NOW ONLY A FEW LEFT.

List Price.		Sale Price.
£57	2¼ h.p. **ENFIELD,** 2-stroke, 2-speed	£44
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£82	2¾ h.p. **DOUGLAS,** 3-speed, clutch and kick-start, fully equipped	£62
£115	3½ h.p. **NORTON,** Model 16L, all chain drive	£73
£110	4½ h.p. **B.S.A.,** Model H2, all chain drive	£73
£85	2¾ h.p. **A.J.S.,** Sports Model B1	£70
£60	2¾ h.p. **TRUMP-J.A.P.,** Sports model, 2-speed and clutch	£45
£65	2¼ h.p. **VELOCETTE,** 2-speed, clutch and kick-start, all chain drive	£49
£120	5 h.p. **N.U.T.,** 3-speed, clutch and kick-start, all chain drive	£84
£73	2¾ h.p. **NEW IMPERIAL,** 3-speed, clutch and kick-start, all chain drive	£60
£79 16s.	2¾ h.p. **MASSEY-BLACKBURNE,** 3-speed and clutch	£60
£75 12s.	2¾ h.p. **O.K. BLACKBURNE,** 3-speed, clutch and kick-start, all chain drive	£60
£105	4 h.p. **TRIUMPH,** Model H, 3-speed, clutch and kick-start	£80
£119	3½ h.p. **ZENITH-BRADSHAW,** 3-speed, clutch and kick-start, all chain drive	£80
£85 1s.	2¾ h.p. **DIAMOND,** Barr & Stroud engine, 3-speed, all chain drive	£70
£78 15s.	2¾ h.p. **SPARKBROOK J.A.P.,** 3-speed, clutch and kick-start	£58
£115	3½ h.p. **DOUGLAS,** Sports model, all chain drive, fully equipped	£83
£60	2½ h.p. **LEVIS,** Model S, 2-speed, clutch and kick-start	£45
£54	2¾ h.p. **CONNAUGHT,** 2-speed, 2-stroke	£40
£115	3½ h.p. **BROUGH,** Sporting T.T. model, 3-speed, close ratio gearbox	£70
£39 18s.	2½ h.p. **CONNAUGHT,** single speed, 2-stroke	£29 10
£150	8 h.p. **BROUGH-SUPERIOR,** Model Mark I., guaranteed 80 m.p.h.	£130
£84	2¾ h.p. **HAWKER-BLACKBURNE,** Sports model	£70
£130	4½ h.p. **P. & M.** Combination, 4-speed, clutch and kick-start	£100
£175	7 h.p. **INDIAN,** electric combination, 3-speed, clutch and kick-start	£120
£105	4½ h.p. **QUADRANT** Combination, 3-speed, clutch and kick-start	£89
£152	6 h.p. **B.S.A.** Combination, 3-speed, clutch and kick-start	£100
£170	10 h.p. **HENDERSON,** 4-cylinder, with Millford de Luxe Sidecar, dynamo electric lighting, electric horn, etc.	£138

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113-115, LOTHIAN ROAD, EDINBURGH.
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Miscellaneous

JONES Garage, The Broadway, Muswell Hill, N.10.—London's lowest prices; cash or deferred terms; every machine guaranteed 3 months.

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JONES Garage.—4h.p. Triumph, as new, left Triumphs in 1920, completely equipped, very smart indeed; £48.

JONES Garage.—1920 Ariel 3½h.p., 3-speed, K.S., fast and quiet, equal to new; £46.

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JONES Garage.—1914 2¾h.p. Premier light tourist, very fine condition indeed; £20.

JONES Garage.—Any machine tested on Muswell Hill. We give free tuition. Send for free list and deferred payment terms.—Jones Garage, The Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. [2414

BARGAIN.—3½h.p. twin-cyl. motor cycle, Bosch magneto, B. and B. carburetter, low riding position, good tyres and tubes, needs slight attention; £9/10; carriage paid; exchange good riding saddles.—Owner, 13, High St., Crowthorne, Berks. [2456

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigdea, 130, Euston Rd. [0795

OUR Terms are most favourable. Send for full particulars, solo or combination.—Maudes', 100, Gt. Portland St., London. [0960

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

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EDWARDS and Co.,

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T.B.

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500 COMBINATIONS and Solos, any make, guaranteed for prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581 [0948

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ALWAYS Buy

SOLOS, combinations, cycle cars. If in town, write 'phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0332

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms:—Selling commission, 7½%, not chargeable unless machine is sold. If no sale, a nominal auction fee is charged: for motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [2421

MOTOR CYCLES WANTED

LATE Model Solo or Combination for cash.—C.S., 497, Old Ford Rd., Bow. [2198

WANTED, 2-stroke, cheap, cash on sight, no waiting. Duval, 61, Grand Parade, Harringay. [1993

WANTED, 2¾h.p. Douglas, 2-speed, not over £20.—Box 4774, c/o *The Motor Cycle*. [2312

2-STROKE Motor Cycle Wanted, must be cheap.—51, Engadine St., Southfields, S.W.18. [1903

4 h.p. Douglas, combination preferred, cheap.—Lawson, 8, Athenlay Rd., Nunhead, S.E.15. [2240

MOTOR Cycle, 2-stroke preferred; must be reasonable price.—10, Barcusmead Rd., Barnes. [2193

WANDSWORTH Buys all Motor Cycles, combinations; best cash prices paid on spot.—Below.

WANDSWORTH Buys all Motor Cycles, combinations; best cash prices paid on spot.—Below.

WANDSWORTH Motor Exchange, Ebner St., York Rd., Wandsworth (Town Station). 'Phone: Latchmere 4686. [2513

WANTED, several cheap motor cycles, any make, cash waiting.—King, Egrove Farm, Oxford. [2311

WANTED, several second-hand motor cycles; must be cheap.—Derrett, Orwell Rd., Clacton-on-Sea. [1335

CHEAP Motor Cycles, any quantity, cash on the spot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0947

WANTED, countershaft Triumph, about £30-£35 cash; East Midlands.—Box 4775, c/o *The Motor Cycle*. [2347

WANTED, damaged machine, cheap; Douglas or similar.—Wingfield, King St., Wokingham, Berks. [2382

WANTED, solo, Morgan, combination, good, cheap.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [2205

WANTED, 2¾h.p. Douglas, 1914 or later, any condition; must be cheap.—Williams, Kentmere, Kendal. [2053

MATCHLESS 1922 Combination wanted, completely equipped.—Little, 148, Lower Addiscombe Rd., Croydon. [2107

SPOT Cash for lightweight motor cycles, must be sound and not earlier 1916; before 6.30 p.m.—15, Deal Rd., Tooting. [2154

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

WANTED, Norton countershaft frame, cheap, state condition, price; also Norton racing Philipson, good condition.—Tom Robertson, Brewery Cottages, Pitlochry, N.B. [1958

BUNTING'S Buy, sell, or exchange any make o. motor cycle. State your requirements. We under take to do your business and give you satisfaction Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [0826

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition —Call, write, or 'phone, Short and Glass, Ltd., 485-495 Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [037

YOUR Motor Cycle or Combination taken in part payment for an Enfield, any model; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal, London. [2532

LONGMAN Bros., 17, Bond St., Ealing, are requiring a number of first-class machines and combinations for spot cash, or sale on commission. Representatives will be sent to inspect after preliminary negotiations.—Write, 'phone, or call. 'Phone: Ealing 689 [6555

SEND Your Motor Cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station, Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [2423

MOTOR SCOOTERS.

A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £20; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

MOTOR ATTACHMENTS.

AUTO Wheel, excellent condition, overhauled, taxed; £9.—Stainer, 179, Warwick Rd., Kensington, W.14. [2122

WALL Auto-Wheel, 2h.p., new, with attachment, suit tricycle; 26 guineas.—Box 4763, c/o *The Motor Cycle*. [2085

AUTO-WHEELS. 5 guineas, perfect condition; repairs and replacements.—J. W. Robins, 97, Latchmere Rd. Battersea. [2216

KINGSBURY Motor Scooter, practically new, £8; Chater lady back tandem, 3 speeds, Simplex attachment (1921), £9.—7, Cowdrey Rd., Wimbledon. [2518

This 2¾ h.p. BURLINGTON DOUGLAS

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Great New 'Burlington' Competition.

Have you sent in your suggestion for a slogan for our sidecars?

TO further popularise our well-known Sidecars, we are instituting the following interesting competition, in order to obtain a really good slogan for these Sidecars.

NOTE.—The type of slogan required is something similar to "Luxury Products at Economy Prices," or "Best on the Long Run."

All that is necessary is to send in your suggestion for a slogan, accompanied by an order for goods to the value of not less than 2/6.

Every 2/6 entitles you to send a suggestion. Eight suggestions must be accompanied by an order to the value of £1.

SEND YOUR SUGGESTION EARLY

An abbreviated List of spares and useful accessories will be found under our advertisement in the Miscellaneous columns.

What's yours for 1923?

Let our Representatives, who will be in attendance at the Show, advise you on your mount for next year. We can supply any machine for cash or deferred payments.

BURLINGTON

MOTOR CYCLE CO., Ltd.,

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Phone: Brixton 2417. Wires: Burlington Motors, Clapham.

Just by Clapham Common Underground Station.

HOODS, WINDSCREENS, ETC.

A FEW shop-soiled Easting and Sandham windscreens to clear; new panels fitted from 12/-; aprons from 10/-.

A FEW shop-soiled Bower adjustable windscreens, complete with coverall apron, manufactured under Patent Nos. 108334 of 1916, and 109601 of 1916, carriage paid on approval, at 25/- each; only a limited number; catalogue. Motor Cycle Show. We are exhibiting at 115, Hammersmith Rd., opposite Cadby Hall. We invite inspection.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [2105

HERCULES Hoods, aprons, etc., cheapest and best. Cameos, 50/-; celluloid, 1/6 sq. ft.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [0853

BASTONES for Windscreens.—Sandum windscreen with apron, 55/-; Easting, £3/18.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [2543

CELASTOID Strong Windscreens, 50×10 7/-, 25× 20 7/-, 16×10 2/6; thinner quality, for poultry houses, 50×20 5/-, 10×10 1/-; post paid.—B. Smith and Son, Woodhouse Lane, Leeds. 'Phone: 22576. [1331

BRISTOL Windscreens, will fit any sidecar, adjustable any angle, neat and efficient, Popular 37/6, De Luxe £2/12/6; Bristol face and chest screen for motor cyclists, being fitted to the rider does not affect steering, instantly attached, price 21/-; send for illustrations.—Patentees and Manufacturers, Bristol Sidecar Co., Stokes Croft, Bristol. [1791

BODIES.

HELEN Sidecars!!! Helen Sidecars!!! Helen Sidecars!!!

MOTOR Cycle Show.—We are exhibiting at 115, Hammersmith Rd., opposite Cadby Hall. We invite inspection of next season's models.

CLEARANCE Lines.—A number of touring bodies, beautifully finished, £5/5; unpainted, £4/15; sports bodies, beautifully finished, from £2/15; catalogues on request; extended payments.—Robini Manufacturing Co., 1 and 3, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1585. [2103

2-SEATER Body for Light Car or Cycle Car; 35/.— Hall, c/o Green Man Hotel, Whetstone, London. [1939

BASTONES for Sidecar Bodies, latest models in stock. Call and inspect before purchasing elsewhere. All at low prices.

BASTONES.—Great clearance of sidecar bodies (stock-soiled), semi-sporting lightweight, £2/15 each; ditto, not painted or upholstered, 20/- each; touring models, 70/- each; ditto, not painted or upholstered, 30/- each.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [2541

BRAND New Capyon and Mirdd Sports Body, with V-shaped windscreen, cost £25; first £9/9.—198, King St., Hammersmith. [2147

BURTON Sidecar Bodies cannot be beaten for value. All latest designs. Write for our 1923 catalogue, it will interest you. Sporting models, £3/7/6 to £5/10; touring from £4, finished complete and carriage paid.—Sidecar Co., Broadstairs [9382

COBB-SPEEDMAN Sidecar Bodies.—Unlimited number of bulbous bodies with lockers, beautifully finished and upholstered, types to fit any chassis, guaranteed 12 months, carriage paid, £4/15; other models from £1/19/6.—Vernon Cobb, Cobb-Speedman Sidecar Works, Burton Joyce, Notts. [1983

SIDECAR Body Designs for the trade only. Working, coloured pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Designing Dept., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—Dorset House, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

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FOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Our pre-war prices were the talk of the last Show. Make sure and see us at Stand No. 170, at Olympia.

SANDUM (V-shaped) windscreen, a hood, screen and apron. The Popular £2/15, and the Standard £3/18. Write for list.

SANDUM (V-shaped) windscreen. Our South London agent writes: "An instantaneous success: sold out; send further supply." Agents, get in touch with us.

SANDUM Dual-purpose Sidecar (patented). The only sidecar of reasonable length capable of carrying two adults in comfort. Bodies supplied separately if required.

SANDUM exhibit at Olympia, Stand No. 170, will include our full range of sidecar specialities.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0019

1920 Douglas Sidecar, complete, disc; 7 guineas.—1a, Hearne Rd., Chiswick, W.4. [2201

C.B. Sidecar, real, as new, complete; £9.—B., 57, Boston Rd., Brentford, Middlesex. [2355

CARS FOR SALE.

PALMER'S Garage, 187-199, High St., Tooting, the pre-eminent place for purchasing; detailed list below.

PALMER'S Garage, Tooting.—Auction sale every Thursday, starting at 2 o'clock; apply for catalogue.

PALMER'S Garage, Tooting, have the best bargains; compare prices below as proof.

PALMER'S Garage, Tooting.—20h.p. Lancia ¾ landaulet, monobloc, 4 speeds, quiet, splendid condition; £135.

PALMER'S Garage, Tooting.—15h.p. Itala, late model torpedo touring car, 4-cyl. monobloc, hood, screen; £50.

PALMER'S Garage, Tooting.—10h.p. Waverley sporting 2-seater, hood, screen, 4-cyl. monobloc; £65.

PALMER'S Garage, Tooting.—15.9h.p. British Ensign touring car, monobloc, wire wheels, exceptional bargain; £75.

PALMER'S Garage, Tooting.—1921½ De Dion 4-seater, 12h.p., dynamo lighting, self-starting, nearly new; £425.

PALMER'S Garage, Tooting.—12-14h.p. Fiat landaulet, 3 speeds, good running order; £50.

PALMER'S Garage, Tooting.—15.9h.p. Arrol-Johnston 1914, dynamo lighting, self-starting, extra smart; £145.

PALMER'S Garage, Tooting.—30h.p. Sheffield-Simplex full landaulet, 6-cyl., 3 speeds; £95.

PALMER'S Garage, Tooting.—20h.p. Metallurgique, very smart 2-seater, dickey, dynamo lighting; £125.

PALMER'S Garage, Tooting.—10h.p. Alcyon torpedo 2-seater 4-cyl., hood, screen, runs well; £60.

PALMER'S Garage, Tooting.—12h.p. 1914 Rover 4-seater, detachable wheels, dynamo lighting; £150.

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PALMER'S Garage, Tooting.—Any above cars supplied on easy payments; we shall be pleased to quote special terms to meet clients' requirements; all are in running order. [2426

ROVER 8h.p. Standard model, £180; 8h.p. 4-seater model, £190; 4-seater model De Luxe, £210; 2-seater De Luxe, £200.—Ratcliffe Bros., 200, Gt. Portland St., W. [0729

179 Guineas, Exchange.—Really ultra-smart 1920 Sports Singer, 2-seater lighting, starter spare wheel, lovely condition.—Seabridge, 35, Hansler Rd., East Dulwich. (Sydenham 2452.) [2400

7-9h.p. Precision 2-seater, 4 speeds and reverse, new parts in engine, enclosed Bosch magneto, B. and B. drip feed, ready to drive away; £50, near offer.—March, East St., Farnham, Surrey. [1893

CHEVROLET 20h.p. Coupe, electric lighting and self-starting, detachable rims, bodywork in new condition, used for demonstrations; £235, or offer.—Apply 24-27, Orchard St., Oxford St., W.1. [2598

REALLY handsome Singer Coupe, dickey, handsome body, painted primrose, dynamo lighting, 5 detachable wheels; £175, cash or deferred.—Marlborough (Motor House), 20-22, Finchley Rd., N.W.8. [6565

HALIFAX.—1923 Lagonda, Calthorpe, Coventry Premier, Deemster, Stoneleigh and Singer light cars; Rover, Morgan or combination taken in exchange.—Halifax Motor Exchange, Horton St., Halifax. [2025

8h.p. Rover Cars for immediate delivery. Standard 2-seater £180, 4-seater £190; deferred payments if desired; your motor cycle taken in part payment.—Official Agents: Kays, 8-10, Bond St., Ealing. [2177

ROVER—Godfrey's are authorised agents for the 8h.p. model; early deliveries of 1923 models; 2-seater, £180; 4-seater, £190; exchanges; gradual payments.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

ROVER Eight, late 1921, full equipment, very fast, used by Rover Co. for some competition work, unscratched condition; £115; or exchange combination and cash.—Hillier, 127, St. Mark's Rd., North Kensington. [2323

WAVERLEY, 2-seater, with dickey, detachable rims, in very excellent condition, fast and reliable, quite exceptional bargain at £95, cash or deferred, or exchange.—Marlborough (Motor House), 20-22, Finchley Rd., N.W.8. [6566

ERIC CAMPBELL late 1921 2-seater, dynamo lighting, spare wheel, speedometer, clock, all aluminium body, very fast; cost over £300; accept £170, or exchange combination and cash.—Hillier, 127, St. Mark's Rd., North Kensington. [2324

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2¾h.p. Villiers, magneto, carburetter, just overhauled; £7 complete.—131, Nechells Place, Birmingham. [1943

P. and M. Engines, £4/10; overbauled and completed, £6/10; stamp.—7, Hereford Rd., Bayswater. [2715

2¾h.p. J.A.P. engine, good condition; bargain, £3. —Richardson, 53, Palmerston Rd., Bournemouth. [2210

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4h.p. Triumph Engine, 1914; sale, or exchange sidecar, cash adjustment.—Young, 1, Glengall Rd., Kilburn. [1900

KING DICK 6h.p. twin, just rebushed, etc., in perfect order; £8/10.—7, Golders Green Crescent, N.W.11. [2373

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PRECISION, water-cooled, 10h.p. V twin, carburetter and Bosch; £12/10.—76, Dalling Rd., Hammersmith. [2364

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BRAND New 1922 Chater-Lea 2-stroke Engine, £8/10; ditto, 2-speed countershaft gear box, £4. —Murray, 37A, Charles St., Hatton Garden, Holborn. [2069

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IGNITION, LIGHTING, ETC.

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AT THE STARTLING PRICE OF

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SPECIFICATION.

ENGINE. 2½ h.p. Villiers or 2¾ h.p. O.K.
GEAR. Single speed.
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O.K. 29 GUINEAS O.K.

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WE would bring to your notice that these magnetos are not old disused magnetos painted on the outside to look like new, like many being offered to the public by so-called magneto specialists and experts, but are new unused Government surplus, and every magneto previous to being sold is thoroughly overhauled, and subjected to the same test as by the makers.

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GENTS' HEAVY FAWN RUBBER SURFACECOATS AND HEAVY FAWN or NAVY RUBBER LINED COATS.

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IGNITION, LIGHTING, ETC.

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MOTOR Cyclists fit reliable high quality magnetos now and avoid certain failure of inferior magnetos.

BOSCH Enclosed Waterproof Type D.A.L. Magnetos, Government surplus, ready to fit on Indian, Harley, J.A.P., or any big single or twin, gives powerful spark at all engine speeds, makes your engine a real live engine, give you easy starting, smooth and rapid acceleration, high speed, and low fuel and oil consumption with increased power; price only £5 each, postage 1/6 extra; a 12 months' written guarantee sent out with each magneto. We give you satisfaction or refund cash.

PLEASE note the above type magnetos were originally manufactured for 200h.p. aircraft engines; therefore we have every confidence in claiming them to be the magneto you require for your big machine. Fit one to-day, and see life with a live machine.

HARLEY-DAVIDSON Owner writes: "Magneto to hand; many thanks for prompt despatch, satisfactory in every way; will recommend to my friends."

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READY to fit on your machine; there are no alterations to make.

WHY is it that the leading Motor Cyclists—the men who know—are almost all sending to us for their Magnetos?

THERE must be a reason; there is; it is because the Magnetos of quality and guaranteed service, supplied by Magdynamo, beat all other Magnetos.

MAGDYNAMO will take your old Magneto in part payment

REMEMBER your magneto is sent on 14 days' approval against cash per return on receipt of your order; there is no obligation to keep it until you have used it for 14 days on your machine and are satisfied; let us send you one now.

ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch XA2 magneto now; price only £5, carriage 1/6.

C.A.V. Magnetos (not converted starters), ready to fit on Triumphs, B.S.A.'s, Nortons, and P. and M.'s, with 12 months' guaranteed service, price £3/10, carriage 1/6.

THOMSON-BENNETT Magnetos latest enclosed waterproof type (not converted starters), ready to fit on 55° Clynos and 180° Douglas' machines, with 12 months' guaranteed service, price £3/10, carriage 1/6.

MOTOR Cycle and Car Owners, are you testing all your sparking plugs properly? Are you wasting ponnds yearly by throwing away good plugs? Fit a Bosch aeroplane hand starter magneto on your garage bench to-day and always have your sparking plug tester at hand, price £2, carriage 1/6.

TRADE discounts and export quotations.—Write, call, or 'phone for terms.

A YEAR'S guarantee on repairs. Before you scrap that magneto, whatever its condition, let us see it; we will rebuild your magneto to look and work like new, no matter what make, within 3 days or 24 hours if urgent, and return it with a written 12 months' guarantee. While your magneto is being repaired we can lend you another free of charge. We could not make these offers if we were not certain of the quality of our work.

YOUR old magneto will be equivalent to new at a low cost. Send us your defective magneto now.

EXPRESS Dixie Repair Service. Your Dixie magneto; no matter what size, rebuilt equal to new and returned in 12 hours, at 30/-; a small extra charge for necessary replacements.

C.A.V. Express Repair Department.—Your C.A.V. magneto, no matter what type, rebuilt equal to new and guaranteed for one year, returned in 12 hours, at 30/-; a small extra charge for necessary replacements.

ARMATURE rewinding, no matter what make, type, or size, 11/6. Wound cores from stock.

BEAVER! Beaver! Beaver!—A postcard will bring you particulars of our famous Beaver mascot for all types of cycles, combinations and cars.

MAGDYNAMO Engineering Co., Ltd., 28, Bateman's Row, E.C.2. 'Phone: London Wall 4570. (One minute from Brown Bros.) [2411

C.A.V. Magnetos, suitable for single or twin-cylinder engines, in perfect order and unused; to be cleared at £1/2/6 each; carriage paid.—Allen-Bennett Motor Co., Ltd., 9-11, Royal Parade, W. Croydon. [0970

IGNITION, LIGHTING, ETC.

DOES Your Engine suffer from Mis-firing, pre-ignition, and the usual shortcomings due to unsuitable sparking plugs? If so, fit Maxim Type S Demountable Plugs, and effectively cure these troubles. Price, 5/- each.—Direct from sole distributor, Harold A. Smith, 86, Manor Park Rd., Harlesden, N.W. [2245

EUSTON Ignition Co., sole representative for the Splitdorf Electrical Co.—Repairs, spares service to Splitdorf magnetos, dynamos, Dixie magnetos, etc. We have the factory, plant and experience. Official Indian electrical service station. Thomson-Bennett repairs and spares; spares and repairs to all makes of magnetos; all repairs are tested on an approved A.L.D. test bench before dispatch, and carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London. Twins, all degrees, charged accumulators, all voltages always ready. We stock everything electrical for the motorist. We give you real live service always —Euston Ignition Co., 329, Euston Rd., N.W.1. 'Phone: Museum 5034. T.A.: Magdyme, Eusroad, London. [0263

TYRES.

A

MAUDES' have a large stock of clearance covers, all sizes; a postcard stating your requirements will bring reply by return.—Maudes', 100, Great Portland St., W.1. [2640

BASTONES for Covers and Tubes. No better or cheaper house.

BASTONES.—24×2 Dunlop rubber-stud, 16/3; Clincher De Luxe Junior, 14/6; ditto extra heavy, 17/6.

BASTONES.—24×2¼ Hutchinson T.T., rubber-stud, 21/-; Dunlop rubber-stud heavy, 26/-.

BASTONES.—26×2¼ Hutchinson T.T., 18/6; Dunlop rubber-stud heavy, 26/9; Michelin Semille, 20/-; Goodrich safety tread, 27/-; Clincher De Luxe extra heavy, 18/9; Spencer-Moulton steel-stud, 24/-.

BASTONES.—26×2⅜ Hutchinson T.T., rubber-stud, 19/6; Clincher De Luxe heavy, 21/-; Bergougnan rubber non-skid, 23/-; Palmer cord heavy, 28/-.

BASTONES.—26×2½×2¼ Goodrich safety tread, 31/6; Clincher Dreadnought extra heavy, 29/6; Dunlop rubber-stud heavy, 33/-; Dunlop rubber-stud extra heavy, 39/9; Hutchinson Pass, rubber-stud, 29/-; Dominion Usco rubber non-skid heavy, 23/-.

BASTONES.—26×2½ Michelin fine ribbed, 15/-; Hutchinson T.T. rubber-stud, 24/-; Goodrich safety tread, 35/-; Spencer-Moulton steel-stud, 25/-.

BASTONES.—650×65 Goodrich safety, 38/6; Clincher Dreadnought, 34/-; Dunlop cord, 44/9.

BASTONES.—700×80 Dunlop Magnum, 41/3; Goodrich safety ex-heavy, 37/6; Clincher De Luxe ex-heavy, 35/-.

BASTONES.—28×3 Goodyear all-weather tread, extra heavy, 37/6; Goodrich safety tread, 37/6; Firestone rubber non-skid extra heavy, 42/-; Clincher De Luxe extra heavy, 30/-; Clincher Dreadnought extra heavy, 45/-.

BASTONES.—Goodrich, Clincher, Hutchinson, and Red-Fox tubes: 24×2 and 24×2¼, 3/9; 26×2¼ and 26×2½, 4/9; 700×80 and 28×3, 6/9.

ALL the Above New and Clearance Covers and Tubes are sent on approval against remittance.

BASTONES, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [2539

26×2⅜ Dunlop, heavy, new; £1/2 each.—35, Citizen Rd., Hornsey Rd., London, N.7. [1992

MOTOR Cyclists remember, Melton Rubber Works, Melton Mowbray, means a lot to you.

A CUT in Motor Cycle Tyres, then send them to the Melton Rubber Works; costs a little, saves a lot; prices reduced 25%.

RETREADS for 3,000 miles wear; no query if done by the Melton Rubber Works; 26in. tyres 15/-, 28in. 18/9. [0347

MOTOR Cycle Tyres on Easy Terms, standard makes, list post free.—J. G. Graves, Sheffield. [0589

NEW Guaranteed Palmer Tubes, all sizes, 3/6 each. —Williams, 17, Maiden Lane, Strand. See Parts and Accessories. [2600

MOTORISTS.—Try our 3,000 mile retreads, repairs, etc., carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [6836

REAL Good reliable second-hand motor cycle tyres, all sizes and makes; 10/- each, plus 1s. carriage. See displayed advertisement.—H. Emanuel and Co. [0832

GOODRICH Tyres in makers' wrappings, fully guaranteed. 27×3½ (fit 650×65 and 700×80), 32/6; 28×3, 35/-; 29×3½, 37/6; Dunlop steel-stud, 700×85, 32/6.—Broadway Motor Co., 998, Garratt Lane, Tooting, S.W.17. [2354

WONDERFUL Bargains.—New Beldam covers, 26×3, 2½, 2⅜, 2¼, and 2, 15/- each; 28×3, 20/- each; 650×65, 27/6 each; 700×80, 32/6 each; new tubes, 5/- each. Good second-hand covers, all sizes, 10/- each; postage 1/6 extra.—Homerton Rubber Works, 11, Upper St. Martin's Lane, W.C.2; and Brooksby's Walk, Homerton, E.9. [0331

SOMETHING NEW AT THE SHOW

Do not fail to see the ELECTRICALLY EQUIPPED DOUGLAS on the Powell & Hanmer Stand No. 254 and take the opportunity of seeing me about your 1923 Model. Get the finest value in the world by purchasing a CORAM-DOUGLAS which is GUARANTEED to do 55 m.p.h. You thus obtain a 1923 Model Douglas with the engine further increased in efficiency by the fitting of Radiated Pistons with Patent Twin Rings, Air Cooled Patented Valve Caps, Racing Valve Springs, and the famous Zoom Zoom Exhaust System, and other improvements—Tony Combined Footboards and Footrests, etc.

HERE ARE SOME OF MY SPECIALITIES TO INCREASE THE EFFICIENCY OF YOUR OLD MODEL—

TWIN RINGS. Two rings in each groove give more power—perfectly gas-tight joints—prevent carbonising as oil cannot pass them—wear indefinitely—need no running in.

For 2¾ h.p. Douglas, **1/6** each; 4 h.p. Douglas, 3 h.p. Royal Ruby, Williamson, and Humber Twin, **1/8** each; 4 h.p. Sunbeam, Triumph (pre 1919), B.S.A., New Hudson, Rudge, Precision, Singer, etc., 85×3 m/m, **1/9** each. All Blackburne engines, Triumph (post 1919), Rover, Premier, Dunelt two-stroke, etc., 85×2 m/m, **1/9** each. All 2¾ h.p. J.A.P. engines, 2¾ in.×3/32 in. **1/8** each. Other sizes quoted for on application.

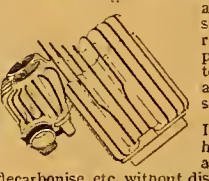
ZOOM! ZOOM!! The popular Exhaust System. Beautifully made, finished in burnished nickel or copper. A pleasant Zooming note without back pressure. Adds pounds to the appearance of any Douglas. Price **30/-** in copper finish, **33/6** nickel.

AIR COOLED VALVE CAPS. My latest are covered by patents. They never blow out nor seize in the threads. Absolutely gas-tight. Prevent knocking and keep the engine cool. Try them on your 2¾ h.p. or 4 h.p. Douglas, and if you are not absolutely satisfied have your money back. Price **4/-** each.

THE CORAM PISTON, fitted with radiating internal fins. Correctly designed, much lighter yet stronger than standard. Fitted with the patent twin rings in one groove. Complete with rings and gudgeon pin. Price **29/-** per pair. Insist on having these fitted when your mount is next down, and you'll never regret it.

THE TONY COMBINED ALUMINIUM FOOTBOARD AND FOOTRESTS. Beautifully finished—giving a natural riding position. A real solid cast job. Something that lasts for ever. Price **30/-** per pair complete.

WHY SUFFER BROKEN VALVES? My valves are guaranteed 12 months not to break, scale, or burn, and never really need grinding in. They cost more, but the best is the cheapest in the long run. 4 h.p. Douglas **10/-**, 2¾ h.p. Douglas **9/-**, complete with special spring, collar and cotter. Other makes, Triumph, Rudge, A.B.C., etc., price on application.



20% POWER INCREASE. This is what the new pattern cylinder gives a 2¾ h.p. Douglas. It has stream-lined ports, and large radiating fins. My price per pair is only **£5**. Fit them to any old model Douglas and you'll really be surprised.

Improved Cylinders for 4 h.p. Douglas with detachable heads, so that you can decarbonise, etc. without dismantling your engine, and which give 20% more power, **65/-** per cylinder.

4 h.p. and 2¾ h.p. **INSTRUCTION BOOKS, 1/6** each.

Any Spare Part by return of Post.

SEE ME AT STANDS Nos. 254 or 61.

W. G. Coram

(Official Douglas Agent)

140, VICTORIA STREET, BRISTOL.

Tel. 3792.

TYRES.

BULL'S.—All sizes in bargain covers and tubes. If your size is not below, write or telephone to Gerrard 1347.—See below.

26×2¼ Palmer cord, 30/-; Wood-Milne and Avon 22/6; Stepney roadgrip, 27/6.—Below.

26×2½ Avon tricar, 30/-; Beldam, 25/-; Clincher De Luxe, extra heavy, 27/6.—Below.

26×2½×2¼ Wood-Milne 4-ply, 25/-; Palmer cord heavy, 30/-; Beldam 3-ply, 22/6.—Below.

26×2⅜ Palmer cord, 30/-; Wood-Milne and Beldam, 22/6.—Below.

28×3 Clincher sidecar, 30/-; Avon Druid, 20/- Beldam R.N.S. or Wood-Milne keygrip, 30/-.—Below.

650×65 Palmer cord heavy, 37/6; Clincher R.N.S., 30/-; Wood-Milne, 22/6.—Below.

TUBES, all sizes, 4/6 each; all goods on approval against remittance; postage 1/- extra.

BULL'S Rubber Co., Ltd., 3, Upper St. Martin's Lane, W.C.2. Gerrard 1347. [0867

ECONOMIC Tyre Co.—The following new blemished goods sent on 7 days' approval against remittance per passenger train, carriage paid:—

ECONOMIC.—24×2 Clipper heavy, 14/6; tubes 4/6; 24×2¼ (also fit 2in. rims) Clincher Heavy Junior, 16/9.

ECONOMIC.—26×2¼ Palmer Heavy Cord, 27/6 Bates, 17/6; 26×2⅜ Palmer Heavy Cord, 27/6 tubes, 4/9.

ECONOMIC.—26×2½×2¼ Goodyear Diamond 30/-; Avon Extra Heavy Rubber stud, 25/- tubes, 5/6.

ECONOMIC.—26×2½ old Standard Clipper, Extra Heavy, 29/6; 650×65 Clipper Extra Heavy 27/6 700×80 Avon Extra Heavy, Rubber stud, 35/-

ECONOMIC.—Dunlop Rubber stud, fully warranted 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26×2¼ 18/6.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14 'Phone: New Cross 1393. [2597

SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co. 436, Argyle St., Glasgow. List post free. [9831

MASONS.—Always leading. Dunlop! Dunlop!! 26×2½, extra heavy ribbed, 31/-; 650×65, ditto, 30/-; rubber studded, heavy, 24×2¼ 26/-, 26×2¼ 26/9, 26×2½×2¼ 33/-; heavy fluted, 26×2½ 21/6 26×2¼ 18/6; perfect, maker's guarantee; 650×65 Dunlop extra heavy, rubber studded, soiled; 25/-.

MASONS.—Cheapest and best. Wood-Milne Key-Grip, 4-ply Covers.—26×2½ 24/6, 26×2⅜ 25/-, 26×2¼ 23/6, 26×2½×2¼ 25/-, 650×65 26/-, 3-ply Covers.—24×2¼ 18/-, 700×80 28/6, 28×3 (American) 27/6, 28×2½ (American) 24/6.

MASONS.—Great Offer Moseley Cable Cord, large studded, perfect.—26×2½×2¼ 30/-, 28×3 (American) 38/6. Large studded, fabric, heavy.—24×2¼ 19/6, 26×2¼ 22/6, 26×2⅜ 23/6, 26×2½×2¼ 25/-, 26×2½ 26/-. Approval against remittance, carriage paid.—Masons, The Tyre House, Ipswich. [0916

TANKS.

TANKS re-enamelled, latest designs, from 10/6.—60, Bowles Rd., Old Kent Rd. [213

TANKS for Triumphs, new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry [9240

TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [9235

TANKS for Humber, 1921 pattern, to fit 1910-19; 35/-.—Coventry Tankers Ltd., Hearsall Works, Coventry. [9241

I SPECIALISE in Repairs, re-builds, and tanks to measure. Enamelling to any pattern. Quick delivery.—Below.

DOUGLAS Pattern Tanks, new and enamelled, complete with all fittings and B. and L. pump; 55/-; folder with photo on request.—G. Day, 85, Cheapside, Birmingham [6602

TANKS Made or Repaired, re-enamelled, lined, transferred, handle-bars, etc., plated; estd. 30 years.—Attwoods, 25, Pentonville Rd., London, N.1. [9451

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied extra capacity.—Hearsall Works, Coventry. [9238

AVERY'S Make and Stock Tanks to suit machines of most the leading manufacturers, with plated fittings complete, at 35/-; guarantee for 12 months with every tank supplied.—Gordon St. Tank Works, Coventry 'Phone: 1774. [0896

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

TANKS.—Latest rounded edge models supplied for any make of any year, partition leakage, drip feeds fitted, dents, and every repair undertaken; re-enamelling, makers' colours, designs and transfers guaranteed.—Park Tank Works, 1A, Paradise Rd., Highbury, N.5. [2152

PARTS AND ACCESSORIES.

A

CLYNO Spares.

MARBLE Arch Motor Exchange.

CLYNO.—5-6h.p. and 8h.p. spare parts; enormous stock; undoubtedly we hold the largest stock of these spares, all brand new, at the lowest prices.

CLYNO Riders! If money, time, quick despatch, personal attention to your order, and a guarantee that all parts sent by us are new and undamaged, and your money returned in full if you are not satisfied with what you require, then you cannot do better than send to us.

CLYNO.—We are among the pioneers for Clyno spares, always have, and always will be the cheapest.

CLYNO Riders! It is our aim to make our address the only depot for Clyno spares.

CLYNO.—All goods by post despatched same day as ordered.

CLYNO Wheels, 25/-; hubs, 12/6; hub shell, 3/-; cup, 6d.; cone, 1/-; hollow spindles, 2/-; spindle nuts, 8d.; Hoffman 5-16 balls, 4d. doz.; felt washers, ½d. each; end cover for hub, 6d.; driving sprocket, WT, 16/-; centre only, 13/6; spindles, front or side-car, 6d. each; rear, 1/3.—Below.

CLYNO Cylinders, 50/-; valve guides, 1/6; valves, 2/-; spring, 3d.; valve cap, inlet or exhaust, 10; piston, 10/-; rings, 8d. each; gudgeon pins, 6 each; bush, 1/-; hollow crank pin, 2/6; crank pin nut and bolt, 6d.; crank pin washers, 3d. each; rollers, 1d. each; exhaust nuts, 9d.; engine sprocket T, 5/-, 14T 7/6, 15T 10/-; flywheels, 10/- each; exhaust tappet, 1/9; inlet, 1/-; tappet guides, 1/3; slotted valve cap spanner, 6d.—Below.

CLYNO Clutch centres, 8/6; clutch plates, bronze 9d., steel 2d.; small cone nut 1/6, large 2/-; screwed centre sleeve, 2/4; outer clutch dome, 8/6; push rod, 9d.; thrust block, 9d.; striking fork, 5/-; starter pinion 18T, 2/6; ratchet sleeve, 2/-; pinion sleeve, 1/-; kick-start spring, 4d.; sprocket spindle, 6/6; Ferodo brake liner, 1/-; kick-start quadrant, 6.—Below.

CLYNO Front Mudguards for Brampton forks, 7/6; front stand, 4/-; front number plate, 6d.; lamp, complete with strap, 9d.; C springs, 15/- pair; petrol and oil filler caps, 8d. each; front flat leaf spring, 3/-; rear portion of frame, 27/6.—Below.

CLYNO.—Our stock of Clyno spares is too well known to ask inspection; at the same time, you are welcome.

CLYNO.—Our latest list is now ready; send for one at once.

CLYNO.—Metal case for carrying spare tube, 1/6; listed 4/6.—Below.

CLYNO.—Brampton or Coventry Chain, ¾×5-16, 5ft.; 12/6.—Below.

CLYNO.—A postcard will bring you a quotation by return for any Clyno part you require.—Low.

CLYNO.—Tyres: brand new Stepney rub. stud, 26×2½, to fit 650×65, for Clynos; 22/- each.

BRAMPTON heavyweight spring forks, 8in. or 10in. stem, for 1in. bars, brand new ex-W.D.; 45/-; Druid, 35/-.—Below.

CLYNO.—Extra heavy Clincher De Luxe tyre for Clyno, to fit 650×65 rim, 15/-.—Below.

DOUGLAS 2¾h.p. belts, brand new and perfect; 3/9 each (made by Palmer).—Below.

TUBES.—Brand new surplus, 26×2⅜ Palmer tubes, 2/- each.—Below.

SADDLES.—Brand new special clearance offer, best makes, 15/-; genuine Bowden double throttle controls for 1in. bars, 3/6; brand new Bowden outer casing, 2d. per foot.—Below.

BEST and Lloyd sight feed lubricators, less pumps, 4/-; electric soldering irons by G.E.C., 200-220 v., 6/-.—Below.

TOOL Kits, brand new, for light cars, 20 tools; an exceptional bargain, 12/-.—Below.

CHAIN, ⅝×¼ Coventry, 2ft. 7in. lengths, 8/6; 22½in. lengths, ½×⅛, Coventry magneto chain, 1/ each; all above brand new.—Below.

RENOLDS Chain rivet extractors, 1/9 each; listed 5/6; very useful tool.—Below.

LEATHER Helmets, soft tan leather-lined chamois; special offer to clear, 4/- each.—Below.

COECAR C springs (Terry), 4-leaf, bushed; 15/- pair.—Below.

ROCKETS.—J.A.P. 6h.p. or 8h.p., 16T 2/-, 14T 2/6; 12T magneto sprockets, 1/6 each.—Below.

PLEASE note, carriage on all above goods extra.—Below.

ALL goods sent on approval against cash; cheques and P.O.'s should be made payable to Marble Arch Motor Exchange, 135, Edgware Rd., London, W. 'Phone: Padd. 789. 'Grams: Archmotex, Padd., London. Hours of business 9 a.m. to 7 p.m.; Saturdays, 4 p.m. [2658

This Boot is specially designed for Motorists.

Dark Tan Uppers, Leather Lined, Soft and Pliable. Stout English Leather Soles.

PRICE

30/-

Per Pair,

Post free

Thoroughly reliable LEGGING.

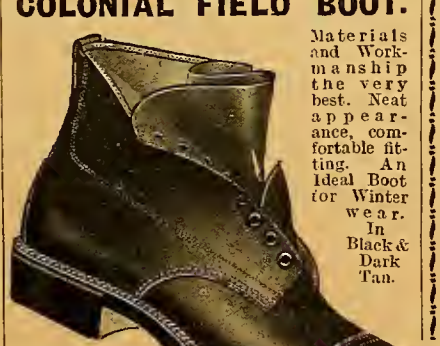
Solid Leather throughout. Strong Spring front, Black or Brown.

Price **9/6** Post free.

Highest Award.

Silver Medal.

COLONIAL FIELD BOOT.



Materials and Workmanship the very best. Neat appearance, comfortable fitting. An Ideal Boot for Winter wear. In Black & Dark Tan.

Price

22/6

Post free.

STATE SIZE REQUIRED.

MONEY RETURNED IF NOT APPROVED.

C. W. COATES & SON

Manufacturers,

89, BYROM STREET, LIVERPOOL.

PARTS AND ACCESSORIES.

A.

BANISTER AND BOTTEN.—Don't be misled by imaginary reductions. Compare prices below:—

BANISTER AND BOTTEN.—Our stock of new Douglas W.D. spares is at least three times as large as any other dealers. We supply the trade. We are the oldest established dealers in Douglas W.D. spares.—Below.

DOUGLAS 4h.p. Engine Spares.—Cylinders, 30/-; crankshaft, 37/6; nuts, 6d.; main races, 17/6 and 8/-; connecting rods, 16/6; pistons, complete, 12/6; bare, 9/6; valves, 2/6; springs, 6d.; valve guides, 1/9; tappets, 5/6; tappet guides, 3/6; valve caps, 2/-; rings, 1/6; gudgeons, 1/-; small ends, 1/6; big ends, 2/-; bolts, 4d.; sprockets, 3/6; camshafts, 15/-; races, 4/-; housings, 3/-; screws, 1½d.; cams complete, 6/-; top section crank case, 25/-; oil trays, 3/6; main oil pipes, 4/6; pumps, 9/-; intermediate and camshaft wheels, 5/-; magnetos, 5/6; chain, 4/-; worm screws, 1/6; bronze wheel, 1/-; wheel studs, 1/3; induction pipes, 12/6; exhaust lifts, complete, 10/-; magnetos, Thomson-Bennett, 37/6; flywheels, 25/-; chains, 11/-.—Below.

DOUGLAS 4h.p. Gear Box, Clutch Spares.—Chain wheels, 17/6; pulleys, complete, 15/-; front plates, 6/6; middle, 2/6; cork, 5/-; rear, 10/-; races for same, 1/-; studs, 3d.; screws, 1½d.; kick-starter quadrants, 12/6; pinions, 2/6; nuts, 1/6; sleeve nuts, 5/6; worms, 5/6; bridle, 5/6; front bolt, 2/6; rear K.S. bolt, 4/6; dustcap, 6d.; drawbolt, complete, 2/6; all internal pinions, 6/- each; dogs, 3/6; mainshafts, 9/-; secondary, 5/-; bronze forks, 3/-; steel, 3/6; main races, 6/-; secondary races, 5/-; corks, 1/6 set.—Below.

DOUGLAS 4h.p. Fork Parts.—Latest forks, 90/- pair; steering columns, 7/6; headclips, 6/6; spindles, 3/-; fork springs, 1/6; eyes, 1/6; nuts, 3d.; shackles, top, 4/-; bottom, 4/6; races, 9d. each. 1915 fork parts: Steering columns, 6/6; spindles, 1/6; lugs, 1/-; springs, 1/6.—Below.

DOUGLAS 4h.p.—Rear stands, 8/-; front (1918), 5/6; (1915), 2/6; footboards, 12/6 pair; carriers (1918), 16/6; rearguards, 10/-.—Below.

DOUGLAS 4h.p.—Frames, steel heads, £7; headlugs, 15/-; bottom rear stays, 4/6 each; tops, 10/-; bolts, 2/-; sidecar rear springs, complete, 9/-; top leaves, 4/-; side rearstay clip, 5/-.—Below.

DOUGLAS 4h.p.—Wheel rims, 4/6; hubs, 12/6; spindles, 3/-; cups, 1/-; shells, 4/6; rings, 1/-; dustcaps, 3d.; belt rims, 11/6.—Below.

DOUGLAS 4h.p.—Exhaust pipes, 16/- pair; silencers, 10/-; clutch and brake pedals, 2/6; rear brakes, complete, 14/6; spanners, valve cap, 1/-; front brakes, 18/6.—Below.

DOUGLAS 2¾h.p. Engine Spares.—Cylinders, 30/-; crankshafts, 37/6; valves, 2/-; complete, 2/9; connecting rods, bushed, 14/-; pistons, bare, 7/6; rings, 1/-; gudgeons, 1/-; small ends, 1/-; valve springs, 6d.; big ends, 1/6; valve guides, 1/6; tappets, 2/-; guides, 1/3; sprockets, 2/6; rocker arms, 3/-; studs (camwheel, rocker, etc.), 1/6; valve caps, 1/9; magnetos, Thomson-Bennett, 37/6; Dixie, 17/6; inlet pipes, 12/-; camwheels, 13/6; flywheels, 22/6.—Below.

DOUGLAS 2¾h.p. Gear Box Spares.—Layshafts, 13/6; screwed sleeves, 6/-; plain, 6/-; large races, 4/-; small, 3/-; pulleys, 5/-; chain wheels, 5/-.—Below.

DOUGLAS 2¾h.p. Clutch Model.—Chain wheels, 17/6; adjustable pulleys, 12/6; pedals, 2/6; mainshafts, 9/-.—Below.

DOUGLAS 2¾h.p.—Rear mudguards, 7/6; carriers, 10/6; silencers, 12/6; footboards, 10/6 pair; chain guards, 4/6; rear stands, 8/-; fronts, 2/6.—Below.

DOUGLAS 2¾h.p.—Fork spindles, long, 1/6, short, 1/-; springs, 1/6; headraces, 6d.; number plates, 1/3 pair; brake blocks, 1/6; sight-feed glasses, 1/-; petrol taps, 1/9; bub spindles, 3/-; cups, 1/-; exhaust lifts, 7/6; filler caps, 1/6.—Below.

DOUGLAS 8h.p.—Cylinders, W.C., £2; pistons, 9/6; rings, 1/6; gudgeons, 1/6; small ends, 1/6; big ends, 3/-; valves, 3/6; connecting rods, 17/6; valve guides, 1/9.—Can quote for other spares.—Below.

TANKS.—4h.p. Douglas, late pattern, new, enamelled maker's colours, with lubricator, complete, 55/-; less lubricator, 44/-, post 1/6.—Below.

BANISTER AND BOTTEN have all the small Douglas spares in stock. Trade supplied. Hundreds of parts not mentioned above. All goods despatched same day, carriage extra.—341, Upper St., London, N.1. Opposite Agricultural Hall. 'Phone: 2480 North. [2119

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INDIAN Forks, wheels, mudguards, handle-bars, front and rear stands, and all parts for above.

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INDIAN Spares.—Vast stock new, also second-hand, at lowest possible prices; send list requirements for our prices.—Dennis, 89, Brixton Rd., London, the Indian Repair Specialists. 'Phone: Brixton 3129. [1972

PARTS AND ACCESSORIES.

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EDWARDS Engineering Co. for Douglas Spares.—We hold large stocks of genuine brand new ex-W.D. Douglas parts. We will despatch any part by return on approval. Carriage extra. Satisfaction guaranteed or money returned. Trade supplied.

DOUGLAS 2¾h.p. cylinders, brand new and unchipped, front or rear, 30/- each.—Edwards.

DOUGLAS 2¾h.p. Engine Spares.—Crankshafts, 37/6; pistons (bare), 7/6; rings, 1/-; gudgeons, 1/-; connecting rods, 12/-; bushed, 14/-; big end bearings, 1/6; small end, 1/-; valves, 2/-; valves complete with spring collar and cotter, 2/9; valve guides, 1/6; flywheels, 27/6; crank case, timing side, 40/-; flywheel half, 20/-; cam wheels, 13/6; crank pinions, 4/6; rockers, 3/-; magneto wheels, 5/-; intermediate wheels, 5/-; tappets, 2/-; guides, 1/3; carburetter controls, 5/6; magneto controls, 4/6; flywheel sprockets, 2/6; valve caps, 1/9.—Edwards.

DOUGLAS 2¾h.p. Gear Box Spares.—Gear boxes complete, £5; layshafts, 13/6; mainshafts, 8/-; pulleys, 5/-; chain wheels, 5/-; screwed sleeve pinions, 8/-; plain, 6/-; sliding dogs, 4/-; ball races, large 5/-, small 3/-; gear box halves, 9/-; pulley side, 10/-.—Edwards.

DOUGLAS 2¾h.p.—Frames, new, £5; S.H., £2/15; carriers, 10/6; rear guards, 7/6; footboards, 8/6; rear stands, 8/-; chain guards, 4/6; silencers, 12/6; exhaust pipes, 18/-; tanks, new, makers' colours, £2; back wheels, 35/-; front, 27/6; handlebars, T.T., 12/6; mudguards, 7/6.—Edwards.

DOUGLAS 2¾h.p.—Forks, complete, £2/5; fork spindles, long 1/6, short 1/-; brake blocks, 1/6; Amac carburetters, 30/-; tool bags, 6/6; spanners, 6d. each; fork steering columns, 10/-; springs, 1/6; links, 1/-.—Edwards.

DOUGLAS 4h.p. Spares.—Frames, S.H., less back stays, £3; valve guides, 1/9; pistons, 9/-; rings, 1/6; gudgeons, 1/-; small end bushes, 1/6; sleeve nuts, 5/6; tappets, 3/6; guides, 3/6; bottom stay bolts, 1/6; top, 1/4; fork spindles, 3/-; crankshafts, 37/6; top shackles, 4/-; bottom, 5/-; connecting rods, 16/6.—Edwards

DOUGLAS 4h.p. Gear Box Spares.—Chain wheels, 17/6; pulleys complete, 15/-; kick-starter quadrants, 12/6; sleeve nuts, 5/6; draw bolts complete, 2/6; mainshafts, 9/-; secondary, 5/-; bronze forks, 3/-; steel, 3/6.—Edwards.

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EDWARDS Engineering Co., 225, Acton Lane, Chiswick, W.4. 'Phone: Chiswick 1383. [0928

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ALBION 2-speed, clutch and K.S., £9; 3-speed, clutch and K.S., £12; plain 2-speed, £5/10; all gears complete, new 1923.—Below.

ALBION 2-speed and clutch, new 1922; £6.—Below.

ALBION 2-speed, second-hand; £3/10.—Below.

STURMEY-ARCHER new 1923 3-speed, clutch and K.S., lightweight, £12; heavyweight 3-speed, chain or chain-cum-belt, £13/10; 2-speed lightweight, clutch and K.S., £9; all gears complete.—Below.

STURMEY-ARCHER second-hand 1922 heavyweight, £10; 2-speed lightweight, £7/10.—Below.

I TAKE in part or full exchange any motor parts or accessories for any of the above new gear boxes.—Fred. Firth, Woodbridge Rd., Moseley, Birmingham. [2452

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INDIAN.—Are you overhauling your machine this winter? Write to us for quotations; new and second-hand parts; approval against cash.

INDIAN.—Fit an efficient kick-starter to your machine, right-hand side; 1913-19 models, £3/10 complete, or send gear box to us and we will fit and return for £4.

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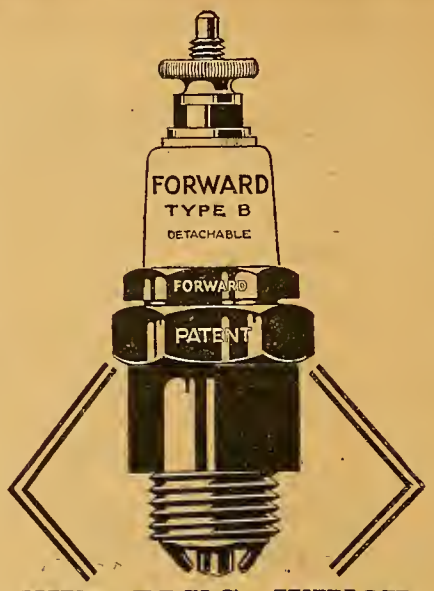

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DOUGLAS 4h.p. Engine Spares: Cylinders, chi 25/-; crank case middle sections, 27/6; c shafts, 37/6; crankshaft ball races, 15/- and connecting rods, 15/6; valves, 2/3; guides, springs, 6d.; tappets, 3/6; guides, 3/6; pistons plete, 12/-; bare, 8/6; rings, 1/3; big-end bs 1/9; small, 1/3; gudgeons, 1/-; timing wheels, camshafts, 15/-; worm screws, 1/6; wheels, 1/- duction pipes, 12/-; flywheels, 27/6; sprockets, Renolds chains, 11/-; chain guards, 5/6, etc.—Bel

DOUGLAS 4h.p. Gear Box Spares: Brand new boxes, complete, £9/10; gear wheels, 6/-; dogs, 3/6; ball races, main shaft 6/-, secondary chain wheels, 17/6; clutch plates, back 8/-, 5/-; loose with cork inserts, 4/6; rear bolts, K.S. quadrants, 12/6; K.S. pinions, 2/3; nuts, springs, 6d.; clutch lever, 6/-; drawbolts, comp 2/3; sleeve nuts, 5/6, etc.—Below.

DOUGLAS 4h.p.; Front Brakes, £1; forks plete, 1922 type, new, £4/10; top shackles, bottom, 5/-; spindles, 3/-; springs, 1/3; head (set of 4), 2/6; carriers, 11/6; stands, 8/-; boards, 12/- pair; head lugs, 12/6; silencers, mudguards, back 10/6, front 12/6; wheels, 1 30/-, back £2; belt rims, 10/-; toolbags, 11/6 s 6/6; sidecar rear springs, 8/6; top leaves, 3/9; haust pipes, 15/6 pair; saddles (large pan), 25/-, —Below.

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DOUGLAS 2¾h.p. Gear Box Spares: Chain wh 4/6; pulleys, 4/6; main shafts, 8/-; S.S. pin 8/-; plain, 6/-; layshafts, 13/6; ball bearings, 1 4/-, small 3/-, etc.—Below.

DOUGLAS 2¾h.p.: Front brakes, 11/6; forks plete, new, £2/5; steering columns, 10/-; spri 1/6; links, 1/-; spindles, long 1/6, short 1/-; races (set of 4), 2/6; back wheels, 35/-; front, 2 mudguards, valanced, 12/6; mudguards, T.T., rear stands 8/-, front 2/6; toolbags, 6/6; carr 11/6; Clincher belts, 6ft.x6in., 6/3; footboa 10/6 pair, etc.—Below.

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N.S.U. Gears, guaranteed, £5/5; state engine; oth gears taken part.—Box 4788, c/o *The Motor Cyc* [25

N.S.U. Gear, genuine adjustable, fit Triumph; £ approval.—3/197, Park Rd., Aston, Birmingha [21

DRUID Forks for 4h.p. machine with 7½in. hea 50/-.—Jack Ward, 11, Radford Rd., Leamin ton Spa. [22

PARTS AND ACCESSORIES.

PRIDE and Clarke for new W.D. Douglas spares.—Below.

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DOUGLAS 2¾h.p.—Flywheels, 20/-; sprockets, 2/6; tappets, 1/9; guides, 1/-; timing wheels, 4/6; cam wheels, 12/6; studs, 1/6; timing frames, 2/-; rockers, 2/6; silencers, 10/-; magneto controls, 5/6.—Below.

DOUGLAS 2¾h.p. Gear Box Spares.—Layshafts, 12/6; mainshafts, 7/-; plain sleeves, 5/-; screwed sleeves, 6/-; sliding dogs, 5/-; pulleys, 4/-; chain wheels, 4/6; adjustable pulleys, 12/6; Coventry chains, 6/6; Renolds chain, 7/-; ball races, large 5/-, small 2/6; gear boxes complete, £24/10.—Below.

DOUGLAS 2¾h.p. Frame Spares.—Frames, £3; forks complete, £2; forks, 17/6; springs, 1/6; links, 1/-; spindles, long and short, 1/-; steering columns, 8/-; head clips, 6/-; chain guards, 4/-; rear stands, 8/-; front stands, 2/6.—Below.

DOUGLAS 2¾h.p.—Front brakes, 10/6; rear brakes, 6/6; brake blocks, 10d.; mudguards, front 7/6, rear with transfer and stand clip, 7/6; carriers, 11/6; wheel spindles, 2/6; hubs complete, 7/6; wheels, front 35/-, rear 35/-; footboards, 8/- pair.—Below.

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LAMPS.—P. and H. 127, 12/6; P. and H. 125, 9/6; P. and H. 120, 5/-; Lucas 462, 15/-; Lucas 454, 7/-; brackets for above, 5/-; generator, P. and H. and Miller, 12/6; Mangin mirrors for above lamps, 5/-.—Below.

27/6—Largest size P. and H. lamp set, No. 127, ebony finish; large quantity of other lamp sets; also spares for lamps, in stock at bargain prices.

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BARREL Springs, 5/-; silencers, 14/6; exhaust valves, 4/3; wheel cones, 2/6; valve springs, 4d.; rear wheels, 28/6; front wheels, 22/6.—Below.

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TRIUMPH Countershaft Frames, 45/-; top stays, 20/-; spring forks, 70/-.—Below.

TRIUMPH Cam Wheels, 7/6; barrel springs, 4/6; back stands, 12/6; valves.—Below.

TRIUMPH Magneto Controls, 6/-; wheel rims, 9/-; tappets, 10/- pair.—Below.

TRIUMPH Countershaft Wheels, plated and lined, front 30/-, back 40/-, complete.—Below.

TRIUMPH Spindles and Cones, 5/-; hub shells with cups, 4/-.—Below.

TURMEY-ARCHER Gear Spares.—Clutch sprockets, 15/-; clutch bodies, 15/-; bearings, 4/-.—Below.

TURMEY-ARCHER Boxes, latest, £14; old box part exchange, liberal allowance.—Below.

ARMSTRONG and Sturmey Hub Gears overhauled and repaired; returned in 3 days.—Below.

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GEAR Box, 2-speed, chain-cum-belt, Albion, excellent condition; bargain, £3/7.—56, Sutton St., Aston, Birmingham. [2560

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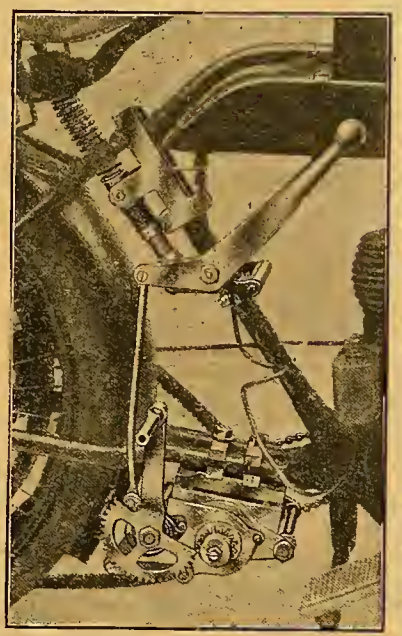

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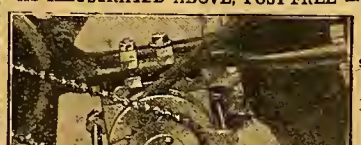

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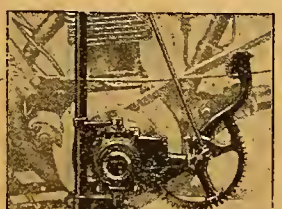

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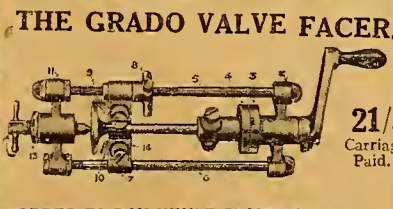

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PREMIER and Triumph repairs and overhauls our speciality. Promptest service.—Forfield (below).

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STANDARD Prices.—Druids Lightweight, 47/6; mediumweight, 57/6; heavyweight, 67/6. Other leading makes quoted for.

LARGE Allowances on your present forks help price question.

GIRDERS for Indians (Powerplus and earlier): Enfield, Rudge, Bat, Abingdon, Brampton, Saxon.

REPAIRS and Replacements at lowest possible prices. Prompt despatch.

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JONES Garage.—For all spares for Ariel, B.S.A., Douglas, Triumph, Levis, J.A.P., Matchless, Martinsyde, etc.

JONES Garage.—Special sets of M.A.G. nuts for inlet domes, very tall, easily got at; 6/- set of 8; spanners, 1/-.

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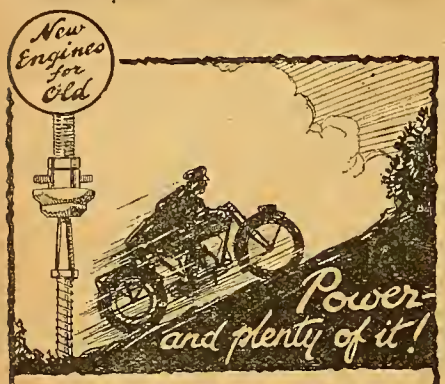

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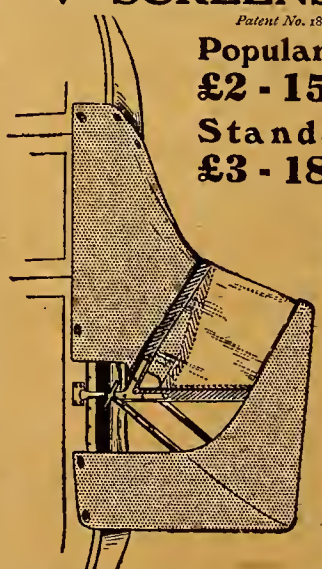

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SCOTT Parts.—1914-1915, guaranteed in first-class condition. Engines, £15; crank cases, £4; flywheels, 35/-; frames, £4; front wheels, 25/-; back, 30/-. Send for complete bargain list. All goods on approval against cash.—Ward Motors, Ltd., 32, Rustler St., Bradford. [0939

AMAC, single-lever, 1919, 14/-; Binks heavyweight, 2-jet, 15/-; footrests for frame, 6/-; B.S.A., Litto, 8/-; Dunlop, 26×2, new, 10/; Palmer extra heavy tread, 26×2¼, 18/-; 2¾h.p. Douglas frame and stays, 35/-; early Triumph tank with fittings, 10/-.—Box 4768, c/o *The Motor Cycle.* [2080

BRITNELL Bros. for Spare Parts.—B.S.A. Spares: 4½h.p. engine, £15; gear box case, 35/-; chain stays, 50/-; fork girders, 35/-; rear stays, 15/-; carrier, 15/-; frame, £3; tank, 40/-; silencer, 12/6; cylinder, chipped, 25/-; crank case, £3; connecting rod, 15/-. We have small parts for B.S.A. in stock.—Below.

CARRIERS.—Triumph, Enfield, P. and M., Clyno, Douglas, Scott, Royal Ruby, Zenith, Premier, Rudge, 15/- each.—Below.

A.J.S., Albion, Sunbeam gear box cases, 30/- each; 2-speed gear box, £4; petrol carrier, 10/-; luggage grid, 12/6; hood irons, 10/-; 5h.p. Zenith centre frame, £3/10; Sturmey-Archer gear box case, 50/-.—Below.

REAR Stands.—Douglas, P. and M., Rudge, Clyno, Scott, Triumph, Enfield from 10/- each; P. and M. forks, complete, 50/-; 8h.p. J.A.P. engine, £15; single lever Amac carburetter, 35/-; Rudge silencer, 10/-; J.A.P. cylinders, 4h.p., 5h.p., 6h.p., 8h.p., at 40/- each; 3-speed Sturmey-Archer gear box, £10; Chater-Lea clutch, 40/-; Ariel connecting rod, 15/-; Rover front chain cover, 15/-.—Below.

SCOTT Spares.—Crankcase, £4; frame, £3; cylinders, £3; flywheel, 50/-; forks, £4; cranks, 12/6; connecting rods, 10/-; pistons, 10/-; tank, 20/-; rear sprocket, 20/-; large stock of parts for all motor cycles; stamped envelope reply. Close 1 p.m. Thursdays.—Britnell Bros., 43-45, High St., Fulham. 'Phone: Putney 1652. [2129

SPEEDOMETER Specialists.—All makes supplied new. Jones and John Manville, trip models, 70/-; replacements; repairs in all departments, all work done on the premises. Send your enquiries before trying others, prompt attention, small repairs same day. Trade supplied.—Pioneer Accessories, Speedometer Supply, Repairing Co., 211, Shafteshury Av., London, W.C. 'Phone: Gerrard 6898. [1025

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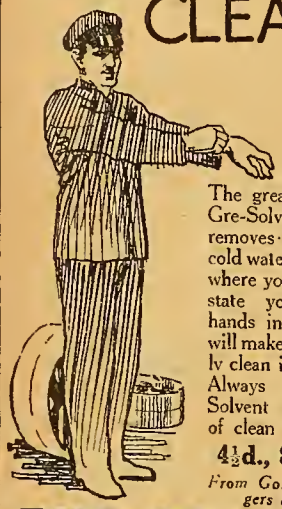

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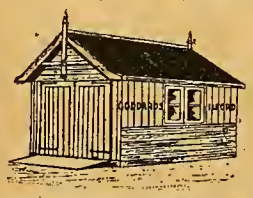

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SALE PRICE.

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The Man who rides knows what is wanted.

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WHEELS! Wheels! Wheels.—Motor cycle wheels built to order; all sizes in stock; motor cycle frames repaired, altered, and brought up to date; side-car chassis repairs; contracts wanted for frame and wheel building, customers' own materials; motor cycles overhauled, enamelling and plating; wanted, all kinds of motor cycle parts cheap for cash, such as engines, frames, wheels, etc.—Pendleton, 28, Lonsdale Sq., Liverpool Rd., London, N.1. [2241

PISTONS with highest quality rings and gudgeons for 2¾h.p. J.A.P., 18/-; 4h.p., 6h.p., and 8h.p. J.A.P., 21/-; 2½h.p. Premier, 18/-; 3½h.p. and 7-9 h.p. Premier, 21/-; B.S.A., 20/-; Triumph, 20/-; Rover, 20/-; 2½h.p. and 3½h.p. Singer, 21/-; Rudge, 21/-; 2¾h.p. Douglas, 12/-; 100 different types in stock; special pistons in 48 hours, 25/-, complete; approval against cash; trade discounts.—C.M.D. Engineering Co., Piston Works, Leamington Spa. 'Phone: 768. [2703

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PISTONS, brand new, complete with pin and rings. 11/6 (list 24/6).—Below.

FRONT Wheels, heavy gauge spokes, plated and lined, 25/- (list 55/-).—Below.

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1922 All-chain Triumphs, brand new; £88; extended payments and old bicycles taken in part exchange. Let your old bicycle pay your first deposit.

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EAGLES.—N.S.U. type 2-speed engine-shaft gears, with free engine and adjustable pulley, universally acknowledged the most perfect of its type, specially made to suit Triumph, B.S.A., Bradbury, Precision, Humber, Rover, Norton, Premier, Singer, Rudge, L.M.C., Abingdon, T.D.C., New Hudson, Arno, James, price £9/18; also to suit J.A.P., Ariel, Peugeot, Fafnir, Minerva, Rex, and other engines with large recessed pulleys up to 8h.p., £10/10; easy to fit, no alteration to motor cycle necessary; trade enquiries invited.—Eagles and Co., Acton Hill Works, Showrooms, Spares, and Repair Dept., 275, High St., Acton, W.3. 'Phone: Chiswick 556. [0161

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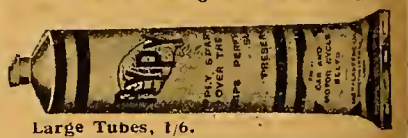
The Perfect Dressing for all Motor Belts.



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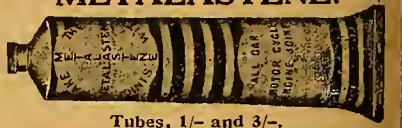

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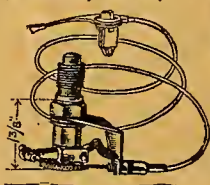
Speed, power, economy, easy starting, slow running, choked jet done away with. Stops tour-stroking on two-stroke machines.



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Postage and Packing 6d.

If fitted with **BOWDEN CONTROL 11/6 EXTRA.**

When ordering state length of jet, including plug and year of carburetter. Write for leaflet, it will interest you.

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Fit your mechanical horn with the patent W.S.R. foot operated bracket adapter, and keep your hands on the handle-bars. Simple to fit: remove bracket, reverse boro, and fit our cast aluminium bracket and pedal. Bolt on footboards (bolts supplied).

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IMPROVED DESIGN.

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Rd. 688,703. Each **5/-**

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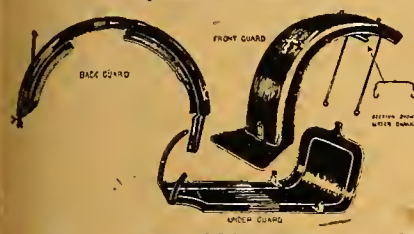
New extra wide Back and Front Mudguards. Full protection to rider.



Front **25/-** Back **16/-** Underguard **15/-**

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The New Improved Exhaust System for the 2¾ h.p. Douglas, handsomely nickel plated, **27/6.**

Straight through exhaust pipes, direct from engine, no back pressure, all in stock, no waiting.

NICKEL PLATED. Triumph, all years; Norton, Rudge, Ariel, Rover, Sunbeam, B.S.A., 1922 pattern A.J.S., Villiers (suitable for machines fitted with Mark 2 or 3 engines without magneto flywheel), Raleigh, P. & M., Levis, 2 and 4 pin flange, all complete with clip and fishtail, **21/-** each.

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1 h.p. DOUGLAS. A.B.C., N.U.T., 7-9 Indian, heavy nickel plated, complete with clips and fishtails, **37/6** per pair.

Fishtails, all sizes in stock, Nickel 3/6, Copper 5/6. SPECIAL PIPES made to order.

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Very efficient inr al straight through pipes, 1¼, 1½, and 1¾, other sizes to order, **8/6** each. We invite you to test these silencers, and will take them back willingly if not satisfactory.

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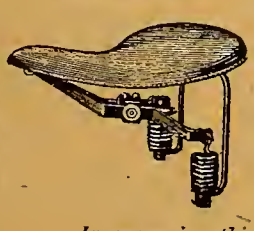

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Short Motor Cycle Coats, same quality.

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Made from best quality suede leather in all colours, complete with fur-trimmed hat to match.

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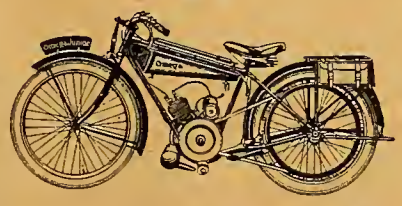
£25



Wonderful value. The little machine with a big Future. Guaranteed speed 25 to 35 m.p.h. Operated by one lever. An ideal Ladies' mount. Easy starting. Saddle only 26 inches from ground. Weight 75 lbs.

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Made from heavy double-texture guaranteed waterproof material; clasp fasteners, leather waistbelt, and straps for boots in all sizes, **21/-** pair. Lighter weight single texture, rubber lined **15/11.**

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Single legs, clasp fasteners, open all the way down, double-texture material for real hard wear, **15/11.** Single texture, rubber lined, **12/6** per pair. When ordering state leg measurements.

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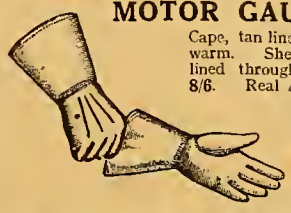

Cape, tan lined, **10/6.** Keep you warm. Sheepskin Gauntlets, lined throughout natural wool, **8/6.** Real Asbestol Gauntlets, guaranteed 5 years, **21/-.** Best Fur Gauntlets, lined inside and out, **30/-**, R.A.F. with Mitt, **37/6.** Send for a pair on approval.

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Made of soft suede leather in all colours. Turned up they make an ideal walking-out hat, turned down you have a comfortable, warm motoring hat.

Leather and Fur **30/-**

Leather only, in plain or Jazz colours **25/-** each.

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As illustrated. Suitable for 2¾ and 4 h.p. Douglas fitted with old type forks, also Triumph and B.S.A., **21/-.** Wide rear guards, Triumph, **16/-.** B.S.A., **21/-.** Triumph Pattern Front, **12/6.** Levis Front, **12/6.** Rear, **7/6.** Douglas T.T., **17/6** pair.

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All leather, fleece lined, **7/6** and **10/6.** R.A.F. pattern, as illustrated, trimmed fur and Chamois lined, **21/-**; lined throughout fur, **22/6.** Long R.A.F. Winter pattern, brand new, **27/6.**

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The New Half Moon Flat pattern, as now being fitted, ½in. stem, ½in. top, and ⅞in. stem, ⅞in. top, **21/-.** We have also specially designed a new handlebar for the 2¾ Douglas, similar to the A.J.S. T.T. pattern, **17/6.** Special Clearance offer—Slightly soiled Douglas Flat T.T., ⅞in. stem, ⅞in top; Touring, ⅞in. stem, ½in. top, 1921; Flat T.T., ⅛in. stem, ⅞in. top; Semi T.T. ½in. stem, ½in. top, **14/6** pair. Touring Bars, ½in. stem, ½in top, and ⅞in. stem, ⅞in. top, **10/-** pair. Shop soiled bars, **7/6** pair.

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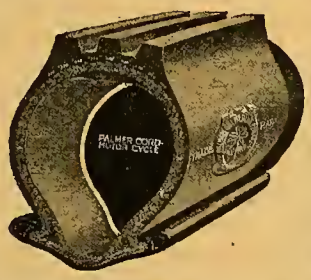

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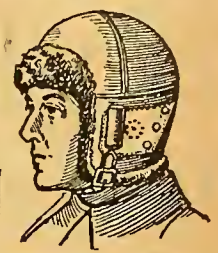

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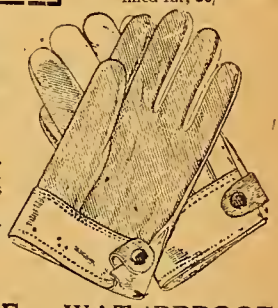

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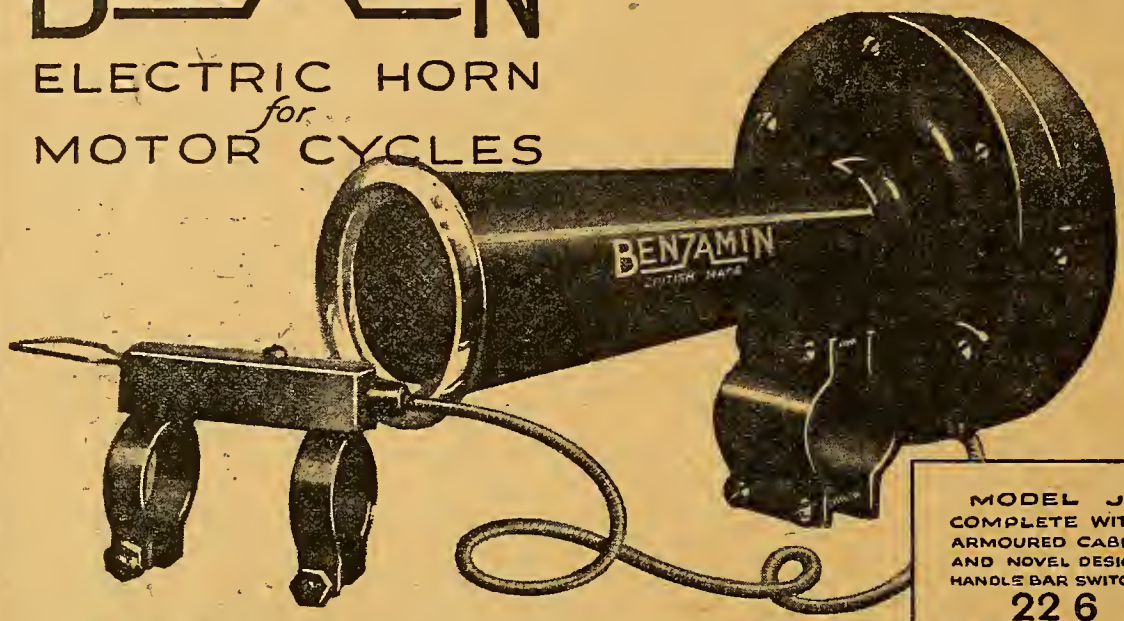

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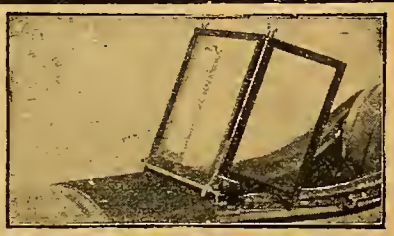

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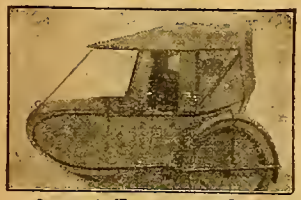

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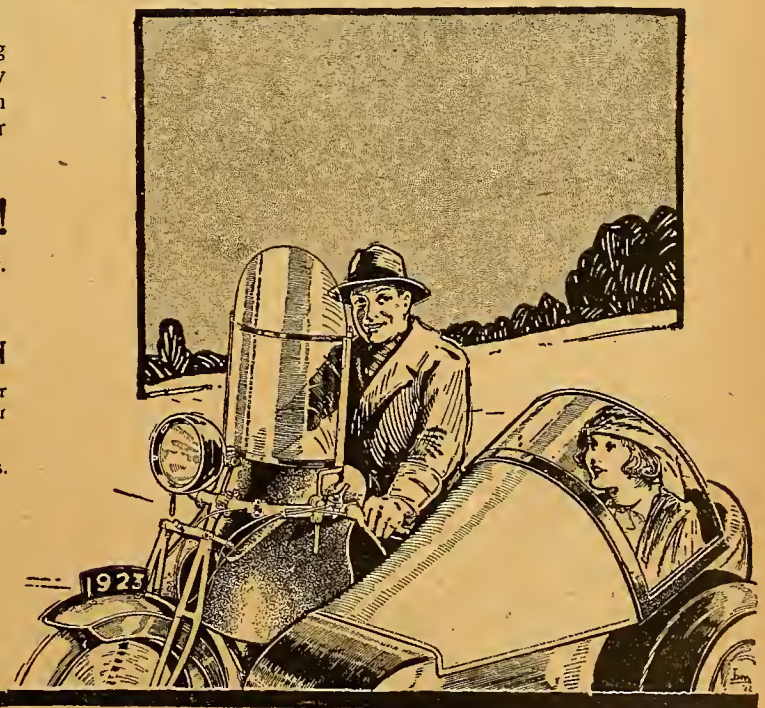

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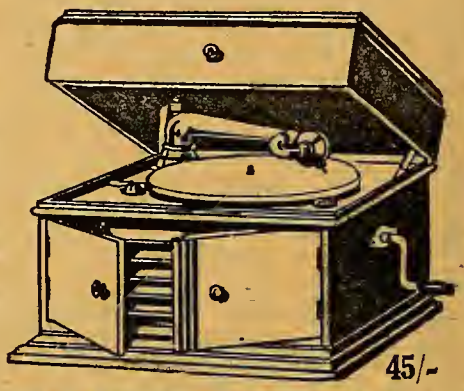

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These are our standard machines, but we have many Protaophones at a cheaper price ranging from 30/- upwards.

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The Motor Cycle, November 9th, page 673,
Motor Cycling, November 1st, page 788,

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T.O.M.
Co. MOTORING · CAMPING · TOURING · EQUIPMENT LTD.
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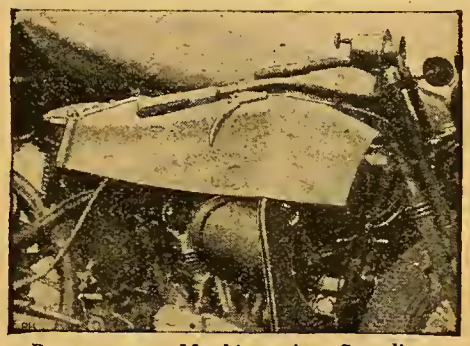
COMPLETE WEATHER PROTECTION FOR MOTORCYCLISTS.

MOTORCYCLE SHOW
STAND 51



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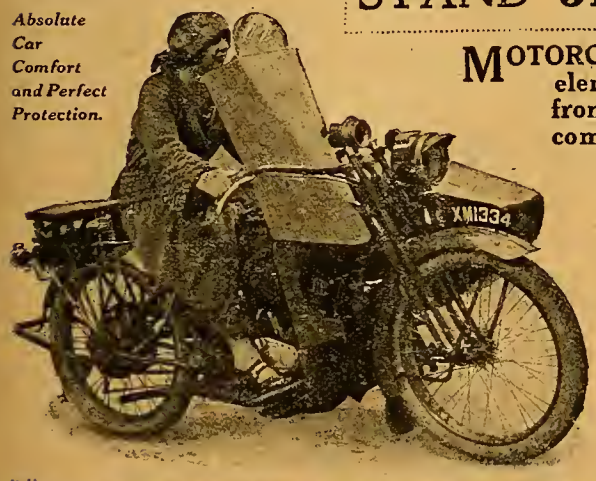

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The T.O.M. Motorcycle Windscreen and Leg Shields have been perfected and tested under all conditions. Engine cooling has been allowed for, and the Shields do not collect but sheer off the dirt. Easily detachable. Handsome appearance. **When not riding is lowered to cover the machine to the saddle, thus protecting from rain.**

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Messrs. Dunhills Ltd. are exhibiting Motor Clothing made up by them on their Stand No. 66, Ground Floor, at the Motor Cycle Show.

"Mintite" PATENT FINISH

Motor Cycle Tubes and Belts are being exhibited at the Motor Cycle Show on Messrs. W. & A. Bates, Ltd., Stand No. 179, Ground Floor; Messrs. A. Roberts & Sons, Ltd., Stand No. 4, Ground Floor

is a superior rubber finish giving the following advantages to

TYRES—WATERPROOF MOTOR CLOTHING

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A permanent polished surface that does not crack.
Lubricating properties that prevent chafing and heating by friction.
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"The surface evinces no disposition to crack or peel, and the mica should effectually prevent any development of stickiness."

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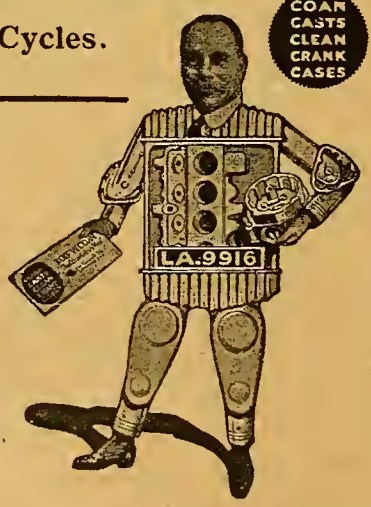
COAN CASTS CLEAN CRANK CASES



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Records Accurately— MILES PER HOUR SEASON MILEAGE TRIP MILEAGE.

IT IS — Guaranteed for 12 months, with fair wear and tear.
IT IS — Purely mechanical, and has only two large working parts.
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STANDARD CAR TYPE
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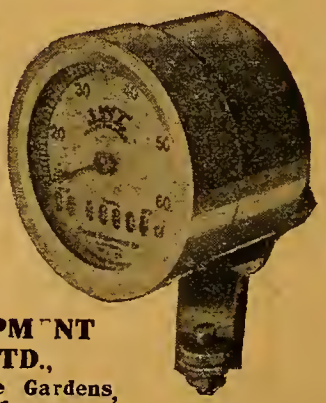

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ENGINE EQUIPMENT COMPANY LTD.,
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THE MOTOR CYCLE

ESTABLISHED IN 1903

· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

Olympia in 1922.

BUT twenty years ago the motor cycle industry was in its chrysalis stage. To-day it has assumed such vast proportions that over 100,000 machines are produced annually, and it has been computed that some thirty million pounds are invested in its factories, and that its annual wages bill approaches sixteen millions. Even so, the possibilities for the essentially economical motor cycle are unbounded, and only the fringe of a vast potential market has been touched. What are the portents for 1923?

Public interest has never waned. The desire to possess a motor cycle has never been absent. High prices and the fear of a material reduction after purchase were the reasons in numerous cases for the postponement of orders this year. Reliability has been demonstrated over and over again in trials in every part of the country; economical at all times, the annual running cost account has been materially reduced by reductions in prices of petrol, oil and tyres, so that 1923 holds bright promise for maker and user.

Without doubt the annual Motor Cycle Show at Olympia is, this year, more interesting than it has ever been, and a careful study of the machines exhibited reveals at least the very important fact that "freak" designs are absent. Never before perhaps have such sound mechanical principles been so general, and this reflects great credit upon the motor cycle industry as a whole.

The trend of motor cycle design forms the subject of a considered review in this issue, but three features at once arrest attention:

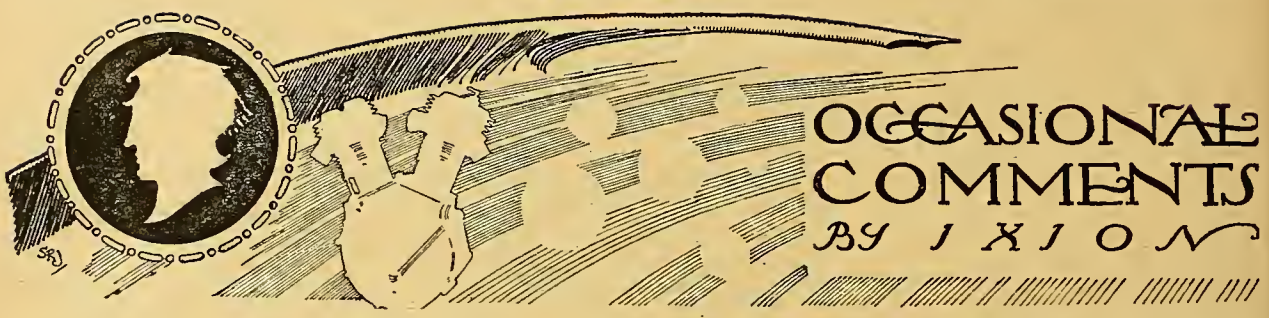
(1) The progress of the ultra-lightweight.
(2) The increased number of 350 c.c. motor cycles.
(3) The almost general adoption of chain transmission.

Of the ultra-lightweights it may be said that they are a revival of an old movement which never progressed because engine design had not reached the stage of efficiency which now obtains. These machines for the "man in the street" are to be found on over twenty stands, and of the total, 75 per cent. are entirely new models. Lightweight machines have always made a strong appeal to the convert by reason of their ease of handling, and it is a vast public which awaits the arrival of a light and economical mount of proved efficiency to take the place of the pedal cycle. In point of numbers, the 250 c.c. motor cycle of the conventional type easily maintains the position it gained at the last Show; but the 350 c.c. class is 50 per cent. larger—a fact attributable to its remarkable successes. Single-cylinder motor cycles of 500 c.c., although represented by a relatively smaller number than the 350 c.c. mounts, have also increased 50 per cent.; but the small twin-cylinder mount appears to be disappearing despite its charm.

A slight increase in the larger single-cylinder machine is to be recorded, but not to such a degree as one would expect, considering that this type of motor cycle represents the most simple and economical passenger machine, for even heavy duty, on the market to-day. The large sidecar outfit as a class has also increased slightly, but the opposed twin has no new names to represent it. Unit construction of engine and gear box seems to be more favoured than hitherto, while overhead valves and four-speed gear boxes are increasing in popularity.

Supported by an even larger number of manufacturers than any Show since the war, Olympia this year is well worth the visit of every motor cyclist, even if he resides a day's journey from the Metropolis; but for those who cannot attend—and for those who can—this issue of *The Motor Cycle*, with its complete description and specifications of the exhibits, will confirm that the advancement of design is indeed general.

An Index to the advertisements in this issue will be found on page xlii of Supplement.



Talk to Them.

I GENERALLY spend an hour at Olympia admiring the stand attendants, who meet such variegated queries with superb patience and courtesy. But they have a better time than the showmen at the car exhibition, who get far more tomfool questions in a day than the massed motor cyclists put in a week. Show visitors seem to fall into two main categories as hecklers. There is the superior individual, who walks briskly round with another obvious expert as a companion; scrutinises the machines rather haughtily; disdains the services of the stand attendants; and limits his rare queries to some technical fact. At the other extreme there is the earnest mug, who talks tripe by the hour at every stand. I will consequently betray the source of my happiest hours at Olympia. I catch an enthusiastic designer when he isn't busy, and let him spread himself as long as he likes to. He always draws my attention to some items which I should not have spotted or understood without his help, and his explanation of his reasons always gives one something to think about afterwards.

Lucky.

HOW fortunate for our hopes of eternal bliss that the ten commandments were enacted before motor cycles were invented. It is many years since I went to Sunday School; but, unless memory betrays me, there is one which denounces any mortal who covets certain things that don't belong to him. Moses framed it to keep wonderfully up to date, for he forbade the faithful to covet each other's houses and domestic servants, two commodities about which none of us have had many scruples since the war. But, mercifully, motor cycles weren't invented at that era, so a pious man can visit Olympia without committing deadly sin. At any rate, I hope so, for I am busily coveting some dozen machines which I have examined this week.

Dynamos Galore, but . . .

SHOW after Show passes, and each year I ransack both the floor and the gallery of Olympia in search of a cheap dynamo outfit, which I can transfer without trouble from one machine to the next, *e.g.*, from the baby two-stroke which I may be riding in January to the o.h.v. big twin which constitutes a man's mount in June. I have yet to discover a solitary example, and no doubt we must wait till dynamo lighting joins the magneto and the carburetter as a standardised component, which every engine is designed to take. In the meantime, there are two main alternatives before the rider who wants the best kind of electric lighting and yet changes his mounts often. One is a combined magneto-cum-dynamo; it is never cheap, but when you sell the machine, you can put the new mag. on the old 'bus and install your old dymag. on the new 'bus (unless, of course, you are switching over to a mount which uses a wholly different kind of magneto). The other is the kind of dynamo which employs a speedometer drive off the rear wheel. If anybody finds any sound alternative at the Show, I hope he will pass on the information to me, as I get many oversea queries on the point.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Going Down to the Sea.

MY remarks anent naval motor cyclists provoked a spirited letter from a ship's wireless officer, whose enthusiasm is as great as that of any R.N. officer, but whose leaves are briefer and less certain. Writing from Yokohama he enquires what can be done to facilitate motor cycling for "those who go down to the sea in ships," though he personally goes "down to the sea" in a train or a taxi. Answering his implied question first, I presume the ancient substitute for our modern "putting to sea" is ascribable to the curvature of the earth's surface not being understood, and the sea being regarded as a hollow. His main difficulty can only be solved in two ways. First, the crying scandal of seamen's licences should be tackled by some spirited representative of marine interests in Parliament. Second, the economic problem of providing machines for men who can only use them for a few weeks in the year admits of no really satisfactory solution. To own a machine permanently is wasteful under such conditions. To buy a new machine and sell at the expiration of leave involves heavy depreciation. To hire is costly. The plan I should personally adopt if I were a sailor would be to visit the big second-hand emporiums, and buy the best bargain I could find, getting my little brother to resell for me when my leave was up. Always supposing I could trust my little brother. Or perhaps one might trust one's girl. Or a pal. M'yes. Sailors who motor cycle might conceivably found a little club of their own. Each member to contribute a £10 share. The tenners to be expended on o.h.v. Nortons or other suitable machines. To be hired to members on leave at £1 per week. But to what condition would a sailor on leave reduce a machine in four weeks?

Occasional Comments.—

Windscreens for Parrots.

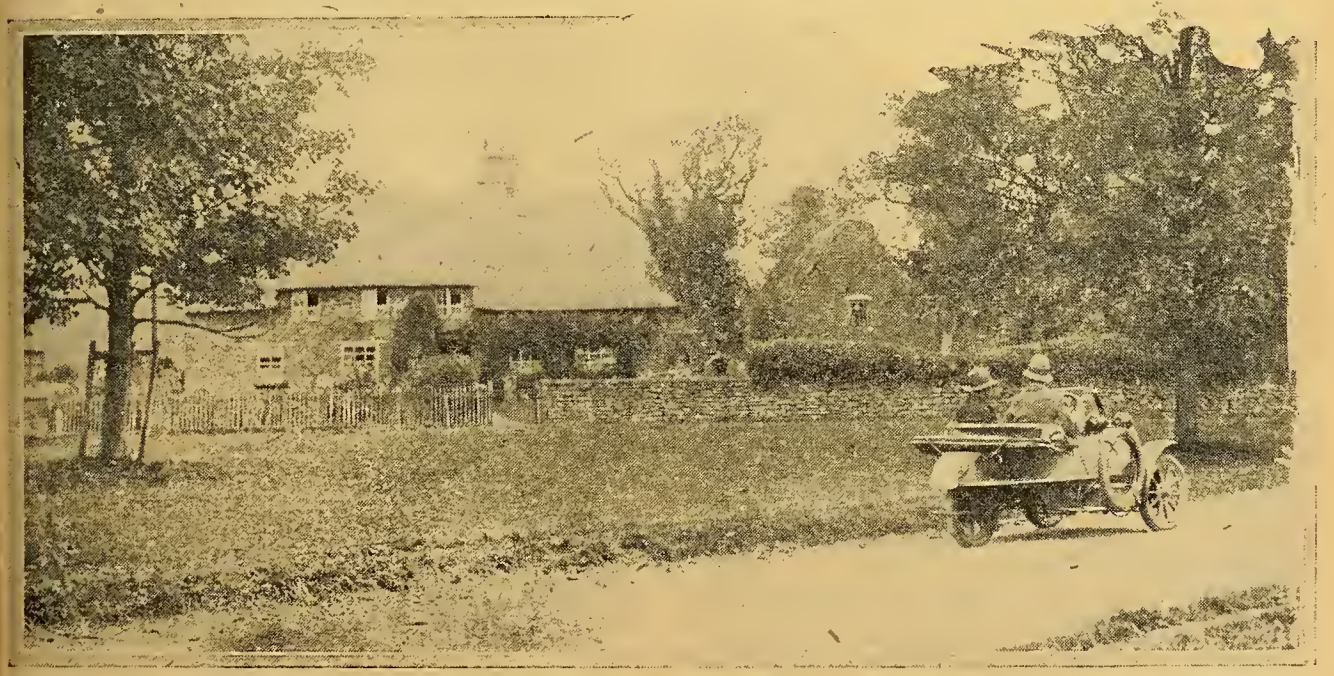
AMONG the stands to which you devote real attention, be sure not to miss 51. It is inhabited by certain varlets of the T.O.M. crowd. They aren't able to show you the nicest things they produce, because tents occupy the dickens of a lot of room, and you must go to 61, Newman Street to inspect their very charming cheap touring outfits. But at Olympia you will find them displaying the latest thing in windscreens for parrots. (A "parrot" is any motor cyclist who occupies a saddle.) I have now tried three outfits of this type, so designers seem to be discovering that 20° of frost plus an east wind are common in these islands. The new Easting is a celluloid handlebar screen with a knee apron. The B.S.A. is a huge metal field-gun screen. The T.O.M. gadget breaks new ground. Its lower storeys consist of metal legshields, enamelled in your tank colours, and embodying air chutes to cool the engine. Above that comes a waterproof twill chest protector, chin-high; and right on top is a dinky little face protector of Triplex glass. The whole affair is rigid; detachable in a matter of one minute; adjustable all ways for height and nearness and folds back to cover the machine.

Some Astounding Claims.

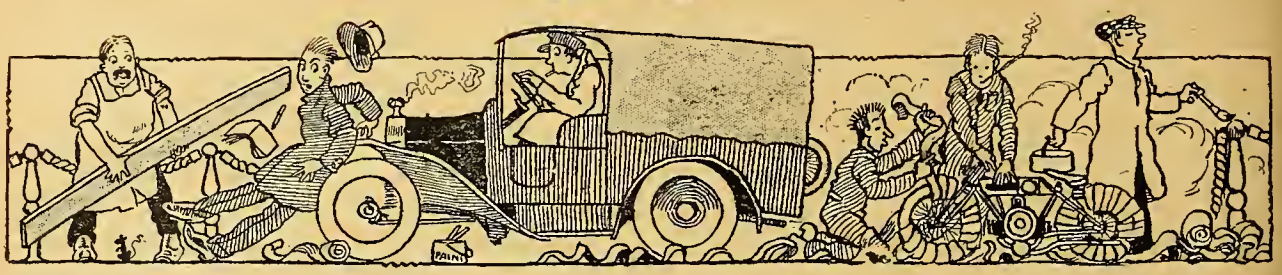
I THINK there is no doubt that these windscreens for parrots are going to get universal on big outfits in the bad months. But I am specially interested in certain purely technical claims which I have not heard advanced till I chatted with the T.O.M. experts. They claim that a first-class fitting of the kind actually adds to your speed, and reduces your gallonages. They are modest people, and do not as yet dogmatise as to the exact causation of these miracles. I call them miracles, because any No. 5 hat would opine offhand that, if you have to push a young sail through the air, speed will drop and gallonages mount. This, as the result of careful tests, the T.O.M. men deny. They suggest that either their air-chutes put so much cold air just where it is wanted that your cylinder keeps rounder than it does on a naked 'bus. Or, alternatively, the wind resistance caused by a screen with a horizontal section resembling a V which has been stepped on perpendicularly, is less than the resistance of such an irregular polyhedron as "Ixion" forms when clad in his storm suitings. Anyhow, a T.O.M. shield is being installed on my Ricumph.

Loud Cheers.

I HEREBY draw the attention of all owners of gas lamps to the announcement made on page 654 of our issue dated November 9th last, and no less to the contents of Stand No. 240 at Olympia. For the first time a dissolved acetylene outfit is being marketed which will fit the rear prongs of a double lamp-bracket. True, it only holds 4-5 cubic feet of gas, sufficient for seven or eight hours' light; but, as I told its sponsors years ago, lots of riders use accumulator sets which, unless maintained by a dynamo, are never equal to more than eight hours' riding. The one and only snag about the new A.L. outfit is that it does not include a gauge. This means that sooner or later a rider will start on a thirty-mile run, and will not be quite sure whether he has enough gas remaining in his cylinder. For such imbroglios there are two remedies. The rider who lives at the back of beyond must buy two cylinders. The rider who resides in a civilised county must be able to rely on finding spare cylinders at every garage.



IN THE HEART OF ENGLAND. An L.S.D. three-wheeler passing through Meriden, one of the many quaint and picturesque villages of Warwickshire, a county rich in historic associations.



BEFORE THE SHOW.

Impressions of Olympia as it is Before the Doors are Opened to the Public.

THOSE who see the well-ordered stands and glittering series of machines for the first time when the Show is opened to the public little realise what the scene was like a few days beforehand. To achieve that orderly neatness takes infinite pains and trouble, for, humans being human, the models that were to have been ready days previously, as per schedule, are often finished actually on the stands.

Olympia shorn of its myriad lights, its carpets and its ornament, loses all glamour and becomes the cold and draughty, forbidding and ugly building that it is. The stands are there, if more or less rectangular wooden bases may be termed stands, and the name boards are in position, having been dug out recently from a cupboard the dust from which they still bear.

Every doorway is open to a penetrating blast sent by Boreas especially for the occasion, so that strong men, of proved endurance at Brooklands, wrap themselves in many overcoats and turn a sickly purple.

A Mystic Chorus.

Down the concrete-floored gangways pant and heave burly labourers propelling huge crates in which are motor cycles, their every action taken to the mystic chorus of their craft, "to me," "from you," "all together 'eave." The object of the game they play with stubborn seriousness is to place the crate on a stand furthest from that for which it is destined. If this is done and the real recipient is seen telephoning frantically for news of the consignment, then it counts game and set, and the gang trot off to the "Fox and Hounds." More skilful players bring a horse and dray, which is better, because, with careful driving, the rear wheels can crunch over one's opponents' stands, but best of all is the Ford van, which somehow or other gets in despite regulations, and, once in, can cause more excitement than anything else. How the things get to the gallery is a riddle no man can solve.

Imagine, therefore, many men bringing crates in clouds of choking concrete dust, others dismantling crates, and others covering every available inch of space with yards and yards of the wrapping in which motor cycles are swathed. Indeed, a motor cycle on arriving at the Show resembles nothing so much as that type of recruit whose puttees at once suggested elephantiasis to an observant medico. This wrapping comes off in long strips, the strips litter the stands, entangle the legs of passers-by, and coil round electric light contacts, for, remember, all this time stolid electricians are wiring innumerable connections for the display lamps, or making heart-breaking attempts to revive dumb telephones. To a man precariously swinging on the signboard of a stand festooned with electric bulbs, what is one bulb more or less, but to the harassed pedestrian on the floor below the receipt of a fallen bulb as a direct hit is apt to irritate.

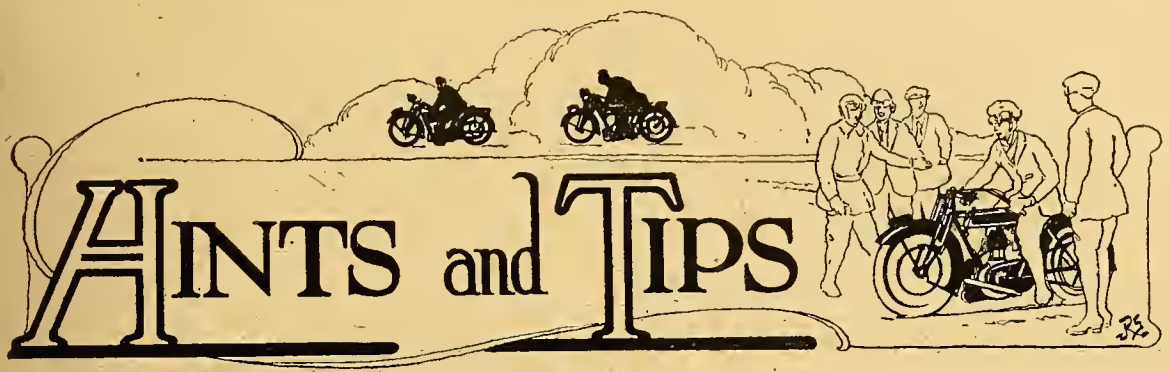
Energetic Supers.

Over all this scene brood the carpenters, and you know what a carpenter armed with a Brussels carpet bagful of tools can do. If there be confusion then he at once starts nailing down something with clangorous hammer blows which split the ear-drums. If there is no confusion, then he makes some. Other folk, many other folk, are about, some unrolling hundreds of yards of matting, some washing down stands—these generally charladies of peculiar and insistent pattern—some laying carpets, and some polishing machines.

Then there is the painter whose task it is to whiten all those jolly little posts which decorate and demark the stands, especially those one leans against.

Those intent on getting details of an exhibit, therefore, must first find the harassed individual in charge of the stand, then write of what they can see through the bars of a crate, and all the while dodge vans and carpet rolls, and carpenters, and falling bulbs, as to the manner born.

Years ago a solemn little procession of staid and sober men, each attired in the clothes of convention and the top hat of ceremony, processed solemnly round the Show to declare it open. Between the paint their clothes collected, and the nailed boards they fell over, between dodging packing-cases and avoiding horses with wicked eyes and ears, the procession lost much of its dignity in the first lap, and gradually became, in Navy language, obsolescent.



HINTS and TIPS

Jottings for the Beginner. Some Technical Terms and Abbreviations Explained. The Question of Power.

It has always been one of the chief aims of "The Motor Cycle" to assist the novice, and every issue since No. 1 appeared, twenty years ago, has contained authoritative and helpful articles so written that the most technical subjects are readily understood.

The following notes are intended exclusively for the beginner and are compiled in order to explain many points which at first may mystify the tyro. Even experienced motor cyclists are constantly exchanging "hints and tips," from which fact the novice must not, however, assume that the motor cycle as a vehicle is so complicated that it is necessary to acquire a technical and practical knowledge of motor mechanics before ownership may become a pleasure.

TECHNICAL TERMS AND ABBREVIATIONS.

ONE of the things which greatly mystify the man or woman when first perusing a motoring journal is the collection of technical abbreviations which every motor cyclist understands and accepts as part of the English language. We need not here mention all these contractions; it suffices to explain the meaning of those which may be encountered in reading this issue of *The Motor Cycle*. Chief among the common abbreviations, perhaps, is the term c.c. This means cubic centimetres (not cubical capacity which is quite a popular error). The capacity of an engine cylinder is measured in cubic centimetres for the reason that the bore (diameter of cylinder) and stroke (travel of piston) are measured by metric units. Naturally the capacity of an engine will denote its approximate power—in fact, it has been the rule to accept 100 c.c. as representing one horse-power.

HORSE-POWER (H.P.).

THE term "horse-power" is familiar to everyone, but is somewhat a misnomer, and although the manufacturers are, for the present, retaining the symbol h.p. (horse-power) to differentiate between the different sizes of engines used, *The Motor Cycle*, for some time past, has classified machines by means of capacity in cubic centimetres only. We recommend that the novice follows the same practice for the reason that the horse-power figures quoted in makers' catalogues have no standard basis. They are merely nominal figures—the result of habit rather than a definite power rating or even an estimation of the power theoretically possible. For example, many machines are quoted as being $3\frac{1}{2}$ h.p., yet their cubical capacities vary between 350 c.c. and 500 c.c. Again, one well-known motor cycle has an engine of 557 c.c., and is known as a $4\frac{1}{4}$ h.p., and another of 663 c.c. is quoted as being 4 h.p. only. From these facts the beginner will see that the horse-power of a machine may be anything which the makers care to state in their catalogues, but every manufacturer also gives the bore and stroke (in millimetres) and the cubic capacity (in cubic centimetres), and from these figures it is an easy matter to judge the respective powers of engines of different makes.

How to Differentiate between the various Sizes of Engines. Types of Motor Cycles for the Novice.

M.P.H. AND M.P.G.

TWO abbreviations freely used in classifying the capabilities of motor cycles are m.p.h. and m.p.g. They represent a measure of the machine's performance in relation to time and fuel used, and both are self-explanatory. M.p.h. is a contraction of miles per hour and m.p.g. of miles per gallon.

When a machine is claimed to be capable of a speed of 60 m.p.h. it does not necessarily mean that 60 miles could be covered in the hour, but more likely the claim is that for a short distance, perhaps half-a-mile or one kilometre, it will attain the mile-a-minute pace after a suitable "flying start" in which to accelerate to its maximum speed.

The ordinary motor cyclist is more affected by consumption (m.p.g.) figures. Good consumption, by which is meant *low* consumption, is a term synonymous with economy. A machine guaranteed to run 100 m.p.g. will consume one gallon of fuel in running over 100 miles of level or average "give and take" roads. In a particularly steep or rough district the consumption would be higher, but m.p.g. must of necessity refer to the average number of miles run to the gallon of fuel under average conditions.

MOTOR CYCLES CLASSIFIED.

ANYONE for the first time studying the specifications of motor cycles, either from a collection of catalogues or from the report of the Show contained in this issue, will observe that the majority of engines have capacities just under 250 c.c., 350 c.c., 500 c.c., 750 c.c., and 1,000 c.c. This is brought about by the Auto Cycle Union and international classification of motor cycles by their engine

Hints and Tips.—

capacity. For example, the great Tourist Trophy races are for machines not exceeding (1) 250 c.c., termed lightweights; (2) 350 c.c., or junior machines; and (3) 500 c.c., or senior machines. Five hundred c.c. is the largest capacity allowed in the Tourist Trophy races, but at Brooklands, where British and International records are made, competitions for 750 c.c. and 1,000 c.c. machines are also included, while in the reliability trials which are so popular, the whole range is included. There are other engines which do not appear to belong to any of the classes mentioned above. These, however, are usually under 200 c.c. as fitted in the ultra lightweights, for which the Auto Cycle Union has not inaugurated a special class, and single-cylinder motor cycles between 500 c.c. and 700 c.c., which have engines of the 500 c.c. type but slightly enlarged in order to give the extra power desirable when a sidecar is attached. There is, however, a class for sidecars up to 600 c.c in the record and racing regulations.

IN choosing a motor cycle, the first thing to decide is whether it is to be used (1) always solo, (2) occasionally solo and occasionally with sidecar, or (3) always with sidecar attached. If solo only, there is a promising choice amongst machines having an engine capacity ranging from 250 c.c. to 500 c.c. We will leave out of consideration for the moment the machines having an engine capacity of less than 200 c.c., and deal later with this size, for it is undoubtedly a type which will develop amazingly as time goes on.

SOLO OR SIDECAR?

NEXT, the prospective purchaser should make up his mind as to whether he desires a touring or a sports type of mount. He should bear in mind the fact that, although he will obtain a more speedy machine if he decides on the sports type, he will necessarily have to humour it more by careful driving and more frequent tuning. The difference between a sports and a touring model usually lies in a faster but a more sensitive engine, which requires a certain amount of skill to drive. Again, sports models often have overhead valve engines, and a broken valve can sometimes be caused by bad driving, with results which are infinitely more serious than in the case of a side-by-side valve engine.

SPORTS OR TOURING?

THE machine with the smallest engine for really serious touring is the 250 c.c. type which generally weighs between 150 and 200 lb. If fitted with a three-speed gear it will be capable of climbing the steepest hills, provided it be kept in reasonably good tune. It should average something like 120 m.p.g. if fitted with a four-stroke engine, and slightly less if the power unit be of the two-stroke variety. A touring model of this capacity should be capable of averaging 20-22 m.p.h. on give-and-take main roads in the hands of non-expert riders. Its maximum road speed should be about 38 m.p.h., while taxation will be £1 10s. per annum.

250 c.c. MACHINES.

PROBABLY the most popular solo model during the coming year will be the 350 c.c. type, although several machines of this class weigh more than 200 lb. (£1 10s. tax limit). The more efficient specimens will do nearly all that the old 500 c.c. machine used to do in pre-war days (it is, perhaps, in top gear acceleration only that there is any falling short), and they should be equal to averaging 25 m.p.h. under normal conditions. The maximum speed of a touring model should be about 45 m.p.h.—of a sports model, possibly 60 m.p.h. Petrol consumption is around 90-100 m.p.g.

THE 350 c.c. TYPE.

A LARGE section of the motor cycle community —those who like to lose as little time as possible on the road—will always look with favour upon the old and trusted 500 c.c. type. Even if it be not kept in the pink of condition, the 500 c.c. solo mount will be equal to almost any hill, and can be loaded with lots of kit and a heavy rider without complaining. Numerous makers are producing "light tourist" 500 c.c. machines which are much more suitable for solo riding than were the somewhat cumbersome specimens of a couple of years ago. Such a machine is as fast as is practicable for the average British road. In the touring models the maximum speed is around 55 m.p.h., while sports types may be capable of anything up to 75 m.p.h. Petrol consumption is between 85 and 100 m.p.g.

500 c.c. MOTOR CYCLES.

THERE are some riders who like to have unlimited power at their disposal, but, generally speaking, it is not of great advantage to have an engine of greater capacity than 500 c.c. for purely solo purposes, since maximum speed and practicable average speed are little, if any, greater. Comfort, however, is usually greater.

ABOVE 500 c.c.

FOR passenger use the 350 c.c. motor cycle is capable of pulling a light attachment with a not-too-bulky passenger over most roads. If the machine be thus laden, however, it is as well to bear in mind that it will need a fair amount of keeping in tune, because it will necessarily be driven most of the time at its full power. For short journeys over reasonably level roads, it is possible to average about 20 m.p.h., but petrol consumption will not be remarkably low, due to the frequent need for "full throttle," in other words, giving the engine all the gas it will take.

SOLO-CUM-SIDECAR MACHINES.

THE great popularity of the big single cylinder machine is largely due to its being suitable equally for solo or for serious sidecar work. A few years ago many manufacturers of 500 c.c. machines increased the capacity of their engines by anything up to 150 c.c. in order to render them more suitable for passenger work, and it is a fact that the single-cylinder engine of 550-650 c.c. is capable of hauling a fairly roomy sidecar, with passen-

THE "BIG SINGLE."

Hints and Tips.—

ger and luggage, over practically any road at an average speed of from 24 to 26 m.p.h., with a maximum of about 42 m.p.h., and a petrol consumption in the neighbourhood of 70 m.p.g. This type of machine is generally considered to be the most useful dual-purpose mount.

BECAUSE a twin-cylinder engine is a smoother running power unit than a big single, the 750 c.c. twin-machine has many adherents. It is usually somewhat heavier, and longer in the wheelbase, than the previous type dealt with, and it is, therefore, more frequently regarded as a purely sidecar mount. As such, it is capable of about the same road performance as the big single, although the maximum speed and hill-climbing ability may be a trifle better. With a sidecar it will average about 60-65 m.p.g. and is capable of a maximum speed round about 45 m.p.h. Certain "light" machines of this category make ideal solo mounts.

TWIN-CYLINDER MOTOR CYCLES.

THERE are a number of machines of 750 c.c. which are intended by their manufacturers solely for sidecar work, and are sometimes, in fact, listed as outfits only. Usually these motor cycles are heavily built, and would not be quite ideal for solo riding. Discretion is necessary in the choice of a motor cycle of this class if it is to be used for the dual purpose of solo and sidecar machine.

SOLELY FOR PASSENGER WORK.

THE 1,000 c.c. motor cycle for sidecar work has certainly increased its popularity of late years, although there has been a tendency towards smaller engine sizes in the solo classes. The big twin outfit is seldom driven at its maximum power, and therefore has a good reserve when a hill is encountered. On this account the 1,000 c.c. sidecar is preferred by a not inconsiderable proportion of road users to the more sluggish light car. A 28 m.p.h. average is well within the bounds of possibility, although petrol consumption is apt to be somewhat heavy if high average speeds are indulged in. Maximum speed, unless the engine be of the super-sports type geared fairly high and pulling a sidecar to match, will probably not exceed 48 m.p.h. Reasonable driving will usually result in a petrol consumption of about 44-55 m.p.g. even if an automatic carburetter is used or if the semi-automatic is adjusted to give one lever control.

THE BIG TWIN.

THE TREND TOWARDS SIMPLICITY.

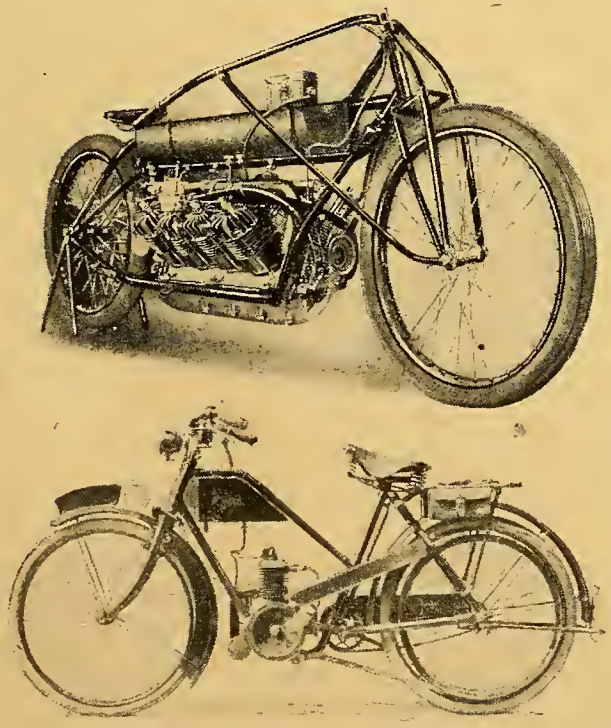
Current and Future Motor Cycle Design based on the Elimination of the Unessential.

IT has become a habit of critics of the motor cycle to assert that there is a tendency towards over-development. If this were true two or three years back, it certainly is not so to-day.

A decade ago there were several motor cycles which were infinitely more complicated than the most mechanically elaborate machine of the present time. To-day every other manufacturer of motor cycles is adding a lightweight to his range of models.

Then there is the present-day miniature two-stroke machine, which is a development of the auxiliary-engined bicycle. This type is becoming very popular, and will no doubt bring a large number of riders into the motor cycling fraternity.

It may be argued that ten or more years ago similar machines were offered to the public and were tried and found wanting. Those who rode the motorised bicycle of that period know that its life was comparatively short. Its engine was usually of the four-stroke type, and the valve gear was so delicate in construction that it could not stand the loads put upon it by the high speeds demanded.



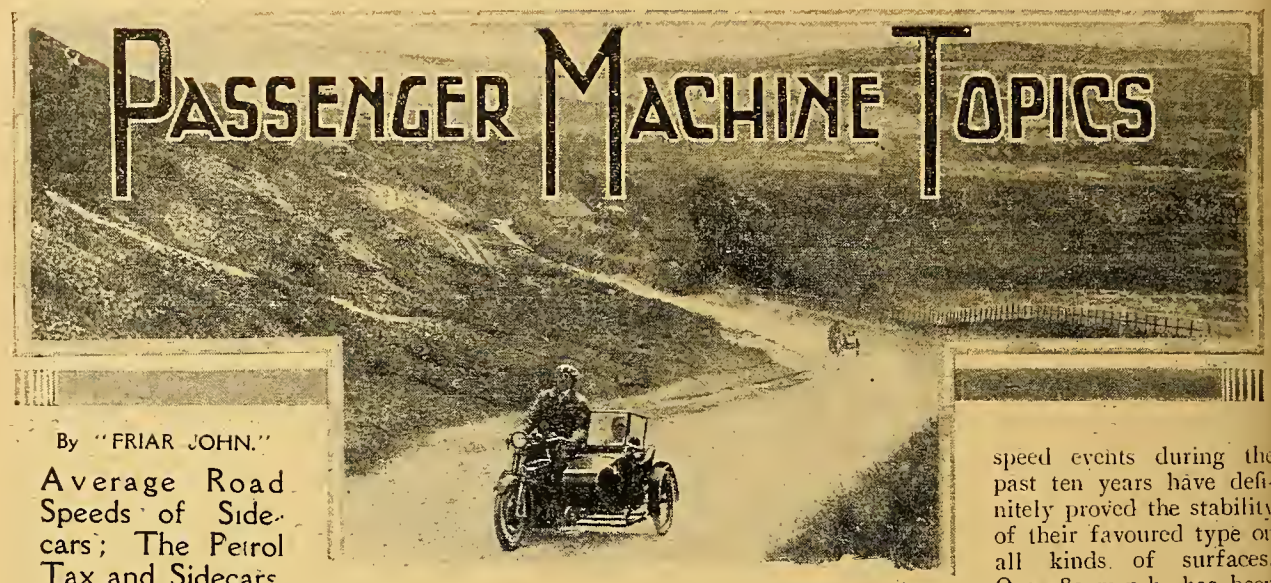
A CONTRAST. At present the motorised bicycle represents the limit of simplicity in Great Britain's self-propelled motor vehicles. The top illustration depicts a nominally 40 h.p. eight-cylinder Curtiss used in America nearly twenty years ago.

The present-day diminutive two-stroke is a thoroughly practicable proposition. It has only three moving parts against the dozen or more in the old type miniature four-stroke.

Ten years ago there were several motor cycles fitted with four-cylinder engines, but to-day not one is produced in this country. There were also many water-cooled engines; at the present time there is only one.

Simplicity is the keynote of present-day design; a few years back all kinds of weird machines were produced, but, in my opinion, motor cyclists have shown that they favour the simple economical mount rather than the machine which requires a great deal of time to keep in tune. Anyone with average intelligence can manage the modern machine. VEDETTE.

PASSENGER MACHINE TOPICS



By "FRIAR JOHN."

Average Road Speeds of Sidecars; The Petrol Tax and Sidecars.

THIS year has been marked by the introduction of several "solid" hoods of the type that, when not in use, may be instantly swung beneath the rear portion of the sidecar body. I should have thought more proprietary sidecar manufacturers would have adopted the idea for use on sporting sidecars, for even owners of 60 m.p.h. outfits have some consideration for their passengers.

THE question of average road speeds often crops up in connection with solo riders. What of sidecar speeds? I imagine few sidecarists have a better record than the chief of *The Motor Cycle* Press photographers. His mileage this year is 10,000 miles, and in that distance he has had three involuntary stops. Many of us boast of fast runs along the Great North Road, but his record of journeying from London to Edinburgh at an average speed of 28 m.p.h., then covering the 1,000 miles of very nice, picturesque course selected by the sporting boys of the Edinburgh M.C.C. for the Scottish "Six Days," and afterwards another fast run back to London, is no small achievement. This "little" tour accomplished, there was at last rest and repose for the machine and man. But such strenuous use demands a vehicle more reliable than a locomotive, for no steam engine would have been permitted to cover this mileage without an overhaul. Another ride of his from Patterdale to London (300 miles) between 5 o'clock in the afternoon and 5 o'clock the next morning is worth mentioning. So it will be gathered that photographs of the big trials are not obtained without arduous riding.

IS the sidecar more stable on greasy roads than the three-wheeler? Last week's correspondence on the subject of the three-wheeler in the I.O.M. raises a more vital question than even the admittance of that type of machine into the Sidecar T.T. Exponents of the Morgan class of vehicle may conceivably dismiss such a question as being one about which it is too ridiculous to argue. They will contend that trials and speed events during the past ten years have definitely proved the stability of their favoured type on all kinds of surfaces. Over 80 m.p.h. has been attained on a J.A.P.-engined Morgan at Brooklands, and a similar machine has won a Grand Prix. These successes should be sufficient to confirm their assertion. The I.O.M. course is a very different proposition from Brooklands, and, compared with the Grand Prix circuit, the Manx course contains many more danger spots.

QUITE apart from the policy of pitting sidecars against three-wheelers, this question of "tail wagging" is interesting. I believe Mr. Morgan himself would be the last to assert that Morgans don't "wag" on grease. I have driven the De Luxe model several thousands of miles, and have never been in danger through skidding, although the slight side-slipping of the rear wheel was disconcerting at first. On the other hand, with a sidecar I one day skidded from one side of the road to the other. This proves nothing, however. Contrary to Mr. W. A. Carr, who said in last week's issue of *The Motor Cycle* he would rather be the passenger in a three-wheeler than in a sidecar during a T.T. race, I would sooner be the passenger in a sidecar, especially on a wet day.

MR. D. R. O'DONOVAN states that the I.O.M. course is too narrow for racing three-wheelers in safety, but the majority of three-wheeler exponents give flat contradiction to his statement. Personally I would like to see three-wheelers compete, which would mean, of course, the inclusion of 1,000 c.c. sidecars. There again opinion is very divided.

SIDECAR owners will probably feel the advantage of a reversion to the petrol tax more than any class of motorist. We all anxiously await the effect of the memorandum recently presented to the Ministry of Transport, which pointed out all the benefits to be gained by a petrol tax. The general feeling is that in 1924 we may be motoring under a taxation less iniquitous, or perhaps one ought to say more equitable, than is the case at present.

What The Show Reveals

Development of the Smaller Solo Machine. British Solo Big Twins Meet All Competition. Value in Medium and Full Powered Sidecar Outfits.

In addition to forming a convenient record of development which has taken place during 1922, the accompanying article will assist the potential purchaser of a motor cycle whether he visits Olympia or not.

IN the estimation of those who have made the motor cycle movement a subject for close study, two outstanding facts are associated with the present Show.

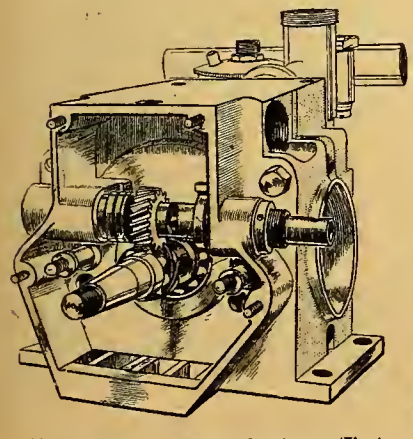
Both of them, curiously enough, have to do with the smaller solo type of machine, for it is at this end of the scale that the most outstanding developments have been made. These facts, which are so evident, are the rapid growth of interest in the miniature-engined, ultra-lightweight motor cycle, and the concentration of designing ability on the part of some of the most prominent manufacturers in the industry upon the 350 c.c. four-stroke type of machine produced throughout in the parent factory.

It is not difficult to trace back these stirrings in the general current of progress. In the case of the ultra-lightweight, the popularity of one example of the modernised motorised bicycle, introduced last year, attracted the attention of many smaller makers seeking outlet for their productive energies, while the signal success of the 350 c.c. four-stroke single in 1921 has now shown its deep influence on the older manufacturers of bigger-engined models hitherto regarded as essential for hard solo work.

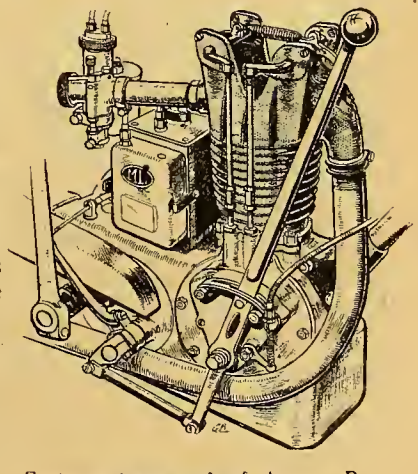
The rise of the 350 c.c. four-stroke single was indicated at the last Show; its forward movement is now confirmed.

In a corresponding article published in the early stages of the 1921 Show, we prophesied that the big American twin would have to look to its laurels in the year 1922, and in this we have been justified by the recent records established by Le Vack and by the results of many speed events on road and track.

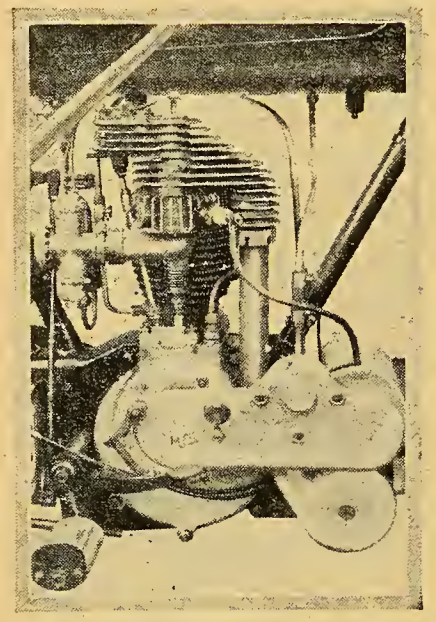
The big twin solo machine of British manufac-



Timing case cover of the latest Wooler removed to show camshaft drive.



Engine and gear unit of the new Rover lightweight



Engine of 347 c.c. Martinsyde, with silent overhead exhaust valve mechanism.

ture has sprung into prominence in a remarkable manner during the past twelve months, and, though some of the pioneers deserve much credit, the movement has undoubtedly been helped forward by the newcomers who have designed machines essentially to suit the sporting rider.

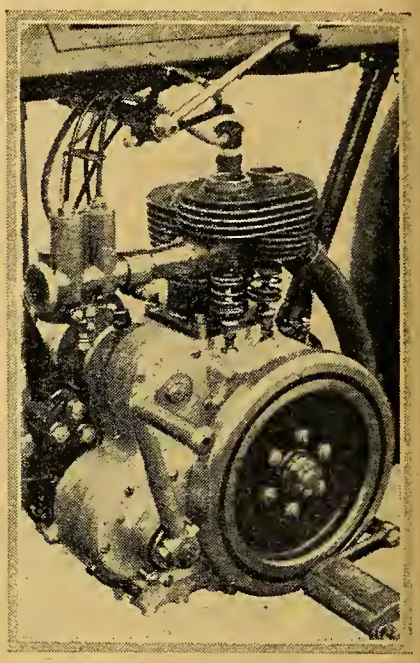
Of course, all these big twin solo machines are suitable for sidecar work to some degree, but the majority are designed primarily for the one duty.

At the other end of the list we welcome the advent of the really light motor cycles which have already been mentioned. Although such machines have made spasmodic appearances throughout the history of the motor cycle, the progress of engineering has now brought us to the point where the miniature engine of approximately 150 c.c. is no longer a toy but a powerful and reliable power plant.

Future of the Ultra-Lightweight.

In this development is to be seen the foundation of the motor cycle of the future, which in a later stage, when it has become more weatherproof, will form a means of transport for thousands of workers who prefer (or are forced by circumstances) to live some distance from their places of business.

Already the manufacturers who have turned to miniature motor cycles make a formidable list, and the backing of so many firms forms a guarantee of the faith of the industry in this type.

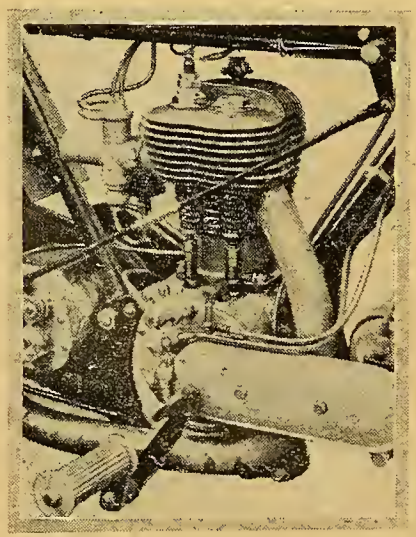


Engine and three-speed gear unit of the new 346 c.c. Triumph.

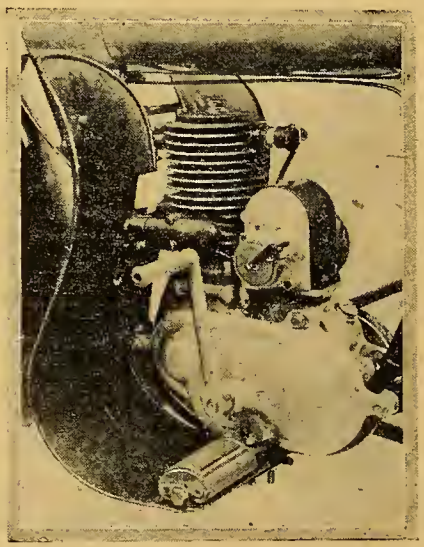
The 250 c.c. Class.

An increase of 100 c.c. brings us to a class which, although it has a promising future, has made but little progress in point of numbers this year. Nevertheless, it is an open secret that one of the most prominent makers is experimenting with units of this size, and another will actually stage a machine of this capacity.

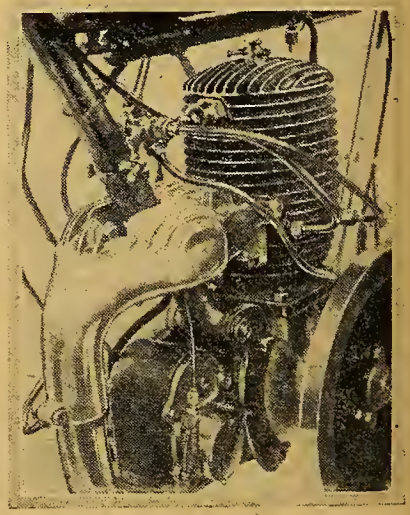
Progress in design, in the 250 c.c. class, has undoubtedly taken place during this year, as witness the speed performances achieved in the T.T. and the Belgian and French Grand Prix races.



Substantially built engine of the new 493 c.c. sporting B.S.A.



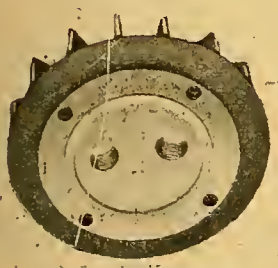
Engine-shaft kick-starter on the enlarged Triumph two-stroke lightweight.



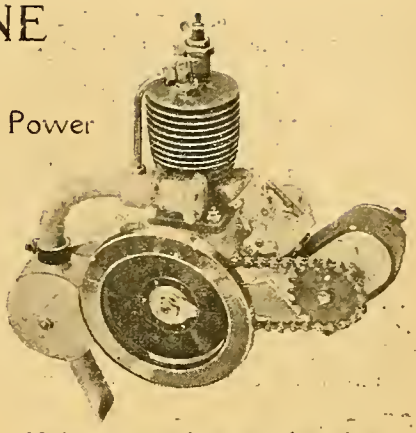
Ribbed cast aluminium exhaust manifold on the 350 c.c. Connaught two-stroke.

EXAMPLES OF MODERN ENGINE DESIGN.

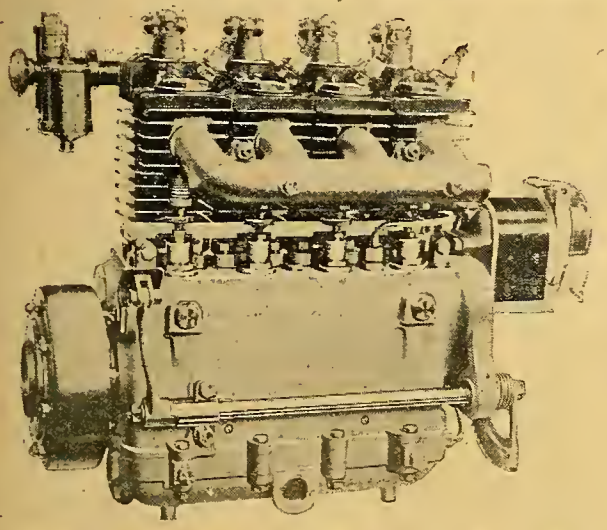
Sound Methods Characterise the Latest Developments of Power Unit Construction.



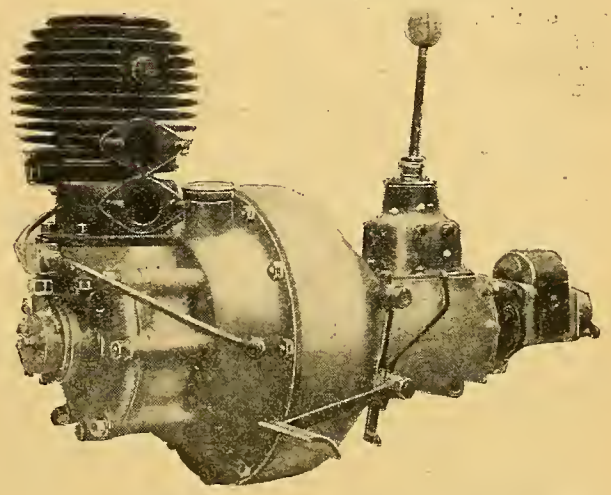
Detachable head of the enlarged Cedos two-stroke.



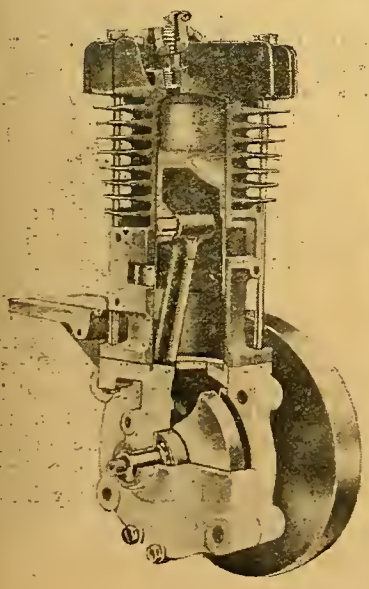
Miniature two-stroke power plant of the J.D. motorised bicycle.

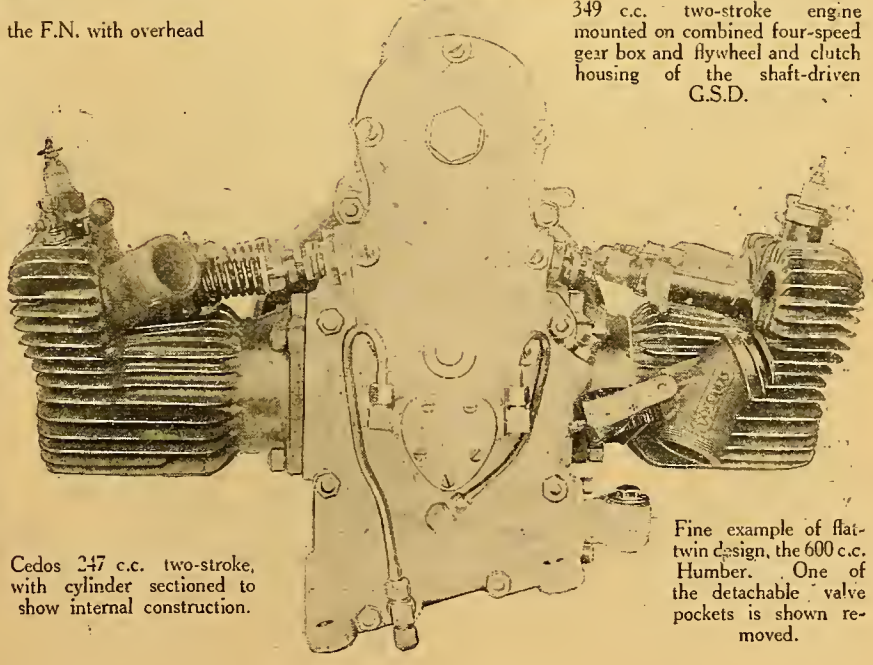


Belgium's famous air-cooled four-cylinder, the F.N. with overhead inlet valves.



349 c.c. two-stroke engine mounted on combined four-speed gear box and flywheel and clutch housing of the shaft-driven G.S.D.





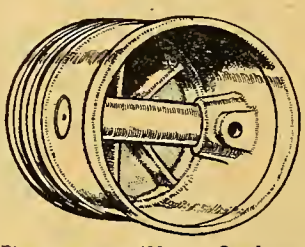
Cedos 247 c.c. two-stroke, with cylinder sectioned to show internal construction.

Fine example of flat-twin design, the 600 c.c. Humber. One of the detachable valve pockets is shown removed.

What the Show Reveals.—

A new side-by-side valve 250 c.c. proprietary unit makes its appearance for the first time, and its advent has increased the ranks of 250 c.c. machines by at least one honoured name.

In the 350 c.c. class is found the most popular type in point of numbers. Thirty-seven makes show it, seventeen of whom produce their own special engine. Proprietary engines of both two- and four-stroke type are available, and amongst the latter are side-valve, overhead-valve, sleeve-valve, and oil-cooled units.



Piston on new 490 c.c. Quadrant, with ribbed head.

350 c.c. Popularity.

Perhaps the most convincing and definite indication of the trend of design lies in the fact that the majority of the oldest established manufacturers in the trade have decided to market machines of the popular 350 c.c. size.

As usual, the evergreen 500 c.c. machine continues to do more than hold its head above water. So often has it been said that it is moribund that it is refreshing to find so many makes still flourishing and more makes joining the class.

When nine or ten firms with historic names, backed by almost every manufacturer of engines, pin their faith to the 500 c.c. type as their main solo model, one need not worry unduly about the future of the class, since it is hardly likely that the machines are produced for show purposes only.

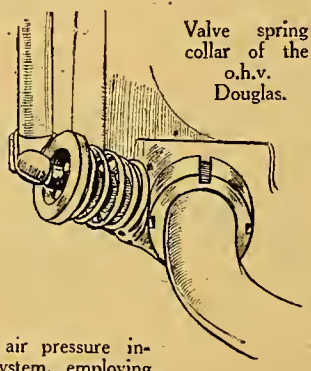
Amongst bigger "singles" one staunch adherent has been lost, but, nevertheless, this type remains perhaps the most popular form of machine for sidecar work.

Big and moderate-sized twin-cylinder sidecar outfits do not appear to be on the increase, nor, on the other hand, do they show any signs of fading away, and with the considerable price reductions which have been made they stand in no fear of competition from any quarter.

Three-wheelers.

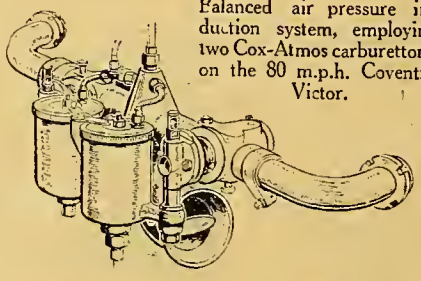
Except for a general reduction in prices there does not appear to be any outstanding change in the position of three-wheeled vehicles. All the old-established makers stage attractive exhibits, and while one machine shown last year has now developed a fourth wheel and left the fold, a solo runabout on three wheels has now extended its range to a two-seater model.

There is undoubtedly a place for the three-wheeler in the general scheme of things both as an inexpensive method of conveying two persons with full weather protection and as a means of providing a really high-class outfit at a price which compares favourably with cars of comparatively meagre specification.

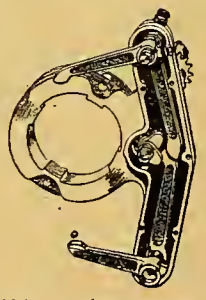


Valve spring collar of the o.h.v. Douglas.

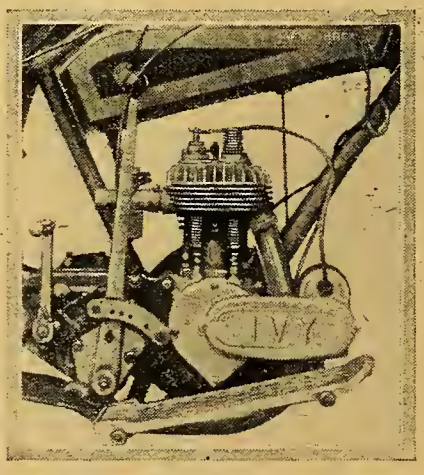
Amongst the three-wheelers are some of the cleverest and most practical designs on the market, and the public would do well to rid themselves of prejudice against either unusual appearance or construction.



Balanced air pressure induction system, employing two Cox-Atmos carburettors, on the 80 m.p.h. Coventry Victor.



Valve rocker arrangement on the sporting Wooler engine.



349 c.c. four-stroke Ivy engine, the product of a firm of two-stroke specialists.

Sidecars.

No symptoms of failing are visible in the sidecar world, and the passenger attachment is becoming more and more practical. There are still luxuriously appointed and superbly sprung sidecars to be found, but the tendency towards over-development, which at one time showed signs of increasing, appears to have received a check, and the more useful, though not less ornamental body, is gaining ground. The Americans show a tendency to still further increase engine size for sidecar work; two 1,200 c.c. models are shown.

We have with us all our old friends in the sidecar world whose names are sufficient guarantee of the goods they produce, and, in addition, there are newcomers. It is unfortunate that the announcement of a sidecar T.T. race came so late in the present year, as it will undoubtedly have much bearing on sidecar chassis design; changes made with this or similar races in view are not likely to be made for some little time.

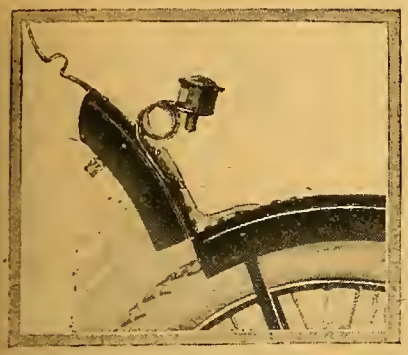
Detail Design.

Having reviewed the general trend of design, some particular and technical details may now be discussed. In the case of engine units, for example, four-strokes are still in the majority, though the two-stroke is holding its own. In one case a firm of two-stroke specialists has introduced a four-stroke model of considerable interest, but none of the previous models are being abandoned. Such new two-strokes as have appeared come chiefly into the smaller categories.

There has been a decided tendency to increase engine capacity in

AT OLYMPIA.

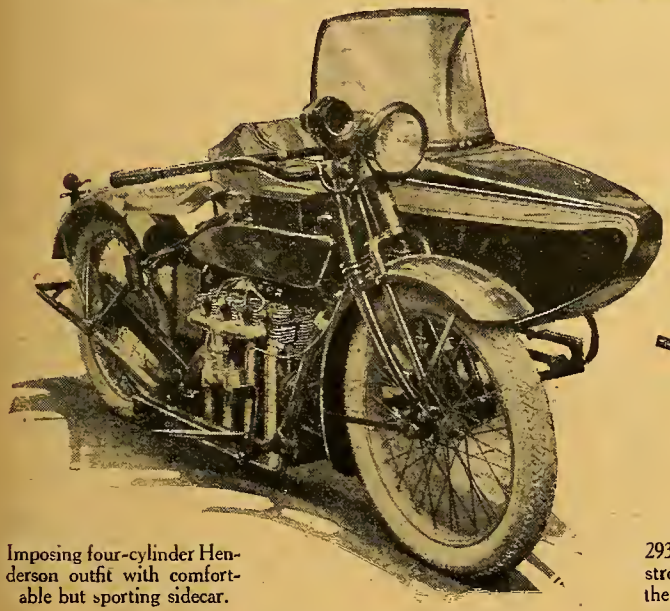
Machines and Details of Interest.



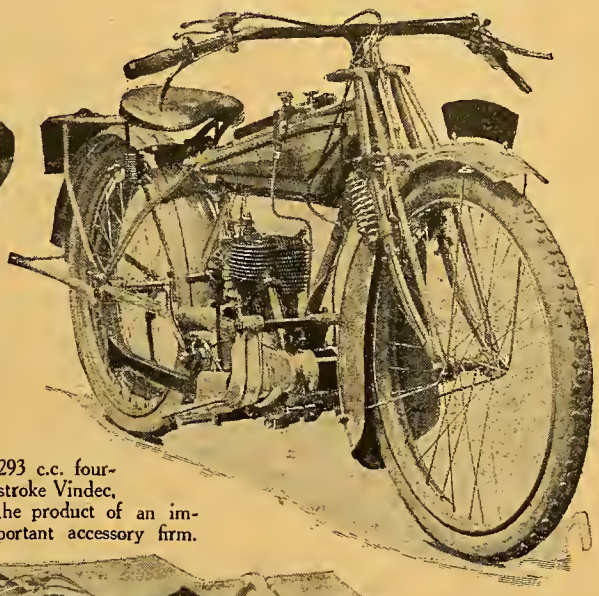
Harley-Davidson hinged rear mudguard and sprung tail lamp.

Water-proof roller-bearing hub for the rear wheel of the big twin Harley-Davidson sidecar machines.

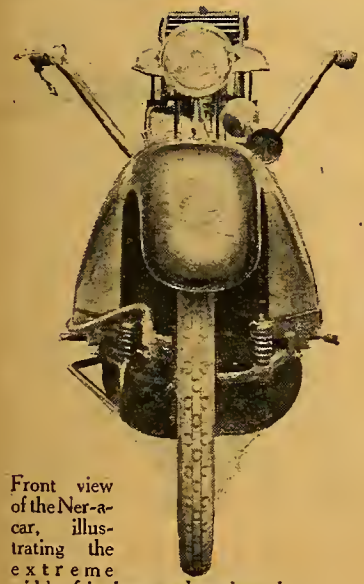
Combined switch and warning buzzer on Harley-Davidson electrical models.



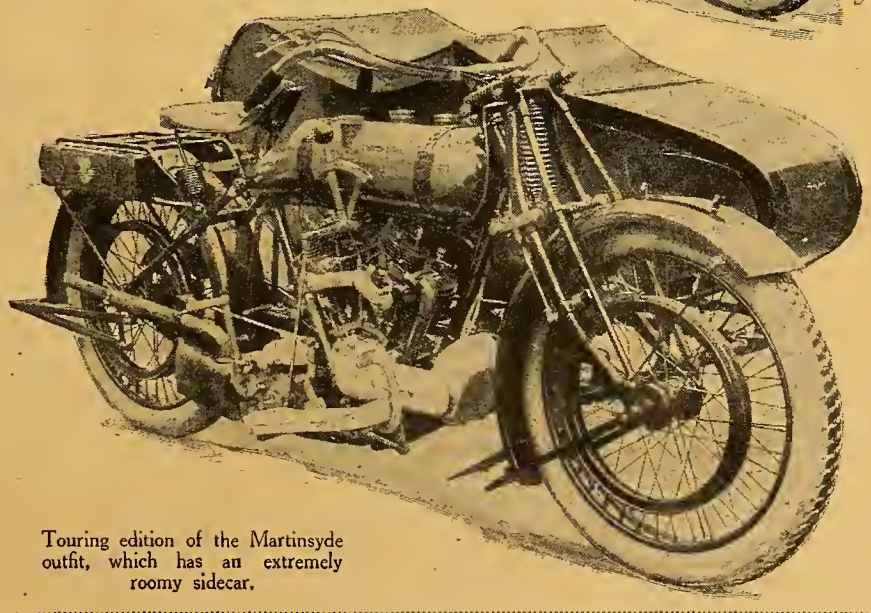
Imposing four-cylinder Henderson outfit with comfortable but sporting sidecar.



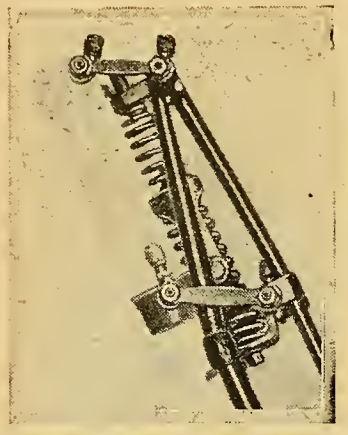
293 c.c. four-stroke Vindec, the product of an important accessory firm.



Front view of the Ner-a-car, illustrating the extreme width of its improved mudguard.



Touring edition of the Martinsyde outfit, which has an extremely roomy sidecar.



Re-designed forks on the Cedos lightweight, which damp out shock and rebound.

the two-stroke class up to about 350 c.c., but it is curious that the marked success of one make of air-cooled two-stroke in the 500 c.c. category has not attracted followers.

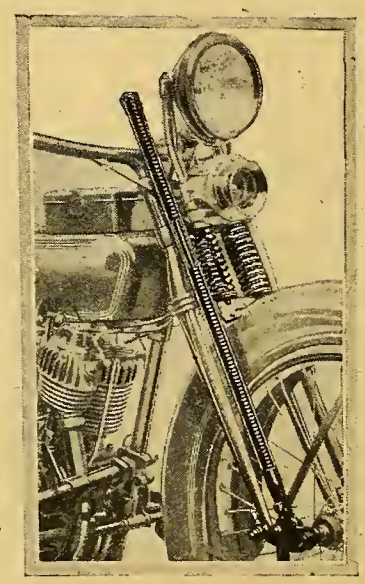
Taking engine design as a whole, there are few really striking departures. Overhead and side-by-side valve gears maintain much about the same proportions as before, and in many cases are offered as alternatives by the same manufacturers.

Mechanical lubrication has been extended by some notable additions embodied in makers' own engines, and also by the improvement of existing and the introduction of new proprietary engine-driven oil pumps.

Apart from engine lubrication there is a tendency to fit better lubricators, or even grease cups on the cycle parts, and one or two makers employ grease gun lubrication by special nipples throughout.

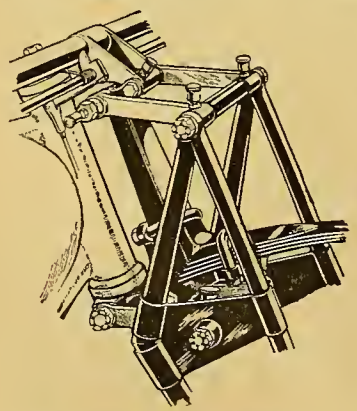
Unit Construction.

Unit construction of engine and gear box is undoubtedly gaining ground after many years of waiting. One of our most important makers shows a 350 c.c. model with a complete engine-gear unit and enclosed primary drive by gearing, and others are only slightly less advanced in that a chain is used between crankshaft and gearshaft.



Four auxiliary springs have been added to the Harley-Davidson front fork, which now has eight springs in all.

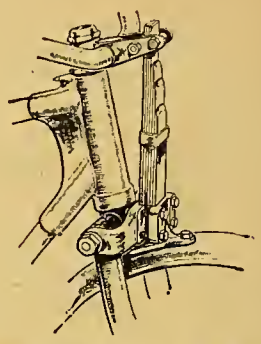
British makers may even be spurred by the sight of a most highly developed example of Italian design in which the first step of the drive is by enclosed spiral pinions.



Link construction on the spring fork of the 1923 Beardmore-Precision sports model.

Apart from complete engine-gear units, several makers adopt the unit assembly system whereby engine and gear box are secured to common plates and mounted in the frame as a single unit; this method has much to commend it, as heavy dismantling costs are avoided if only one of the components becomes deranged.

Speed gear construction shows marked development, and almost all the proprietary gear box makers have produced new boxes and improved their existing models; there are other interesting transmission features to be noted. For instance, two machines employing selective two-speed chain drives hitherto, now offer three speeds and four speeds respectively. Indeed, four makers in all will offer four-speed models apart from those who use the proprietary four-speed gear boxes which are available. There are also rumours of the advent of more gears of the latter class in the near future.

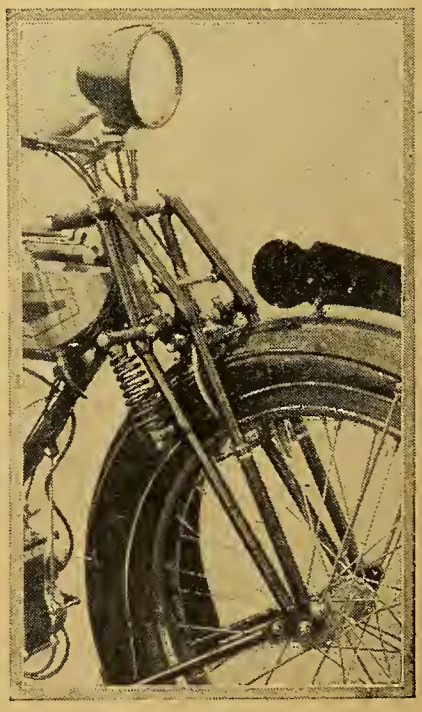


Simple hinged fork and leaf spring on the Omega miniature.

Shaft Transmission.

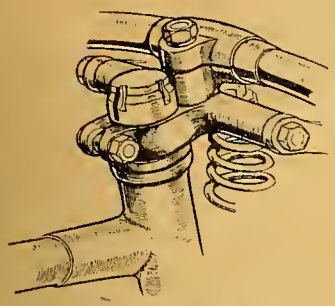
Shaft drive, after being represented by a single Belgian make for so many years (excepting a scooter), at last will have one British representative. In other respects the remarkable feature of transmission at the Show is the virtual disappearance of the belt on all but the lightest machines; chain-drive has indeed come into its own, although not, it must be regretted, in an all-enclosed form.

Another important advance lies in the fact that

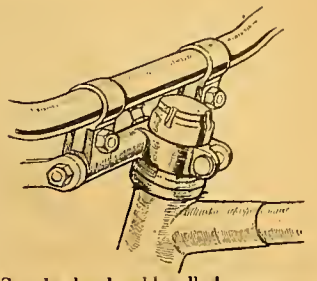


New Druid-pattern Triumph forks fitted to the 550 c.c. (chain-driven) and 346 c.c. models.

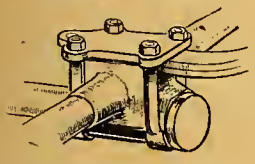
DETAILS OF 1923 MODELS AT OLYMPIA.



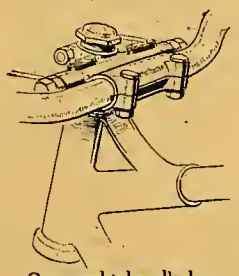
Steering head and handle-bar fixing on the 493 c.c. B.S.A.



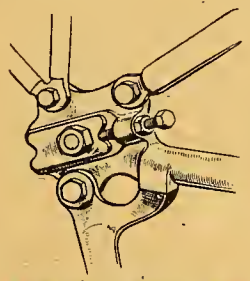
Steering head and handle-bar arrangement on the lightweight B.S.A.



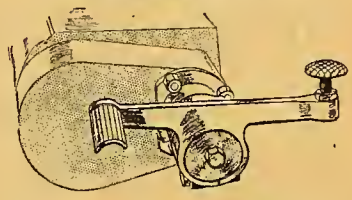
Spring bracket of the new Rudge sidecar.



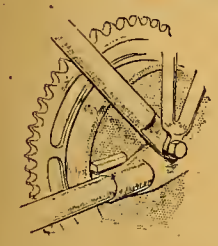
Connaught handle-bar mounting.



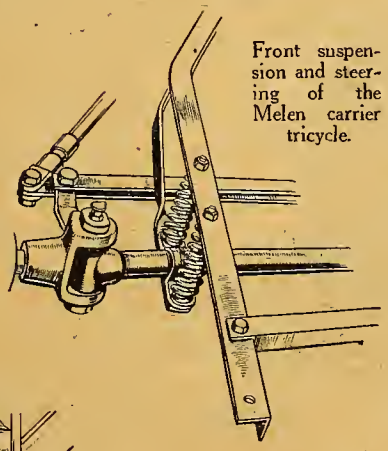
Reversible distance piece on rear axle of chain-driven O.K. lightweights.



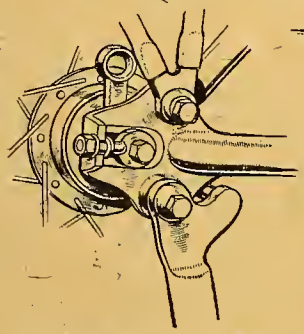
Foot control used in conjunction with a hand lever on the sporting P. & M.



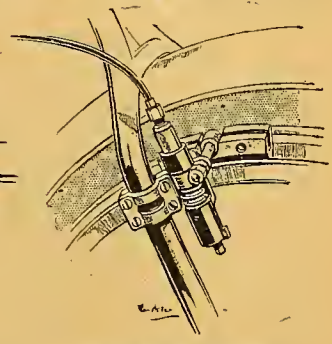
Brake stop on the Raleigh



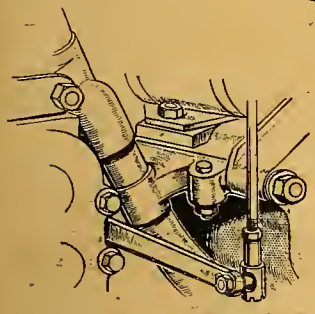
Front suspension and steering of the Melen carrier tricycle.



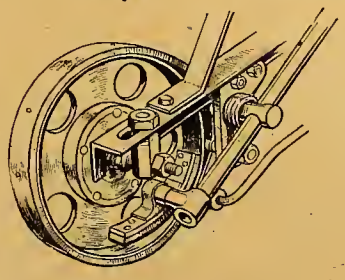
Detachable wheel of 346 c.c. Triumph, illustrating extension to distance piece for ease of handling.



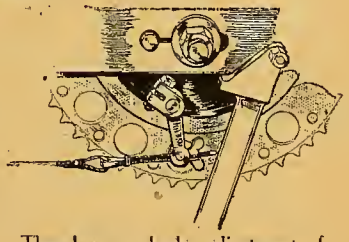
Cable-operated rear brake on the J.D. miniature.



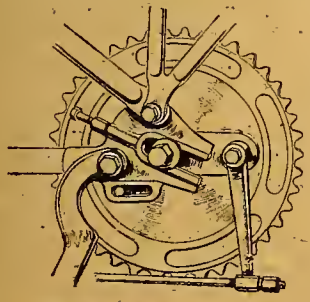
Cotter-locked Velocette engine bolt.



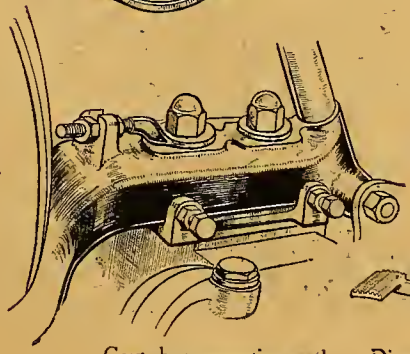
Internal shoe and contracting band brakes on the Melen tradesman's carrier.



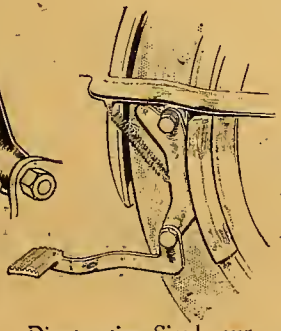
Thumb-screw brake adjustment of the Ner-a-car.



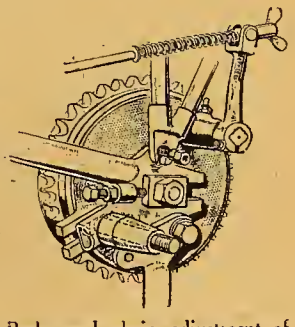
Brake and axle slots on the New Hudson, so arranged to allow chain adjustment without upsetting the brake.



Gear box mounting and adjustment on the O.K.

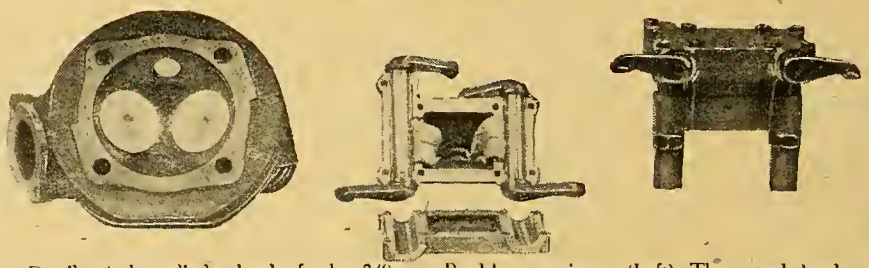


Direct acting Sirrah rear brake.



Brake and chain adjustment of the 976 c.c. New Imperial.

still another gear box manufacturer has incorporated a transmission shock absorber in the clutch mechanism, thus removing a load of responsibility from the engine maker and the motor cycle assembler, although some fit a cushion hub as well.



Details of the cylinder head of the 349 c.c. Bradshaw engine. (Left) The actual head showing the large diameter valves; (middle) the rocker box with wick-oiled bearings; and (right) the same item assembled.

Of transmission shock absorbers there are four main lines of development: that already mentioned, the spring link chain, the cushion type of hub, and the engine shaft shock absorber, usually of the spring-loaded cam type.

Variable pulley belt transmissions are almost non-existent, although some of the best examples are still obtainable on the cheaper editions of certain well-known makes. Friction drive, also, only has a very small following limited to light machines.

Brakework.

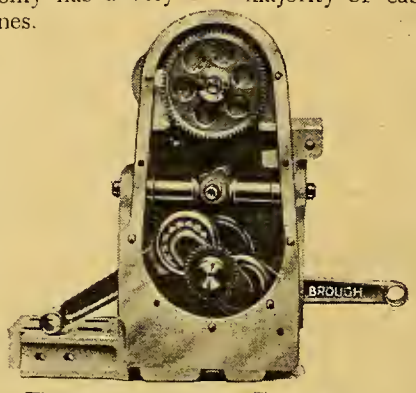
Far from being an unimportant detail, brakes are of vital importance, and have at last received the attention they deserve. Internal expanding brakes on at least one wheel have become very popular, and special means are usually provided when one is fitted to the rear for the removal of the wheel without disturbing brake or chain adjustments. The dummy belt rim brake finds many supporters, especially amongst machines of the highest class, for when properly designed it is most satisfactory. Band brakes are to be found on only a small number of machines.

Little change is visible in either frame or fork springing. All the big spring-frame machines remain with us, and there is one new spring frame amongst the lightweights. One very notable improvement has been made to spring forks, however, which consists of a damping device functioning in a manner similar to the friction type shock absorber so common in car practice. It is suitable for either front or rear suspension.

Broadly speaking, frames remain unaltered, but there are one or two good examples of duplex construction; in one case the "top" tubes run straight from the head to the rear spindle, and in several instances provision is made for enclosing engine and gears in a kind of bonnet, so that the rider is kept clean and the draught is concentrated by means of scoops upon the engine where it is most needed.

Improvements for the Practical Rider.

Quite a number of makers are attaching saddles direct to the frame members, thus saving some weight and lowering the riding position, and there is a considerable move in the direction of adjustable handlebars, much ingenuity having been displayed along these lines. Wider mudguards are fitted in the majority of cases, and the rather flat section guard with no valances has come into fashion. This type, especially when ample wheel clearance is arranged, will please our overseas riders.

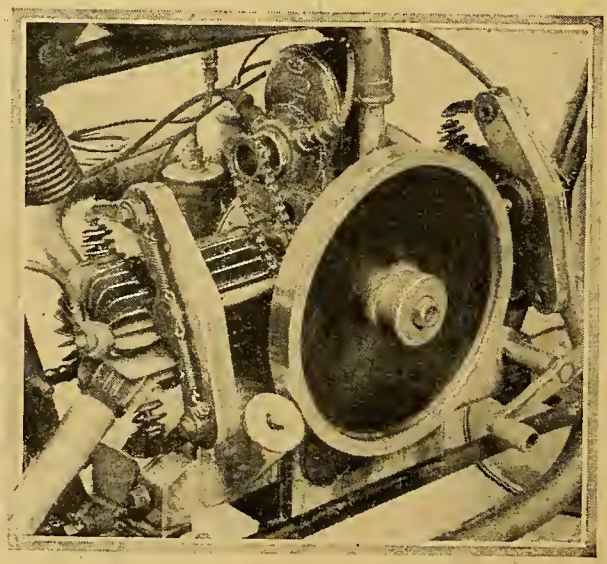


Timing case cover of 496 c.c. flat twin Brough engine removed to show roller-bearing big ends and camshaft.

Tanks which have given some trouble on modern high-speed machines have been stiffened in many cases. Some have a double partition between oil and petrol tank, and one or two have the two tanks made separately and divided by a felt packing piece.

A few firms have decided to drop the saddle tank on the score of structural weakness or expensive production, but it is retained by the majority of those who fitted it last year.

Two-lever carburetters continue to hold their own, and a new type of two-jet semi-automatic instrument has been fitted to several machines. Fully automatic single-lever carburetters are to be seen in fair numbers as standard equipment. There are, comparatively speaking, several newcomers which have made good headway.



"Semi-overhead" best describes the valve gear of the latest high efficiency Wooler engine.

Miniature Carburetters.

Two of the old-established carburetter makers have produced miniature apparatus to suit the tiny engines used on many of the modern ultra-light machines.

Magneto design continues to improve; departures from the accepted horse-shoe magnet type were made

What the Show Reveals.—

last year, and this year are still more common. In one instance a rotating magnet is employed, greatly simplifying the mechanical construction and wiring and relieving the armature of centrifugal stresses.

Tyres are cheaper and better this year, and a noticeable tendency to use bigger sections is apparent on all except the very lowest-priced models.

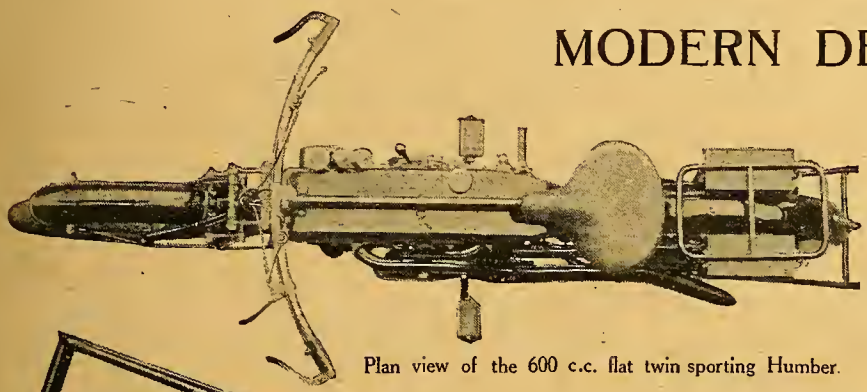
Controls do not appear to be simplified either by reduction in numbers or by standardisation as regards position, and the subject is worthy of further consideration. The new twist-grip control produced by a well-known carburetter firm will be welcomed by many.

This concludes the survey of what is revealed by a cursory glance over the exhibits at the Show, looking at them in their entirety rather than in detail.

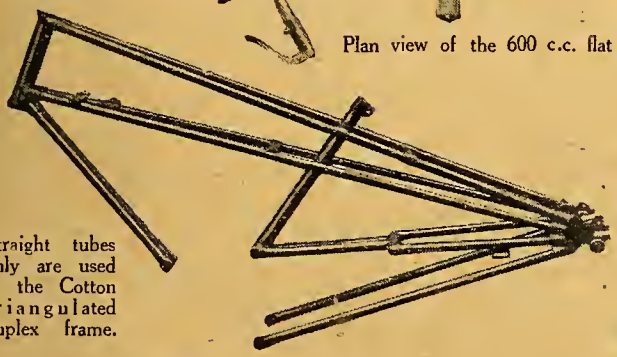
Absence of freakishness, sound technical features, and practical fitments denoting a knowledge of the practical rider's requirements are features which augur well for the future. No one can visit the 1922 Olympia Show of motor cycles and come away with any feeling of pessimism as to the outlook of the sport and industry, on technical grounds at any rate.

MODERN DESIGN.

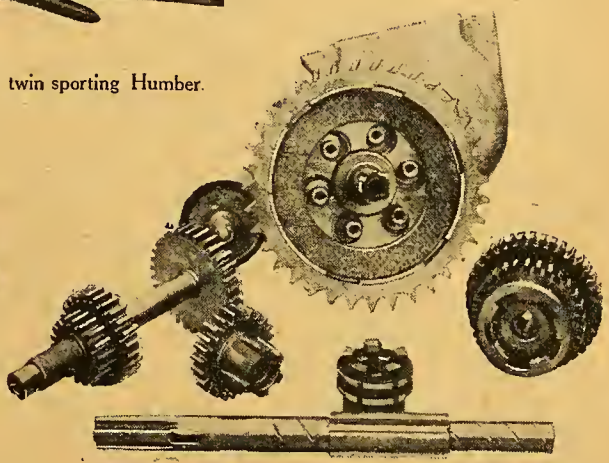
All types of machines for every class of motorist are at Olympia.



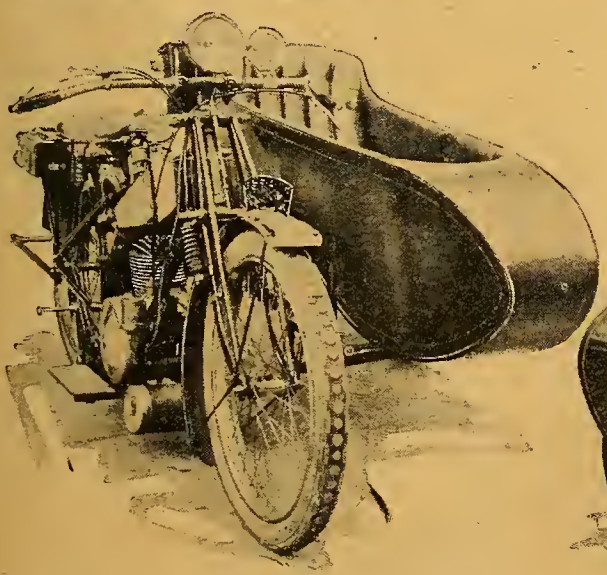
Plan view of the 600 c.c. flat twin sporting Humber.



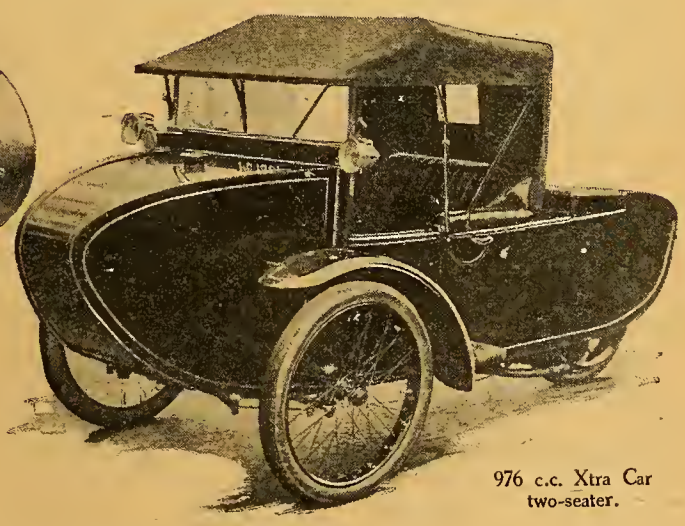
Straight tubes only are used in the Cotton triangulated duplex frame.



Components of the new Scott three-speed gear.



Electrically equipped Grigg lightweight sidecar outfit.



976 c.c. Xtra Car two-seater.

TYRES FOR 1923.

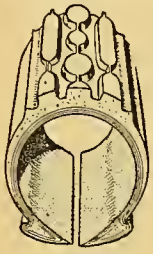
Importance of Substantial Covers. Sizes and Prices Tabulated.

SELECTION of the right tyre for its special duty is of the utmost importance. Tyres of insufficient weight or size can destroy the pleasure of many miles of motoring; it is essential, therefore, to obtain the best and biggest tyres that can be fitted to the rims of the machine.

In view of the apparently confusing array of tyre sizes given in the accompanying guide to the principal tyres for the 1923 market, it should be remembered that 26×2¼, 26×2⅜, and 26×2½ for 2¼ will fit on the same rim (and most probably on the 26×2 rims of many old machines and lightweights). Even 28×3 covers have been fitted to 26×2¼ rims, but the practice is not recommended by the tyre makers. On 650×65 rims the other sizes permissible are 700×80 and 710×85, and, in some cases, 26×3.

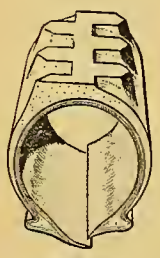
Rims of the old size (O.S.) 26×2½ may be fitted with a 26×3 oversize.

A BUYER'S GUIDE OF COVERS AND TUBES.



Avon (Durolith).

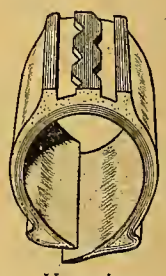
Bates (All-weather).



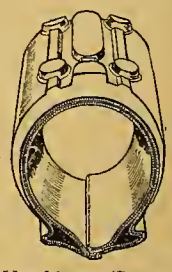
Be'dam (Rubber non-skid).

Name and Type.	Size.	Price. Cover. s.	d.	Tube. s.	d.
AVON.					
Druid	24×2¼	19	3	6	0
Stonehenge	24×2¼	25	0	6	0
Druid	26×2¼	20	0	6	0
Stonehenge	26×2¼	25	9	6	0
Heavy 3-ribbed	26×2¼	25	9	6	0
Durolith	26×2¼	32	0	6	0
Stonehenge	26×2⅜	30	0	6	9
Heavy 3-ribbed	26×2⅜	30	0	6	9
Durolith	26×2⅜	36	0	6	9
Combination	26×2½	57	6	6	9
Durolith	26×3	44	3	7	3
Combination	26×3	67	6	7	3
Durolith	28×3	45	9	7	9
Combination	28×3	75	0	7	9
Extra heavy 3-rib	28×3	42	6	7	9
Durolith	650×65	37	9	7	0
Durolith	700×80	44	3	7	3
Extra heavy 3-rib	650×65	34	6	7	0
Extra heavy 3-rib	700×80	41	0	7	3
Combination	650×65	62	6	7	0
Combination	700×80	67	6	7	3
BATES.					
3-rib and square stud	24×2	25	6	5	9
3-rib, square stud and All-weather	24×2¼	27	0	6	0
All-weather	24×2½×2¼	33	6	6	6
3-rib and square stud	26×2	27	0	6	0
3-rib, square stud and All-weather	26×2¼	28	0	6	3
3-rib and square stud	26×2⅜	36	0	6	6
3-rib, square stud and All-weather	26×2½×2¼	38	0	7	0
3-rib and All-weather	650×65	40	0	7	3
3-rib, square stud and All-weather	26×3	45	6	7	6
All-weather	27×3½	48	0	9	3
3-rib, square stud and All-weather	28×3	47	0	8	0
All-weather	29×3½	50	0	10	0
BELDAM.					
3-ply	26×2	26	3	6	0
„	26×2¼	26	9	6	3
„	26×2⅜	30	0	6	6
„	26×2½	33	0	7	0
„	26×2¼	34	9	7	0
„	26×3	39	0	7	6
„	28×3	42	6	8	0
4-ply	26×2	31	6	6	0
„	26×2¼	33	9	6	3
„	26×2⅜	35	9	6	6
„	26×2½	39	9	7	0
„	26×2¼	41	6	7	0
„	26×3	42	9	7	6
„	28×3	45	0	8	0

Bergougnan (Non-skid).

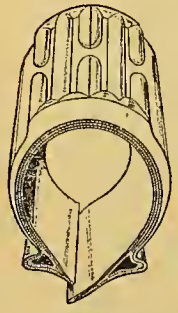


Hermetic (Peerless).

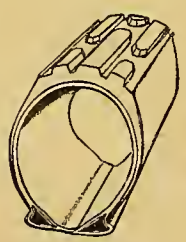


Hutchinson (Super-steel-studded).

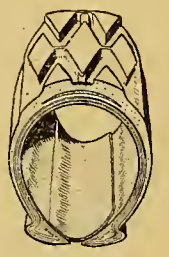
Name and Type.	Size.	Price. Cover. s.	d.	Tube. s.	d.
BERGOUGNAN.					
4-ply de Luxe	24×2	34	0	6	0
„	24×2¼	36	6	6	6
„	26×2	39	3	6	6
„	26×2¼	41	9	6	9
„	26×2⅜	44	3	7	3
„	26×2⅜×2¼	49	3	6	9
„	26×2½	51	6	7	6
„	26×2½	58	0	8	6
„	26×3	56	3	8	6
„	28×3	58	3	9	0
„	29×3½	72	9	9	3
CLINCHER.					
Dreadnought Pass. ex. hy.	26×2½×2¼	38	6	7	0
„	28×3	47	6	8	0
De Luxe ex. hy. non-skid	24×2	26	0	5	9
„	24×2¼	27	6	6	0
„	26×2	27	9	6	0
„	26×2¼	28	3	6	3
„	26×2⅜×2¼	31	6	6	6
„	26×2½×2¼	34	9	7	0
„	28×3	45	0	8	0
De Luxe ex. hy. rubber n.s. for new standard rims	26×2¼	29	0	6	3
„	26×2½×2¼	35	6	7	0
„	26×3	43	6	7	6
Junior de Luxe rubber non-skid	24×2	17	0	5	9
„	26×2	18	9	6	0
„	24×2¼	18	9	6	0
„	26×2¼	19	6	6	3
Dreadnought 3-rib	650×65	36	6	7	3
„	700×80	42	6	7	6
De Luxe ex. hy. n.s.	700×80	43	6	7	6
„	650×65	33	9	7	3
DUNLOP.					
Dunlop Cord	24×2¼	31	0	6	0
„	26×2¼	32	0	6	3
„	23×2½	40	3	7	0
„	26×3	52	0	7	6
„	28×3	53	9	8	0
„	650×65	40	3	7	3
Rubber studded 3-ply	24×2	24	9	5	9
„	26×2	26	3	6	0
„	24×2¼	26	0	6	0
„	26×2¼	26	9	6	3
„	26×2⅜	30	0	6	6
„	26×2½×2¼	33	0	7	0
„	o.s. 26×2½	34	9	7	0
„	o.s. 26×3	39	0	7	6
„	650×65	32	0	7	6
„	700×80	41	3	7	6



Goodrich (Non-skid).

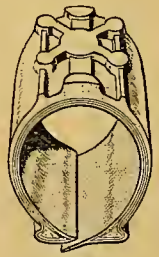


John Bull (Rib-stud).



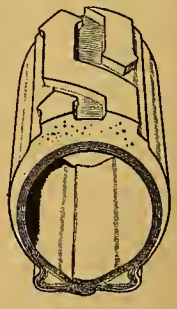
Goodyear. (Non-skid).

Kempshall (Heavy non-skid).

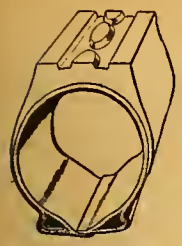


Clincher (De Luxe).

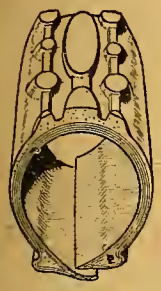
Roberts (Moulded heavy).



Macintosh (Non-skid).



Max (Cycar)



Pedley (Pedley stud).

Pirelli (Heavy studded).

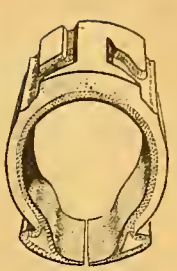
Moseley (Extra heavy).

Dunlop (Motor cycle cord).

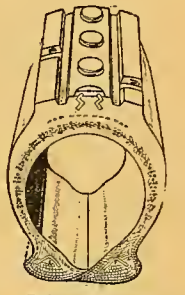
Name and Type.	Size.	Price. Cover.		Tube.	
DUNLOP (Cont.)		s.	d.	s.	d.
Rubber studded ex. by. 4-ply	26×2¾	35	9	6	6
,,	26×2½×2¼	39	0	7	0
,,	o.s. 26×2½	31	6	7	0
,,	28×3	45	0	8	0
,,	650×65	34	6	7	3
Magnum	26×2½	33	9	7	0
,,	700×80	41	3	7	6
,,	28×3	42	6	8	0
ELITE.					
Super non-skid	26×2¼	28	0	6	0
,,	26×2½×2¼	35	0	7	0
,,	28×3	45	0	8	0
,,	700×80	44	0	7	6
GOODRICH.					
Safety Tread	26×2¼	27	6	6	0
,,	26×2¾	30	0	6	6
,,	26×2½	31	6	7	0
,,	26×2½×2¼	32	6	7	0
All-weather	26×2½×2¼	36	6	7	3
,,	26×3	41	6	7	9
,,	28×3	45	3	8	3
,,	27×3½	52	6	9	9
,,	29×3½	61	6	10	0
HERMETIC.					
Peerless	26×2¼	32	0	6	3
,,	26×2¾	35	6	6	6
,,	26×2½×2¼	36	0	7	0
,,	26×2½	36	0	6	9
,,	650×65	39	0	7	0
,,	28×3	44	0	8	0
,,	700×80	48	0	8	0
HUTCHINSON.					
Super-stud. ex strong	24×2¼	22	9	6	0
,,	24×2½×2¼	34	3	6	6
,,	26×2¼	33	9	6	3
,,	26×2¾	35	6	6	6
,,	26×2½×2¼	36	6	7	0
,,	26×2½	41	0	7	6
,,	650×65	26	6	7	3
,,	700×80	41	3	7	6
,,	28×3	42	6	8	0
Super-stud. small car	650×65	39	0	7	3
,,	700×80	44	3	7	6
,,	28×3	45	9	8	0
,,	710×85	54	0	9	0
,,	29×3½	59	3	9	6
JOHN BULL.					
Rib. Stud	24×2½×2¼	33	6	6	3
Cross groove or rib stud	26×2	27	0	6	0
,,	26×2¼	28	0	9	6*
				6	3†
Rib Stud	26×2¾	36	0	10	9*
				6	6†
,,	26×2½	38	0	10	9*
				7	0†
,,	*650×70	40	0	11	6*
				7	3†
,,	700×80	45	6	12	0*
				7	6†
,,	28×3	47	0	13	0*
				8	0†
KEMPSHALL.					
Heavy non-skid	26×2¼	33	0	6	3
,,	26×2¾	34	6	6	6
,,	26×2½×2¼	36	0	7	0
,,	o.s. 26×2½	43	0	7	0
,,	28×3	58	6	8	0
Premier Cord	24×2¼	31	0	6	0
,,	26×2¼	32	3	6	3
,,	26×2½×2¼	40	3	7	0
,,	o.s. 26×2½	42	3	7	0
,,	700×80	52	0	7	6
,,	28×3	53	9	8	0
MACINTOSH.					
Cord foundation 4-ply, chain pattern	26×2¼	32	3	6	3
,,	26×2¾	34	9	6	6
,,	26×2½×2¼	40	3	7	0
,,	26×2½	39	0	6	9
,,	26×3	52	0	8	0
,,	28×3	53	9	8	6
MAX.					
Cycar	26×2	27	6	5	6
,,	26×2¼	33	0	6	0
,,	26×2½	36	0	6	9
,,	26×2½×2¼	39	6	6	9
,,	28×3	45	6	8	0
,,	650×65	41	0	7	0
,,	700×80	52	0	7	9
,,	710×90	63	0	9	6

* T.T. † Standard.

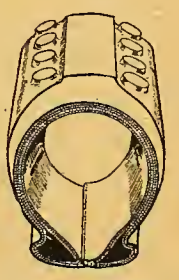
Name and Type.	Size.	Price. Cover.		Tube.	
MIDLAND.		s.	d.	s.	d.
Ribbed and Studded	26×2	26	3	6	0
,,	26×2¼	26	9	6	3
,,	o.s. 26×2½	32	0	7	0
,,	26×3	41	3	7	6
,,	28×3	45	0	8	0
,,	650×65	32	0	7	3
,,	700×80	41	3	7	6
,,	26×2½×2¼	28	6	6	0
,,	26×2¾	29	0	6	6
,,	26×2½	33	0	7	0
,,	26×2¾ oversize o.s.	35	0	7	0
MOSELEY.					
Cable	26×2½×2¼	39	3	7	3
,,	26×3 (650×65 and 700×80 rims)	48	0	8	0
,,	28×3	50	6	8	3
Four-ply	26×2½×2¼	36	6	7	3
,,	26×3 (650×65 and 700×80 rims)	41	3	8	0
,,	28×3	45	0	8	3
Three-ply	24×2	23	6	5	6
,,	26×2	24	3	5	9
,,	26×2¾	28	6	6	9
PALMER.					
Cord	24×2	29	4	6	0
,,	24×2¼	31	0	6	4
,,	26×2¼	32	3	6	9
,, beavy	26×2¼	35	4	6	9
,, ,,	26×2¾	40	0	7	1
,,	26×2½	40	4	7	10
,, beavy	26×2½	44	4	7	10
,, ,,	26×3	57	0	8	7
,, ,,	28×3	59	0	9	0
,, ,,	650×65	44	8	8	3
,, ,,	700×80	57	0	8	6
Cord ex. by. ribbed	28×3	105	0	11	10
Combination	28×3	130	0	11	10
Rubber	700×85	100	0	11	3
PEDLEY.					
Heavyweight 3-ply	24×2¼	24	6	6	0
,,	26×2¼	26	3	6	3
,,	26×2¾	29	6	6	6
,,	26×2½	32	6	7	0
,,	650×65	32	6	7	0
Extra heavy car type studded	26×2¾	36	9	6	6
,,	26×2¼	45	3	7	0
,,	650×65	45	3	7	0
,,	26×3	54	3	7	6
,,	28×3	56	6	8	0
Extra hy. 3-ribbed	26×2¼	33	9	6	3
,,	26×2½	45	3	7	0
,,	650×65	45	3	7	0
,,	26×3	54	3	7	6
,,	28×3	56	6	8	0
PIRELLI.					
Light	26×2	23	3	6	0
,,	26×2½×2¼	27	3	6	6
Heavy	26×2¾	23	3	6	6
,,	26×2½	38	9	7	0
,,	26×3×2½	41	3	7	6
,,	26×3	41	3	7	6
,,	28×3	45	0	8	0
Extra heavy	26×3	72	0	7	6
,,	28×3	80	0	8	0
ROBERTS.					
Moulded heavy	26×2¼	28	0	—	
,,	26×2½	38	0	—	
Double clinch	26×2¼	26	9	—	
,,	26×2½	33	0	—	
R.R.	26×2¼×2¼	33	0	—	
R.O.M.					
Combination	26×2¼	57	0	9	0
,,	26×2¾	71	0	10	0
,,	26×2½	68	6	10	0
,,	26×3	75	6	11	6
Rubber stud cover	26×2¼	32	6	9	0
,,	26×2¾	38	6	10	0
,,	26×2½	35	6	10	0
Polygon anti-skid	26×2¾	41	6	10	0
UNITED STATES.					
Traxion	26×2½×2¼	—		—	
,,	26×3	47	6	8	0
,,	28×3	50	6	8	6
,,	27×3½	58	6	10	0



Elite (Non-skid).



Palmer (Steel-studded heavy).



Midland (Ribbed and studded).

R.O.M. (Non-skid).

U.S. Rubber (Traxion).

Questions and Replies

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

VARIABLE PULLEY GEARING.

(1) When I wind down on to free engine on my single cylinder Zenith-Gradua the belt gets so tight that it stops the back wheel from going back as far as is necessary and I only just get free engine. Winding up on to top gear my belt is so slack that it allows the engine to race. If I tighten the belt on top gear, the belt then gets so tight as to stop me from getting free engine. I have tried adjusting the pulley from the engine shaft but all to no purpose. Can you please inform me what I can do? (2) Can I get a lower gear ratio than 6½ to 1 as I want to attach a sidecar?—P.H.G.

(1) If you cannot eliminate the trouble either by adjustment of the belt, the pulley flanges or the control rods it is likely that the flanges themselves are badly worn at the top and it would be better to renew them. (2) If you use a ¾in. belt you could probably get a 6¾ or 7 to 1 gear.

COASTING DOWN HILL.

(1) Is it a good plan to allow a motor cycle to run down hill with the engine shut off, chiefly for the sake of cooling the latter? (2) Supposing I coast in neutral will it damage the gears if I re-start the engine when the speed has decreased to about 10 m.p.h. by opening the throttle, lifting exhaust valve and engaging low gear, dropping the exhaust immediately? Is there a better way?—W.J.B.

(1) It is quite a good plan to close the throttle (leaving the air lever open) when coasting down hill, provided you leave the top gear engaged. (2) You are liable to damage something seriously if you adopt the method you suggest. If you wish to run freely down hill with the gears in the neutral position you must be prepared to re-start the engine at the bottom of the hill with the kick-starter, otherwise the shock on the gears and transmission, being suddenly called upon to overcome the resistance of the engine is likely to prove disastrous. It is possible, however, with practice on those machines which permit the gear lever being retained in the neutral position between top and middle to coast in this way. As the machine commences to slow down the clutch is withdrawn and timing the road speed carefully top gear is re-engaged and the clutch let in again with the exhaust valve raised and the throttle set for easy starting; the engine should start at once. This method, though feasible, is not to be recommended except to skilled and careful drivers as it increases unnecessarily the work of the clutch. It is quite usual to close the throttle and coast down against compression, lifting the exhaust lever occasionally to prevent an excess of oil being sucked up past the piston rings, which, of course, tends to oil up the sparking plug.

Important Dates.

Sat., Nov. 25th, to Sat., Dec. 2nd—Olympia Motor Cycle Show.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th (1923)—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd (1923)—Scottish Motor Show.

SMALL CAR PROGRESS'ON

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

BURNT VALVES.

Lately I have had trouble with exhaust valves pitting and burning on the face, but I cannot trace the cause. The tappets are adjusted properly and the mixture is right, as I have an adjustable jet. My machine is a 1920 998 c.c. Indian.—J. E. H.

If the tappets are correctly adjusted and the mixture is right the trouble may be caused by a slight error in the ignition timing. The contact breaker points should be just separating as the piston is on top dead centre with the magneto control two-thirds retarded. If the timing is in order, however, new exhaust valve springs may be necessary, as it is possible that the old ones have lost their temper. Make quite sure that the exhaust valve lifter is not preventing the valves seating correctly and also examine the cylinder seats, as the valves may be "pocketed" (*i.e.*, too deep in the seating as a result of frequent grinding in).

350 c.c. PERFORMANCE.

(1) What is the maximum speed of the average machine fitted with a 350 c.c. Blackburne engine without expert tuning? (2) Does it do the engine or machine any harm to drive it at its maximum over good roads? (3) What r.p.m. will the engine accelerate to? (4) I am thinking of raising the gear of this machine. Is this advisable, and if so to what should I raise it? (5) Is it harmful to the machine to take a friend on the carrier (16 st. weight total)? (6) What consumption should I get per gallon of oil and petrol?—H. W.

(1) From 40 to 45 m.p.h. (2) It is not advisable to drive a machine at its maximum speed for a very great distance, but where the roads are really good no serious harm could result from an occasional speed burst. (3) Probably the engine will do about 2,800-3,000 r.p.m. (4) You do not say what the present ratio is, but in any case we should not recommend you to raise it above 5 to 1 for solo riding or 5¼ to 1 if you are taking a passenger on the carrier. (5) No serious harm should result from carrying a passenger on the carrier. (6) About 90 to 100 m.p.g. petrol and 850 to 1,000 m.p.g. oil.

SPEED AND CONSUMPTION.

(1) What is the highest speed obtainable by a 269 c.c. Villiers-engined lightweight on the level? (2) The approximate petrol consumption, an Amac carburetter being fitted? (3) Is this engine suitable for strenuous touring in a fairly hilly district?—F.G.M.

(1) Approximately 40 m.p.h. under ordinary touring conditions. (2) Between 75 and 90 m.p.g. (3) Quite suitable.

BREAKAGE IN REPAIRERS' HANDS.

Recently I had occasion to send my 650 c.c. twin motor cycle to a garage for repairs, the flywheels being loose. After doing the job—retiming, etc.—and getting the machine in proper running order, and while still in their hands, for some reason or other the cylinder burst, consequently breaking the piston and connecting rod. (1) Having kept me waiting for several months, while new parts were secured, the garage proprietors are now including in their invoice the cost of these replacements. Do you consider I am liable? There could have been no flaw when they took the machine over, as this cylinder, etc., has been on the machine since it was new in 1918. (2) They had to dismantle and assemble the engine twice and perhaps spent a little time in fitting the piston; they charge time as 45 hours at 5s. per hour. Is the time spent excessive?—H.A.

(1) It would be very difficult to contest the charge for the replacement of the cylinder, as you would have considerable trouble in proving that the breakage was due to negligence on the part of the repairers, and it could be on this ground alone that you could claim to have it replaced. (2) In view of the fact that the breakage occurred while it was in the repairers' hands, the charge for refitting certainly appears to be high; in the majority of cases of this kind we find that a breakage is usually made good at approximately cost price; this applies especially to the best class of garage.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"H.G." (Skelton-in-Cleveland).—Variable jets; Bowden extra air inlet; Hagg tandem: ease of steering.

"R.U." (Ecclefechan).—596 c.c. Indian Scout: stability on grease, performance of engine-countershaft gearing, electrical equipment.

"F.H.P." (Leicester).—Lucas electric Horn No. 52, used with Magdyno. Effect on plates of 8 a.h. accumulator.

"R.S." (Derby).—Coram pistons and rings in 1921 348 c.c. Douglas; necessity for "lapping" and care in running-in.

"L.J.G." (East Ham).—349 c.c. standard sports A.J.S.; 348 c.c. Douglas.

"F. and S.F." ((Fleetwood).—Junior Triumph: consumption, carbonisation, suitable oil, and timing.

"A.F." (Maidstone).—Family Morgan for three adults; leg room for rear passenger.

"S.L." (Birmingham).—Terry spring links on Druid forks (350 c.c. machine).

"E.H.C." (Liverpool). — Voltalite dynamo on motor cycle.

"R.F.B." (Portsmouth).—293 c.c. New Imperial or 349 c.c. Raleigh: long runs (150 miles); best transmission.

"W.G.R." (Stafford).—Binks three-jet on 349 c.c. Blackburne.

"G.E.M.J." (Ealing).—Indian Scout, solo and sidecar.

SPARKLETS.

Successes in 1922.

An illustrated booklet describing the wonderful successes of Sunbeam machines in the Senior T.T. Race and French, Italian, Austrian, and Belgian Grand Prix Races, as well as in the English Six Days Trials, will be sent to any reader on application to John Marston, Ltd., Sunbeamland, Wolverhampton.

A Successful Year.

The shareholders of Humber, Ltd., have cause to be satisfied with the trading of the company this year. In spite of the twelve weeks lock-out, adverse exchanges, and high duties, a 10 per cent. dividend has been declared on the ordinary shares. The net profit for the year amounted to £108,249.

Official Test of Folding Sidecar.

An A.C.U. test of the Dorway folding sidecar has been carried out. The body was removed, the chassis folded, re-opened, and the body replaced eight times in an average time of half-a-minute. The machine was then driven 100 miles by an A.C.U. official over the roughest roads in and about London, and the conclusions drawn were entirely satisfactory.

In the Cause of Charity.

In the Enfield Cycle Co.'s London depot, 48, Holborn Viaduct, London, E.C.1, is being exhibited a two-stroke model fitted with Maglita set which has been purchased by the past-president of the General East End Tradesmen's Association. It is being disposed of for the benefit of the London Hospital, Whitechapel. Tradesmen in the East End of London and in Smithfield Market are selling the necessary tickets at 2s. 6d. each. The ballot will be under the supervision of the Viscount Knutsford.

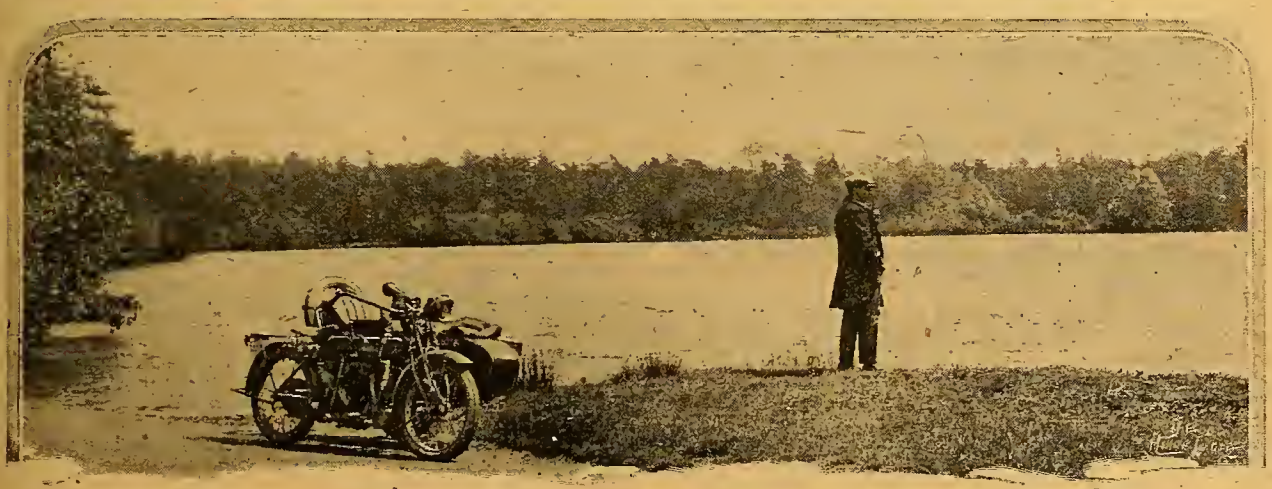
Good Trading.

Although industrial difficulties affected output during the year, the balance-sheet of the Triumph Cycle Co., Ltd., is satisfactory. The final dividend on the ordinary shares is 7½%, which, together with the interim dividend, makes a total of 10%. The trading profit for the year was £80,014.

Catalogues Received.

John Marston, Ltd., Sunbeamland, Wolverhampton: A preliminary list of Sunbeam 1923 prices.

S. Smith and Sons (M.A.), Ltd., Great Portland Street, London, W.C.: Details of several motor cycle accessories, such as the M-L Maglita, the M-L magneto, K.L.G. plugs, clocks, speedometers, and other useful oddments.



THE ETERNAL ATTRACTION. Like the majority of people, motor cyclists seek out stream, river or pool by which to rest and have a quiet smoke. A scene at Wisley Hut on the Portsmouth Road.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

STEERING ON BANKED TRACKS.

Sir,—Recently I have been interested to notice the increasing vogue of an adjustable friction device on the steerheads of certain of the faster machines on Brooklands.

It would be interesting to know if such devices are used throughout the complete circuit of the track. I have heard it stated that if a machine is travelling on a banked track with a banking angle exactly suitable to its speed, no movement of the front wheel is required, and that the act of inclining the machine normal to the banking is sufficient to cause it to turn; while others contend that the direction of the front wheel must be perpendicular to the radius of the curve at any given point, *i.e.*, the front wheel must be slightly turned relatively to the machine. Possibly some of your readers could explain which point of view is correct.

Glasgow. K.E. 9645.

AUTOMATIC SIGNALLING.

Sir,—I do not quite understand Mr. Broadbent's line of argument. He states he cannot see how you arrive at the conclusion that automatic signalling has only met with limited success on railways, and then in the next paragraph goes on to say that it is impossible to install automatic signals at crossover points. Surely Mr. Broadbent by saying this supports your view as to the limited success.

It may interest Mr. Broadbent, and possibly others, to know that the North-Eastern Railway has had automatic signals on a ten-mile section on the main line between York and Darlington for the past thirteen years, and that the main line traffic, including the fastest *booked* train in England, has run over this section during that period without a mishap due to failure of the automatic signalling scheme, but—and here the limited success comes in—it is necessary to have mannally-operated signal frames at the junctions; these signals are, however, electrically controlled by the automatic equipment. A. P.

Darlington.

SOLID TYRES FOR MOTOR CYCLES.

Sir,—With reference to your article "Solid Tyres on Touring Machines," in which you state that the wear and tear of the roads must be greater with solid than with pneumatic tyres, might I, as a surveyor and a student of the science of road-making, point out that in reality the pneumatic tyre effects greater damage to roads than practically any other type.

As doubtless you are aware, pneumatic tyres bulge slightly according to the air pressure therein and the speed at which the vehicle is being driven and the weight thereon. The effect of this bulge is that it acts as a continual sucker, drawing small particles of material from the road, which become disintegrated and cause dust. The material of the road, on losing these particles which bind it together, becomes exceedingly dusty, and with this sucking action, eventually becomes torn up and very loose.

Heavy commercial motor traffic does, comparatively speaking, very little damage, not being fitted with pneumatic tyres, but with solid ones, and instead of clinging to the road, as a motor cycle travelling at speed would do, merely rolls over it; but this type of vehicle has many other means of damaging roads without fitting pneumatic tyres.

A pneumatic tyre does far greater damage to a road in dry, hot weather, when the surfaces of the road have been "baked" by the sun. These remarks apply particularly to macadam roads. In order to show the particular sucking powers of a pneumatic tyre, on the Bath Road during the week-end stones and pieces of road material from one-eighth to half an inch have been found to be torn up, even though the road had been made of the best materials obtainable for the work.

In my opinion, a solid tyre on a motor cycle would not do so much damage as a pneumatic tyre for the above reasons. SURVEYOR.

London, S.W.8.

Sir,—I have been many times in the first (1913) Trojan car, which is still running with the same reliability as a new one.

Leylands did their best to smash this foolproof and unbreakable car (for eighteen months) over their cinder dump and railway sleepers.

The coupé model has pneumatics tyres fitted "to overcome prejudice," so that when the owner finds that it makes no difference in the springing he will gladly revert to the 1,500 mile 30s. a time solids.

STUART LESLIE.

["1.500 mile" may possibly be intended to read "15,000 mile."—ED.]

PREJUDICE AGAINST PILLION RIDING.

Sir,—Whilst not wishing to open up a discussion for or against the popular pastime of pillion-riding, I should like to bring to notice the unfair criticism prominently levelled at this form of sport by a prominent London daily newspaper.

Practically every week a list of accidents, always stated to be due to the presence of the second passenger, is given a prominent position, and the paragraph invariably ends by calling upon the authorities to pass a law to put an end to this dangerous practice.

You can well imagine my surprise the other morning on seeing a leader headed "Good Hunting."

Starting off by giving a list of killed and injured so far this season, this champion of life saving in sport ends by the following remarkable paragraph. "It is this risk which makes fox-hunting one of the greatest of sports. In most the dangers are only for the hunted . . . the hunter waits in security for his quarry. . . . Man was born a hunting animal. Civilisation has too often given him a safe skin while he hunts."

My only comment is that it is praiseworthy to lose your life or limbs in a sport costing about £15 per minute, therefore, only for the wealthy, but, to do so by pillion-riding is deliberate suicide, and should be legally withheld from the usually not too affluent motor cyclist. E. M. COOPER.

THE MATHEMATICS OF "HANGING-ON."

Sir,—Oh! "Schnaps," why damn a perfect exposition of mathematics by an incorrect application of them? In my previous letter I was comparing *resistances*, and resistance is a *force*, it is not *work*.

It would be perfectly correct to say that the *work done* by a cyclist in a unit of time in overcoming tractive resistance at 30 m.p.h. is 30 times the work done at 1 m.p.h. But similarly, the work done in overcoming air resistance at 30 m.p.h. in the same unit of time is 900×30 times the work done at 1 m.p.h. So why drag in the common factor of 30 at all? I omitted it and compared the forces only.

I have been accused of "sheer ignorance," and now of "scientific inexactitudes": perhaps some other correspondent will now oblige with a further exposure of my faults.

High Wycombe. "BENEDICT."

AT THE TOP OF ITS CLASS.

Sir,—I have been much interested in the article in defence of the high-priced sidecar.

The principal *casus belli*, of course, is the Rover "8," and I think if manufacturers of sidecars gave some thought as to the reason of its instant popularity they might manage to market an outfit which would capture the thousands who, as your contributor rightly says, have not motored before, and are now buying Rovers.

To deal first with the allegation of "extravagance" in this type of vehicle, I submit the following figures. Assuming an m.p.g. of 45 for the car and 60 for the sidecar, a difference of £8 in tax and insurance, £3 for tyres; 3,000 miles per annum, extra cost of car £12 14s., 5,000 miles per annum, extra cost of car £13 10s., a difference of 1.05 and .65 pence per mile respectively. Most people garage their sidecars at home, and I fail to see why the slight extra size of a car should entail any extra outlay.

The average buyer requires a vehicle which may be used as an all-round hack—not for Alpine tours—a vehicle in which the driver need not dress like an Esquimaux for a five-mile rainy trip—a machine in which it is possible to converse in comfort at 20 m.p.h., and finally which may be cleaned in the minimum amount of time.

These being the requirements, it is not surprising that a chassis, designed on eminently sound engineering principles—inferior neither in material or workmanship to a high-grade outfit, and combining the weather protection of an enclosed car with a degree of silence, seldom, if ever, met with in a sidecar, and running at a cost from .5 to 1.0 pence per mile greater than a sidecar—should attract so much attention. When, however, some manufacturer turns out a sidecar outfit more on the lines of your artist's sketch at a cost some 25% less than the Rover his sales will bring their own reward.

I have no connection with either sidecar or light car manufacturers. B. ENG.

Rugby.

Sir,—In February, 1921, I entered the ranks of the motorists, and at that time I was doubtful whether or not to expend my money on a high-class sidecar outfit or invest in a small car. After a great deal of consideration, which was obviously not backed by experience, I purchased a two-seater, air-cooled cycle car, and, although the price was in the neighbourhood of £240, at that time it was considered to be one of the cheapest four-wheeled vehicles of its class.

There was no doubt in my mind at the time and immediately after my first run that I had secured a machine which would give me every satisfaction, and, further, would protect myself and my passenger from any rough weather we might perhaps have to encounter.

After 250 miles' running I began to doubt the wisdom of my purchase, and after 500 miles the machine was, to my mind, practically useless—very bad hill-climbing, tyre trouble, difficult starting, and serious overheating of the engine, to say nothing of magneto and transmission trouble—and, although many expert people had the car in their hands, they were unable to do anything with it.

At a loss of over £80 I sold the machine and purchased a Matchless sidecar outfit.

A vast difference was noticed in every possible way, and during the whole time the outfit was in my possession—and this was over a year—I did not experience the slightest difficulty in any shape or form; I knew I could always take the machine out at any time and expect to do a journey anywhere I wished to go.

Again, in May this year, I thought I could obtain the same satisfaction from a well-known four-wheeled cycle car, and consequently disposed of my reliable sidecar outfit and with an extra amount of money took over my new acquisition.

I found everything in perfect order, and at last thought I had obtained a car which would enable me to go anywhere without the slightest trouble.

Unfortunately my theory did not work out correctly, and up to the present the makers have seen the car no less than seven times. I will say that, with the exception of a main bearing seizure (which occurred whilst in the hands of a relative), all the troubles I had to contend with were petty, but I do so wish that I could enter the garage and know that the engine could be started without a hitch.

It is not surprising, therefore, that I am getting a little "fed up" and begin to sigh for the reliable machine which I had on three wheels. XL 754.

London, E.C.2.

T.T. SPEEDS ON THE ROAD.

Sir,—Are "Zenooth" and his followers pulling someone's leg, or have they invented a new "dope"?

London, S.W. 499 TRIUMPH.

Sir,—I do not agree with Mr. C. B. Bickell, as, personally, I would rather meet a "week-end summer rider who potters about, and needs to think twice in an emergency," than a speed-merchant who does not have the time to think *once*, let alone twice. SATIS.

Glastonbury.

Sir,—I am sure that the definite cancellation of the proposed Amateur T.T. has been received with widespread feelings of regret; and I am surer that our feelings are the more poignant after reading some of the claims of your "road-burning" correspondents. Amateurs who can average 40-50 m.p.h. under everyday road conditions are obviously the men we want over in "the island" for the amateurs' race, if the standard of riding excellence is to bear comparison with the performances of our professional experts.

I have noticed that when averaging 24 m.p.h., one can pass *most* things on the road—most riders and car-owners seem to jog along at about "30," with a slight reduction of speed when passing through villages and small towns. This generally brings the average down to about 22 m.p.h.

It is strange that none of our well-known speedmen ever rush into print concerning *their* best road "averages." Perhaps if C. P. Wood, Watson-Bourne, or, say, F. W. Dixon were to give us their experiences, we would get something authoritative and, I am sure, very interesting.

Newcastle-on-Tyne. "QUIXIX."

Sir,—Last July or August you were good enough to publish a protest of mine against the modern tendency to speed. I have made careful inquiries since, and I find that medical opinion is strongly against the effects of the wind resistance set up by the great motor cycles which hurtle along our main roads at anywhere between 30 and 80 miles an hour.

Many of my friends, including the local police constable, who is an extremely good man, agree with me that if the present 20 m.p.h. speed limit were abolished, someone would be killed.

May I, as an unbiased spectator, who has some little knowledge of the mechanical side of motor cycles, suggest that machines ridden "solo" should have a limited piston displacement of 150 c.c., and sidecar machines 250 c.c. This would increase the efficiency of engines, and therefore be a great economy in fuel and oil.

I fear a few of the wrongly-termed "sporting" fraternity will call me a silly man, but I am prepared to defend my suggestion. I have mentioned it to several motor cyclists, and they all finally agreed with me that the community in general would benefit greatly, and that motor cycling would be within the means of many more.

A. O. RUSSELL.

HUMIDITY AND POWER OUTPUT.

Sir,—On a Ford car I got 34% and a friend of mine got, on a Ner-a-car, 25% better results by using an Empire economiser in conjunction with an air moistening device.

In reply to "Experimentor's" query regarding the absence of misfiring in a charge mottled with water spray, I found that moistened air is in suspension with the gaseous mixture, and under compression breaks up into oxygen and hydrogen gases, so causing no misfiring or internal effects of rust. HUMIDIFFUSER.

London, N.W.1.

CASTOR OIL IN ENGINE LUBRICATION.

Sir,—I am sure hundreds of your readers will agree that Castrol R is not harmful to internal combustion engines. From my own experience I can say nothing but praise for this excellent lubricant, and it is usually conceded that an ounce of practice is worth a ton of theory.

The last time I dismantled my 490 c.c. Norton, which had then over 12,000 miles to its credit, I found all bearings perfect. This speaks well for engine and lubricant, considering I use the same machine for hill-climbs, speed events, and reliability trials, as well as for business and pleasure. I should also like to mention the great economy of using this oil.

I have no interest in Wakefields or Nortons, or any oil concern. LESLIE H. SHARP.

Sir,—I have read with interest the article which you have published on the use of castor oil for motor cycle lubrication. The correspondence aroused thereby has been most interesting, but I do not think that any of the writers have quite got at the real advantages which castor possesses over mineral oils.

Frictional resistance in a bearing, where the surfaces are separated by an oil film, is wholly viscous, and the heat produced raises the temperature of the thin film of lubricant which is a bad conductor of heat, and from which the heat escapes but slowly by conduction. The quantity of heat developed may be so great, and the lubricant consequently become so fluid that it is incapable of sustaining the load, and the bearing may seize. This seizing, when the loads are considerable, owing to the reduced viscosity brought about by increase of temperature, is somewhat more pronounced when mineral oils are used than is the case with vegetable lubricants, for the viscosity of the latter does not fall off so rapidly with rise of temperature, as is the case with the former. So that although mineral oils can be, and are produced, having the same viscosity as castor oil at ordinary temperatures, yet it does not follow that they will be of equal lubricating value.

However, viscosity does not play such an important part in lubrication as one would expect, because lubrication depends upon other less generally understood and somewhat obscure properties.

As a matter of fact, a lubricant may have the required viscosity and yet not be a lubricant. A liquid in order to act as a lubricant must possess enough body or combined capillarity and viscosity to keep the surfaces between which it is interposed from coming in contact. Mineral, unlike animal and vegetable oils, seem for the most part deficient in this property of forming thick permanent films.

When a grease is rubbed between the fingers it will be found that they slide freely over one another even when pressed together with considerable force, due to the fact that the grease has formed a thick film which is not easily displaced. The corresponding property in the case of liquids is called "oiliness," which is the property that prevents the lubricant from being easily pressed out. Different liquids possess this property in very different degrees. Thus, although sperm oil is much less viscous than glycerine it is a far better lubricant. The glycerine feels harsh between the fingers, whilst the sperm oil feels smooth and greasy. The viscosity of an oil, therefore, by no means furnishes its lubricating value, and this property of viscosity has to be combined with that of "oiliness."

Oiliness is generally possessed most markedly by the animal oils, less so by those of vegetable origin, and least of all by mineral oils. It is on this account that fixed oils are so frequently added to mineral oils, for they give to the latter just that property in which the mineral oils are most deficient.

It has been found by actual experiment that an internal combustion engine, when using castor oil for lubrication, will maintain a much higher average number of revolutions per minute that the same engine attained when using a mineral oil for lubrication. The explanation of this is probably embodied in this property of oiliness.

Castor oil actually does cause corrosion of the vitals of a motor cycle engine when used for lubrication—I have repeatedly proved this by analysing the carbon deposits, which invariably contain free fatty acids. But this disadvantage is more than counterbalanced when one takes into consideration all its advantages, *e.g.*, non-solubility in petrol, high viscosity, which remains high at increased temperatures, and its oiliness, and it is the combination of these three characteristics which make it so valuable to racing men.

L. F. WRIGHT.
Research Chemist.

CARBON DEPOSIT ANALYSED.

Sir,—After reading the article by Mr. G. Middleton on the composition of carbon deposit, I was prompted to make an analysis from the cylinder head of a 349 c.c. Douglas engine.

The analysis varies considerably from his, and may be of interest. I may state that the carburetter had no gauze in it.

Oleaginous Carbon	75.30%
Ash	24.70%
	100.00%

Analysis of the ash gives the following results:

Silica SiO_2	28.72
Ferric Oxide Fe_2O_3	53.24
Alumina Al_2O_3	2.81
Copper Oxide CuO	9.76
Manganese, etc., etc.	5.47
	100.00

The silica residue was examined and found to contain fairly large particles of flint, some of which were quite one-sixteenth of an inch in diameter.

The copper present was derived from the copper insets at the end of the gudgeon pin, and due to their friction with the cylinder wall.

No doubt a small proportion of the iron present was obtained from the road; the fact that alumina and manganese were present points to this, as these three are usually found together in nature.

In concluding, I may say that this large percentage of iron present is not due in any way to under-oiling, as I usually over-do things where oiling is concerned. A.D.G.

London, S.E.27.

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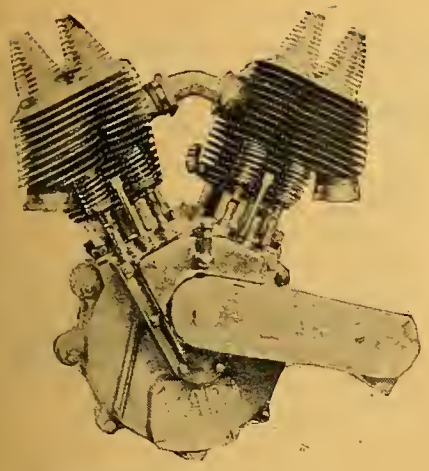
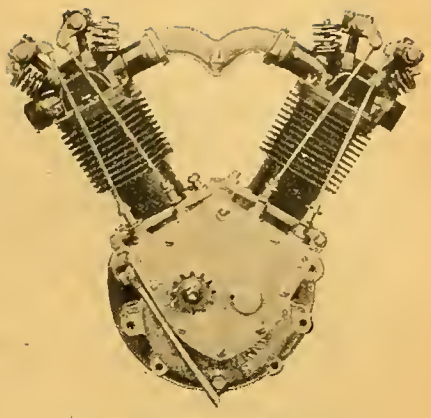
PROPRIETARY ENGINES FOR 1923.

Almost Every Requirement in Type or Size of Power Unit is Produced by Specialist Manufacturers.



976 c.c. J.A.P.
(50°, 85·5 × 85 mm., side valves.)



696 c.c. BLACKBURNE.
(60°, 71 × 88 mm., overhead valves.)

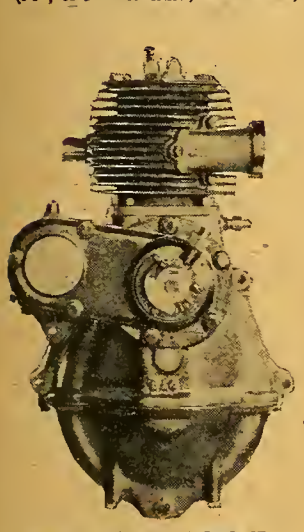
A PROPRIETARY engine described in the simplest terms is an engine available on the open market to all who build motor cycles.

Naturally, the larger manufacturers make practically every part of their machines in their own works, but many firms of the highest repute buy power units from specialists in engine construction.

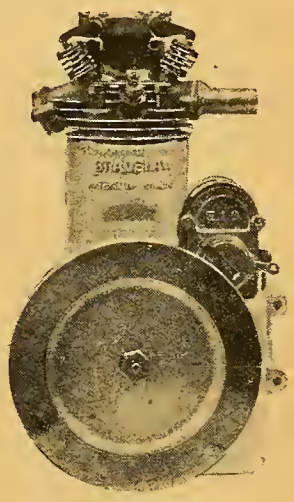
Curiously enough, while the best known makers of complete motor cycles flourish in the Midlands, several of the better known proprietary engine makers hail from London and the South.

The popular J.A.P. is not only our oldest proprietary engine, but one of the earliest British-made engines, and it is interesting to record that in 1903-4 it was fitted to the first motor bicycles made by firms which have since reached the highest rank. It competed against the then invincible Continental makes in 1904 and 1905, and was soundly beaten, but its makers stuck to their work, with the result that the modern J.A.P. engine can, and does, triumph brilliantly wherever it is used. J.A.P. engines are available in capacities ranging from 250 c.c. to 1,080 c.c.

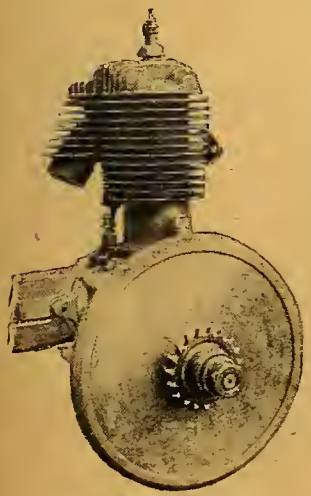
Next in order may be mentioned the Blackburne, originally known as the De Haviland. The range of Blackburne sizes has gradually been extended, and all types from 250 c.c. to 1,098 c.c. are made. As originally designed, with one piece crankshaft, split big end, outside flywheel and detachable head, the Black-



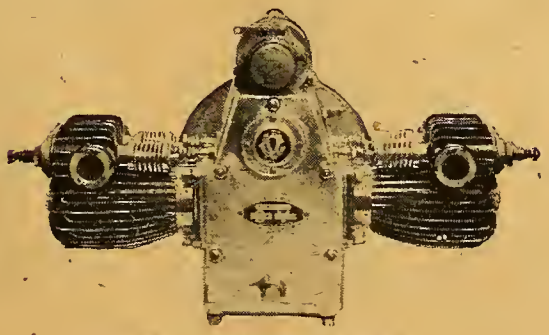
499 c.c. BARR & STROUD.
(86 × 86 mm., single sleeve valve.)



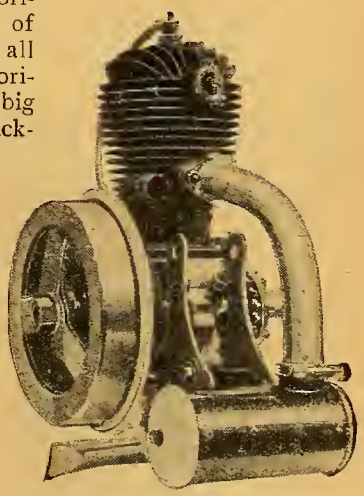
349 c.c. BRADSHAW.
(68 × 96 mm., overhead valves, oil-cooled.)



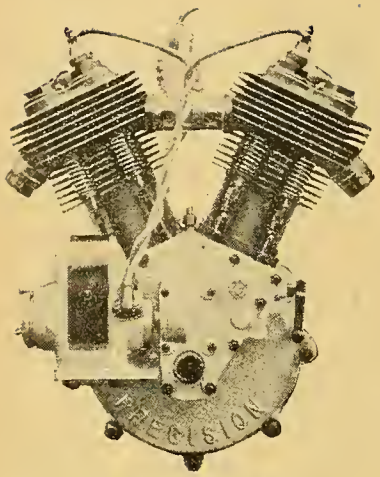
249 c.c. BLACKBURNE.
(60 × 88 mm., side valves.)



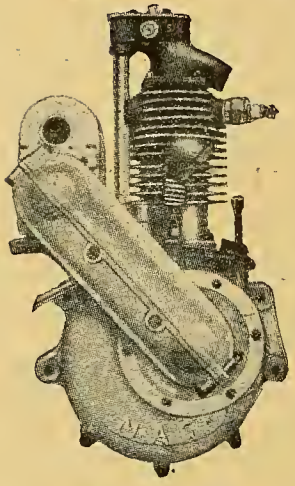
688 c.c. COVENTRY VICTOR.
(180°, 75 × 78 mm., side valves)



343 c.c. VILLIERS.
(79 × 70 mm., two-stroke, flywheel magneto.)



1,090 c.c. PRECISION.
(50°, 85 × 96 mm., side valves cycle-car type.)



346 c.c. M.A.G.
(72 × 85 mm., overhead inlet valve.)

998 c.c. BARR & STROUD.
(50°, 86 × 86 mm., single sleeve valves.)

burne units had a long run of success, but latterly some of those features have had to give place to more progressive developments, chiefly in regard to the adoption of ball and roller bearings.

A Well-known Swiss Engine.

Among Continental engines, the only one which has ever attained popularity in England is the superbly-made M.A.G., the initials of which stand for the title and address of the firm—Motosacoche, Acacias, Geneva. The word Motosacoche means "motor in a toolbag," the name given to one of the early lightweights which grew from a miniature then rated at 1¼ h.p. through bigger and bigger sizes until, for the British market, the 993 c.c. and 1,098 c.c. big twins have been specialised; smaller twins are available, however. Two small singles also come from the M.A.G. works.

A distinct departure from ordinary practice is the sleeve-valve B. and S. engine made by the famous scientific instrument makers, Barr and Stroud, Ltd., of Anniesland, Glasgow, under Burt's patents. The type of single-sleeve valve used first saw the light in the Argyll and Picard-Pictet car engines. Silent in operation and yet highly efficient, the B. and S. is rapidly attaining the popularity it deserves; for 1923 the 350 c.c. engine is supplemented by another single of 500 c.c. and a V twin of 1,000 c.c.

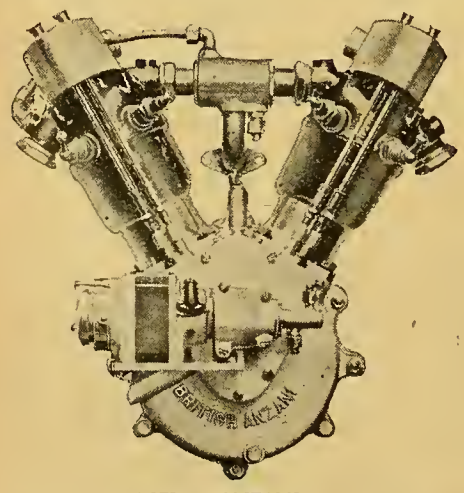
Big Twins and Little Two-strokes.

Finally, among the four-strokes must be mentioned the British Anzani, which is a highly efficient, beautifully made twin-cylinder of 986 c.c. and 1,075 c.c. capacity, which has met with considerable success on the track.

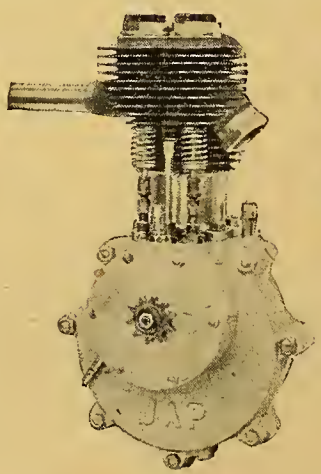
In the Coventry Victor we have the only flat-twin proprietary engine. It has been on the market for several years, and has given great satisfaction. Only one capacity (688 c.c.) is offered.

We now come to the two-stroke proprietary engines, of which the most prominent is the Villiers, the pioneer of its type.

Being early on the field, its makers have brought the Villiers engines to a high state of efficiency, and



1,078 c.c. ANZANI.
(57°, 85 × 95 mm., overhead valves, water-cooled.)

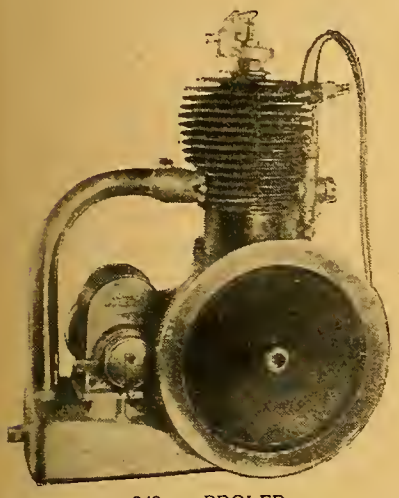


346 c.c. J.A.P.
(70 × 90 mm., side valves.)

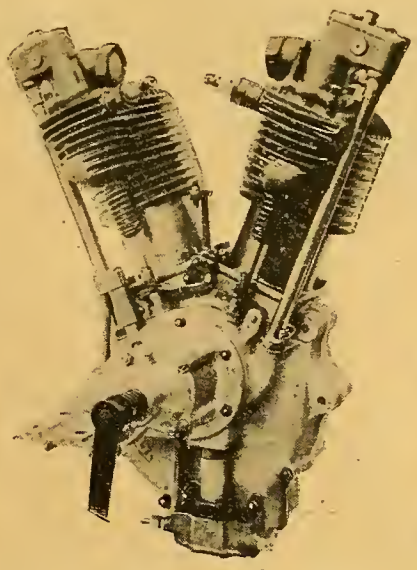
1,090 c.c. BLACKBURNE.
(60°, 85 × 96 mm., overhead valves, water-cooled.)

Proprietary Engines for 1923.—the introduction of a flywheel magneto, which now serves to provide lighting as well as ignition current, has gained them further popularity.

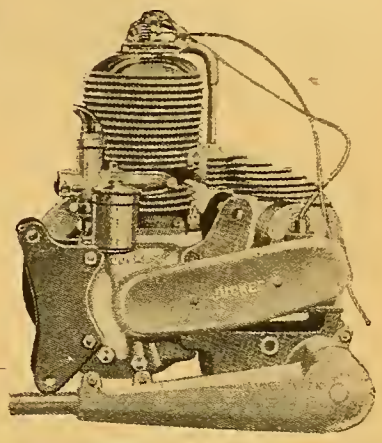
Other two-stroke proprietary engines are the Broler and Juckes, the latter is a new proposition introduced by the maker of the well-known Juckes gear boxes.



349 c.c. BROLER.
(75 × 79 mm., two-stroke.)



1,098 c.c. M.A.G.
(45°, 82 × 103·5 mm., overhead inlet valves.)



277 c.c. JUCKES.
(70 × 72 mm. two-stroke.)

SIZES AND TYPES OF PROPRIETARY ENGINE UNITS.

Name.	Bore and Stroke.	c.c.	Cyl.	Lubrication.	Type.
	mm.				
ANZANI	83×92	996	2 (57°)	Mech.	O.h.v.
„	85×95	1,078	2 (57°)	„	„
*BARR & STROUD	70×90.5	348	1	„	Sleeve-valve.
„	86×86	499	1	„	„
„	86×86	998	2 (50°)	„	„
BLACKBURNE	60×88	249	1	Splash	Side or o.h.v.
„	71×88	348	1	„	„
„	85×96	545	1	„	Side valve.
„	71×88	696	2 (60°)	„	Side or o.h.v.
„	85×88	998	2 (60°)	„	„
* „	85×96	1,090	2 (60°)	„	„
†BRADSHAW	68×96	349	1	Mech.	O.h.v.
† „	68×68	494	2 (180°)	„	„
† „	76×76	690	2 (180°)	„	4-speed unit.
BROLER	75×79	349	1	Petroil	Two-stroke.
*COVENTRY VICTOR	75×78	688	2 (180°)	Drip	Side valve.
J.A.P.	64.5×76	249	1	Auto.	„
„	70×76	292	1	„	„
„	76×90	346	1	„	„

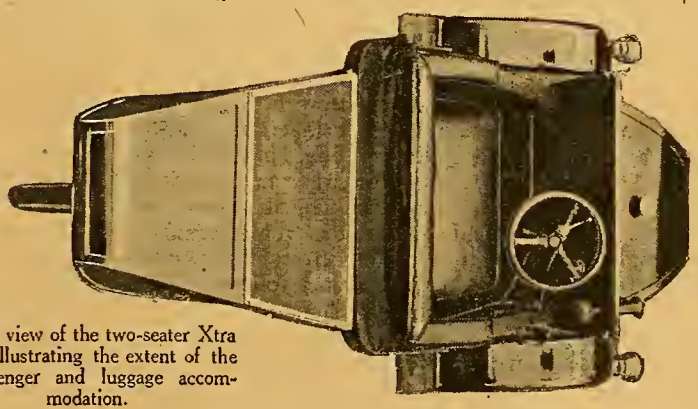
* Air- or water-cooled. † Oil-cooled.

Name.	Bore and Stroke.	c.c.	Cyl.	Lubrication.	Type.
	mm.				
J.A.P.	85.5×85	488	1	Auto	Side valve
„	85.5×95	549	1	„	„
„	64.5×76	498	2 (50°)	„	„
„	76×85	770	2 (50°)	„	„
„	85.5×85	976	2 (50°)	„	„
JUCKES	70×72	277	1	—	Two-stroke
M.A.G.	64×77	248	1	Splash	O.h.i.v.
„	64×92	296	1	„	„
„	72×85	346	1	„	„
„	64×77	496	2 (45°)	„	„
„	64×92	592	2 (45°)	„	„
„	72×91	740	2 (45°)	„	„
„	82×94	992	2 (45°)	„	„
* „	82×103.5	1,098	2 (45°)	Mech.	„
* „	82×103.5	1,098	2 (90°)	„	—
PRECISION	85×96	1,090	2 (50°)	Splash	Side valve.
VILLIERS	55×62	147	1	Petroil	Two-stroke.
„	67×70	247	1	Auto.	„
„	79×70	343	1	„	„

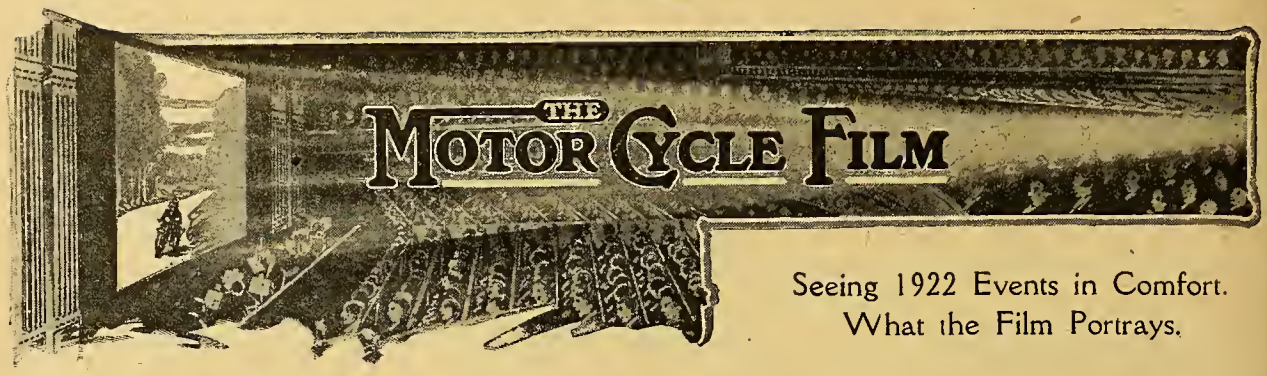
* Air- or water-cooled. † Oil-cooled.

AT OLYMPIA.

To fill the petrol tank of the Ner-a-car the saddle is raised as shown.



Plan view of the two-seater Xtra car illustrating the extent of the passenger and luggage accommodation.



Seeing 1922 Events in Comfort. What the Film Portrays.

DURING the present week motor cyclists in London have the opportunity of seeing *The Motor Cycle* film at the Broadway Cinema, Hammersmith, which is so easily accessible from Olympia.

After the final performance two identical films will be put into circulation, one in the south and the other in the north of England.

Those who are looking forward to the exhibition in their own locality of this interesting pictorial history of 1922 motor cycle events will be glad to know exactly what *The Motor Cycle* film comprises.

First comes the M.C.C. club championship for *The Motor Cycle* Cup, with scenes at the start on a by-road near Tring. Familiar faces among officials and competitors are recognisable, and in one view Mr. "Timekeeper" Bidlake is seen in characteristic attitude. A view of Kop Hill on a typical 1922 summer's day with rain falling and wind-tossed trees is an attractive feature, and an excellent idea of the 1 in 5 gradient is given.

Numerous as was the crowd of motor cyclists who visited the Isle of Man this year, there is a vast majority which never has the opportunity of witnessing the T.T. races. For these the 1922 events will be run again as really live happenings. First is seen the embarkation of machines at Liverpool. Next is shown the start of the Lightweight and Junior races, incidents at Sulby Bridge, the Ramsey hairpin, Craig-ny-baa, and the Junior T.T. winner, T. M. Sheard, the Manxman.

Similarly is the Senior Race dealt with. One can observe the nervous tension in the competitors' faces as they await the word "Go." The film shows a scene at Quarter Bridge, fast cornering at Braddon Bridge, the negotiation of the difficult turn at Governor's Bridge, incidents at the replenishment depots, and finally a picture of the victorious Bennett.

Scenes from two more M.C.C. events follow. The first is in the London-Edinburgh Run, showing the competitors on "The Struggle" at the summit of Kirkstone Pass. But their efforts are nothing to those of the riders on Beggar's Roost in the club's Easter event, London to Land's End. The gradient is 1 in $3\frac{1}{2}$, up which machines, wreathed in smoke, skid and dodge the awful surface, while the riders "bump" in their saddles in order to secure wheel grip.

Next follows a section of film prepared by *The Autocar* showing a few incidents in the Junior Car Club's General Efficiency Trial. Professor Low is seen working his audiometer, and there are pictures of the acceleration test and an exciting incident in the climb up the test hill.

Fast cornering in the T.T. Car Races, especially at the Ramsey hairpin, and Sulby Bridge are included and there are some fine views of the French Grand Prix, which give the start of the cars (led by the winning motor cyclist of the previous day's event), speed on the straight stretches, and excellent riding at the sharp corners.

A sensational American section follows. Cars skid round the pylon (in this case a barrel) on Daytona Beach, and so fast do they flit by that the eye is dazzled.

Then there is an American hill-climb which may give an inspiration to club secretaries and trials organisers. Heavy machines attempt the ascent of a trackless hill of 1 in 2. Practically all fail and topple over backwards, while the riders narrowly escape injury; spectators in their thousands turn up in cars to see the "sport." Certainly it is a thrilling exhibition.

An excellent view of cars speeding round an American track is shown, and then we return to Europe to witness scenes on Amulree and Kenmore in the Scottish Six Days Trials.

Snow cars performing in the French Alps provide another attractive feature, and finally comes the motor cycle Grand Prix at Strasbourg, where the machines are started off in batches, class by class, speed past the grand-stands, and stop at replenishing cages. At the end the Greek Psalty, the Paris agent of the winning 250 c.c. machine, subsides into ecstasies at the success of Davison, while Bennett, the T.T. hero and 500 c.c. winner, is carried shoulder high by his colleagues.

Truly a fine entertainment, which lasts about forty minutes.

THE MOTOR CYCLE FILM:

NOW SHOWING IN LONDON

at the

BROADWAY CINEMA, HAMMERSMITH.

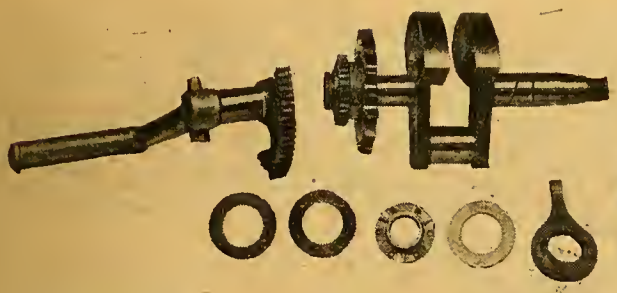
(Five minutes from Olympia.)

All the principal motor cycle events in 1922. T.T. Races in the Isle of Man, Grand Prix Races in France, Reliability Trials at home, and "stunt" hill-climbs and races in America.

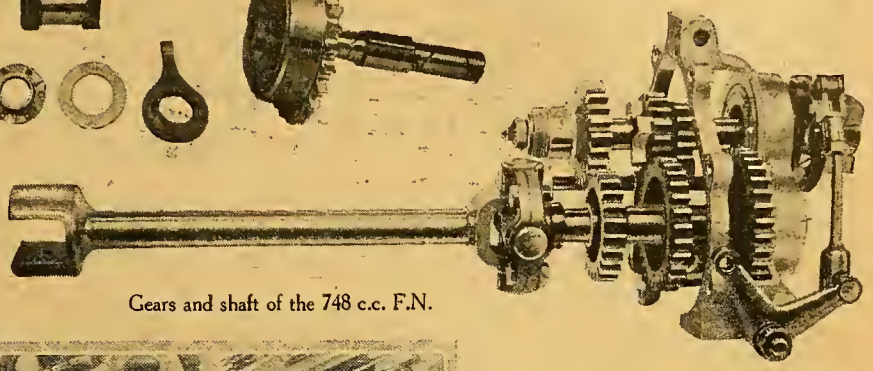
Prices of Admission: 2s. 4d., 1s., and 8d. 2s. 4d. seats may be booked in advance. Tel.: Hammersmith 718.

After Saturday next the Film starts on its tour of London and provincial clubs.

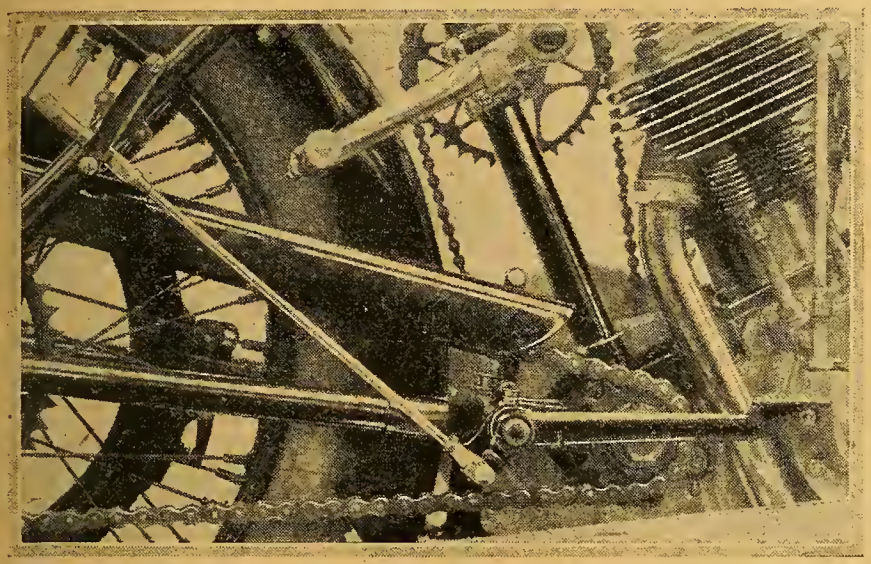
INTERESTING DETAILS OF MOTOR CYCLES AT OLYMPIA.



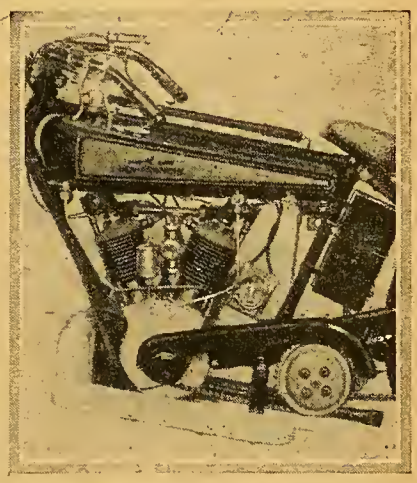
Gear-shaft and clutch crankshaft and kick-starter, details of the latest two-stroke Triumph lightweight.



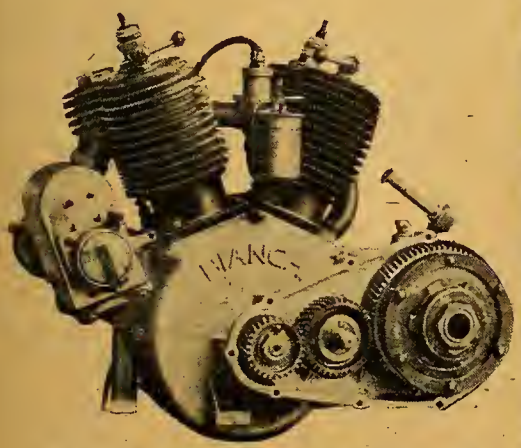
Gears and shaft of the 748 c.c. F.N.



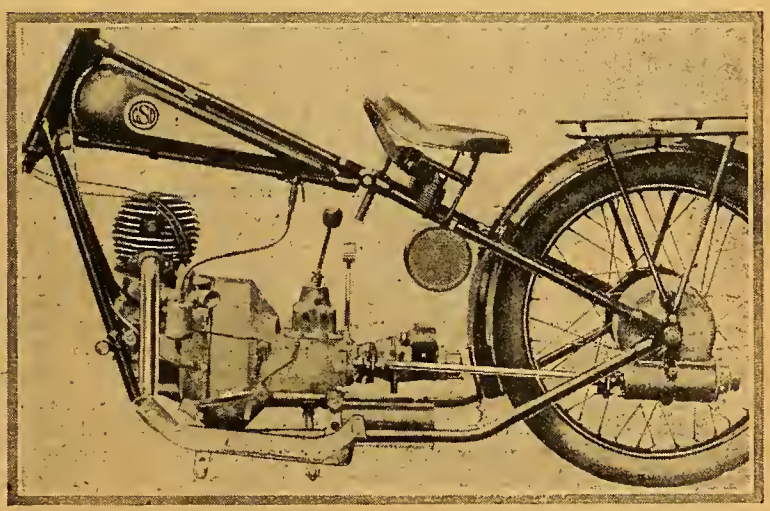
A feature of the Royal Enfield is an ingenious lock which permits rear brake pressure to be maintained without effort on part of the driver.



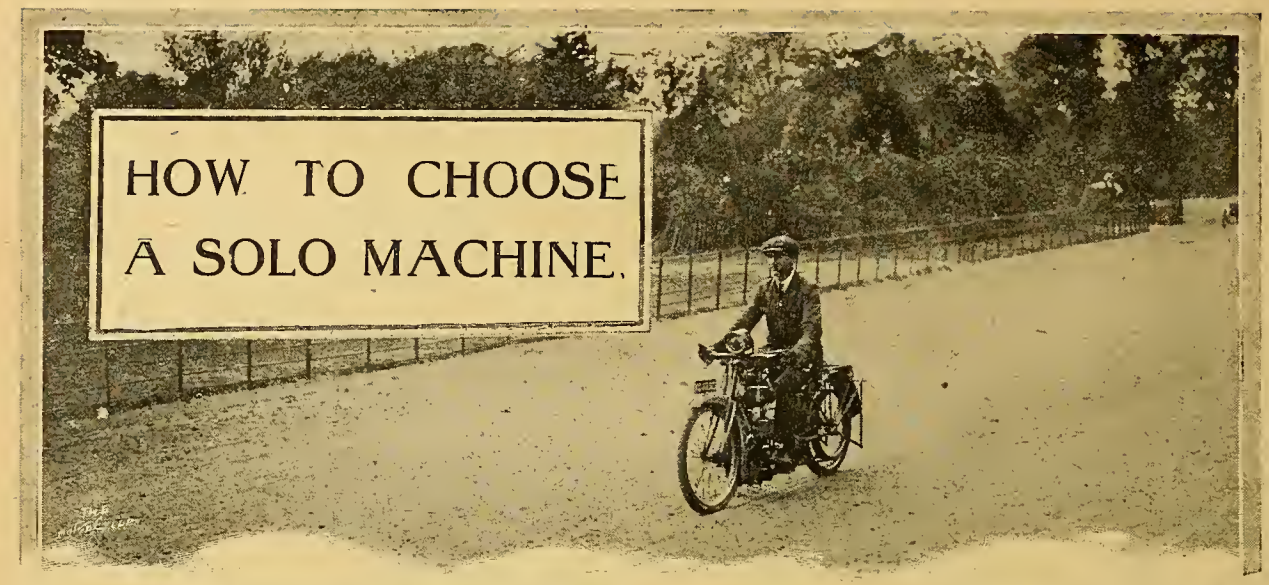
New tank and frame of the largest Lea-Francis, which has a 592 c c. M.A.G. engine.



The Bianchi, like the Harley-Davidson flat twin and the new Triumph, employs spur gears in the primary drive.



Engine and four-speed gear unit, frame and transmission layout of the 350 c.c. G.S.D.



HOW TO CHOOSE A SOLO MACHINE.

Limiting One's Choice by a Study of Requirements. Selecting from the Final Choice.

By "ROAD RIDER."

VERY few novices go seriously astray in picking their first machine, chiefly because the general average of quality is now exceedingly high.

It is very rare for a big factory to turn out a poor machine; and when the products of a small firm are concerned, the engine, gear box, carburetter, ignition, forks, etc., are generally manufactured by some famous component works, so that the complete assembly is likely to give satisfaction.

Thus, the novice's only risk of making a substantial blunder hinges on his picking a type of machine wholly unsuited to his needs, as if a weak, timid, elderly man should order a big twin sports model, or some ignoramus with a sporting temperament should foolishly buy a single-geared baby two-stroke.

Such mistakes are committed every winter, but not in large numbers. The novice's regrets, if any, usually centre on his having bought a good example of the right kind of machine, but not the one and only make which pleases him best after a year on the road has educated his taste. For this reason, the most careful thought should be given to defining exactly what is wanted. Buy in haste and repent at leisure.

When the intending rider has analysed his own wants thoroughly, his choice will usually be narrowed to three or four machines; and the advice outlined below in this article should enable him to make the perfect choice.

The Outstanding Quality.

No two men have exactly the same wants, and all of us want more than the most perfect machine can supply. But a little thought will usually identify one factor as topping the list of our needs; and among such factors the following items will figure prominently in the minds of various individuals: Speed, comfort, light weight, hill-climbing, economy, absence of skidding, weather protection, and suitability for night work. Whichever ranks first, the beginner should make full use of any local club. If he can attend one of its meets as passenger in a friendly sidecar, he will come home with his head awhirl from kindly though contradictory advice, but he will have spotted two or three machines likely to suit him.

The speed machine is the easiest to pick. Our back numbers will indicate which machines do best in the T.T. and at Brooklands, whilst many of the fastest machines, such as the Norton, Brough Superior, Scott-Squirrel, are now sold with a speed guarantee. On the other hand, no such guarantee is given with the four-valve Triumph, sports A.J.S., sports Sunbeam, and other popular road-burners, including most of the big twins. But even in this market there are several points to be emphasised.

Maintenance of Tune.

A very small engine does not maintain super tune for long; it is possible to obtain a 350 c.c. machine capable of 70 m.p.h., but a bigger engine, possessing a real reserve of power, is likely to maintain its maximum speed for longer periods. Any fast engine of 500 c.c. and over should remain fast; the speed durability of a smaller engine demands verification.

Secondly, fast road work is more a matter of acceleration than of sheer speed. The machine which can pick up to 40 m.p.h. quickly will beat another which may be 10 m.p.h. faster on the track, but accelerates sluggishly. If the gear box is to be used for accelerating, see that the gears are easy to change, especially if you have to change up from middle to top when the machine is already doing 45 m.p.h.

Thirdly, though a big twin is faster than almost any single, a good single takes less tuning, and will give all the speed which any man can employ on British roads.

If comfort is at the head of your list, big tyres are the surest and cheapest road to it; by "big" I mean 3in. on a 500 c.c. model. These in combination with an ordinarily decent fork and perhaps a super

How to Choose a Solo Machine.—

saddle listed at 63s. or so will flatten any road; and the super saddle is not a necessity. Spring frames vary in efficiency, and some of them are heavy; a trial is desirable. The B. and D. stabiliser is a really good thing; I have ridden over bricks hands off with the help of this device.

Light weight no longer condemns the user to road vibration and weak hill-climbing, as it once did. But lightweights vary far more in quality than the older and more fully-developed patterns. A man who likes something which is easy to handle with its engine stopped can undoubtedly discover a machine which will take him anywhere, and will neither bore nor shake him when he does 200 miles in the day. But he should pick carefully, using the information below, and insist on a road trial.

Hill-climbing.

Hill-climbing is nowadays purely a matter of gear ratios. In hilly counties the buyer should have three speeds, and the bottom ratio should be 15 to 1, or even lower. He need not fear overheating.

Economy depends first upon the quality of the machine; secondly on its size; and thirdly on the rider. Minimum costs fall to the lot of a man who drives sensibly, does not shirk doing his own dirty work (from repairing punctures upwards), chooses a first-class mount, and prefers 350 c.c. to 1,000 c.c. A first-class chain-driven 350 c.c. model is probably the cheapest machine to own.

Skidding is in reality more a matter of the rider's nerves than of mechanics. But on the sort of road which unsaddles many of our crack men in a trial, the best chance of a non-stop falls to him who has (1) a small multi-cylinder engine, mounted low in the frame; (2) a rather low gear; (3) a perfectly smooth drive; (4) wide bars, low enough to put plenty of weight on the front wheel; (5) low weight so as not to make steering clumsy; and (6) a pair of well-scolloped tyres, which beget confidence. But an ordinary rider with a little experience should be able to hold up almost any machine over any normal road. The skidding bogey is exaggerated in the novice's mind.

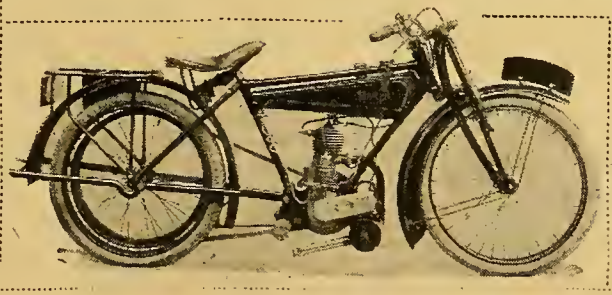
Genuine weather protection is very seldom supplied on standard machines, as comparatively few people want it. It is usually added after purchase in the form of such gadgets as legshields, handle-bar muffs, windscreens, and other proprietary articles. But the all-weather rider should see that his fancied mount has wide mudguards, well clear of the wheel, and that his magneto and sparking plug are out of reach of the mud and water thrown up by the front wheel. For regular nightwork dynamo lighting is well worth its price.

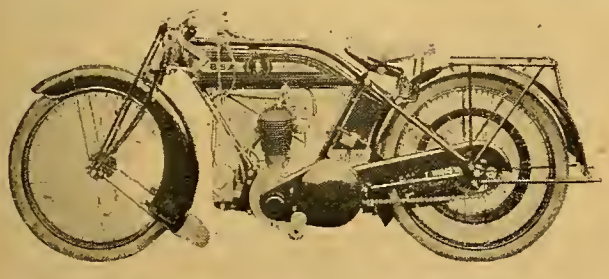
It is always well to see that a fancied machine can be straddled easily, as some saddles are still too high off the ground for stumpy riders to feel comfortable.

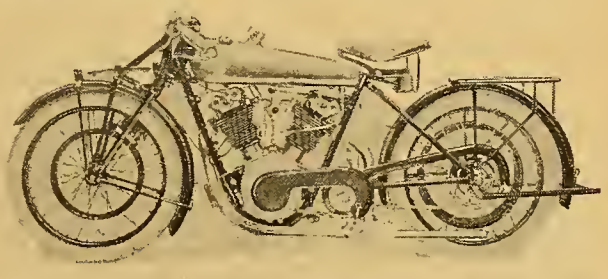
Possibles and Probables.

If the foregoing hints have enabled the novice to rough out a specification of what will suit him best, a visit to Olympia or a collection of catalogues will soon provide him with the names of a dozen machines worth further attention; and he is next confronted with the task of arranging them in his order of merit. If he can actually see them all, he will whittle down the list quite appreciably, but will probably be overwhelmed by the impossibility of separating the two or three final survivors. This, however, is easier than it looks. He has three invaluable assistants in the job. The first is a trial run, which the local agent will readily give. The second is summoned to his side by obtaining those back numbers in which *The Motor Cycle* reported the two big Six Days Trials of 1922. At first sight the results will seem to indicate that every make gets gold medals. But analysis will show that where A earned one gold from, say, six entries, B started four machines, all of which earned golds. A reference to the similar trials in 1921 will broaden the base of these deductions. By this time the choice should certainly have narrowed down to a couple of "possibles." Here again *The Motor Cycle* will stand his friend. Its advertisement columns will reveal how much each machine depreciates per annum. If 1922 machines of C make, bought at £100, are offered at an average price of £80, whereas 1922 machines of other makes listed at £100 command no more than £75 or £70 apiece, C is clearly the pick of the basket, for "money speaks."

Thus the novice with an orderly mind can literally pick out the best machines in each class without expert assistance.







THREE SOLO TYPES. Above is a single geared two-stroke lightweight, representing lowest first cost and simplicity of design. Below it is a medium weight three-speed four-stroke single; the "go anywhere" mount of sturdy proportions. At the right is a sports model big twin; the choice of ardent and expert soloists.

THE MANUFACTURERS' BANQUET.

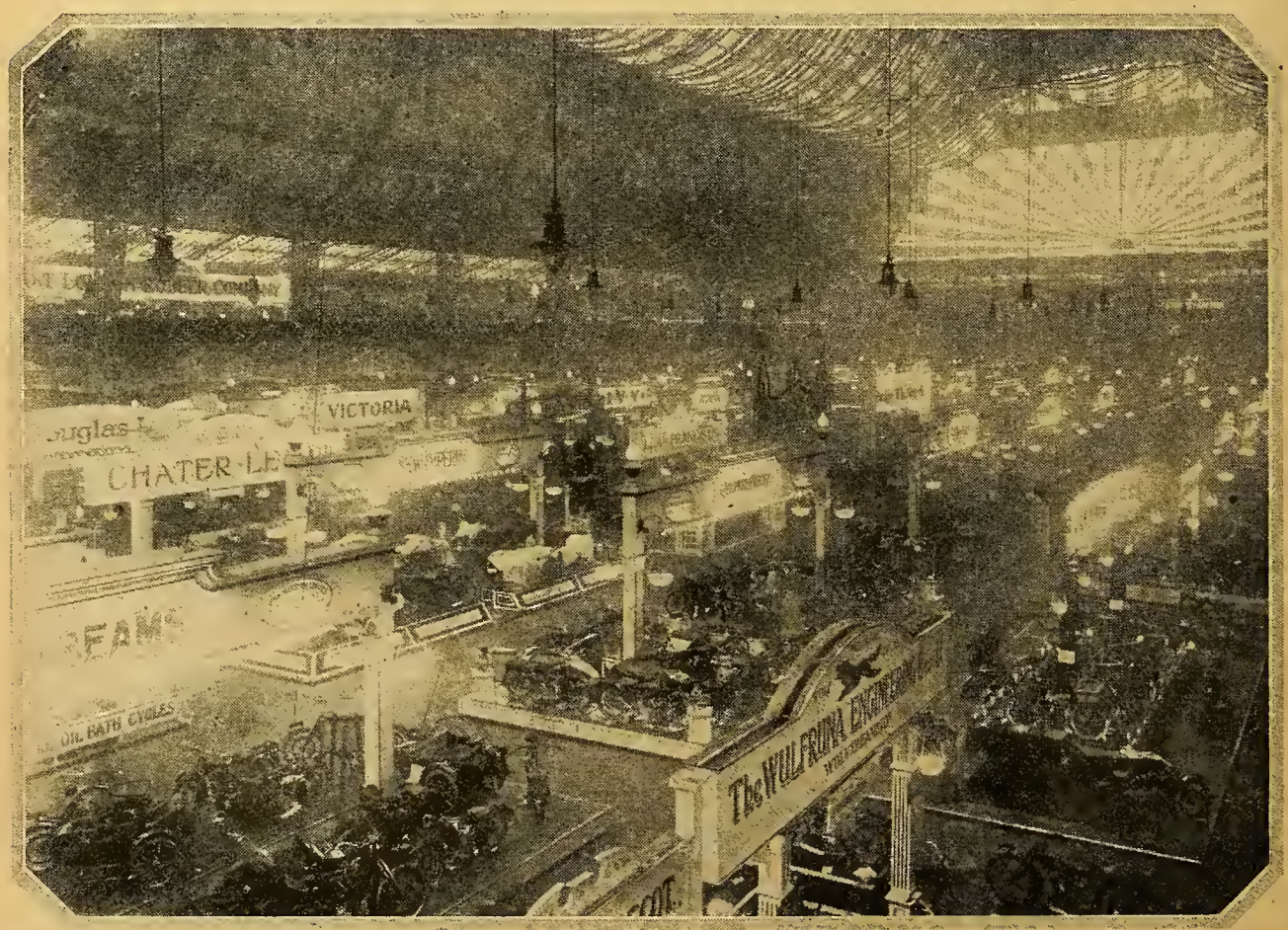
Good Roads Essential—Why not Abolish Doles and Use Unemployed on Road Improvements?—20% Average Drop in Prices for 1923—Importance of Overseas Trade.

MORE brilliant than usual, and with speeches surpassing in quality the usual important statements on the eve of the Show, the eighth annual banquet of the British Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., at the Connaught Rooms last Friday evening, proved a great success. The chair was occupied by the President of the Union, Sir Harold Bowden, Bart. In proposing the toast of the "Cycle and Motor Cycle Industry," Sir William Joynson-Hicks, Bart., M.P., Parliamentary Secretary to the Department of Overseas Trade, dealt with the importance of the industry, the thousands of workpeople dependent upon it, mentioning that some 400 firms were engaged in the production of motor cycles or their components. He regretted the decrease in overseas exports which naturally he regarded as of the first importance, but struck an optimistic note in predicting a reversal of the decline within the next two or three years. Trade, he said, is no longer national, it is international. Twenty per cent., he estimated, represented the average drop in prices this year, and he was confident he saw the beginning of a silver lining for British trade.

In responding, the chairman acknowledged the excellent work of Sir William on behalf of road users in general. The motor cycle industry had passed through a trying and difficult year, but there were a few bright spots, as reflected in certain balance sheets (laughter). He considered stabilisation of foreign currencies the key to a bright future, and ascribed unemployment largely to the falling off of foreign demand. Competition, he said, was keen, and strenuous efforts were being made for business.

A Welcome for Lightweights.

Lightweight motor cycles at £25, he continued, will bring in thousands of recruits, many of whom will later hanker after more power and endurance, and



General view of the Eighth Annual Motor Cycle Exhibition at Olympia. It is open daily from 10 a.m. to 9 p.m. until Saturday, Dec. 2nd.

The Manufacturers' Banquet—

buy more ambitious types of machines. He favoured abolishment of existing taxes, and in place thereof a nominal registration fee, with a petrol tax of 6d. rather than 5d. per gallon, which was the only equitable scheme based upon the amount of use of the roads. He marvelled why the unemployed were not used on road improvements, and drew cheers when he denounced the £261,000,000 issued in respect of doles. Good roads were the secret of the popularity of cycles and motor cycles in this country, and still better roads would mean more orders, more employment, and a nation improved in health.

Overseas Trade the Key to the Future.

Mr. Arthur Brampton, J.P., proposed "The Guests" in a witty speech, coupling the names of the Earl Birkenhead, P.C., and the Rt. Hon. Sir Joseph Cook, G.C.M.G. (High Commissioner for Australia). Lord Birkenhead, at the outset, remarked that he had never indulged in the higher forms of attractive locomotion, but he had raced five times on high bicycles—no, he had never won—he replied to an impromptu question! He said that no office held such a contributory power toward restoration of trade as that of the Department of Overseas Trade. There was no short road to prosperity, he urged, remarking that only four years had passed since the Great War, and much remained to be done to reform the economic life of the world before prosperity could be expected. There was much work ahead, and we should not arrest mischief by simply carrying on in tranquillity. Thereafter he delved into political subjects, and in his typical manner made impassionate appeals of exceptional eloquence, gesticulating the while, with which he completely arrested the attention of the large concourse present.

Business within the Empire.

Sir Joseph Cook, who followed, concurred in the importance of the Overseas Trade Department. He considered those members present looked prosperous enough, and he doubted really if they were living on their losses. He remarked that he had heard before the idea that bad trade was due to taxation: it was, in fact, the tale he heard down under. Australia, he said, was the largest purchaser of British goods in the world, and his advice to manufacturers was to recognise this fact and concentrate their attention upon the Southern Dominions. There was better business within the Empire than out of it, he stated emphatically.

Sir James Percy, D.L., J.P., proposed "The Chairman" in optimistic tone, remarking that with prices of motor cycles, tyres and petrol down the future assuredly called for optimism. He paid eloquent tribute to the many qualities of the chairman, to which Sir Harold Bowden suitably responded.

A BUSY WEEK ON THE TRACK.

Records Fall by the Dozen in Great Show Time Offensive.

DURING the whole of last week there were scenes of unparalleled activity at Brooklands, where record-breakers had concentrated for a final onslaught on record figures before the track closed for the winter, last Saturday. Fortunately, favourable weather conditions prevailed, and day by day the record list underwent considerable alteration. In the six days ended Saturday, no fewer than 49 motor cycle and cycle car records—mostly world's—were broken. The week's doings may, perhaps, best be described in diary form.

MONDAY—Short Distance Records.

The electrical timing strips were in position on the Monday, and all the records made on this day were over the kilometre and mile. Victor Horsman was out on his o.h.v. Norton, both solo and with sidecar, and, in the latter class, was successful in raising the mean speed figure for the flying kilometre to over 80 m.p.h.—a speed which most riders of 500 c.c. machines would be fully satisfied if they could attain solo. W. Sheraton put up some standing start records on a 490 c.c. Norton, but his speeds for the kilometre were shortly afterwards exceeded by F. A. Longman, riding a T.T. pattern 349 c.c. A.J.S. When Longman's machine was weighed, however, it was found to be 5 lb. under minimum weight, whilst his tyres were of less than the prescribed section. Le Vack, on his big Zenith-Jap, made an attempt on the 50-mile record in Class E, but a brass plug in the exhaust valve cap fused after four laps, and the attempt was abandoned.

TUESDAY—Effect of Disturbed Currents.

Le Vack attributed his trouble with a hot back cylinder to the effect of a wide oil tank, placed behind the engine, upon the air current. Changing the position of his plug from the inlet valve cap to the fore side of the cylinder, the engine ran considerably better, and Le Vack started off again to capture the 50-mile record in the 1,000 c.c. solo class (E). He lapped steadily in round about 106.6s., which, on the 10ft. line, is 91.78 m.p.h., whilst, on the 50ft. line it represents 93.44 m.p.h. As has before been mentioned, a motor cyclist lapping at this speed must keep outside even the 50ft. line, so that it will be realised that the speed of 91.71 m.p.h. with which Le Vack is credited for the 50-mile record is considerably below his real average.

WEDNESDAY—50 m.p.g. at 74 m.p.h.

R. N. Judd, on a side-valve Norton, made a meritorious 100-mile run, lapping regularly at about 74 m.p.h. He secured the record for that distance by a small margin, but, shortly afterwards, a broken crank pin at the end of 61 laps forced his retirement. When he filled up at the conclusion of the 100 miles, it was found that he had used barely two gallons of spirit—a consumption which, for a racing machine, is extremely good. Unfortunately for Judd, Emerson (Douglas) broke his 100-mile record on the following day. Le Vack brought out his Zenith, with sidecar attached, and set out for the 50 miles, 100 miles and 1 hour records in Class G. He had completed all but two laps of the 50 miles when he smelt burning rubber, and, looking at the front wheel, saw what he took to be a front stand trailing along the ground. As he had no such fitment, he realised that the fork girder had broken, but he kept going until 19 laps were completed, when it was found that both sides of the fork had fractured, and attempts on longer distance records were, naturally, abandoned. C. G. Pullin next went out on his 344 c.c. Douglas and sidecar, and collected the flying five miles and standing ten miles records (Class B/S).

THURSDAY—Speed Kings Turn Out.

Having fitted a pair of Druid forks to his Zenith, Le Vack started out for the hour and 100-mile sidecar records. He had hardly got going, however, when the clutch started

A Busy Day on the Track.—
slipping (he has used the same Sturmey-Archer gear box throughout the season without attention), and hurried repairs failed to effect a cure. More short-distance records were made with the aid of the electrical strips, Emerson (494 Douglas) securing the standing kilometre in Class C, and Longman—who, by virtue of fitting larger tyres and tank, had brought the weight of his A.J.S. to over the limit of 165 lb.—beat the standing kilometre in Class B.

W. D. Hawkes, driving a Morgan fitted with overhead-camshaft eight-valve Anzani engine, repeated his attack on the flying five miles and standing ten miles records in Class H/2 (two-seater cycle cars not exceeding 1,100 c.c. He had lowered the existing records on the previous day, but, when his machine was examined, tyres of too small section were found to be fitted to the front wheels). This time he improved considerably on his speed, but, as he crossed the finishing line, one of the cylinders suddenly ceased firing, serious engine trouble being the cause.

Cyril Pullin successfully attacked the standing kilometre and mile in Class B/S on his 348 c.c. Douglas and sidecar, and just as it was getting dusk Le Vack brought out his 346 c.c. New Imperial-Jap for the flying five miles and standing ten miles in Class B. He lapped at the astounding speed of nearly 86 m.p.h.—a pace which only two or three men at the track can equal on 500 c.c. machines—and secured the desired records by a handsome margin.

FRIDAY—New 400 miles 500 c.c. Record.

The first on the track the next day was J. L. Emerson (494 c.c. Douglas), who was out for Class C records up to 6 hours. He started away with a standing lap of 75.26 m.p.h., and for the first half hour his average speed was 78 m.p.h. He missed lowering the 50-mile record (which he already held) by 3 secs., and he stopped just before the finish of the first hour (another of his own records) for petrol. After 39 laps he changed a back wheel, and at the end of 46 laps his engine commenced to misfire, a trouble which was cured by changing the exhaust valve spring. He lost about 10 minutes over this, but his 50th lap was the fastest, being at the rate of over 80 m.p.h. After he had beaten the 100-mile record at the very useful speed of 76.97 m.p.h., his helpers signalled him to slow down, and he continued to lap with monotonous regularity at about 68 m.p.h. until the conclusion of the 400 miles, which took place after dark. Incidentally, Emerson's 400-mile world's record beats that which the Garelli recently established at the Monza Park track (Italy).

Whilst Emerson was busy, Le Vack set out for the one hour and 100 miles in Class G (1,000 c.c. sidecars) on the Zenith-Jap, the clutch of which had been tightened up until it would not free. With J. V. Prestwich in the highly uncomfortable sidecar, the laps were reeled off at 74-75 m.p.h., and a perfect run was made, the engine never missing a beat throughout. One of the front wheel spindle nuts loosened itself and caused the steering to become somewhat difficult—the strain that Le Vack must have felt, indeed, was reflected in the blades of the forks, which were actually bent below the steering head. Another rider to put up sidecar records on Friday was W. D. Marchant, riding a 349 c.c. O.K.-Junior with o.h.v. Blackburne engine. He secured the 50 miles and one hour records in Class B/S, and his only trouble on the run was an oily plug—proof of the cool-running of his engine.

SATURDAY—More Long Distance Records.

Saturday, probably being the last day for many months to come when record-breaking will be possible, was a day of feverish activity. The electrical strips were once more in position, although the most noteworthy records made were long-distance. A 1,000 c.c. twin-cylinder Rudge, driven alternately by R. E. Dicker and J. H. Mather, set out early in the morning, and, lapping with great consistency at around 76 m.p.h., managed to break into the record list (Class E) at the end of 6 hours. The 500 miles and 600 miles records were also secured, the machine running in all for nearly 8½ hours, and averaging over 71 m.p.h. for the entire period. Incidentally, it may be mentioned that the 500 miles record at 74.96 m.p.h. replaces that which Le Vack set up (70.42 m.p.h.) in the 1921 500 Mile Race.

Riding his 250 c.c. New Imperial-Jap, Le Vack made a very successful onslaught on the 50 miles, 100 miles, one and two hours' records in Class A. His speed of approximately 68 m.p.h. must be regarded as little short of marvellous. His two-hour record, in fact, eclipses that which was credited to H. R. Davies (A.J.S.) in the next higher class—350 c.c.

W. D. Hawkes took his Morgan-Anzani over the flying kilometre, but further engine trouble prevented his attacking the mean speed figures. F. A. Longman was also successful in securing the standing mile, both normal and mean speed, in Class B on his 349 c.c. A.J.S.

A full list of the records made during the week will be found below.

CLASS A.—Solo up to 250 c.c.

25/11/22.—H. Le Vack (249 New Imperial-Jap).

	m.p.h.
*50 Miles=43m. 44.63s.	68.61
*100 Miles=1h. 29m. 0s.	67.41
*1 Hour=68 miles 955 yards	68.54
*2 Hours=135 miles 1,201 yards	67.84

CLASS B.—Solo up to 350 c.c.

23/11/22.—F. A. Longman (349 A.J.S.).

†Standing kilometre (one way)=35.90s.	62.51
*Standing kilometre (mean)=36s.	62.14

22/11/22.—C. G. Pullin (344 Douglas).

*Flying mile (mean)=41.20s.	87.38

25/11/22.—F. A. Longman (349 A.J.S.).

†Standing mile (one way)=53.98s.	66.96
*Standing mile (mean)=54.405s.	66.17

23/11/22.—H. Le Vack (346 New Imperial-Jap).

*Flying 5 miles=3m. 29.90s.	85.75
*Standing 10 miles=7m. 23.73s.	81.13

25/11/22.—H. Le Vack (249 New Imperial-Jap).

*2 Hours=135 miles 1,201 yards	67.84

CLASS C.—Solo up to 500 c.c.

23/11/22.—V. E. Horsman (490 Norton).

*Flying kilometre (mean)=23.90s.	93.59
*Flying mile (mean)=38.825s.	92.72

23/11/22.—J. L. Emerson (494 Douglas).

†Standing kilometre (one way)=33.9s.	65.99
*Standing kilometre (mean)=34.5s.	65.50

20/11/22.—W. Skeaton (490 Norton).

†Standing Mile (one way)=53.55s.	67.23
*Standing mile (mean)=53.375s.	67.19

24/11/22.—J. L. Emerson (494 Douglas).

	m.p.h.
*100 Miles=1h. 17m. 57.04s.	76.97
*200 Miles=2h. 53m. 50.24s.	69.03
*300 Miles=4h. 29m. 29.63s.	66.79
*400 Miles=6h. 0m. 4.30s.	66.65
*3 Hours=206 miles 1,714 yards	68.99
*4 Hours=269 miles 873 yards	67.38
*5 Hours=331 miles 1,049 yards	66.32
*6 Hours=399 miles 1,584 yards	66.65

CLASS E.—Solo up to 1,000 c.c.

21/11/22.—H. Le Vack (998 Zenith-Jap).

*50 Miles=32m. 42.56s.	91.71

25/11/22.—R. E. Dicker and J. H. Mather (998 c.c Rudge).

*500 Miles=6h. 40m. 12.43s.	74.96
*600 Miles=8h. 25m. 7s.	71.27
*6 Hours=450 miles 654 yards	75.02

CLASS B.S.—Sidecars up to 350 c.c.

22/11/22.—C. G. Pullin (348 Douglas).

*Flying 5 miles=4m. 27.71s.	67.24
*Standing 10 miles=9m. 21.53s.	64.11

23/11/22.—C. G. Pullin (348 Douglas).

†Standing kilometre (one way)=45.45s.	49.21
*Standing kilometre (mean)=45.875s.	48.76
†Standing mile (one way)=66.40s.	54.21
*Standing mile (mean)=66.525s.	54.11

24/11/22.—W. D. Marchant (349 O.K. Junior-Blackburne).

*50 Miles=50m. 21.92s.	59.26
*1 Hour=87 miles 1,305 yards	57.74

CLASS F.—Sidecars up to 600 c.c.

20/11/22.—V. E. Horsman (490 Norton).

†Flying kilometre (one way)=27.55s.	81.19
†Flying mile (one way)=44.55s.	80.81
*Flying kilometre (mean)=27.875s	80.24
*Flying mile (mean)=45.05s.	79.91
†Standing mile (one way)=56.44s.	63.78

CLASS G.—Sidecars up to 1,000 c.c.

22/11/22.—H. Le Vack (998 Zenith-Jap).

*50 miles=39m. 41.20s.	75.59

24/11/22.—H. Le Vack (998 Zenith-Jap).

*100 miles=1h. 20m. 12.88s.	74.79
*1 hour=74 miles 1,532 yds.	74.87

CLASS H/2.—Two-seater Cycle Cars 1,100 c.c.

23/11/22.—W. D. Hawkes (1,088 Morgan-Anzani).

*Flying 5 miles=3m. 31.40s.	85.14
*Standing 10 miles=7m. 20.60s.	81.70

(NOTE.—If the above records are calculated on the basis of the 50ft. line, the speeds are 86.70 m.p.h. and 83.17 m.p.h. respectively.)

25/11/22.—W. D. Hawkes (1,088 Morgan-Anzani).

†Flying kilometre (one way)=25.73s.	86.94

*World's record. †British record.

4 SPEED GEAR | 3 SPEED GEAR | 2 SPEED GEAR

All made by

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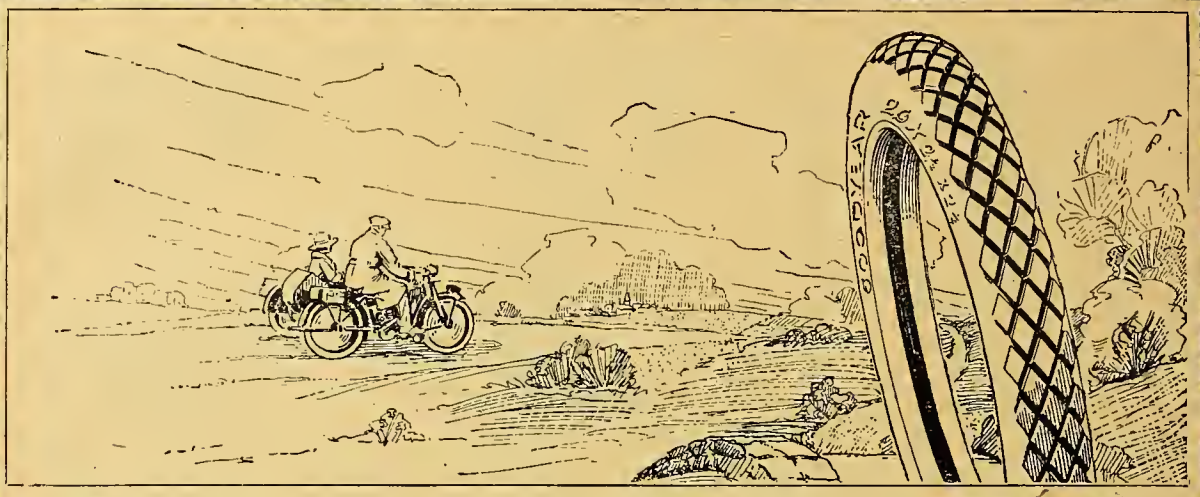
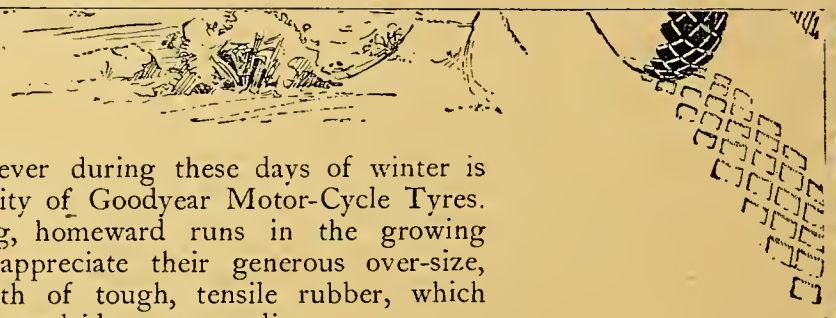
Olympia - Stand 278.

John Jardine Ltd., Deering St., Nottingham. 'Phone: 3295 3296 Nottingham.



Winter, too, Reveals their Worth



Prized more than ever during these days of winter is the steadfast reliability of Goodyear Motor-Cycle Tyres. It is on those long, homeward runs in the growing darkness that you appreciate their generous over-size, their increased depth of tough, tensile rubber, which banish the dread of roadside tyre mending.

And that sturdy All-Weather Tread with its deep-cut, diamond-shaped blocks that bite through slime and mud—more than ever do those slippery roads emphasise its firm, tenacious grip.

It is comforting to remember, when wintry going suggests the replacement of a worn cover, that you pay no premium for the protection these trusty Goodyear Tyres afford. They are obtainable everywhere from Goodyear Registered Dealers. The Goodyear Tyre & Rubber Co. (Great Britain), Ltd.

26×2½×2¼	-	All-Weather Tread	£1 16 6	-	-	Tube	7s. 3d.
26×3	-	" " "	£2 1 6	-	-	"	7s. 9d.
28×3	-	" " "	£2 5 3	-	-	"	8s. 3d.
*27×3½	-	" " "	£2 12 6	-	-	"	9s. 9d.
*29×3½	-	" " "	£3 1 6	-	-	"	10s. 0d.

* Oversizes for 26×3 and 23×3 respectively.

To make sure that it will reach the user in perfect condition, each Goodyear Tube is rolled, then packed in a waterproof, oilproof bag.

We are exhibiting at the Motor Cycle Show, Olympia, Stand No. 13.

GOODYEAR

CURRENT CHAT

Special Features.

OLYMPIA SHOW REPORT.
TYRE BUYERS' GUIDE.
HINTS AND TIPS.
WHAT THE SHOW REVEALS.

Times to Light Lamps.

Nov. 30th	.. ..	4.24 p.m.
Dec. 2nd	.. ..	4.23 „
„ 4th	.. ..	4.22 „
„ 6th	.. ..	4.21 „

One number plate must be illuminated as above *vide* Road Vehicles (Registration and Licensing) Order (1921). According to the Lights on Vehicles Regulations (1905) the lamps ordinarily required by law may be lit half an hour later.

Special Articles Next Week.

Next week's issue of *The Motor Cycle* will contain articles criticising the exhibits at this week's record Motor Cycle Show.

Of Interest to L.-E. Competitors.

The new Muskham Bridge, on the Great North Road near Newark, erected at a cost of £50,000, was formally opened by H.G. The Duke of Portland last Friday.

***Not* a Complete Review.**

At least one daily paper's review of the Motor Cycle Show consisted of a reference only to those motor cycles and accessories which were advertised in its issue.

Records on the Eve of the Show.

Last week no less than forty-nine new records were set up on Brooklands track. Details appear in another section of this issue. The track is now closed for its customary winter repairs.

A Sicilian Car Race.

The Autocar of to-morrow's date will contain an interesting narrative of the Coppa Floriso Race held in Sicily last week. A sleeve-valve engined car proved successful.

Cheaper Petrol.

Aviation and No. 1 petrol sells freely in the North London district at 1s. 9d. per gallon. It is said that the spirit is the product of the "non-combine" companies and is up to the standards named in quality. We have tried it on several occasions and could find no difference.

T.T. Dates Fixed.

It has been decided by the Isle of Man authorities that the following dates shall be granted for the 1923 T.T. races: Monday, June 11th, Junior Race; Wednesday, June 13th, Lightweight Race in the morning and Sidecar Race in the afternoon; Friday, June 15th, Senior Race.

Cycle Car Race in Belgium.

The Belgian Motor Cyclists' Federation has decided to organise a Cycle Car Grand Prix in Belgium on July 17th, 1923, to follow the Motor Cycle Grand Prix. This date will be confirmed at the F.I.C.M. meeting in London on December 4th. Information can be obtained from the Federation Motocycliste de Belgique, 63, rue de la Regence, Brussels, Belgium.

"Prophets without Honour."

Only one firm at the Show appears to have adopted the A.C.U. rating of horse-power (1 h.p. per 100 c.c.) down to the second decimal place, and that firm is American.

The Discovery of the Show.

According to a daily paper, a feature of the big Blackburne taxi outfit is "wheel drive." Truly an improvement on the articulated legs on which the ordinary motor cycle runs.

More "Child's Guide to Motor cycling."

Recently we represented the sounds whereby various types of motor cycles could be recognised. Here is the sound that L——'s new two-stroke made after he had "overhauled" it: ——

Indian Examination for Driving Licences.

The United Provinces impose a test on applicants for driving licences, the Superintendent of Police being the registering authority in each district. "The system," writes a Superintendent of Police, "has two drawbacks—one that there is no prescribed test, and consequently the tests vary according to the individual ideas of each superintendent (and often according to the state of his liver); the other that a person tested on a motor cycle receives a licence which also permits him to drive a motor car, and *vice versa*. That the system is useful is illustrated by the fact that I recently tested an Indian who affirmed that he was a good driver. In attempting to turn a very simple corner in reverse, however, he twice ran his car into a brick culvert."

The Scottish Show.

At the Scottish Motor Cycle Show, which will be held in Edinburgh from January 26th to February 3rd, there will be nineteen stands devoted to motor cycles.

The Prejudiced Press.

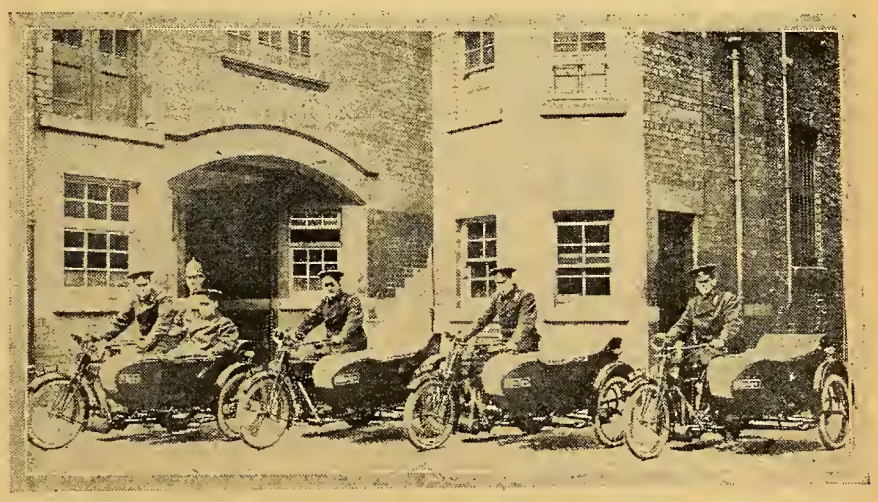
An omnibus, swerving out to overtake another, ran into a motor cyclist, fatally injuring his pillion passenger. The inquest verdict was manslaughter against the 'bus driver, but the Sunday newspaper heading was "The Deadly Pillion," not, as a reader suggests, "The Deadly Omnibus."

Wonderful Oil Consumption.

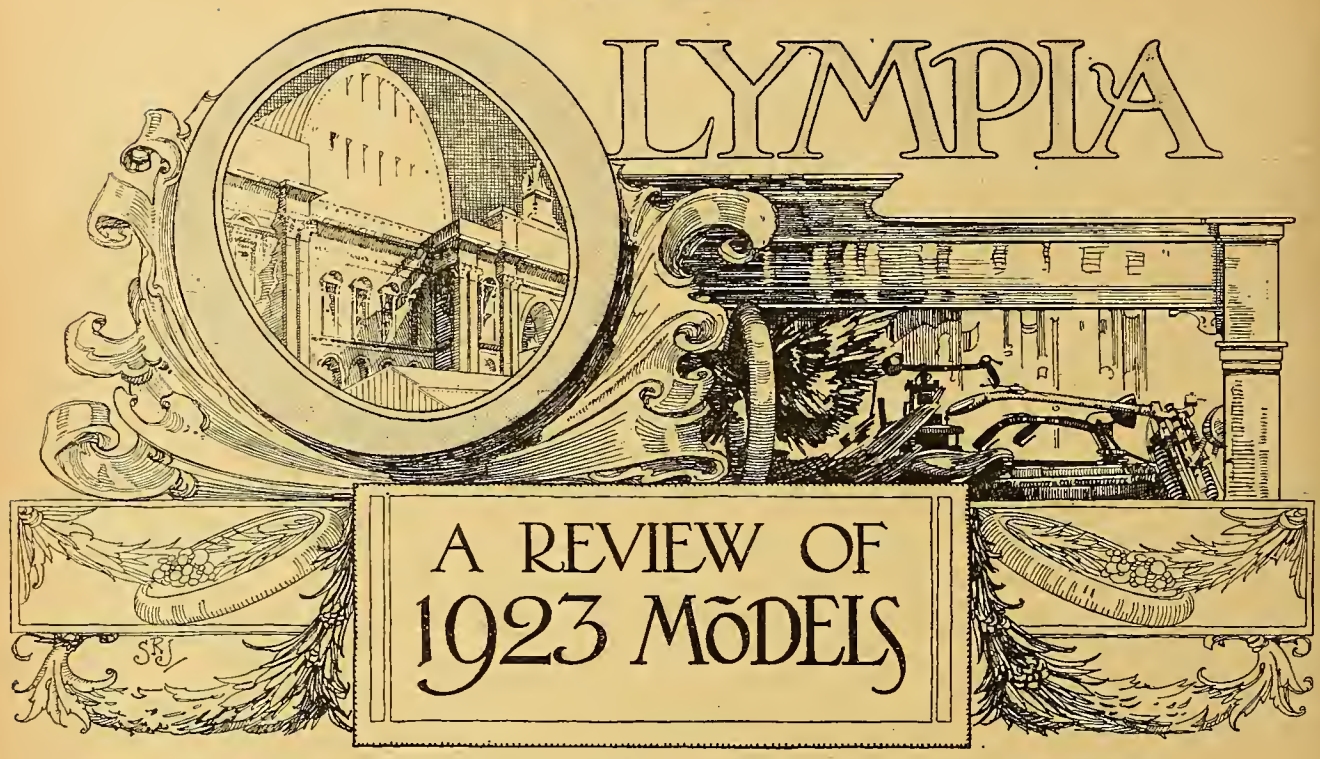
As the result of an official test of Wakefield oil under A.C.U. observation, a 247 c.c. Levis succeeded in attaining an oil consumption of 32.777 m.p.g. on Brooklands track. The distance covered was 161 miles at an average speed of 19.93 m.p.h. One ounce of Castrol C summer grade oil was added to two gallons of B.P. aviation spirit, the consumption of the mixture being 161.1 m.p.g.

M.C.C. Events for 1923.

The Motor Cycling Club has settled on its 1923 fixture list in good time. The following are the most important dates:—March 17th, Opening run to Brighton; April 30th-31st, London-Land's End trial; May 18th-19th, London-Edinburgh run; June 23rd, Inter-Club Team Trial for *The Motor Cycle* Cup; July 7th, Brooklands Meeting; September 29th, One-day sporting solo trial; December 26th-27th, London-Exeter-London trial.



MOTORISED POLICE. It is becoming common in large towns to maintain a squad of police motor cyclists. The four Rudge sidecar outfits are part of the fleet used by the Liverpool force.



STAND-TO-STAND DESCRIPTION OF MOTOR CYCLES, SIDECARS, AND THREE-WHEELERS ON VIEW AT OLYMPIA (Nov. 25th to Dec. 2nd).

The reports and illustrations have been prepared by the staff of "The Motor Cycle" after personal examination of the Exhibits.

A.J.S. (67.)

Overhead Valve T.T. Model.

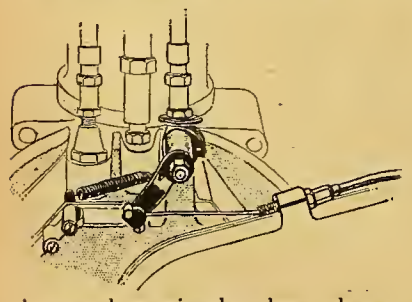
2¾ H.P. MODEL.—74×81 mm. (349 c.c.); single cyl. four-stroke; overhead valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-speed gear; clutch, no kick-starter; chain drive; 650×65 mm. tyres. Price £87.

A. J. STEVENS AND CO., (1919), LTD., Wolverhampton.—By reason of its performances in the T.T. Races, great interest will be shown in the 349 c.c. overhead valve Tourist Trophy type A.J.S., which is a direct development from the famous racing machines, and is attractive because few makes have attained such consistent success with their speed models. The T.T. machine is in the centre of the stand, and, of course, is show finished, but the bright nickel and special enamelling do not hide the fact that it is essentially a speed model. Even to look at the little machine gives one the idea that its balance for riding purposes should be exceptional.

The side-valve 349 c.c. machines are represented, but are little different from their predecessors.

7 H.P. MODEL.—74×93 mm. (799 c.c.); V twin-cyl. four-stroke; side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 tyres. Price, with Sidecar, £152 10s.

In addition there are, of course, specimens of the 799 c.c. sidecar outfits, one in particular being a two-seater sidecar with a neat little windscreen, a proper cape hood, and excellent upholstery.

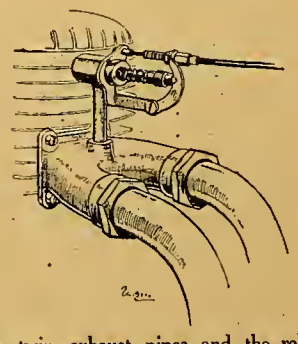


An external cam raises the exhaust valve on the A.J.S.

MODERN TENDENCIES.

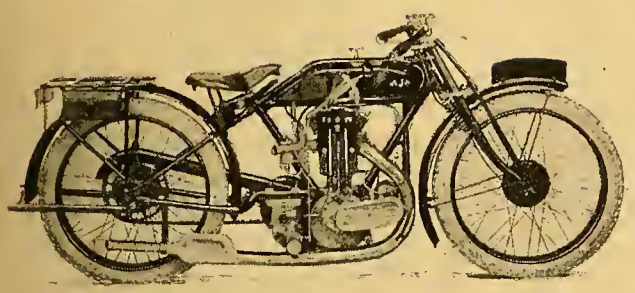
DEFINITE progress in design is discernible in every type of Motor Cycle for 1923. The article "What the Show Reveals" (pages 795 to 803), reviews these improvements in detail. Further to assist readers who are visiting Olympia to assimilate the main items of interest, the outstanding features are summarised below:

(1) Increased number of ultra lightweight motor cycles.
(2) 350 c.c. motor cycles growing in popularity.
(3) Additions to the 500 c.c. range.
(4) Improved saddle tanks concealing the top tube.
(5) Almost general adoption of chain drive.
(6) The vogue of the sporting model.
(7) Better protection from the elements for the rider.
(8) Engine-gear unit construction.
(9) Exceptional value for money in both solo and sidecar machines.
(10) Improvements in electric lighting sets.

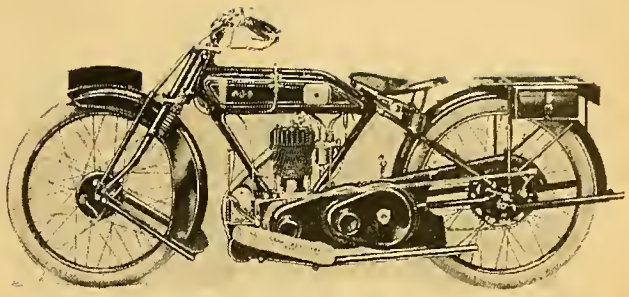


The twin exhaust pipes and the release valve of the Alecto.

The Olympia Show.—



An attraction of the A.J.S. range—the 349 c.c. o.h.v. model.



Conventional and thoroughly tried—the 349 c.c. side valve touring model A.J.S.

The machine itself is of the solid and reliable type with which the A.J.S. made their name, has the electric light controls on the tank side as usual, and a very large expanding brake of car type for the front wheel.

Magdyno equipment is standardised and included in the list price.

AJAX. (157.)

Miniature Two-speed Model.

1½ H.P. MODEL.—55×62 mm. (147 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 26×1¾in. tyres. Price £26 5s.

AJAX MOTOR MANUFACTURERS, LTD., Arthur Street, Birmingham.—A newcomer to the motor cycle world, the Ajax Junior is one of the cheapest lightweights in the Show. The makers claim that it is in no sense a cycle, but a motor cycle; we should say that it is a step between the two, for the tyres fitted are not much larger than those used on pedal cycles. Fitted with a simple type of spring fork, the Ajax Junior is, however, a machine which will appeal to those who require a two-speed miniature to supplant the pedal cycle.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price £47 10s.

Following conventional lines, with a sloping top tube, the larger two-stroke model employs a Saxon fork and other well-known components. A similar model, but having a 348 c.c. Blackburne engine and Maplestone fork, is shown with two-speed gear, clutch and kick-starter at £62. For an extra £3, a three-speed gear can be fitted.

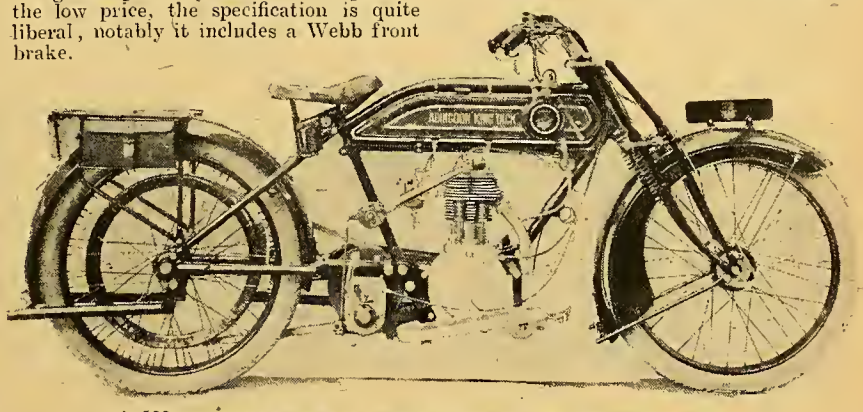
ABINGDON. (127.)

Low Prices and Sound Material.

3½ H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. four-stroke; side valves; drip lubrication; B. and B., Amac, or Senspray carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price £67 10s.

ABINGDON WORKS, LTD., Tyseley, Birmingham.—The 499 c.c. Abingdon must rank as one of the cheapest machines of its power in the Show. It is fitted with the firm's own engine, distinguished by beautiful workmanship, the castings being exceptionally clean. In spite of the low price, the specification is quite liberal, notably it includes a Webb front brake.

6-7 H.P. MODEL.—73×95 mm. (795 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; B. and B., Amac, or Senspray carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price £95.



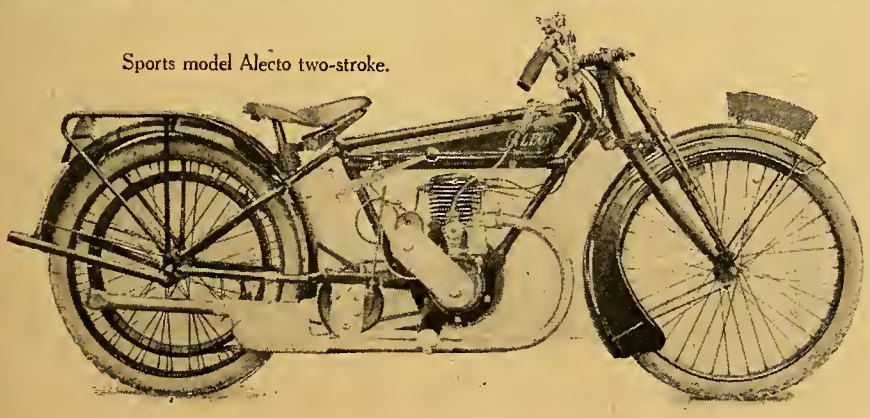
A 500 c.c. single bearing a well-known name—the Abingdon King Dick.

4¼ H.P. MODEL.—85×110 mm. (624 c.c.); single cyl. four-stroke; side valves; drip lubrication; B. and B., Amac, or Senspray carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price £85.

The 624 c.c. model is of the heavy-duty type with exceptionally large bearings and is designed to pull a heavy load for prolonged periods without needing replacements. Both engine and gear box are of the firm's own manufacture, the workmanship throughout being characteristically good. Details worth attention are the neat method of oiling the primary chain, the detachable and interchangeable wheels, and the hinged rear mudguard.

The 795 c.c. twin closely resembles the 624 c.c. model in general specification and quality. It should be noted that both the 498 c.c. and 774 c.c. machines have 28 × 3in. tyres, which must minister appreciably to the driver's comfort.

Sports model Alecto two-stroke.



AIROLITE. (20.)

A Very Miniature Sidecar.

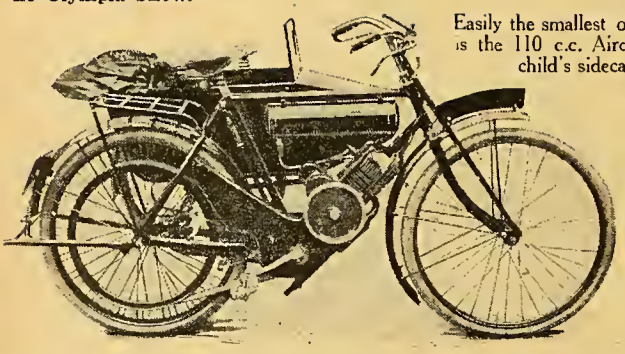
1½ H.P. MODEL.—52×52 mm. (110 c.c.); single cyl. two-stroke; petroil lubrication; Amac carburetter; chain-driven mag.; single-speed gear; no clutch or kick-starter; chain and belt drive; 28×1¾in. tyres. Price: Solo, £27/6; with sidecar, £33/12.

SMALL ENGINES CO., 131, Coventry Road, Birmingham.—By the standards applied when considering a bigger machine, the Airolite motorised bicycle is not so attractive to look upon, but examination reveals that it is quite a workmanlike job.

The engine is a Simplex two-stroke which has a ball-bearing mainshaft. The countershaft is also mounted on ball bearings.

Simple spring forks have been incorporated as standard since the machine was introduced last spring, but otherwise it remains perhaps more like a pedal cycle

The Olympia Show.—



Easily the smallest outfit in the Show is the 110 c.c. Airolite, which has a child's sidecar attachment.

than any other miniature in the building. An open frame lady's model is also on view, which, except for a necessary change in the shape of the tank and the addition of what in pedal cycle phraseology is called a gear case over the pedalling chain, is a replica of the other.

The reader is advised to brace himself up at this point, for—an Airolite sidecar outfit is shown! But it is not so bad as it appears, for the sidecar, although fitted with a hood and windscreen, is only intended for a child up to ten years of age.

AMERICAN X

Handsome American Twin.

7·9 H.P. MODEL.—84.5×88.9 mm. (999.5 c.c.); V twin-cyl.; four-stroke; overhead inlet valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 27×3½in. tyres. Price: Solo, £105; with Sidecar, £130 5s. Melchior, Armstrong and Dessau, Ltd., 15, Newman Street, London, W.1

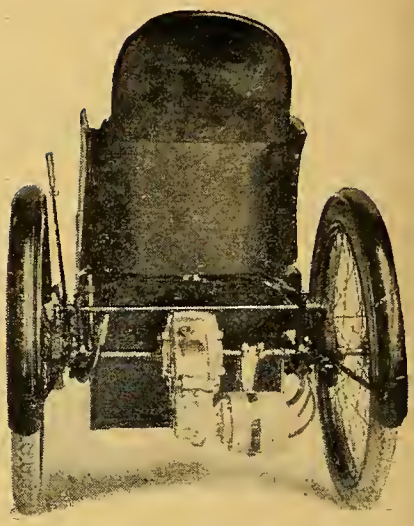
The American X remains entirely unaltered from last year. Following typical American practice in all its details, it must rank as one of the handsomest machines coming to us from across the Atlantic; for it is finished on English lines in black enamel, picked out with narrow gold lining. The electric installation is very neatly carried out.

ARGSON. (32.)

Help for the Disabled.

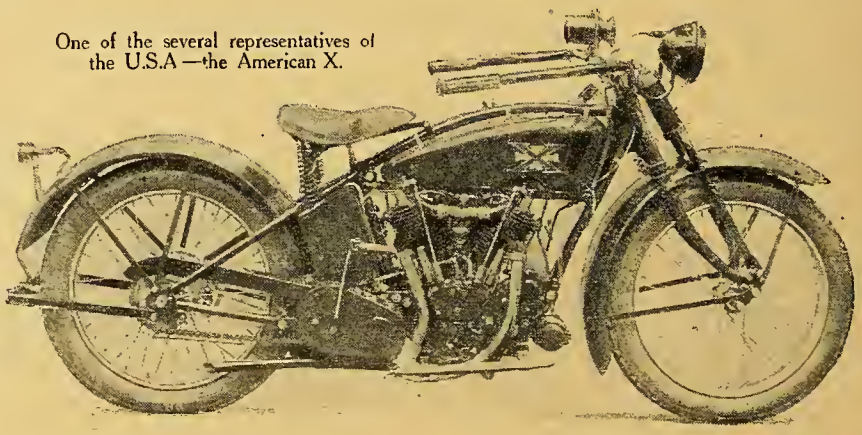
1¾ H.P. MODEL.—60×60 mm. (170 c.c.); single cyl. two-stroke; petroil lubrication; Mills carb.; flywheel mag.; single speed gear; gear drive; 26×2in. tyres (rear wheels). Price £85.

ARGSON ENG. CO., LTD., Richmond Rd., E. Twickenham, Middlesex.—Consisting of an invalid carriage adapted to take a two-stroke engine instead of being propelled by hand, the Argson is not likely to appeal to the average visitor to the Show, but nevertheless has, unhappily, a very definite place in the present-day scheme of things. The hand propel-



Battery-operated electric motor-driven Argson invalid carriage.

One of the several representatives of the U.S.A.—the American X.



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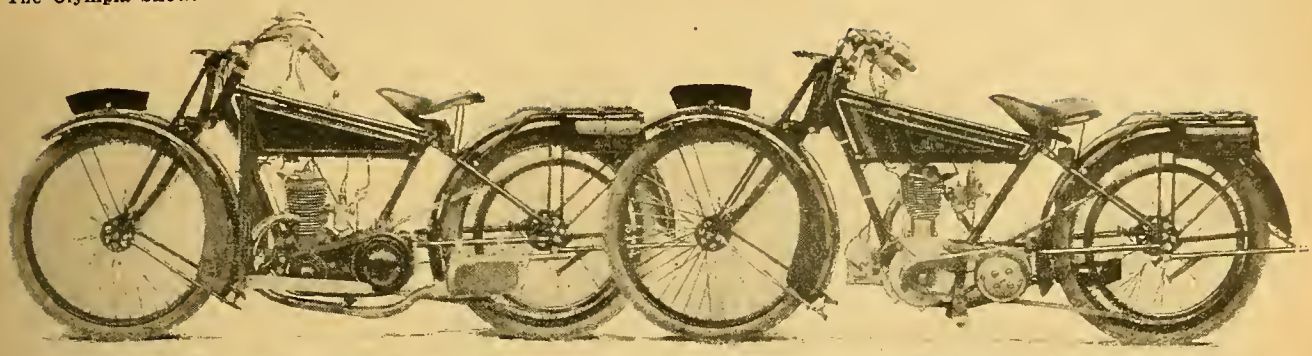
The Olympia Show.—



Improved version of the 292 c.c. touring Allon two-stroke.

New four-stroke Allon with 346 c.c. J.A.P. engine and semi-sporting equipment.

ling gear is retained, and serves for starting up. Located at the rear, the engine, which is made by the Argson Company, is quite an excellent little design employing a roller bearing big-end. Its crankshaft extends through an enclosed gear reduction case to carry a Villiers flywheel magneto, which, of course, may be used to supply lighting current if required. No clutch, in the proper sense of the word, is provided, but it is possible to disengage the gears by a lever operation from the driving seat. Carburetter and sparking plug are also accessible to the driver. Two external contracting band brakes are operated simultaneously by one long lever.

Speeds from 4 to 25 m.p.h. are claimed. Also shown is an electric tricycle, from which, it may be noted, a maximum speed of only 6 m.p.h. is obtained, owing to the necessity of conserving current.

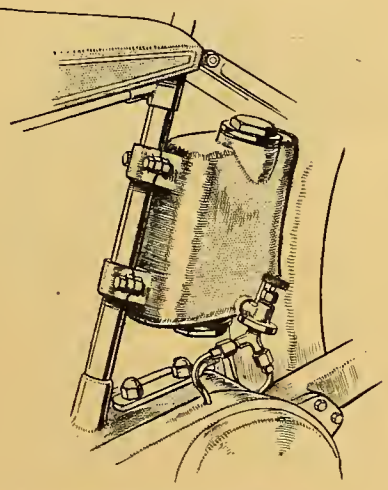
ALLON. (73.)

Four-stroke Model Introduced.

2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price: Solo, £59 17s.; with Sidecar, £75 12s.

ALLDAYS AND ONIONS, LTD., Birmingham.—Both the 292 c.c. two-stroke and the 346 c.c. J.A.P.-engined four-stroke machines are shown, both as solo and as sidecar outfits. The two-stroke has not been altered much from the design with which the Allon made its name, and is a neat and workmanlike job, substantially built and with plenty of protection from bad weather. The touring machine, in particular, is provided with very ample mudguards. The four-stroke is on much the same lines, with a well dropped top tube, sloping tank, and low seating position. Either chain and belt or all-chain drive can be fitted, as desired, and a choice of carburetters is given, either Amac or B. and B. being specified in accordance with the requirements of the rider. In cases where an electric head lamp is used, the current is derived from the flywheel magneto when the machine is running and a dry battery when standing. The latter is carried by the headlamp bracket.

The use of a proprietary four-stroke engine is an innovation on the Allon machines, as are the proprietary gear boxes.



Verus cast aluminium oil tank with drip feed to chains.

ALECTO. (25.)

A Speedy Two-stroke Revived.

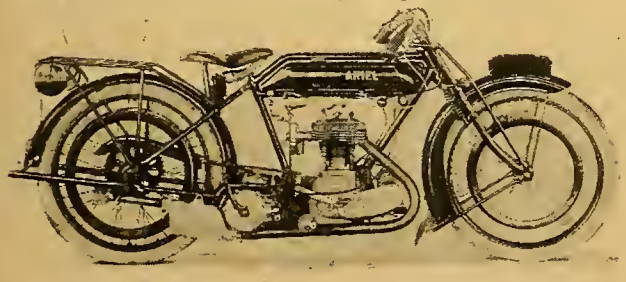
3½ H.P. MODEL.—76×76 mm. (345 c.c.); single cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £65.

WHITMEE ENG. CO., Grove Road, Balham, London, S.W.—One of the first two-stroke machines to demonstrate its capabilities on the track by establishing long-distance records was the Alecto. Although this feat has almost been forgotten nowadays, and for some time the machine was in danger of being discontinued owing to external causes, the reappearance of the Alecto at Olympia brings back old memories.

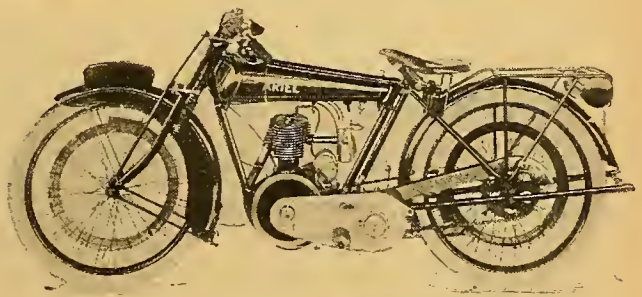
Speed is still a characteristic of the machine, and a belt-driven sports model, differing only in gear and transmission from the model specified above, is said to be capable of 50 m.p.h. in delivery tune. It is priced at £58.

The same engine is fitted to all three machines on show, which are respectively of the sports, touring, and sidecar types. It has an aluminium piston, floating gudgeon pin, plain big end bearing, and drilled connecting rod, and the oil-ways, as indicated on the sectioned engine, are worthy of inspection. The main shaft is supported on double race ball bearings. Silencing has been much improved, a large detachable aluminium expansion chamber being slung from the rear chain stay. Of course, one of the best-known features of the Alecto is its forked exhaust pipe to avoid the front down tube.

A final belt-drive touring model costs £60, and a three-speed chain-driven sidecar outfit £90.



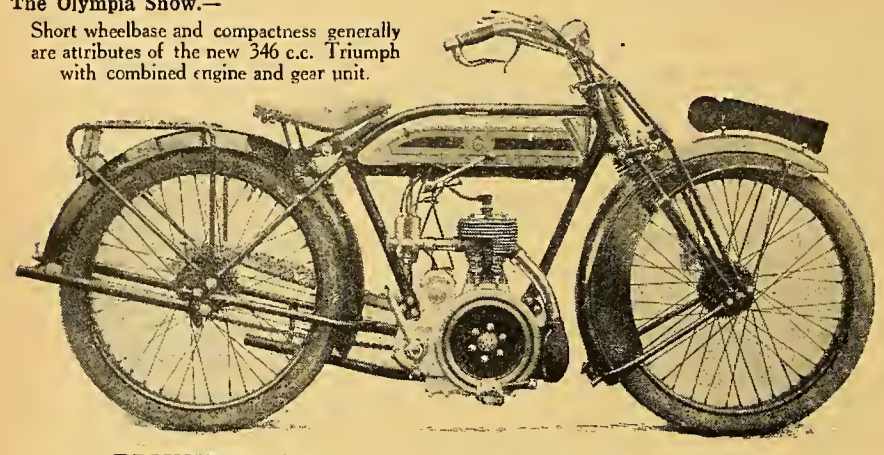
The new 498 c.c. sports Ariel has chain drive and improved silencing arrangements.



Lightweight Ariel with a 249 c.c. Blackburne engine fitted in a loop frame.

The Olympia Show.—

Short wheelbase and compactness generally are attributes of the new 346 c.c. Triumph with combined engine and gear unit.



TRIUMPH. (128.)

All Electrically Equipped.

2¾ H.P. MODEL.—72×85 mm. (346 c.c.); single cyl. four-stroke; side valves; mechanical lubrication, Triumph carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; 26×2½in. tyres. Price: Solo, not fixed.

TRIUMPH CYCLE CO., LTD., Priory Street, Coventry. —The new Triumph lightweight is slightly overshadowed by the heavy price reductions of its sister models and by the new Triumph policy of standardising electric lamps and hooters on all their machines; but it nevertheless stands out as one of the attractions of the Show. Engine and gear box form a unit with a capacious sump from which a plunger pump delivers oil under pressure to the crankshaft, timing gears, and lay-shaft of the gear box. There are no chains in the unit. The front wheel is a new departure for this firm, as it embodies an expanding brake, the drum of which carries the speedometer drive. This machine will not be available for delivery till April, and has not yet been priced.

2½ H.P. MODEL.—67.35×70 mm. (249 c.c.); single cyl. two-stroke; petroil lubrication; Triumph carb.; chain-driven mag.; 2-speed gear; clutch and kick-starter; chain-belt drive; 24×2½in. tyres. Price: Solo, £52 10s.

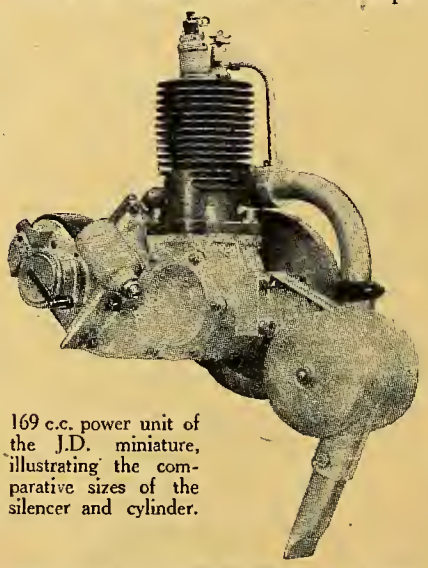
This model now has an engine of larger capacity, and the exhaust system has been redesigned in the interests of silence and neat appearance. A clutch is now incorporated with the gear box, a kick-starter is fitted, and large aluminium legshields are standardised. Lucas electrical equipment is included in the price.

3½ H.P. MODEL.—80.94×97 mm. (499 c.c.); single cyl. four-stroke; o.h.v. (4) valves; band pump lubrication; Triumph carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £96 10s.; with Sidecar, £125 12s. 6d.

This favourite sports machine has required no substantial alteration, but the sparking plug has been moved to the side of the cylinder head, where it is now perfectly accessible, and the twin exhaust pipes sweep forward in an easier curve to clear the Magdyno. The price reduction is most marked, seeing that full electric lighting and a bulb hooter are included in the new figure.

4 H.P. MODEL.—85×97 mm. (550 c.c.); single cyl. four-stroke; side valves; band pump lubrication; Triumph carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £93 10s.; with Sidecar, £121 2s. 6d.

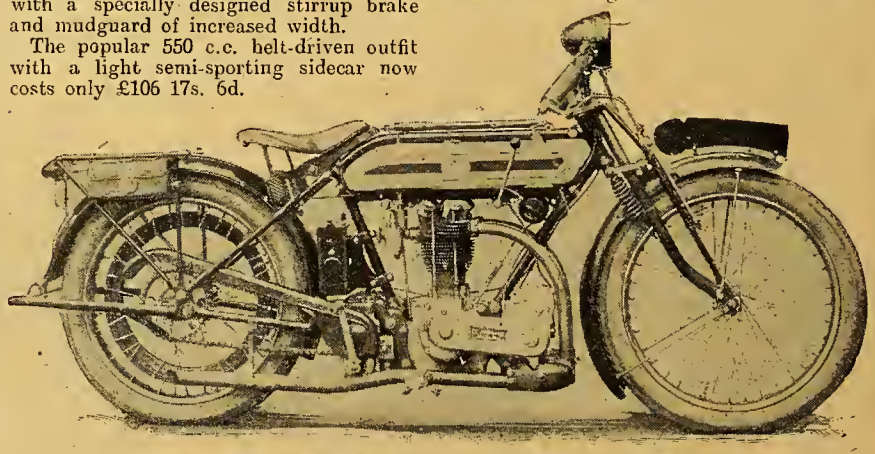
Like the o.h.v. and the chain and belt models, the all-chain Triumph has undergone no material alterations. A Magdyno lighting set and electric horn are included in the catalogue price, a very neat mounting for the battery case being provided behind the saddle tube. The Triumph-



169 c.c. power unit of the J.D. miniature, illustrating the comparative sizes of the silencer and cylinder.

Druid fork is now employed on this model with a specially designed stirrup brake and mudguard of increased width.

The popular 550 c.c. belt-driven outfit with a light semi-sporting sidecar now costs only £106 17s. 6d.



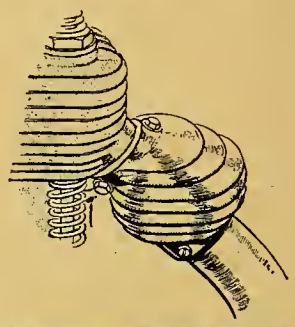
Speed, comfort and full equipment mark the 499 c.c. o.h.v. Triumph.

BEARDMORE-PRECISION. (109.)

Pressed Steel Construction.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £57 10s.; with Sidecar, £72 10s.

F. E. BAKER, LTD., King's Norton, Birmingham.—Ever since their introduction, the post-war Beardmore-Precision machines have been characterised by two special features differentiating them from most other makes, namely, pressed steel frame construction and the use of leaf spring forks. The latest addition to the range is a 346 c.c. medium-weight single-cylinder machine, which is intended to take a light sidecar if desired. This machine is fitted with Sturmey-Archer three-speed gear, and, in general specification, is similar to the larger models shown on this stand. A detail that does not escape the critical

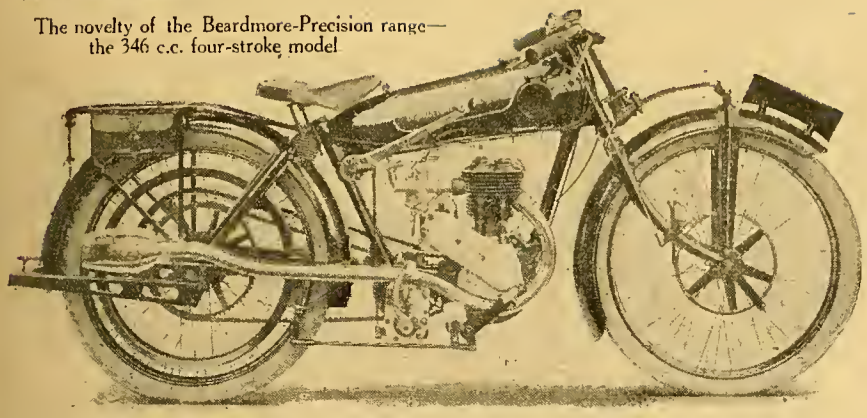


Special fins on the top end of the exhaust pipe of the 496 c.c. sports Beardmore.

eye is the fitting of a petrol filter immediately under the tank between the petrol pipe and the tank, and the latter, it will be recollected in these machines, forms part of, and lends its strength to, the frame, as does also the rear mudguard. The stand and carrier are also formed of steel channel instead of the more usual brazed tubing. The large and freely curving exhaust pipe and adequate silencer are noteworthy features of all models. A machine is also shown with 349 c.c. Barr and Stroud sleeve valve engine.

The Olympia Show.—

The novelty of the Beardmore-Precision range—the 346 c.c. four-stroke model



3½ H.P. MODEL.—81.1×96 mm. (496 c.c.); single cyl. four-stroke; side valves; mechanical lubrication; B. and B. or Amac carburetter; chain-driven magneto; Sturmey-Archer 3-sp. gear; clutch and kick-starter; all-chain drive; 700×80 mm. tyres. Price: Solo, £70.

Noteworthy features of the bigger Beardmore-Precision machines are the unit construction of engine and gear box, the Sturmey-Archer three-speed gear being incorporated in the crank case, the automatic lubrication system, all oil being contained in a sump the front part of which is ribbed for cooling, and the deeply-ribbed aluminium casting interposed between the cylinder and the exhaust pipe on the 496 c.c. model. The 496 c.c. model specified above is of the sports solo type, and the front forks are on the parallel link principle, but have the Beardmore leaf springing.

4¼ H.P. MODEL.—89×96 mm. (598 c.c.); single cyl. four-stroke; side valves; mechanical lubrication; B. and B. or Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £80; with Sidecar, £105.

The big single model follows closely the lines of the sports model just described, but naturally heavier equipment, footboards, and leg guards are included. On one example a two-seater sidecar is shown.

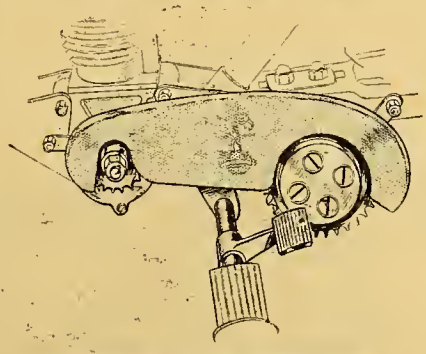
Spring-frame models are also available.

EXCELSIOR. (98.)

For Solo and Passenger Service.

1½ H.P. MODEL.—55×62 mm. (147 c.c.); single cyl. two-stroke; petroil lubrication; Mills carb.; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain-cum-belt drive; 24×2in. tyres. Price: £28 10s.

BAYLISS, THOMAS AND CO., King's Road, Tyseley, Birmingham.—A range of models varying from the miniature Villiers-engined lightweight of 147 c.c. up to a large and substantial 976 c.c. J.A.P.-engined sidecar outfit, is shown on the Excelsior stand. The smallest of these machines will attract great interest, not only on account of its sound practical construction, but also by reason of

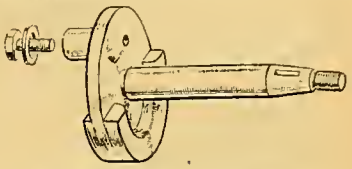


Neat chain guard on the smallest Excelsior model.

the very attractive price at which it is now offered to the public. It is a genuine lightweight, and offers also the advantage of the well-known Albion two-speed countershaft gear, which is incorporated with chain-cum-belt transmission.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive. Price with Sidecar, £123.

Internal expanding brakes, front and rear, and the Burman three-speed gear are provided on the large sidecar machine. Provision is made for taking up the shocks of transmission, both in the countershaft and in the rear chain sprocket. The mudguards are of large dimensions, and a neat tool chest is incorporated behind the saddle.



Overhung crankshaft of the new ultra-lightweight Omega.

HOBART. (101.)

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; sight-feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Price: Solo, £72.

HOBART CYCLE CO., LTD., Coventry.—Hobart has long been an honoured name in the lightweight world, and although proprietary engines are employed—a J.A.P. in this case and Blackburne in others—they show the result of this specialisation very clearly.

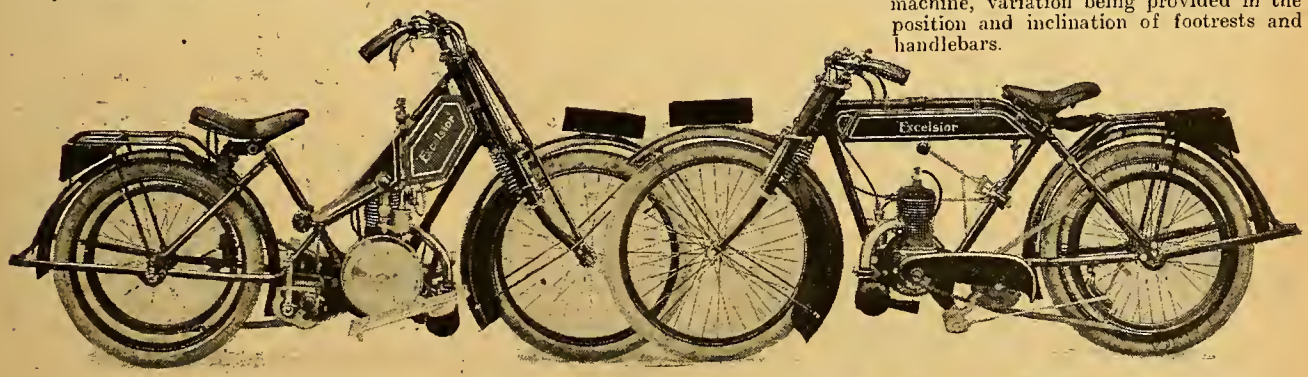
The specified model is a sporting type, and has the super-sports engine.

Other prices for the 250-350 c.c. machines extend upwards from £56.

1¾ H.P. MODEL.—60×60 mm. (170 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch, no kick-starter; chain and belt drive; 24×2in. tyres. Price: Solo, £32 18s. 6d.

A welcome addition is the new Hobart Junior with 170 c.c. engine. It is certain to find favour with those who are looking for a neat, practical, and reliable machine that is really light.

A light type of Brampton fork with central tension spring is fitted, and the cylindrical form of the tank gives a most pleasing appearance to the machine, suggesting that a special study has been made of providing the utmost accommodation in the smallest possible space. The Albion two-speed gear box is standardised. The miniature may be obtained either as a sports or a touring machine, variation being provided in the position and inclination of footrests and handlebars.



Open frame Excelsior two-stroke lightweight, suitable for motor cyclists of either sex.

The Bwlch-y-Groes-conquering Excelsior miniature with 147 c.c. Villiers engine

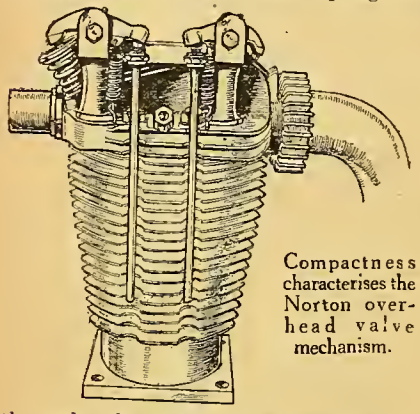
The Olympia Show.—

NORTON. (103.)

High-speed Mounts.

3½ H.P. MODEL.—79×100 mm. (490 c.c.); single cyl. four-stroke; overhead valves; hand pump lubrication; Mills or B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter (optional); chain drive; 26×2½in. tyres. Price: Solo, £98.

NORTON MOTORS, LTD., Bracebridge Street, Birmingham.—Chief interest centres round the 490 c.c. overhead-valve-engined Norton, which is the most recent addition to the range of these famous machines. A feature which at once catches the eye is the arrangement of supplementary return movement springs on



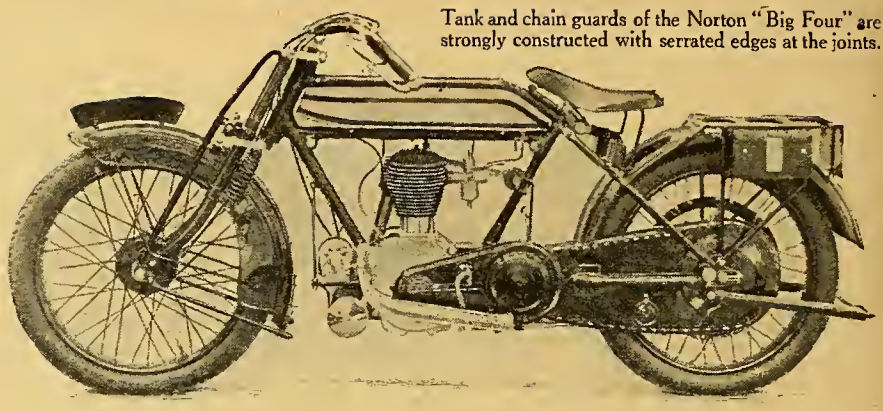
Compactness characterises the Norton overhead valve mechanism.

the push rods. The extra radiating fins at the point where the exhaust pipe leaves the detachable cylinder head are well placed to ensure maximum cooling effect, and the fins on the cylinder barrel itself are brought unusually low down. Practical riders will be impressed by the thorough way in which the brakework has been carried out on all Norton models. An internally-expanding brake is employed on the front wheel in all cases, whilst that on the back wheel takes effect with trailing action on a dummy belt rim.

3½ H.P. MODEL.—79×100 mm. (490 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; Mills or B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £79.

No great change has been made to the side-valve Norton, which has always been as fast and powerful as many specially-designed o.h.v. machines.

The direct belt driven model is altered



Tank and chain guards of the Norton "Big Four" are strongly constructed with serrated edges at the joints.

only in price; it is now £60, and is one of the very few direct-driven machines above 350 c.c.

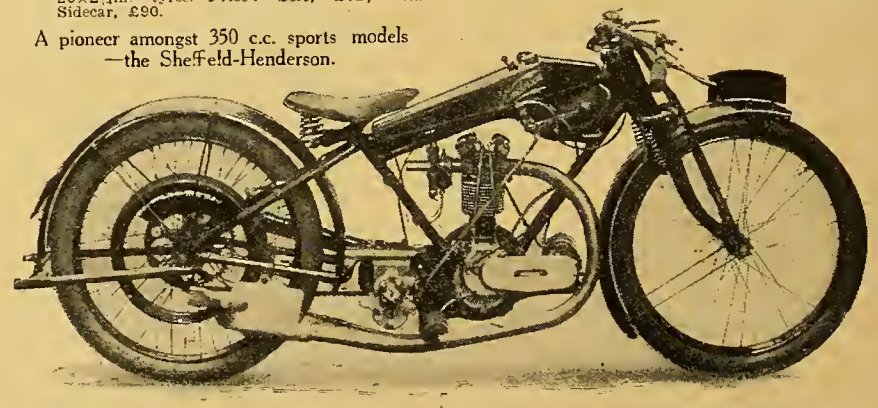
"Big Four" (633 c.c.) touring and tradesman's carrier sidecar outfits complete the exhibit, the machine, solo, costing £84, the sidecars varying according to style. The general finish of these machines, especially the clean exterior of the crank case, is commendable.

SHEFFIELD-HENDERSON. (165.)

With a Speed Reputation.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £72; with Sidecar, £96.

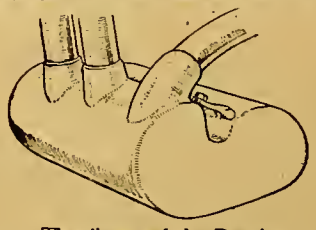
A pioneer amongst 350 c.c. sports models —the Sheffield-Henderson.



HENDERSON MOTORS, LTD., Fitzwilliam Street, Sheffield.—All four of the models on this stand are of the same nominal horse-power and are of the same general lines as regards frame, tanks, and detail. There is, however, a wide difference in the type of engine fitted.

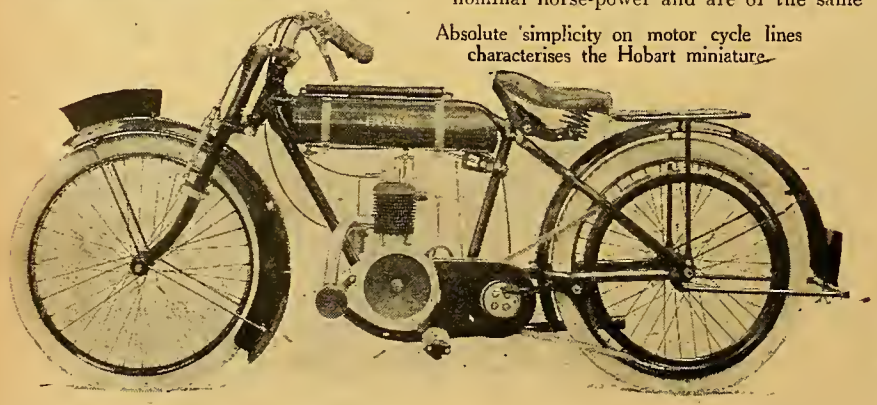
One model, as specified, which has a 348 c.c. Blackburne single-cylinder engine with side valves, is of the touring type with deep mudguards, a carrier, and the fullest of equipment. The next has the overhead valve single-cylinder engine, and the makers claim 70 m.p.h. from the machine as an attraction to those whose sporting instincts favour high speed and dropped bars

The third machine lies midway, having the same engine as the first model, but special cams and aluminium piston and narrow guards. It is of rakish build. As a variation a fourth model is offered with the Bradshaw oil-cooled single-cylinder engine and mechanical lubrication. All of them are shown with



The silencer of the Dunelt.

suitable sidecars attached, but the special overhead valve machine appears also as a solo mount. A somewhat unusual outline is given to all the machines by the presence of the tool kit just below that portion of the tank which contains oil and by the curious shape of the tank itself.



Absolute simplicity on motor cycle lines characterises the Hobart miniature.

Week by Week

—throughout the Year, we have unfolded the tale of the Tyre with NINE lives.

Last week we gave a resume of our chief successes during the season.

When so many famous crack riders continue to rely on **HUTCHINSON** for success and personal safety—it is very evident that they ***know*** from experience that there is NO Better tyre they can choose.

Everywhere the attention of Motor Cyclists is being focussed upon the wonderful records achieved on **HUTCHINSON.**

No wonder so many purchasers of new machines are specifying "The Tyre with Nine Lives." They insist on the tyre that experts have proven—the famous product of the House of **HUTCHINSON,** tyre makers for over half a century.

At it Again!

Herbert Le Vack and J. L. Emerson put up some sensational speed records on **HUTCHINSON** *at Brooklands on Saturday, November 18th, under unfavourable conditions.*

Le Vack achieved three world's records. Class E, standing 10 miles—covered in 6 mins. 26.9 secs. (equivalent to the phenomenal speed of 93.04 m.p.h.). **In the Hour:** 89 miles, 1,591 yds. were completed at a speed of 89.90 m.p.h. 100 Miles covered in 1 hr. 6 mins. 43.4 secs. (Le Vack's speed was greatly increasing towards the end of the 100 miles).

Emerson's Performance: Class E.—100 mile record to 1 hr. 20 mins. 14.22 s. (equivalent to 74.77 m.p.h.).

STAND **9** MOTOR CYCLE SHOW.

Out of 185 existing records at Brooklands—150 are held on **HUTCHINSON.**

COMPARE THESE PRICES.

Size.	1923 Price.	1922 Price.
24×2¼, strong	**26/0**	36/6
24×2½×2¼, strong ...	**28/6**	40/0
26×2¼, strong	**26/9**	37/3
26×2¼, extra strong...	**33/9**	47/0
26×2½×2¼, extra strong	**36/6**	55/3

Size.	1923 Price.	1922 Price.
650×65, small car	**39/0**	63/0
28×3, small car	**45/9**	74/3
710×85 small car*...	**54/0**	81/0
29×3½ front ..... oversize† ...	**59/3**	89/3

* To fit 650×65 rim. † To fit 28×3 rim

FULL LIST ON REQUEST

You are cordially invited to Stand ***NINE****, where The Tyre with* ***NINE*** *Lives will be shown.*

Your dealer can supply—BUT—you must ask for

STAND **9** MOTOR CYCLE SHOW.

SUPERSTUDDED

HUTCHINSON TYRES

Rubber Manufacturers 1850.
Tyre Manufacturers 1870.

HUTCHINSON TYRES,
70, Basinghall Street, E.C.

THE TYRE WITH NINE LIVES

Two other of PRICE'S preparations equally as good as Huile de Luxe

The following remarks will be of interest to the Motor Cyclist enjoying winter runs on a sound machine suitably protected against the weather, but the cycle parts of his machine require better protection. The hubs, for instance, contain comparatively delicate bearings soon ruined by wet and grit, as has been frequently pointed out in the A.C.U. Judges' Reports. The chains, also, unless completely enclosed and running in oil, must be proofed against showers of mud.

PRICE'S

Hub Lubricant Stiff

frequently commended in the Motor Cycle Press as ideal for filling hubs, is a highly refined pure hydrocarbon, which when rendered fluid by gentle warming, can be readily injected with the usual metal syringe or pump. It fills up the bearings and completely seals the openings against the ingress of wet and grit. One filling remains good for several months. Several Motor Cycle Manufacturers send out their machines with the hubs already packed. It is excellent also, for use in grease cups and for laminated springs, either gaitered or open.

PRICE'S

Rangraphine

used and recommended by the leading chain makers in the Country is an efficient blend of pure graphite with Rangoon Jelly. The former lubricates and prevents the accumulation of grit, whilst the latter is the standard preparation for preservation from rust. Periodically the chains should be cleaned and soaked in melted Rangraphine, which also is best for smearing on the teeth of the chain wheels. Smeared on threads of valve caps and spark plugs, it renders them easily removed yet gas tight.

A tin of each, *i.e.* 2 tins, for 2/- inclusive

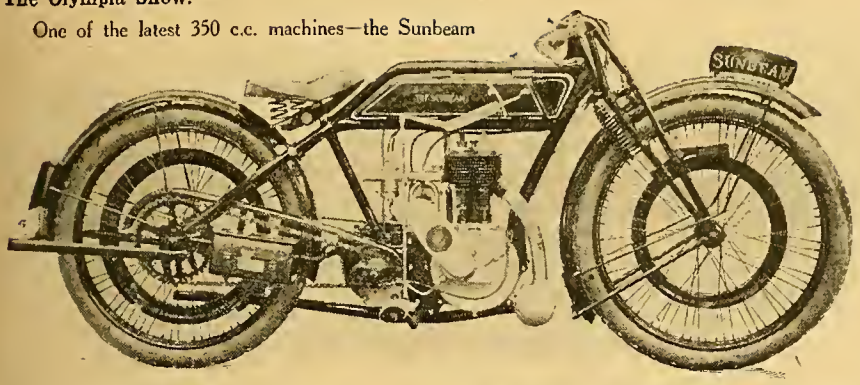
Where any Motor Cyclist has a difficulty in obtaining supplies locally, we will send for 2/- a carriage paid parcel containing a sample half pound tin of each preparation sufficient for several months use and latest lists and useful literature.

PRICE'S PATENT CANDLE COMPANY LIMITED,

Battersea, S.W.11.

The Olympia Show.—

One of the latest 350 c.c. machines—the Sunbeam



SUNBEAM. (110.)

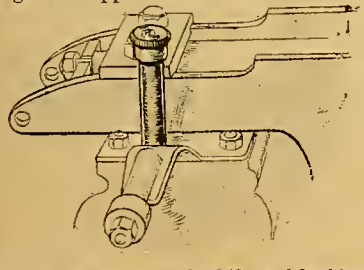
Speedy Side-valve Singles.

2¾ H.P. MODEL.—70×90 mm. (347 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2⅜in. tyres. Price: Solo, £94 10s.

JOHN MARSTON, LTD., Wolverhampton.—Success in racing and competitions both at home and abroad has been the lot of the Sunbeam last season, and the reasons for these achievements and for the well-deserved popularity that these machines enjoy cannot be gathered from a perusal of the bare specifications of the Sunbeam range. The reasons for the Sunbeam success lie rather in details of design, workmanship and finish, which have been brought to a degree of perfection that must be seen to be fully appreciated. Visitors to the Sunbeam stand have the opportunity of seeing the complete range of these machines, which now caters for all classes. The type that won both the T.T. and the great French race at Strasbourg this year, with long-stroke engine (77×105) is on view; and much interest is also shown in the recently introduced 347 c.c. lightweight, which incorporates all the well-known refinements of the larger models, such as oil-bath chain cases, powerful brakes operating on dummy belt rims both front and rear, and the Sunbeam three-speed gear. Sunbeam enthusiasts and motor cyclists in general will welcome the reappearance of this model in its present advanced form.

3½ H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. four-stroke; side valves; drip-feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £110 5s.

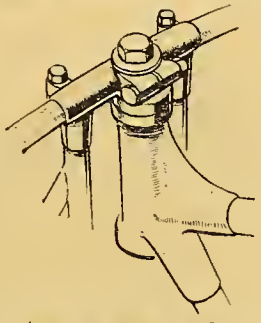
To the rider who desires a fast solo mount with reasonable comfort for serious touring the 499 c.c. "light solo" makes a strong appeal. The sweep of the exhaust pipe on this and the 492 c.c. T.T. sporting model is a distinctive feature in the general appearance of these machines.



Gear box lubricator on the 348 c.c. Matchless

4¼ H.P. MODEL.—85×105 mm. (599 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-speed gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Solo, £120 15s.; with Sidecar, £157 10s.

The 599 c.c. sidecar outfit remains for the most part unaltered. The leaf-spring front fork on this and on the 976 c.c. J.A.P.-engined twin cylinder model deserves special notice.



Omega-Jap handle bar fixing.

OMEGA. (140.)

An Attractive Miniature.

1.7 H.P. MODEL.—60×60 mm. (170 c.c.); single-cyl. two-stroke; petroil lubrication; Amac carb.; chain-driven mag.; single gear; no clutch or kick-starter; belt drive; 24×2in. tyres. Price £25.

W. J. GREEN, LTD., Omega Works, Coventry.—The Omega Junior is a very interesting addition to the range of featherweights, and in single-geared form is remarkably cheap, whilst several transmission options are available for those who can afford them. Notable points are the low saddle position (26in. from ground level), the readiness of the engine to two-stroke at low speeds and down hill, the light and original spring fork, and the use of two belt rim brakes on the rear wheel, one being operated by cable from the handle-bars.

3.5 H.P. MODEL 2.—71×88 mm. (348 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; single gear; no clutch or kick-starter; belt drive; 26×2¼in. tyres. Price: Solo, £38; with Sidecar, £53.

The well-known 348 c.c. two-stroke engine is now obtainable on five different models, of which the sidecar outfit with three-speed gear, chain drive, clutch and kick-starter at £75 is especially attractive. This engine may also be had mounted in the firm's duplex frame, giving unusually good weather protection. Numerous small refinements have been made in the machine; the most ostensible change is the adoption of a huge aluminium silencer.

2.9 H.P. MODEL 5.—70×76 mm. (292 c.c.); single-cyl. four-stroke; side valves; drip lubrication; Amac carb.; chain-drive mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £63 10s.

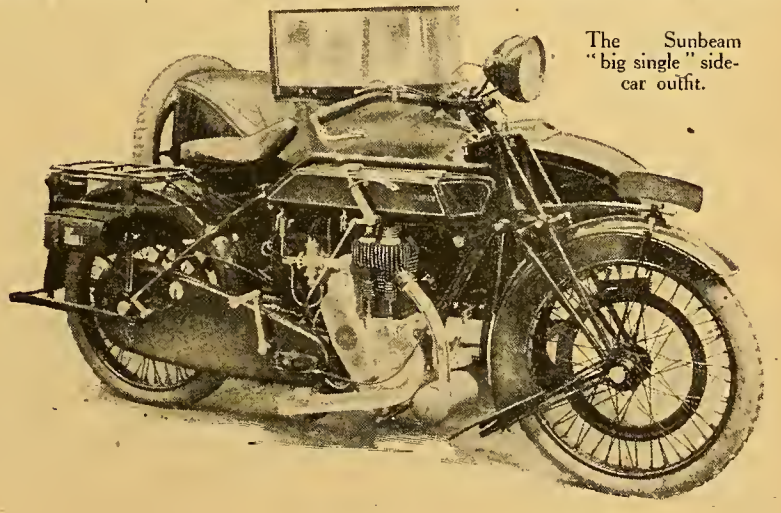
This model has undergone very little change from last year. It now has all-chain drive, an expanding brake in the rear hub, the Omega patent spring fork, and a front belt rim brake instead of the stirrup pattern. Alternative transmissions may be specified.

BRADBURY. (108.)

Three Sturdy Four-strokes.

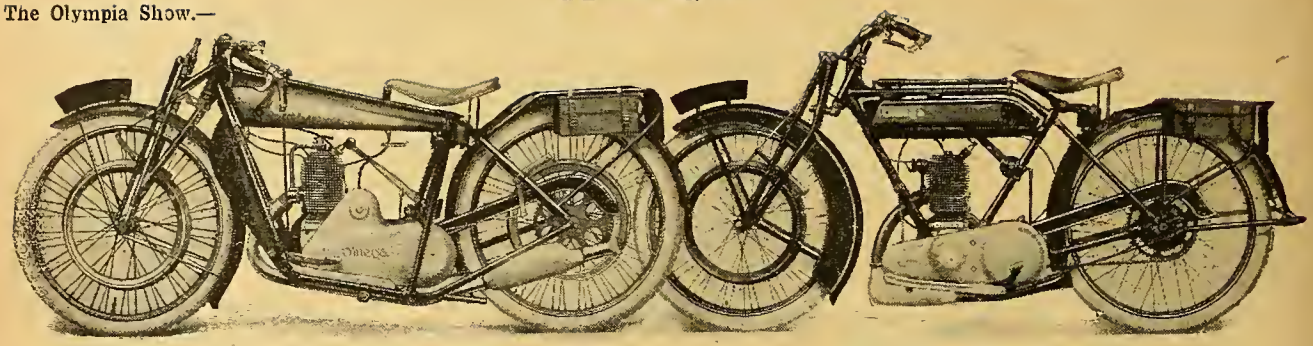
6 H.P. MODEL.—74.5×86 mm. (749.75 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £95; with Sidecar, £122 8s.

BRADBURY AND CO., LTD., Oldham.—The Bradbury twin (750 c.c.) sports model has quite recently broken records at Brooklands, and this machine deservedly holds pride of place on their stand at Olympia, for its general lines are extremely attractive, and it at once commands the attention of those who are seeking a high-powered mount which shall not at the same time be excessively



The Sunbeam "big single" sidecar outfit.

The Olympia Show.—

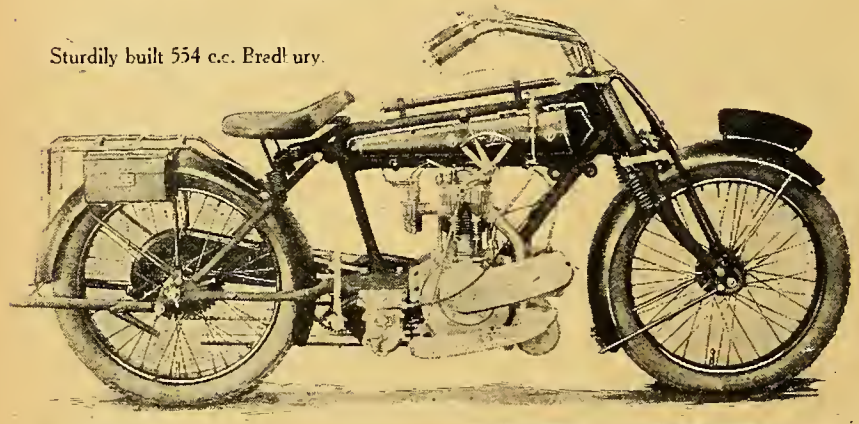


Two examples of the Omega; that on the left has a duplex frame.

neavy. It is difficult to say exactly how the makers have achieved comparative lightness with this model, but a glance followed by a brief test with the hand suffices to show that they have succeeded, and that without sacrificing solidity.

2¾ H.P. MODEL.—74.5×80 mm. (350 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2⅜in. tyres. Price: Solo, £65.

Sturdily built 554 c.c. Bradbury.



The medium-weight 350 c.c. single-cylinder machine is also an attractive general-purpose mount. It is shown fitted with Moss three-speed gear and all-chain drive, and a feature that will not escape the notice of practical long-distance tourists is that 2⅜in. section tyres are standardised instead of the too common smaller size.

The new 554 c.c. single-cylinder model is similar in general specification to the smaller machine. In all cases internally-expanding brakes are fitted to the front wheel, and Druid front forks are employed. A large silencer is provided so that these machines should run very quietly, and the frames in each case afford a low and comfortable riding position, whilst the centre of gravity is sufficiently well forward to provide easy steering.

HENLEY. (111.)

4¼ H.P. MODEL.—85×96 mm. (545 c.c.); single cyl. four-stroke; side-by-side valves; mechanical lubrication; Amac or B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £72 10s.; with Sidecar, £92 10s.

HENLEY ENG. CO., LTD., Steward Works, Doe Street, Birmingham.—There are quite a number of signs of very careful design on the larger Henley that serve to lift it out of the ruck. The neat knee grip fixture (concealed) and the capacious tool box on the carrier will serve as instances of this; and the mechanically-minded will appreciate that such things as frame design are on the same high standard. Burman gear boxes are fitted in every case.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; overhead valves; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch, no kick-starter; all-chain drive; 26×2½in. tyres. Price: Solo, £72 10s.

Following the same general lines, but stripped of all unessential fitments, is a nice-looking speed model which is well up to the general high standard of excellence of the many machines in the Show employing the o.h.v. Blackburne engine.

348 and 249 c.c. side valve Blackburne-engined singles are priced at £63 10s and £56 10s. respectively.

IVY. (64.)

New Four-stroke Model.

2¾ H.P. MODEL.—75×79 mm. (349 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in tyres. Price: Solo, £70; with Sidecar, £92.

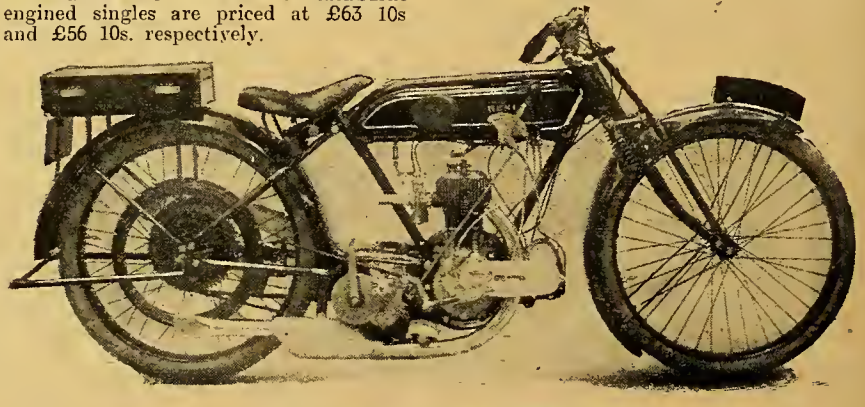
S. A. NEWMAN, LTD., Aston Cross, Birmingham.—The principal feature of the Ivy exhibit is the new side-valve-engined four-stroke, which makes its appearance for the first time. This does not differ radically from the two-stroke-engined models, which are so well-known, and which are shown on the stand in various models. It is a quite clean-looking little machine, arranged in an entirely conventional manner, enamelled the khaki colour which is distinctive of the Ivy machines, and notable for a double down tube from the steering head to the crank case.

Designed in the first place as a comfortable touring machine, it has deep mudguards and extra leg guards for riding in bad weather.

3 H.P. MODEL.—75×79 mm. (349 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £65.

The two-strokes have been slightly modified in detail, and are shown mainly as solo mounts, one having the dropped frame suitable for a lady's use, but all of similar design. To one a collapsible sidecar is fitted.

The only real alteration to the smaller (250 c.c.) Ivy lies in a change of plug position, *i.e.* to the rear of the cylinder head.



Chain driven 348 c.c. Henley-Blackburne.

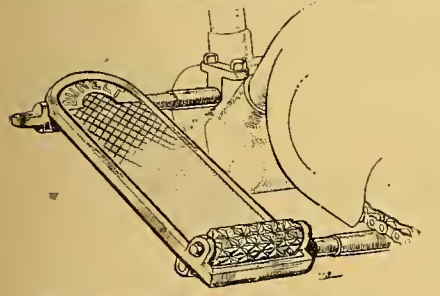
The Olympia Show.—

DUNELT. (166.)

Big Single Two-Strokes.

4 H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. two-stroke; drip-feed lubrication; Amac carb.; chain-driven mag.; 3-speed gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £75; with Sidecar, £89 10s.

DUNFORD AND ELLIOT (SHEFFIELD), LTD., Bath Street, Birmingham.—The Dunelt is the only big single-cylinder machine which employs a two-stroke engine, and even in the two-stroke world it is distinctive because it has a double diameter piston. The cylinder is placed at an



The Dunelt footplates are slightly splayed and so provide a natural position for the rider's feet.

angle, thus allowing the tank to slope to a lower point at the rear, and also bringing the saddle position lower. One solo machine is shown of touring type with handlebars of black finish, wide mudguards, and the tools in their leather case protected by a metal strengthening box. The other three examples on the stand all have sidecars, and beyond this addition do not differ from the solo mount to any extent. One is shown completely equipped with a celluloid windscreen of large size clipped to the handle-bars, which should be remarkably effective, extra leg guards for the rider, a shield for the sidecar, and a gear-driven speedometer bolted to the handlebars. Two of the sidecar machines, however, have final belt drive, and one has an all-chain transmission; with sidecar it is listed at the very reasonable price of £95.

BROUGH. (60.)

80 m.p.h. 500 c.c. Flat Twin.

496 c.c. MODEL.—70×64.5 mm. (496 c.c.); flat twin four-stroke; overhead valves; mechanical lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; no clutch or kick-starter; chain drive; 26×2½in. tyres. Price £100.

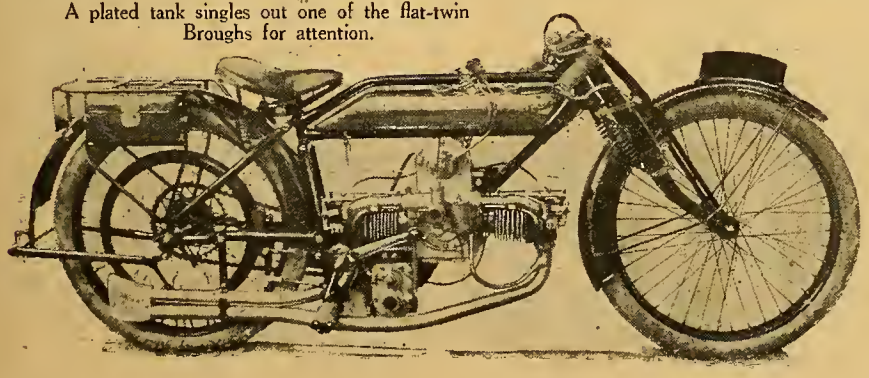
W. E. BROUGH AND CO., Basford, Nottingham.—The centre of attraction on the Brough stand is the 496 c.c. flat twin sports model, which is guaranteed to attain a speed of 70 m.p.h., or, if a slightly increased price be paid for extra attention, 80 m.p.h. The model in question is one of the best-looking machines in the Show, having a nickel-plated tank with rounded corners, and, of course, the long separate exhaust pipes ending in an aluminium fish tail, which all good sporting models should have. This year the cylinder head has been considerably modified, substantial roller bearings are used for the connecting rods, and the aluminium pistons are of the firm's own alloy. The location of the handle-bars, foot-rests, and saddle affords an exceptionally fine riding position with a real sense of control.

692 c.c. MODEL.—70×90 mm. (692 c.c.); twin cyl. four-stroke; side-by-side valves; drip lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £90; with Sidecar, £120.

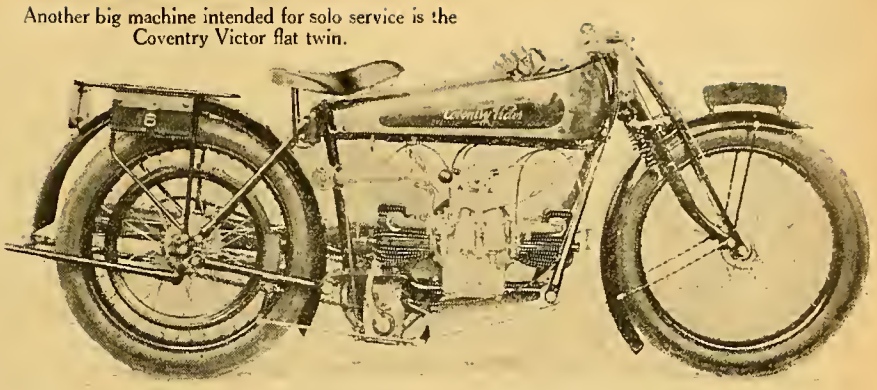
The other two models on the stand are the new 496 c.c. machine which has side valves and 26×3 in. tyres, but otherwise is much on the lines of the sporting model, and the 692 c.c. model especially meant for sidecar work. Both these machines have the chain drive from engine to gear box, concealed and protected by an aluminium coverplate, in distinction to the sporting model, on which the chains are visible. These two models are fitted with very large mudguards, affording ample protection to the rider and to the mechanism.

The location of the gear box (under the rear cylinder) and the method of engine mounting, permits the wheelbase of the Brough to be kept within reasonable limits.

A plated tank singles out one of the flat-twin Broughs for attention.



Another big machine intended for solo service is the Coventry Victor flat twin.



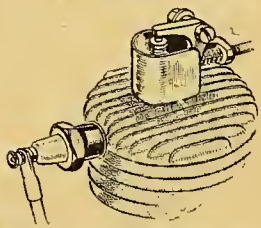
COVENTRY VICTOR. (28.)

Medium-weight Flat Twins.

5.7 H.P. MODEL.—75×78 mm. (688 c.c.); flat twin cyl. four-stroke; side valves; mechanical lubrication; twin Cox-Atmos carburetters; gear-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×3in. tyres. Price: Solo, £110; with Sidecar, £136.

COVENTRY VICTOR MOTOR CO., LTD., Coventry.—There is something very imposing about the 80 m.p.h. Coventry Victor. In the same way as a semi-stripped 250 c.c.-350 c.c. machine may be likened to a torpedo-boat destroyer of the road, the big flat-twin under review may be called a Dreadnought. It has fairly full touring equipment, adequate mudguards, large tyres, and a 2½ galls. capacity saddle tank.

Technically, the most interesting feature about the engine (which follows standard lines except for a higher compression ratio and a modified valve gear) is the induction system. Two carburetters are employed, and a valve-controlled air inlet funnel faces forward. Air pressures in the induction pipe, both float chambers, and the fuel tank are balanced by connecting pipes, thus ensuring that a uniform flow of petrol takes place at the jets at all speeds, and irrespective of jars caused by road inequalities.



Protected compression release on the McKenzie engine.

An interesting detail refinement on this model is an aluminium undershield which also serves as a front stand. An addition of £5 to the list price is made for the 80 m.p.h. guarantee.

On a standard sports model, also shown, only one Cox carburetter is employed; the tank is not of the saddle variety, and the tyre is 28×2½in.

Touring types (one called the "Grey Ghost" and finished in grey) with and without the Holt spring wheel sidecar complete the exhibit. The prices are:—De Luxe touring solo £100, with Holt sidecar, £125; standard touring or sports solo £97 10s., with sidecar £119.

The long wheelbase model has been discontinued.

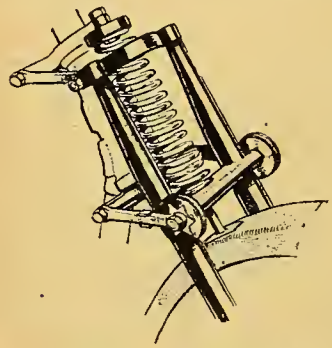
The Olympia Show.—

ROVER. (131.)

250 c.c. Model Introduced.

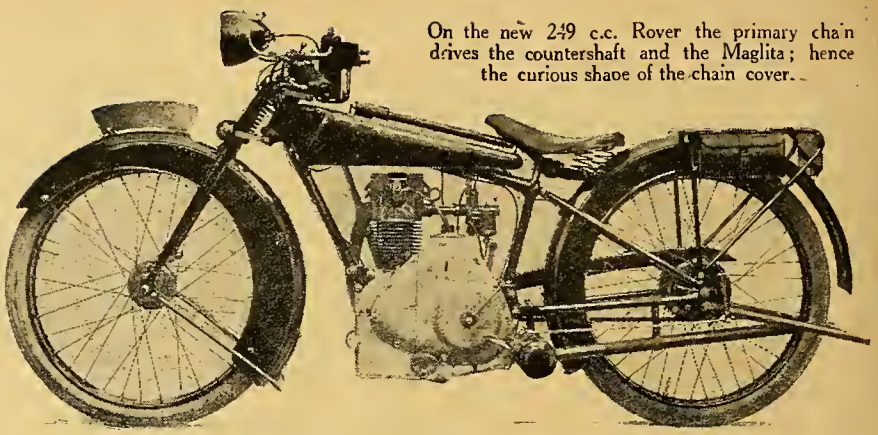
2.5 H.P. MODEL.—63×80 mm. (249 c.c.); single cyl. four-stroke; overhead valves; mechanical lubrication; B. and B. carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £85.

THE NEW ROVER CYCLE CO., LTD., Coventry.—The Rover lightweight is numbered among the chief attractions of the Show, and its novel power unit is separately staged for the admiration of enthusiasts. This unit comprises engine, oil sump, gear box, kick-starter, clutch, and magneto, built up in a common assembly. The engine has overhead valves operated by roller bearing rocker shafts, and the detachable head is fixed by three studs. The primary drive is triangular, the chain passing over the magneto sprocket. In order to withstand the pull of the drive, a specially strengthened armature shaft is incorporated in the M-L Maglita. The chain is adjusted by bodily moving the magneto. The gudgeon pin bush is the only plain bearing in the unit. Lubrication is by splash, an oscillating plunger pump being used to raise oil from the sump into the crank case. An external lever adjusts the delivery aperture of this pump. Very attractive features of the machine are the B. and D. shock absorbers on the front fork, the new saddle tank, and the spring-up back stand.



Spring forks embodying B. & D. shock absorbers on the Rover lightweight.

On the new 249 c.c. Rover the primary chain drives the countershaft and the Maglita; hence the curious shape of the chain cover.



4 H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. or Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Solo, £95 Sports, £100 Standard; with Sidecar, £125 Sports, £130 Standard.

No changes have been thought necessary in this machine, except that, in view of increased police activities, the silencing of the sports edition has been substantially improved.

5-5 H.P. MODEL.—74×85 mm. (654 c.c.); twin cyl. four-stroke; side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: Solo, £115; with Sidecar, £145.

This model remains unchanged.

RAY. (16.)

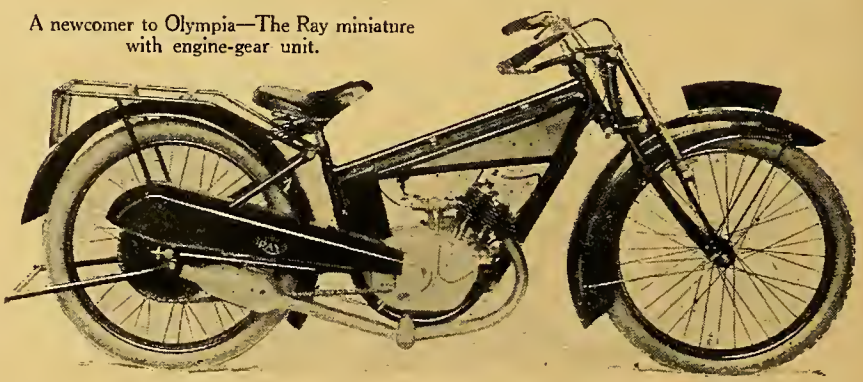
A Refined Miniature.

2 H.P. MODEL.—60×70 mm. (193 c.c.); single cyl. four-stroke; side valves; automatic lubrication; Amac carburetter; flywheel mag.; 2-sp. gear; clutch, no kick-starter; gear and chain drive; 24×2¼in. tyres. Price, £40 19s.

W. H. RAVEN AND CO., LTD., 223, Castle Boulevard, Nottingham.—Weighing 130 lb. and with a saddle height of only 24in., the Ray is a perfect miniature without the somewhat crude specification of the average machine in its class.

It has an engine and gear unit and metal plate clutch, all running in oil from the crank case sump. Final drive is by ½×0.205in. chain, also lubricated by oil from the crank case.

A newcomer to Olympia—The Ray miniature with engine-gear unit.

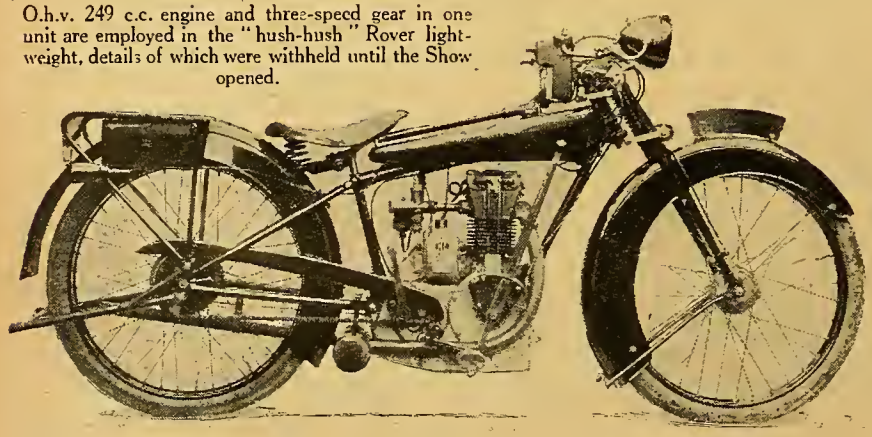


Accessibility has been the aim of the designer. Timing gear, cylinder, gears, and clutch may all be removed in a few minutes, leaving the crank case *in situ* in the loop frame. Plain bearings are employed in the engine—white metal for the big end—but the gear main shaft runs in ball races.

Quite a novelty is the use of a flywheel magneto, which, of course, gives one useless spark with each complete cycle. A plain electric head lamp supplied direct from a lighting coil in the magneto costs 30s. extra, and a more elaborate lighting set, including a battery, £4 2s. 6d.

The rear brake is of the external contracting type, provided with a neat spring

O.h.v. 249 c.c. engine and three-speed gear in one unit are employed in the "hush-hush" Rover lightweight, details of which were withheld until the Show opened.

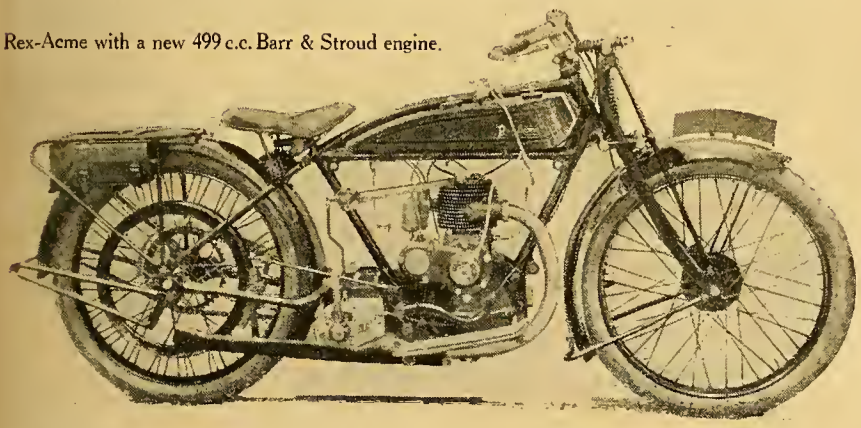


The Olympia Show.—

locking wing nut for adjustment. 175 m.p.g. fuel consumption and a rather remarkable road performance are claimed for this thoroughly workmanlike little solo machine.

sleeve valve engine mounted in a frame at the Show. The installation is particularly neat. The Best and Lloyd oil pump beds very nicely into the engine at a height which ensures its safety in a tumble.

Rex-Acme with a new 499 c.c. Barr & Stroud engine.

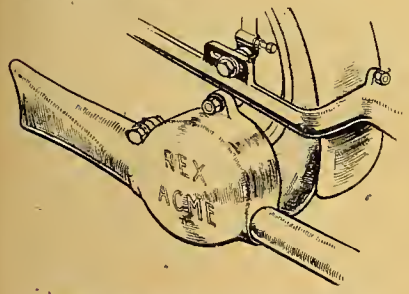


REX ACME. (133.)

Two-stroke and Sleeve Valve Engines.

1.7 H.P. MODEL.—60×60 mm. (170 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; clutch, no kick-starter; chain and belt drive; 24×2in. tyres. Price £32 18s. 6d.

THE REX MOTOR MFG. CO., LTD., Coventry.—The Rex Acme range includes no fewer than seven models, of which interest will no doubt centre particularly in the two chief novelties. The cynosure of the exhibit is the Rex Minor, a 112 lb. feather-weight of neat and handsome design equipped with the firm's own two-stroke engine of 170 c.c.



Compact silencer on the Blackburne-engined Rex-Acme.

2¾ H.P. MODEL.—70×90.5 mm. (349 c.c.); single cyl. four-stroke; sleeve valve; drip lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price £65 15s.

The Rex Acme touring models are obtainable with a variety of engines. The heavy steering head, with special provision for bearing lubrication, is an excellent feature. The double girder rear stand and the internal expanding brakes deserve notice. On the sports models the straight-through exhaust pipe has a curiously-shaped expansion and tail box at its rear end.

4 H.P. MODEL.—86×86 mm. (499 c.c.); single cyl. four-stroke; sleeve valve; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £95; with Sidecar, £119/18/6.

This is noteworthy as being the only example of the 499 c.c. Barr and Stroud

SCOTT. (136.)

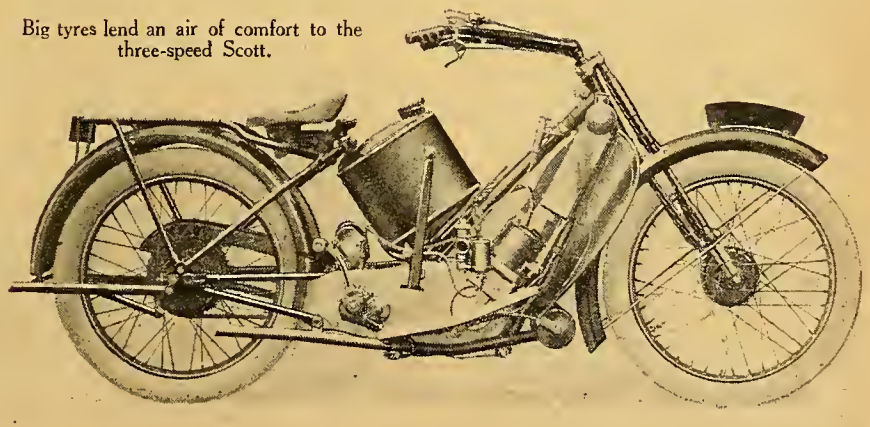
Three-speed Water Cooled Two-stroke.

3½ H.P. MODEL.—73×63.5 mm. (532.5 c.c.); side-by-side twin cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £110; with Sidecar, £135.

SCOTT MOTOR CYCLE CO., Saltaire, Yorks.—The new three-speed Scott is an altogether bigger and heavier model than its predecessors, though it is still lighter than many four-stroke rivals of less capacity. The gear and magneto form a unit, readily detachable from the frame. The front chain is easily adjusted by sliding the gear box in its slotted cradle, and alignment cannot be lost in the process. The rear brake on this model is of the expanding pattern, and the wheel is detachable. Very wide channelled mudguards are fitted. The gear ratios can be altered very rapidly by changing the front sprocket of the secondary chain. A 3-gallon tank is standard, and a Magdyno can be readily fitted in the space behind the tank.

3½ H.P. MODEL.—73×63.5 mm. (532.5 c.c.); twin cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven magneto; 2-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Solo, £95; with Sidecar, £120.

Big tyres lend an air of comfort to the three-speed Scott.



The standard two-speed model remains practically unaltered for next season, except that an internal expanding front wheel brake is now fitted.

3½ H.P. MODEL.—70×63.5 mm. (486 c.c.); twin cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Solo, £89; with Sidecar, £110.

The famous Squirrel has two minor but welcome alterations. The front brake is now of the expanding type, and the twin sight feeds of the lubrication system have been raised to a position where they are more easily watched.

POWELL. (167.)

Two-stroke Models Introduced.

4 H.P. MODEL.—85×96.5 mm. (547 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £90; with Sidecar, £110.

POWELL BROS., Wrexham.—Of the three 547 c.c. Powell machines, one is a sports model with low handle-bars and a low saddle position. The second is a fully-equipped touring machine, and the third has a sidecar. All three are interesting by reason of the high finish, the exceptionally workmanlike way in which the accessories and details are carried out, and the fact that the single-cylinder engine is carried in an inclined position, instead of vertically as is usual. Inclined as it is, the cylinder gives more room in which to work on any part of the engine, and to a certain extent better cooling is obtained. In addition, this machine has now a really serviceable front wheel brake, and seems altogether to be the work of practical riders.

2½ H.P. MODEL.—67×70 mm. (247 c.c.); single cyl. two-stroke; drip feed lubrication; B. and B. carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 24×2¼in. tyres. Price £45.

A smaller model is a two-stroke on conventional lines and of very light weight. Care, however, has been taken to include everything which the rider may desire for the operation and control of the motor cycle. Mudguards of adequate width are fitted to protect the mechanism and the rider. There is also a 343 c.c. Villiers-engined model, which, with a three-speed gear, is suitable for light sidecar work.

The Olympia Show.—

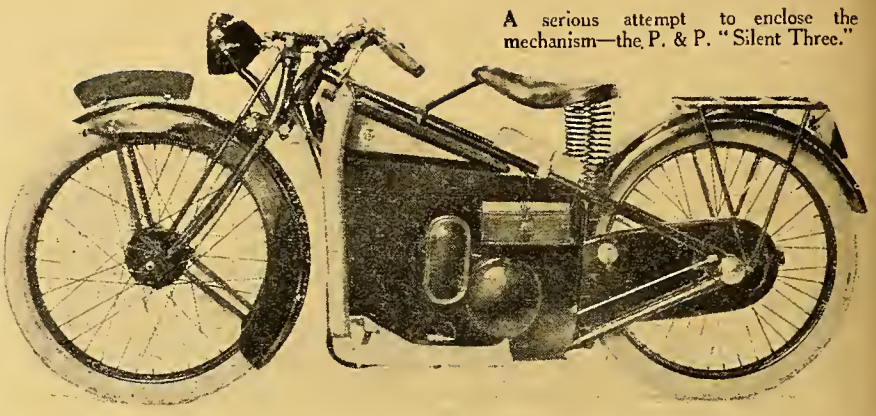
P. & P. (146.)

Silence First.

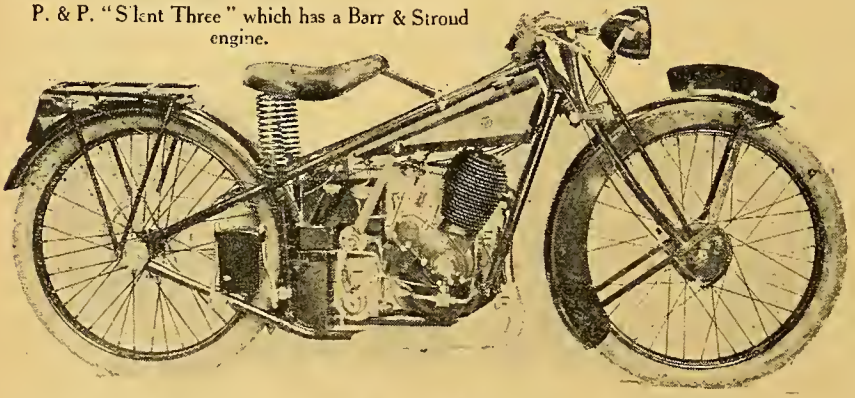
3.5 H.P. MODEL.—70×90.5 mm. (349 c.c.); single cyl. four-stroke; sleeve valve; mechanical lubrication; B. & B. carburetter; gear-driven magneto; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £75; with Sidecar, £97 10s.

PACKMAN AND POPPE, Moor Street, Coventry.—Labelled the "Silent Three," this is a machine of which every detail will repay special attention, the design being original throughout. Starting with the B. & S. sleeve valve engine as a basis, the makers put silence in the forefront of their aims. Low down in front of the engine cradle is mounted an enormous expansion box, so constructed of aluminium as to destroy "ring." From this a central pipe leads to a large welded steel silencer above the bottom bracket, the gross capacity of the system being fourteen times that of the combustion chamber. To silence the transmission heavy ⅝ Renold chains are enclosed in tight-fitting aluminium cases. The frame is duplex with straight members running from the cleverly designed steering head to the rear hub. The live axle runs on two double-row self-aligning bearings provided with felt washers and dust caps. Lubrication is by a Best mechanical pump, self-priming by gravity from the tank. Ingenious provision is made for fitting leg shields, side shields, and an underscreen. The saddle is hinged in front and operated on two gigantic coil springs. Altogether a most interesting machine.

A serious attempt to enclose the mechanism—the P. & P. "Silent Three."



P. & P. "Silent Three" which has a Barr & Stroud engine.



lable. Mudguarding is exceptionally complete—it has been further improved for next year—and the entire mechanism, except the cylinder, is completely enclosed.

The friction transmission has also been improved, the face disc being reversible and thus doubled in length of wear; a new spring-loaded plunger makes the change speed lever self-locking and self-releasing on its quadrant.

Although 74 c.c. larger, the engine is practically a replica of last year's unit, but its silencing arrangements have been made more adequate, and there are various improvements which add to the accessibility of its ignition details. The kick-starter has been strengthened, and since it is mounted on an eccentric, the mesbing of the pinions may be adjusted to take up wear. Two internal expanding brakes are now employed, both on the rear hub, which incidentally has also been modified and has a quickly-withdrawable spindle.

Steering head bearings, front suspension, lighting (a single headlamp fed by the flywheel magneto and an auxiliary battery), and various detail fitments have received attention. The whole exhibit well repays examination, especially the plated chassis.

P.V. (19.)

Simple Spring Frame Models.

4-5 H.P. MODEL.—64.5×76 mm. (498 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive 26×2½in. tyres. Price £90.

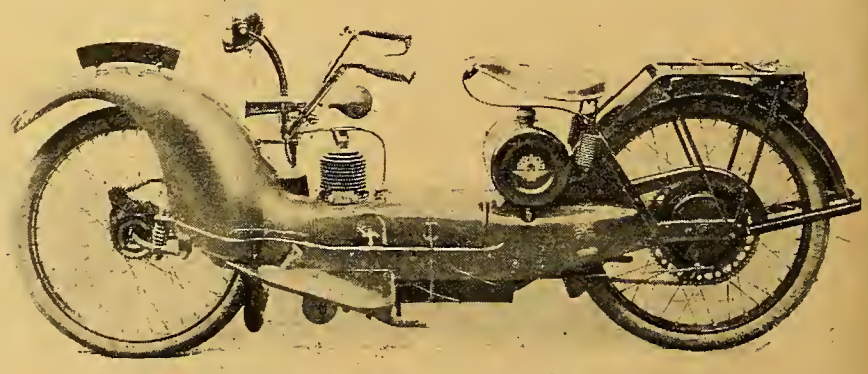
P.V. MOTOR CYCLES, LTD., Perry Vale, Forest Hill, London, S.E.23.—That it has survived so many years successfully when other systems appear and disappear in the course of a twelve-month proves that the P.V. spring frame is worth while. It is a simple design. Two pivoted arms, which carry the rear wheel, are extended to the saddle tube and connected with coil shock and rebound springs enclosed in the last-mentioned member. For 1923 the wheelbase has been considerably shortened by the simple expedient of moving the saddle tube forward so that its lower end is in front of the bottom bracket.

NER-A-CAR. (31.)

Car Practice on Two Wheels.

2½ H.P. MODEL.—70×74 mm. (283 c.c.); single cyl. two-stroke; petroil lubrication; B. and B. carb.; flywheel mag.; 5-sp. gear; clutch and kick-starter; friction drive; 26×2½in. tyres. Price £65.

INTER-CONTINENTAL ENGINEERING CO., 20, Conduit Street, London, W.1.—After a most favourable reception in many quarters during 1921-22, the Ner-a-Car reappears in a considerably improved form. Its aim, of course, was, and is, to be what its name denotes, although, curiously enough, the name was actually derived from the American designer, a Mr Neracher. It follows car lines in having a low sling chassis and a system of pivoting axle steering which combine to make it remarkably stable and easily control-

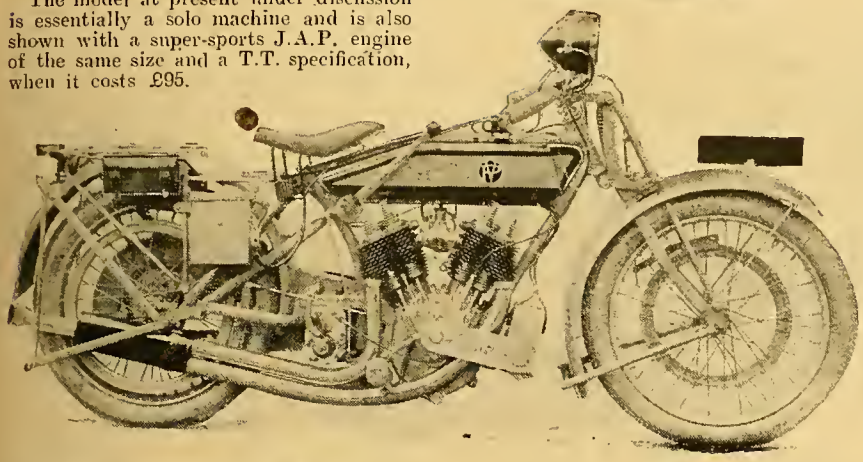


Better mudguard construction is a 1923 Ner-a-Car improvement.

The Olympia Show.—

The model at present under discussion is essentially a solo machine and is also shown with a super-sports J.A.P. engine of the same size and a T.T. specification, when it costs £95.

New 976 c.c. spring frame P.V.



Essentially the same as the 498 c.c. touring model is the 654 c.c. sidecar outfit, the chassis of which embodies a spring wheel suspended on exactly the same system as the cycle. The body is further insulated by two pairs of flexible C springs, underslung in front.

Detail work is well carried out. Braking is on dummy belt rims front and rear, front stands with neat clips are fitted in each case, and the Jackstand, an easy action two-step device introduced at the last Show, is embodied on the touring machines.

Also on the same lines is an entirely new model with the 976 c.c. J.A.P. engine. It is priced at £145 solo, and £167 with the P.V. sidecar. A B.T.H. mag-generator costs £17 extra.

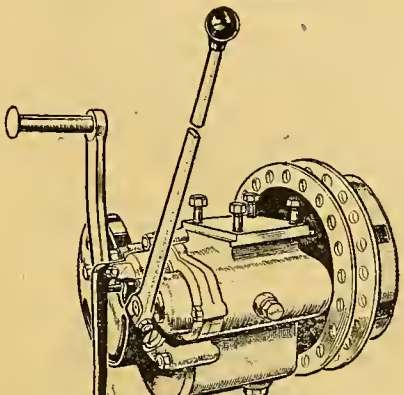
One of the P.V. lightweights to which a 349 c.c. Barr and Stroud engine is fitted follows the same specification, when the price is £76, but the remaining Villiers- and J.A.P.-engined machines, all under 350 c.c., have final belt drive and cost from £42 upwards.

GNOME-RHONE. (26.)

An Anglo-French Product.

4 H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; own carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price, £69.

OVERSEAS SALES, LTD., 21, George Street, Hanover Square, London, W.1.—Designed by an Englishman, but made in France, the Gnome-Rhone is more interesting because of the intention to manufacture it on mass-production lines (10,000-20,000 per annum is the suggested output) than for any unconventionalities in its construction. Indeed, although nearly the whole of the vital parts of the machine are produced in the huge Gnome-Rhone aeroplane factory (excepting the magneto), the layout and design generally are on the very simplest and most straightforward lines. Except the bottom bracket, all the frame lugs are drop forgings.

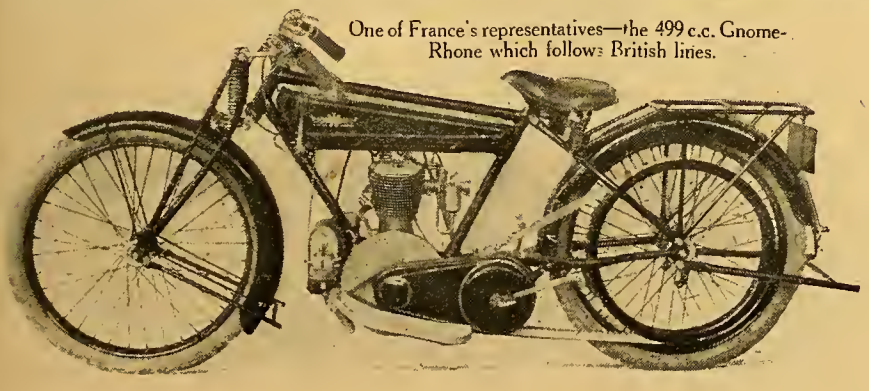


Sturdily-built Gnome-Rhone three-speed gear box, replacing the proprietary unit first used on this machine.

The engine, which has a roller-bearing big end and a ball-bearing mainshaft (transmission side), has an external flywheel with the primary sprocket on the outside. Thus it has been easy to enclose the primary chain in a neat case. Valve ports have been designed to give an easy flow to the gases.

Other items worthy of inspection are the long pedal-operated direct-acting rear brake, the flywheel brake, and the air strangler to facilitate starting. Footboards and fairly adequate mudguards are fitted to all the models shown, and to one model a simple spring wheel sidecar with an English body is attached.

One of France's representatives—the 499 c.c. Gnome-Rhone which follows British lines.



VICTORIA. (62.)

Models from Scotland.

1½ H.P. MODEL.—55×62 mm. (147 c.c.); single cyl. two-stroke; petroil lubrication; Amac carburetter; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 26×2in. tyres. Price, £45.

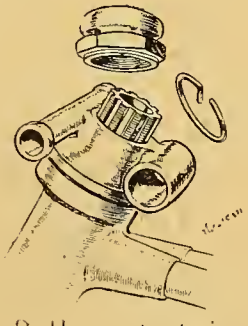
VICTORIA MOTOR AND CYCLE CO., LTD., Victoria Works, Dennistoun, Glasgow.—Victoria machines are amongst the few motor cycles coming from Scotland. All the five models manufactured and placed on the market are exhibited, and are divided into two categories: the one with the well-known Villiers two-stroke, the other with the J.A.P. engine. Of those with the Villiers engine the little 147 c.c. machine merits particular attention as a motor cycle runabout with very few parts that will require attention, allied with simple and workmanlike control.

3½ H.P. MODEL.—79×70 mm. (343 c.c.); single cyl. two-stroke; drip feed lubrication; Amac carburetter; flywheel mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price: Solo, £55; with sidecar, £70.

There is nothing startling in the design of the largest two-stroke model, to which is attached a fairly roomy sidecar of attractive and well-balanced proportions.

4 H.P. MODEL.—85.5×95 mm. (549 c.c.); single cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price: Solo, £75; with sidecar, £90.

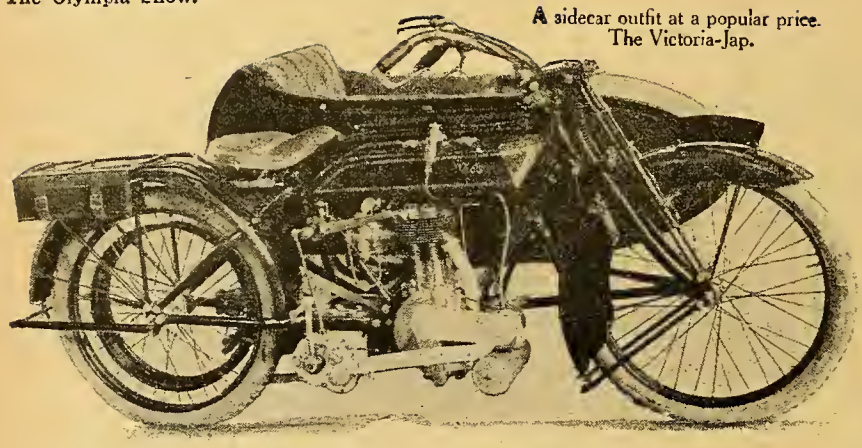
The J.A.P.-engined machine falls into another category, being much more powerful; it has a Sturmey-Archer gear box, deep and wide mudguards, and, in general, the specification is as simple as possible. The example shown is attached to a sturdy and well-built little sidecar to emphasise the particular purpose of this model.



Double security steering head feature of the P & P

The Olympia Show.—

A sidecar outfit at a popular price. The Victoria-Jap.



FRANCIS-BARNETT. (81.)

Refined Mounts in 350 c.c. Class.

2½ H.P. MODEL.—70×76 mm. (293 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £64.

FRANCIS-BARNETT, LTD., Lower Ford Street, Coventry.—In the main both the sporting and the touring models of the 293 c.c. Francis-Barnett are unaltered from the machines that were on the road last year. The touring machine in particular is a good, solid-looking and reliable type, well equipped, and not expensive. Considerable care has been taken to make it possible to remove the rear wheel with the minimum of trouble. The second model is almost identical in lines with its predecessor, but is of 346 c.c., and costs £72 as a solo machine, or £85 with a neat sidecar.

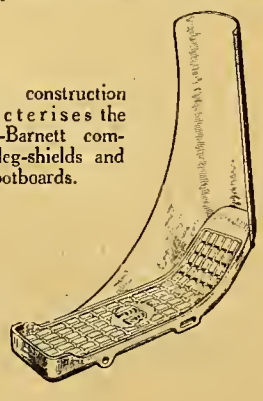
Another model with the 346 c.c. engine is a sports machine painted a very nice and serviceable grey. Naturally, it has the super-sports J.A.P. engine, and incidentally has been extremely successful in various important competitions this year.

On the Francis-Barnetts the tool kit is carried on behind the seat tube, where it is in many ways better protected and less subject to vibration.

Greater clearance has been provided between the mudguard and the wheel, and the chain guards, which are substantial, are secured in position by two bolts only, so that they can be detached quite easily.

Power unit of the new 346 c.c. solo New Hudson.

Neat construction characterises the Francis-Barnett combined leg-shields and footboards.



NEW HUDSON. (142.)

Varied Single Cylinders.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; mechanical and hand lubrication; Binks carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price, £65.

NEW HUDSON, LTD., Icknield Street, Birmingham.—The 346 c.c. New Hudson is an entirely new model, the engine being distinctly reminiscent of the firm's bigger power unit. The cylinder carries enormous radiating fins, whilst the gases are led away through an exhaust pipe of unusually large bore into an aluminium expansion box mounted just forward of the rear hub. The valves are no less than 1¾in. in diameter The cast aluminium chain cases are amongst the handsomest in the Show. Both brakes are of the internal expanding pattern. Following what is now standard New Hudson practice, the tank is made in two sections telescoping into each other, so that the partition is readily accessible should repairs become necessary. A 498 c.c. solo model is materially the same.

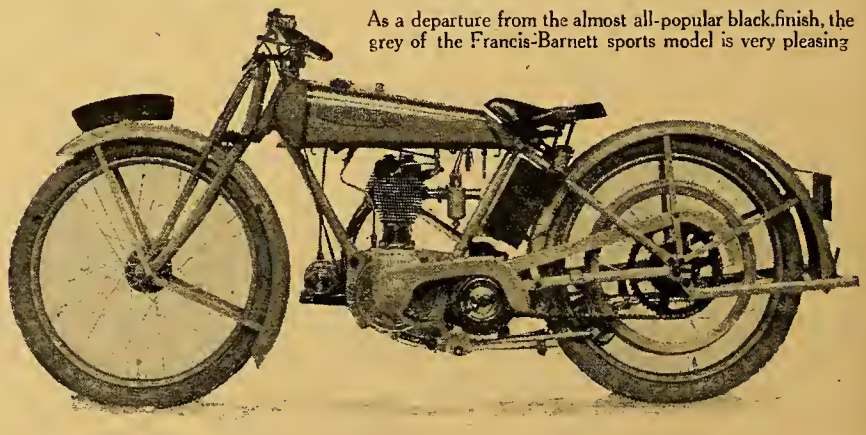
2¼ H.P. MODEL.—62×70 mm. (211 c.c.); single cyl. two-stroke; drip feed lubrication; B. & B. carburetter; chain-driven mag.; 3-sp. gear; chain and belt drive; 24×2in. tyres. Price, £39.

The small two-stroke New Hudson is again offered in three forms for 1923, namely, the popular, sporting, and tourist models, which have proved so satisfactory that they remain unchanged except for the addition of footboards to the popular edition.

4.5 H.P. MODEL.—87×100 mm. (595 c.c.); single cyl. four-stroke; side valves; mechanical and pump lubrication; B. & B. carburetter; chain-driven magneto; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price with Sidecar, £112.

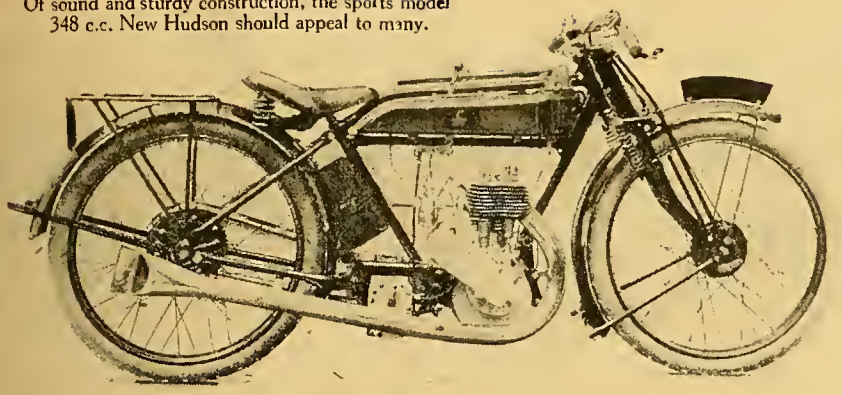
This machine has earned such a high reputation in its class that any substantial alterations were obviously unnecessary. The steering head merits special study, being equipped at top and bottom with ball bearings of unusually large size charged with sufficient grease to last the season. The firm's new pattern silencer now figures on this model. The rear sidecar connection has been redesigned to eliminate twisting stresses. The tank is of the firm's special two-piece design. Four editions of this model are offered, namely, standard, sporting, *de luxe*, and

As a departure from the almost all-popular black finish, the grey of the Francis-Barnett sports model is very pleasing



The Olympia Show.—

Of sound and sturdy construction, the sports model 348 c.c. New Hudson should appeal to many.



family, the latter being fitted with a double-seated sidecar. Special provision is made for positively adjusting the tension of the magneto and primary driving chains.

DOT. (59.)

Sports Twin and Light Singles.

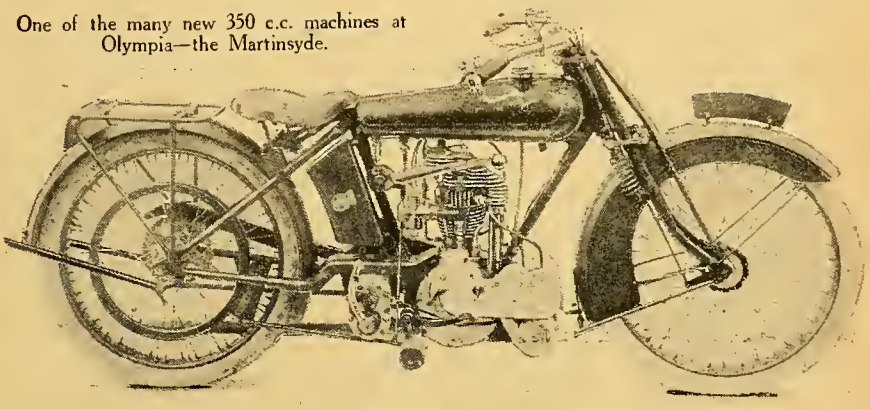
8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, £140.

D.O.T. MOTORS, LTD., 69A, Market Street, Manchester.—Of the machines on the D.O.T. stand the model which will appeal instantly to riders of the sporting type is the 976 c.c. super-sports model, every line of which suggests speed. It is fitted with a J.A.P. engine, having side valves and heavily finned valve caps.

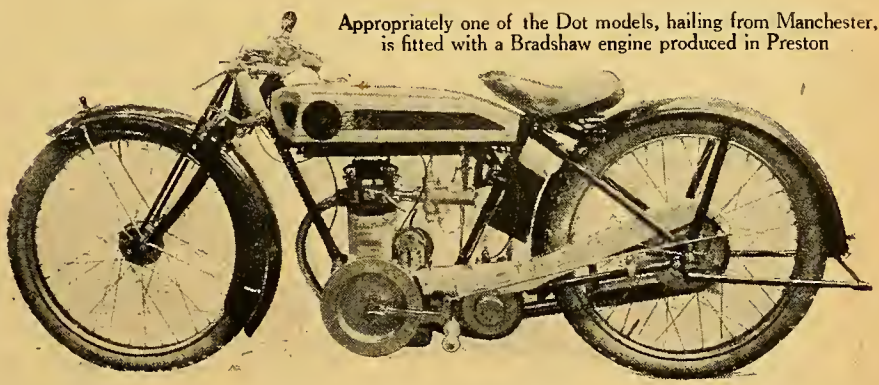
2½ H.P. MODEL.—70×76 mm. (292 c.c.); single cyl. four-stroke; side valves; hand-pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2⅝in. tyres. Price, £65.

Other models are the 292 c.c. J.A.P.-engined standard and the T.T. types, the latter shown without a carrier and with the top tube concealed by the tank, wide handlebars with very effective rubber grips and single practical-looking footrests. It also has a J.A.P. engine of 70×76 mm. (292 c.c.). A 250 c.c. model with a Blackburne overhead valve engine, and last, but not least, one of the new type machines having the 350 c.c. oil-cooled Bradshaw single-cylinder engine are also on view. This last is a new venture for the firm, and is of very neat design.

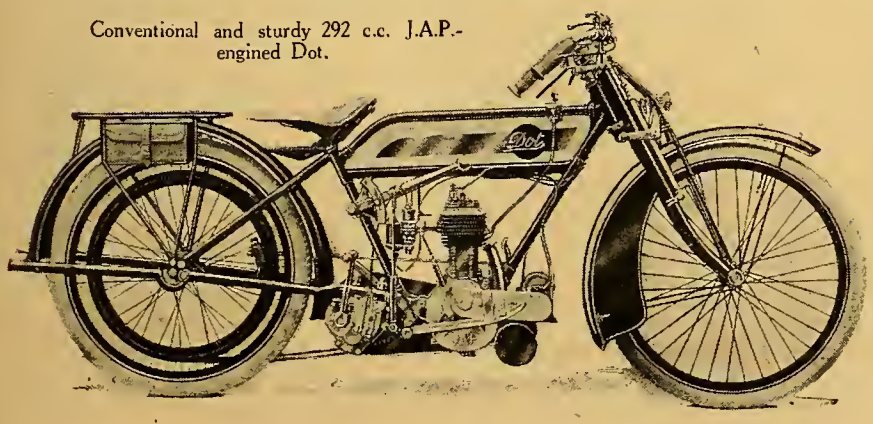
One of the many new 350 c.c. machines at Olympia—the Martinsyde.



Appropriately one of the Dot models, hailing from Manchester, is fitted with a Bradshaw engine produced in Preston



Conventional and sturdy 292 c.c. J.A.P.-engined Dot.



MARTINSYDE. (30.)

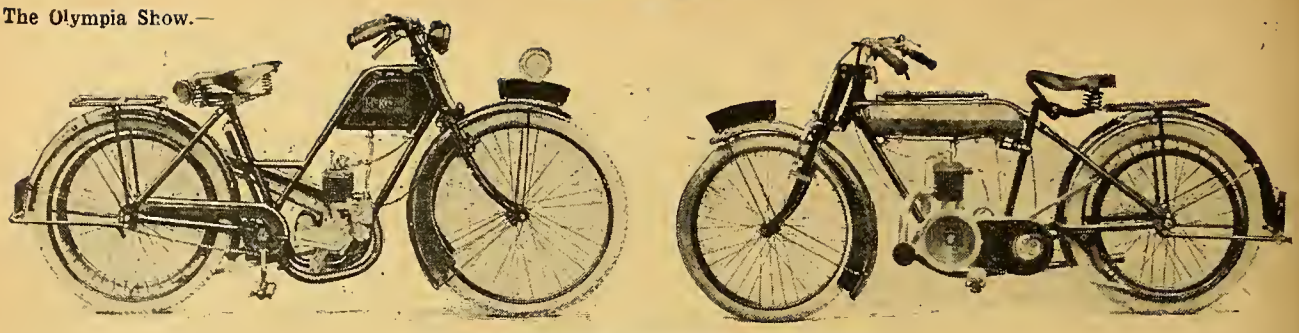
Overhead Exhaust Valves.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; overhead exhaust valve; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½×2¼in. Price: Solo, £70; Sports, £72.

MARTINSYDE, LTD., Woking.—No more interesting reply to the insistent demand for 350 c.c. solo machines has yet appeared than the new Martinsyde single. Following normal Martinsyde practice, the exhaust valve is of the overhead pattern. In this position, it is claimed, it gets the maximum cooling draught, which after all is a very reasonable theory. The o.h.v. gear is a model of simplicity and accessibility. The rocker pivots on an inverted knife edge, being retained in position by a light coil spring, which also keeps the tappet down. The valve stem, which has a shoulder upon which the rocker end abuts, extends through a cover plate in the head to the end of a leaf spring. This cover plate, which carries the knife edge bearing, is readily detachable, and thus the complete valve gear may be dismounted very easily. The exhaust port is well ribbed throughout its length. Otherwise the engine is not unconventional, although the method of driving the Showell oil pump from an idler sprocket on the magneto chain, the pump being enclosed in the chain case, is certainly worthy of note. The fuel tank fixture by means of a concealed clamp is also ingenious.

An internal expanding brake is fitted in front, but a dummy belt rim is employed in the rear, which, after all, is a system that has many advantages.

The Olympia Show.—



Two models of the popular McKenzie are now produced.

In a sports form, a Ricardo aluminium piston, a close ratio Sturmey gear box and a racing Amac carburetter are fitted, resulting in an extremely attractive-looking "speed iron."

6 H.P. MODEL.—70×88 mm. (678 c.c.); V twin cyl. four-stroke; overhead exh. valves; foot pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all chain drive; 26×3in. tyres. Price, £125.

The "Quick Six" Martinsyde, which is shown as a solo machine only, remains substantially unchanged. Its price, with an 80-m.p.h. guarantee, is £135.

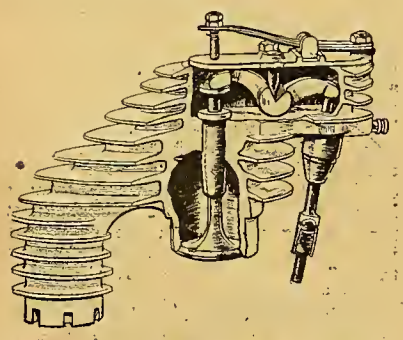
On the touring standard sports and tradesman's carrier sidecar outfits the new valve gear is the chief alteration of importance if we except the new prices, which are identical for the three—£130.

McKENZIE. (145.)

Popular Motorised Bicycle.

1¾ H.P. MODEL.—60×60 mm. (169 c.c.); 1 cyl. two-stroke; petroil lubrication; Wex carb.; gear-driven mag.; single-sp. gear; belt drive; 26×2in. tyres. Price £27 6s.

GEO. MCKENZIE, 220, Shaftesbury Avenue, London, W.C.2.—The featherweight McKenzie set a fashion in miniatures; it scales no more than 80 lb. all on, and is deliberately fitted with pedals not only for assistance up unusually steep gradients, but also to inspire the rider with confidence in the case of a possible breakdown on the road. The machine has been simplified to the absolute limit for the sake of unmechanical users; apart from the brakes, with which every cyclist is familiar, there are only two levers, the compression release and the throttle. A coaster hub is no longer used for the rear brake, which now consists of an ordinary belt rim shoe, operating by back-pedalling at two points in the circle of the cranks. A very light spring fork is fitted to reduce road shocks. The price includes all necessary accessories.



Extremely simple and accessible Martinsyde overhead exhaust valve gear.

A WORD TO NEW READERS.

This number of *The Motor Cycle* is mainly devoted to the all-important topic of the moment—the Motor Cycle Exhibition at Olympia, and the 1923 models exhibited therein. It is not a normal issue either in size or the nature of its contents. The beginner will find every issue of *The Motor Cycle* is of assistance to him, as well as proving absorbingly interesting. *The Motor Cycle* is unapproached in the quality and substance of its reading matter. Each issue contains features which the process of time have proved to be the most popular among experienced riders and with the newcomer to the motor cycle movement.

Our aim is:—

(1) To record faithfully motor cycling history at home and abroad.

(2) To interest the ever-increasing number of motor cyclists by discursive articles of an authoritative character on popular subjects.

(3) To continue to foster the development of the most economical form of motoring.

(4) To assist the novice.

(5) To encourage progress in design by free and open criticism.

(6) To develop the three-wheeled passenger motor cycle, whether sidecar or runabout.

Over 120,000 Motor Cyclists read *The Motor Cycle* every week.

The Motor Cycle is written by Motor Cyclists for Motor Cyclists.

Every Thursday - Threepence.

1¾ H.P. MODEL.—60×60 mm. (169 c.c.); 1 cyl. two-stroke; petroil lubrication; Wex carb.; gear-driven mag.; 2-sp gear; clutch; no kick-starter; chain-cum-belt drive; 24×2in. tyres. Price £33 10s.

This is another edition of the McKenzie on conventional motor cycle lines. Its weight is given as 120 lb.

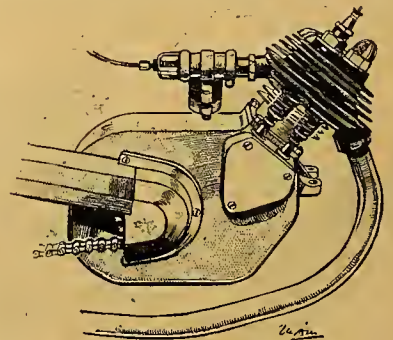
ORBIT. (24.)

Four Lightweights.

2¾ H.P. MODEL.—68×72 mm. (261 c.c.); single cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £55.

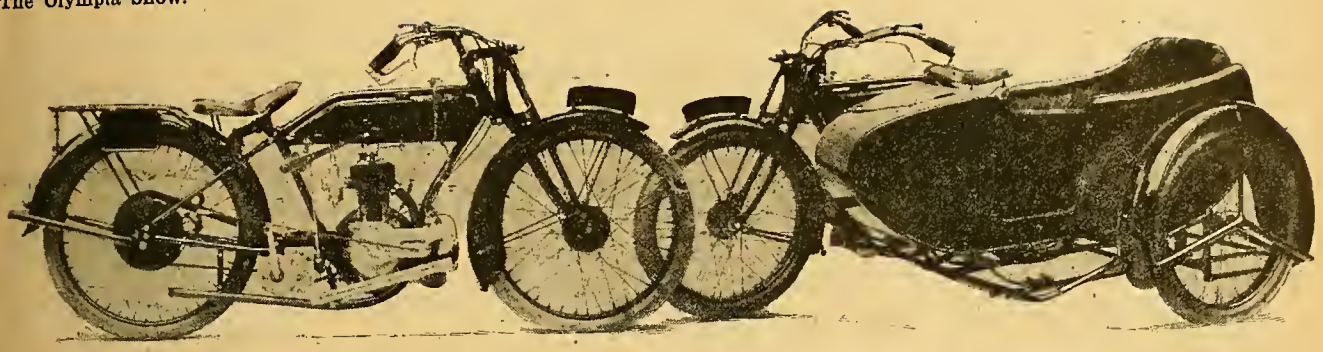
ORBIT MOTORS, LTD., Orbit Works, Wolverhampton.—Four Orbit lightweights are shown, all practically to an identical specification, excepting in the engine units. Only the two-stroke, as detailed above, is fitted with the firm's own power unit, a conventional but well-carried-out design of the three port type with plain bearings and a deeply-finned cylinder. Internal expanding brakes on the front and rear wheels, a well-balanced front mudguard, and a capacious metal tool box on the saddle tube, are items common to all four models, although a Bradshaw-engined type is distinctive on account of its pair of highly-polished aluminium mudguards. Swan front forks, which have an enclosed central shock and rebound spring, are employed in every case. The silencer, which is right at the end of the exhaust pipe, is of Orbit design and embodies baffle plates.

For the rest the exhibit is best described by detailing the prices of the models not covered by the specification: 349 c.c. Barr and Stroud, £67 10s. (A.J.S. lightweight sidecar, £20 extra); 349 c.c. Bradshaw, £67 10s.; o.h.v. 349 c.c. Blackburne (semi-racing equipment), £70. Disc wheels are an extra.



One of the several engine-gear units at Olympia is on the Ray ultra lightweight.

The Olympia Show.—



349 c.c. side-valve O.E.C.-Blackburne in its full touring form.

Well-upholstered sidecar attached to the 545 c.c. model of the same machine.

O.E.C.-BLACKBURNE. (40.)

Taxi Sidecar Outfit.

10 H.P. MODEL.—85×96 mm. (1,090 c.c.); V twin cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, with Taxi Sidecar, £252.

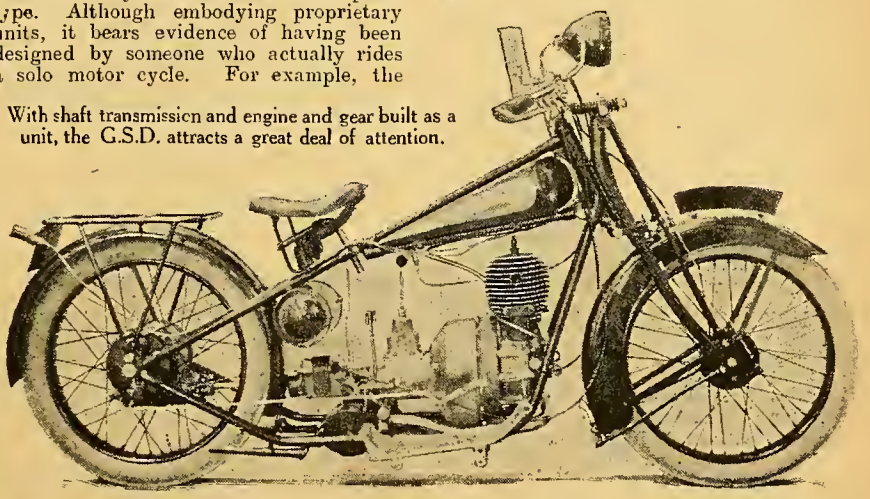
OSBORNE ENGINEERING CO., LTD., Lees Lane, Gosport, Hants.—Finished in a very striking shade of cream, the chief Osborne exhibit—a 1,090 c.c. taxi sidecar—is remarkable for the fact that it has a system of wheel steering instead of handle-bars. This arrangement for sidecar taxis was introduced last year to overcome the difficulties caused by handle-bars which foul a high sidecar body when making sharp turns. The price of £252 includes Magdyno lighting, very complete equipment generally—for instance an undershield is fitted—and a limousine two-seater sidecar mounted on a very strong girder chassis. Dual hand and foot clutch control is provided.

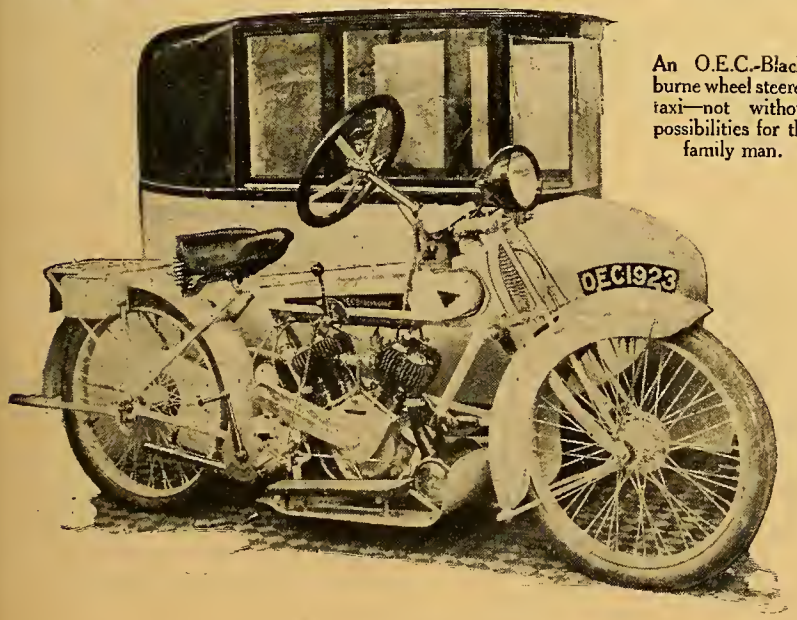
Imposing single- and double-seated touring sidecars are inherently the same in specification, but employ the 998 c.c. Blackburne engine. The prices range from £140 14s. upwards.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; overhead valves; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch, no kick-starter; chain drive; 26×2½in. tyres. Price £84.

For the soloist the most attractive model is undoubtedly the overhead valve sports type. Although embodying proprietary units, it bears evidence of having been designed by someone who actually rides a solo motor cycle. For example, the Burman gear lever is right forward, and thus allows the rider to grip the tank with his knees. Handle-bar shape, foot-rest position, and saddle height combine to give a very comfortable riding position.

With shaft transmission and engine and gear built as a unit, the G.S.D. attracts a great deal of attention.





An O.E.C.-Blackburne wheel steered taxi—not without possibilities for the family man.

The display is completed by a side-valve 349 c.c. model (solo at £71 8s., and with a light sidecar at £97 13s.), and a utility 545 c.c. sidecar outfit at £113 8s. None of the last-mentioned machines has a mechanical oil-pump, and the larger sidecar outfit differs in having 28×3 in. wheels and internal expanding brakes front and rear.

G.S.D. (44.)

Four Speeds and Shaft Drive.

2¾ H.P. MODEL.—76×76 mm. (350 c.c.); single cyl. two-stroke; mechanical lubrication; Amac carb.; shaft-driven mag.; 4-sp. gear; clutch and kick-starter; shaft drive; 26×3in. tyres. Price £85.

R. E. D. GRANT, 15, St. Paul's Road Coventry.—That it exhibits the novelty of the Show is claimed for considerably more than one stand in Olympia, but there seems to be a general consensus of opinion that No. 44 comes nearest to earning this honour. The G.S.D. has a unit engine and four-speed gear box and final shaft drive, and is the only British machine now on the market to employ this oft-sought form of transmission. Of the car type and design, the gear box has a central ball and socket change,

The Olympia Show.—

and with the high efficiency White and Poppe two-stroke engine forms a snug and easily removable unit in the duplex frame.

Very careful design is apparent in the transmission, and since the David Brown worm and worm wheel are in one unit, the danger of misalignment is eliminated. Hardy flexible couplings are interposed at each end of the shaft, which is in absolute line with the gear shaft and the worm shaft. The gear ratios are 6, 9, 13, and 18 to 1, and the gear box and gear change has been so designed as to obviate any possibility of damaging the gears when changing. A sectioned box is shown.

The engine unit is cleanly encased and is claimed to be oilproof, an oil tank being incorporated in the flywheel casing and fitted with a float type oil indicator. Mechanical lubrication with a variable feed is employed.

Riding position and the rider's comfort generally have received careful attention, it being the intention of the designer to appeal to the most fastidious class of professional men.

In most respects he has succeeded admirably, and one cannot help being struck at the close resemblance of the machine to a composite model of the best of the oft-published "ideal specifications" of *The Motor Cycle's* readers.

ZENITH. (21.)

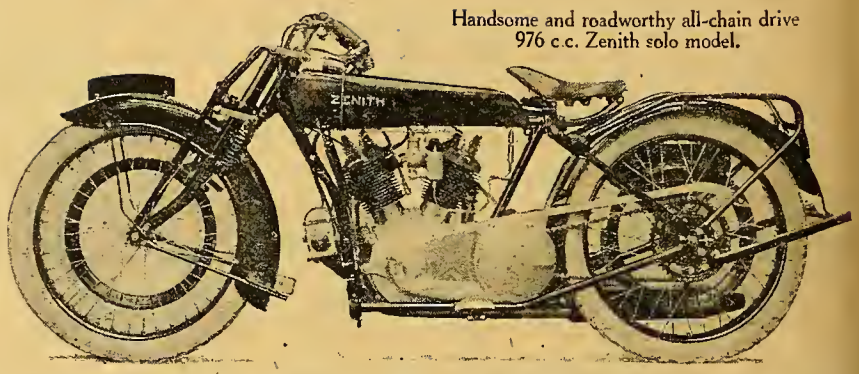
Chain-driven Twins and Singles.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, £125.

ZENITH MOTORS, LTD., Hampton Court.—In the latest edition of the 976 c.c. Zenith the lessons of many years of catering for the soloist who favours big twins, plus those of 100 m.p.h. records on the track, have been cleverly blended to produce one of the most attractive solo machines in the exhibition. In brief, now that chain drive has almost entirely ousted the belt from public favour, the Zenith Company has more than moved with the times.

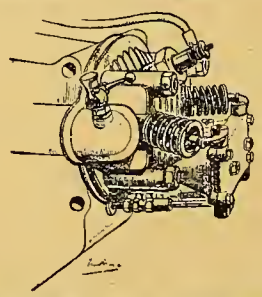
The frame is very neat and promises considerable rigidity, while the saddle height is low. The footrests are sensibly placed and are of the flat type as used by Le Vack on Brooklands.

Handsome and roadworthy all-chain drive 976 c.c. Zenith solo model.



The price quoted is for a model with the super-sports J.A.P. engine; £10 less is charged for the standard power unit.

An extremely racy mottled aluminium sidecar with a streamlined chassis is shown attached to this model.



Improved valve gear on the Zenith-Bradshaw.

3½ H.P. MODEL.—68×68 mm. (494 c.c.); flat twin cyl. four-stroke; overhead valves; mechanical lubrication. Claudel-Hobson carburetter; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, £105.

Little change has been made to the Bradshaw model, which was the first make to which this type of oil-cooled engine was fitted, and which is still the only one to use the flat twin version. The rocker gear, however, is now enclosed and wick-lubricated.

Since the centre of gravity of the machine is comparatively low down, this model possesses several advantages as a solo mount, but it has been proved in several important trials that it is capable of hauling a sidecar anywhere within reason.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, £69 15s.

The 346 c.c. Zenith is not in any way a startling design—for the most part it embodies standard proprietary units—but it is thoroughly pleasing in appearance, particularly in its sports form, and well finished in detail. Another exhibit with a 293 c.c. J.A.P. engine is materially the same; it is priced at £65. Only one Gradua-geared (variable pulley) model is shown; it has a 654 c.c. J.A.P. engine, and a clutch and kick-starter.

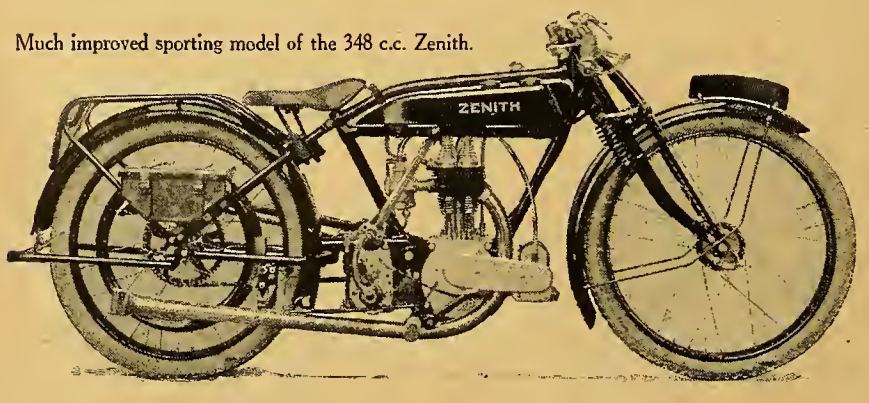
HACK. (91.)

Scooter Type's Sole Representative.

1¼ H.P. MODEL.—50.4×50.4 mm. (103 c.c.); single cyl. two-stroke; petroil lubrication; Binks carb.; gear-driven mag.; clutch, no kick-starter; chain drive; 20×1¾in. tyres. Price: Solo, £38 17s.

HACK ENGINEERING CO., Victoria Works, Victoria Road, Hendon, N.W.4.—The Hack lightweight is illustrative of an intermediate stage between the scooter and the ultra-lightweight motor cycle. The makers are to be congratulated on having achieved simplicity in their design. The wheels are fitted with 20×1¾in. tyres, and the transmission is of the simplest form by means of a single chain of not unreasonable length direct from a geared down countershaft on the engine to the back wheel. The machine is suitable for a lady to ride, a practical form of guard being provided to prevent contact of garments with the cylinder. The engine is situated at the bottom of the saddle pillar, and the centre of gravity is thus kept low down.

Much improved sporting model of the 348 c.c. Zenith.



LEA-FRANCIS. (95.)

Refined V Twins.

5 H.P. MODEL.—64×92 mm. (592 c.c.); V twin cyl. four-stroke; overhead inlet valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £96 10s.

LEA & FRANCIS, LTD., Coventry.—To the most critical, the Lea-Francis models are a joy. This firm has always had a reputation for the highest class of workmanship and the most refined productions. Two models only are at present shown, both with V twin M.A.G. engines, which differ only in the matter of the stroke, the larger model having a bore and stroke of 64×92 mm., whereas the stroke in the case of the smaller machine is only 77 mm. (496 c.c.). These machines have

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always been noted for quiet running, and the bigger model, which perhaps attracts the most interest on the stand, is fitted with an aluminium silencer of ample dimensions. Chain guards are provided for the larger model, but the smaller machine, which is made for the solo rider, is fitted with complete chain cases, and the three-speed gear is of the firm's own manufacture; the other being a Burman. The brake work has been very thoroughly carried out, dummy belt rims being provided on both front and rear wheels, and the arrangement and application of the brake shoes is also very well carried out. In the case of the smaller model the frame is slightly shorter than that of the 592 c.c. model, and the gear box is fitted in the bottom bracket shell. In the larger machine, however, advantage is taken of the space between the seat pillar tube and the rear mudguard for fitting a good-sized leather tool case, which itself is enclosed in sheet steel. A feature of refinement which commands special attention on this machine is the provision of two shock absorbers for the chain drive, one in the countershaft, and one in the rear hub, which is the standard Enfield pattern.

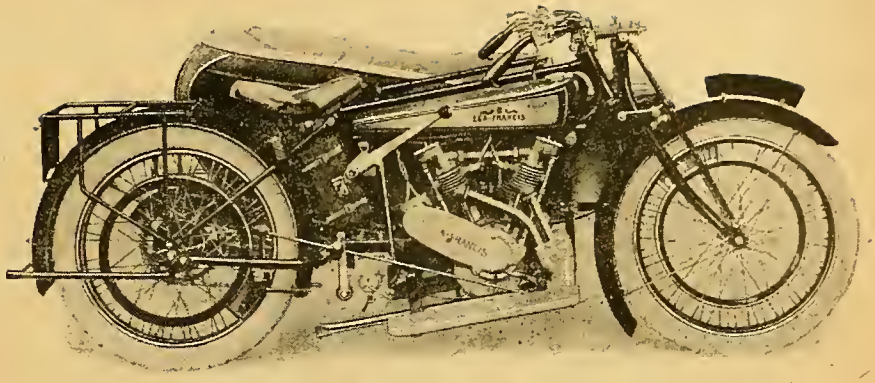
MOHAWK. (92.)

Touring Solo Lightweights.

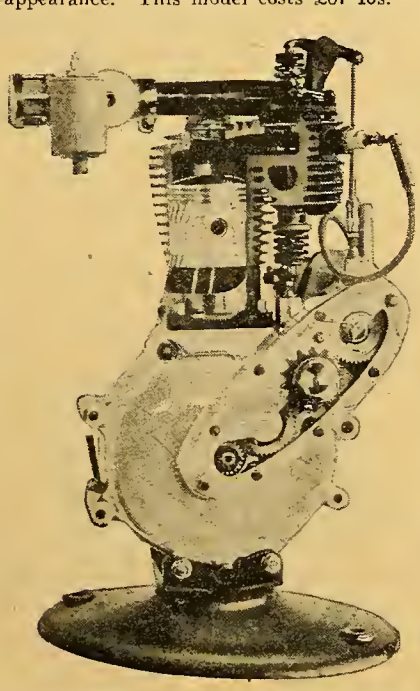
2¾ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price £58.

THE MOHAWK CYCLE CO., Alexandra Road, Hornsey, and Coventry.—Mohawk models meet the demand for substantial and conventional machines built up from well-known and tried proprietary units, which are to be marketed at a moderate price. The equipment of the lightweight machine as a practical touring mount is sufficiently complete, with comfortable aluminium footboards, and the riding position and shape of the handle-bars are such, in the case of the standard model, as to appeal to the steady middle-aged type of rider. The machine is fitted with Brampton forks and Sturmey Archer two-speed gear box, with a simple and practical means for adjusting the driving chain from the engine to the countershaft.

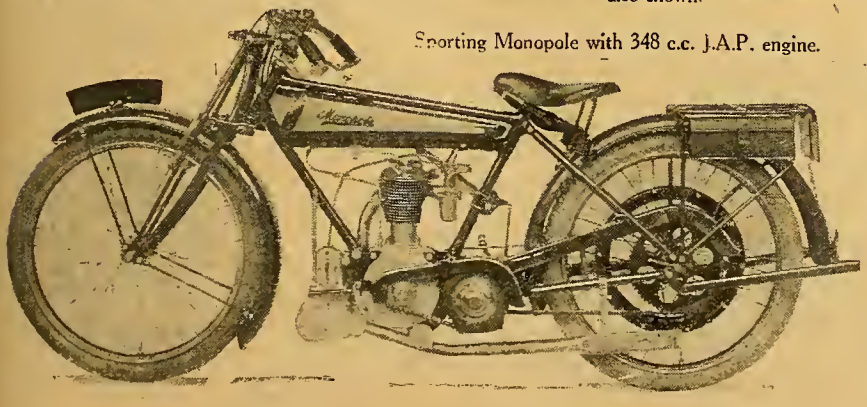
A 770 c.c. J.A.P.-engined model is also staged, fitted with Sturmey-Archer three-speed gear box and all-chain drive. This is listed at £105. The sports model is fitted with 346 c.c. J.A.P. engine, and differs from the lightweight in having chain drive throughout. The frame is somewhat longer, and the machine presents a racy and attractive appearance. This model costs £67 10s.



Standard touring 592 c.c. Lea-Francis sidecar outfit.



A sectioned engine of the 499 c.c. type on the Rudge stand. The firm's twin engine is also shown.



Sporting Monopole with 348 c.c. J.A.P. engine.

MONOPOLE. (37.)

Five 350 c.c. Solos.

3 H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; B. & B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £69 10s.; with sidecar, £85 5s.

MONOPOLE CYCLE AND MOTOR CO., LTD., Coventry.—Five Coventry-built machines, none exceeding 350 c.c., are staged. Various proprietary units—Villiers or J.A.P. engines and Sturmey-Archer gearboxes—are employed and generally speaking the machines do not differ greatly from last year's models. Chain transmission on the 348 c.c. semi-sporting model detailed above is, however, an innovation. It is neatly carried out, transmission shocks being absorbed by the cushion arrangement in the Sturmey gearbox. All the Monopole machines are finished in a soft shade of green, which, particularly on the sidecar model, looks quite attractive. The sidecar itself is a lightweight sporting Grindlay.

Another 348 c.c. solo mount uses final belt drive, when the price is £67 5s.

A single-geared 247 c.c. Villiers-engined lightweight at £40, and a 293 c.c. J.A.P.-engined model with a two-speed gear, clutch and kick-starter, at £58, complete the exhibit.

VELOCETTE. (129.)

Mechanically-oiled Two-stroke.

2½ H.P. MODEL.—63×80 mm. (249 c.c.); single cyl. two-stroke; mechanical lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 24×2¼in. tyres. Price £65.

VELOCE, LTD., Aston Manor, Birmingham.—The Velocette engine has undergone radical alterations, and substantial advances have been made in respect of power output, silence, and balancing. The chief outward indication of these improvements lies in the exhaust system, twin pipes emerging from each side of the cylinder near its base, and leading into a large transverse silencer. Great pains have been taken to make all the joints in the exhaust system both sound- and oil-proof. The public performances of this engine proved that in its old form it was exceptionally efficient; next year both its power output and its road manners will display further improvement. The remainder of the machine remains practically unchanged, though the new exhaust pipes have en-

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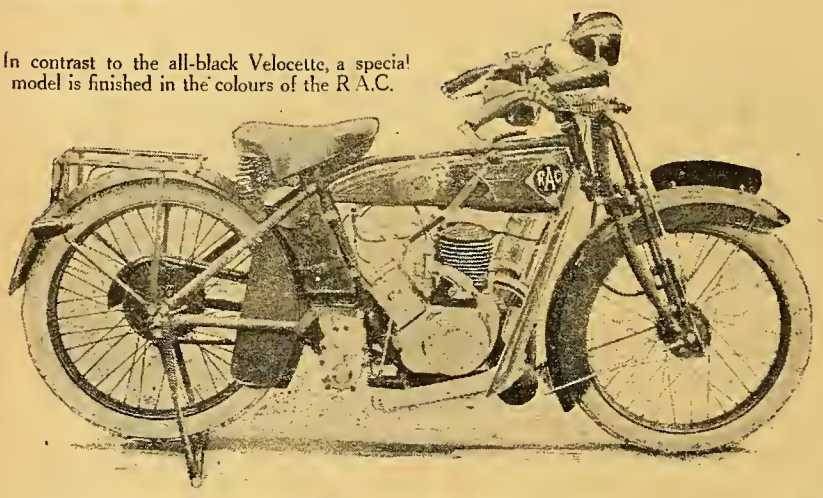
In contrast to the all-black Velocette, a special model is finished in the colours of the R.A.C.



forced alteration of the oil filler to a more convenient pattern. The weight of the three-speed model is still well under 180 lb., the two-speed model being proportionately lighter. The sports model is fitted with a close ratio gear box. The engine of the latest machine is a development of the 1922 type of racing unit.

Although Velocettes are not sold as all-weather-finish models, they are practically clear of any plated parts near the ground line, and on the touring pattern very neat aluminium leg shields can be fitted in conjunction with the footboards.

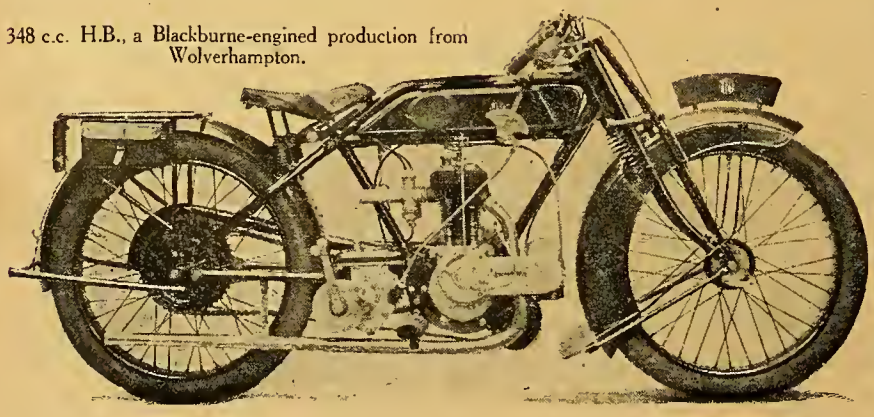
H.B. (121.)

Refined 350 c.c. Solo Models.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; side valves; mechanical pump lubrication; Amac carb.; chain-driven magneto; 3-sp. gear; clutch, no kick-starter; chain drive; 650×50 mm. tyres. Price: Solo, £78; with Sidecar, £98.

HILL BROS., Wolverhampton.—The H.B. machine is designed as a *de luxe* member of the 350 c.c. class, in which no risk is run of spoiling the layout by a cut price or undue weight reduction. The finish and components are of the highest class throughout. Three models are manufactured, all with Blackburne engines. The sports model is obtainable with either the side valve or the o.h.v. unit. The silencer system is worth attention. At first sight it looks like a plain straight-through pipe, but the gases are actually conducted through an expansion chamber which is very rigidly mounted in front of the crank case. The effect is that the long pipe is far more stable than usual. The primary chain adjustment is exceptionally neat. The latest type of John Bull knee grips are screwed into sockets provided on the tank. A Webb front brake and the new model Best mechanical pump are attractive features. The wheel base is 51½in., which should provide good comfort and stability.

348 c.c. H.B., a Blackburne-engined production from Wolverhampton.



EDMUND. (138.)

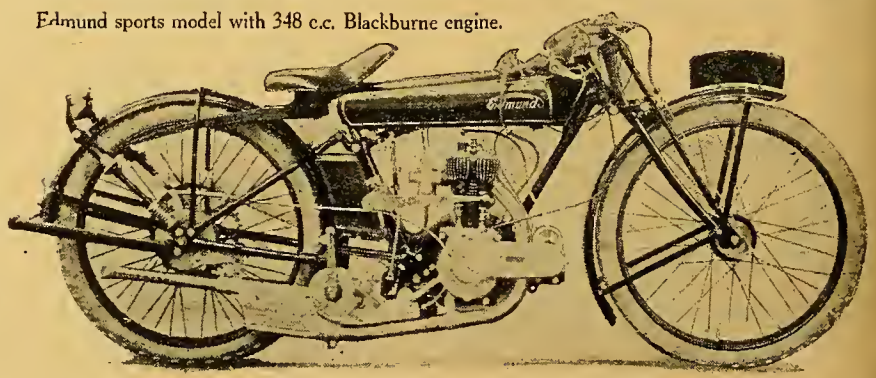
Super Suspension for the Rider.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £78 15s.; with Sidecar, £97 5s.

C. E. EDMUND AND CO. (1920), LTD., Milton Works, Milton Street, Chester.—Edmund machines are, of course, famous as pioneers in the movement to provide increased comfort for the rider. The machines have been manufactured substantially in their present form for many years past. For 1923 three models are offered, namely, touring, sports, and super-sports, all of which are normally fitted with Blackburne engines, overhead valves being utilised on the super-sports type. Options consist of a Barr & Stroud engine on the touring model, or a special J.A.P. engine on the sports model. The policy of the firm is to offer 350 c.c. machines of the best quality, distinguished by the comfort bestowed by the patent frame. Several minor alterations of interest are to be noticed. The cast aluminium chain guards are exceptionally neat. Customers may choose either a sprung or rigid carrier. A large armoured toolbag is fitted to the tourist model. The sports model carries its expansion box in the modern fashionable position level with the rear wheel; this box is of excellent pattern, being of rectangular shape made in cast aluminium and very heavily ribbed in order to cool the gasses as far as possible.

Ribbed silencer of cast aluminium is used on the Edmund.

Edmund sports model with 348 c.c. Blackburne engine.



The Olympia Show.—

HARLEY-DAVIDSON. (34.)

Big American Twins.

9.89 H.P. MODEL.—84.1×88.9 mm. (989 c.c.); V twin cyl. four-stroke; overhead inlet valve; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; all chain drive; 28×3in. tyres. Price: With Sidecar, £139 15s. (with full electric equipment).

HARLEY-DAVIDSON MOTOR CO., LTD., 74, Newman Street, London, W.1.—Although several improvements have been made to the standard Harley-Davidson sidecar outfit, the chief point of interest is undoubtedly the new price. In past years American machines have not unnaturally tended to cost appreciably more than British products in the same class; for next year the Harley compares favourably with anything else in the building on a price basis alone, and its reputation for power and speed places it in a high position among the big twin sidecar outfits.

Detail improvements have been made in the mechanical oil-pump (now a detachable unit), in the fork springing (now embodying double the number of springs), in the weather-proofness of the rear hubs, and even in such a comparatively insignificant items as the suspension of the rear lamp.

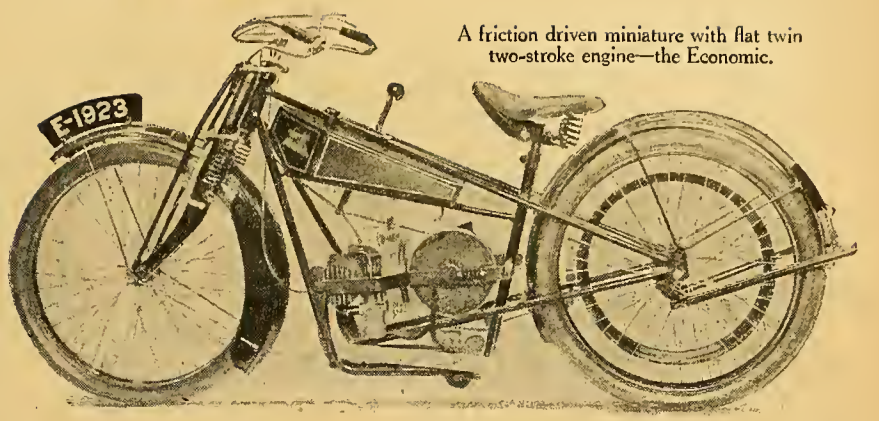
Conforming to the same specification generally is the "oversize" 1,208 c.c. model shown solo at £120, and with a new two-seater sidecar and full electric equipment at £157 5s.

Acetylene equipped touring and exceedingly attractive sporting 989 c.c. outfits are also on view at £135.

5.84 H.P. MODEL.—69.8×76.2 mm. (584 c.c.); flat-twin cyl. four-stroke; side valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; 26×3in tyres. Price: Solo, £105.

Interesting as representing the American ideal of a "light" solo machine as well as for its proved silky running and controllability, the flat-twin Harley is little altered. Only one example is staged, and here again full electrical equipment, including horn, is supplied for the moderate price stated.

On the electrical Harleys the magneto is dispensed with entirely.



A friction driven miniature with flat twin two-stroke engine—the Economic.

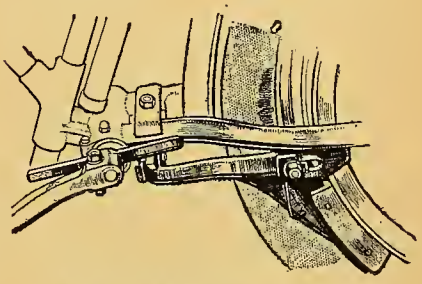
ECONOMIC. (45.)

Friction-driven Miniature.

2 H.P. MODEL.—52.5×38.5 mm. (165 c.c.); flat twin cyl. two-stroke; petroil lubrication; own make carb.; flywheel mag.; variable-sp. gear; no clutch or kick-starter; friction and belt drive; 26×2¼in. tyres. Price £28 17s.

THE EYNSFORD ENGINEERING CO., LTD., Primrose Works, Eynsford, Kent.—The Economic miniature has frankly been designed and built down to a price, but the fact that it has survived the handicap of a necessarily none too superfine external finish proves that it is quite a practicable vehicle. For next year this finish has been much improved, being now the more conventional black instead of red. It is notable as employing the only flat-twin two-stroke engine on the market, which incidentally is of the very simplest construction. The friction drive provides a wide range of gears, and also enables the overall weight of the machine to be kept down to 115 lb. This despite the fact that a duplex frame is employed. Its greatest achievement was an A.C.U. observed ride from London to Edinburgh at an average running speed of 17 m.p.h.

A light delivery model has a box carrier over the rear wheel.



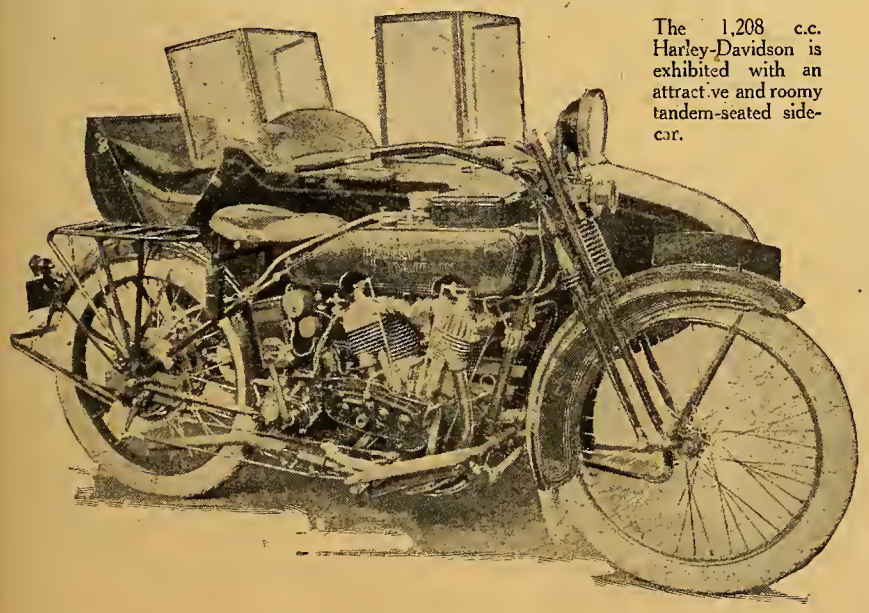
Rear brake operation on the McKenzie.

HENDERSON. (123.)

Four Cylinders, Three Speeds and Reverse.

11.5 H.P. MODEL.—68.3×89 mm. (1,301 c.c.); four cyl. four-stroke; side valves; mechanical lubrication; Zenith carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 27×3½in. tyres. Price: Solo, £137; with Sidecar, £163 5s.

MELCHIOR, ARMSTRONG AND DESSAU, 15, Newman Street, London, W.1.—The four-cylinder Henderson has gradually developed during late years into one of the most compact and luxurious machines on the road. The principal alterations of this elaborate layout consist of additional finning over the exhaust ports; as each port was already provided with a separate branch pipe over 12in. in length, there is no doubt about the efficiency of the scavenging. The transmission has been further silenced by the incorporation of a spiral bevel in the primary drive to the gear box. Lubricators are now fitted to both hubs. The Coupette sidecar is one of the handsomest and cosiest in the Show. A curved three-ply hood, with talc side windows, is hinged to disappear completely into the body at will. When raised, it joins a one-piece three-sided celluloid windscreen, so that the interior is completely windproof. The Henderson is the only motor cycle at the Show offered with a reverse gear; it is an optional addition.



The 1,208 c.c. Harley-Davidson is exhibited with an attractive and roomy tandem-seated sidecar.

The Olympia Show.—

HAZLEWOOD. (130.)

Medium-weight Passenger Models.

5-6 H.P. MODEL.—70×88 mm. (650 c.c.); V twin cyl. four-stroke; side valves; drip lubrication; Amac or B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-belt drive; 650×65 mm. tyres. Price: with Sidecar, £110.

HAZLEWOOD'S, LTD., Coventry.—The 650 c.c. Hazlewood is only marketed as a sidecar outfit, but it is offered in four different models at remarkably low prices. With a tradesman's carrier body, or as a tourist machine with chain-cum-belt drive, it almost touches bottom in price where an engine of its power is concerned. The touring model with all-chain drive and the sports edition are fractionally more expensive. Features of special interest on these machines are a spring seat pillar, a very substantial shock-absorber for the all-chain drive, and the internal expanding rear brake.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; drip lubrication; B. and B. or Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price: Solo, £75.

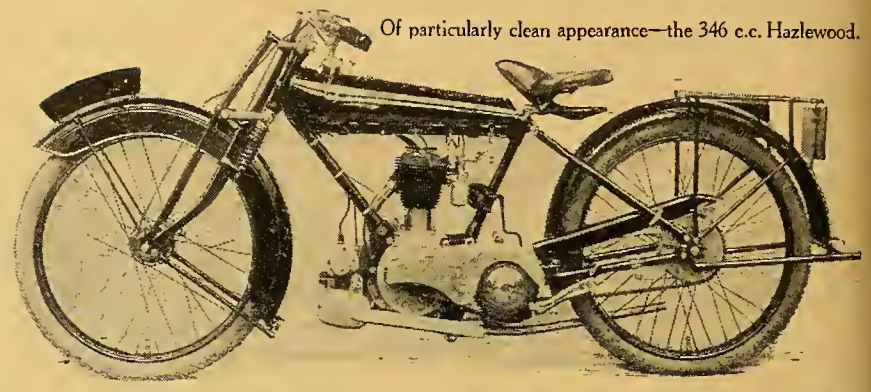
The 346 c.c. model has excellent chain guards and an unusually roomy expansion box for the exhaust. A J.A.P. engine is fitted, and three speeds and all-chain drive can be had if desired.

HUMBER. (126.)

Flat Twin and New Solo Single.

2¾ H.P. MODEL.—75×79 mm. (349 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £55.

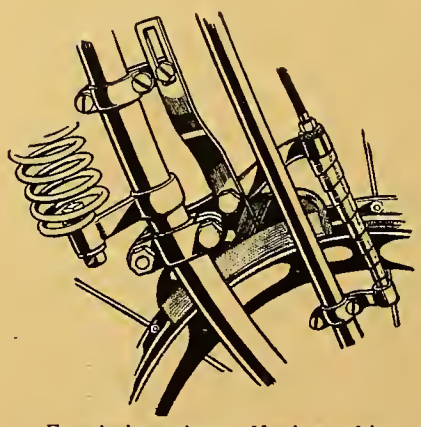
HUMBER, LTD., Coventry.—The new Humber lightweight is a superbly finished example of its class, conspicuous for a very heavily finned cylinder and clean aluminium castings. Points of interest are the enclosed kick-starter, large quickly detachable clutch cover, Brampton spring chain, and Webb front brake. Black all-weather finish is optional on all Humber machines without extra charge, and these models display the absolute minimum of bright parts. The exhaust system on the 349 c.c. model is interesting; a long pipe leads to a cast aluminium expansion box behind the gear bracket, the rear end of this box being reduced towards the final exit.



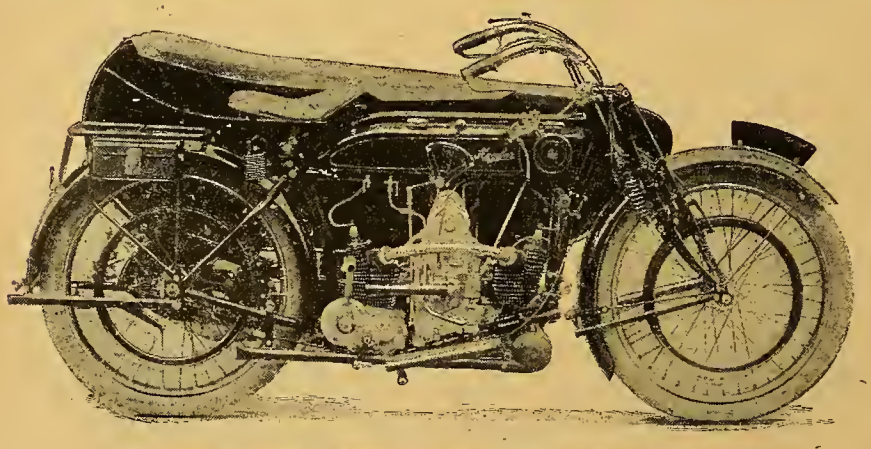
Of particularly clean appearance—the 346 c.c. Hazlewood.

4½ H.P. MODEL.—75×68 mm. (600 c.c.); twin cyl. four-stroke; side valves; mechanical lubrication; Claudel-Hobson carburetter; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Sports, £89; Touring, £99; with Side car, £105 and £120 10s.

For 1923 the flat twin engine has undergone no substantial alteration, although certain detail changes have been made in the lubrication system. The stirrup brake has been eliminated from the touring model, and with the substitution of a front belt rim brake both wheels are now interchangeable. This alteration has naturally led to a broader front fork and 6in. mudguards. The stirrup brake, narrow fork and guards are still retained on the sports model. The price of the latter, inclusive of a doorless Grindlay sidecar, is noteworthy.



Front brake on the new Humber model.



The smooth running and elegant-looking 600 c.c. Humber sidecar outfit.

HAWKER. (36.)

Dual-purpose Big Single.

4 H.P. MODEL.—85×96 mm. (545 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £85; with Sidecar, £105.

H. G. HAWKER ENG. CO., LTD., Canbury Park Rd., Kingston.—The largest of the Hawker models has been completely re-designed for next year and is now an excellent example of the more substantially-built dual-purpose big single. 700×80 mm. tyres are fitted, and the rest of the machine is in proportion. It is not, however, in any way a cumbersome-looking design.

It has internal expanding brakes front and rear.

One model shown is completely equipped, including the new B.T.H. mag-generator lighting set, which is very neatly carried.

2½ H.P. MODEL.—70×76 mm. (293 c.c.); single cyl. two-stroke; sump lubrication; Amac carb.; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 26×2⅜in. tyres. Price: Solo, £39 8s.

Neatness is the keynote of the Hawker two-stroke, which, it may be recalled, earned considerable fame by hauling a sidecar up 5-mile-long Tornapress in the 1921 Scottish Six Days Trials.

Its unusual features are a detachable cylinder head and a simple system of automatic lubrication. The way in which

Over 350 photos and drawings are used to illustrate this greatly enlarged

SHOW REPORT NUMBER

of

THE MOTOR CYCLE

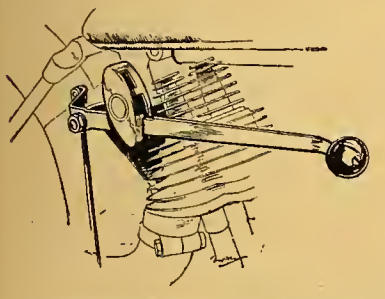
It is an issue worthy of preservation for reference purposes.

The Olympia Show.—

both its brakes work on the rear belt rim also is not too common.

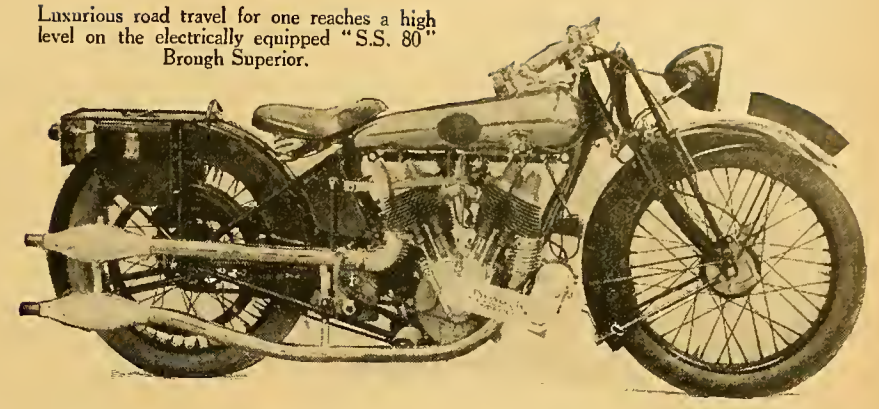
The flywheel magneto may be used to supply lighting current.

In between the two extremes specified are 250 c.c. and 350 c.c. side-valve and 350 c.c. o.h.v. Blackburne-engined models at £70, £72 10s., and £84 respectively. All three have chain drive and Burman three-speed gear boxes.



New Sturmey Archer gear quadrant on the Brough Superior.

Luxurious road travel for one reaches a high level on the electrically equipped "S.S. 80" Brough Superior.



BROUGH SUPERIOR. (89.)

Super-Sports Big Twins.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side-by-side valves; drip feed lubrication; Binks carb.; chain-drive mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £150; with Sidecar, £184.

GEORGE BROUGH, Haydn Road, Nottingham.—One would have thought it impossible to add any further refinements to the "S.S.80" Brough Superior. Yet this Rolls-Royce of motor cycles—it earns the title by something more than mere cost—has been further improved since it made its first (and very successful) appearance in the Six Days Trials. Attention has been devoted in the main to details. The lower torque tubes now extend from the rear axle to the rear engine plate, passing inside instead of outside the exhaust pipes; knee grips are carried on concealed clamps on the tank; and the exhaust pipes fixing has been cleaned-up. When a Magdyno is fitted (£15 extra) the details are carried out in a wonderfully neat fashion, embodying the latest switch and lamp brackets integral with the forks. The way in which the fully-equipped model camouflages its equipment is remarkable. The handlebars are clear except for a speedometer right in the centre. For £160 the "S.S.80" model is supplied with a guarantee to have exceeded 80 m.p.h. on the track.

A new sidecar has been designed to suit the machine. Despite attractive sporting lines, it is extremely roomy and comfortable, being upholstered with "Buoyant" cushions of spring-mattress fame.

Also in the 1,000 c.c. class are the side-valve and o.h.v. models, both at £130, and finally there is the 740 c.c. M.A.G.-engined machine, which is a replica of the "S.S.80," but somewhat less of a road-eater. Its price is £115, or with full equipment £125; and a specially finished sporting Montgomery sidecar is sold for it at £27.

CYKELAID. (158.)

For Motorising Bicycles.

1½ H.P. MODEL.—55×56 mm. (133 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; flywheel mag.; clutch, no kick-starter; chain drive; 26×2in. tyres. Price £24 10s.

SHEPPEE MOTOR CO., LTD., Thomas Street, York.—In its latest form the Cykelaid motor-assisted bicycle is far more workmanlike in design than such machines have been in the past.

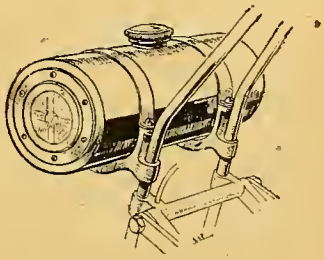
The little power unit fits very neatly to a special front wheel with the petrol tank above the mudguard, motor cycle type spring forks, and the silencer actually bolted to the mouth of the exhaust ports. Control is limited to a single-lever carburetter, and the whole of the mechanism is as simple as possible. Two ladies' and two gentlemen's machines are shown, one of each type being provided with a substantial motor cycle type carrier, and all with the motor cycle type stand.

CLEMENT. (181.)

Only 43 c.c. Capacity.

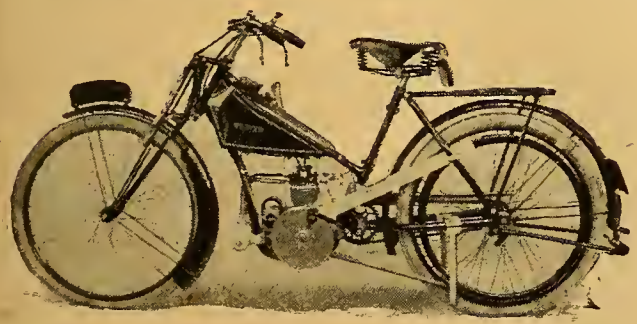
¾ H.P. MODEL.—35×45 mm. (43 c.c.); single cyl. four-stroke; overhead valves; splash lubrication; gear-driven mag.; single-sp.; chain drive; 28×1¾in. tyres. Price £24 3s.

A. CLEMENT, 26, Albany Street, London, N.W.1.—The smallest engine in the Show is fitted to this motorised bicycle,

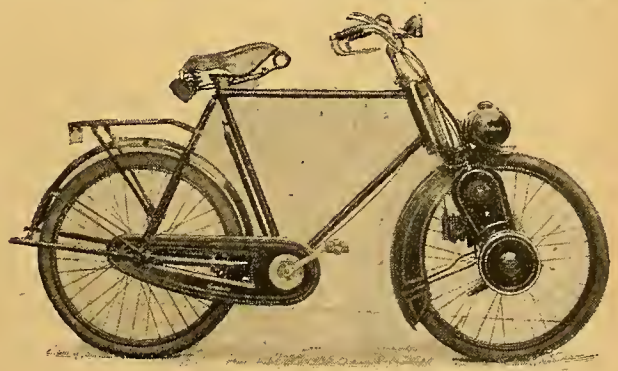


The licence holder on the Cykelaid is accommodated in the end of the tank.

a Belgian design assembled in this country. The cylinder is an exact model of that on the Gnome aeroplane engine, and is a special attraction to model-makers. The machine itself is little more than a pedal cycle with a fork employing a leaf spring. That the engine is of the high-

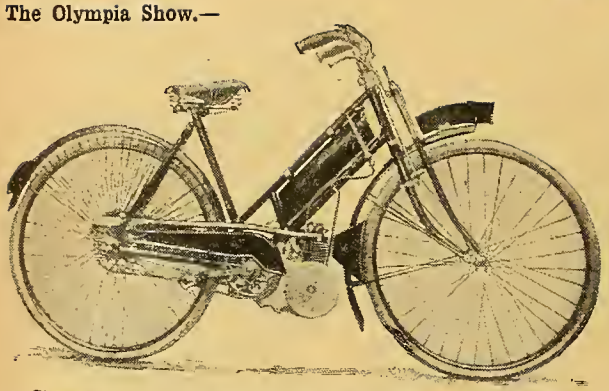


Overhead valves are not confined to sports models—the little Weaver lightweight has a miniature o.h.v. engine.



Cykelaid motor attachment for pedal cycles.

The Olympia Show.—



Clement 43 c.c. motorised bicycle—the smallest-engined machine at the Show.

speed type may be judged from the fact that the gear ratio is 12 to 1, with which it is capable of maintaining an average speed of 24.66 m.p.h. The makers hold an A.C.U. certificate showing that on an observed test covering 59½ miles this speed was accomplished, and also that the machine, with a 169 lb. rider, ascended Hindhead without pedal assistance. "Ten miles a penny" is one of the claims made by the manufacturers. A lady's model is also shown, and is priced at one guinea extra. A special racing model is also on view, with dropped handlebars and wooden rims. Its weight complete is but 38½ lb.

Connaught silencer cut away to show arrangement of exit pipes.

CONNAUGHT. (132.)

Solo and Sidecar Two-strokes.

2¾ H.P. MODEL.—73×70 mm. (293 c.c.); single cyl. two-stroke; petroil lubrication; Amac or B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 24×2¼in. tyres. Price £49 7s.

BORDESLEY ENG. CO., Aston, Birmingham.—The foundation of this model is the familiar Connaught engine on which the reputation of the firm has been built. It is famous for economy, both in petrol and oil, and is marketed with three separate transmission specifications, viz., popular (direct belt drive), standard (chain-cum-belt), and all-weather model (all chain). The geared models are definitely recommended for pillion work. A glance at the machines indicates that silence is going to be a special feature during 1923, it being obvious that very special attention has been paid to the exhaust system.

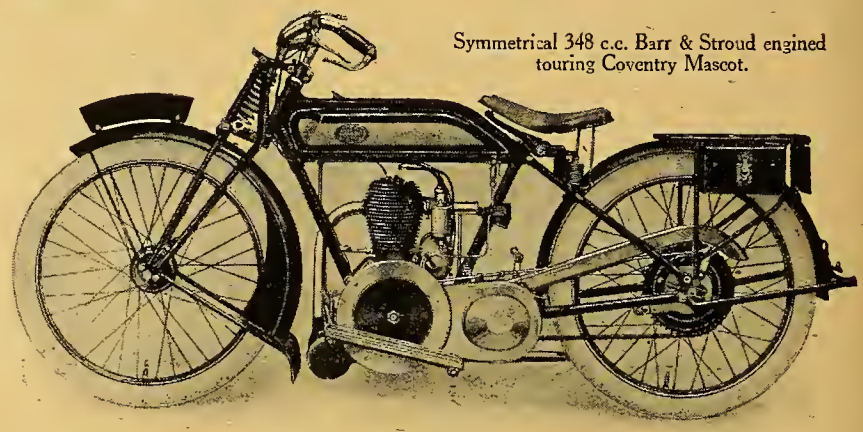
3½ H.P. MODEL.—76×77 mm. (349 c.c.); single cyl. two-stroke; mechanical pump and petrol lubrication; Amac or Wex carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £65 2s.; with Sidecar, £78 15s.

The silencing arrangements of both the sports and the *de luxe* models are worth close attention. The exhaust of the *de luxe* model emerges from the cylinder into a finned aluminium manifold, and passes down a huge flexible copper pipe into a capacious aluminium expansion box under the engine, from which the exit is by twin copper fishtails. On the sports model, which has a similar engine, the exhaust emerges from the cylinder into a duplex aluminium manifold, from which it travels down a big copper pipe to an aluminium expansion box level with the rear wheel. The capacity of these systems, and the use of special metals to cool the gas and to prevent "ring," are noteworthy points.

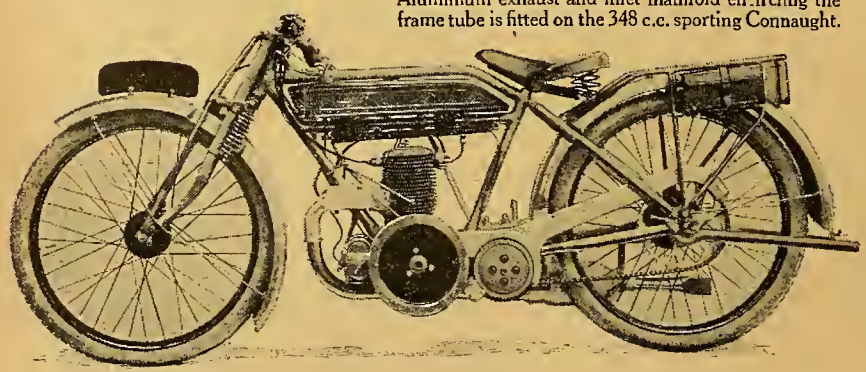
This 348 c.c. engine is, of course, large as two-strokes go. On the sports model it is capable of 55 miles per hour, whilst the *de luxe* model with a low bottom gear makes a powerful touring mount. Each model is fitted with a Showell mechanical pump. Petroil lubrication is used as an auxiliary. The handle-bar adjustment in the head clip deserves attention.

Equipped with quite a roomy and substantial sidecar the three-speed model has ample power and is sufficiently robustly built for transporting two people anywhere.

Symmetrical 348 c.c. Barr & Stroud engined touring Coventry Mascot.



Aluminium exhaust and inlet manifold encircling the frame tube is fitted on the 348 c.c. sporting Connaught.



COVENTRY-MASCOT. (124.)

Sleeve Valve or o.h.v. Oil-cooled.

2¾ H.P. MODEL.—70×90 5 mm. (348 c.c.); one cyl. four-stroke; sleeve valves; hand pump lubrication; Vici carb.; gear-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive 26×2¼in. tyres. Price: Solo, £67; with Sidecar, £87.

COVENTRY MASCOT CYCLE CO., LTD., Camden Street, Coventry.—These machines are of thoroughly conscientious design and form a very nice housing for the Barr and Stroud engine. The front down tube is duplex in order to give the necessary clearance for a straight exhaust pipe. The steering head is an excellent mechanical job, its inner curve being struck to a true radius without corners. All fittings are brazed. Very sensible footboards are fitted, and both the brakes are of the Webb type. Various transmission options are given. One model has a tremendous expansion box with the tail pipe carried up to the level of the pannier bag for the purpose of negotiating water splashes.

2¾ H.P. MODEL.—68×96 mm. (349 c.c.); one cyl. four-stroke; overhead valves; mechanical lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £69; with Sidecar, £89.

This model is fitted with the new vertical single cylinder oil-cooled Bradshaw engine, equipped with overhead valves and mechanical lubrication. The frame and riding position are of the sports type, and as this engine has a high efficiency the machine is decidedly attractive.

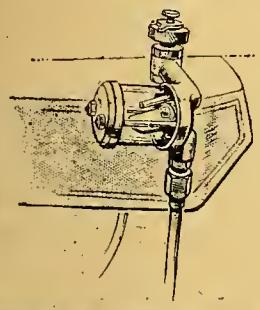
The Olympia Show.—

J.E.S. (38.)

Four-speed 150 lb. Lightweight.

2½ H.P. MODEL.—68×68 mm. (247 c.c.); single cyl. two-stroke; automatic lubrication; Amac carburetter; chain-driven mag.; 4-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, £59 17s.

J.E.S. MOTOR CO. (GLOUCESTER), LTD., Gloucester.—This year's Six Days Trials demonstrated that the 169 c.c. J.E.S. with four-speed gear box was a go-anywhere machine; there should therefore be no doubt as to the capabilities of the new 247 c.c. model which forms the chief exhibit.

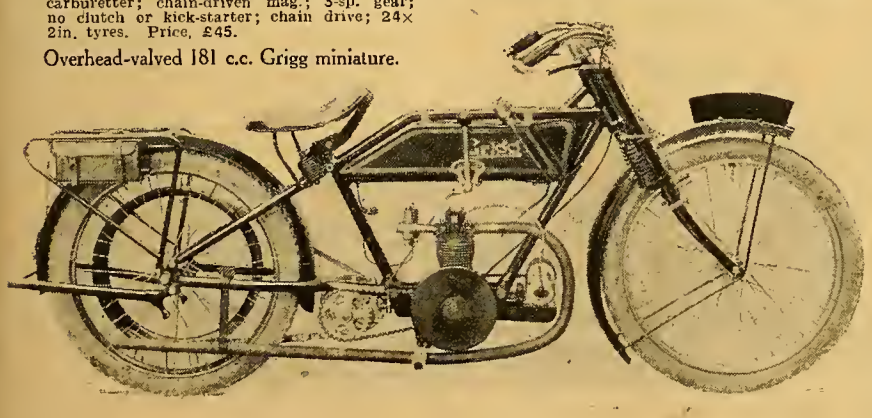


Adjustable oil drip-feed on the J.E.S.

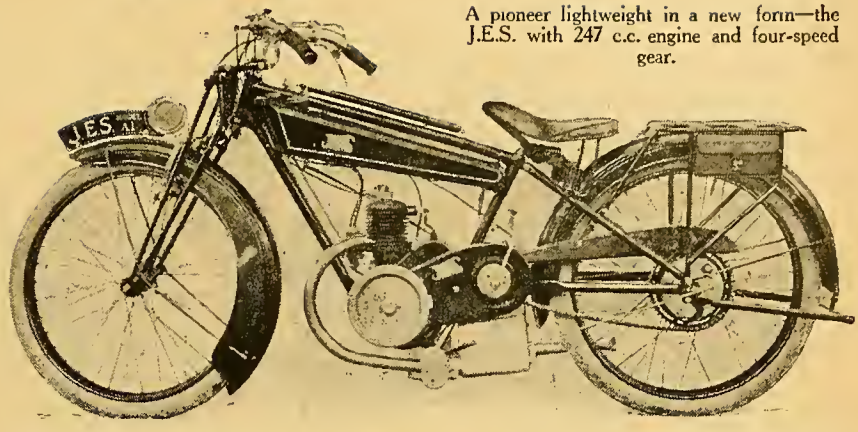
The gear box is the same as was used on the smaller model in the A.C.U. Trials, but the engine is a new production, although on quite conventional lines. It is of the three-port type, and has a roller-bearing big end. Lubrication is by crank case pressure controllable by an adjustable drip feed. Special attention has been paid to balance. Quite a novel principle—for motor cycles—is applied in the diminutive four-speed gear box. The pinions are in constant mesh, and each pair in turn is dogged to the main- and lay-shafts. Thus the drive on each gear is indirect. Similar designs are often employed in machine tools. Other important features include a massive internal expanding rear brake, a slightly smaller front brake, and girder spring forks. Transmission is by chain, and there is a shock absorber in the rear hub. Complete, this workmanlike little motor cycle weighs only 150 lb.

1¾ H.P. MODEL.—60×60 mm. (169 c.c.); single cyl. two-stroke; automatic lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; no clutch or kick-starter; chain drive; 24×2in. tyres. Price, £45.

Overhead-valved 181 c.c. Grigg miniature.

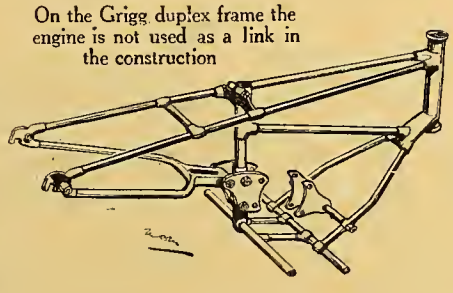


A pioneer lightweight in a new form—the J.E.S. with 247 c.c. engine and four-speed gear.



The 169 c.c. miniature is shown in two forms, with direct belt drive at £29, or to the above specification with a new three-speed gear box and final chain drive at the price stated. In the first case a belt rim rear brake is employed, but on the more elaborate model the internal expanding type, as on the 247 c.c. machine, is repeated.

On the Grigg duplex frame the engine is not used as a link in the construction



GRIGG. (35.)

Duplex Frame Construction.

3½ H.P. MODEL.—79×70 mm. (343 c.c.); single-cyl.; two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price with Sidecar, £72 10s.

THE GRIGG MOTOR AND ENG. CO., LTD., St. Margaret's, Twickenham, London.—Probably the most interesting of the many varied Grigg lightweights is the 343 c.c. Villiers-engined sidecar outfit. It is one of the most compact, and incidentally most moderately priced, passenger machines in Olympia. The chief feature of this, and of all the other little Griggs, is a neat triangulated frame, duplex in some places. Otherwise they employ well-known proprietary components, except for the smallest model, which has the 64×62 mm. (199 c.c.) Grigg two-stroke engine. Two speeds are fitted to this, and to the 247 c.c. and 347 c.c. Villiers-engined solo models, which cost respectively £42 10s., £49, and £55. A 349 c.c. Blackburne engine is fitted to a new model, with chain drive and a three-speed gear box, at £73.

A late arrival on this stand was a miniature four-stroke, using the o.h.v. engine popular on many makes in this class. With two-speed and belt drive it costs £37 16s.

F.N. (141.)

Shaft Drive

8 H.P. MODEL.—52×88 mm. (748 c.c.); four cyl. four-stroke; overhead inlet valves; mechanical lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; shaft drive; 26×3in. tyres. Price: Solo, £110; with Sidecar, £135.

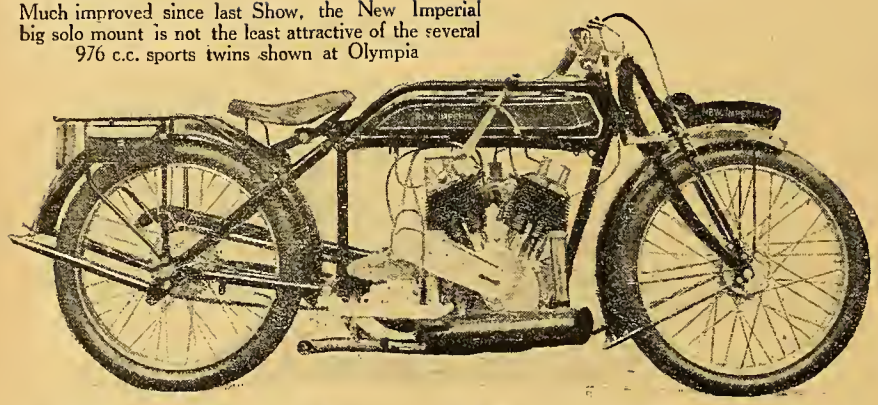
F.N. (ENGLAND), LTD., Kimberley Road, Willesden Lane, N.W.—The four-cylinder touring model F.N. remains entirely unchanged from last year, though several new sidecars have been added to the range, including a spring wheel model. This machine is now obtainable as a sporting model, the main feature of which is a specially-tuned engine which can be guaranteed to provide speeds exceeding 60 miles an hour; the saddle, footboards, and handle-bar of the sporting model have been modified to suit its speed.

2¾ H.P. MODEL.—65×85 mm. (282 c.c.); one cyl. four-stroke; overhead valves; drip feed lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; clutch and kick-starter; shaft drive; 26×2½in. tyres. Price £60.

This veteran lightweight has undergone very little change, as might be expected from its long and honourable history. The front fork has been redesigned, and its links are now equipped with large ball bearings. A sight feed for the drip lubrication has been brought up level with the tank on the near side, where it is extremely convenient for observation. Scintilla magnetos will be fitted for 1923. The new saddle, which is of French origin, gives a low riding position, and the mudguards are wider than formerly.

The Olympia Show.—

Much improved since last Show, the New Imperial big solo mount is not the least attractive of the several 976 c.c. sports twins shown at Olympia



NEW IMPERIAL. (94.)

Solo Lightweights—Big Twin Sidecars.

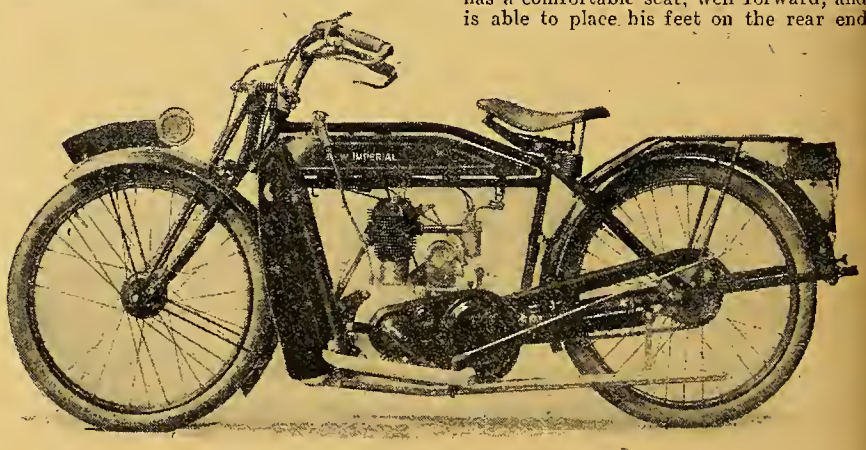
2½ H.P. MODEL.—70×76 mm. (293 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter chain drive; 26×2¼in. tyres. Price £65.

NEW IMPERIAL CYCLES, LTD., Princip Street, Birmingham.—On the New Imperial stand are shown models designed to meet all tastes. From a light sporting machine of 248 c.c. with J.A.P. engine, the range extends up to a very complete and substantial outfit with 976 c.c. twin-cylinder J.A.P. engine. Interest centres round the standard 293 c.c. light touring machine which, with complete equipment, is marketed at an attractive price. This model has leg guards which are arranged in such a way as completely to protect the rider from any mud splashes that the front guard has failed to intercept, and so placed as to offer the minimum amount of wind resistance. In addition to the model with standard equipment, there is shown a machine fitted with the M-L Maglita set, which, with its accumulator and head lamp both clipped to the handle-bar, presents an appearance neat and by no means cumbersome.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V-twin cyls. four-stroke; side valves; drip feed lubrication. B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: Solo (super-sports) model, £117; (standard) with Sidecar, £125.

Many features of special interest are presented by the big sidecar machine. Brakes, for instance, are internal expanding car type on both front and rear wheels, and the hubs are fitted with Timkin roller bearings. The silencer is of remarkable dimensions, and will attract those who are specially desirous of a quiet machine. The carrier and back half of the rear mudguard are arranged so as to be very easily and quickly removable when access to the back tyre is desired. Amongst many other features, the provision of special grease lubricating caps at all vital points on the machine is notable. These caps are closed by spring loaded balls, and provided for the purpose, which screws on to them. The grease is forced in, and are filled by means of a special grease gun there can be no doubt whatever about its reaching the point at which it is required. Of course the chief change on this model, as already recorded in *The Motor Cycle*, is the new loop frame.

Mention should also be made of the substantial and practical light sidecar outfit fitted with a 350 c.c. J.A.P. single-cylinder engine and three-speed gear.



Medium weight 293 c.c four-stroke in the big range of New Imperial models.

H.T. (46.)

All-weather Runabout and Sports Solo.

2¾ H.P. MODEL.—70×90.5 mm. (348 c.c.); single cyl. four-stroke; sleeve valve; drip feed lubrication; Cox Atmos carb.; gear-driven mag.; 2-sp. gear; clutch and hand-starter; chain and belt drive; 26×2½in. tyres. Price £80.

THE H.T. MOTOR CYCLE CO., Park Street, near St. Albans, Herts.—Probably the old and fuller name of the H.T.—the Hagg Tandem—better describes this model, which is a two-seated two-wheeler designed to overcome the main objections to pillion riding. The extra passenger has a comfortable seat, well forward, and is able to place his feet on the rear end of the main footboards. It is claimed that the usefulness of the H.T. as a solo mount is not in any way diminished.

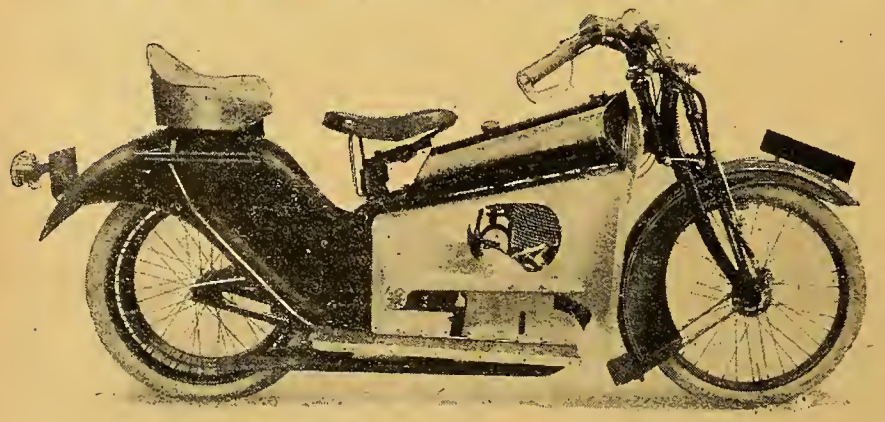
Other features of note are a simple but extremely strong spring frame, complete shielding of the engine, and adequate mudguarding, a hand-starter, and a foot-controlled gear, which allows the nervous rider to retain his hands on the handle-bars whenever the machine is in motion.

Provision has been made for carrying luggage pannier fashion over the rear wheel.

2¾ H.P. MODEL.—70×90.5 mm. (348 c.c.); single cyl. four-stroke; sleeve valve; drip feed lubrication; Binks carb.; gear-driven mag.; 2-sp. gear; clutch, no kick-starter; chain and belt drive; 26×2½in. tyres. Price £65.

Right at the other end of the scale is the second model of the H.T., a simple and light speed machine, shorn of all unessentials.

Internal expanding front and rear brakes are fitted to both types, and several other items in their specification are the same, but it would be difficult to imagine a greater contrast than the finished products.



Completely shielded and fully sprung tandem-seated model of the H.T.

The Olympia Show.—

P. & M. (77.)

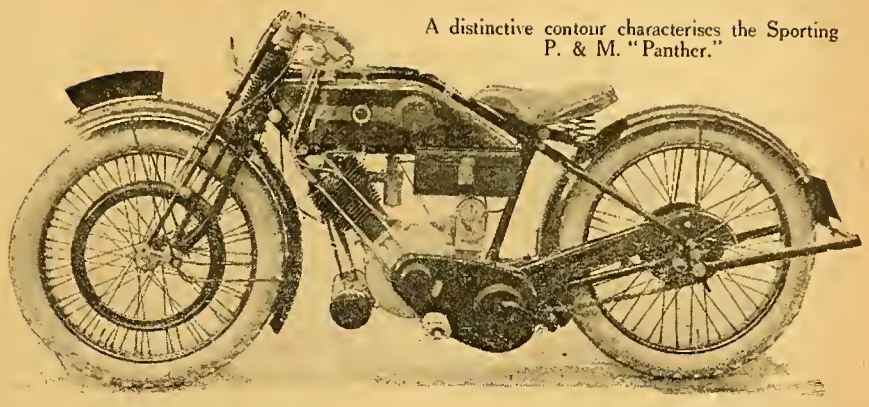
Tourist Mount Turns Speed Model.

4½ H.P. MODEL.—84.1×100 mm. (555 c.c.); single cyl. four-stroke; side valves; mechanical lubrication; B. and B. carb.; chain-driven mag.; 4-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Sports solo, £100; Touring Sidecar (fully equipped), £136.

PHELON AND MOORE, LTD., 4, Berners Street, Oxford Street, W.1.—For many years the broad and distinctive lines of the P. and M. machine have been the same. Indeed, one familiar with the earlier models could, without hesitation, recognise the motor cycles on the stand as descendants in the direct line. The principal model for next year is the new sporting type of 555 c.c. capacity. This machine for the first time in the history of P. and M. is of really sporting character, with dropped handle-bars, a sloping tank, and a cut-away top tube to give an easy riding position. An aluminium piston is fitted, together with a special form of knee pad, rigidly fixed to the tank by a concealed clamp. In addition there is a new type of sidecar with an aluminium body, having a car type windscreen and a disappearing hood. This body resembles in many respects the Brooklands type of racing car body which has been so popular in the past season.

An ordinary sidecar is shown, together with two models, one solo and one sidecar, having Brooks cantilever leaf-spring saddles. The sporting models, of course, have an ordinary saddle.

The excellent finish of the machines calls for commendation; indeed, ever since this old-established firm specialised on the production of motor cycles these have been famed for quality. In view of the almost general adoption of variable gears and chain transmission this year, it is not without interest to observe that P. and M. machines from the earliest days have been thus equipped.



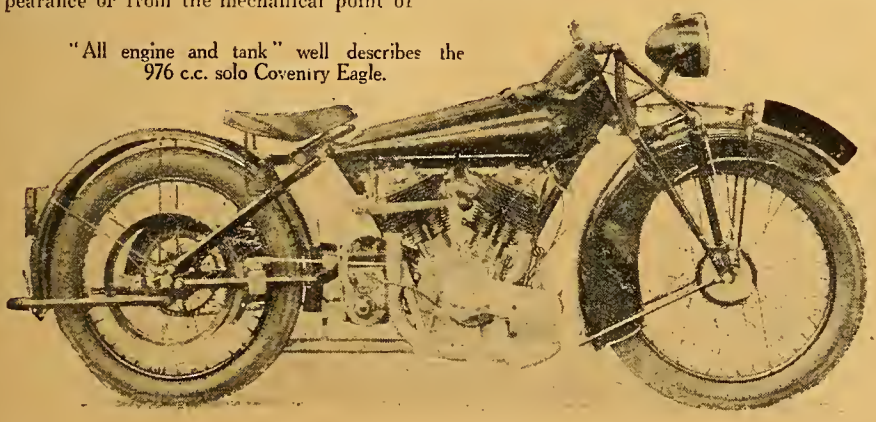
A distinctive contour characterises the Sporting P. & M. "Panther."

COVENTRY-EAGLE. (43.)

Small Singles; Big Sports Twin.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side-by-side valves; hand-pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £125; with Sidecar, £145.

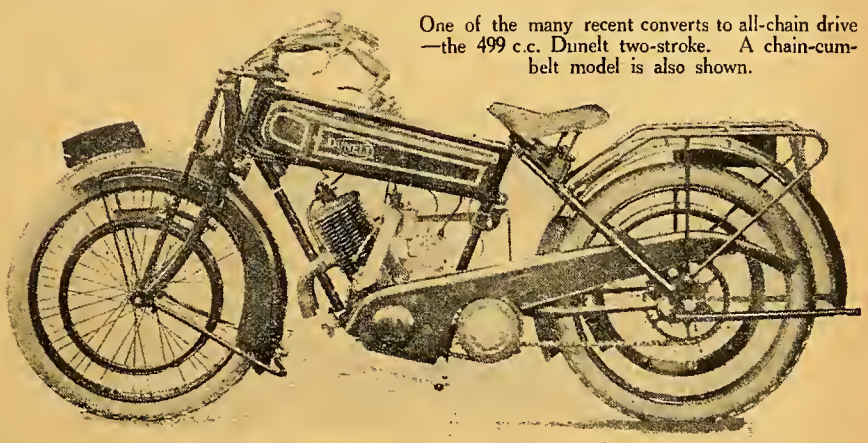
COVENTRY EAGLE CYCLE AND MOTOR CO., Coventry.—There are few machines in the Show that can compete with the latest big Coventry Eagle, either in appearance or from the mechanical point of view. It is a most imposing machine, yet compact and neat. Engine and gear box are well-known proprietary units—the super-sports J.A.P. and the Sturmey-Archer respectively—but it is the way in which they are housed that attracts attention. Incidentally, the engine plates are of a new pattern, employing two bolts instead of one where they are attached to the frame lugs, and of such a shape as to permit extremely short front down- and saddle-tubes. A very rigid assembly is the result. Montgomery spring forks, a large bull-nosed saddle tank, and a neat aluminium silencer are noteworthy features.



"All engine and tank" well describes the 976 c.c. solo Coventry Eagle.

3 H.P. MODEL.—70×90 mm. (346 c.c.); single cyl.; four-stroke; side-by-side valves; hand-pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼ in. tyres. Price: Solo, £67; with Sidecar, £86.

Known as the general utility model, the 346 c.c. J.A.P.-engined Coventry Eagle may be taken as representative of the wide range of light- and medium-weight machines staged. It again embodies well-tried proprietary components, but differs from the larger machine in having Brampton forks. To a sporting specification, using the sports edition of the same engine, it costs £69 10s.



One of the many recent converts to all-chain drive—the 499 c.c. Dunelt two-stroke. A chain-cum-belt model is also shown.

Very similar is a 348 c.c. Blackburne-engined model at £65; while there are two workmanlike 249 c.c. Blackburne and 293 c.c. J.A.P. models, with two-speed, clutch and kick-starter, and final belt drive, both at £56.

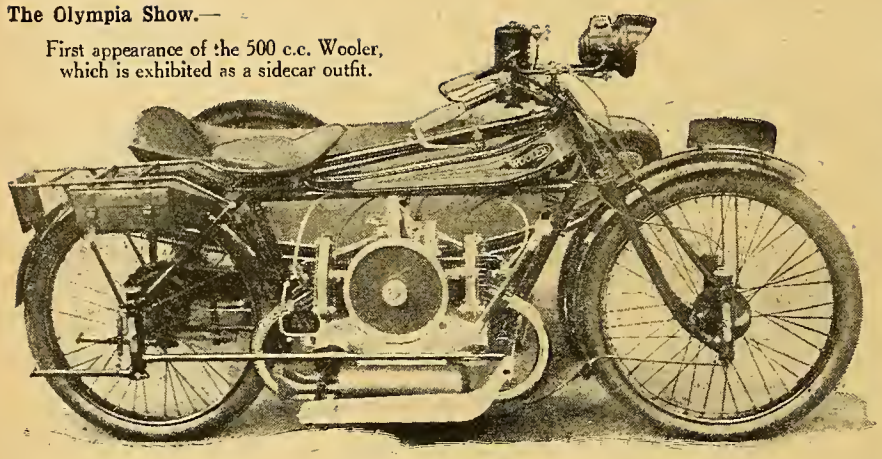
1¾ H.P. MODEL.—55×60 mm. (142 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; chain-driven mag.; single gear; chain and belt drive; 26×2in. tyres. Price £30 9s.

The new miniature is one of the best-looking of its type in the Show. This quality is helped by the tank being a replica of that on the larger machines. The magneto-drive, from a sprocket alongside the engine sprocket, enables one cover to protect the primary and magneto drives. £33 12s. is the price of a two-speed model.

Finally, there is a sturdy but pleasing family sidecar outfit at £115, employing the 549 c.c. J.A.P. engine.

The Olympia Show.—

First appearance of the 500 c.c. Wooler, which is exhibited as a sidecar outfit.



WOOLER. (18.)

Overhead Camshaft Flat Twin.

2¾ H.P. MODEL.—60.5×60 mm. (345 c.c.); flat twin cyl. four-stroke; overhead valves; mechanical lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch, no kick-starter; gear and chain drive; 26×2¼in. tyres. Price £80.

DEDERICH WOOLER ENG. CO., LTD., Alperton, London.—Right from their inception, Wooler motor cycles have always tended to be unconventional, and many of their original features—for example, the simple system of front and rear suspension—are still retained on this, the latest model. The engine has been re-designed to give the greatest efficiency, and the valves, placed radially in the cylinder heads, are operated through rockers by a camshaft running parallel with the cylinders. A simple adjustment for taking up wear is provided. The method at first adopted of holding down the detachable head by an interrupted thread has been discarded, ordinary bolts now being used. Embodying a sump for the mechanical oil pump, the crank case also holds the three-speed gear. To adjust the driving chain the whole engine unit may be slid bodily forwards on its duplex carrying members. Internal expanding brakes front and rear, suitably-placed footrests, and well-dropped handle-bars make the specification of this model workmanlike. It also gives promise of considerable speed.

3½ H.P. MODEL.—66×73 mm. (499 c.c.); flat twin cyl. four-stroke; overhead valves; mechanical lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; 26×2¼in. tyres. Price: Solo, £94; with Sidecar, £109.

Although an entirely new model not previously seen or illustrated, the 499 c.c. Wooler follows the lines of the 345 c.c. model so closely that little additional description is required. Intended for solo or passenger work, it is shown with a very neat, low sidecar, finished to match the tank. Also shown are chain-driven three-speed and belt-driven variably-geared examples of the touring 345 c.c. model, little altered from last year. Solo the prices are £75 10s. and £65 respectively, or with suitable sidecars £95 10s. and £77 10s. A 1,000 c.c. Wooler engine embodying the new camshaft is also shown, but apparently it has been designed for use in a light car so many medium-weight machines; and, last, the Barr and Stroud single-cylinder sleeve-valve engine of 349 c.c. capacity. In each case the power plant is adapted in a remarkably neat and attractive manner. The Sturmey-Archer two-speed gear and Amac carburetter are fitted to machines with the Villiers and J.A.P. engines. A smaller model, also with Villiers engine, may be described as an ultra-lightweight machine. This is fitted with the Albion two-speed gear, and will appeal particularly to those who require a mount that is both substantial and tractable, whilst being at the same time really light.

3½ H.P. MODEL.—70×90.5 mm. (349 c.c.); one cyl. four-stroke; single-sleeve valve; sight feed lubrication; Amac carb.; chain-driven magneto; 3-speed gear; clutch and kick-starter; chain drive; 26×2¾ tyres. Price £77 10s.

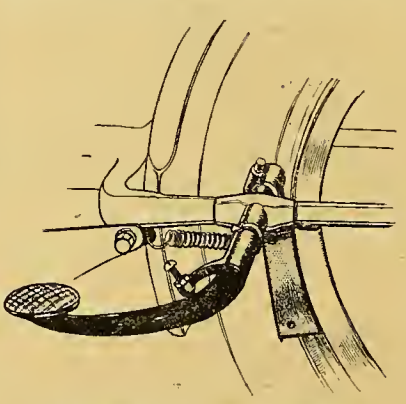
Probably the most interesting model on this stand is that fitted with the 349 c.c. Barr and Stroud sleeve-valve engine; it is chain-driven throughout. The magneto is an M.L., and a Sturmey-Archer three-speed gear is employed. The brake work is well carried out, dummy belt rims being fitted on both front and rear wheels. Altogether this is a most attractive model, and merits close study. In the case of the types fitted with Villiers two-stroke engines, a choice of three varieties is given, i.e. the 150 c.c. ultra-lightweight already mentioned, together with the 250 c.c. and 350 c.c. types. The larger model is fitted with Sturmey-Archer three-speed gear. This or the sleeve valve engined machine is suitable for sidecar work.

DIAMOND. (93.)

Sleeve Valve or Two-stroke Models.

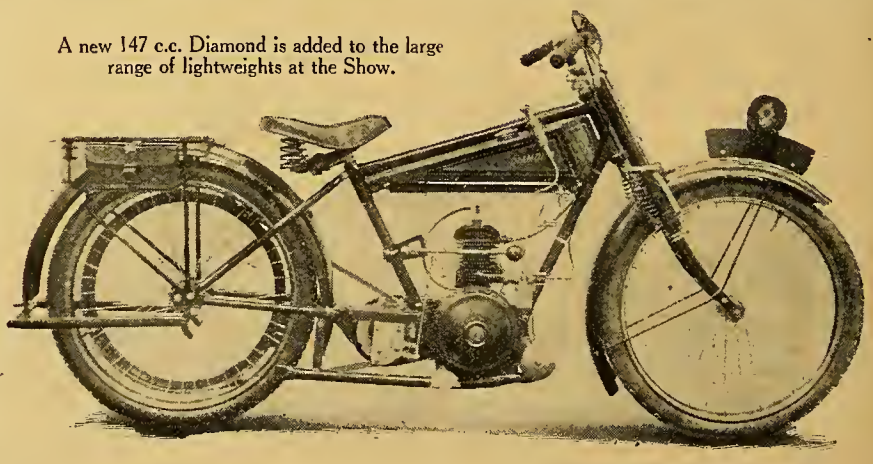
3½ H.P. MODEL.—79×70 mm. (343 c.c.); one cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼ tyres. Price £60.

THE D.F. AND M ENGINEERING CO., LTD., Diamond Works, Wolverhampton.—Visitors to this stand will find three different and well-known types of engines, one of which is a two-stroke (the Villiers); another, the well-known standard J.A.P., with side valves, found on



Brake pedal of the Diamond miniature.

A new 147 c.c. Diamond is added to the large range of lightweights at the Show.



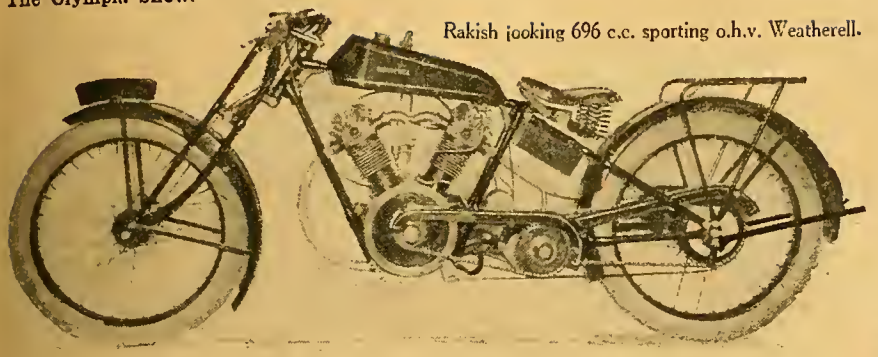
WEATHERELL. (17.)

With Speed Trials Interest.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; overhead valves; drip-feed lubrication; Vici carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £80.

R. WEATHERELL AND CO., LTD., The Terrace, High Road, Kilburn.—Perhaps the chief success of the 350 c.c. Weatherell was to win the 100-mile Giant Handicap at Brooklands last summer, but a study of 1922 speed trials results will often discover this make in a prominent position, for it has distinguished itself in many meetings, particularly in London and Home Counties. Various modifications have been made for next

The Olympia Show.—



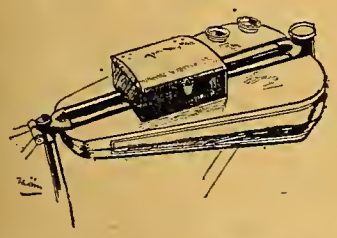
Rakish looking 696 c.c. sporting o.h.v. Weatherell.

year, notably a new type of fuel tank resting on the top of the duplex top tube. This change gives the machine a curiously speedy appearance.

5-6 H.P. MODEL.—71×88 mm. (696 c.c.); twin cyl. four-stroke; overhead valves; drip-feed lubrication; Vici carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: Solo, £115; with Sidecar, £135.

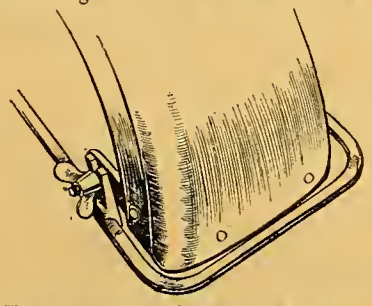
Weatherell machines are probably better known in their 250 c.c.-350 c.c. forms, but the 696 c.c. model with a sidecar attached has by no means disgraced itself on its few appearances on Brooklands track. It is an imposing machine, and should prove to have remarkable powers of acceleration. A side-valve model costs £10 less.

Tank rail tool bag on 348 c.c. Weatherell.



Another o.h.v. Blackburne-engined machine, of 249 c.c., completes a very striking trio of sports models. It is priced at £70 (with side valves £5 less). Internal expanding brakes front and rear, and neat, quickly detachable chain guards are features of all the machines. One of the new petrol tanks is also shown with a plated finish.

to speak of sidecar and a remarkably roomy tradesman's carrier at the astonishing price of £57 15s. The No. 2 Model is the cheapest, being shorn of any luxury fittings, so that the single-geared edition is listed at as low a price as many miniature 150 c.c. machines. For the first time chain drive makes its appearance on the *de luxe* models, on which the rear chain cover is ingeniously mounted to slide with the gear box when the latter is adjusted. The petrol tank is now supported from beneath on bridges carried on two light detachable tubes. The new band brake on the *de luxe* and the very simple rear belt rim shoe on the cheaper models are equally worthy of notice. Footboards, where fitted, are of the hinged type resting on rubber pads. A new spring frame is exhibited on this stand.



The front stand of the Weatherell is secured at the side of the mudguard.

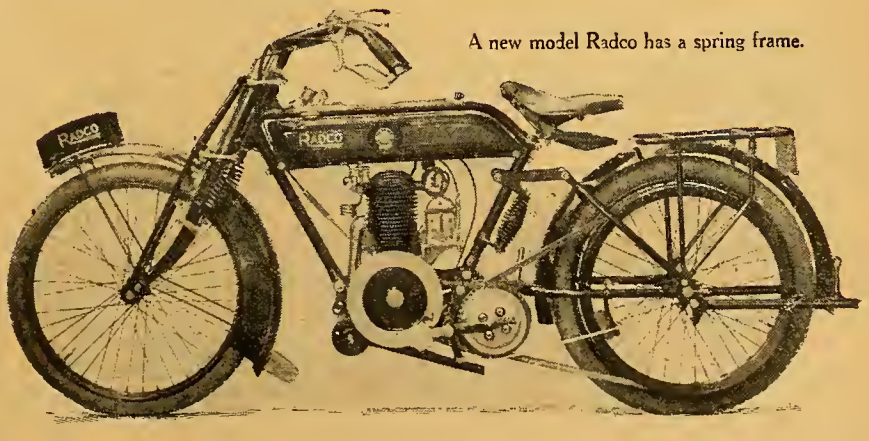
RADCO. (135.)

Many Models—One Engine.

2½ H.P. MODEL.—67×70 mm. (247 c.c.) single cyl. two-stroke; petroil or drip feed lubrication; Amac or Mills carburetter; chain-driven mag.; single gear; clutch and kick-starter; belt drive; 24×2in. tyres. Price, £31 10s.

E. A. RADNALL AND CO., Dartmouth Street, Birmingham.—The Radco is almost unique in that the makers adhere strictly to a single engine, with which, by means of various transmission options, they furnish a sufficient range of models to suit all purses. Their successful 247 c.c. two-stroke engine is retained practically without change for 1923, and is fitted to single gear, two-speed, three-speed, sporting, and lady's models, not

A new model Radco has a spring frame.

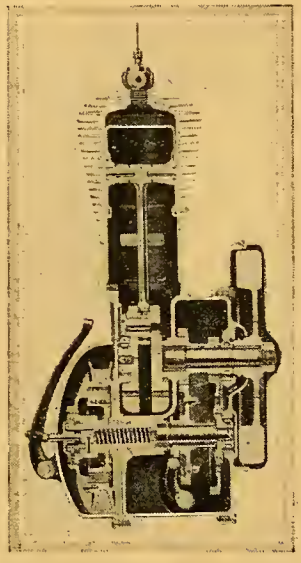


CLYNO. (27.)

Luxurious Big Twin at Low Cost.

8 H.P. MODEL.—76×102 mm. (925 c.c.); V twin cyl. four-stroke; side valves; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: with Sidecar, £125.

CLYNO ENGINEERING CO., LTD., Wolverhampton.—Since the spring-frame Clyno sidecar outfit was a very advanced design at its inception, it does not require modification to modernise it. Engine and gear box are both of Clyno design and manufacture, and, while following conventional lines, are neatly carried out. For next year the clutch has been redesigned, and is now of the steel and phosphor-bronze plate type, instead of the cork insert pattern hitherto employed. The cylinder heads and timing gear have also been modified.



Clyno two-stroke engine and gear unit.

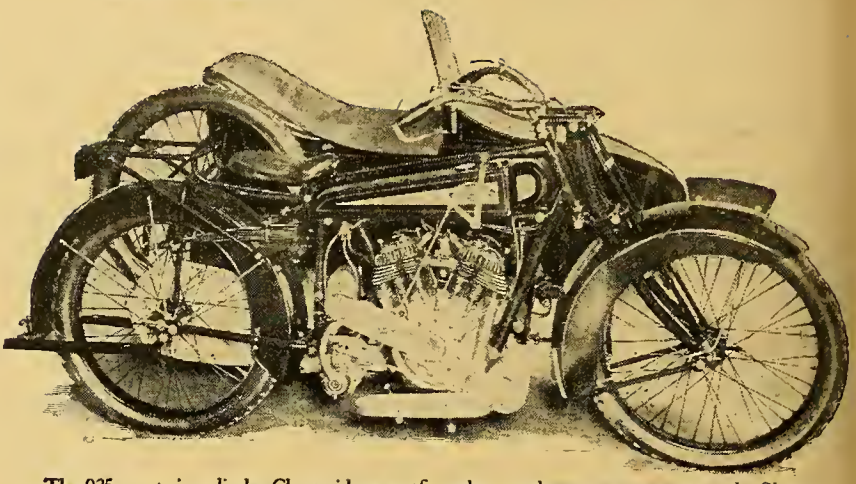
Detachable and interchangeable wheels, extremely efficient mudguarding, enclosed transmission, an adequate combined leg and undershield of improved design, and large rubber-studded footboards, contri-

The Olympia Show.—

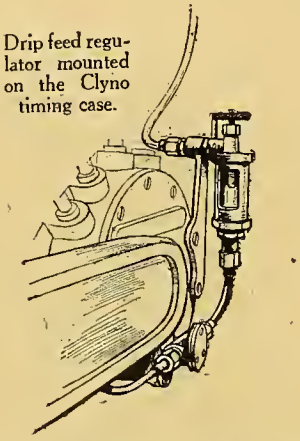
bute to the equipment of this luxurious machine, which, with a Magdyno lighting set (£15 extra) and an imposing sidecar with hood and windscreen, represents the sidecar outfit in its most highly developed form. The spare wheel costs £6 extra.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single cyl. two-stroke; petroil lubrication; Amac carburetter; gear-driven mag.; 2-sp. gear; no clutch or kick-starter; gear and belt drive; 26×2¼in. tyres. Price £45.

One of the most successful and neatly designed two-stroke lightweights of pre-war days, the Clyno makes a welcome reappearance without having undergone any drastic alterations. It will be recalled that its main feature was the absolute simplicity of its unit two-speed gear box.



The 925 c.c. twin cylinder Clyno sidecar outfit makes a welcome reappearance at the Show.



Drip feed regulator mounted on the Clyno timing case.

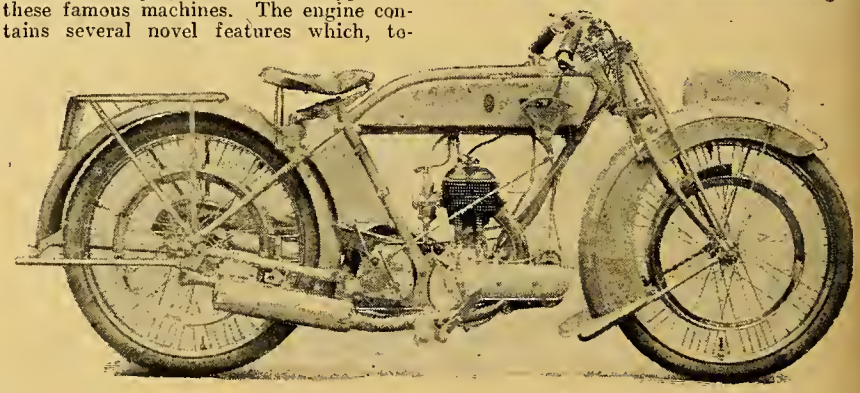
The offset engine is carried in a loop frame of otherwise conventional design. No clutch or kick-starter is provided, it being considered that paddling off is so simple as not to necessitate the complication of these members. All the Clynos on show have a new finish—black with a cream panel in the tank. Three outfits, one demonstrating the spring wheel sidecar and one lightweight, comprise the complete exhibit.

B.S.A. (96.)

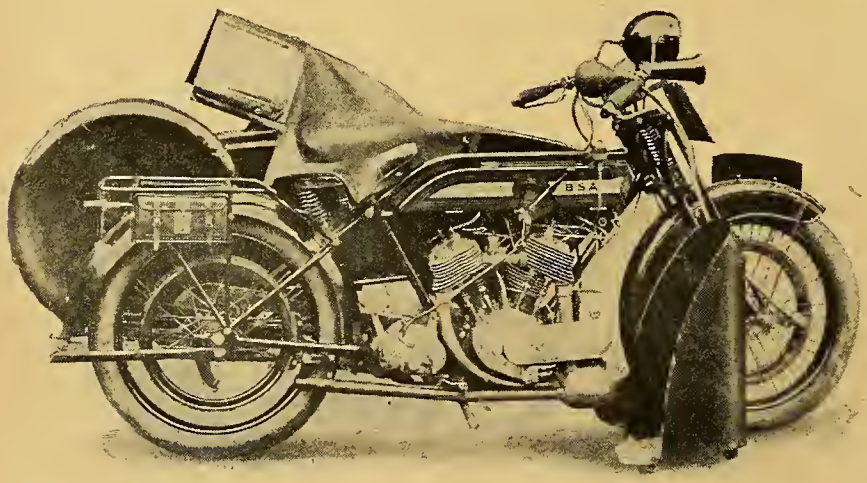
Singles and Twins in Five Sizes.

3½ H.P. MODEL.—80×98 mm. (493 c.c.); single cyl. four-stroke; side valves; mechanical lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price £70.

B.S.A. CYCLES, LTD., Small Heath, Birmingham.—The new 493 c.c. B.S.A. sports model is outstanding in a very attractive display of different types of these famous machines. The engine contains several novel features which, together with the general layout of the machine, combine to make it attractive to the speed merchant. The piston, though of cast-iron, has been very much lightened. An oil pump of the screw type, located in the timing cover, provides forced lubrication to the engine bearings, and the gear box has been modified, the ratios being somewhat closer than those of the standard design.



A French grey B.S.A. of 349 c.c. is a centre of attraction.



Footboard and leg shields shown detached from the 770 c.c. B.S.A. sidecar.

The handle-bars are adjustable as to angle of inclination, being held by a split lug at the top of the steering head, so that any adjustment required can be made by loosening its grip, moving the bars to a different angle, and then tightening up again. This is a feature which appeals to many.

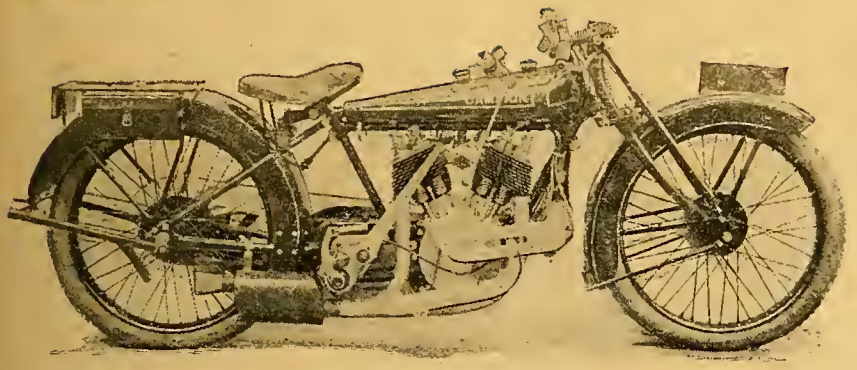
2¾ H.P. MODEL.—72×85.5 mm. (349 c.c.); single cyl. four-stroke; side valves; mechanical lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price £57 15s.

The features of the new B.S.A. 349 c.c. medium-weight model are similar to the sports machine already described, and with the firm's great reputation behind it, it forms a welcome addition to the range.

4¼ H.P. MODEL.—85×97 mm. (557 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive. 26×2½in. tyres. Price: Solo, £75; with Sidecar, £95.

Several examples of the standard 557 c.c. all-chain drive and chain-cum-belt models are also shown; the low prices are remarkable.

The Olympia Show.—

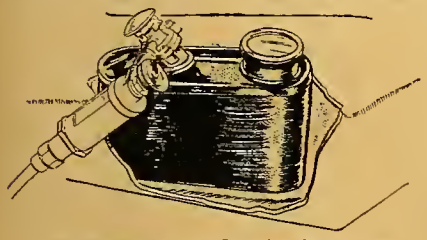


The Campion is a Nottingham representative of the big twin sports type.

6 H.P. MODEL.—76×85 mm. (770 c.c.); V twin-cyl. four-stroke; side valves; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £85; with Sidecar, £105.

Aluminium chain cases are no longer fitted, their place being taken by a light pressed case for the front chain and a guard for the final drive on the "light six" 770 c.c. twin-cylinder machine.

The B.S.A. concern has for some time made a speciality of protecting the rider from cold and wet. Their special leg-shields provide a degree of protection that is as yet unsurpassed. An example of the big twin sidecar outfit with enclosed chain drive and interchangeable wheels as well as a taxi outfit is also shown. The big twin outfit costs £140.



The oil tank of the Campion is separate from the main tank to avoid soldered partitions.

CAMPION. (72.)

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); twin cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 4-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: Solo, £132; with Sidecar, £157.

CAMPION CYCLE CO., LTD., Robin Hood Street, Nottingham. — Most striking amongst the Campion exhibit is the Super Sports 976 c.c. model, with the Jardine four-speed gear box. This machine is painted bright vermilion, and is fitted with a sidecar and exceptionally wide car-type black mudguards. The idea is that this shall be a fast and powerful touring outfit, and yet if the mudguards are removed and the sidecar detached, it shall be a suitable mount for the "unlimited" solo classes of speed events. All the other motor cycles on the stand exhibit the wide range covered by the machines manufactured by the company. There is, for example, the 250 c.c. Villiers two-stroke, with sloping top tube and footboards, and a 348 c.c. Blackburne single-cylinder lightweight, as well as a J.A.P.-engined machine of similar size and type. Of the sidecars one is a plain ordinary design meant for everyday use, and built at as low a price as possible. The other has a luxurious touring equipment, with spare wheel, a Cape hood, apron, and a boot behind for luggage or spare parts. All wheels are interchangeable.

BOWN. (102.)

Varied Choice of Engines.

1½ H.P. MODEL.—55×62 mm. (147 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb.; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain-cum-belt drive; 26×2in. tyres. Price £31 15s.

BOWNS, LTD., Æolus Works, Summer Lane, Birmingham.—Several alternatives are offered by the makers of the Bown motor cycles, Blackburne, J.A.P., and Villiers-engined models being shown upon the stand. The general specification apart from the engine is similar in each case. These machines are laid down and constructed on lines that are sound, solid, and practical, and ample provision is made for silencing, the exhaust pipes in every case being taken right out to the back of the machine.

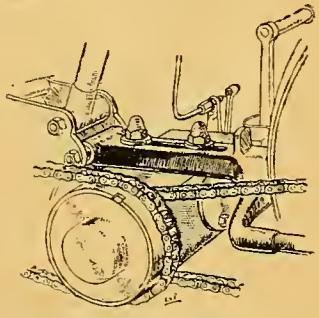
Internal expanding Brampton front wheel brakes may be fitted as an alternative to the ordinary rim brake, and the Brampton fork with centrally placed tension spring has been standardised. Adjustment is provided for the front driving chain to the gear box.

METRO-TYLER. (159.)

Wireless Equipped Sidecar Outfit.

5-6 H.P. MODEL.—71×88 mm. (696 c.c.), twin cyl. four-stroke; side valves; drip-feed lubrication; Amac carb.; chain-driven mag.; 4-sp. gear; clutch and kick-starter; all-chain drive; 26×2½in. tyres. Price: Solo, £97 13s.; with Sidecar, £160 13s.

THE METRO-TYLER CO., LTD., Banister Road, Kilburn Lane, London, W.10.—Everything else on the Metro-Tyler stand is inclined to be dwarfed by the magnificence of the limousine aluminium sidecar fitted to the 696 c.c. twin. It is a very fine example of sheet metal work, and, although of imposing dimensions, it weighs only 63 lb., or, including the wireless receiving set with which it is equipped, 70 lb. The machine itself is a perfectly straightforward design, little altered for this year. It has a Jardine four-speed gear box and internal expanding brakes front and rear, but is not at all weighty, and is eminently suited for solo use.



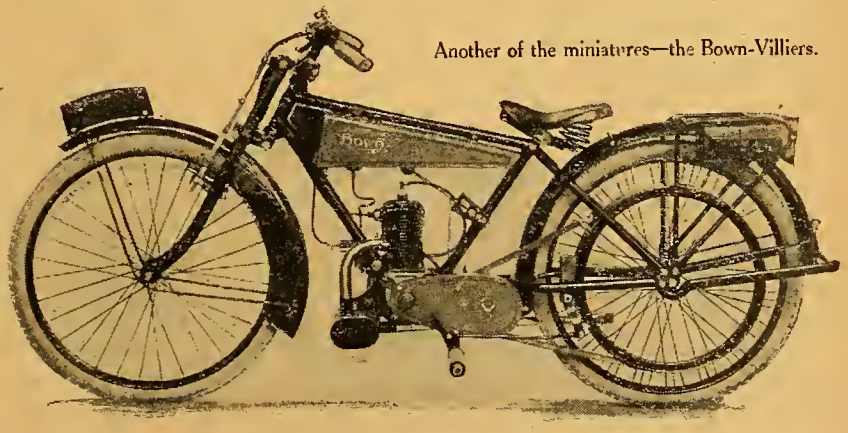
Gear box fixing on the Metro-Tyler.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip-feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 26×2½in. tyres. Price £54 12s.

Few alterations have been made on the well-known "all-enclosed" Metro-Tyler two-stroke, which, as the name implies, has a covered-in crank case, gear box, and magneto. A commendably clean-looking appearance is the result. A roller-bearing big end is employed, and the crankshaft construction, which permits this without employing a built-up crank-pin, is patented.

2½ H.P. MODEL.—70×70 mm (269 c.c.); single-cyl. two-stroke; drip-feed lubrication; Amac carb.; chain-driven mag.; single gear; belt drive; 26×2½in. tyres. Price £35 14s.

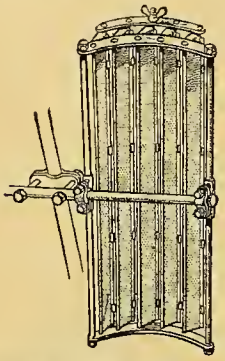
Another of the miniatures—the Bown-Villiers.



The Olympia Show.—

Known, on account of its finish, as the "All-black Baby," the single-geared 269 c.c. model is a good example of the simplest type of miniature, in all but engine capacity. It weighs 120 lb., and is claimed to be the lightest machine in the Show in the 250 c.c.-350 c.c. class. Notwithstanding, it is sturdily constructed.

Conventionally laid-out machines using the 269 c.c. Metro-Tyler engine, and the side-valve and o.h.v. 348 c.c. Blackburne engines are also shown. The last-mentioned has all-chain drive and an Albion three-speed gear box, and is priced at £79 16s.



The louvre type leg shields which open and close at will on the new Coventry Victor.

COTTON. (23.)

Successful Frame Triangulation.

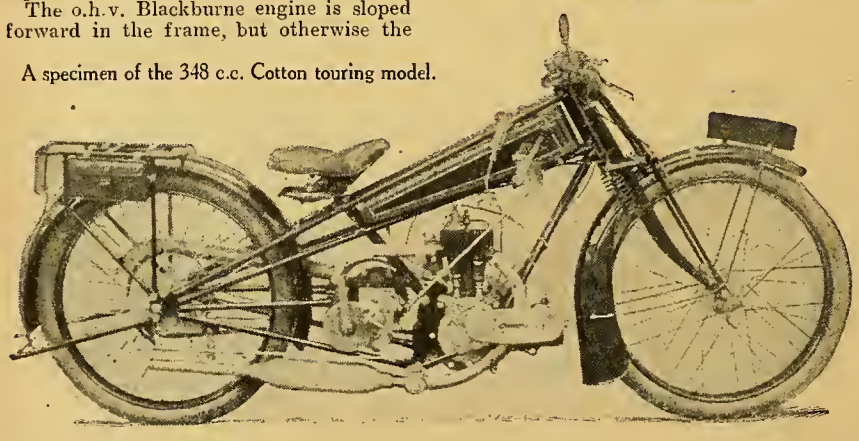
2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; overhead valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch, no kick-starter; chain drive; 26×2¼in. tyres. Price, £72.

THE COTTON MOTOR CO., Gloucester.—Until this year the advantages of the Cotton duplex and fully triangulated frame have been admitted mainly in theory. At the T.T. races they were demonstrated in practice. S. Woods, the Cotton rider, came very near to winning the 350 c.c. class, actually finishing fifth after an unparalleled series of accidents, including a fire that put his brakes out of action. A machine on which feats like this have been accomplished naturally demands attention, and considerable interest is being taken in its marketed replica.

The o.h.v. Blackburne engine is sloped forward in the frame, but otherwise the power unit, transmission, etc., are adequately covered by the specification above. A neat cylindrical aluminium silencer is fitted to this and all the Cotton models.

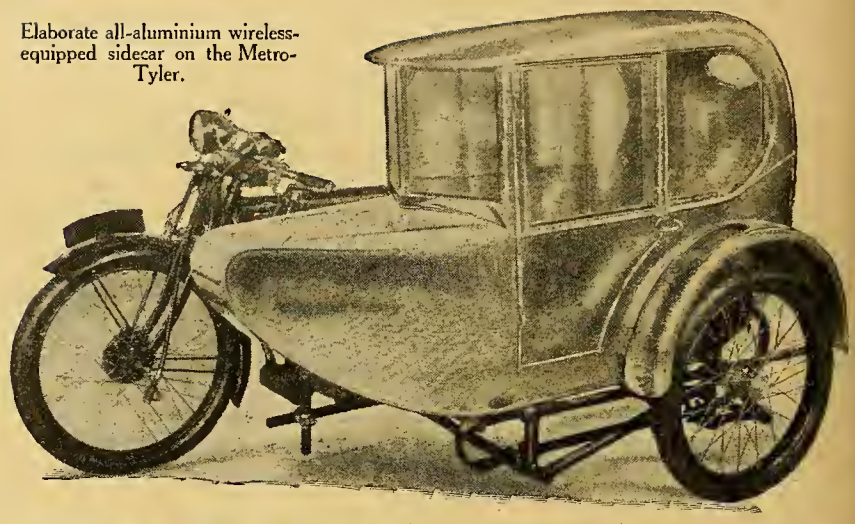
Four other less racy Cottons are on show: (1) a 247 c.c. Villiers with two-speed gear and final belt drive, £49; (2) a 249 c.c. side-valve Blackburne with the same transmission, £57; (3) a 348 c.c. side-valve Blackburne, also with the same transmission, £60; and (4) a 348 c.c. Blackburne with three-speed gear and all-chain drive, £67.

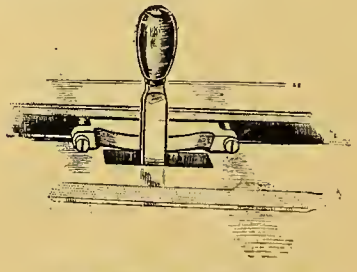
1923 improvements include an alteration to the head lug, which lowers the handlebars by 1½in. The saddle remains about 25in. from the ground.



A specimen of the 348 c.c. Cotton touring model.

Elaborate all-aluminium wireless-equipped sidecar on the Metro-Tyler.





Central gate control of the James lightweight two-stroke.

JAMES. (75.)

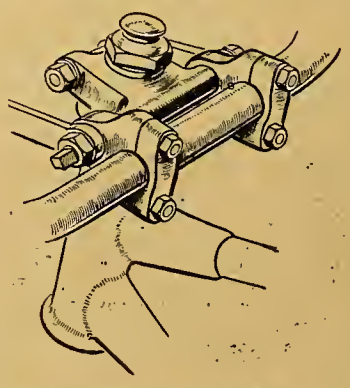
Wide Range Handsomely Finished.

2¾ H.P. MODEL.—73×83.5 mm. (349 c.c.); single-cyl. four-stroke; side valves; pump lubrication; Mills carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price £65.

JAMES CYCLE CO., LTD., Greet, Birmingham.—Principal model on the James stand is the latest type of 349 c.c. single-cylinder, which differs considerably from the lines which have been characteristic of the James motor cycle for a good many years. There is a dropped top tube and sloping tank, giving a very low seating position. The engine has a detachable head, inside flywheels, a roller bearing for the big-end, ball bearings for the crankshaft, and side valves of nickel steel. A three-speed countershaft gear, controlled by a very large gear lever working in a quadrant on the right-hand side of the tank, is fitted.

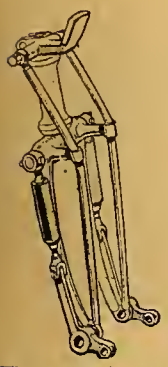
The little two-stroke model has an engine of 239 c.c., with the fins staggered in the manner to which we have become accustomed for so many years on the James.

The remaining machines on the stand include the 500 c.c. twin (considerably cleaned-up), and the 749 c.c. twin, specially designed for sidecar work, while a sectional engine is exhibited to show the working parts.

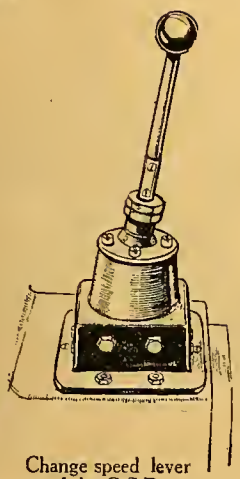


James handle-bar fixing enabling various positions.

The Olympia Show.—

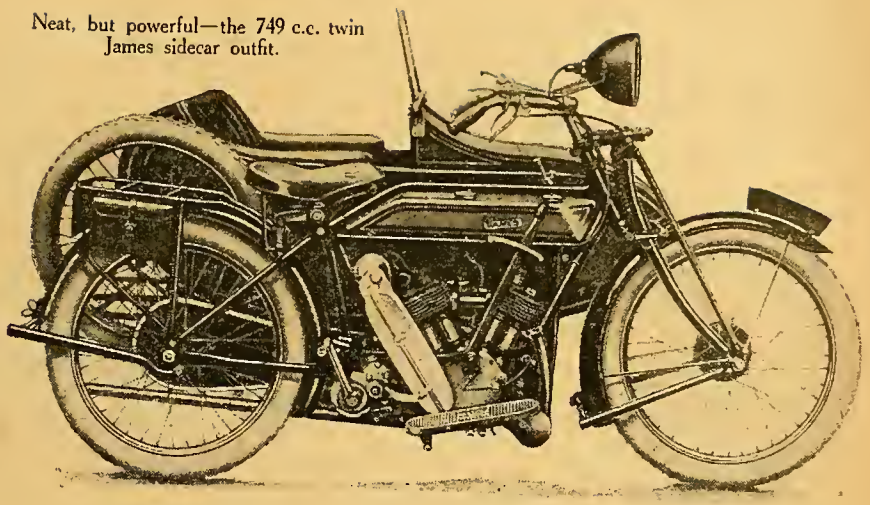


The spring fork of the 4 h.p Bianchi.



Change speed lever of the G.S.D.

Neat, but powerful—the 749 c.c. twin James sidecar outfit.



DUZMO. (15.)

Sports Single.

3½ H.P. MODEL.—89×79 mm. (496 c.c.); single cyl. four-stroke; overhead valves; mechanical lubrication; Binks "Rat-trap" carb.; chain-driven mag.; 3-sp. gear; chain drive; 650×65 mm tyres. Price £100

JOHN WALLACE, CEDAR ROAD WORKS, Enfield Highway, London—The above is a specification of the standard sporting model Duzmo, which, on Saturday evening, when *The Motor Cycle* report was completed, had not arrived on its stand. It arrived on Monday.

Although it may seem paradoxical to say so, the Duzmo sports model is the standard type, the touring model being a supplementary design for the sidecarist. This gives the cue to the machine, which represents one of the earliest efforts to give the sporting motor cyclist a machine that is something more than a semi-stripped modification of a touring model. To-day it is not alone in this respect, but the fact that it was among the first in the field entitles it to respect. In designing the engine, and, indeed, the whole machine, an attempt has been made made to combine a high road performance with a reasonable degree of comfort. To this end the inclined o.h.v. engine is laid out so that the gases are allowed the freest possible ingress and exit, and combustion head and valve passages have a highly polished finish. Frame design and tyre size contribute towards ease of handling for long-distance riding.

DOUGLAS. (61.)

Touring and Racing Flat Twins.

2¾ H.P. MODEL.—60.5×60 mm. (348 c.c.); flat twin cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 26×2¼in. tyres. Price £50.

DOUGLAS MOTORS, LTD., Kingswood, Bristol.—For many years the Douglas motor cycle has held a position on the market entirely of its own, and the recent successes of the larger machines have brought the make prominently before the public in the last few weeks. The 348 c.c. machine is practically identical, as far as its main lines are concerned, with the motor cycle with which the Douglas firm made its name, but it is available, of course, now both with the belt and with chain drive, clutch and kick starter, and three-speed gear.

3½ H.P. MODEL.—68×68 mm. (494 c.c.); flat twin cyl. four-stroke; overhead valves; mechanical lubrication; Amac carb.; gear-driven mag.; 3-speed gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price £95.

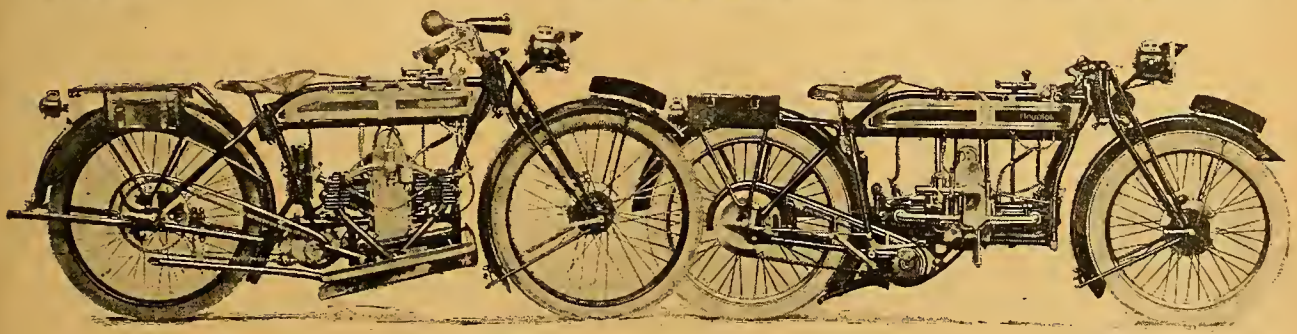
In addition there is the 494 c.c. model, with which so much has been done at Brooklands and which was the first machine of the 500 c.c. class officially to exceed 100 m.p.h. This engine is, broadly speaking, on the same lines as the 348 c.c. model, but has overhead valves, and the machine shown on the stand is of the Tourist Trophy type. There is also the 733 c.c. model, intended especially for sidecar work, which is very much on the same lines as the 494 c.c., save that the engine has a bore and stroke of 83×68 mm. (733 c.c.). Finally the 595 c.c. machine, also chiefly for sidecar work, is exhibited, and has mechanical lubrication. This engine has been but little altered of recent years, and is almost of the same design as the smallest machine, save that the frame is on the lines of the 494 c.c. type. The bore is 74.5 mm. and the stroke 68 mm. The price of the 595 c.c. model is £85 solo, £110 with sidecar.

BIANCHI. (156.)

Italy's Advanced Design.

6 H.P. MODEL.—70×78 mm. (600 c.c.); twin-cyl.; four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; 26×3in. tyres. Price: Solo £135; with sidecar, £150.

BIANCHI MOTORS, LTD., 26, St. James Street, London, S.W.1.—Emanating from an old-established car factory in Milan, Bianchi motor cycles are notable for their fine detail finish. The workmanship—"craftsmanship" might be a better word—is excellent, and so is the manner in which the engine and gear box are carried together in the sturdy loop frame to form one unit. The primary drive is by gear, but from a glance at the clean contour of its cover a primary chain might be expected. In some respects the frame design is not unlike the familiar New



Chain-driven three-speed 348 c.c. Douglas.

Sporting solo model of the 733 c.c. Douglas.

The Olympia Show.—

Imperial system. Both wheels are detachable and interchangeable, and the wide mudguards are detachable.

4 H.P. MODEL.—75×112 mm. (498 c.c.); single cyl. four-stroke, side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £100.

In most respects the smaller model follows the lines of the 600 c.c. twin, but since the gear box is mounted fairly high up, the frame is considerably more compact. Both engines are quite straightforward in design, but the cylinder castings are worthy of inspection as unusually good examples of the foundry-man's art.

LEVIS. (68.)

Pioneer Two-strokes.

2¼ H.P. MODEL.—62×70 mm. (211 c.c.); single cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 24×2¼in. tyres. Price £49.

BUTTERFIELDS, LTD., Stechford, Birmingham.—An early machine to make a name on the market as a two-stroke lightweight, the Levis is still represented by one model having the original lines and simplicity. This is shown with a single gear belt drive and everything reduced to its simplest possible expression. The remaining models have the 211 c.c. engine and the 247 c.c. engine, but the design of all is on much the same lines, the differences being that the 247 c.c. unit has a three-speed gear of chain drive, and both expanding brakes act on the rear wheel. Chain and belt is used for two of the 211 cc. machines, the chain from the engine being neatly covered in by a metal case.

Naturally, the Levis wins in the Lightweight T.T. and the French and Belgian Grand Prix Races have earned a more than ordinary amount of interest for the marketed representatives of the successful machine.

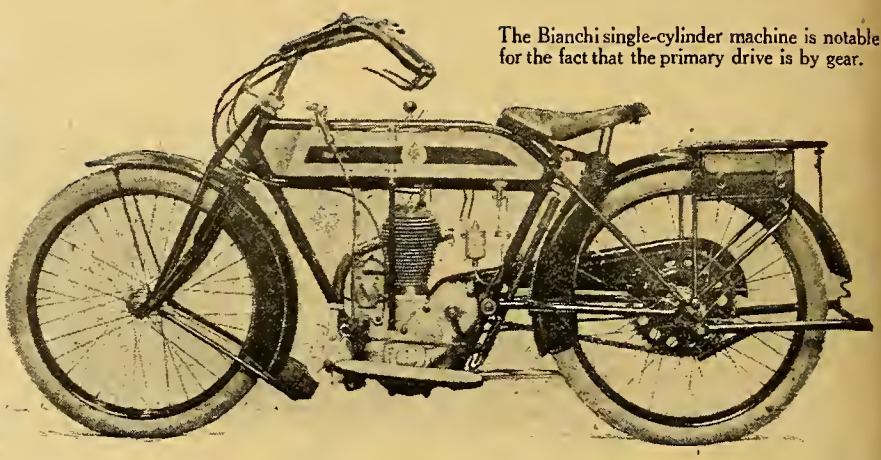
VERUS AND SIRRAH. (164.)

Eight Light Solo Models.

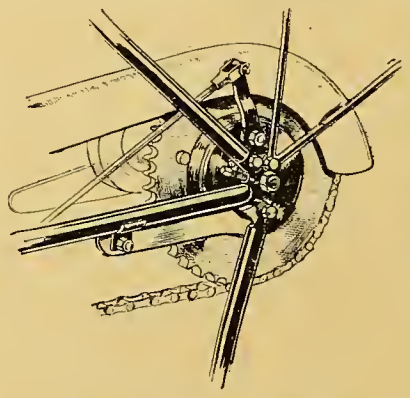
2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single-cyl. four-stroke; side valves; mechanical lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch, no kick-starter; chain drive; 26×2½in. tyres. Price £90.

ALFRED WISEMAN, LTD., Glover Street, Birmingham.—Three Verus models are shown, the remaining five on the stand being Sirrahs, which are utility machines produced by the same firm. None of the eight has a greater engine capacity than 350 c.c., and the super-sporting Verus specified above is typical of the rest, except that it has several refinements naturally not found on, say, the 293 c.c. Sirrah sidecar outfit at £67. Best mechanical pump lubrication is employed, oil being carried in a shapely aluminium tank on the saddle tube. Adjustable footrests, internal-expanding brakes front and rear, a tool bag on the top rear stay (no carrier is fitted), and an adjustable drip oil-feed to the front and rear chain, are neat features of this model, which is very attractive in appearance.

An o.h.v. 348 c.c. Blackburne-engined Verus with an unusually disposed exhaust pipe is priced at £94, and a side-valve o.h.v. Blackburne model at £66. Chain-cum-belt drive is used in the last-mentioned case.



The Bianchi single-cylinder machine is notable for the fact that the primary drive is by gear.



Levis internal expanding rear brake.

2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single cyl. two-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, with Sidecar, £67.

Already mentioned, the Sirrah sidecar outfit deserves a special specification on account of its very moderate price. The sidecar is a lightweight Canoelet, the gear box a Burman, the forks Brampton, and the rest of the components and equipment of equally well-known and reputable makes. The same machine, solo, with a two-speed box, clutch and kick-starter, and final belt drive, is £50.

Two further light solo models with the same transmission, but employing 249 c.c. Blackburne and 211 c.c. two-stroke Sirrah engines, cost £52 10s. and £50 respectively, while a well-thought-out 150 c.c. o.h.v. miniature called the Weaver completes a comprehensive exhibit, yet hardly fully representative of the very complete range marketed.

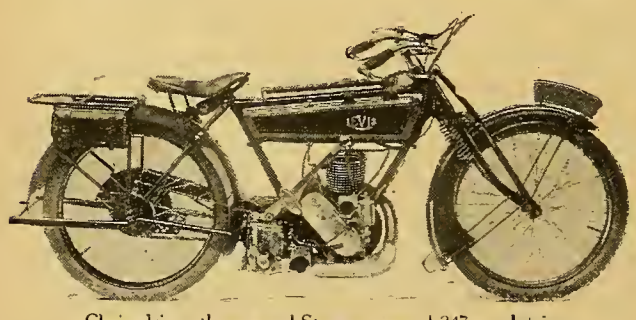
SPARKBROOK. (137.)

Well-finished Cycle Work.

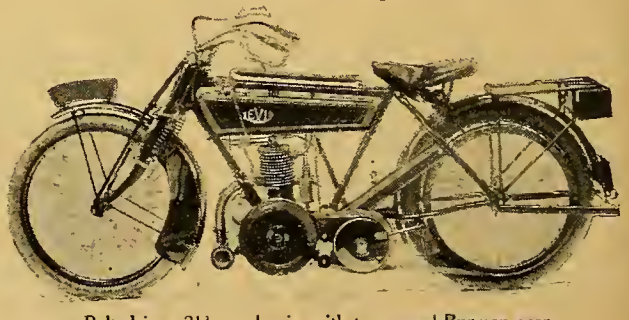
2½ H.P. MODEL.—67×70 mm. (247 c.c.); single cyl. two-stroke; drip feed lubrication; B. and B. carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price £50.

SPARKBROOK MFG. CO., Paynes Lane, Coventry.—This model remains unaltered from last year, but is worth attention in all its cycle details, such as the duplex handle-bar fixing and the length of steering head lug.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £66.



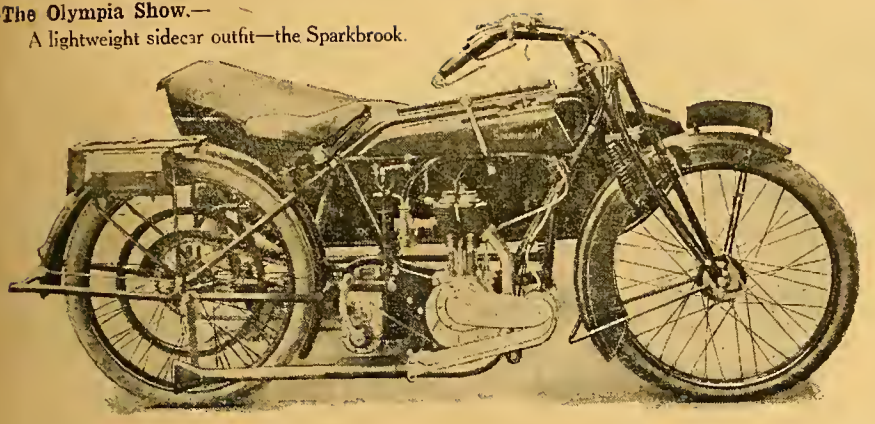
Chain-driven three-speed Sturmey-geared 247 c.c. Levis.



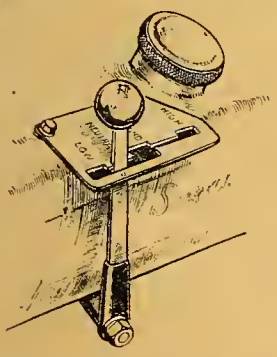
Belt-driven 211 c.c. Levis, with two-speed Burman gear.

The Olympia Show.—

A lightweight sidecar outfit—the Sparkbrook.



The 346 c.c. J.A.P.-engined model is an entirely new one of excellent quality throughout. Details of interest include the very neat expansion chamber located unostentatiously beneath the gear box. The head lug is carried well down below the point where a front sidecar attachment would be fixed, and it is then chamfered. The near-side stay of the rear mudguard swings out so that the wheel can be cleared for tyre repairs instead of weakening the guard itself by a hinge. Very substantial drawbolts are used for the rear chain adjustment. The mounting of the front guard by lugs on both fork members is notable. Altogether the cycle work is admirable throughout.



The very simplest form of gear gate—a slotted plate on the tank—is employed on the Sparkbrook.

2¾ H.P. MODEL.—70×90.5 mm. (349 c.c.); single-cyl. four-stroke; sleeve valve; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £69; with Sidecar, £89.

This model differs from the foregoing solely in the engine, which is the popular Barr and Stroud sleeve valve pattern. The installation has been very neatly carried out with the magneto sheltered behind the cylinder. The engine cradle is very stiff, and the oil from the crank case release is neatly directed on to the primary chain.

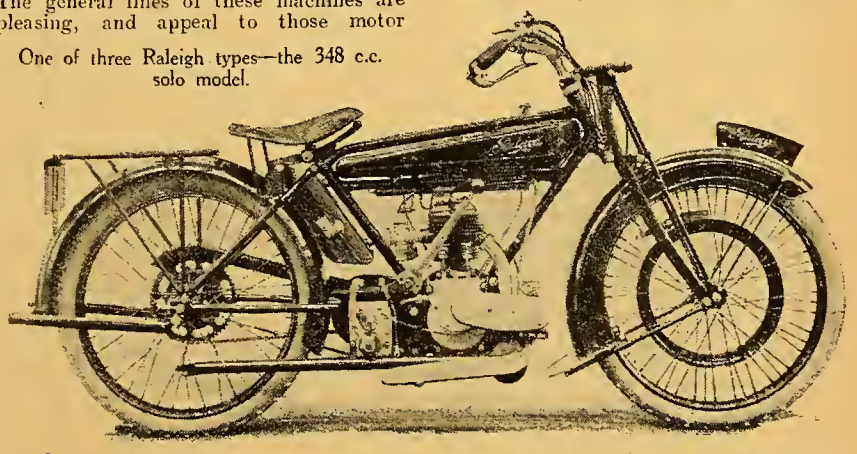
RALEIGH. (99.)

Outside Flywheel Singles.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; side valves; drip-feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £66.

RALEIGH CYCLE CO., LTD., Nottingham. Two models of the well-known 348 c.c. medium-weight Raleigh are shown, and pride of place must be given to the 348 c.c. all-chain model which, with Sturmey-Archer three-speed gear, forms a very complete and practical touring mount. The cheaper model differs from the above, in that it is provided with a two-speed gear and chain-cum-belt drive at £55. The general lines of these machines are pleasing, and appeal to those motor

One of three Raleigh types—the 348 c.c. solo model.

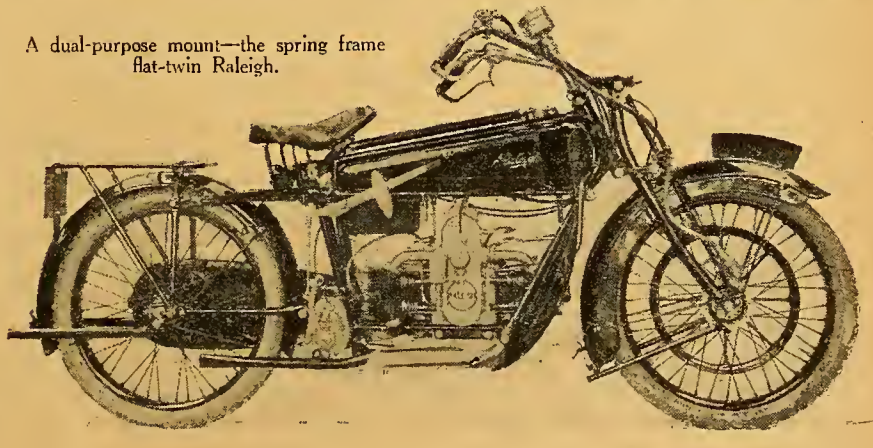


cyclists who require a substantial and reliable touring mount, which, whilst capable of a good turn of speed, cannot be described as a racing machine. A detail which appeals specially to the practical rider is the arrangement of holder to display the licence on the side of the tool-bag beneath the seat-pillar tube.

Very attractive also is a sports model of the lightweight, which differs more than merely in having flat bars and foot-rests. The engine has been modified internally so as to attain higher "revs," and over 60 m.p.h. is within its reach.

The horizontally opposed twin-cylinder model is shown with a sidecar, and incorporates many features of refinement which appeal to those who love comfort on the road. The wheels are detachable and interchangeable, and the general finish and workmanship of the outfit are of a very high order. A capacious locker is provided at the rear of the sidecar body, and a fixed windscreen is also fitted. The price is £130.

A dual-purpose mount—the spring frame flat-twin Raleigh.



MELEN. (105.)

Box Carrier Motor Tricycle.

2¾ H.P. MODEL.—70×77 mm. (297 c.c.); single cyl. four-stroke; drip feed lubrication; Amac carb.; direct-driven mag.; 3-sp. gear; chain drive; 24×2¼in. tyres. Price £80.

F. AND H. MELEN, LTD., Sherlock Street, Birmingham.—A unique little business three-wheeler is shown on the Melen stand, which otherwise is for the most part devoted to bicycles. It is fitted with a 297 c.c. two-stroke engine, three-speed gear, and chain transmission. Two brakes act on a single rear drum; one is an external contracting band and the

other is a shoe, pulled on to the inner periphery by the hand lever. From experience on the road it has been found to be a particularly stable little vehicle, efficiently sprung, economical, and very suitable for the type of driver who is likely to handle it. The accommodation, too, is good, the carrying capacity being from 1½ to 2 cwt.

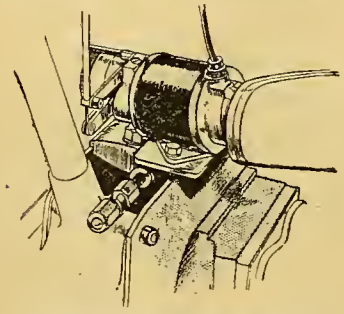
MATCHLESS. (71.)

Solo Models Introduced.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); twin cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Price: Solo, £115.

H. COLLIER AND SONS, LTD., Plumstead, London, S.E.18.—To solo riders one of the most interesting machines in the Show is the 976 c.c. J.A.P.-engined solo Matchless.

The engine, despite its size, looks extremely neat, the tank concealing a twin top tube—an arrangement which adds considerably to the appearance of the machine—while the knee grips are secured by concealed screws to the side of the tank. Very heavy mudguarding is employed, with ample clearance between the tyre and the guard. The chain is partially protected, and the wheel hub carries a gear for the speedometer drive.



Magneto mounting on the 348 c.c. Matchless.

No less than eight variations of the sidecar outfit occupy the stand. They vary from a sports model with a particularly neat form of carrier to the rear of and above the sidecar, to the latest and most comfortable type of touring vehicle, which has a windscreen with a side panel, a cape hood, and every known accessory which could assist or make more comfortable the occupants; it is listed at £175.

Finally, there are two examples of the new 348 c.c. solo Matchless, which uses proprietary components—Blackburne engine and Sturmey gear box—in a distinctive manner. On one the electric equipment is the new Lucas Magdynette.

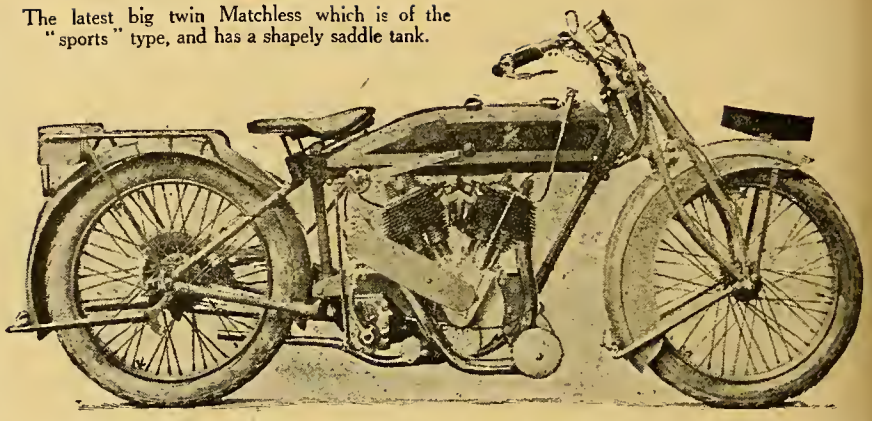
RUDGE. (97.)

New Four-speed Models.

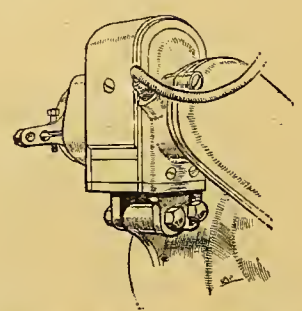
3½ H.P. MODEL.—85×88 mm. (499 c.c.); single cyl. four-stroke; o.h. inlet valve; foot pump lubrication; Senspray carb.; gear-driven mag.; 4-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price: Solo, £85; with Sidecar, £100.

RUDGE-WHITWORTH, LTD., Coventry.—Chief interest on the Rudge stand centres round the models, both single and twin cylinder, fitted with the new four-speed

The latest big twin Matchless which is of the "sports" type, and has a shapely saddle tank.



gear box and all chain drive. This gear box, the double helical pinions of which are constantly in mesh, was described in our last issue and can be studied in detail on the stand. Opportunity is also afforded of scrutinising the technical details of the engine which, both in the case of the single and twin cylinder types, contains many special features. A sectional model on the stand lays bare the piston, which is aluminium and has special grooving designed to facilitate lubrication.



A simple but effective magneto chain adjustment—a Powell feature.

The 998 c.c. twin-cylinder outfit forms an imposing display, and the fitting and general arrangement of the new four-speed gear have been carried out in a most practical manner. The bracket supporting the gear lever quadrant, for instance, is brazed instead of being clipped to the frame.

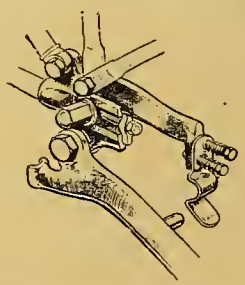
The general specification of single and twin-cylinder all-chain models is similar, and the Rudge-Multi belt-driven machines at £65 are also well represented.

QUADRANT. (161.)

Moderate Priced Big Single Outfit.

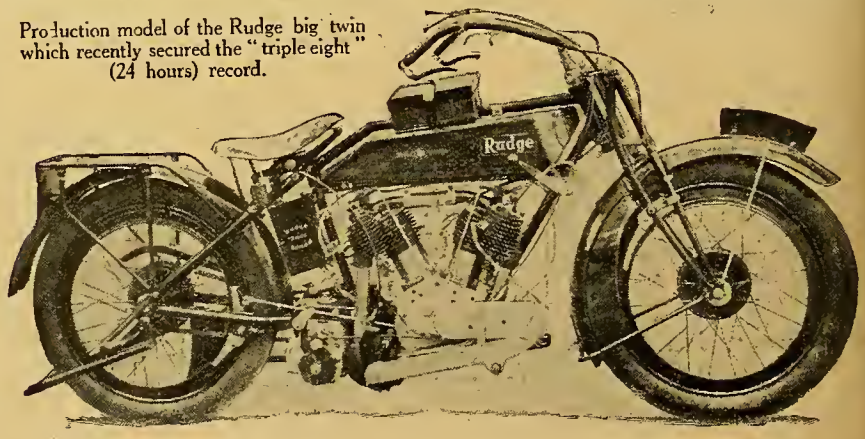
4½ H.P. MODEL.—87×110 mm. (654 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; Binks carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price: Solo, £75; with Sidecar, £95.

MARCH, NEWARK, AND CO., LTD., 45-53, Lawley Street, Birmingham.—Always one of the most moderately priced big singles, the 654 c.c. chain-driven Quadrant still retains a position in this respect that requires some surpassing. It has a sturdy, straightforward engine



Stand clip on the fork end of the Quadrant.

Production model of the Rudge big twin which recently secured the "triple eight" (24 hours) record.



The Olympia Show.—

noted for its slogging capabilities and distinguished by the unusual position of the inlet valve—behind the cylinder.

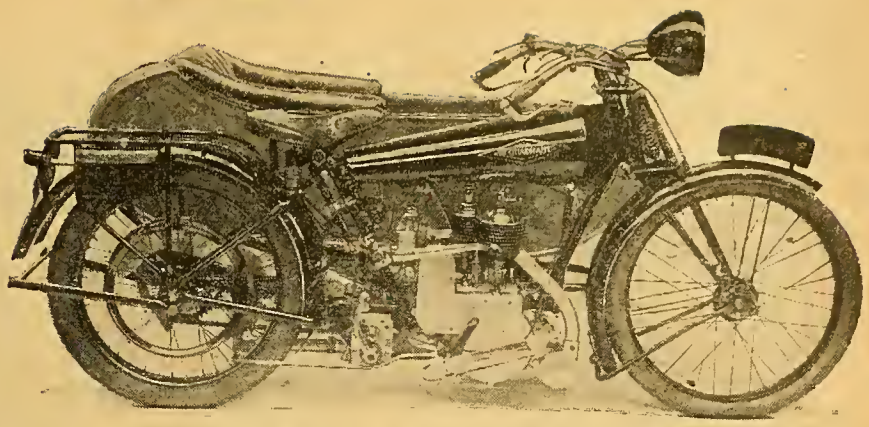
With a Lucas dynamo lighting set, a model *de-luxe* costs £110 with sidecar, or £90 solo (not shown).

With final belt drive, 26 × 2½in. tyres, and a stirrup pattern front brake, the sidecar outfit is £90.

3½ H.P. MODEL.—79×100 mm. (490 c.c.); single cyl. four-stroke; side valves; hand pump lubrication; Binks carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £63; with Sidecar, £80.

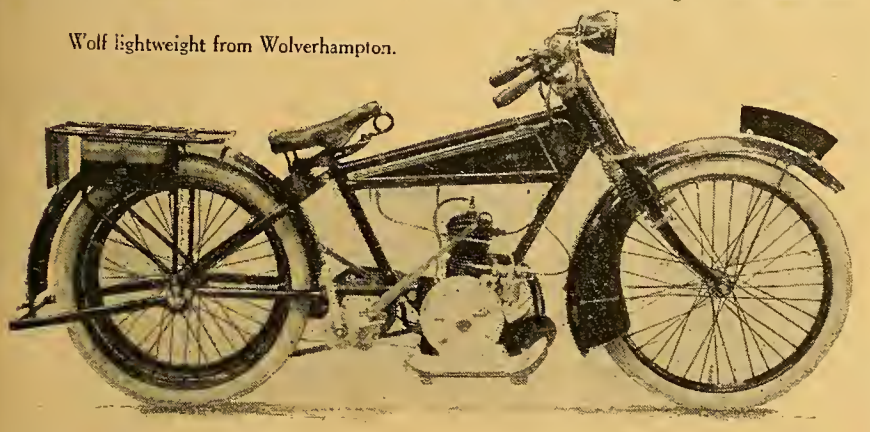
As an amply powerful dual-purpose semi-sporting machine, the new 490 c.c. Quadrant has much to recommend it. Although considerably lighter and neater looking than the 654 c.c. machine, it is just as sturdily constructed. The riding position is good, and the brake pedal is commendably accessible to the right footrest.

Quadrant spring forks, a front internal-expanding brake, and a saddle tank are items on this model, as on the majority of the other machines.



Electrically equipped model of the 654 c.c. Quadrant.

Wolf lightweight from Wolverhampton.



WOLF. (125.)

Choice of Many Alternatives.

1¼ H.P. MODEL.—55×62 mm. (147 c.c.); single-cyl. two-stroke; petroil lubrication; Amac carb.; flywheel mag.; 2-sp. gear; no clutch or kick-starter; chain and belt drive; 24×2¼in. tyres. Price £31 10s.

THE WULFRUNA ENG. CO., LTD., Wolverhampton.—The 1923 range of Wolf motor bicycles is probably the most complete in the industry, both as regards size, type, and make of engine and options in transmission. Three or four alternative drives are permitted with the different engines according to customer's preference. The baby of the family is Model F, equipped with the 147 c.c. Villiers engine and a range of no less than five transmission options. Customers desiring more power may order the 247 c.c. or 343 c.c. Villiers two-stroke engines, whilst those who prefer a four-stroke engine may specify the 293 c.c. or 345 c.c. J.A.P. or the 249 c.c. Blackburne. The 550 c.c. Blackburne engine, tourist model, is a particularly handsome example. The sports model with o.h.v. Blackburne engine, finished in black and gold, should be especially popular. The 249 c.c. Blackburne-engined model with two-speed and chain drive is to be sold at £67 10s.

4¼ H.P. MODEL.—85×96 mm. (545 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac or B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price: Solo, £75.

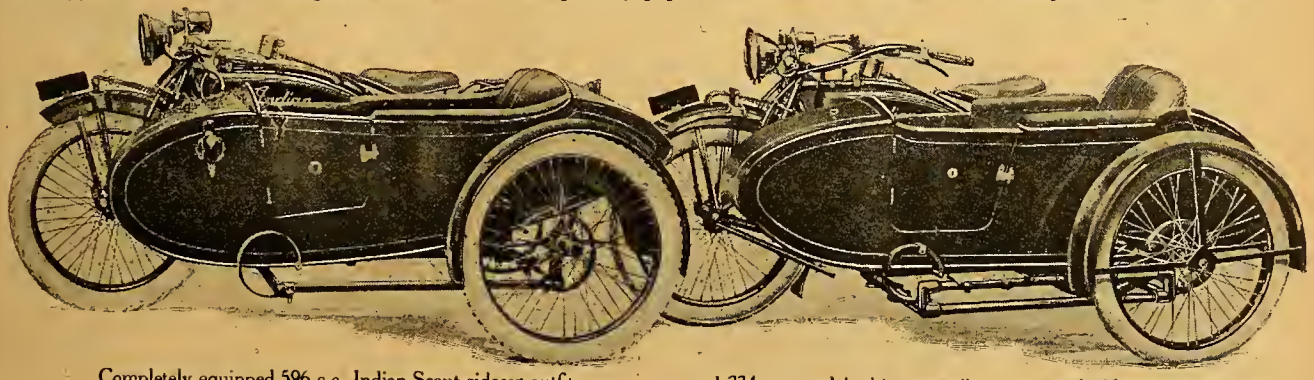
A substantially built machine suitable alike for touring or heavy sidecar work. It has a Blackburne engine, and the gear box is either Burman or Sturmey. An alternative model with all-chain drive is available at an additional cost.

INDIAN. (63.)

Over 1,200 c.c. Capacity.

10 H.P. MODEL.—82.5×112.6 mm. (1,234 c.c.); twin cyl. four-stroke; side valves; mechanical lubrication; Schebler carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price: Solo, £137; with Sidecar, £167.

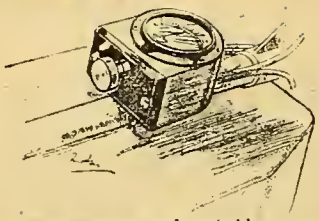
HENDEE MANUFACTURING CO., Indian House, Euston Road.—Most of the interest in the Indian naturally centres on the new 1,234 c.c. model, known as the Super Chief. So large an engine reminds one of the earlier efforts to obtain high speed, but this, the latest type, differs so greatly from its predecessors that a comparison is almost impossible. Not only is the engine neater, but the whole machine, though on lines built for speed, is a really workmanlike and practical job. The influence of American thought is apparent throughout, as, for example, in the method adopted to enclose the valves and valve springs, so protecting them from dust or mud. Besides the Super Chief which is



Completely equipped 596 c.c. Indian Scout sidecar outfit.

1,234 c.c. model with convertible two-seated sidecar with the rear seat folded up.

The Olympia Show.—



The neat ammeter and switchbox on the top tube of the Indian.

shown with a sidecar, there is the ordinary Chief of 998 c.c., which is similar to the one shown last year. A third model, the 596 c.c. Scout, is also on the stand, but is in general design the same as the other two. All the machines are finished in the familiar Indian bright red, and the electrical accessories are carried out with an admirable thoroughness.

CHATER-LEA. (78.)

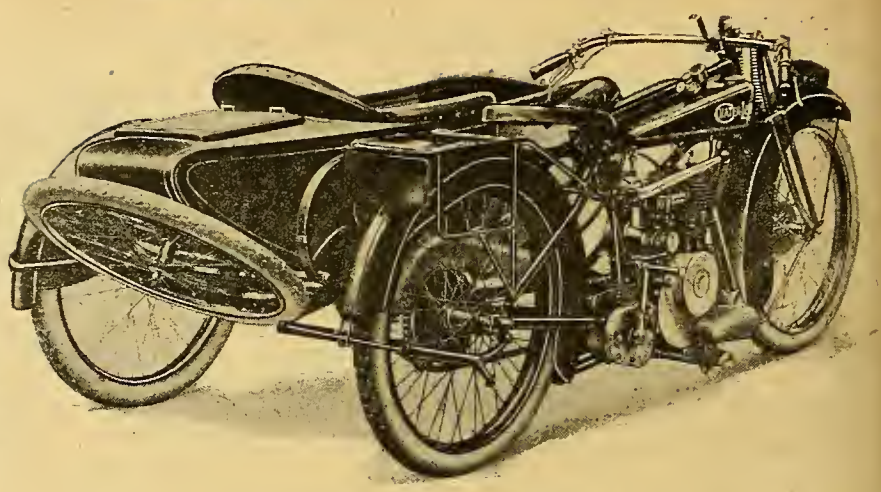
Several Singles and a Big Twin.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £65.

CHATER-LEA, LTD., 74-84, Banner Street, Golden Lane, London, E.C.1.—A very excellent example of the popular 350 c.c. type of solo mount, possessing many excellent features, such as interchangeable front and back wheels, a specially strengthened steering head with ¼in. balls, most efficient mudguarding and internal expanding brakes fore and aft. Sand-blasted chain guards of very neat appearance protect the two chains, while the silencing arrangements have been carefully designed, there being a large expansion chamber situated towards the rear of the system. The motive power is the popular 348 c.c. Blackburne engine with side valves. The o.h.v. model is offered at £7 10s. extra. The tank is of ample dimensions, containing two gallons.

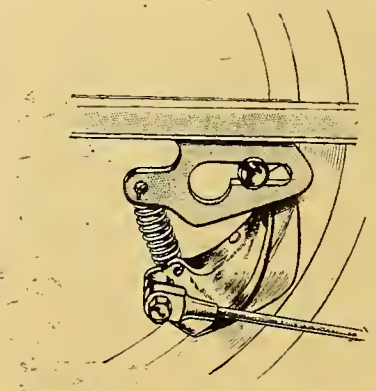
4¼ H.P. MODEL.—85×96 mm. (545 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £75; with Sidecar, £100.

A thoroughly practical double-purpose mount of the 600 c.c. class fitted with



Equipped with spare wheel, the 545 c.c. Chater-Lea and sporting sidecar make an attractive medium-weight outfit.

all the refinements embodied in the model previously described, possessing in common with it adjustable handle-bars, while the same specially strengthened head is utilised, but in this case the balls are $\frac{5}{16}$in. in diameter. It is worthy of



Details of the rear brake on the Chater-Lea, showing the sliding adjustment provided.

mention that the engine is Chater-Lea's own manufacture, and is particularly well finished. In the case of this machine the silencing expansion chamber is carried close up against the forward portion of the crank case and consists of a large aluminium casting. Naturally, the wheels are interchangeable, remarks which apply also to the sidecar wheel. A spare wheel and tyre complete can be supplied. Other details are the same as those in the model previously described, but it may be mentioned that a M-L Maglita set can be supplied as an extra.

The well-known two-stroke and the big twin sidecar are also exhibited, the prices being, for the two-stroke £40. £43 and £47 10s. for plain two-speed, plus clutch, plus kick-starter respectively, and £115 for the sidecar outfit.

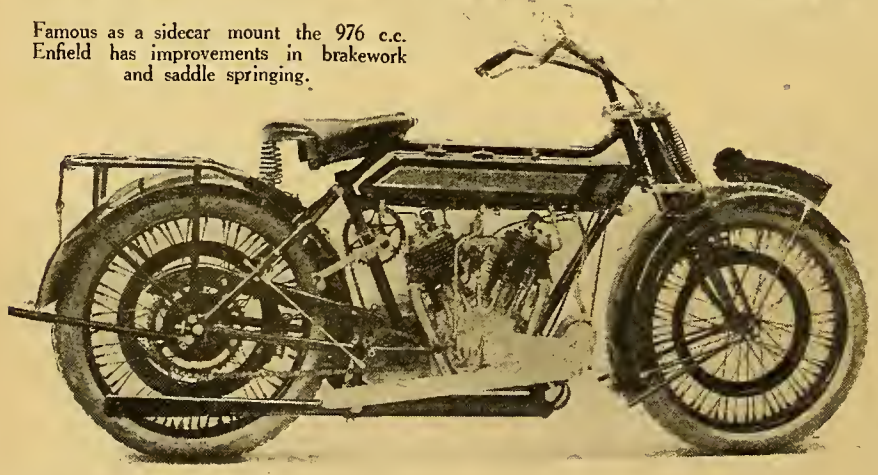
ROYAL ENFIELD. (107.)

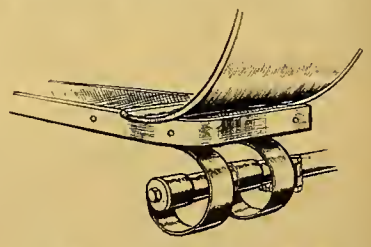
Big Sidecars and Solo Two-Strokes.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valve; mechanical lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and hand starter, all-chain drive; 700×80 mm. tyres. Price, with Sidecar, £120.

THE ENFIELD CYCLE CO., LTD., Redditch.—Unstinted admiration is accorded by all observers, critical and otherwise, to the models displayed on the Enfield stand,

Famous as a sidecar mount the 976 c.c. Enfield has improvements in brakework and saddle springing.

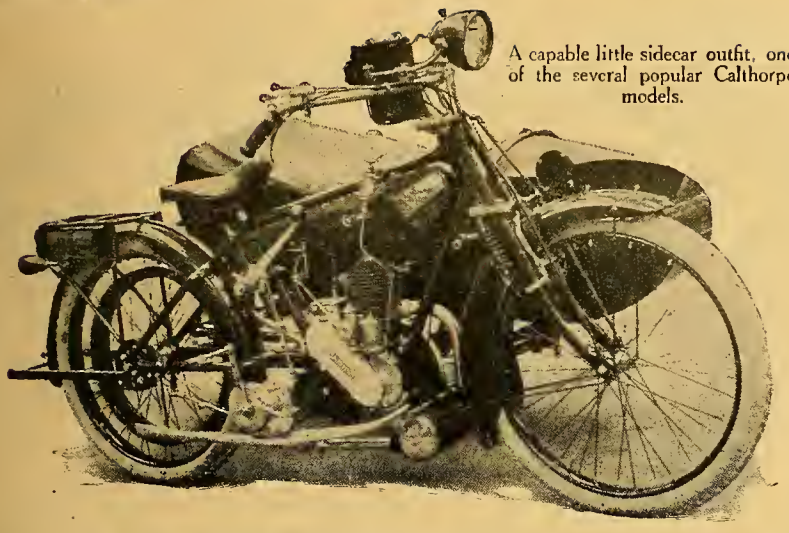




On the 976 c.c. Enfield the front end of the footboards are suspended on springs.

especially to the 976 c.c. twin cylinder sidecar outfit. The engine of this deservedly popular machine is made specially for it by Vickers, Ltd., and the well-known Enfield system of two-speed gear, obtained by means of selective cone clutches and two chains from the engine to the countershaft, has now been before

The Olympia Show.—



A capable little sidecar outfit, one of the several popular Calthorpe models.

the public for many years and has proved itself very thoroughly in practice.

A feature of these machines differentiating them from most others is hand-starting through the countershaft. A Terry spring seat is now fitted on large coil springs mounted on the carrier. A ratchet lock for the foot brake is also fitted. Such features as the silencer and mudguards are of ample dimensions and admirably carried out. The footboards, which are large and comfortable, are rubber studded; and special guards are provided for the protection of legs and feet. An example of this machine with G.P.O. delivery van is also shown.

2¾ H.P. MODEL.—64×70 mm. (225 c.c.); single cyl. two-stroke; petroil lubrication; Amac carb. chain-driven magneto; Enfield 2-sp. gear; clutch and kick-starter; all-chain drive; 24×2¼in. tyres. Price: Solo, £50.

The 225 c.c. 2-stroke lightweight models are, for the most part, unaltered except as regards their prices, which have followed the general decline. They are shown both as sports and touring models, and the protection for legs and feet and general comfort provided on the latter will appeal strongly to the all-weather long-distance rider

CALTHORPE. (104.)

Two-stroke Models.

2½ H.P. MODEL.—67×90 mm. (245 c.c.); single cyl. two-stroke; sight feed lubrication; Mills carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-belt drive; 24×2¼in. tyres. Price: Solo, £40.

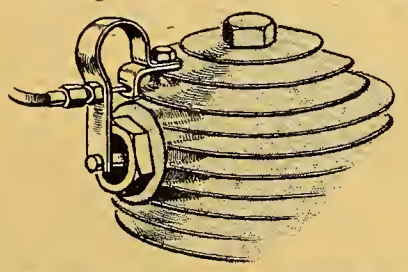
THE CALTHORPE MOTOR CYCLE CO., Barn Street, Birmingham.—Several details are worthy of attention on the smallest Calthorpe. Six-inch mudguards are fitted, and the protection for the rider is really remarkable for such a small and light machine.

An aluminium silencer of good dimensions is disposed inconspicuously beneath the engine, and the exhaust is carried well away to the back. The rear wheel brake, heel-applied, is remarkably simple and effective in its arrangement, there being no rods or superfluous connection whatever.

A direct belt-driven model which is marketed at the popular price of £30 is also shown.

3 H.P. MODEL.—75×79 mm (349 c.c.); single cyl. two-stroke; sight feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, with Sidecar, £75.

There is also a small light sidecar outfit at a very attractive price. The two-stroke engine is of 349 c.c., and the



Extremely neat single-spring, cable-operated Calthorpe release valve.

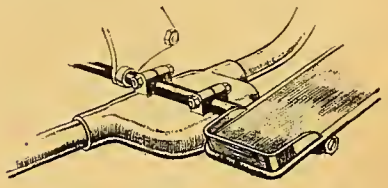
example shown upon the stand is fitted with the M-L Maglita lighting set, the price with this addition being £87 10s.

O.K. (79.)

Four-Strokes and Two-Strokes.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single cyl. four-stroke; overhead valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £76.

Few better examples of the 350 c.c. solo mount are to be seen in the Show than the 348 c.c. Blackburne-engined O.K. Built on thoroughly conventional lines, well mudguarded, and with many points of convenience well studied, it should appeal to the sporting rider. The gear box fixture is worthy of note, since not only is there a longitudinal adjustment by means of a drawbolt, but set screws allow a certain variation to be made so that perfect chain alignment may be ensured. The side valve-engined model is similar in every detail except the engine, the addition of footboards, and



Silencer attached to foot-rest bar on the O.K.

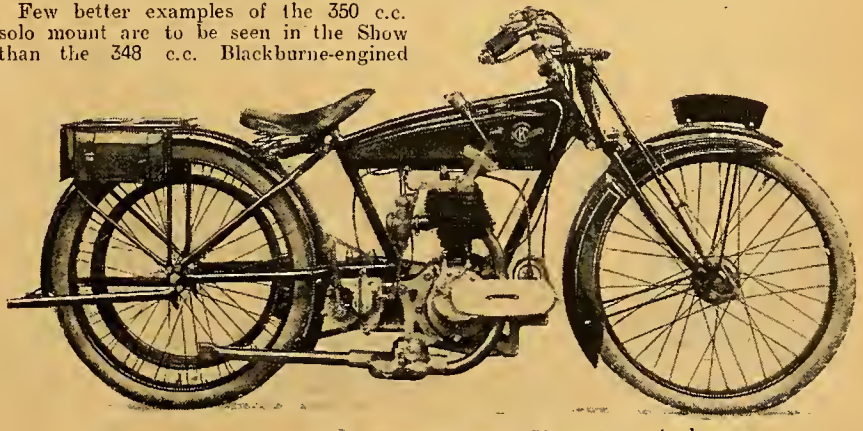
slight modifications in the silencing arrangements. The side valve model costs £65 10s., or with two speeds only £55 10s. The three-speed with sidecar costs £83.

2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single cyl. two-stroke; drip-feed lubrication; Sen-spray carb.; chain-driven mag.; single gear; direct belt drive; 26×2¼in. tyres. Price: Solo, £35.

Quite the most attractive feature about this machine is its price. It is nevertheless well constructed, and a good example of the simplest form of motor bicycle. The tank has a solid pressed steel nose, and this year the model has been improved by the fitting of adjustable footrests, while the heel-operated brake pedal can be similarly adjusted to conform therewith.

2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2½in. tyres. Price: Solo, £56 10s.; with Sidecar, £74 10s.

For a long time Humphries and Dawes, Ltd., have specialised in the low-powered inexpensive sidecar outfit, which they have brought to a high degree of perfection. Their latest model 292 c.c. sidecar outfit is a thoroughly well-thought-out machine. The gear box fixing and adjustment are carried out in the same manner as in the Blackburne-engined model. With this



An attraction of the big O.K. range—the 249 c.c. Blackburne-engined mount.

The Olympia Show.—

machine comfortable aluminium footboards are provided, and a very excellent system of silencing the exhaust, the expansion chamber being beneath the crank case of very large dimensions and divided into two halves, and L-shaped. The exhaust gases pass through a very long exit pipe with flattened ends. A compensating shoe brake applied to a dummy belt rim is fitted to the rear wheel, while on the front is an internal expanding brake of the firm's own design. This is a very nice piece of work, and is provided with a felt washer to exclude oil from the bearing surfaces.

SUN. (100.)

Rotary Valve Two-Stroke.

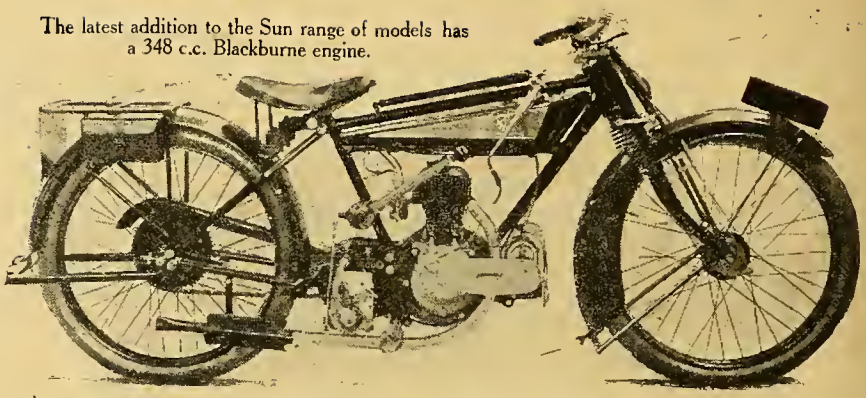
2¾ H.P. MODEL.—67×70 mm. (247 c.c.); single cyl. two-stroke; rotary valve; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-speed gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price: Solo, £49 10s.

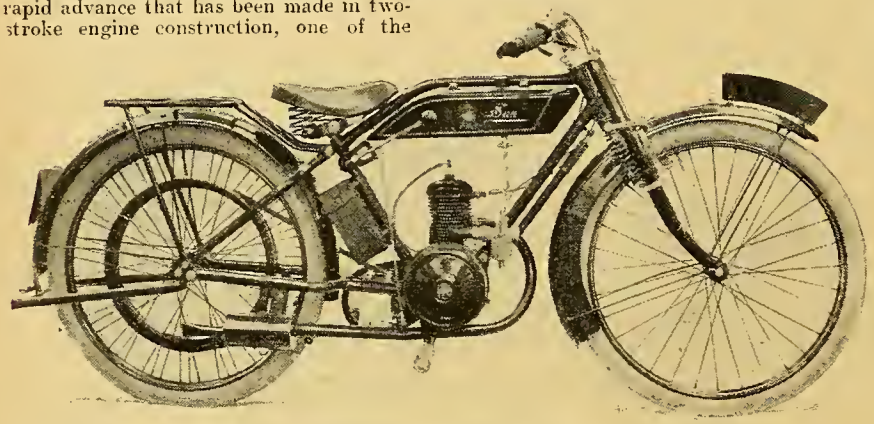
SUN CYCLE AND FITTINGS CO., LTD., Aston Brook Street, Birmingham.—In the rapid advance that has been made in two-stroke engine construction, one of the most interesting innovations was the incorporation in the Sun-Vitesse engine of a rotary valve regulating the inlet port in the crank case. The details and working of this engine can be studied from a sectioned model shown on the stand.

The single-speed 147 c.c. Villiers-engined model is very attractive from the point of view of those who are seeking for real simplicity. Moreover, this machine is really light, as anyone can satisfy himself by lifting the example shown. It scales only 98 lb. when fitted with two-speed gear, whilst the single-speed model weighs but 86 lb. In addition to these models, machines are also staged fitted with J.A.P. and Blackburne engines.

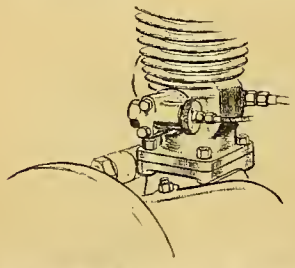
Features to be noted on the larger Sun-Vitesse models are the internal expanding brakes, transmission shock absorbers in the rear wheel, and their well-balanced lines generally.

The latest addition to the Sun range of models has a 348 c.c. Blackburne engine.





Produced by lightweight specialists—the Sun miniature.



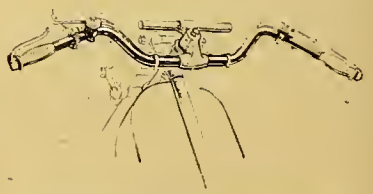
Extra air valve of the Sun on the side of the cylinder.

MASSEY. (29.)

Concentrating on 350 c.c. Solos.

2¾ H.P. MODEL.—70×90 mm. (346 c.c.); single-cyl. four-stroke; side valves; hand pump lubrication; Cox-Atmos carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price: Solo, £75.

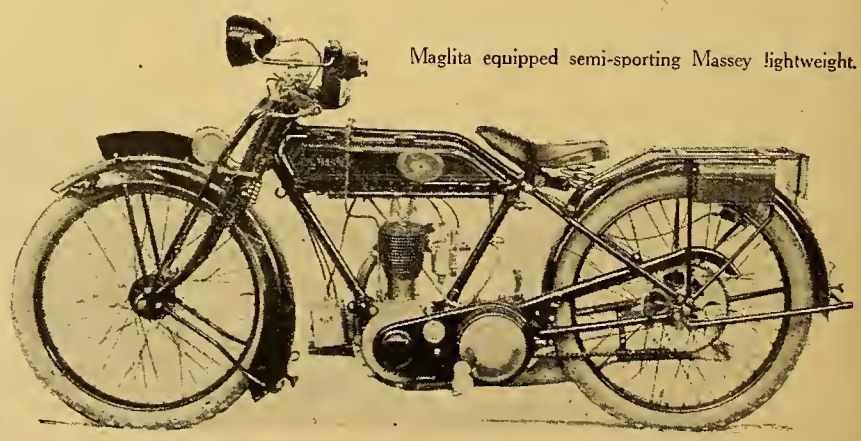
MASSEY MOTOR CO., LTD., Belgrave Road, Birmingham. — Three Massey models are shown, all very much alike in appearance and specification. Proprietary engines are used—the super-sports J.A.P. in the case specified—and Burman three-speed gear boxes, but the resulting machines are wonderfully distinctive in appearance. Careful frame design accounts for this to a great degree; superfine finish also plays its part. The lubrication is automatic, no sight feed being fitted, but otherwise the specification follows very conventional lines. Internal expanding brakes are fitted front and rear, and extremely neat chain covers.



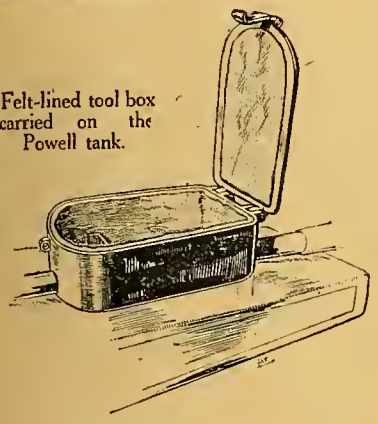
An additional bar for the mounting of instruments is provided on the Massey.

Also shown are a 348 c.c. J.A.P.-engined sidecar outfit at £92 10s., and a 349 c.c. Blackburne solo machine at £70. Specialisation on one type of machine has, in this case, had the very obvious effect of perfecting that type as far as it is possible.

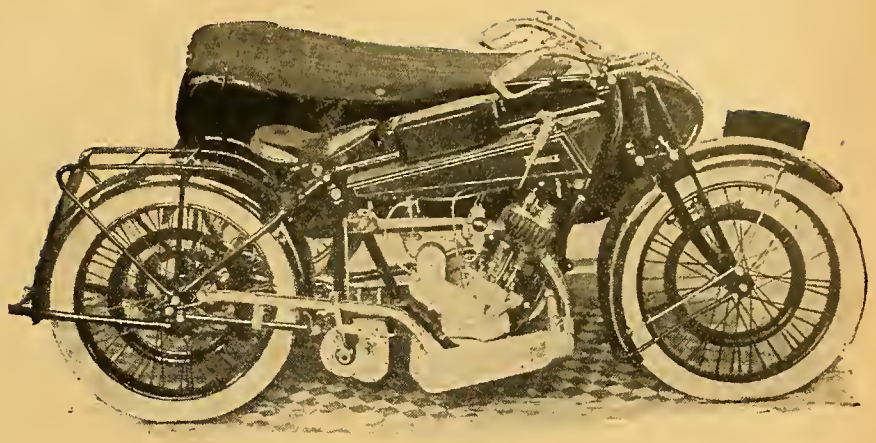
Maglita equipped semi-sporting Massey lightweight.



The Olympia Show.—



Felt-lined tool box carried on the Powell tank.



Chain-driven big single Powell sidecar outfit.

ARIEL. (106.)

From 250 c c. to 1,000 c.c.

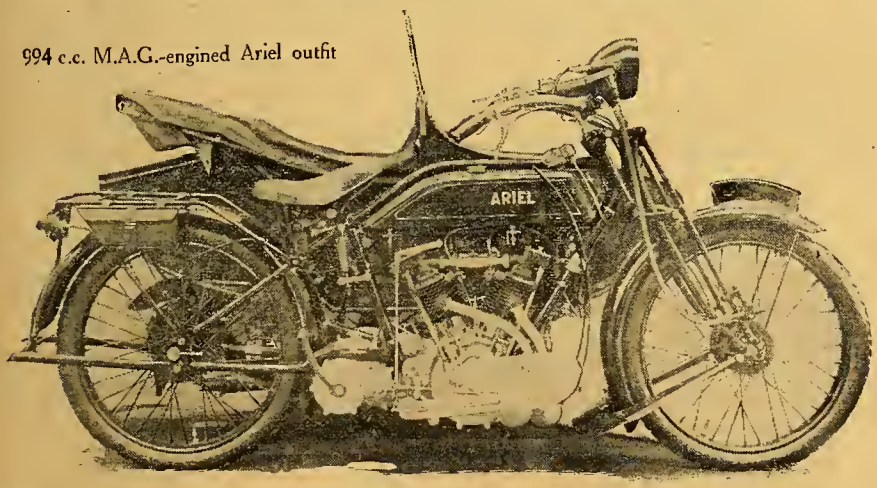
2½ H.P. MODEL.—60×88 mm. (249 c.c.); single cyl. four-stroke; side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Price: Solo, £57 10s.

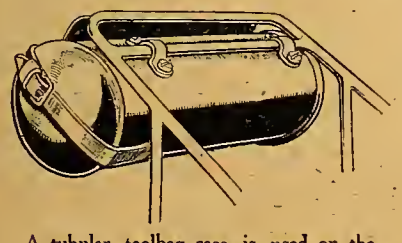
ARIEL WORKS, LTD., Bournbrook, Birmingham.—The full range of Ariel models shown at Olympia comprises machines from the new 249 c.c. lightweight up to the 994 c.c. twin M.A.G.-engined sidecar outfit, and of this comprehensive series the lightweight model is not least in importance. The engine is a Blackburne, and the general lines of the machine are most pleasing. The brake work has been well and carefully carried out, a powerful front wheel brake operating on a dummy rim being fitted and the rear wheel brake being applied with trailing action. The dimensions of the aluminium silencer and disposition of the exhaust piping are also admirable.

6/7 H.P. MODEL.—73×95 mm. (796 c.c.); two cyl. four-stroke; side valves; drip feed lubrication; Cox Atmos or Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-and-belt drive; 26×2½in. tyres. Price: Solo, £95; with Sidecar, £119 10s.

Examples are staged of both types of twin-cylinder sidecar outfit. The smaller of the two has a 776 c.c. Ariel side valve engine, whilst the larger model uses the well-known M.A.G. of 994 c.c., in which the inlet valves are placed above the exhaust valves; otherwise their specifications are similar. The 796 c.c. model, with chain drive and 28×3in. tyres, costs £5 extra. Care has been taken with the single cylinder models of 498 and 665 c.c. respectively to render them specially silent. The smaller of these two is shown both as a sports and touring model with final chain transmission.

994 c.c. M.A.G.-engined Ariel outfit





A tubular toolbag case is used on the Sports Ariel.

PEUGEOT. (22.)

High-class Workmanship.

1¾ H.P. MODEL.—52×52 mm. (110 c.c.); single cyl. two-stroke; petroil lubrication; G.R. carb., gear- and shaft-driven mag.; single gear; no clutch or kick-starter; gear and belt drive; 26×2in. tyres. Price: Solo, £55.

PEUGEOT (ENGLAND), LTD., Brompton Road, London, S.W.1.—Easily the most expensive miniature in the Show is the French-built Peugeot. At £55 it costs approximately the same as one or two geared and chain-driven British 350 c.c. solo machines. On the other hand, the workmanship and finish could not be surpassed, and the neat appearance of the power unit is such as will inevitably attract the elderly pedal cyclist.

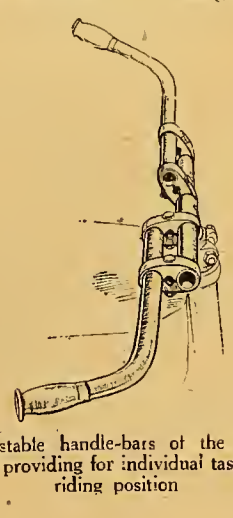
No actual weight figure is available, but it is, almost certainly, the second lightest self-propelled machine on the British market. Approximately one-half gallon of petrol is carried in the tank, and should suffice for nearly 100 miles of average running. Pedalling gear is retained. The wheels are quickly detachable, a feature assisted by calliper-pattern stirrup brakes. A ladies' model, with a semi-open frame, costs £56, the extra £1 being for a clutch, which may be embodied in the standard model for the same price.

J.D. (74.)

Super Motorised Bicycle.

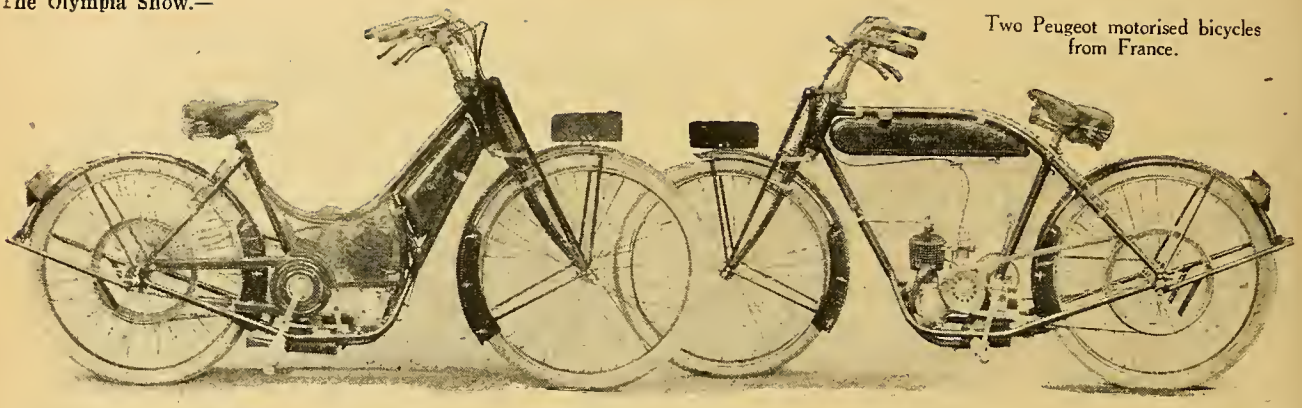
1¼ H.P. MODEL.—51×57 mm. (116 c.c.); single cyl. two-stroke; petroil lubrication; Villiers carburetter; chain-driven mag.; single-speed; clutch, no kick-starter; chain-cum-friction drive; 26×1¾in. tyres. Price: Solo, £35.

BOWDEN WIRE, LTD., Willesden Junction, N.W.10.—Although the J.D. machine is essentially a motor-assisted bicycle, nevertheless it is designed as a



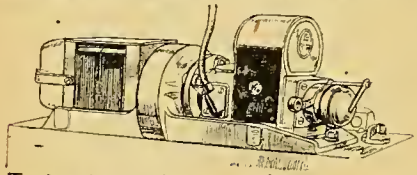
Adjustable handle-bars of the 1923 Dot, providing for individual taste in riding position

The Olympia Show.—



Two Peugeot motorised bicycles from France.

whole, not as an attachment to be fitted to an ordinary bicycle strengthened for the purpose. The engine is particularly well made, the manufacturers assuming that with so small a cubic capacity the power unit would be doing high duty for the greater part of its time, and, therefore, needs to be made better than would be the case with a larger engine. Power is transmitted from the crankshaft to reduction gearing, and thence to a pulley composed of special friction material engaging with what appears at first sight to be a belt pulley attached to the rear wheel spokes. This pulley can be disengaged by a control on the handle-bar when a clutch action is desired, and is held in position by coil spring mechanism acting through a bell crank lever in such a manner that irregularities in the driven rim have no effect upon the drive.



Tandem-driven dynamo and magneto on the Scott Sociable.

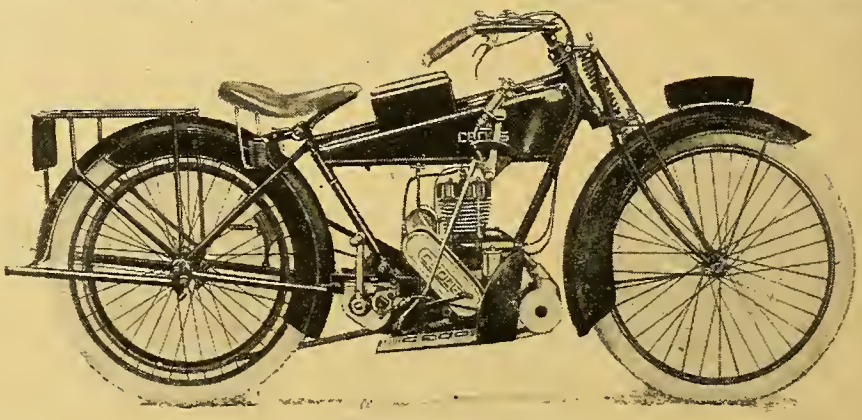
Those who desire to test the efficiency of the friction drive and understand its operation should inspect the working models on the stand driven by electric motors.

CEDOS. (80.)

Detachable Head Two-strokes.

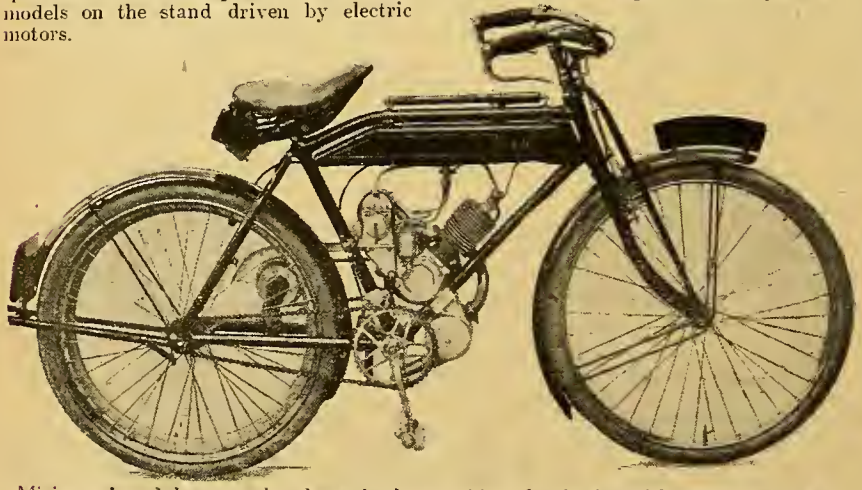
2½ H.P. MODEL.—67×70 mm. (247 c.c.); single cyl. two-stroke; drip lubrication; Cedos carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Price: Solo, £57; 2-sp. Model, £58; Ladies' Model, £60.

CEDOS MOTORS, Northampton.—Several interesting features are noticeable on the attractive little Cedos two-stroke. Its motive power is one of the few two-stroke engines which possess a detachable head, and it is interesting to note that it is fed with mixture by a carburetter of the firm's own manufacture. The machine has attractive lines, wide handle-bars, giving excellent control, and internal-expanding brakes fore and aft. Not only are comfortable footboards provided for the driver, but there is an undershield, an extension which protects the underside of the engine.

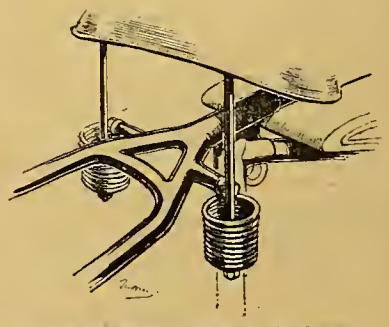


A graceful little mount—the 247 c.c. Cedos, with detachable cylinder head.

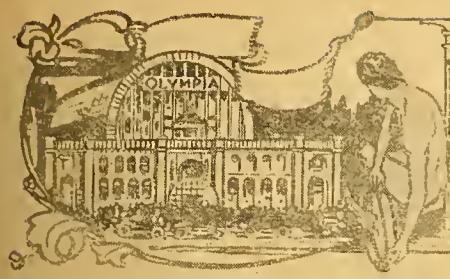
Two variations of this model are the slightly cheaper type with two-speed gear and belt and chain drive (£48), and the ladies' machine, which, of course, naturally has a special open frame and 24in. wheels so as to give a lower riding position. The ladies' model is also in equivalent forms at £59 and £50 respectively.



Miniature intended to appeal to those who do not wish to forsake the pedal cycle entirely—the 116 c.c. two-stroke J.D.



Saddle spring anchorage on the frame of the Hawker.



Sidecar Attachments.

Types at the Show.

A Survey of 1923 Models exhibited by Manufacturers of Proprietary Sidecars.

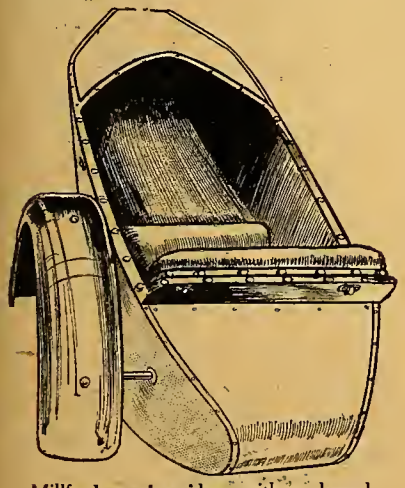
WATSONIAN. (69.)

All Types of Sidecars.

WATSONIAN FOLDING SIDECAR CO., LTD., Birmingham.—The chief exhibit on the Watsonian stand is the new two-seater model. Although sufficient width has been given to allow a normal-sized person and a child to be seated side by side, the chassis is only of normal width. The advantages of the method of seating are very obvious, especially when the extra passenger is a very small child. On the model exhibited an Easting screen, sufficiently wide for protection of the two passengers, is part of the equipment, and the price asked is £29.

The interest manifested by sidecarists in the folding type of chassis is exemplified in the several new patterns on the market. The Watsonian is a well-tried design that will stand hard usage. A folding chassis must, of course, be strongly constructed to be of any use whatever.

There seems to be no end to the delightful little sporting bodies at the Show, and the Watsonian R34 in polished aluminium is no whit behind any in gracefulness of design. A detachable aluminium dash and neat little windscreen give finish to one of the most pleasing of sidecars; the price of this model is £24. In addition to a big range of standard models an exceptionally light racing body and a tradesman's carrier, of well-thought-out design and stout construction, are shown. The latter is listed at £19 10s.

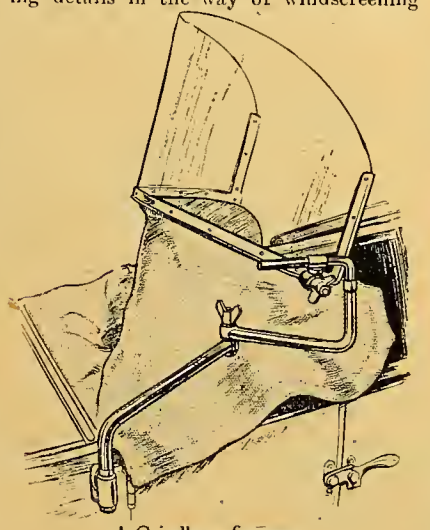


Millford sporting sidecar with mudguard on body.

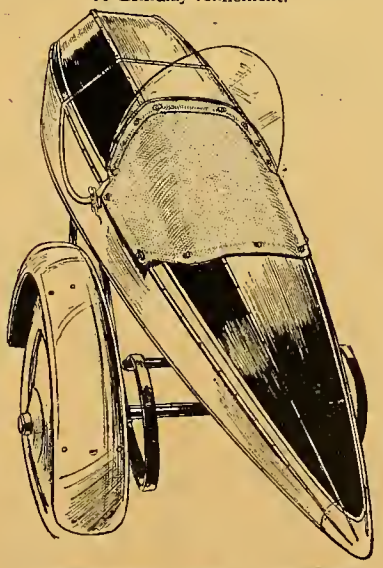
SANDUM. (170.)

Double-Seater Models.

SANDHAM ENG. CO., LTD., 336, Gray's Inn Road, London, W.C.1.—One of the most enterprising of sidecar manufacturing firms, the Sandham Eng. Co., offers for the forthcoming year a range embracing every conceivable type. Interesting details in the way of windscreening



A Grindlay refinement.



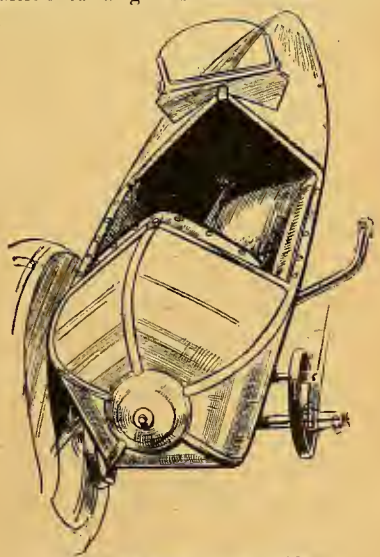
A striking design of sidecar by Montgomery, finished in aluminium.

are numerous, showing that this important item has been studied from actual use of the sidecar, and not from the drawing office. The Sandum Sociable, for instance, was evolved after numerous experiments in body building which cost the firm £250, but the results pay for the trouble entailed, for this model is unquestionably one of the best ever produced of its kind. There is ample room for an adult and child in the rear seat, whilst another child can be accommodated easily in front, tandem fashion. This has been accomplished without sacrificing the compact design of the body or widening the chassis. The price is £30. For dual purposes the tandem-seater is shown with various detail improvements. This model, the rear portion of which falls back and forms an additional seat, permits both passengers to enter by the door; the back rest of the forward seat being easily removable for this purpose. The special feature of the design is that the rear portion folds forward, converting the body into a single-seater. There is a streamline Junior at £14.

MILLFORD. (65.)

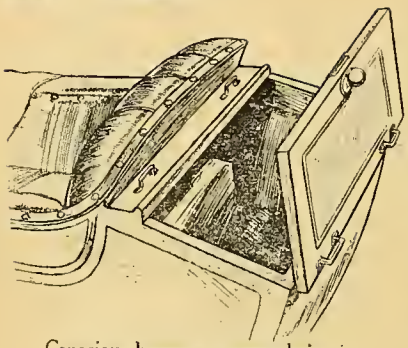
Family and Other Patterns.

MILLS-FULFORD, LTD., Crown Works, Coventry.—Several improvements have been effected in the Millford range of sidecars, the outstanding alterations being chiefly in the big family model. Last year this double-seater was roomy, but the addition of a good-sized bulbous back



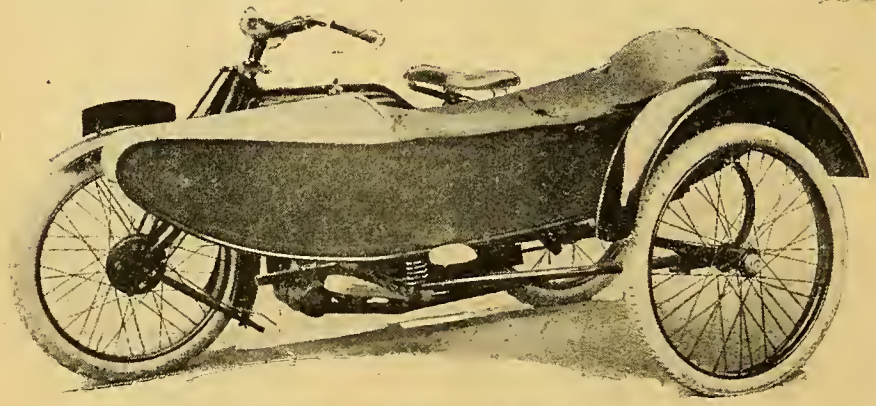
The sporting model Swallow sidecar.

Sidecar Attachments.—



Capacious luggage accommodation is provided on the Sandum.

adds considerably to its effectiveness as a touring sidecar. The greater height, too, of the front back-rest is a decided improvement, and the well for the feet of the rear passenger is a minor alteration that will be acceptable to tall passengers. The important question of price has been studied closely by the makers, and reductions of from £3 to £9 5s. have been effected. In the "Favourite" pattern, for instance, the original £30 has been reduced to £25, and, in addition, all models are sent carriage paid in free crates. Amongst the innovations for 1923 is a little sporting sidecar of taking design marketed at £18 18s. in standard three-ply wood, and at £21 in polished aluminium. The most important and far-reaching alteration is the attaching of the mudguards to the body instead of to the stays. Elimination of rattle is thus effected. The Millford Rock chassisless sidecar is shown at £25; it is one of the most comfortable on the market to-day.



A Whitley sporting sidecar on a 349 c.c. A.J.S.

MONTGOMERY. (42.)

Sports and Touring Types.

W. Montgomery and Co., Coventry.—The Montgomery range is unquestionably one of the most complete in the show. Models of every conceivable type are shown, and the most fastidious buyer will find designs to meet his requirements. If one model can be chosen which attracts more than another it is the racing model with an all aluminium body and scoop-shaped wind-shield, fitted to a dash which gives complete protection and yet offers the minimum of wind resistance. The price is £22 10s.

Superlative finish, the maximum comfort for the passenger, and grace in design are found in model No. 1. It is of low build, yet the back is not too low for comfort; there is ample leg room, and a good locker. This model, fitted on the new underslung chassis, is priced at £26 10s.

A little sporting model which the Montgomery people say "set the fashion in sporting bodies" is offered at £21 10s., and a clean, graceful design it is, weighing only 100 lb. complete.

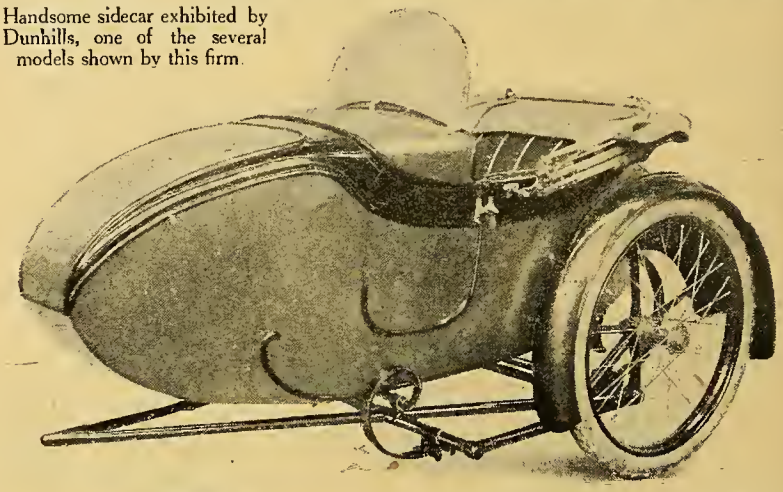
A tradesman's carrier is, of course, provided, differing little from the old and well-proved model. It is light and clearly designed, and listed at £21 10s.—a cheap production considering its fine finish. The lowest priced model is the No. 3, a little sidecar suitable for light-weight machines, and listed at £19 10s. Although low in price it has all the best characteristics of Montgomery products.

RIDEEZI. (163.)

For the Family.

Coleford Motors, Ltd., Rideezi Works, Western Road, Merton.—Every pattern from the lightest and most streamline of racing bodies to the commodious family pattern is provided on this stand. One model that will catch the eye of the family man is the "Champion" two-seater. This sidecar is provided with a dickey which forms a seat big enough for an adult, while there is ample room for a child in the front part of the body. It is sold at £31. A similar pattern to the Champion is listed for £23 2s., but the dickey in this instance is suitable only for a child. Amongst the lightweight models is a smart pattern weighing only 75 lb.; it is listed at £13 13s., and must be good value at that price. It is interesting to observe that all Rideezi sidecars are covered in aluminium at the nose and at the rear to prevent disfigurement by the cracking of the three-ply wood or of the enamel. Also exhibited is an aluminium hood which folds over the rear portion of the body when not in use. This device is neat and instantly put into operation.

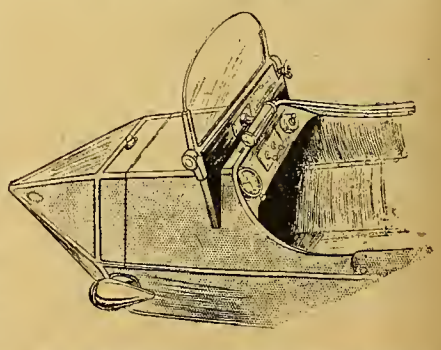
Handsome sidecar exhibited by Dunhills, one of the several models shown by this firm.



KERRY. (304.)

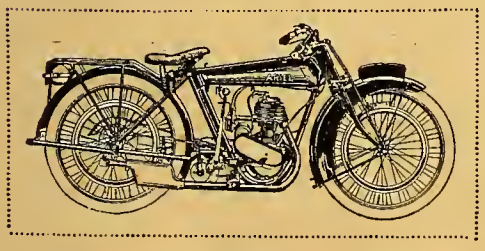
Many Sidecars.

East London Rubber Co., Ltd., 29, Great Eastern Street, London, E.C.2.—Quite apart from the rest of the sidecars (up among the accessories in the Gallery) are shown two of a very complete range offered by the East London Rubber Co., Ltd. The "Kerry" No. 7 pattern is distinguished by its superior finish, both of coachwork and upholstery. A good-sized locker, broad enough at the top to accommodate a fairly large suitcase, is provided. An enclosed wheel underslung type of chassis accommodates



The effective dashboard and screen of the Hawk hexagon sidecar.

Look at these prices—— remembering the quality



	£	s.	d.
2½ h.p. Lightweight, Four-Stroke, Two-Speed Gear, Clutch and Kick-Starter, All Chain Drive	57	10	0
3½ h.p. Sports Model, Three-Speed Gear, Kick-Starter, Belt Drive	75	0	0
3½ h.p. Touring Model do. Chain and Belt Drive	79	10	0
3½ h.p. Sports Model do. Chain Drive	82	10	0
3½ h.p. Touring Model do. Chain Drive	87	0	0
4½ h.p. do. do. Chain Drive	95	0	0
6-7 h.p. do. do. Chain and Belt Drive	95	0	0
6-7 h.p. do. do. Chain Drive	100	0	0
8 h.p. do. do. M.A.G. Engine	105	0	0

SIDE-CARS.

ARIEL No. 1 Model, Coach Built Side-Car, specially designed for 4½, 6-7 and 8 h.p. Models with All Chain Drive	29	10	0
ARIEL No. 2 do. do. for 3½ h.p. Models and 6-7 h.p. Chain and Belt Drive Model	24	10	0
ARIEL No. 3 do. do. do.	20	0	0
SPORTS MODEL Side-Car	20	0	0

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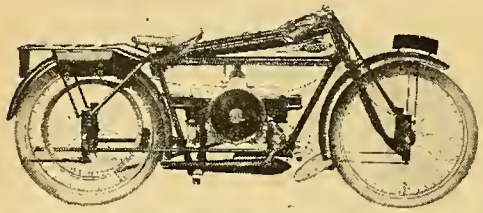
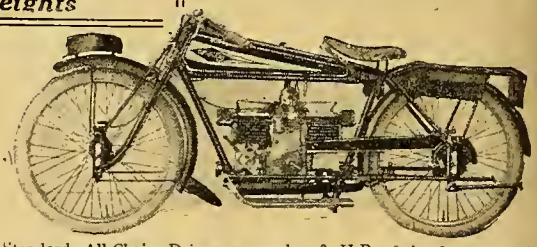
ACCESSIBILITY



Belt Drive, Variable Gear, giving 9 speeds, 2¾ H.P. Flat Twin 60½ x 60, opposed valves, capacity 345 c.c. **£65**



Standard All-Chain Drive, 3 speeds, 2¾ H.P., 60½ x 60, opposed valves, capacity 345 c.c. **£75 10 0**
With Touring Side Car and Spring Chassis. **£95 10 0**

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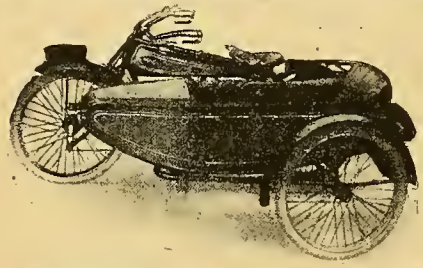
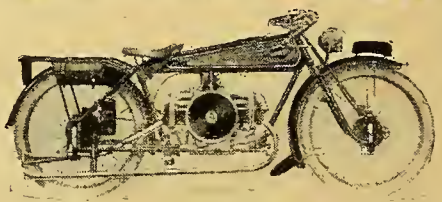


Sports Belt Drive Combination, Spring Chassis. **£77 10 0**



2¾ H.P. Sports Model, All Chain Drive, 3 speeds, O.H.V. 60½ x 60, capacity 350 c.c., Overhead Cam Gear. **£80**
3½ H.P., O.H.V., capacity 500 c.c., **£94**. With Side Car de Luxe, Disappearing Hood Screen and Apron, extra. Front and Rear Springing Reserve Petrol Tank. Mechanical Lubrication of Engine and Gear from Pump.

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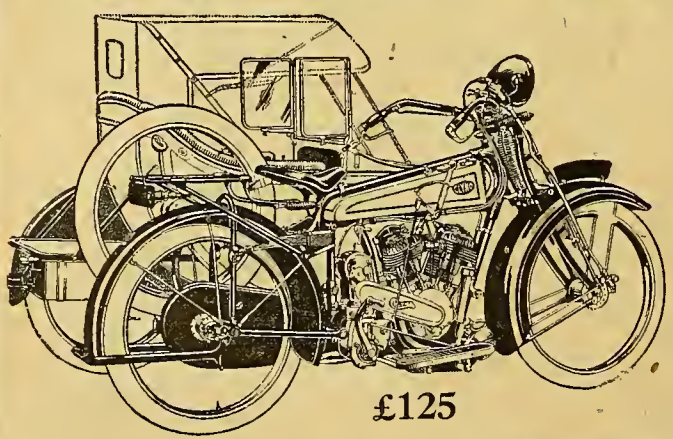

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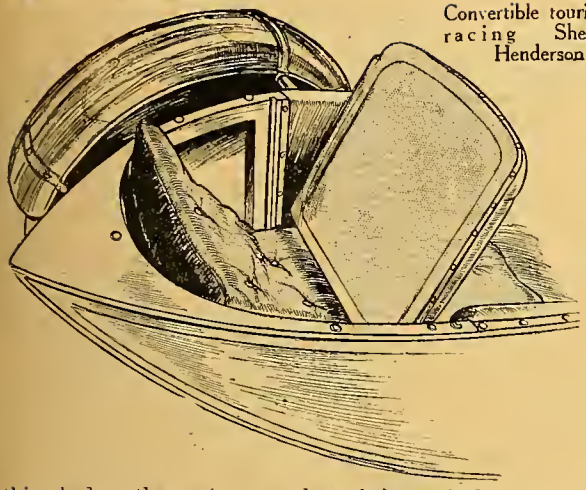
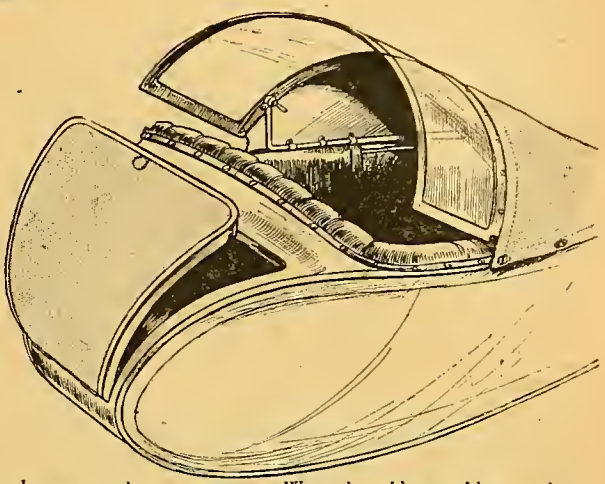
Sidecar Attachments.—



Convertible touring or racing Sheffield-Henderson



Large two-abreast two- eater Watsonian sidecar with capacious luggage receptacle in rear.

this body, the price complete being £23 10s. The other sidecar shown is known as the Tourist No. 9, and is a roomy, well-upholstered model with an extremely well padded hack cushion. Another very desirable feature, none too common on any of the sidecars exhibited at Olympia, is an unusually high back to the seat. This model is listed at £22 15s.

WHITLEY. (120.)

Sports, Trade, and Touring Sidecars.

WHITLEY MFG. CO., LTD., Charterhouse Mills, London Road, Coventry.—Like the majority of sidecar manufacturers, the Whitley Mfg. Co. has this year specialised in a light sporting design, and offer for £15 10s. a model that is extremely good value. At this price four-point attachment and a sensible storm apron are provided. Alternatively, a touring body of the same pattern is offered at the same price. Another introduction is the tradesman's model, a sensibly-sized carrier, stoutly constructed, and not so unwieldy as are many. Judging by the numbers of trade carriers shown, it would seem that an increasing interest is being taken by tradesmen in this form of delivery vehicle. The interest will increase providing manufacturers do not build the bodies too large, thus tempting users to carry more weight than is justified on a sidecar chassis.

A Whitley production of clean and straightforward design is known as Model 12. This sidecar is marked by its fine finished and roominess, and is priced at £24 10s.

A detail of interest on Model 20 is the registered design of the wheel bracket, which permits the spindle to be withdrawn and at the same time provides for the main and under tubes, mudguard stay, and wheel stand all in one casting.

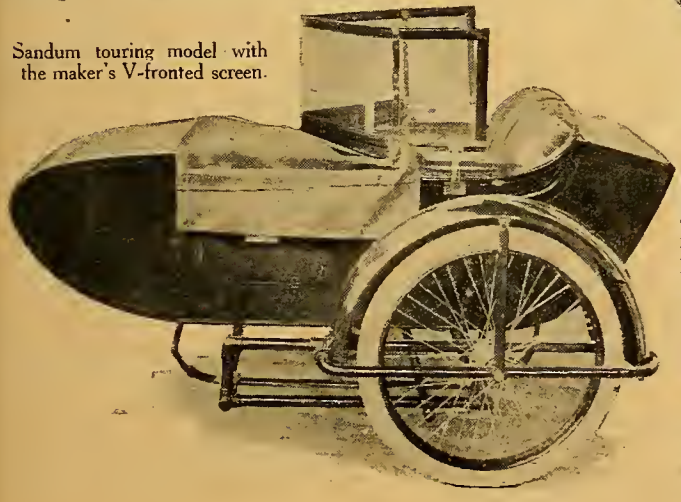
HAWK. (29a.)

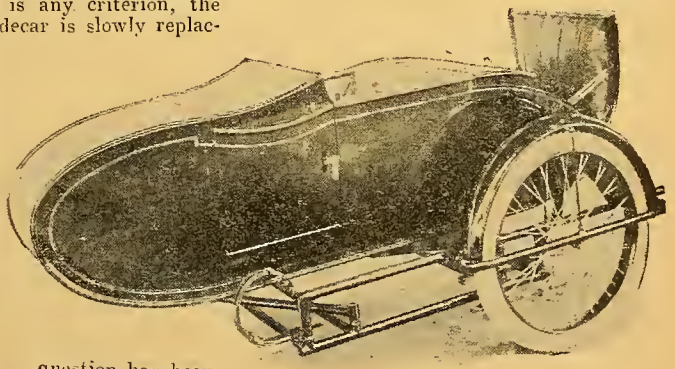
Streamline Bodywork.

HAWK ENG. AND SIDECAR MFG. CO., Hampton Street, Brighton.—If the evidence of the road is any criterion, the sporting type of sidecar is slowly replacing the old high back and broad nose models. In the Hawk range there are to be found streamline patterns which offer the minimum of wind resistance. This question has been closely studied by the designer, and he has found from practical experience that the models he has placed on the market are ideal for the man who wishes to carry the minimum dead-weight and at the same time provide comfort for the passenger and give reasonable luggage space. The most attractive model on the stand is probably the Standard Racing De Luxe, finished in cream, and equipped with a well-fitted dash and a small hood which folds neatly and quickly away when not needed. This model with a body weighing 40 lb. is offered at £25.

In addition to the range of sporting sidecars a tradesman's carrier is offered, and this, too, has been designed with the object of giving as little wind resistance as possible, although providing good accommodation. The price of this model is £25 10s. A standard touring model is also marketed, following similar but more commodious lines to the racing Hawk. This sells at £30.

Sandum touring model with the maker's V-fronted screen.





One of the several Rideezi models—a touring type with dickey seat.

DUNHILLS. (66.)

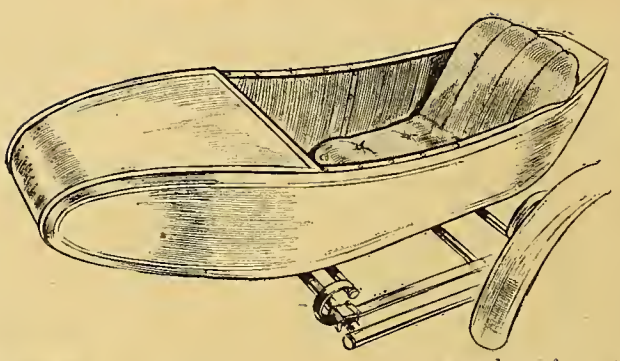
Sidecar Springing with Shock Absorbers.

DUNHILLS, LTD., 359, Eus on Road, London, N.W.—On this stand is one of the most interesting sidecar exhibits in the Show. Apart from the range of models shown, there is one innovation that deserves to become more widely known. This is the B. & D. stabiliser, which eliminates recoil and permits the introduction of more flexible coil springs than could otherwise be used. This device can be fitted on the majority of models, and unquestionably

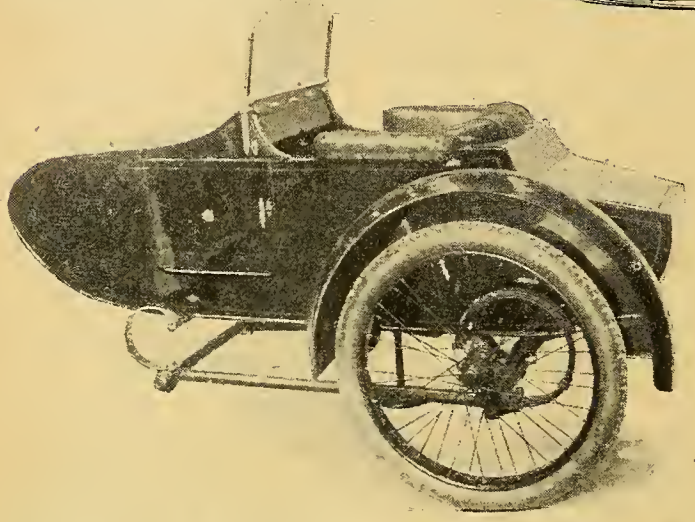
Sidecar Attachments.—

adds to the comfort of the passenger on bad roads.

Among the models which have proved their worth this year is the double-seater, a design ingeniously incorporating hammock seating for the front passenger. Although an extraordinary amount of leg room is provided the passenger the body might be mistaken for a single-seater. The price for this finely



New sports model Rideezi sidecar with hammock seat cushion and aluminium top panel.



Locker capacity has not been overlooked in the Hughes touring sidecar.

finished model is £35. The B39 is another graceful and commodious model, and should suit the tastes of the most fastidious. The sidecar shown is finished in Harley-Davidson green, and is equipped with a neat semi-circular screen and efficient hood. Its price is £32 10s. An entirely new sporting model is offered on the well-known Dunhill triangulated chassis at £20.

GRINDLAY. (39.)

Spring Wheel and Sports Sidecars.

GRINDLAY, LTD., Spon End, Coventry.—The Grindlay range of sidecars is complete and workmanlike. An introduction is a chassis which encircles the hub suitable for interchangeable wheel outfits, while the rear spring-slides on the cantilever chassis have been abandoned, the springs now being pivoted. Probably the most striking exhibit on the stand is the Club model, a well-designed sidecar with a polished aluminium dash suitable for any powered machine. A slight alteration to the locker on this model provides greater luggage accommodation. The Club model with spring wheel sells at £30, but with the new enclosed wheel chassis the price is £26. Another likeable body is attached to a light chassis and finished in primrose. Its rakish lines are suitable for a sports mount and should attract the speedman who wants a sidecar light in weight and offering small wind resistance. For £16 15s. a lightweight touring model is offered which is suitable for hard work with any type of machine up to 500 c.c.

CANOELET. (160.)

From Taxis to Lightweights.

MEAD AND DEAKIN, Tyseley, Birmingham.—The selection of Canoelet sidecars offered by Mead and Deakin is exceptionally complete and is very wide in its appeal, no fewer than eight being staged. All the models are distinguished, too, by their graceful lines and beautiful finish. Another point which marks the care in production is the variety in chassis design, which seems to have been considered in conjunction with the type of body used.

One of the most attractive of all is the M.M. 4 touring model, finished in mauve and equipped with deck and windscreen and a hood of light design, the latter being a new pattern. The A4, a semi-sports model in the Indian red, elaborately lined with gold and fitted with torpedo apron and screen, should satisfy the owners of Indian Scouts and similar fast machines, for the body can be finished in any colour.

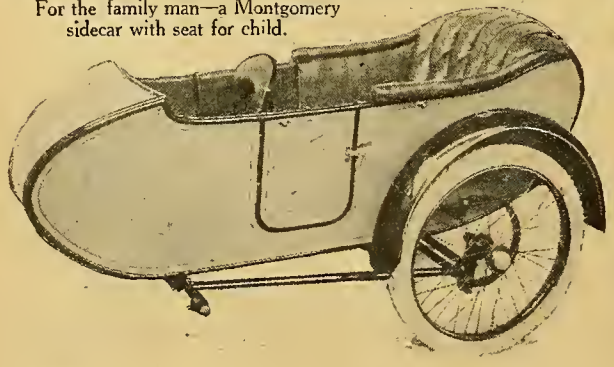
In great contrast to these models is the Taxi sidecar, a huge affair, but no doubt comfortable, selling at £85. For the owner who requires the minimum of body weight there is a little black and gold sidecar, clean cut in design—as indeed all the Canoelets are offered—for £16 5s.

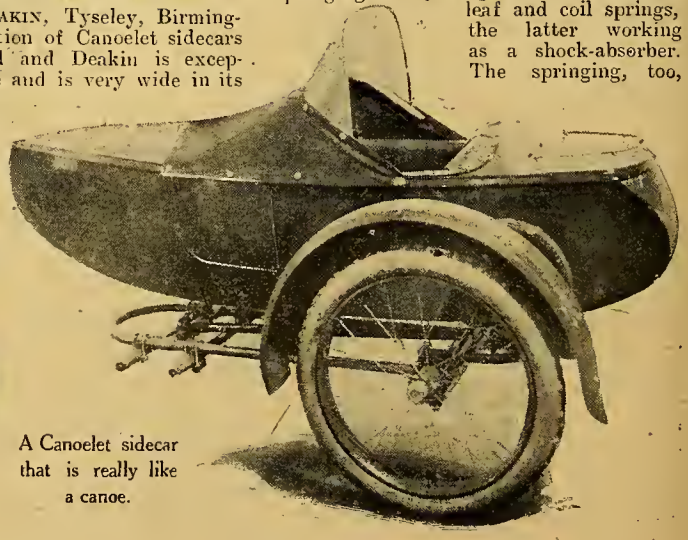
HENDERSON. (165.)

Leaf and Coil Springing.

HENDERSON MOTORS, LTD., 73, Fitzwilliam Street, Sheffield.—Models ranging from £17 10s. to £35 are shown on the Henderson stand, and though each model is interesting as bearing its own particular characteristics, the "Elite" chassis is one of the most striking things among the sidecars exhibits. The rear springing is by a pair of combination leaf and coil springs, the latter working as a shock-absorber. The springing, too,

For the family man—a Montgomery sidecar with seat for child.





A Canoelet sidecar that is really like a canoe.

The best tyre in 1923

will be the NEW DUNLOP CORD

Because—

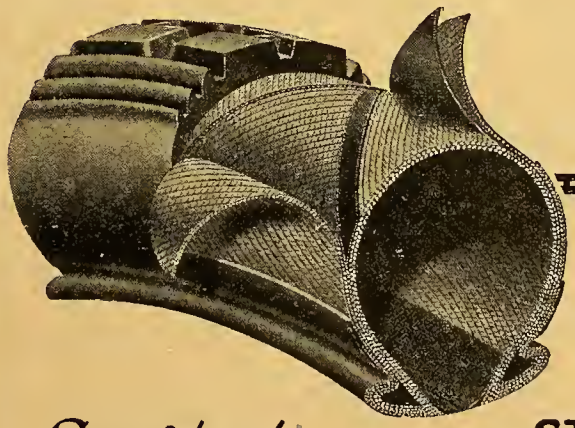
1.—it gives the *motor-cyclist* all the advantages of Dunlop multiple-ply cord construction so pronounced in Dunlop Cord *motor* tyres.

2.—this cord construction adds miles to the life of the cover, making it cheaper, on a cost-per-mile basis, than any previous type.

3.—it carries the finest tread yet devised, providing a sure fore and aft grip of the road under all conditions.

4.—it adds comfort to riding, possessing much greater cushioning capacity than tyres of the canvas type.

Sectional view—showing construction



SUPPLIES WILL BE OBTAINABLE SHORTLY FROM ALL MOTOR-CYCLE DEALERS.

See it at STAND OLYMPIA 83

and ask for further particulars of its excellencies

BRITAIN'S FASTEST MOTOR CYCLE.

The Cynosure of all eyes at OLYMPIA

ZENITH

STAND NO. 21 RIGHT CENTRE OF HALL

THE LIST OF RECORDS, set out below, annexed by the ZENITH-J.A.P., (side valve) ridden by Mr. H. Le Vack, from 1 kilometre to 100 miles, proves its SPEED and ENDURANCE. The ZENITH-J.A.P. performance in the 200 miles Sidecar Race, the only British machines to finish (2nd, 4th & 6th) when new RECORDS were set up for 200 miles, 2 hours & 3 hours, proves its RELIABILITY.

Oct. 21—Solo—10 miles, standing start .. **91.54 m.p.h.** World's Record.
Nov. 18 " 10 " " " .. **93.04 m.p.h.** World's Record.
Oct. 27—Solo—5 miles, flying start .. .. **100.29 m.p.h.** British Record.
The first time any motor cycle has covered a lap at Brooklands at over 100 m.p.h.
Oct. 28—Sidecar—5 miles, flying start .. **81.72 m.p.h.** British Record.
Sidecar—10 miles, standing start .. **78.88 m.p.h.** World's Record.
Oct. 31—Solo—Kilometre, flying start .. **102.8 m.p.h.** Mean Speed Record.*
Solo—Mile, flying start .. .. .. **103.71 m.p.h.** British Record.
Solo—Mile, flying start .. .. .. **102.91 m.p.h.** Mean Speed Record.*
Oct. 31—Sidecar—Kilometre, flying start .. **86.62 m.p.h.** Mean Speed World's Record.*
Sidecar—Mile, flying start .. .. **85.83 m.p.h.** British Record.
Sidecar—Mile, flying start .. .. **85.4 m.p.h.** Mean Speed World's Record.*
Nov. 17—Solo—1 Hour .. .. **89.9 m.p.h.** World's Record.
Solo—100 Miles .. .. **89.9 m.p.h.** World's Record.
Nov. 21—Solo—50 Miles .. .. **91.71 m.p.h.** World's Record.
Nov. 22—Sidecar—50 Miles .. .. **75.59 m.p.h.** World's Record.

* Mean Speed is the average of two runs taken both ways of the course. (Subject to official confirmation).

If unable to visit Olympia, ask your nearest Agent: or write us.

Full details, prices, etc., sent by return.

All-Chain Models - - from £65

ZENITH MOTORS, LTD.,
—— HAMPTON COURT, ENG. ——

Manufacturers of all the highest grade machines at Olympia have shown their discriminating judgment of the world's best chain by again fitting

RENOLD

Competition Riders—Track or Road—in all the premier events during 1922, have again fitted Renold Chains. Their judgment is worth noting. They are convinced that there is only one chain for severe conditions—a

RENOLD

For 1923, whether fitted to a new machine or for replacement purposes, profit by the experience of manufacturers and hard riders and insist upon a

RENOLD

HANS RENOLD LIMITED, DIDSBURY, MANCHESTER.
London :: Leeds :: Birmingham :: Glasgow :: S. Wales :: Montreal :: Brussels :: New York.

Sidecar Attachments.—

is adjustable for any weight and clearance. Among the sidecar exhibits which impresses itself as being particularly well thought out is the "Sports" model at £20. The makers maintain that perfect steering at any speeds is obtainable with this design. The lowest-priced sidecar on the stand is the "Featherweight," listed at £17 10s.

DORWAY. (113.)

Folding Chassis.

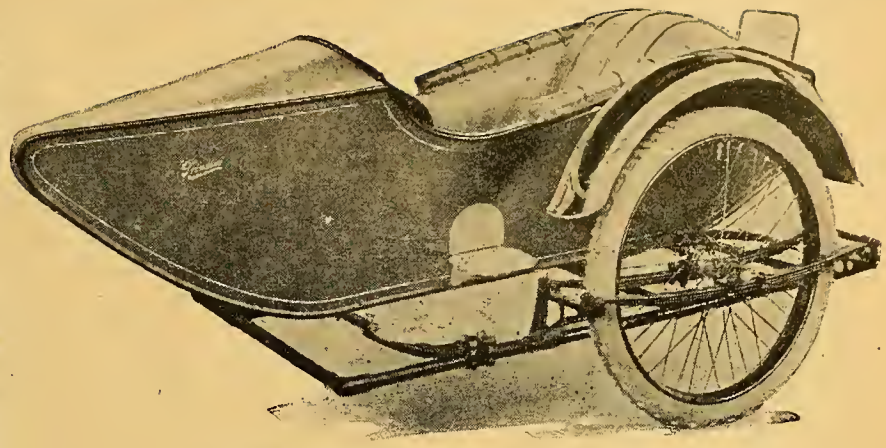
THE DORWAY SIDECAR CO., 345, Bell Barn Road, Birmingham.—The advantages of the folding chassis are so obvious that the wonder is, not that many firms are now specialising in this form of sidecar, but that more are not in general use. The Dorway chassis, which was very fully dealt with in the issue of *The Motor Cycle* for October 19, is robust in design and carefully thought out in every detail. The chassis, complete with a roomy body, sells for £28.

SWALLOW. (180.)

Graceful Sports Model.

SWALLOW SIDECAR CO., Bloomfield Road, Blackpool.—Amongst the most distinctive sidecars in the Show are the sporting Swallows in polished aluminium.

Although light and "racy" in appearance, the construction is strong and suitable for machines of any power. Many sporting bodies are fitted to chassis obviously unsuited for machines of larger capacity than 500 c.c., but in this instance the designers have rightly met the demand for strength from owners of powerful twins, as well as merely providing grace of outline with minimum wind resistance.



Grindlay sporting Club model, light but strongly made.

All the models are provided with a windscreen of the aeroplane type, consisting of a small semi-circular Triplex panel mounted in aluminium. Included in the equipment is a small quickly detachable hood, which may be erected in a very few seconds. It is carried in the locker at the rear.

HUGHES. (144.)

Four Models to Suit All.

THOS. HUGHES AND SON, LTD., Baker Street, Sparkhill, Birmingham.—The policy of Hughes & Son., Ltd., for the coming year is to provide a short range of models, each one suitable for various-powered machines.

For powerful motor cycles the "Cruiser" is offered for £30, a model of striking design and fine finish, equipped with dash and screen. Of a more commodious pattern is the "Standard" touring model, at £24. This, too, is fitted on a chassis strong enough for any-powered machine yet not unduly heavy. A really fascinating little model is the "Torpedo," which combines grace of outline with a fairly commodious body, and at the same time is light. This sidecar is listed at £23. For £17 10s. the "Lightweight" is good value.

WHAT NOT TO MISS.

The Swallow sidecar with concealed hood—actually it is removable and stowed away in a locker.

The several Bradshaw engined solo mounts.

The 976 c.c. Coventry Eagle—one of the cleanest big twins in the Show.

The £28 10s. 6d. Excelsior lightweight, fresh from Bwlch y Groes.

The O.E.C. limousine coupé sidecar attached to a wheel-steered bicycle.

The sprung wheel Gnome-Rhone sidecar.

The new skew gear Rudge four-speed box.

The dual spring fork of the latest Harley-Davidson.

The 733 c.c. Douglas sidecar, with sliding screen and pillion carrier seat as standard.

The post office red Campion sidecar.

The Millford tandem-seated sidecar.

The Harper, Ner-a-Car, Morgan, T.B., and New Hudson chassis.

The new B and B twist grip controls for existing machines.

The Coventry Victor louvre type adjustable leg shields.

The dove-grey Francis-Barnett T.T. machine.

The Sandum all-weather hood with V screen.

The 976 c.c. Zenith sports sidecar outfit.

The 38 lb. "T.T." lightweight on the Clement stand.

The 25-guinea Sirrah.

The £67 10s. 499 c.c. Abingdon.

The "Oversize" Watsonian sidecar, which seats an adult and child side by side, and has a commodious dickey.

The little overhead valve Weaver.

The "all-enclosed" model of the P. & P.—the hoseable mount.

The shaft-driven G.S.D.

The new Triumph lightweights.

The tower of fins on the small Martinsyde.

The Metro-Tyler polished aluminium saloon sidecar finished in Bedford cord and having wireless equipment.

The single-cylinder Matchless, which suggests a revival of Matchless competition in the Tourist Trophy Races.

The Coupette—a folding fixed type hood among the Lea-Francis exhibits.

The handsome sporting Canociet sidecar with scuttle screen and rear deck rail.

The grey 349 c.c. B.S.A. at 55 guineas.

The novel method of indicating the features of the Excelsior by streamers suspended from the archway of the stand.

The new 349 c.c. three-speed Sunbeam.

The sporting P. & M. Panther sidecar outfit.

The 348 c.c. Raleigh at £55.

The Motor Cycle photographic transparencies. (Stand No. 70.)

SIDELIGHTS OF THE SHOW.

Jottings of Interest at the Annual Olympia Exhibition.

CIGAR-SHAPED sidecar bodies of polished aluminium would appear to be the accepted standard in sporting sidecars.

Introducing another Saturday into the Show "week" is a popular innovation, judging by the crowd of visitors on the opening day.

The palm for finning we award to George Brough and his "S.S.80 Superior" model. Besides liberally finning the exhaust port, there is quite a goodly collection of fins on the pipe itself—"getting quite fishy," a wag remarked.

Records and rumours of records were in the air at Olympia on Friday whilst stand attendants were busily staging their wares.

The enterprising French firms who have come over for the Show demonstrate Continental advance in design and construction of motor cycles.

Dope is a favourite topic of conversation among the speed men who foregather at the Show. Promises of another 10 m.p.h. are made by those now experimenting with fuel mixtures.

One may pay as little as £28 and as much as £45 for a lightweight of similar outward design.

Sidecar or runabout—which shall it be? This problem still keeps buyers (and their spouses !) busy.

One hears less of mass production of a single model these days. Rather is it the case that makers provide a range of patterns to satisfy all tastes.

Many manufacturers would prefer the Show earlier in the year—September is the month favoured in some quarters.

Show visitors have an opportunity of noting the progress made with the Extension to the Olympia building on the Hammersmith Road side. Next year it will enable the Car Show to be arranged in one building, instead of splitting the Show between Olympia and the White City as in the last three years.

The Cedos will be to the fore in 1923. A new private company to handle it is being formed next week.

Circulation of the Show issues of *The Motor Cycle* :—

Nov. 9th	... ...	129,001
Nov. 16th	... ...	132,411
Nov. 23rd	... ...	140,322

All-weather finish is becoming the vogue.

Quite a large number of visitors to the Show on Saturday were tempted to journey up by road, the weather being fine and the roads dry.

Rudge machines have either four or twenty speeds in 1923.

Real improvements are observable in sidecars for 1923. Passengers will appreciate the conveniences arranged for map and goggle accommodation, and also the weather-protecting devices.

Even on Friday morning the staging of the exhibits at Olympia was well advanced.

The descriptions of 1923 models in this issue, as well as the review of accessories, were prepared by "THE MOTOR CYCLE" staff subsequent to a personal examination of the Olympia exhibits. It is the most complete review of the annual Olympia Exhibition, embracing in one issue every motor cycle, sidecar, and three-wheeled runabout.

A Press-day, as at the Car Show, would be a much-appreciated innovation at the Motor Cycle Show next year.

At the manufacturers' banquet on the eve of the Show, Sir Harold Bowden, referring to reduced prices for 1923, recalling a famous remark, said that he did "not know what the public would think of prices, but, my God, they frighten me."

This year's exhibition is a real value-for-money show.

The daily press photographers were, as usual, eagerly sorting out the freakish designs on the opening day.

Step quietly on to the Indian stand, make a noise like an order, and you may receive a handsome little cigarette holder.

There are more foreign visitors to the Show than usual; representatives from many countries have arrived for the most important motor cycle exhibition in the world.

The smallest engine in the Show is the 43 c.c. Clement.

THE MOTOR CYCLE EXHIBITION
at
OLYMPIA
will remain open to the public until Saturday next (December 2nd).
300 manufacturers are represented and over 1,000 vehicles on view, together with 10,000 components.
It is open each day from 10 a.m. to 9 p.m., and the admission charge is 2s.

Many considered the motor cycle manufacturers' banquet more interesting in the quality and interest of the speeches than the car manufacturers' banquet a month ago.

Brooklands fairly buzzed with excitement up till closing time on Saturday, and many records went by the board. The track is now closed for necessary repairs.

Still too many stand attendants know little of the machines they represent. Even bore and stroke floors many of them.

Next year, many motor cyclists would like to see the banishment of guineas for prices and initials for names.

With the arrival of the G.S.D., the J.D., the P. and P., and the H.T., all newcomers to Olympia, there is a perfect medley of initial names of motor cycles.

Sidecars should enjoy great popularity in 1923, thanks to the attention of designers to the all-important question of weather protection. Many really commendable examples of all-weather sidecars are displayed at Olympia this week.

A T.T. for 150 c.c. motor cycles is not so distant as one might suppose. There is quite a range of such machines at the Show.

Further cuts in prices were being mooted on Monday afternoon.

Working models are to be found on many stands demonstrating the action of engines and gears.

Young and old, male and female, jostled together to obtain a glimpse of the latest motor cycles on Saturday afternoon and evening.

Somebody has been complaining that he stepped into the Show and lost £40. It turned out that the cut figure at which he was advertising his 1922 second-hand machine was considerably more than the manufacturers were charging for the same model electrically equipped.

As mentioned in our report, the Duzmo was an absentee on Saturday. One model turned up on Monday morning.

Before the war it was possible to obtain a single-geared lightweight for £23 10s. This year a machine of similar quality, but with much better equipment, is shown at £26 5s.

How the Show appeals to boys of fourteen—the finest that ever was or ever will be.

Quite a number of people are walking about with cigarette cases bearing the well-known Rudge-Whitworth symbol.

RUNABOUTS AT OLYMPIA.

Six Machines which may be regarded as Substitutes for the Sidecar Outfits and Two Solo Machines on Similar Lines.

HARPER RUNABOUT. (122.)

Solo Three-Wheelers.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single cyl. two-stroke; petroil lubrication; Zenith carburetter; flywheel mag.; 3-sp. gear; clutch and lever-starter; chain drive; 2¼in. tyres. Price £100.

R. H. CARLISLE AND CO., LTD., 188, Deansgate, Manchester.—The Harper runabout stands in a class by itself. Its designers, recognising the demand for an exceptionally light, handy vehicle giving complete weather protection, have succeeded in producing a most attractive little three-wheeler. Low upkeep and running costs are claimed for it, and, considering the power unit is only of 269 c.c. capacity and the entire weight only 280 lb., the claim may well be justified. A three-speed gear, chain transmission giving direct drive on all speeds, Zenith carburetter, independent foot and hand brakes, starting from the seat by lever, and foot acceleration are details which go to the making of a workmanlike little runabout. The matter of luggage-carrying has been well considered, the space under the emergency extra seat being ample for light parcels, while provision has been made for the carrying of such things as golf clubs, fishing rods, and tennis rackets. The whole of the mechanism and body is supported on the quarter-elliptic springs, a desirable feature for so small a machine. On the question of actual road performance the little Harper can boast of a good record in the Scottish Six Days Trials. For the makers to have entered such an arduous event with a three-wheeler fitted with so small an engine exemplified fully their faith in the machine, and their temerity was justified.

Tradesman's box-carrier models are available.

MORGAN. (139.)

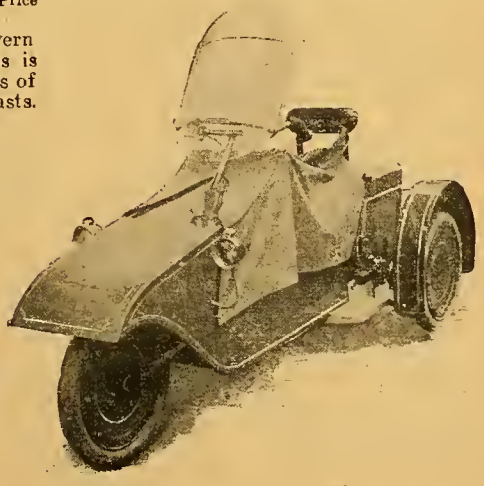
Simple Three-wheelers.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; clutch and handle-starter; shaft and chain drive; 700×80 mm. tyres. Price £128.

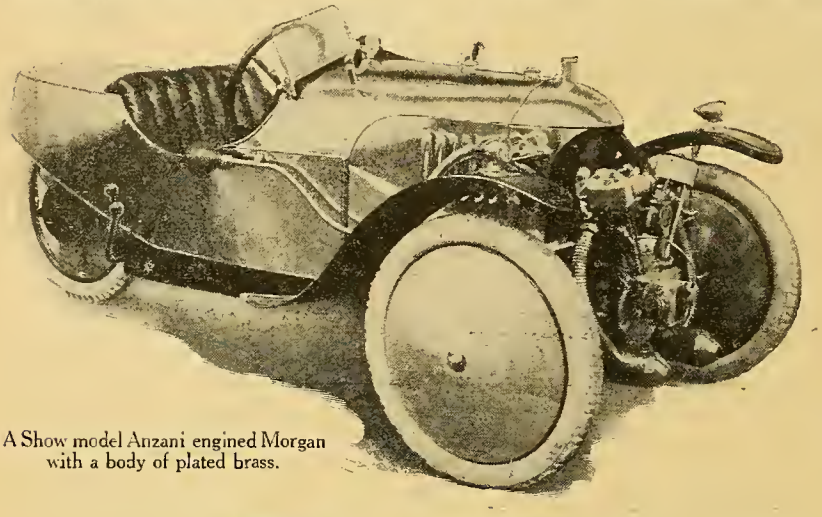
THE MORGAN MOTOR CO., Malvern Link.—The range of Morgan models is wide enough to meet the requirements of all classes of three-wheeler enthusiasts. For £128 there is offered the standard model fitted with either an air-cooled J.A.P. or Blackburne engine, whilst for £30 more the family Morgan can be had, which will accommodate two extra passengers in the rear seats. This model specially attracts the family man, for the accommodation provided is far more commodious than might be imagined on so small a chassis. Speed men can be accommodated with the Grand Prix model at the reduced price of £160, and at these figures a full equipment is, of course, included. One of the most interesting exhibits on the stand is the chassis so familiar to many and still fascinating in its admirable simplicity. No change of design is made this year, and, indeed, judging by the continued success of the Morgan, alike in the hands of private owners and in trials, little change is needed.

A model known as the Aero is another attractive exhibit, the body being polished aluminium. It draws universal attention by its various little fitments. The radiator and tank are nickel-plated, and

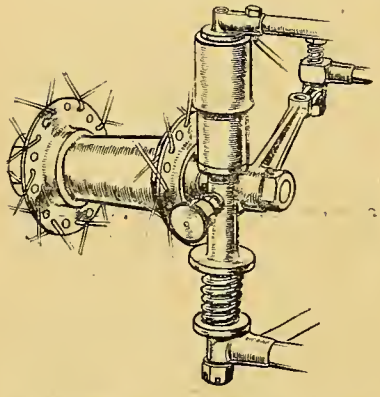
Completely equipped Harper runabout, improved in detail for next year.



Runabouts at Olympia—the general design and colour scheme are sufficiently noticeable to lure the least impressionable passer-by. The price of this model is £200.



A Show model Anzani engined Morgan with a body of plated brass.



The Morgan has no front axle in the accepted sense of the term. Steering is accomplished by pivoted stub axles.

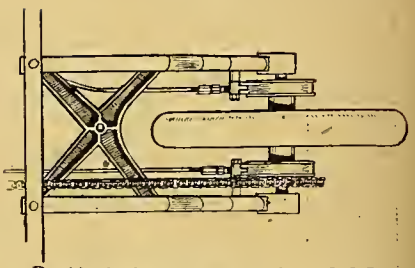
L.S.D. (169.)

Sturdy Runabouts.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; bevel-driven mag.; 2-sp. gear and reverse; clutch and kick-starter; shaft and chain drive; 26×3in. tyres. Price £145 19s.

SYKES AND SUGDEN, LTD., Linthwaite, Huddersfield.—Sturdy construction is immediately noticeable in this three-wheeler. Its designers have succeeded in producing a machine that will stand hard wear over rough country. The main frame of the vehicle is composed of angle steel welded together and stiffened by deep oak side pieces. Detachable and interchangeable artillery wheels are used, the rear one being instantly removed by simply slackening the spring nuts. Enclosed coil springs are used for the front suspension. All the models exhibited are exceptionally attractive, but the Popular model, offered at £145 19s. (including hood, screen, horn, and complete acetylene lighting equipment), is obviously excellent value. The family man is catered for in a model which is fitted with dickey seat capable of accommodating two children, and, moreover, the makers claim 60 m.p.g. for this particular machine.

Air-cooled J.A.P. engines are fitted to all the models, the transmission being through a clutch and propeller-shaft to a gear box, and finally by chain. The L.S.D.'s records on the road prove it to be well past the experimental stage.



Double brakes on the 8 h.p. L.S.D. runabout.

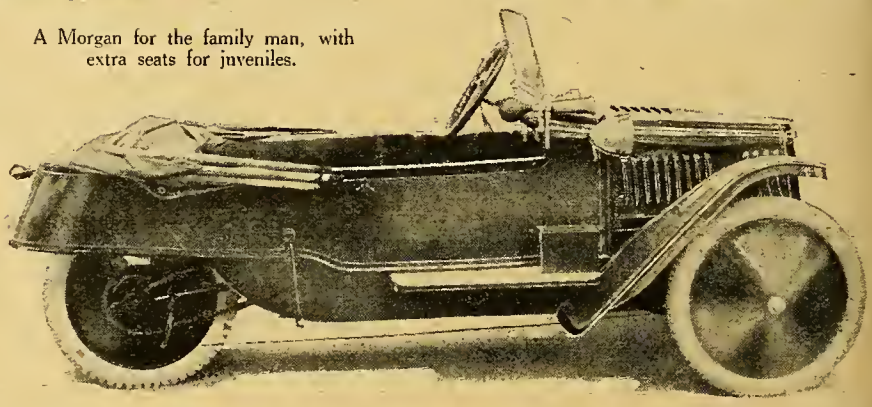
T.B. (57.)

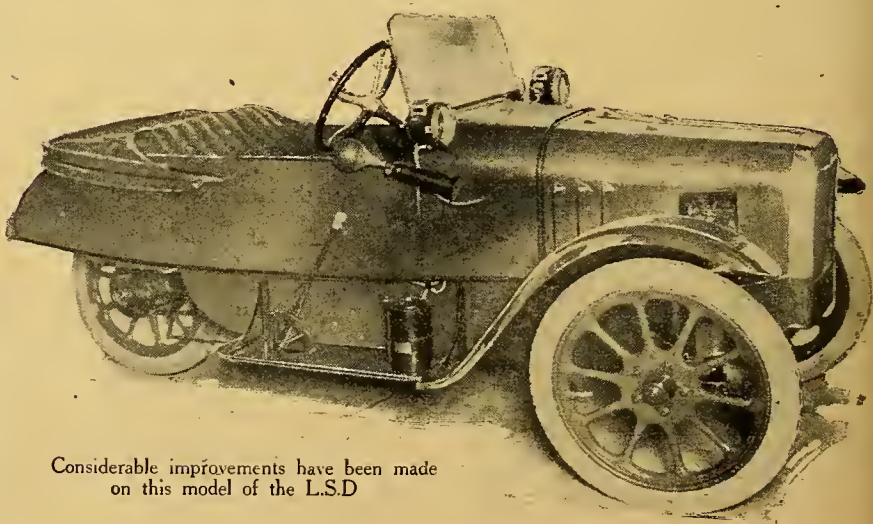
60 m.p.h. Three-Wheeler.

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); V twin cyl. four-stroke; side-by-side valves; drip feed lubrication; Binks carburetter; chain-driven magneto; 3-sp. gear; clutch and hand-starter; shaft drive; 700×80 mm. tyres. Price £155.

THOMPSON BROS. (BILSTON), LTD., Bradley Eng. Works, Bilston.—The essential feature of any three-wheeler is its chassis design, this point having more bearing on the success of the vehicle than any other. In the T.B. chassis every possible weakness has been closely studied, and the result is a sound and satisfactory design. Rear springing is by semi-elliptical springs mounted on the cantilever principle, the front being of the quarter-elliptic type. All three

A Morgan for the family man, with extra seats for juveniles.





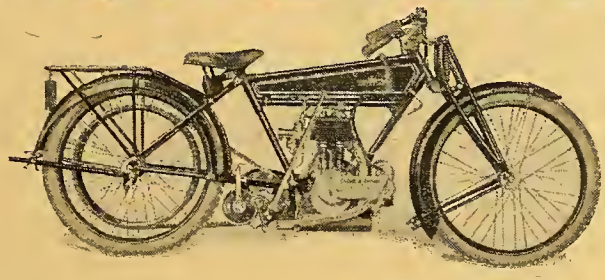
Considerable improvements have been made on this model of the L.S.D

Stand 26 Stand 26

Something quite NEW-

The GNOME and RHONE

4 H.P. **4 H.P.**



At Stand 26 £69-0

PRICE COMPLETE

On view for the first time, the new 4 h.p. "G. & R."

Motor Cyclists will appreciate to the full this latest production machine of the world-famed engineers, Messrs. Gnome and Rhone.

The chief features of the "G. & R." are its **Great Strength, Perfect Simplicity,** and **Complete Reliability.**

You are cordially invited to call at Stand 26 and inspect at your leisure.

Trade and Colonial Agents are now being appointed. Buyers interested are invited to call as early during the Show as possible.

SPECIFICATION

ENGINE.—Singlecylinder4stroke,85m/m bore, 88 m/m stroke=499c.c.
GEAR BOX.—The new Gnome and Rhone 3 speed.
CARBURETTOR.—Gnome and Rhone.
IGNITION.—High Tension Magneto.
BRAKES.—(1) Main brake working on bell-rim of back wheel.
(2) Auxillary brake working on fly wheel.
TYRES.—26×2½.
FINAL DRIVE.—Chain cum belt.
FRAME.—All lugs are of drop steel forgings.

GNOME & RHONE
34, Rue de Lisbonne, PARIS, 8e.
or c/o OVERSEAS SALES, LTD.
Telephone . . Mayfair 3150

Distributors for British Colonies:
OVERSEAS SALES, LTD.
21, George Street,
Hanover Sq., LONDON, W.1

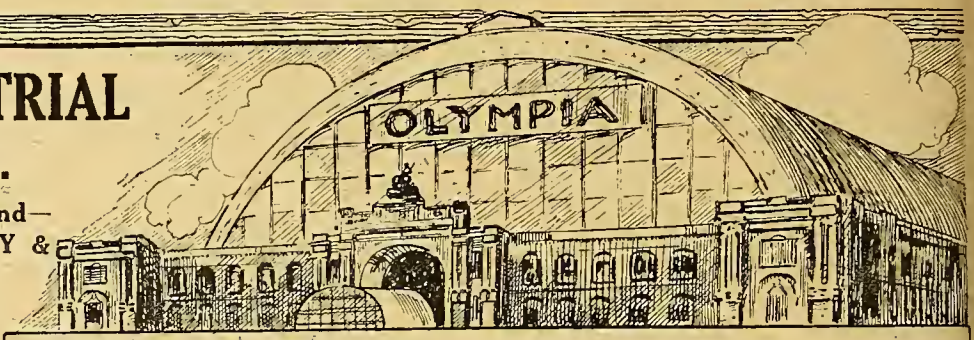
Stand 26 Stand 26

BEST AFTER TRIAL

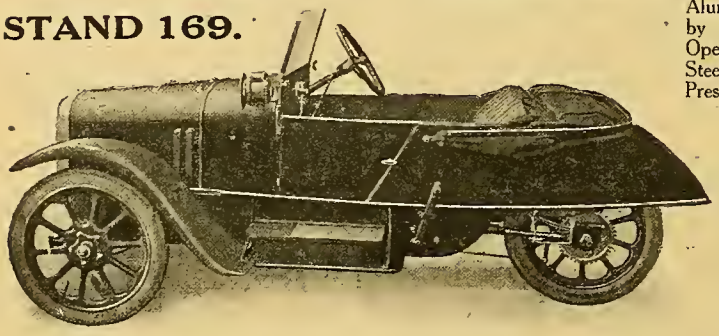
The L.S.D.

responds to every demand—
ECONOMY, RELIABILITY & COMFORT.

MILEAGE -	55 m.p.g.
SPEED - -	50 m.p.h.
OIL - - -	800 m.p.g.
TAX - - -	£4 p.a.
TYRES - -	8,000 miles
PRICE - -	139 Gns.
	149 Gns.
	154 Gns.



STAND 169.



NOTE this Brief Specification :—

ENGINE—8 h.p. J.A.P. (M.A.G. Twin, air-cooled £5 5 0 extra). **MAGNETO**—High-grade. **CARBURETTOR**—Amac, or other approved make. **CLUTCH**—Leather faced cone. **TRANSMISSION**—Shaft to Gear Box, thence by Chain to Back Wheel. **GEAR BOX**—Aluminium, with two forward speeds and reverse, actuated by a separate handle, fool-proof. **KICK-STARTER**—Operating through Gear Box. **CHASSIS**—Built of Angle Steel and Ash. **TYRES**—Dunlop, 26 by 3. **WHEELS**—Pressed Steel. **BRAKES**—Two external contracting; one pedal and one hand. **LIGHTING**—Acetylene, two head and one tail lamp. **BODY**—Roomy two-seater, with provision for third seat, ample leg-room and luggage accommodation. **EQUIPMENT**—Hood, fixed angle wind-screen, horn, tools, jack and pump.

SYKES & SUGDEN, LTD.,
LINTHWAITE, HUDDERSFIELD.

STAND 161

The QUADRANT

THE MARVEL OF VALUE IN THE SHOW IS THE NEW 3½ H.P. SPORTS MODEL. NOTE PARTICULARLY THE SPECIFICATION WHICH INCLUDES STURMEY 3-Speed, Kick Starter, Binks Carburetter, Dunlop Tyres, Front Hub Band Brake and powerful Foot Rear Brake, Front and Rear Stands, Aluminium Chain Covers.

60 GNS. At Works.

The 4½ H.P. Touring Combination at **£95** At Works. is also unsurpassable, and gives every comfort to passenger with Power efficiency and reliability to the driver. It is absolutely impossible to beat this specification at the price. Sturmey 3-Speed, Kick Starter, Dunlop Tyres 700×80, Oval design Tank, Binks Carburetter, Aluminium Chain Covers, Coach Built Side Car with 4 point attachment.

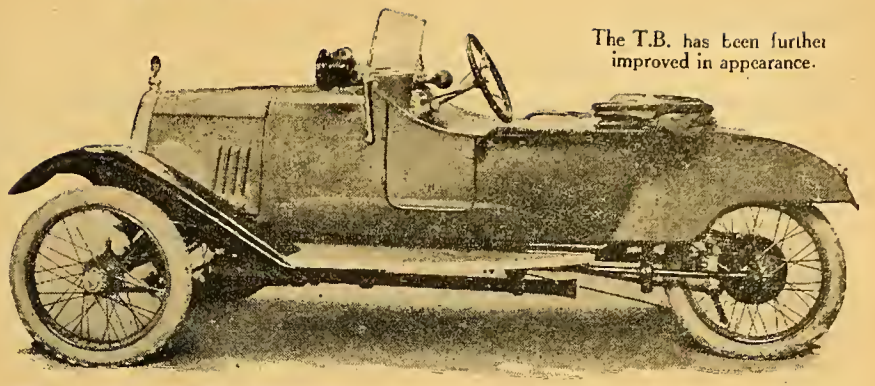
Catalogues from—

MARCH, NEWARK & CO., Ltd., QUADRANT WORKS, BIRMINGHAM.

Southern Distributors: **CLIFFORD WILSON MFG. CO., 177, Westminster Bridge Road, S.E.1**

Runabouts at Olympia.—

wheels are interchangeable, the spare wheel being carried on the off side of the body. A big improvement, too, has been effected by the introduction of a ratchet brake acting on an external contracting band instead of the internal expanding type. In general appearance the T.B. is good, and there is a cleanness and finish about all the models which, adds distinction to a pleasing range. At £155 the standard air-cooled T.B. is an attractive proposition, while for an additional £10 a water-cooled engine can be fitted, as well as several refinements in detail. T.B. three-wheelers have done remarkably well in competitions, and those who favour a sports model can obtain one with the guarantee of 60 m.p.h. Its price is £175. Family men are also catered for with a model having a type of body known in the car world as the "clover leaf"; on the T.B. this arrangement gives accommodation for a child between and slightly behind the two normal occupants.



The T.B. has been further improved in appearance.

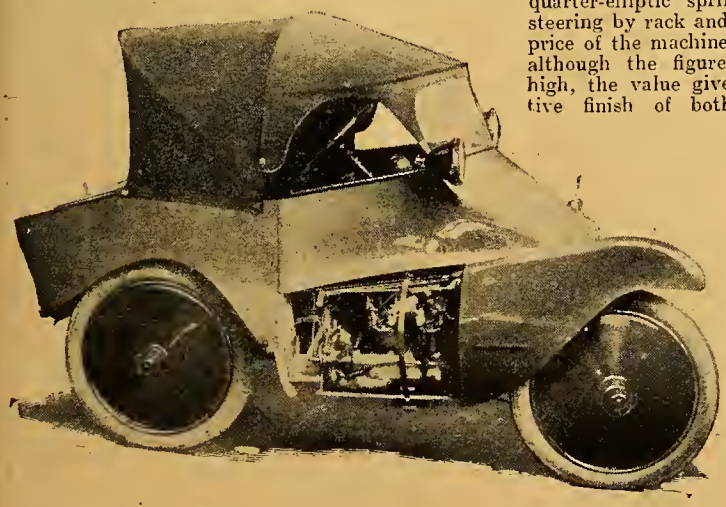
SCOTT SOCIABLE. (168.)

Unconventional but Comfortable.

5/6 H.P. MODEL.—76.2×63.5 mm. (578 c.c.); twin cyl. two-stroke; rotary inlet valve; petroil lubrication; Zenith-Scott carb.; gear-driven mag.; 3-sp. gear; clutch and hand-starter; shaft and spiral bevel drive; 700×80 mm. tyres. Price £176 8s.

SCOTT AUTOCAR CO., Lidgett Green, Bradford.—Although only placed on the market a few years ago, the Scott Sociable has already found many ardent admirers. Its unorthodox design has now become familiar amongst motor cyclists, and its price of £176 8s., including full equipment, places it in direct competition with the more luxurious sidecars. That it possesses certain advantages over the latter is indisputable, complete protection for the driver and excellent springing being two of its outstanding features. In essentials the little runabout differs but slightly from last year's models, but various detail refinements have been effected, the most important being greater ease of starting. The salient feature of the little vehicle—the triangulated chassis—has been described many times.

Years of testing have thoroughly proved the 578 c.c. water-cooled two-stroke engine to be of ample power, even on the steep hills amongst which the machine was conceived. As may be imagined, this type of engine in conjunction with the spiral bevel drive goes to the making of a machine particularly quiet and smooth in action. No doubt many newcomers to the pastime will be fascinated by the unquestioned ingenuity of this unconventional design.



One of the several Scott Sociables exhibited. The "engine room" covers are opened to show the power unit.

NEW HUDSON (142.)

A Car on Three Wheels.

10 H.P. MODEL.—82×94 mm. (996 c.c.); V twin cyl. four-stroke; overhead inlet valves; drip feed lubrication; Cox Atmos carb.; Lucas gear-driven Magdyno; 3-sp. gear and reverse; clutch shaft and final chain drive; 700×80 mm. tyres. Price £195.

NEW HUDSON, LTD., Icknield Street, Birmingham.—This finely-finished three-wheeler remains practically the same in specification as last year, with the exception of the body, which has been increased in width by 2½in., and in length by 3in. With this alteration there is now ample room for two adults and a child. A glance at the stripped chassis shows how thoroughly every point has been studied, and, incidentally, how finely finished is every detail of plant, transmission, and springing.

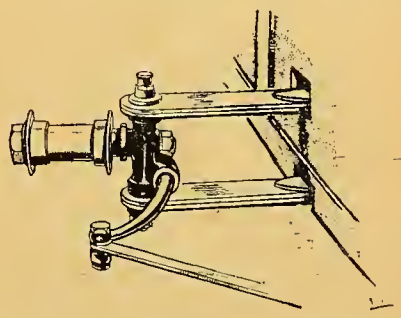
Shaft drive is employed from the water-cooled engine through a car type gear box, and then by chain to the rear wheel. All three wheels are quickly detachable and interchangeable, a jack being incorporated in the rear of the frame. The front springing is by quarter-elliptic springs, and the steering by rack and pinion. The price of the machine is £195, and although the figure may appear high, the value given in superlative finish of both mechanical parts and body work is as good as any thing in the Show.

XTRA CAR. (47.)

Single- and Double-Seater Runabouts.

3½ H.P. MODEL.—79×70 mm. (343 c.c.); single cyl. two-stroke; petroil lubrication; Binks carburetter; flywheel mag.; 2-sp. gear; clutch and lever-starter; chain and friction drive; 26×2½in. tyres. Price, £105.

XTRA CARS, LTD., 45, London Street, Chertsey, Surrey.—The Xtra Car aims at similar running costs and upkeep to the motor bicycle, and at the same time provides complete weather protection. This year the passenger as well as the solo market has been catered for, the former by the production of a two-seater model



fitted with a 976 c.c. J.A.P. engine at a price of £122 17s. A two-seater "runabout," essentially the same, uses the 343 c.c. Villiers engine. The drive is by single chain over from the engine to two friction rollers on a rocking frame. Either roller can be brought into engagement with a drum on the rear wheel. As the rollers have different-sized sprockets and themselves vary in diameter, two speeds are obtained. The rear portion of the frame is suspended on two quarter-elliptic springs, the front suspension being two pairs of transverse flat springs carrying car type steering heads. Rack and pinion steering is adopted.

The two-seater model marks the Xtra Car's entry into serious competition with the sidecar, and at the same time widens the appeal of a most interesting little vehicle. Undoubtedly the design is marked by individuality. The designer no doubt weighed the pros and cons of engine position and saw advantages in placing the engine at the rear—for it does possess advantages.

AMONG THE ACCESSORIES.

Equipment for the Motor Cyclist and Fittings for his Machine. Gallery and Annexe Exhibits Reviewed.

SO great is the number of exhibits in the accessory section of the Show that it is naturally impossible to review every stand, consequently the most practical method of dealing with the vast number of articles gathered together in the gallery and annexe is to notice chiefly those articles which appeal primarily to the private user, unavoidably omitting those which chiefly concern the manufacturer. In each case the stand number of the exhibit is shown in parenthesis.

ELECTRICAL EQUIPMENT.

A review of modern electrical equipment appeared in *The Motor Cycle* of November 16th, but naturally the announcement of many innovations was reserved for the Show.

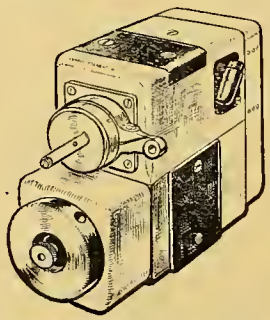
For example, The Sphinx Manufacturing Co. (202) has produced a new touring model plug which has a mica insulator protected by a porcelain cap. Perhaps its most interesting feature is the fact that the central electrode is, except for the nickel tip, of pure copper, a material which has been chosen on account of its heat conducting properties.

Progress and improvement in design are features of the C.A.V. electrical equipment (C. A. Vandervell and Co., Ltd.—233), and we were impressed by the new aluminium accumulator case which is designed to take the C.A.V.-Willard battery. There is also a neat little sidecar lamp which has a detachable front, allowing the interior to be withdrawn and used as an inspection lamp.

Neat Switches.

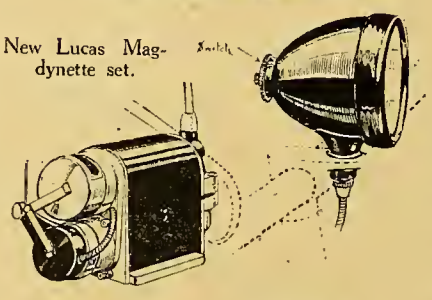
The degree of ingenuity which had to be displayed in designing the P. and H. handle-bar switch (Powell and Hanmer, Ltd.—254) for this firm's lighting installation is remarkable, for, although not more than 3in. across, this fitment comprises not only a lighting and dimming switch, but also an ammeter.

For a long time compact dynamo electrical installations for lightweights has been a crying need, and the Lucas Electrical Co., Ltd. (257), has stepped into the breach by producing the Magdynette, the generator of which is of the same shape and size as an ordinary magneto, but its special armature possesses two windings, one giving a continuous current for lighting and charging the dynamo, and the other a current for the ignition. Needless to say, the finish of the installation and its components is unsurpassed in excellence. The Magdynette is at present only suitable for lightweight single-cylinder machines, and must be driven at engine speed.

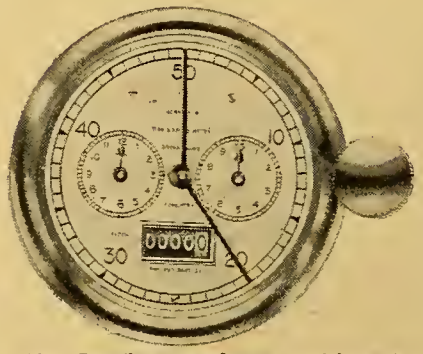


Compactness and a clean external appearance are features of the B.T.H. Mag-generator.

New Lucas Magdynette set.



Forward spring clip terminal.



New Bonniksen speedometer which totals running time and mileage.

A totally new pattern magneto has been introduced by S. North and Sons (249), which is rectangular in shape. The magnets are of cobalt steel and laminated pole shoes are employed. Naturally, it is beautifully made and is light in weight.

Among handy terminals and smaller electrical oddments must be mentioned the Saxgripp terminal (Saxessories, Ltd.—220), which springs over the screw end of the plug and remains securely fixed.

New Terminals.

The Forward snap-on terminal is also worthy of mention. It is a product of the Forward Sparking Plug Co. (293), whose weatherproof model is certainly a boon to the all-weatner rider.

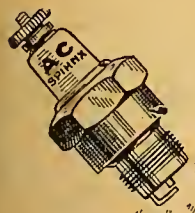
Clifford Pressland (54) also looks after the interests of the motor cyclist who does not fear the elements. His Sparxekas dome terminal not only protects the plug, but incorporates a spark gap and is an exceedingly useful accessory.

For intermittent work on comparatively short journeys, the dry battery, if a good one, gives excellent light and long service. This system of illumination has long been made a study of by A. H. Hunt, Ltd. (301). Not the least useful of this concern's accessories is the H.H. hand lamp, which is of great value as an adjunct to the motor cycle house; its battery lasts for very long periods.

Quite an excellent feature of Brown Bros., Ltd.'s (229) exhibit is a sidecar lamp attached to a bayonet jointed bracket which allows of the lamp being detached and refitted in a different position.

SADDLES AND PILLION SEATS.

It is especially refreshing to note the effort made by various manufacturers to improve the comfort for the rider. The X.L.All saddle (John Leckie and Co.—203), constructed on correct anatomical lines in one form, is provided with ball-bearing joints so that ease of movement is ensured. The same firm's combined saddle and pillion seat is a most ingenious device, as it is equally effective whether a full load is carried or not.



AC SPHINX

THE STANDARD SPARKING PLUG OF THE WORLD.

BRITISH MANUFACTURE.

Why YOU should change your Sparking Plugs to-day!

Do you know that constant use affects the good qualities of your plugs? All the zest of Sport lies in the ability to extract from your engine its last ounce of power.

That first kick-start, slow tick, and whirling race,—like the first brilliance of a new electric lamp,—gets dull and sluggish with time.

Take out your old plug, notice how the gaps have become widened and pitted, while hard brown hydrocarbon scale is coating your insulator and robbing it of its efficiency. That plug *cannot* give 100 per cent. results.

Now fit a new AC-SPHINX Plug—first making sure you have the right model for your engine—and on the instant you will notice the improved running. Lost power means greater expense of running, The cost of a new plug now and then is quickly saved on petrol bills alone.

Don't waste time and money upon experiments. AC-SPHINX Plugs are designed and produced by the largest sparking plug organisation in the World.

Get them from your local man—he holds a stock.

MAKERS:

The Sphinx Manufacturing Co., Ltd., Birmingham.

OLYMPIA

Nov. 25th — Dec. 2nd.

STAND 202

(GALLERY)

ENGLAND'S MOST DURABLE PLUG.

MODEL 18MT

STANDARD METRIC

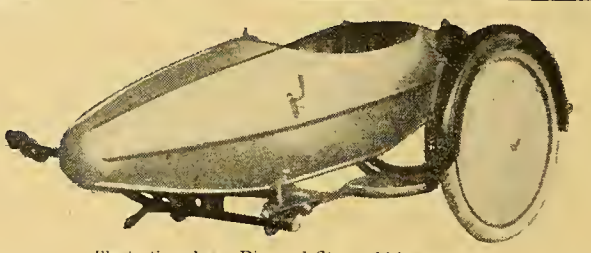
5/- EACH

In answering this advertisement it is desirable to mention "The Motor Cycle."

D61

"SWAN" SIDECARS.

The "Swan"



"Sporting" Model.

Illustration shows Disc and Step, which are extra.

You may hunt high and low—within or without the Show—There are no sidecars of such general excellence and grace as the "Swan"—Pay what you will, the Swan is still **"The finest thing on one wheel."**

1923 PRICES:

Sporting Model	(For all Standard makes of Motor Cycles, such as Triumph, Norton, B.S.A., Sunbeam, and similar machines)	**£20-0-0**
Standard Touring Model	do. do.	**£22-0-0**
De Luxe Touring Model	do. do.	**£24-10-0**

The above models can be supplied to suit American Motor Cycles, spring frame, or otherwise, and any other make of motor cycle prices on request.

Illustrated Catalogue with prices from the makers :

SIDECARS (OXFORD), LTD., OXFORD.

CEDOS

QUALITY & PRICE

DEMANDS YOUR SERIOUS ATTENTION.

2-speed, 2.47 Model, clutch and kick-starter, **£48** 3-speed, ALL-CHAIN Drive, Internal Expanding Brakes, **£57**

The famous Cedos Lady's Models £2 extra.

STAND No. 80.

WE OFFER SPECIAL STOCKING TERMS TO AGENTS.

CEDOS MOTORS (J. McCONNELL & Co.), NORTHAMPTON

Among the Accessories.—

Particularly worthy of mention is the Tan-Sad side saddle pillion seat with handles at the side, and another model with back and foot rests on which the rider sits astride. Another very attractive production of this firm is a folding stool, which is sold at 4s. 6d., and can be carried in the sidecar and used as an extra seat or for picnic purposes. (Tan-Sad, Ltd.—242.)

Mention has already been made in these pages of the Terry spring saddle (Herbert Terry and Sons, Ltd.—252), the surface of which consists of numerous coiled springs and a top cover of leather. It gives particularly easy riding.

The Lycett Saddle and Motor Accessories Co., Ltd. (250), has adopted a similar design to the foregoing in a slightly different manner, namely, by utilising elastic rubber cords as used on aeroplane axles, and covering these with a detachable leather top. The principle of hinged coil springs and springing the saddle peak, so that the saddle has an even movement, has also been adopted. The elastic saddle should prove to be exceedingly comfortable.

Saddles Sprung at the Front.

There is a distinct tendency to spring the front of the saddle, and this method is adopted by Middlemores (Coventry), Ltd. (157), who connect the coil springs to the framework by means of three laminated springs.

Few firms have given greater study to the question of the rider's comfort than J. B. Brooks, Ltd. (310). Detail improvement has been made to the popular B.170 pattern, larger coil springs being fitted, while the action of the spring is assisted by pivoting the spring plunger rod instead of leaving it rigid. Back rests which can be fitted to any pattern Brooks' saddles are also shown. The same firm has also brought out a new pillion seat mounted on wide inverted leaf springs and with a clever system of attachment. A similar model is supplied with a back rest.

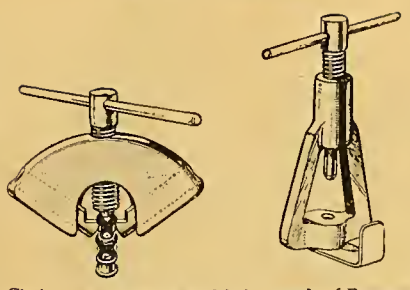
New System of Springing.

Comfortable upholstered pillion seats have been produced in numerous designs by Saxessories, Ltd. (220). In these seats springs are connected to a flexible top frame and to its under portion by flexible links. Chief among these may be mentioned the Sax-add pillion, the Sax-Orber luggage pillion, several varieties of other pillion seats, and child's seats for sidecars.

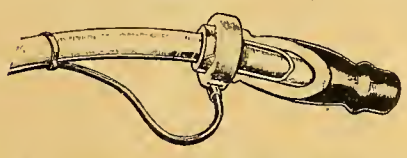
No reference to saddles would be complete without a mention of the Leatheries product (Leatheries, Ltd.—302), which should prove most comfortable, and is fitted with a back rest; while Gough and Co., Ltd.'s (279), saddle is provided with an ingenious link motion and efficient coil springing.

A new system of springing for pillion seats has been taken up by the Bowden Brake Co. (271), in which flat spring steel strips are used in lieu of cushions, a design which should give the maximum amount of comfort.

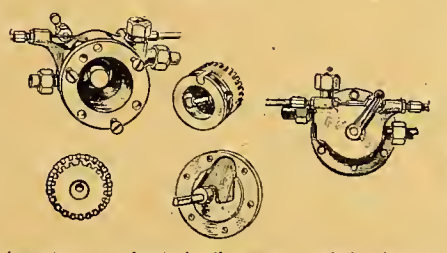
Pillion seats and saddles which are a distinct departure from the conventional are the products of A. T. Austin (118).



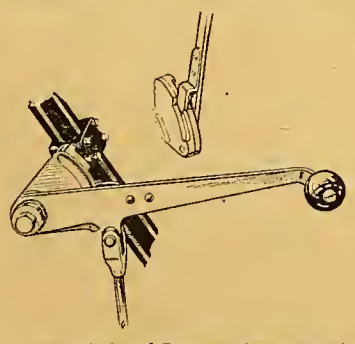
Chain rivet extractor and belt punch of Pennant manufacture.



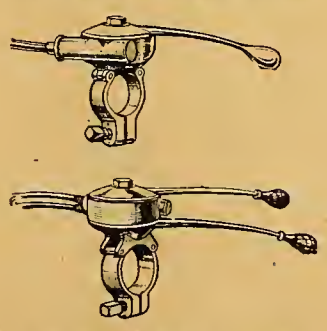
An improved form of the Pidko twist handle-bar control shown by S. Smith & Sons, Ltd.



Ingenious mechanical oil pump, called "The Pilgrim," and shown by Brown Bros., Ltd.



Neatly designed Burman change speed lever working on the gate principle.



Amac control levers can be used on the right or left-hand side opening either inwards or outwards.

The framework is of aluminium, and the seat of sheet steel anchored to the frame at one end and attached to the other by a series of coil springs. The Austin saddle weighs but 4½ lb. and the pillion seat 5 lb.

WIND SCREENS AND SHIELDS.

Protection for the passenger in the sidecar has long been the care of Easting Windscreens, Ltd. (104). The Easting screen has now reached a high state of protection, and one form has been arranged to protect both passengers in a two-seated sidecar. Nor has the driver been neglected. Easting windscreens for the solo enthusiast are now available after two appearances in the Tourist Trophy Races, but the touring model is naturally of larger dimensions than the I.O.M. type, and gives further protection owing to the addition of an apron.

The question of protection for the sidecar passenger has recently been the careful study of Auster, Ltd. (274). The screens for motor cars have long been world-famed. One of the most ingenious sidecar screens we have yet seen is the Auster, which can also be used as a sidecar cover. When out of use, the screen portion lies flat with the rest of the cover and is attached thereto by means of the effective lightning fastener.

Weather protection for the driver of either a motor bicycle or a sidecar outfit has also been the care of the T.O.M. Syndicate (51). Complete protection is given by the T.O.M. shield, and also incorporated is a wind deflector which directs a forced draught on to the engine. The tiny face screen and ample-sized apron can be folded back when the machine is at rest, thus completely covering the saddle and the top of the machine.

ANTI-THEFT DEVICES.

There are several ingenious devices for the purpose of defying the motor cycle thief. Among these may be mentioned the Lee lock (Lee Locks, Ltd.—52), of which there are two models, one for existing machines, and the other built up in the head tube of the frame. It is absolutely safe, and the key, of which each series is different, cannot be withdrawn unless the lock is secure in either the free or lock position.

Quite a different principle is employed in the Firmus carburetter control lever and lock, which, as its name implies, is a carburetter control lever set which incorporates a letter lock. This is shown by the Firmus Co., Ltd. (49).

GENERAL ACCESSORIES.

Under this heading come such things as horns, clocks, watches, and other unclassified items. These accessories are handled by many of the previously-mentioned firms. In addition to these may be named several good examples of horns by Dckla, Ltd. (117), and Clayton-Wright, Ltd (222).

Acetylene lighting installations were pretty thoroughly dealt with in the issue of November 16th, but it should be recorded that Allen Liversidge (240) has introduced a new and neat push-on gauge for the latest pattern D.A. lighting set, while Dunhills (253) supply a nicely-made and inexpensive cast aluminium generator.

Among the Accessories.—

and Timson Bros. (201) show a complete range of F.R.S. lamps. Obviating the necessity to clean the carbide container of the generator, the Elephant Chemical Co.'s carbide carrier is a very useful invention, which allows the carbide to be inserted in any standard lamp in cartridge form.

For converting a hand- into a foot-pump, the Ellcam Cycle and Motor Co. (208) supply a very neat fitting adaptable to any cycle pump.

An excellent example of a collapsible sidecar hood is to be seen on the stand of the Apex Inflator Co. (149).

Silencers were not greatly in evidence in our tour of the gallery, but, on the ground floor, the Sirrah silencer (Alfred Wiseman—164) is an excellent fitting. It is of cast aluminium, has a perforated end, and contains an aluminium plate, on each side of which are staggered diagonal baffles. A $\frac{1}{16}$in. clearance is left between the edges of this and the outer casing to allow of enough leakage to prevent back pressure.

Best known for valve attachments, which not only enclose the valve springs, but eliminate air leaks, the F.E.W. Patents Co. (151) has introduced an aluminium radiator, which can be fitted to any hollow valve cap in a very short space of time.

OILS AND ENAMELS.

Lubricating oil firms at the Show are The British Oil and Turpentine Co., Ltd. (248), The Challenge Oil Co., Ltd. (245), The County Chemical Co., Ltd. (286), Prices Co., Ltd. (191), Sterns, Ltd. (118), The Vacuum Oil Co., Ltd. (232), and C. C. Wakefield and Co., Ltd. (223).

Enamels are shown by Jenson and Nicholson, Ltd. (Robbialac), and the Judge Brand Co., Ltd.

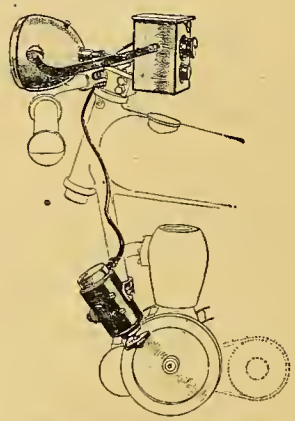
SPEEDOMETERS.

A study of the various types of speedometers in the Show is a particularly interesting one. Shown for the first time, the Bonniksen time and speed meter is an exceedingly attractive instrument. In the centre of the dial are two smaller dials. One for showing the time has a clock movement starting from the moment the machine is put in motion, while the other dial records the distance. By dividing the figures shown on one dial into the other, the average speed is obtained, or a calculator is supplied which allows the record to be ascertained at once. This is to be seen on Rotherham and Sons' stand (251).

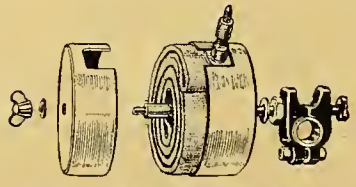
Two of the speedometers in Olympia work on the fan principle, in which the flexible shaft drives a fan which generates a current of air conducted on to a second fan attached to the indicating needle. Two excellent examples of this are the J.W.T., shown by Hobday Bros. (239), and the Imspecs, shown by G. Davenport and Co., Ltd. (276).

Among the centrifugally-actuated instruments is the Watford (S. North and Sons, Ltd.—249), which is one of the best-known English makes, and has a world-wide reputation for steady reading and reliability.

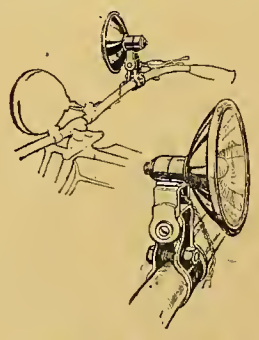
Small D.A. lighting set, with 4-5 cubic feet cylinder.



Flywheel driven Britalite dynamo lighting set with handle-bar mounted accumulator



Neat, safe and effective inner tube carrier made by Clayton-Wright Ltd.



Invaluable for use in fog or for reading signposts, the Stewart handle-bar spot light.

Also working on the same principle, but not of British manufacture, are the Stewart (The Cooper-Stewart Eng. Co., Ltd.—283) and the Johns-Manville (Markt and Co., Ltd.—300). The latter firm is also demonstrating a gear-driven Veeder cyclometer, an inexpensive fitment which records distance only, and not speed.

Though no alteration has been made in the ingenious Cowey speedometer movement (Cowey Eng. Co., Ltd.—298), it must be mentioned that one of the firm's latest models can be supplied without the trip arrangement at a considerably reduced figure, while the more elaborate model with trip record has been improved in design and can be fitted with an efficient lamp to illuminate the dial.

SMALL TOOLS AND EQUIPMENTS.

Articles which strongly appeal to the practical motor cyclist are small tools, including not only those which can be carried on the machine, but which also can be used for purposes of repairs and adjustments in the motor cycle house.

Special mention must be made of the spanners, adjustable and fixed, which are the production of the Pennant Manufacturing Co., Ltd. (190). The 6in. screwdriver, provided with an aluminium handle and machined $\frac{5}{16}$in. square steel hardened blade, is a particularly fine tool which will stand any amount of abuse. There is also an excellent chain rivet extractor which will take several sizes of chains, an equally good belt punch, and an all-steel adjustable spanner.

It is often a difficult matter to replace a valve spring in position. The orthodox method with a very powerful spring is to tie up each side of the spring with string, but the compression thereof is usually a difficulty. The special tool provided for this purpose by Ernest H. Hill, Ltd. (194) allows this operation to be carried out without difficulty.

For the Garage.

Though more or less a garage tool, the utility of the ball-bearing extractor which is the product of J. A. Ryley (234) cannot be denied. By means of this tool a ball bearing may be extracted from a crank case or gear box in a few seconds without the slightest risk of damage.

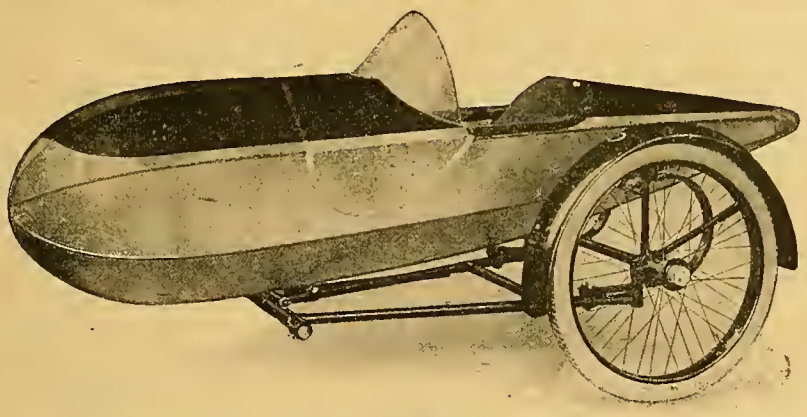
A beautifully-made spanner, known as the Boss, which can be made to grip a nut like a vice, is sold by Saxessories, Ltd. (220). The jaws are moved by means of a knurled screw forming part of the handle, which moves on a very slow thread. Special mention must also be made of several patterns of chain rivet extractors which are products of the same firm.

Excellent examples of small tools are to be found on the stand of Brown Bros., Ltd. (229), and of Dunhills, Ltd. (253).

Practical sets of motor cycle spanners are specialities of F. Line and Co. (198), and note should be made of the useful box spanners made by Accles and Pollock, Ltd. (196).

Proprietary Engines are illustrated and described on pages 811 to 813, and a Tyre Buyers' Guide will be found on pages 804 and 805.

We have other new models also



which cannot fail to interest YOU.

1923 "Montgomery" Super Sports, **£24 - 10 - 0** Carriage Paid.

Designed for speeds up to 80 miles per hour; higher speed designs up to 200 M.P.H. to order. Light enough for 3½ H.P. Machines, strong enough for 8 H.P. Machines.

Made of polished Aluminum painted on top to prevent dazzle in driver's eyes. Hinged dash for easy access. Well upholstered comfortable seat, ample leg room. Supplied to fit any make Motor Cycle specified.

STAND NO. 42 OLYMPIA.

W. MONTGOMERY & Co., SIDECAR SPECIALISTS, **COVENTRY.**

OMEGA

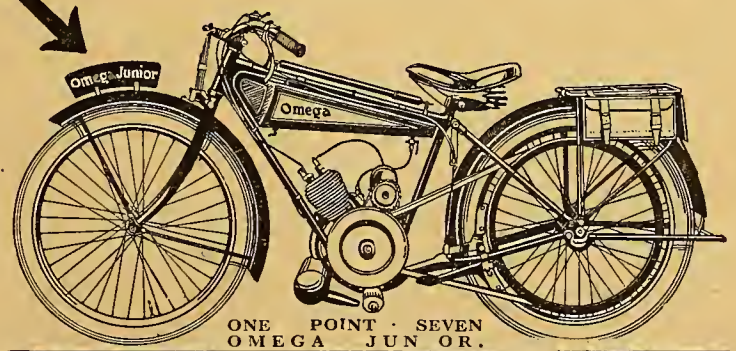
STAND 140

THE LITTLE BIKE WITH A BIG FUTURE. This new Omega Junior marks a new era in two stroke efficiency and value. A REAL motor cycle with a non-spitting, ever two-stroking engine of 1·7 h.p., with road speeds of 3 to 35 m.p.h., at a price within the reach of thousands whose limited means have hitherto precluded them from the joys of motorcycling.

WITH TWO SPEED £29 - 10

£25

WITH TWO SPEED AND CLUTCH £32



ONE POINT SEVEN OMEGA JUNIOR.

OTHER OMEGA MARVELS OF VALUE INCLUDE—

3 h.p. two stroke	from	£38	3 h.p. Duplex frame, all-chain			3 h.p. three speed all-chain		
Ditto two speed	,,	£44	drive, two speed		£65	drive sidecar Combination ..		£75
Ditto three speed		£54	Ditto three speed		£69	Ditto Solo		£58

CALL AT STAND NO. 140 OLYMPIA OR WRITE NOW FOR PARTICULARS OF THE COMPLETE RANGE OF OMEGAS.

Birmingham Depot: 183a, Broad Street. **W. J. GREEN, LTD., Omega Works, COVENTRY.** Bartletts, 93, Gt Portland Street, W

WEX SUCCESS

Some First Class Awards gained during the experimental stages of Wex Carburetter, Ltd.

RECORDS - - 41
RELIABILITY TRIALS - - 41
HILL CLIMBS 39
SPEED TRIALS - - 42

RECENT RESULTS.

Nov. 20. Cyril Pullin on a 2¾ h.p. Douglas Solo—
Mean Speed Mile - - - 87.46 m.p.h.
Nov. 22. Cyril Pullin on a 2¾ h.p. Douglas and Sidecar—
Flying Five Miles - - - 67.24 m.p.h.
Standing Ten Miles - - 64.11 m.p.h.
Flying Mile - - - 67.29 m.p.h.
Nov. 23. Cyril Pullin on a 2¾ h.p. Douglas and Sidecar—
British Standing Kilo - - 49.29 m.p.h.
British Standing Mile - - 54.21 m.p.h.
International Standing Kilo 48.76 m.p.h.
International Standing Mile 54.11 m.p.h.
W. D. Marchant on a 2¾ h.p. O.K. Blackburne and Sidecar—
50 miles and one hour records.

This is only the beginning . . . WEX is "getting into its stride." Built on a firm basis of outstanding merit WEX is going to expand—widely . . . .

Every motorcyclist who studies results—needs a WEX.

It is "The Carburetter that goes one better."

Try it and prove it yourself.

WEX

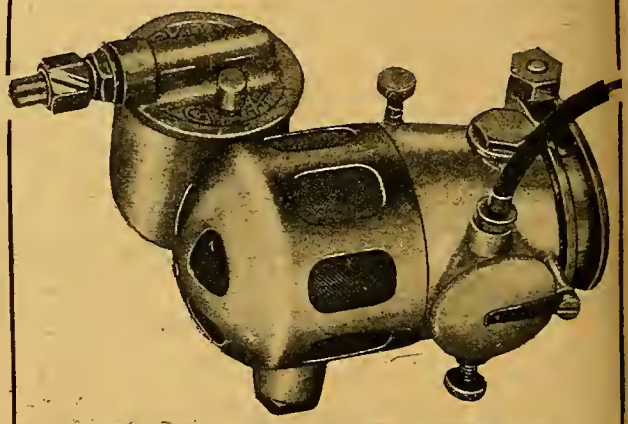
MOTORCYCLE CARBURETTER

WEX CARBURETTER, Ltd.
319, Fulham Road, London, S.W.10.

Distributing Agents: FARMER BROS. & Co., Ltd., 319, Fulham Road, London, S.W.10.

Commercial Publicity.

"THE STAUNCHEST ALLY OF THE MOTOR CYCLE."



This carburetter, of skilful and well considered design, is proving itself one of the great successes of the day, and the unsolicited testimonials evoked from enthusiastic users are an eloquent proof of its sterling qualities, which reduce running costs to a minimum, give a large increase in power, cut out flat spots and guarantee easy starting in the coldest weather.

Write to-day for full particulars of this wonderful carburetter designed on an entirely new principle.

Satisfaction Guaranteed in 30 Days or Money Returned.

GEOFERIC & KEENE, Ltd., 6, BROAD STREET PLACE, E.C.2

'Phone: London Wall 7755.

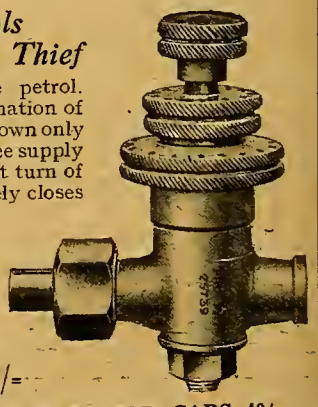
EKON
AUTOMATIC CARBURETTER

'Grams: "Ekoncarb, Ave, London."

MOGARD THIEF PROOF PETROL TAP

Effectively Fools the Motor Cycle Thief

He can't turn on the petrol. Only the correct combination of the three tap screws—known only to the owner—gives a free supply of petrol. The slightest turn of any one screw effectively closes the tap. Get a Mogard Thief Proof Petrol Tap to-day and save yourself the worry, the anxiety and financial loss of a stolen motor cycle.



IN BRASS NICKEL PLATED **35/-**

WITH 6 ins. STEM FOR MOTOR CARS 40/-

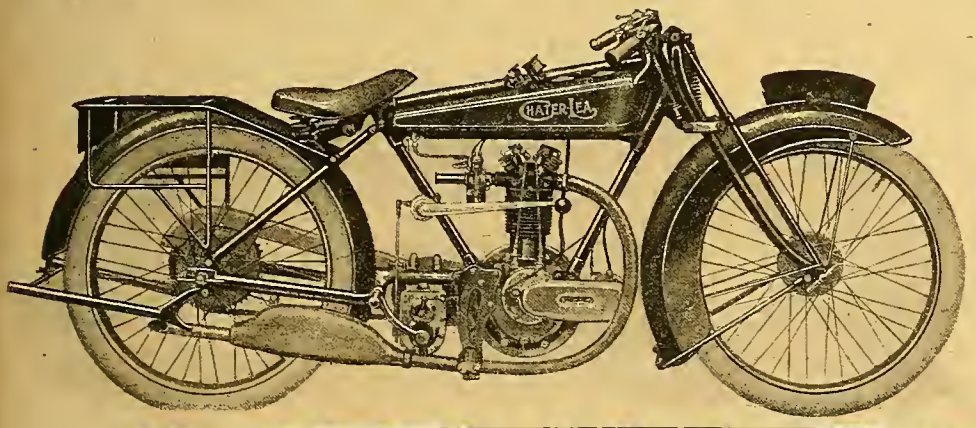
From all Garages and Agents or direct from

Sole Manufacturer and Patentee, **E. CROWTHER,**
14, Lynthorne Road, Frizinghall, BRADFORD.

J.T.C.

CHATER-LEA

2¾ H.P. Sports Motor Cycle will undoubtedly prove one of the most popular solo mounts for 1923. In appearance it is attractive, and, at all speeds, most comfortable. Specification is complete in every detail—Blackburne engine, 3 speeds, all chain, shock absorber, interchangeable wheels with internal brakes, etc., etc. Price, with side valve engine **£65** and with overhead valve engine **£72 10s.** Wonderful value! Don't fail to see it



At the Show
STAND 78
Centre Ground Floor.

Come right on the Stand and make a close inspection of the finest Motor Cycles in the World.

Motor Cycle List Post Free.

CHATER - LEA, Ltd.,
(Established 1890)
74-84, Banner Street,
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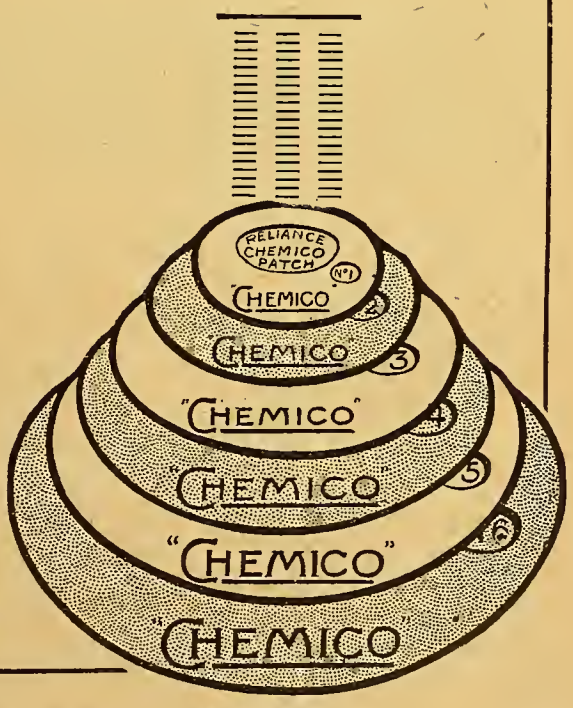
"CHEMICO"
PATCHES

Are the perfected product of twenty-five years' experience of the needs of Patch users. They are supplied in
FOUR SHAPES AND SIX CONVENIENT SIZES
to each shape, curved to the contour of the tyre and with an unvulcanised face for solution, ensuring a
QUICK EFFICIENT AND PERMANENT mend. Ask your Garage to show you some CHEMICO Patches, and test them for yourself.

Prices from 1½d. to 1/- Oval. 2½d. to 1/8 Square. 2d. to 10d. Oblong. 4d. to 2/- Rectangular.

THE COUNTY CHEMICAL CO., LTD.,
BRADFORD STREET, BIRMINGHAM.

The Seal of Satisfaction to thousands of Motor Cyclists



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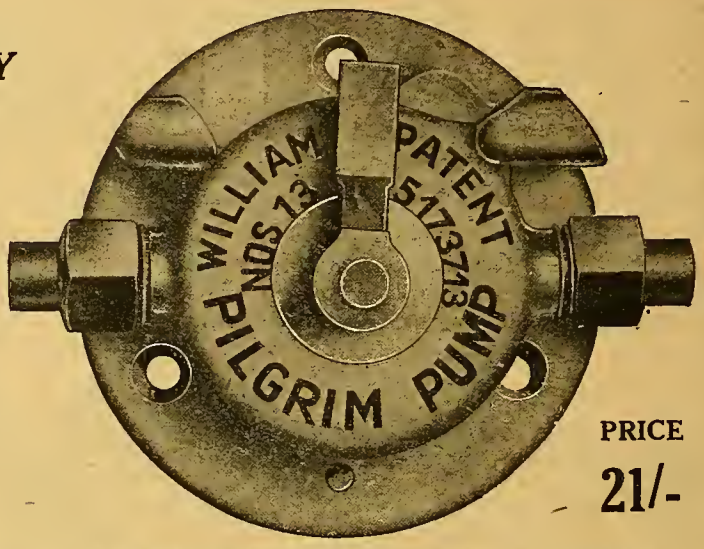
FIT A

PILGRIM

THROTTLE CONTROLLED MECHANICAL PUMP AND BRING THE OLD ONE RIGHT UP TO DATE.



PRICE **21/-**

OIL PROPORTIONAL TO LOAD AT ALL TIMES.

EFFICIENCY. ECONOMY. CONTENTMENT.

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AGENTS: BROWN BROTHERS, LTD., GT. EASTERN STREET, LONDON, E.C. 2.

MAKERS: THE PILGRIMS WAY MOTOR CO., LTD., FARNHAM, SURREY.

HELEN SIDECARS.

We are exhibiting at 115, Hammersmith Rd., opposite Cadby Hall.

Sports Bodies

For 2¾ h.p. - Weight 32 lbs.
For 4 h.p. - Weight 40 lbs.
Complete coverall apron.

£8 . 0 . 0

Phone: Brixton 1585.

ROBINI MFG. CO.,
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1¾ h.p. Two Stroke IMMEDIATE DELIVERY.

SEND FOR 1923 CATALOGUE.

40 M.P.H. 200 M.P.G.

PIONEER OF LIGHTWEIGHTS.

SINGLE SPEED COUNTERSHAFT (as illustration) **26** Guineas

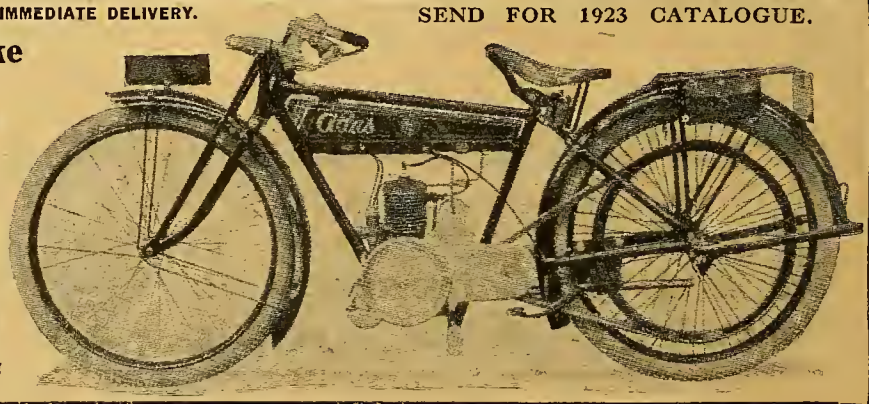
TWO-SPEED GEAR BOX **29** Guineas

Manufactured throughout in our own Works.

THE ASTON MOTOR & ENG. CO., LTD.

WITTON LANE, BIRMINGHAM.

Do not fail to visit our Showroom at 83, North End Road, opposite Hammersmith entrance to Olympia.



"SPENCE" OIL PUMP
(Pat. No. 17408/22).

STAND No. 251.

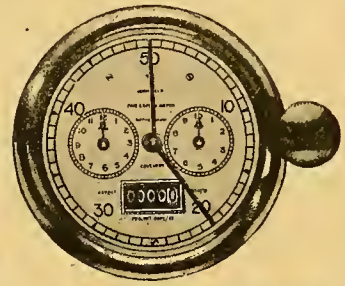
CONTINUOUS DEMONSTRATIONS

DAILY OF THE

"BONNIKSEN" TIME-SPEEDMETER

AND

"SPENCE" OIL PUMPS.



"BONNIKSEN" TIME-SPEEDMETER.

ALSO COMPLETE RANGE OF "ROTHERHAM" PRODUCTS AS STANDARDISED BY THE LEADING MANUFACTURERS AND OF PARAMOUNT INTEREST TO THE MOTORIST.

ROTHERHAM & SONS, LTD., COVENTRY.

Telephone:—752 & 753.
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2d. 3d. & 4d.

CLUB BLACK ENAMEL
Special Hard Drying .. .. Jars **1½d. & 1/6.**

CLUB COLOURED ENAMEL.

Dries in 24 hours. Does not crack or chip.

Made in: Motor Cycle size Tins **1/9**, Large Tins **3/-**
Royal Mail Red. Black.
Elswick Green. White.
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Light Blue Lavender.
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CLUB TRANSPARENT ENAMEL FINISH, 1/6

ANY ARTICLE SENT POST FREE IF LOCALLY UNOBTAINABLE.

PLEASE SEND NAME OF AGENT.

CLUB
GRAPHITE
THE PERFECT LUBRICANT FOR Chains & Bearings
NEITHER GUM OR RUNS
THE SILICO ENAMEL Co WATSON ROAD, STRATFORD, LONDON, E.15.

6d. & 1/9. 1 lb. Tin

CLUB ENGINE BLACK
For Radiators, Exhaust Pipes, etc. Tins **1/- & 1/8**

FOR ALL ENGINE JOINTS. 1/- & 3/9.

IN ALL COLOURS. (See Above) 1/9 & 3/-

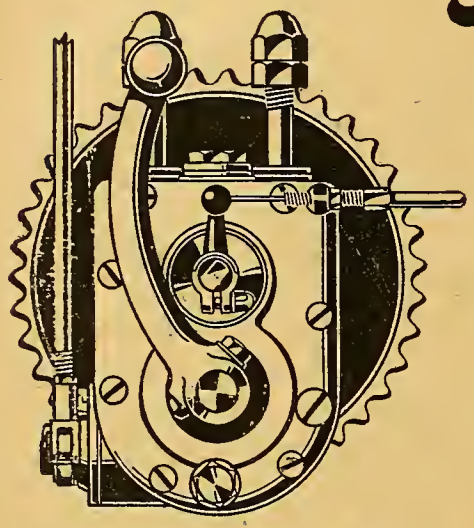
SOLE MANUFACTURERS:

SILICO ENAMEL CO.——STRATFORD, LONDON

In answering these advertisements it is desirable to mention "The Motor Cycle."

MOSS

The Secret of Silence



The new 1923 Moss Three-speed Gear for Motor Cycles up to 500 c.c. *is the most silent box on the market*, and the *secret* of this noiseless running *lies entirely in the design.*

In the first place, THE GEARS NEVER MOVE ENDWAYS—they are FIXED in position on their respective shafts and EVERY CHANGE IS CARRIED OUT ENTIRELY BY DOGS. This feature definitely eliminates worn splines and consequent running out of pitch.

That is the whole secret, and the sound engineering lines upon which the design proceeds, guarantees silence not for the first 500 miles only, *but through out the life of the motor cycle to which this gear may be fitted.*

COME TO OUR STAND and study the models on view. Let us tell you more about this unique gear box so that you may better realise that once again MOSS GEARS are far ahead of competition.

STAND 213 OLYMPIA (Gallery)

THE MOSS GEAR Co., Ltd.,
ASTON MANOR : : BIRMINGHAM.

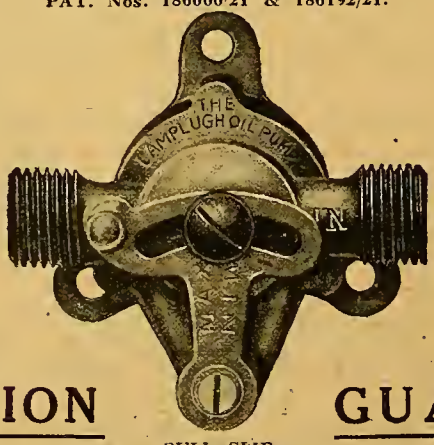
RELIABLE AUTOMATIC LUBRICATION AT LAST!

SEE THAT YOUR NEW MOUNT IS FITTED WITH

THE LAMPLUGH AUTOMATIC OIL PUMP

PAT. Nos. 186000/21 & 186192/21.

POSITIVE SUCTION



FULL SIZE.

POWERFUL PRESSURE

DOES NOT RELY ON GRAVITY. DOES NOT RELY ON GRAVITY

SATISFACTION GUARANTEED

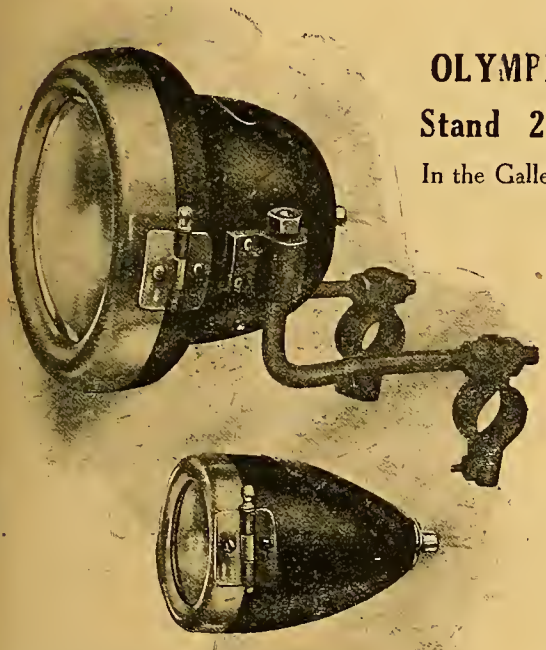
EASILY FITTED TO YOUR PRESENT MACHINE.

PRICE COMPLETE WITH T PIECE TO FEED THROUGH EXISTING SEMI-AUTOMATIC SIGHT **16/-** POST FREE.

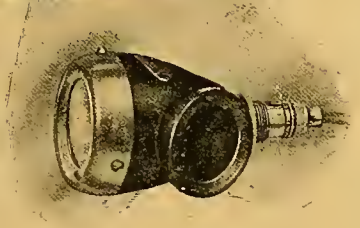
S. A. LAMPLUGH, LTD. KINGS ROAD, TYSELEY, BIRMINGHAM.
LONDON OFFICE: Mr. G. H. SMITH, 12. MORTIMER ST., W.1.

STAND 306 GALLERY OLYMPIA MOTOR CYCLE SHOW.

The Ideal Lighting Set for Sidecar Outfits



OLYMPIA
Stand 253
In the Gallery.



OLYMPIA
Stand 253
In the Gallery
and
Stand 66
on the
Ground Floor

COMPLETE set, including Head, Sidecar and tail lamp, supplied complete with bulbs, brackets detachable holders and all necessary flex. The lamps are beautifully finished in black and have ni kel-plated mounts. The whole appearance of the set is extremely neat and smart, and a splendid beam of light is thrown.

No. 1834/85 Complete Set, with brackets, wiring and 4 v. bulbs - - - -	65/-
4 v. Accumulator for above set - -	27/6

OUR OWN MANUFACTURE THROUGHOUT.

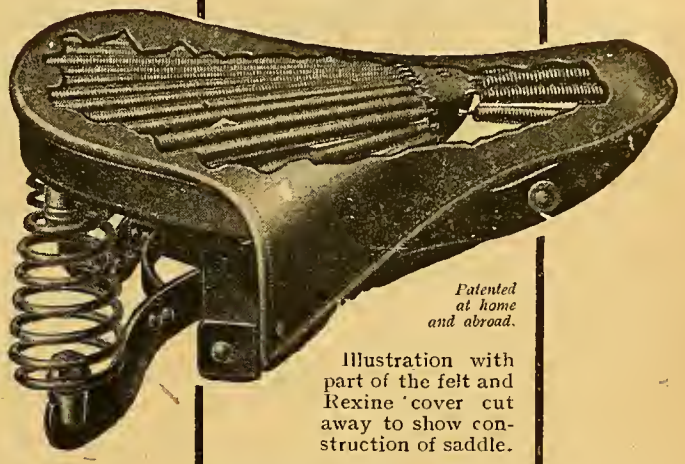
Head Lamp only . - - -	34/-
Sidecar Lamp only - - - -	21/-
Tail Lamp only - - - -	10/-

Dunhills Limited

MOTOR CYCLE EQUIPMENT SPECIALISTS

359-361, EUSTON ROAD, LONDON, N.W.1.
GLASGOW DEPOT - - 72, St. Vincent Street.

At
Stand
252
OLYMPIA



Patented at home and abroad.

Illustration with part of the felt and Rexine cover cut away to show construction of saddle.

You will see the wonderful floating

"TERRY"

spring seat saddle.

We invite you to come and see it, sit on it, test it, and discover its real good qualities—so you may have it on your 1923 model.

If you cannot visit the Show, write now for literature describing the saddle and its successes —post free.

Herbert Terry & Sons, Ltd.,
Manufacturers,
Redditch, Eng
Est. 1855

228 miles one day!

Capetown.

I must write and tell you how I have appreciated your spring saddle; after six months riding I have never had to adjust it once.

Last month I was third in the Cape Motor Marathon Race of 202 miles in the sidecar class on an 8 H.P. 'Enfield" and sidecar fitted with a Terry's Saddle. Also did the fastest time, 5 hours 27 minutes 10 seconds, although having to stop four times to replenish my oil and petrol and tighten the handlebars. The road in parts was very bad indeed, miles of potholes, at times the combination left the ground entirely. Stretches of sand, two streams and one river to cross. I rode thirteen miles to the start and thirteen at the finish, making my total mileage 228 for the day. The saddle was as comfortable at the finish as it was at the start, and made all the difference.

You can make any use you like of this letter from a satisfied owner.

N. F.

Stop!!! We've got the machine you want

and not only have we this—the first essential—but we have something just as important to all careful motor cyclists.

And that is—**SERVICE AFTER SALE.**

In the old days, when you bought a machine, the Service you obtained was pretty much a matter of luck.

That was before Allen-Bennett had discovered the real meaning of the word Service. Now you need only get in touch with an Allen Bennett man and you get real Service right from the start—year in and year out.

Our name is your unfailing assurance of a perfect machine of proved merit, the easiest of easy terms extending over a period of eighteen months if you so desire, and every attention to your personal wishes.

Remember, also, that owing to our very favourable position as contracting agents we can give PROMPT DELIVERY.

When you visit the Show, look for the Allen-Bennett representatives on these stands:

MORGAN	**BROUGH SUPERIOR**
MATCHLESS	**SHEFFIELD-HENDERSON**
DUNELT	**P. & P. SILENT THREE**

or any other stand by appointment.

If you are unable to visit the Show, write us for full particulars of our new and second-hand and shop-soiled machines—it will also serve as an introduction to Allen-Bennett Service

We are contracting agents for all leading makes of machines. Sole district agents for London and 30 miles radius for

BROUGH SUPERIOR
SHEFFIELD-HENDERSON
P. & P. SILENT THREE

Over 100 shop-soiled and second-hand machines in stock. Why not call and see whether any of these meet your requirements.

Once again we reiterate:

"Stop! We've got the machine YOU want!"

Allen-Bennett Motor Company Limited.

'Phone: 2450-2451

'Grams: "Track, Croydon."

9-10-11, ROYAL PARADE, WEST CROYDON.

Commercial Publicity.

In answering this advertisement it is desirable to mention "The Motor Cycle."

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle." by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House Tudor Street, London, E.C.4. *Readers who reply to Box No advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisement some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10 a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one [illegible]

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., 1921, 3h.p., new condition, equipped; £48 —1, Luther St., Leicester. [2827

SOUTHPORT.—1922 A.B.C., electric head lamp, Cowey horn, very nice condition; 53 guineas; exchanges.—Kents, 417, Lord St., Southport. [3060

The Sign of Good Service

Prospective Customer's state of mind after inspecting all the machines at the Show.

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Before deciding, why not have a chat with one of Godfrey's men at Olympia? They will be pleased to meet you on any stand by appointment, and can always be found on the

INDIAN, SCOTT and LEVIS STANDS.

GODFREY'S long experience is yours for the asking. An experience not restricted to the mere selling of machines, but broadened and widened by a long record of successes on road and track.

We can arrange to take your present mount in part exchange for any new machine, and you can pay the balance by monthly instalments if you wish.

GODFREY'S
Limited,
SHOWROOMS:
208, GT. PORTLAND ST., LONDON, W.1.
'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. late 1921, dynamo lighting, speedometer, perfect; £65.—1, Alexandra Rd., Kingston. [3127

A.B.C., 1921, 4 speeds, electric lighting, spring frame; £52.—214, Albert Rd., Croydon. [2902

A.B.C., little used, perfect condition; £47.—Gregory, Meads, Chipping Norton, Oxon. [2808

Spare Parts

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon [0964

Abingdon.

ABINGDON 3½h.p., N.S.U., 2-speed, good condition; bargain, £20.—Hinton, Woodham Mortimer, Maldon, Essex. [3035

3½h.p. Abingdon, King Dick, clutch, all on, excellent running order; £27, or near offer.—Battey, 1, Carmalt Gardens, Putney. [2777

A.J.S.

1923 A.J.S. models for immediate delivery.—Premier Motor Co., Birmingham. [2577

A.J.S 1923 Sports, latest, o.h.v.; quickest deliveries. —Clifford Motories, Eastwood, Notts. [9957

ORDER Early your 1923 model A.J.S from Merrick's Stores, Listerhills Rd Bradford [8564

A.J.S., 2¾h.p., 1923 models, for immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0974

F.O.C.H. invite inspection; A.J.S and other makes; bargains 5, Heath St., Hampstead (near Tube). [1375

A.J.S. 1922 standard Sports, 2¾h.p., excellent condition, new tyres, registered, very little used; £59.—Below.

A.J.S. 1922 brand new standard Sports, unscratched; £69/10.—Guthrie, 61, High St., Hawick, Scotland. [2862

A.J.S. 5-6h.p. Combination, 3 speeds, lamps, horn, Tan-Sad; drive away; £38, no offers.—Mylam, 197, London Rd., Croydon. [3133

1920 6h.p. A.J.S. Combination, full accessories, excellent condition; £100, or near offer.—Couch and Stoneman, Dartmouth. [2781

A.J.S. 1920 6h.p. Combination, Easting, D.A. lighting, spare wheel, full equipment, good condition; £80.—16, Uplands Park Rd., Enfield. [2726

£48.—1916 A.J.S. Combination, spare wheel, screen, luggage grid, equipped, licensed, smart, sound, reliable.—Bacon, Offington Lane, Worthing. [3036

FOR A.J.S. 1922 models 2¼h.p. solo, or 7h.p. combinations, get in touch with the N. London agents, Jones' Garage The Broadway, Muswell Hill [0785

1922 (July) 2¾h.p. A.J.S. B1, as new, mileage 400, fully equipped and specially tuned; £65.—Buckingham, Atrato House, George St., Ryde, I.O.W [2677

A.J.S.—Immediate delivery; 2¾h.p. touring, £77; 2¾h.p. Sports, £77; 7h.p. Combination, £152/10. —Will Chapman's Garage, Belgrave Rd., Leicester. [2816

A.J.S. 1922 2¾h.p. Sports, little used, perfect condition, any trial, lamp, horn, tax paid, insured; £68, or near offer.—Ransom, Welby Warren, Grantham [3043

A.J.S. 1920 6h.p. Combination, lamps, horn, speedometer, hood, Binks, fully insured to August 24th, 1923; £90.—Parker, 28, Grand Avenue, Bournemouth. [3045

AT Edwards.—1921 7h.p. A.J.S. combination, lamps, horn, speedometer, spare wheel, tax paid; 85 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3351

A.J.S 1919 6h.p. Combination, completely equipped with lamps, horn, spare wheel, etc., tax paid, excellent condition; bargain, £75.—P. J. Evans, John Bright St., Birmingham. [3416

A.J.S. 2¾h.p., 1921 (July), full equipment, speedometer, legshields, spares, tyres excellent, first class throughout; any examination; £65.—Bradley, 2, West Ter., Richmond, Yorks. (D) [2665

A.J.S. 7h.p. Combination, new 16/9/21, exceptional condition, fitted Triplex screen, legshields, side screen, Bonniksen, electric and gas lamps spare wheel, etc.; £110.—Owner, 12, Leaside Avenue, Muswell Hill, N.10. [2960

SOUTHPORT.—1922 A.J.S. B1 combination, polished aluminium sidecar, gift, 69 guineas; 1916 A.J.S. 6h.p. combination, fully equipped, new sidecar body, gift, 52 guineas; exchanges.—Kents, 417, Lord St., Southport. [3058

7h.p. A.J.S. and sidecar, delivered from works, August, 1921, complete with spare wheel, hood, side and tail lamps, Lucas mirror, P. and H. horn, Smith's speedometer, licence paid, done 3,860 miles, bargain for immediate sale; £120.—Timberlake's Garage, Wigan. 'Phone: 512-513. [2658

MOTOR CYCLES FOR SALE.

A.J.S.

1922 A.J.S. 7h.p. Combination, like new throughout, 2-seater sidecar, complete with hood and screens, completely equipped with Magdyno lighting and electric horn, spare wheel, speedometer and many spares, an exceptionally fine outfit; will accept £140 to clear; unrepeatable bargain.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3309

A.J.S. 1921 7h.p. Combination, with spare wheel, dynamo lighting, first-class order, £115; also 1921 7h.p. Combination, with spare wheel, Lucas battery lighting, speedometer, Binks' carburetter, exceptionally fine condition, £110. Full particulars of these and 50 other machines free on request. Exchanges and deferred payments.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [3222

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4606

Alldays.

ALLON 2-stroke, 2-speed, clutch, late 1919; best over £40.—153, Manor Rd., West Ham, E.15. [3132

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £38.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [3267

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

22 Guineas, exchange.—Allon 2-stroke, 2 speeds, footboards, lamps, horn, watch, smart, any examination; trial.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [3336

1920 Allon 2½h.p., 2 speeds, clutch and kick-starter, fully equipped with all lamps, Klaxon horn, etc., excellent order, guaranteed, tax paid; £35.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3281

Ariel.

ARIEL 1920 5-6h.p. Combination, 3-speed, electric lighting, perfect; 68 guineas; exchanges; photograph.—Below.

ARIEL 1920 3½h.p., 3-speed, as new, 52 guineas; with sidecar, 62 guineas; exchanges; photograph.—Below.

ARIEL 3½h.p. 3-speed Coachbuilt Combination; 32 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1115

1920 6-7h.p. Ariel Combination, fully equipped, spares, excellent condition; £65.—Greenfield, 255, South Park Rd., Wimbledon. [2785

ARIEL Combination 4h.p., countershaft, 3-speed, clutch, kick-start, sporting sidecar; £28.—Ward, South Western Garage, New Malden, Surrey. [2557

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency Cycle Co., Ltd., 236, High Holborn, W.C.1. [0701

ARIEL 1920 3½h.p. Combination, fully equipped; any reasonable offer about £50, owner going abroad, bargain.—Foll Youngs, 2, The Parade, Kilburn, N.W.6. [2738

1920 6-7h.p. Ariel Combination, fully equipped, speedometer. Easting windscreen, excellent condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1856

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage, Broadway, Muswell Hill N.10. [0804

Bat.

BAT-J.A.P. 8h.p. Combination, Magdyno, spare wheel, only done 500 miles; £115.—72, East Dulwich Rd., S.E. [2807

BAT 8h.p., J.A.P., done only 900 miles, suitable for sidecar, excellent condition; £85; appointment.—Crossley, 33, The Drive, Chingford. [2715

Beardmore.

1921 3½h.p. Beardmore-Precision, 2-speed, spring frame, electric and gas lighting sets, all tools, etc., absolutely as new, any examination; £38.—F. C. Lingley, New St., Woodbridge, Suffolk. [2905

Spare Parts:

BEARDMORE-PRECISION Spares, immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

Blackburne.

1920 4h.p. Blackburne, full accessories; £60.—Ross, 86, High Rd., Lee. [2936

BLACKBURNE 4h.p. Combination, 1920, 3-speed, kick-start; bargain, £55.—Snow, Laurel St., Dalston, E.8 [3391

1920 Blackburne 4h.p. Combination, completely equipped and in good order; unrepeatable bargain at £55.—The Layton Garages, 30, Holywell St., Oxford. [3306

Spare Parts:

ALL Blackburne engine spares; list on application; trade supplied.—Maudes', 100, Gt. Portland St., W.1. [2836

LAMB'S LTD. AT THE SHOW

Our representatives will be in attendance at the following Stands during Show Week:—

MATCHLESS
MORGAN
NEW IMPERIAL
CONNAUGHT

We trust we shall have the pleasure of assisting you by discussing Exchanges, etc., etc.

LAMB'S Ltd

WOOD GREEN, London, N.
50, HIGH ROAD.

EUSTON ROAD, London, N.W.
(Opposite Great Portland Street Station.)

WALTHAMSTOW, London, N.E.
151, HIGH STREET.
Car Hire Dept. 'Phone W'stow 418.

MOTOR CYCLES FOR SALE.

Bradbury.

BRADBURY 1923 models. Write for price list.—Agents, Bright and Hayles, 78, Church St., Camberwell, London. [2741

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £68; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

BRADBURY, late 1920, 4h.p., 3-speed, clutch, kick-starter, all-chain, handsome sidecar, lamps, horn, apron, Tan-Sad, etc.; cost, without sidecar, £141/4/3; our price with sidecar, £48.—Delancey St. Garage, Camden Town, N.W.1. [3000

Spare Parts:

BRADBURY spare parts, prompt delivery.—Agents, Bright and Hayles, 78, Church St., Camberwell. [2742

Brough

58 Guineas.—Brough Combination, 1921, 6-8h.p., Sturmey 3-speed, clutch and K.S., Sunbeam sidecar, a fast outfit, equipped, licensed.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [3066

1917 3½h.p. Brough, 3-speed, Sturmey-Archer gear box, lamps, speedometer, and full equipment, recently overhauled, and in thoroughly good order; trial run arranged any time, Saturdays and Sundays included; £35.—Jarvis and Sons, Ltd., Victoria Crescent, Wimbledon, S.W.19. [3228

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

SOLE Agents for London and thirty miles radius.

THE Sporting Rider's Ideal. Immediate delivery of Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h., £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended poymeats and exchanges.—9, 10, 11, Hoya Parade, West Croydon 'Phone: 2450-1. 'Grama: Track. Croydon. [0733

BROUGH SUPERIOR.—1923 models now available for immediate delivery; exchanges and extended payment propositions a speciality.—Place your order with Oxfordshire's leading motor cycle agents, The Layton Garages, 30, Holywell St., Oxford. 'Phone: 58. [3293

BROUGH SUPERIOR 8h.p. overhead, fitted 1921 tank, benzol-proof finish, 1922 oiling, aluminium discs, head, rear lamps, generator, horn, special luggage carrier, 27×3½ rear tyre, taxed to December, beautiful condition, property well-known agent now abroad; £112.—108, Manchester Rd., Oldham. [1913

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0838

B.S.A.

PROMPTEST Deliveries of 1923 Models.—The B.S.A. specialists.

COUNTY Cycle and Motor Co. Ltd., Broad St., Birmingham. [3162

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. Model Sports £70.—Clifford Motories, Eastwood, Notts. [9958

B.S.A. 3½h.p., new 1920, cylinder, equipped, taxed perfect; £15.—17, Heaton Rd., Mitcham. [3123

£45.—1920 B.S.A. 4¼h.p. Combination, chain-cum belt, perfect order.—30, Woodfield Rd., Leigh-on Sea, Essex. [3103

B.S.A. 1920 4¼h.p. chain Combination, taxed, all accessories; £75.—Will, 769, Romford Rd. Manor Park, London, E.12. [3263

B.S.A. 1922 4h.p. Combination, fine sturdy machine brand new, shop-soiled, all-chain; £72.—The Morris Garages, Oxford. [3211

GOOD 4¼h.p. B.S.A., 4-speed Jardine gear box clutch, K.S., reliable machine; £27/10; exchanges.—24, Balliol Rd., North Kensington. [3133

B.S.A. 1916 4¼h.p. Combination, all-chain, coach built sidecar, Easting, good riding condition, tax insurance paid; £45.—10, Springcroft Avenue, East Finchley. [3141

BARGAIN.—B.S.A. 4¼h.p., 3-speed, all-chain, coach built sidecar, 35 guineas; solo, 29 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1863

GENUINE 1921½ B.S.A. Combination, 3-speed 4¼h.p., luxurious, roomy B.S.A. £42 sidecar, complete, accessories, licensed; 65 guineas.—Fersfield, Westbury Rd., New Malden. [2963

1920 B.S.A. 4¼h.p. Combination, with extra bucket seat, fully equipped with speedometer, etc. exchange for cycle car, G.N. preferred, or sell £75.—Rous, Nordwood Corner, Allhallows, Rochester, Kent. [3273

MOTOR CYCLES FOR SALE.

B.S.A.

£20.—1914 3½h.p. B.S.A., in excellent condition, Bosch magneto, kick-start, Grade gear, belt nearly new, tyres serviceable, in constant use by owner.—N. Wilkinson, 99, Cheapside. [2682

LATE 1921 4½h.p. B.S.A., chain, No. 3 sidecar, hood, all lamps and spares, original tyres unworn, mileage 2,000; seen Essex; £85, or near offer.—Box 4311, c/o *The Motor Cycle*. [2670

1922 B.S.A. Light 6-7h.p. and No. 4 sidecar, shop soiled demonstration model, maker's guarantee; 105 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5454

B.S.A. 3½h.p., single gear, 1914 (believed), Bosch, B. and B., dropped frame, tank re-enamelled, engine overhauled, new tyre and belt; £24.—C. Pack, 40, Robinson Rd., Rushden, Northants. [3012

35 Guineas.—1915 B.S.A. Combination, 4½h.p., all-chain drive, 3 speeds, clutch, kick-starter, P. and H. lamps, mechanical horn, pillion seat, tools, practically new tyres, tax paid, trial; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [3230

B.S.A. 6h.p. Twin de Luxe Combination, 1923 model, show finish, at new reduced price, just delivered, £115; 4½h.p. H.2 model, chain drive, £75; 4½h.p. K.2, chain-cum-belt, £72; deferred payments or exchanges.—Eagles and Co., 275, High St., Acton, London. [3234

B.S.A.—We are now in a position to give immediate delivery of most of the 1923 models; exchanges arranged and extended payments with pleasure. The experience and knowledge of the leading Oxfordshire motor cycle agents is at your service.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3294

SOUTHPORT.—1921 B.S.A. 4½h.p., all-chain, brand new condition, little used, speedometer, lamps, etc., gift, 59 guineas; 1921 (September), 4½h.p. B.S.A. all-chain combination, electric head lamp, Cowey speedometer, Cowey horn, windscreen, Brooks cantilever saddle, 65 guineas; exchanges.—Kents, 417, Lord St., Southport. [3062

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4805

B.S.A. Spares definitely by return, post free, trade supplied.—Pitts, B.S.A. Service, Redditch. [1761

THE B.S.A. Specialists.—County Cycle and Motor Co., Ltd., Broad St., Birmingham. Catalogue free on request. [3163

B.S.A. Spares can be had by return, post free from Jones' Garage B.S.A. Agents and Spare Service Depot Broadway, Muswell Hill, N.10. [0805

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all B.S.A. spare parts always in stock. Write for free spare part list, stating year of manufacture. [0750

Calthorpe

CALTHORPE 1922, used trials only, all accessories; £26.—76, Dalling Rd., Hammersmith. [3006

CALTHORPE 2-stroke Bosch, B. and B., dropped frame; £15.—Fisher, Springwell Rd., Heston, Hounslow. [2956

2¾h.p. Calthorpe-Jap 1920 model, splendid condition, complete with lamps, horn, tools, etc., licensed.—227, Gladstone St., Peterborough. [3126

Cedos

CEDOS 1920 2½h.p., 2-stroke, 2-speed, good condition; £27/10.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3343

CEDOS 1922 Model, 2½h.p., 2-speed, shop-soiled, bargain, £35.—Fowler and Brigden, 130, Euston Rd., King's Cross. [0962

Clyno.

CLYNO Combination 1917, 2 new tyres, any trial; £35.—434, Fulham Rd. [3005

CLYNO 2½h.p., 1918, 2-speed, clutch, fully equipped and taxed, absolutely perfect; £20.—105, Moore Pk. Rd., Fulham. [3016

23 Guineas.—Clyno, 1920, 2¼h.p., 2-speed and clutch, accessories, tax paid.—Delancey St Garage, Camden Town, N.W.1. [300]

5-6h.p. Clyno Combination, lamps, watch, speedometer, and spare wheel; bargain, £45.—S Howell, Automobile Engineer, 112, Whitehorse Rd., Croydon. [2703

CLYNO, 8h.p., J.A.P. Combination, mechanically perfect, 4 interchangeable wheels, tyres unscratched, all accessories; £68, or exchange 2-seater; write first—Poole, Ivydene, Alexandra Rd., Hounslow. [2786

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4802

Connaught

1923 Connaught. Exchange and extended payments.—Wauchope's, 9, Shoe Lane, London. [3250

Cotton.

1923 Cottons, all models, prompt delivery from the man on the spot.—Gibb, Northgate, Gloucester. [0968

THE LANCASHIRE SHOW!
IS HELD ALL THE YEAR ROUND AT
PARKER'S
EXCHANGES.
DEFERRED PAYMENTS.
BOLTON BRADSHAWGATE | 246/52 DEANSGATE MANCHESTER
Tel. 1348. Tel. Cen. 864.
Sole Agents or Distributors for all the best makes of Motor Cycles & Light Cars.

MOTOR CYCLES FOR SALE.

Coulson.

COULSON-B., 1920-21, 2¾h.p., 2-speed, spring frame, Blackburne engine, electric lighting, Klaxon, taxed; £34/10 cash.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

Coventry Eagle

AT Edwards.—1922 (September) 2¾h.p. Coventry Eagle, super-sports J A P., 3-speed close-ratio box, electric lighting, fitted Watsonian aluminium sports sidecar, absolutely as new; 70 guineas; or solo, 60 guineas; exchanges or deferred.—101, Great Portland St., W 1 [1851

Coventry Victor.

1920 5-7h.p. Coventry Victor, Grindlay De Luxe spring wheel sidecar, Easting Royal, P. and H. lamps, Klaxon, Stewart speedometer; £70, nearest.—Postmaster, Mahaesbury. [3048

NEW Coventry Victor, touring model, Miller's electric lighting, Lucas horn, guaranteed perfect; £98, or exchange lower powered machine and cash.—Crees, Great Clacton-on-Sea, Essex. [2798

De Luxe

£15.—1921 2½h.p. De Luxe, 2-stroke, appearance as new.—King, Egrove, Oxford. [3074

BARR and Stroud 2¾h.p. engine De Luxe motor cycle, 3-speed Burman, K.S., all-chain, Terry spring saddle, speedometer, licensed, mileage under 100; bargain, 65 guineas.—At Richardson's, 5, Rosslyn Mews, Rosslyn Hill, Hampstead. [3114

ENSURE Early Delivery of your 1923 De Luxe.—Barr and Stroud; still the best value procurable. Send only £1 deposit and book your date ahead. We will pay your taxation if you order now. Send 1½d. stamp for art illustration of our new famous Super Model D with double expanding brakes.—De Luxe Motors, 174, Corporation St., Birmingham. [2787

Diamond.

ROBERTSON'S Motors, Ltd., are the London and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P. engines.—157b, Great Portland St., W.1. [5931

Douglas.

£27.—2¾h.p. Douglas, taxed, 2-speed.—38, Duke Rd., Chiswick [3129

1918 Douglas, 2-speed, posh condition; 25 guineas.—67, Fernlea Rd., Balham. [3378

£22.—1918 2¾h.p. Douglas, 2-speed, good tyres, tax paid.—King, Egrove, Oxford. [3075

1916 4h.p. Douglas, tax paid; £30; bargain.—Ross, 86, High Rd., Lee. [2934

4h.p. W.D renovated Douglas; £30 or offer.—Dyer, 17, Montpelier Row, Blackheath. [2867

BARGAIN.—Douglas 3-speed, fully equipped; £50; cost £113.—49, Beck Rd., Hackney. [2959

1918-19 Douglas Combination, very nice condition; 45 guineas.—67, Fernlea Rd., Balham. [3376

DOUGLAS 1921, all on, taxed, perfect; £45.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5851

F.O.C.H. invite inspection; Douglas and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1373

1922 2¾h.p. Douglas, used 50 miles only; £45.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [3028

SEVERAL late 2-speed Douglases; from £20.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [3067

DOUGLAS Combination, late 1920, mileage 2,500, fully equipped; £65.—69, Kingston Rd., New Malden. [2982

1921-22 2¾h.p. Douglas, 3-speed, kick-start, absolutely as new; 45 guineas.—19, Valley St., Tooting. [3377

1923 Douglases, just arrived, 2-speed and 3-speed; why wait.—Gibb, Northgate, Gloucester. Phone: 852. [0967

DOUGLAS 1921 2¾h.p., all on model, Binks carburetter, tax; £35; 2-stroke, fast.—H. Rock, Cradley, Staffs. [2997

24 Guineas.—1916 2¾h.p. Douglas, fully equipped, ride away.—F. C. Lingley, New St., Woodbridge, Suffolk. [2906

1922 Douglas Combination 4h.p., speedometer, lamps, and horn complete; £85.—The Morris Garages, Oxford. [3211

4h.p. Douglas and Sidecar, in perfect running order, any trial; £32/10.—85, St. Stephen's Rd., Sneiton, Nottingham. [2994

£25.—1918 Douglas 2¾h.p., 2-speed, lamps, horn.—Smith's, 86, Chalk Farm Rd. Opposite Chalk Farm Tube Station. [2519

1916 2¾h.p. Douglas, fast, good condition, owner going abroad; £35; offers.—Cullinane, London Aerodrome, Croydon. [2655

1920 Douglas 2¾h.p., 3-speed, lamps, footboards, new tyres, very fast, Binks carburetter; £48.—1, Highlever Rd., N. Kensington. [3179

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 2¾h.p., 1914, tax paid, lamps, aluminium number plates, fully equipped; £24.—50, Haverstock Hill, N.W.3. [3087

DOUGLAS 1920 Combination, countershaft, fully equipped, taxed; £68.—William, 769, Romford Rd., Manor Park, London, E.12. [3269

1920 Douglas 2¾h.p., fully equipped, including speedometer; sacrifice at £38 cash.—The Layton Garages, 30, Holywell St., Oxford. [3303

21 Guineas.—Douglas 2¾h.p., 1918, 2-speed, good condition, taxed, equipped; after 5 p.m.—316, Hither Green Lane, Lewisham, S.E. [2882

AT Edwards.—1922 3½h.p. Sports Douglas, fully equipped, speedometer; 65 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [2583

AT Edwards.—1918 2¾h.p., 2-speed Model, fully equipped, excellent condition, new tyres and belt; 37 guineas.—101, Gt. Portland St., W.1. [7505

1921 Douglas 2¾h.p., lighting, Magnums, Tan-Sad, copper exhaust, beautiful condition; best offer over £40.—Bailey, Church Lane, Teddington. [2750

DOUGLAS 1922 2¾h.p., fully equipped, lamp, horn, etc., brand new, shop-soiled, 2-speed; £52; 3-speed, £70.—The Morris Garages, Oxford. [3213

1921 2¾h.p. Douglas, all accessories, footboards and under-shield, new tyres, fast, good running; £48.—R. Yull, 191, Eastern Esplanade, Thorpe Bay. [2681

2¾h.p. Douglas 1915 (stored 4 years), just overhauled, excellent condition, complete; £33, or offer.—Moir, 66, Alexandra Rd., Swadlincote, Derbyshire. [3026

1919 Douglas Combination, £54; 1920 combination, £62; also 1921 combination, £72; full accessories in each.—Ross, 86, High Rd., Lee. [2939

DOUGLAS Combination 1918, show receipt £28 for just overhauling, tax paid, very complete; £37.—5, Putney Bridge Rd., Wandsworth. Putney 2728. [2713

PRACTICALLY brand new Douglas 2¾h.p., 3-speed, clutch, kick-start, 1920 model, scarcely used, equipped; £48.—37, Canterbury Rd., Dalston, N.1. [2866

BARGAIN.—1920 Douglas 2¾h.p., 2-speed, perfect, 29 guineas; ditto, 1914, 23 guineas; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1869

1918 2¾h.p. Douglas, 2-speed model, fully equipped, excellent condition, new tyres, new belt; 37 guineas.—Edwards, 50, Harrington Rd., South Kensington. [3338

SEPTEMBER, 1921, 4h.p. Douglas Combination, little used, spotless condition, Tan-Sad, engine No. 13515; £80.—Smith, 63, Friern Barnet Rd., New Southgate, London. [2716

DOUGLAS 4h.p. 1917 Combination, accessories, sidecar, as new, windscreen, apron, machine perfect, speedometer; bargain, £55.—2, Palmerston Rd., Southfields, S.W. [2829

1922 Douglas 2¾h.p., fully equipped, licensed year, insured, indistinguishable from new; exchanges or deferred; 45 guineas.—Edwards, 50, Harrington Rd., South Kensington. [6623

TWO Douglases, repainted, thoroughly overhauled, many accessories; no reasonable offer refused. Cash, deferred or exchange.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [3402

1919 Douglas 4h.p., in perfect condition, engine as new and guaranteed, open engineers inspection, lamps, Klaxon, Tan-Sad, any trial; £50.—78, Crowborough Rd., Tooting Bec. [2943

39 Guineas, exchange.—1918 Douglas combination, 3 speeds, clutch, kick-start, lamps, smart, any examination; trial.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [3335

1919 Douglas 2¾h.p., 2-speed, long copper exhaust; £28. 1918 Douglas combination, fully equipped, tax paid; £38.—Ward, South Western Garage, New Malden, Surrey. [2556

4h.p. Douglas Combination, 1918, mechanically perfect, clutch, kick-starter, 3-speed, Cameo, hood, Klaxon, etc., tax paid; £65, or near.—L.S., 5, Needl Parade, Wembley Hill, N.W.10. [2661

1918 Douglas Combination, 4h.p., fully equipped with Easting screen, Tan-Sad, all lamps, etc., splendid condition; £55.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3278

1919 Douglas Combination, 4h.p., fully equipped with lamps, horn, tools, etc., in perfect order, guaranteed; £65.—Homacs, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3279

1922 3½h.p. o.h.v. Sports Douglas, 80 m.p.h., guaranteed perfect, every accessory; cost £145 2 months ago; owner ordered abroad; quick sale £95.—19, Duchess Mews, Portland Pl., W.1. [2873

DOUGLAS 1917 2¾h.p., 2 speeds, splendid order, fast, powerful, guaranteed perfect, all accessories, trial any time, tax paid; bargain, £29.—Owner, 45, Charles St., Exmouth St., Commercial Rd., Stepney. [3116

1922 Douglas, 3½h.p., o.h.v., fully equipped, licensed, indistinguishable from new, three months' guarantee; 80 guineas; exchanges or deferred.—Edwards, 50 Harrington Rd., South Kensington. [1140

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MOTOR CYCLES FOR SALE.

Douglas.

£58.—1920 Douglas 4h.p. Combination, 3 speeds, clutch, kick-starter, P. and H. lamps, Klaxon horn, Cowey speedometer, Easting screen.—Smith's, 86, Chalk Farm Rd. Opposite Chalk Farm Tube Station. [2520

1923 Douglas Models. Prompt delivery of any model; exchange and extended payments; full market value allowed for second-hand machines; tuition free.—Wauchope's, 9, Shoe Lane, London. Central 5168. [3251

FOR Douglas 1922 2¾h.p. and 4h.p. Combinations, get in touch with us; we are North London agents, and give you the best of service; all spares in stock; no W.D. rubbish.—Jones Garage, The Broadway, Muswell Hill. [0786

1918 2¾h.p. Douglas, 2-speed, wide tank, large copper exhaust, machine specially tuned and fully equipped, splendid condition all round, makers' colours; £28.—164, Revelstoke Rd., Smithfields, S.W.18. 'Phone; Wimbledon 1185. [2973

1920 2¾h.p. Douglas, 3-speed, clutch and K.S., licensed, little used, and faultless condition, all on; £37/10.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1292 (half-min. from Brixton Skating Rink). [3327

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157b, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—We hold a complete stock for all models; post free. Douglas Agents and spare part stockists.—Jones Garage, The Broadway, Muswell Hill, N.10. [0806

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2h.p. Economic, perfect, only run 200 miles; £25 offers.—Barland, Kington, Herefordshire. [2690

ECONOMIC 1922 2¾h.p., sale or exchange higher power.—Grenier, 31, Drummond Crescent, Euston. [2950

ECONOMIC.—Do not fail to visit Stand 45, Olympia Motor Cycle Show, and see the Economic Motor Cycle. [1407

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denman Motor Agency, 4, Denman Place, Piccadilly Circus. Tel.: Regent 986. [0890

Edmund.

EDMUND, spring frame, 1921, 2¾h.p. J.A.P., Enfield clutch gear, Sensspray.—T.E.S., 37, Ninian, Cardiff. [2660

1922 Spring Frame Edmund Combination, Black Burne engine, Burman 3-speed, clutch, kick starter, lamps, speedometer, horn, etc., brand new £28 sidecar, wonderful condition; gift at £75; would separate if necessary.—The Motor House, Ltd., 20, Finchley Rd., N.W.8. [3401

Enfield

1923 Enfields in stock; immediate delivery.—Premier Motor Co., Birmingham. [3357

£28.—1920 Enfield, 2-speed, speedometer, lamps, new Dunlops.—89, East Hill, Wandsworth. [2967

1918 8h.p. Enfield Combination, as new, full accessories; £75.—Ross, 86, High Rd., Lee. [2925

ENFIELD 1921 Lightweight, 2-speed, as new £36.—Mylam, 197, London Rd., Croydon. [3189

ENFIELD 2-stroke, smart, perfect, reliable, fast £15; stamp.—99, Tynemouth Rd., Mitcham. [3123

ENFIELD 2-stroke 2¼h.p. 1921, perfect condition 36 guineas.—Miss Drew, Margery Wood, Reigate. [2207

LATE Enfield Combination, smart and reliable; 55 guineas, or exchange.—67, Fernlea Rd., Balham. [3387

ENFIELD, 2-stroke, with kick-starter and accessories as new, £38.—Ratcliffe Bros., 200, Gt. Portland St., W. [3248

ENFIELD Combination, 1917, not W.D., perfect condition; £48.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3340

1916 Enfield, 3h.p., 2-speed, new Dunlops, Lucas lamps, unscratched, tax; £34.—Green, 47, Gladstone Rd., Farnborough, Kent. [2835

ENFIELD 2¾h.p., 2-speed, clutch, K.S., recently overhauled, fully equipped, tax paid; £30, or near.—Faulds, Layer Hall, Colchester. [9783

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 176A London Rd., Croydon. 'Phone: 1619. [5600

MOTOR CYCLES FOR SALE.

Enfield

LUXURIOUS Dynamo Enfield Combination, run only few miles, every possible accessory; £95; exchanges.—24, Balliol Rd., North Kensington. [3136

ENFIELD-VICKERS.—Large selection of 1922 8h.p. combinations, fully equipped, from £80 to £120. Fowler and Brigden, 130, Euston Rd., King's Cross. [0961

25 Guineas.—1921 Enfield 2-stroke, 2-speed, clutch, T.T. bars, footrests, speedometer, fast.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [3024

1922 Enfield-Vickers Combination, brand new July, Lucas Magdyno outfit, screen, tools, etc., insured, splendid machine; £125.—Silor, 101, Armagh Rd., Bow. [3105

ENFIELD 8h.p. Colonial Model (September, 1920), splendid condition, any trial or inspection, all on; £75.—Stewart, 94, Clockhouse Rd., Beckenham. [2860

70 Guineas.—1921 Enfield-Vickers Combination, 8h.p., Lucas horn, luggage grid, pump, tools, taxed paid, trial; bargain.—Smith's, 86, Chalk Farm Rd., N.W.3. [3229

1919 Enfield 3h.p., perfect condition, little used; £20 paid on improvements last month; ill-health; £40, offers; exchange car.—H. Lowe, Clarence Av., Marfleet, Hull. [2663

1923 Royal Enfield Models, solos and combinations; exchanges and extended payments; tuition free; delivery when required.—Wauchope's, 9, Shoe Lane, London. Central 5168. [3252

YOUR Motor Cycle or Combination taken in part payment for an Enfield, any model; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal, London. [2532

1921 Enfield Combination, 8h.p. Vickers engine, Lucas dynamo lighting, hood, screen, speedometer, luggage carrier, etc., as new, guaranteed, tax paid; £105; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3280

ENFIELD.—We now have the 1923 models in stock and ready for immediate delivery; extended payments arranged to suit your immediate requirements; good modern second-hand machines accepted in part payment.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3295

1922 Royal Enfield 8h.p. Vickers Combination, electric lighting, bought end September, absolutely new condition, mileage under 700, fully equipped Impervo, insured till September, 1923, owner recalled overseas; cost £160; sacrifice £125, or nearest offer.—Devine, 33, Beaumont St., Oxford. [2860

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

1923 Excelsior lightweight Villiers, 2 speeds, wonderful power; £28/10; new.—Keen, Leominster. [1228

1921-22 Excelsior, 2-speed, Sturmey-Archer, kick-start, as new; 30 guineas.—67, Fernlea Rd., Balham. [3375

F.N.

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

Francis-Barnett.

FRANCIS-BARNETT 2¾h.p. late 1920, condition like new, copper exhaust, lamps, horn, tools, etc.; £45, or nearest offer; any trial.—Tyler, "Rossie," Westleigh Rd., Swindon. [3018

Harley-Davidson.

HARLEY-DAVISON 1915-6 Combination.—77, Acre Lane, S.W.2. [3231

1919 7-9h.p. Harley, very fast; 50 guineas.—Ross, 86, High Rd., Lee. [2937

1915 7-9h.p. Harley-Davidson Combination, 1922 overhaul, very fast, moderate price.—Castle House, Eynsford, Kent. [2728

HARLEY-DAVIDSON 1920 Combination, all accessories, 7-9h.p., perfect, original owner; price £95.—15, Julian's Rd., Stevenage. [1443

43 Guineas.—Harley-Davidson 1916-17 model 7-9h.p. clutch, 3 speeds, K.S.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2717

HARLEY Combination, very fast, £55; also Indian combination, £40.—Letters, H. R. Hall, c/o Greso Man Hotel, Whetstone, London. [3365

BARGAIN.—1919 Harley-Davidson 7-9h.p. combination, splendid condition; £75.—Apply, Cooper, 159, High Rd., Woodford Green, Essex. [2667

HARLEY-DAVIDSON Aug. 1920, Combination, hood, screen, luggage grid, Lucas dynamo, Tonsad, spares, insurance paid to Oct., 1923, any trial; best over £82.—129, Grove Green Rd., Leytonstone. [2947

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Cov.-Premier, 10 b.p., 4-cyl., 2-seater ..... 230 gns.
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New Imperial, 8 h.p., 3-sp. comb. £125 0
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Harley, 1918, 7-9 h.p., 3-sp., all-ch £67 10
Indian, 7-9 h.p., 2-sp., all-chain. £35 0
Moto Reve, Twin, wants attention £9 10
Norton, 1922, Big Four, new.... £90 0
Rudge-Multi, 1921, 3½ h.p., like new £52 10
Triumph, 1913, 3½ h.p., cl. model £29 10
Veloce, 1920, 3½ h.p., 3-speed .. £52 10
Villiers, 2½ h.p., 2-sp., c/shaft gr. £29 10
PASSENGE MACHINES
Ace, 1921, 4-cyl. comb., tax paid £97 10
Campion-Jap, 5-6 h.p., 3-sp., c/sh. £59 10
Cov.-Eagle, 1921, combination.. £62 10
Cov.-Victor, 1921, 5-7 h.p. comb. £79 10
Harley, 1919, elec. comb., ex. gd. £97 10
Martinsyde, 1920, 6 h.p. comb... £79 10
Matchless, 8 h.p. comb., belt drive £45 0
Rudge-Multi, 1920, 5-6 h.p. comb. £69 10
Scott, 3¾ h.p., 2-sp. comb., tax pd. £49 10
Scott, 1920 comb., scrn., etc., tax paid £79 10
Triumph, 3½ h.p., 2-sp. comb., tax paid £39 10
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Richardson, 1920, 2 sr., dickey st. £85 0
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Martinsyde, 1920, 6 h.p. comb. .. £79 10
Matchless, 8 h.p. comb., belt drive £45 0
New Hudson, 6 h.p., 3-sp. comb £49 10
New Imperial, 8 h.p., 3-sp. comb. £69 10
Rex, 5-6 h.p., 2-sp. and sc. £29 10
Rex, 1913, 6 h.p., coach cb. £42 10
Rudge-Multi, 1920, 5-6 h.p. comb. £69 10
Rudge-Multi, 1920, 7-9 h.p. comb. £75 0
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Scott, 1920 comb., screen, etc., tax paid £79 10
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MOTOR CYCLES FOR SALE.

Harley-Davidson.

LUXURIOUS 7-9h.p. Harley-Davidson Combination, purchased from Harleys in July, as new; £90; exchanges.—24, Balliol Rd., North Kensington. [3134

BARGAIN.—1921 4h.p. flat Twin Harley-Davidson, 3 speeds, perfect; 55 guineas; exchanges; photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1870

1919 Harley-Davidson 7-9h.p., Enting, hood, electric lamps, horn, splendid outfit, nice to drive, bags of power; best offer over £70, or exchange late 2-seater car.—78, Crowborough Rd., Tooting Bec. [2942

1921 Harley-Davidson Combination, electric and acetylene lighting, fully equipped, mileage only 3 000, perfect condition; exchange for lighter solo and cash or sell best offer.—'Phone: Museum 7286. [2990

1921 7-9h.p. Harley Combination, mechanically perfect, dynamo lighting, electric horn, any trial, expert examination; £89.—Apply between 9-5.30, H. Blades, A. Schrader's, Son, Inc., Willesden Junction, N.W.10. [2731

1920 Harley-Davidson Combination, 4h.p. flat twin, 3 speeds, clutch, and kick-starter, all lamps, horn, speedometer, absolutely as new, guaranteed; £75.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3282

1917 Harley-Davidson 7-9h.p. Combination, coach-built, electric horn and lighting, new tyres and chains, in perfectly good order; £48; ride away; owner bought later model.—A. Southorn, 44, Abbeville Rd., Clapham, S.W.4. [3142

1920 7-9h.p. Harley-Davidson, electric model, T.T. bars, discs, speedometer, tools, etc., just been thoroughly overhauled, in excellent order throughout, fast and flexible, owner abroad; price £65.—Apply W. R. Young, St. Albans. [2765

£58.—1919 7-9h.p. Harley-Davidson with special large coachbuilt sidecar, fully equipped, electric and acetylene lights, long exhaust with handle-bar controlled cut-out, splendid condition; any trial.—88, Fitzjohn's Av., Hampstead, N.W (D) [2876

HARLEY-DAVIDSON, late 1919, magneto model, and large Derwent bulbous sidecar, aluminium scuttle, Triplex screen, electric lighting, speedometer, discs, copper exhaust, 29×3½ tyres, spare chains, exceptionally smart, mechanically perfect; photo; £78; lightweight part payment.—17, Sussex Rd., New Malden. 'Phone: 138. [2980

ARE You Visiting Olympia? If so, call and see us on Stand No. 34, where we shall be pleased to give you full particulars of the Harley-Davidson motor cycle and combination We are the authorised agents for this machine; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal., London. [2527

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St. Ealing. [4804

HARLEY-DAVIDSON second-hand W.D. spares, all genuine; your requirements, competitive prices; practically any parts.—Maudes', 100, Gt. Portland St., W.1. [2829

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

Hawker.

1923 Hawker Models on extended payments.—Wauchope's, 9, Shoe Lane, London. [3253

H.B.

H.B., 2¾h.p. Blackburne, 1920, 2-speed, clutch, K.S., accessories, splendid condition, mileage under 3,000; accept £54.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. [2689

Henderson

ROBERTSON'S Motors, Ltd.—1922 De Luxe Henderson motor-cycles in stock at the new reduced figure of £137 —157b Gt Portland St W 1 [2350

BRAND New Henderson De Luxe, with Millford De Luxe sidecar, most luxurious outfit; list price £175, our price £140.—Pioneer Motors, Grindlay St., Edinburgh. [9541

1920-21 4-cyl. 10h.p. Henderson Special Sports Combination, new condition, any trial, fast, luxurious, and complete outfit; sell £100, or exchange Aero Morgan to suit business purpose.—Hay Yard, Duncan St., Islington [2874

ARE You Visiting Olympia? If so, call and see us on Stand No 123, where we shall be pleased to give you full particulars of the luxurious 4-cyl. Henderson motor cycle. We are the authorised agents for this machine; cash, deferred payments or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal., London [2526

MOTOR CYCLES FOR SALE.

Henderson.

138 Guineas.—Henderson 1921¾ Elite Combination, 12h.p., 4-cyl., side valves, 3 speeds, reverse model, dynamo lighting, licensed; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2718

Hobart.

HOBART, 2¾h.p. Blackburne, 2-speed, clutch, kick-start, new, never registered; £63.—Cleaver, Sittingbourne. (D) [3021

Humber.

HUMBER 3½h.p., 2-speed, free, taxed; £18.—Blundell, 18, Bute Gardens, Wallington. [3106

£10.—Humber 2¼h.p., rebushed, speedometer, excellent condition.—Robins, 97, Latchmere Rd., Battersea. [2834

1923 Humber Models; exchanges and extended payments; generous terms.—Wauchope's, 9, Shoe Lane, London.

1922 4½h.p. Flat Twin Humber, lamps, etc., mileage 1,100, as new, beautifully kept; £72.—31, Thursby Rd., Northampton. [2102

HUMBER 1922 4½h.p., Milford Favourite sidecar, mileage 1,500, lamps, horn, speedometer, Camer windscreen, and tools complete; £125.—Motor House, Malvern Link. [2763

HUMBER 1921 Combination, 4½h.p., Brooks' cantilever, Easting, fully equipped, tyres good, owner buying car; cost £200, accept £90.—Mead, Woodford Green. 'Phone: Woodford 363. [2830

HUMBER 1921 4½h.p. Combination, Grindlay sidecar, lamps, horn, windscreen, Brooks cantilever saddle, exceptionally fine condition; bargain, £85.—P. J. Evans, John Bright St., Birmingham. [3415

HUMBER.—We will accept your present machine as part payment for a 1923 model Humber and give you immediate delivery of the latter.—All communications to Oxfordshire's leading motor cycle agents, The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3296

Indian.

INDIAN 7-9h.p. Road Racer, exceptionally good; £25; exchange.—17, Heaton Rd., Mitcham. [3119

INDIAN Powerplus, electric lighting, perfect; £45.—Norfolk, Dorset Mews, Dorset Rd., Clapham, S.W. [2940

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1916 Powerplus Indian Combination, dynamo lighting, nice order; £50.—Ross, 86, High Rd., Lee. [2932

£22/10.—T.T. 7-9h.p. Indian, electric light, discs, new condition, clutch, new tyres.—89, East Hill, Wandsworth. [2969

1923 Indian Models; exchange and extended payments.—Wauchope's, 9, Shoe Lane, London. Central 5168. [3255

£48.—1920 7-9h.p. Indian coachbuilt combination, dynamo, little used, new appearance.—King, Egrove, Oxford. [3076

38 Guineas.—7-9h.p. Indian, dynamo lighting, combination.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [2977

A SMART 5-6h.p. Indian Sporting Combination, 3 speeds, etc.; bargain, £39.—176, St. Albans Avenue, Bedford Park, Chiswick. [2784

£70.—Indian Combination, 1919, electrical equipment, windscreen, tax paid.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3408

INDIAN Powerplus 7-9h.p., and Grindlay Super Sidecar, late 1920, electric equipment, perfect order throughout; £85.—6, Muston Rd., Upper Clapton. [2922

BARGAIN.—Indian 7-9h.p., 2-speed, coachbuilt combination; 35 guineas; photograph; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1871

1919 T.T. Powerplus-Indian, D.A. lighting, spare chain, sprockets, in splendid condition; £50, or exchange late fixed gear Norton.—60A, High St., Wimbledon. [2859

SCOUT Indians 1923.—Meet us on Stand 63; generous allowance on exchange for your present machine.—"Parwood," Indian Agents, East Hill, Wandsworth. Battersea 443. [2968

INDIAN Combination, late model, 1921 Dunhills' sidecar, lamps, speedometer, taxed, splendid condition; real bargain, £55.—3, Stamford Brook Rd., Hammersmith. [3150

7-9h.p. Indian, dynamo lighting, 2-seater Mills-Fulford sidecar, hood, privately owned, perfect condition; £100.—S. Howell, Automobile Engineer, 112, Whitehorse Rd., Croydon. [2706

NOVEMBER, 1921, Indian Scout and sporting aluminium sidecar, electrically equipped, speedometer, etc., done 3,000 miles, as new; photo; 70 guineas.—G. French, 276, Hills Rd., Cambridge. [3011

£15 down and 12 monthly payments of £3/15.—1919 Powerplus Indian, dynamo lighting, exceptionally good condition, any trial, not W.D.; discount for cash.—Langford's, 37, Cricklewood Broadway, N.W.2. [3346

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1920	2½ h.p. **CLYNO,** 2-speed and clutch	£25
1920	8 h.p. **ENFIELD** Comb.	£75
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1919	3½ h.p. **P. & M.,** 2-speed, etc.	£38
1919	4 h.p. **TRIUMPH** Comb., model "H"	£58
1918	4½ h.p. **B.S.A.** Comb., all on	£55
1917	4 h.p. **DOUGLAS** Comb.	£54
1915	4 h.p. **DOUGLAS** Comb.	£48
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INDIAN Powerplus Combination, February, 192 dynamo lighting, electric horn, mileage 1,500, co dition as new, tyres unpunctured; £110; consider la 4h.p. solo part exchange.—Tuck, 26, Hampshire Terrac Southsea. [295

LANGFORD'S, Indian specialists, for the wonderfu 1923 models; highest price allowed for you present machine; liberal easy-payment terms; writ call or 'phone for particulars.—Langford's, 37, Crickl wood Broadway, London, N.W.2. Hampstead 861 [257

Spare Parts:

FOR Indian spares and overhauling try Horswi Indian Specialist, over 10 years' experience, 4 Bridge St., Chester. [127

GODFREY'S, Ltd., 208, Great Portland St., Londo W.1.—Complete stock of all Indian spare par always in stock. Write for free spare part list, statin year of manufacture. [075

INDIAN Spares.—New and second-hand for a models; all second-hand spares sent on approva write, call, or 'phone; we can save you money.—Lan ford's, 37, Cricklewood Broadway, N.W.2. Hampstea 8616. [135

INDIAN Spares, 1909-1922, new, also second-han from stock; send list requirements for our prices. Dennis Accessories Stores, 89, Brixton Rd., Londo 'Phone: Brixton 3129. The firm with a reputatio for promptness and satisfaction. [378

Invicta.

1921 Invicta 2¾h.p., 2-speed, fully equippe licensed, excellent condition; 27 guineas; e changes or deferred.—Edwards, 50, Harrington Rd South Kensington. [33

Ivy.

29 Guineas.—1920 Ivy, a snip.—59, Palfrey Plac Dorset Rd., Clapham Rd., S.W.8. [29

Spare Parts:

IVY.—All spares from stock.—Maudes', 100, Gt. Por land St., W.1. [28

Ixion.

1920 Ixion brand new, fixed gear, £35; 1921 Ixio 2-speed, £45.—Saunders, 32, High St., Ham stead. [250

James.

£22.—4¼h.p. James, 3-speed, countershaft gear good running order.—King, Egrove, Oxford. [307

1919 5-6h.p. James Combination, thorough goi order, fully equipped; £55.—34, Willes Rd Kentish Town. [305

AT Edwards.—1922 3½h.p. sports James, equippe tax paid, indistinguishable from new; 7 guineas.—Below.

AT Edwards.—1919 3½h.p. twin James, 3-speed, a chain, equipped lamps, horn, etc.; 38 guineas exchanges or deferred.—101, Gt. Portland St., W. [335

1919 James 5-6h.p. model De Luxe Combinatio Easting, Tan-Sad, first-class machine, in perfe condition, any trial; £75.—Mason, Draper, Bagshot. [267

BARGAIN.—James Combination, 1917, 6h.p., 3-spee clutch, K.S., electric lighting, nearly new tyres sacrifice £29; must sell; seen any time.—Duval, 6 Grand Parade, Harringay. [290

1919-20 5-6h.p. James Combination, screen, Luca lamps, small mileage, topbole condition, in equipment, enamel and mechanical condition as new £82.—39, Dundonald Rd., Leicester. [288

1922 7h.p. James Combination, De Luxe sidecar as new, fitted Lucas head lamp, sidecar lamp tail lamp, horn, and insurance; owner ordered foreig service; offers wanted.—Church, c/o Dan Guy, We mouth. [267

1921 4¼h.p. James Combination, indistinguishab from new, fully equipped, electric lightin screen, speedometer, etc.; any trial or examination accept £60 for quick sale.—Waldron Motor Mart, 64 Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbl don 607. [305

Spare Parts:

JAMES Spares.—Immediate delivery.—Kays, 8 an 10, Bond St., Ealing. [944

WHITBY'S.—James spares, expert service.—7, Th Vale, Acton, W.3. 'Phone: Chiswick 1513. [977

Lea-Francis.

1915 Lea-Francis Combination, dynamo lighting hargain, Terry's spring saddle; £65.—Ross, 8 High Rd., Lee. [292

LEA-FRANCIS, 3-speed, kick-start, all-chain; £35 or exchange, and £15, for 7-9h.p. or 8h.p. 3-spee combination.—40, Luton Rd., Faversham. [291

AT Edwards'.—1920 3½h.p. Lea-Francis, M.A.C engine, fully equipped, lamps, horn, speedometer perfect order; 48 guineas. Exchanges or deferred.— 101, Great Portland St., W.1 [932

58 Guineas.—Lea-Francis, 1922, 3½h.p., twi M.A.C., 3-speed, clutch, kick-starter, enclose chain drive; actual gold medal winner Scottish an English Six Days Trials; new tyres.—Delancey S Garage, Camden Town, N.W.1. [300

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PREMIER Motor Co., the Levis Specialists.

IMMEDIATE Delivery of all 1923 Levis models; 2¼h.p. Popular, single gear, £38; model T., h.p., 2-speed, clutch, kick-start, £49; we are the arest agents to the Levis works, and sell more ma-ines of this famous make than any other agents the British Isles; free delivery. Premier Motor ., Aston Rd., Birmingham. [3558

EVIS, single; £20 or nearest; Douglas wanted.— Macfadyen, Boghead, Arbroath. [2761

1916 Levis, 2 speeds fully equipped; bargain, £20.— Fisher, Springwell Rd., Heston, Hounslow. [2955

1923 Levis Models; exchange and extended pay-ments.—Wauchope's, 9, Shoe Lane, London [3256

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone: 2. [0966

EVIS, late 1921, 2-speeds, hand clutch, speedo-meter, lamps, etc., beautiful condition; £35.— Thornsett Rd., Earlsfield, London. [3157

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GODFREYS, Ltd., 208, Gt. Portland St., London. W.1.—Complete stock of all Levis spare parts keys in stock. Write for free spare part list, stating ar of manufacture. [0753

L.M.C.

L.M.C. 4h.p. 1920, fully equipped, with lamps and horn, and licence paid, very fine order, and quite ady for the road; £38.—The Layton Garages, 30, Holy-ell St., Oxford. [3305

Martinsyde

MARTINSYDE Combination 1922 6h.p., 3-speed gear, splendid hill-climber, brand new, shop-filed; £120.—The Morris Garages, Oxford. [3214

MARTINSYDE 1921 6h.p. Combination, equipped, splendid condition; 75 guineas.—Paterson, 146 Kirland Rd., Paddington. Seen evenings, Saturday ter 1 p.m. [3131

ROBERTSONS Motors, Limited, are the London Martinsyde Service agents; trial runs arranged 923 models now available at the new prices, spares ocked - 157a, Gt Portland St., W.1 [1122

1922 Martinsyde 6h.p. Combination, complete with Milford sidecar, cost £160, has only been used few times; a gift at £130; cash or deferred.—Marl rough (Motor House), 20, Finchley Rd. N.W.8 [6560

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1921 Model H Matchless Combination, nice condi-tion; 95 guineas.—67, Fernlea Rd., Balham. [3370

1921 Model H Matchless Combination, every ac-cessory; £82/10; exchanges.—24, Balliol Rd., orth Kensington. [3138

1921-22 H. Matchless Combination, spare wheel, M.A.G. engine, absolutely as new; 87 guineas. 19, Valnay St., Tooting. [3571

1923 Matchless Combination Models; exchange and extended payments.—Wauchope's, 9, Shoe ne, London Central 5168. [3257

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1923 Programme. All leading makes of motor cycles and light cars.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich. [3413

AT Edwards.—1919 8h.p. Victory Matchless com-bination, Lucas lamps, Bonniksen speedometer, spare wheel, new condition throughout; 70 guineas Below.

1921 8h.p. Spring Frame Matchless Combination, M.A.G. engine, Magdyno lighting, spare wheel, hood, screen, tax paid, perfect condition; 90 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3352

MATCHLESS Combination, 8h.p., 2-speed, lamps, horn, etc., overhauled, good running order; 40 guineas Edwards, 50, Harrington Rd., South Ken-sington. [1142

1922 Matchless Model H 2-seater Combination, 8 h.p., 2 screens, J.A.P. engine, electric light, done 500 miles only; £135.—Kent, Lynton Park Lane, Congleton. [2403

MATCHLESS, brand new, Model H2, M.A.G. engine, spring frame, Lucas lamps, horn, screen, shields, etc.; £130, only one at this price.—Mason's Garage, Letchworth, Herts. [1660

MATCHLESS-M.A.G. 1921 Combination, Lucas lighting, spare wheel, hood, screen, etc., excel-lent condition and appearance; £78.—Mylam, 197, London Rd., Croydon. [3190

MATCHLESS 1921 Combination, 8h.p. M.A.G. engine, like new, spring frame, spare wheel, electric light, hood, screen, etc.; £80 only.—Bunt-ing's Exchange, Wealdstone. [3154

MATCHLESS-M.A.G. Family Combination (Sep-tember 1921) Lucas lighting, Tan-Sad, splen-did condition, carefully used; bargain, £125.— "Helvetia" Headstone Lane, Pinner. [2864

1921 Model H Matchless Combination, dynamo lighting, spare wheel, speedometer, hood, screen, M.A.G. engine, small mileage; £87/10.—Willier (side bell), 127, St. Mark's Rd., North Kensington. [3145

MATCHLESS.—Immediate delivery of all 1923 models, including the new model L 3h.p.; price £70; exchanges and extended payment propositions a speciality.—The Layton Garages, 30, Holywell St., Oxford 'Phone: 581 [3297

1921 Matchless H spring frame combination, M.A.G., Magdyno, fully equipped. Easting, spare wheel, excellent tyres, tubes, spare chain, valves, tubes, etc., insured, very carefully used £90.—Grimston, 435, Port-land Rd., West Hove, Sussex. [2803

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1920 H Model Matchless Combination, J.A.P., stan-dard equipment and speedometer, hood, legshields, side-step, jack, Lucas lamps and generators, water-proof overall cover, insurance, numerous spares, etc. perfect running order, small mileage, any trial; £95 or nearest offer.—57, Mount Nod Rd., Streatham Hill, S.W. [2772

1923 Matchless Combinations.—T. J. Ross, of High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demon-stration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock [3244

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1921 Matchless, perfect condition, paint, nickel work as new, completely overhauled by makers at great expense; fitted automatic lubrication, Lucas dynamo lighting set, spare wheel, luggage carrier, new model front band brake, tools, tax paid; inspec-tion and trial run by appointment; £100; cost when new £250.—Piaunaea, 15, Queen Anne's Gardens, Bush Hill Park, Enfield. [3404

MATCHLESS 1922 model H, with 2-seater side-car, M.A.G. engine, dynamo lighting, spare wheel, speedometer, electric and bulb horns, 2 screens, absolutely indistinguishable from new, £145; also 4 other 1919, 1920 and 1921 Matchless Com-binations, from £75. Full particulars of these and 50 other Combinations priced from £20 upwards free on request.—Newnham Motor Co., 225 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325 and 80. [3223

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MATCHLESS Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9446

MATCHLESS Spares for J.A.P. or M.A.G. by re-turn, post free.—Jones' Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0808

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18 Guineas.—1922 McKeuzie, brand new, licensed, equipped; bargain.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [3025

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1920 Metro-Tyler, tax paid, discs, lamps, shop-soiled; £40.—Saunders, 32 High St. Hampstead. [2501

1920 Metro-Tyler, sports model, fully equipped, in excellent order, guaranteed; £25.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3283

Ner-a-Car.

£57.—1922 Ner-a-Car, slightly shop-soiled only, a bargain.—South Eastern Garage, Herne Hill, S.E.24. [2402

NER-A-CAR 1922, registered, insured, in excellent order and condition, little used; 40 guineas, or near offer.—Box 4852, c/o *The Motor Cycle*. [2766

New Hudson.

1913 3½h.p. 3-speed New Hudson Combination; £30.—Ross, 86, High Rd., Lee. [2926

£14.—2¼h.p. New Hudson, 2-stroke, single-speed, good running order.—King, Egrove, Oxford. [3078

NEW HUDSON, 2-stroke, 2-speed, fully equipped, splendid condition; any trial; £20.—Ward, South Western Garage, New Malden. [3364

1921 New Hudson 2¼h.p., 2-speed; just overhauled, splendid condition, tax paid, lamp and horn; £30. —Fairhead and Sawyer, Melton, Suffolk. [2758

1920 New Hudson 4h.p. Combination, lamps, speedometer, screen; £60; taxed.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [9975

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2¾h.p. New Imperial, 2-speed, kick-start; £32; exchange other make.—Naish, Church Rd., Wheatley, Oxon. [2650

NEW IMPERIAL-J.A.P. 2½h.p., 2 speeds, 1918, splendid condition; £24.—30, Thornsett Rd., Earlsfield, London. [3159

2¾h.p. New Imperial-Jap, June, 1921, 2-speed, clutch, kick-start, good condition; £35.—39E, Emperor's Gate, Gloucester Rd. [3008

2¾h.p. New Imperial, 1920, J.A.P. engine, No. 81737A, 2 speeds, clutch, K.S., fully equipped, small mileage, spares, perfect condition guaranteed; £28; after 7 p.m.—Caldecourt, 105, Mount Pleasant Lane, Clapton. [3010

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1921 B.R.S. Norton, 3-speed, speedometer, lamps, tools, as new; 55 guineas.—174, Avenue Rd., Acton, W.3. [3040

NORTON 1922 Super-Sports, close ratio gears, Ricardo piston, Lucas lamps, tax; 65 guineas.— H. Rock, Cradley, Staffs. [2996

1922 Norton 3½h.p. 16H, £67/10; also Big 4h.p., £70; both new, unregistered, shop-soiled only.— Bates, 19, Albany Rd., Coventry. [3184

NORTON Big Four Combination 1922, countershaft, kick-start, equipped, taxed; £98.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3270

1923 Norton models.—Immediate delivery; extended payments and exchanges with pleasure.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3298

NORTON 1922 16H., countershaft, Brooklands special racer, kick-start, taxed, as new; £115.— Walker, 769, Romford Rd., Manor Park, London, E.12. [3271

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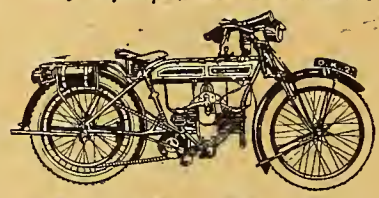

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8h.p. Norton-Jap with sidecar, re-enamelled and overhauled, guaranteed to be in first-class condition; £40.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [3166

SOUTHPORT.—1922 B.R.S. Norton, absolutely splendid condition, Mabon clutch, Lucas horn, speedometer; a picture; 42 guineas; exchanges.—Keuts, 417, Lord St., Southport. [3059

1920 Big 4 Norton, large Lucas lamps, Klaxon, Watford trip speedometer, new superstudded Hutchinsons 700×80, excellent condition; £65.—Fearn, Hazelbank, Kirriemuir. [2668

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LATE 1922 3½h.p. Overhead Valve Norton, specially tuned engine, has won over 30 firsts, seconds, and thirds during last 3 months; £95; fully guaranteed.—Simister, Jordangate, Macclesfield. [3315

AT Edwards.—1922, August, 3½h.p. Norton, sports model, Lucas lamps and horn, knee grips, tax paid, indistinguishable from new; 49 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3349

1921 Norton Big Four, Lucas lamps, speedometer, Klaxon, knee grips, watch, mileage 500, indistinguishable from new, guaranteed perfect throughout; 70 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [9310

N.U.T

N.U.T. 1920-21 and Swan sporting sidecar, dynamo, discs, etc.; £78; handsome outfit; call before 7. —Snow, Laurel St., Dalston, E.8. [3392

O.K.

1920 O.K., 2-stroke, nice condition; 18 guineas.—67, Fernlea Rd., Balham. [3373

1921-22 O.K.-Villiers 2¾h.p., 2-speed, fully equipped, as new, guaranteed perfect, tax paid; £33.—28, Oldridge Rd., Balham, S.W.12. [2676

1922 O.K., 3-speed, K.S. and hand clutch, almost as new; very great bargain at £45.—The Layton Garages, 30, Holywell St., Oxford. [3307

O.K. 2½h.p. Mark X, 1921 model, Villiers' engine, single speed, new and unused; £28/10.—Eaglea and Co., 275, High St., Acton, London. [3235

Omega.

OMEGA-VILLIERS 1921 2¾h.p., 2-speed, taxed, lamps, horn, etc., Brooks, splendid condition; £27, or offer.—60, Wickham Rd., Brockley, S.E.4. [3117

P. and M.

4½h.p. P. and M. 2-speed Combination; £49.— Gomme, Stevenage. [3113

£16.—3½h.p. P. and M., 2-speed, clutch, fine running order.—King, Egrove Farm, Oxford. [3080

£42/10, sacrifice.—1921 P. and M., 2 speeds, kick-start, fully equipped, taxed, as new.—143, Ravenshury Rd., Earlsfield, S.W. [3310

P. and M. Combination, 1918, 2 speeds, accessories, Tan-Sad, hood and screen, splendid condition; £36.—30, Thornsett Rd., Earlsfield, London. [3160

6 R.A.F. 1918 P. and M. machines, stove enamelled, lined, thoroughly overhauled; £30 each; must be sold.—Cooper, 63, Avenue Rd., Camberwell, S.E.5. [3397

P. and M. 1918 Combination, R.A.F. model, sound running order, gears new, 1922 B. and B., lamps and horn, tax paid; trial; cash price £33.—Flint Bungalow, Croydon Rd., Warlingham. [2875

1918-19 Renovated P. and M.'s, guaranteed 3 months; £40; instalments taken. Incomplete P. and M.'s; £17/10.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [2992

1920 P. and M. Combination, little used, condition as new, lamps, mirror, luggage and petrol carriers, spares, including 2 covers, 3 tubes; £80; private owner.—Broadway Motor Works, South Chingford. [2985

BARGAINS.—P. and M. Combination, 1920, as new, 53 guineas; also 1917 P. and M. combination, 36 guineas; solo, 29 guineas; photographs; exchanges.— Peter Gordon Ltd., 110, Upper Richmond Rd., East Sheen. [1872

1923 P. and M. Solos or Combinations at 1923 prices; immediate delivery from the authorised agents; exchanges entertained.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. 'Phone: Paddington 1177. [3170

1918 P. and M. Combination, touring, spring frame sidecar, mechanically perfect, and excellent appearance; £29.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton, S.W.2. 'Phone: Brixton 1292 (half-min. from Brixton Skating Rink). [3328

Spare Parts:

P. and M. Spares Specialists. Stamp brings list. Immediate delivery.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [2993

MOTOR CYCLES FOR SALE.

P. and M.

Spare Parts:

P. and M. second-hand W.D. spares, all genuine; your requirements, competitive prices; practically any part.—Maudes', 100, Gt. Portland St., W.1. [2838

ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

Peters.

PETERS! Peters! Peters!—We have a limited number of these beautifully sprung machines for sale at bargain prices; all brand new; write for particulars.—Advance Motor Manufacturing Co., Ltd., Northampton. [2775

Peugeot.

PEUGEOT 3½h.p. Twin, £10; requires adjustments. —Kennard, 78, Yerbury Rd., Holloway. [2795

7-9h.p. Peugeot Combination, new tyres, running order; photo; £20, offers.—101, Eglinton Hill, Plumstead, S.E.18. [3206

Premier

PREMIER 2½h.p., Bosch magneto, good order; £13. —38, Sherriff Rd., West Hampstead. [3086

£18, or Offer.—1914 Premier 3½h.p., Dunlops, horn, etc., unused during war.—43, Hambalt Rd., Clapham, S.W.4. [3115

4h.p. Premier, 2-speed, coachbuilt sidecar, overhauled this year, accessories; £40, bargain.—63, Arlingford Rd., Brixton. [2701

23 Guineas.—Premier 3½h.p., 3 speeds, Cancelet Combination, licensed 1922; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2719

1916 Premier Coachbuilt Combination, underslung, 3 speeds, countershaft, clutch, kick-start, as new; £38, exchanges.—7, Cowdrey Rd., Wimbledon. [3208

Spare Parts:

PREMIER Parts.—I have a large consignment of genuine parts purchased direct from the makers; write for quotation.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [2916

GENUINE Premier Spares.—We have purchased from the Coleshill Trading Company, the tremendous stock of genuine Premier parts (the largest and only complete stock in the world) purchased by them from the makers, and are offering the same at knock-out prices.—Furfield Motors, Furfield Place, Leamington Spa. [1864

PREMIER Genuine Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Furfield Motors, Furfield Place, Leamington Spa. 'Phone: 631. [8369

Priory.

PRIORY-J.A.P., brand new; £45.—Clark, 7, Exhibition Rd., S.W.7. [2305

AT Edwards.—2¾h.p. Priory 2-stroke, 2-speed, brand new; £36.—101, Gt. Portland St., W. [7503

1922 Priory, 2¾h.p., J.A.P., 2-speed, clutch and kick-start, brand new and unused, three months' guarantee; £43; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1143

Quadrant.

1920 4h.p. All-chain Quadrant, nice order; £50.—Ross, 86, High Rd., Lee. [2935

£55.—1921-22 Quadrant combination, accessories.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1838

£90, or reasonable offer.—Brand new 1922 Quadrant combination.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1837

1920 4½h.p. Quadrant Combination, 3-speed, countershaft, all chain, new 1921, equipped, taxed; £48.—68, Lytton Rd., Leytonstone. [2857

IMMEDIATE Delivery of all 1923 Quadrant models direct from Olympia.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3409

£60.—1922 Quadrant 4½h.p. special solo, 1923 improvements, used competitions only.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [2587

QUADRANT 1922 4½h.p., Millford sidecar, Tan-Sad, lamps, etc., low mileage, new condition; £75; seen North London.—Box 4872, c/o *The Motor Cycle.* [3197

Spare Parts:

CLIFFORD WILSON Manufacturing Co., Quadrant official repairers and spare parts stockists, 177, Westminster Bridge Rd. (opposite Waterloo Station Approach), London, S.E.1. Tel.: Hop 210. [9989

Radco.

£12.—Radco 2½h.p., lamps, etc., tax paid, good condition.—Robins, 97, Latchmere Rd., Battersea. [2833

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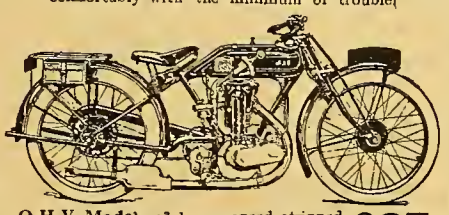

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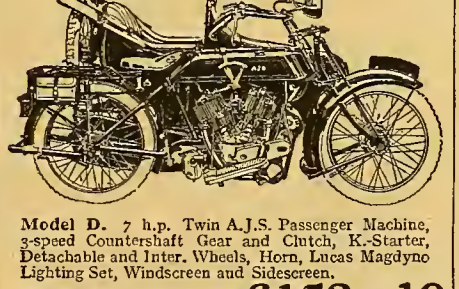

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IMMEDIATE delivery of all Raleigh 1923 models, many improvements, huge price reductions. We have sold more Raleigh 1922 models than any other firm in the British Isles; buy the machine which represents the best value from the firm who give you the best service; exchanges and deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [2580

RALEIGH, 1922, 2-speed, 2¼h.p., brand new, shop soiled; £56.—7, Exhibition Rd., S.W.7. [3588

RALEIGHS.—1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [9960

RALEIGH, 5-6h.p., new 1922, at special price: £90 —Ratcliffe Bros., 200, Gt. Portland St., W. [3247

RALEIGH, 1923 models, from £57; immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0975

1923 Raleigh Models; exchange and extended payments.—Wauchope's, 9, Shoe Lane, London. Central 5168. [3260

LATE 1922 3h.p. Raleigh Combination, 3-speed, clutch, K.S., used twice, as brand new; sacrifice £55; exchanges.—24, Balliol Rd., North Kensington. [3133

BARGAIN.—Raleigh 1922 5-6h.p. Spring Frame Combination, Lucas lamps, magnificent machine, almost new; sacrifice £92.—Edgeworth House, Arlesey, Beds. [2921

RALEIGH, 1922, 2¾h.p., 3-speed, lamps, horn, speedometer, knee grips, extra tool bag, perfect condition; £65, or offer.—F. R. Hornby, Overdale, Heaton, Bolton, Lancs. [2832

RALEIGH 1923 models and prices are the most interesting offered to the public.—2¾h.p. 3-speed all-chain drive with clutch and kick-starter, £64, 2-speed chain-cum-belt, £57; delivery from stock; exchanges and deferred payments; spare parts always available. Sales and service depot for Raleigh machines.—Newnham Motor Co., 223 and 245, Hammersmith Rd., London, W.6. 'Phone: Hammersmith 1325 and 80. [3221

Reading-Standard.

1916 Reading-Standard, very nice order; bargain, £60.—Ross, 86, High Rd., Lee. [2929

READING-STANDARD, 1920-21, 16h.p., not done 1,000 miles, with special roomy sidecar, spare tyre and all tools, as new; cost over £250; accept £160; fully equipped, electric lighting.—Hinton, 1, Chapel St., Leamington Spa. [2871

Ready.

AT Edwards.—1922 2¾h.p. Ready, J.A.P., 2-speed, countershaft gear, equipped with lamps and horn, tax paid, exceptional condition; 35 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1145

Rex.

1923 Rex Models; exchange and extended payments.—Wauchope's, 9, Shoe Lane, London. [3261

REX, 2-speed, complete less engine, £12; sidecar, £3; V.S. 2-speed wheel and stays, £5; offers.—22, Park View, Down Lane, Tottenham. [2771

Rover.

4h.p. Rover Sports Model, new, shop-soiled; £85.—Evans Garage, Newport, Salop. [3110

ROVER, 1921, 8h.p., repainted, etc., perfect condition; £125.—Ratcliffe Bros., 200, Gt. Portland St., W. [3246

£35 Under Catalogue.—Unridden 5-6h.p. Rover.—S. Howell, Automobile Engineer, 112, Whitehorse Rd., Croydon. [2704

1922 4h.p. Rover cycle and sidecar, in perfect condition, 3 speeds; £70.—R. E. Jones, Ltd., Dillwyn St., Swansea. [2768

ROVER 3½h.p. Combination, 1920 about, kick-start, countershaft, all on, taxed; £68.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [3272

ROVER Combination, late 1919, J.A.P., first-rate condition, luggage carrier, screen and hood; £57/10.—Bowling, Chemist, Pembroke Dock. [2823

ROVER 1914 3½h.p., 3-speed clutch, exceptional condition, also sidecar, Easting screen; £28, or near; would separate.—Apply, Giles, 10a, Fairhazel Gardens, N.W.6. [2774

AT Edwards.—1920 3½h.p. Rover, all-chain drive, equipped with electric lighting, horn and speedometer, absolutely indistinguishable from new; 55 guineas; exchanges or deferred.—101, Great Portland St., W.1 [1149

BARGAIN.—Rover 3½h.p., 3 speeds, hand clutch, kick-start, 29 guineas; also Rover 3h.p. 3-speed combination, Rover sidecar, 38 guineas; exchanges; photographs.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1118

Spare Parts:

ROVER Spares.—Immediate delivery.—Kaya, 8 and 10, Bond St., Ealing. [9445

Royal Ruby.

1919 Royal Ruby Combination, 8h.p., perfect condition; £47/10.—9, Church Rd., Harlesden. [3041

MOTOR CYCLES FOR SALE.

Royal Ruby.

1918 8h.p. Royal Ruby, renovated as new, solo £55, with sidecar £65.—Ross, 86, High Rd., Lee. [2950

ROYAL RUBY, Villiers engine, perfect running order; £15.—Golding, Vale Cottage, Oatlands Park, Weybridge. [9694

1922½ 8-10h.p. Royal Ruby Combination, as new, Lucas Magdyno, 2-seater sidecar, spare wheel, hood, screen, speedometer, mileage 1,200, cheap; offers.—Ewers, Newton Rd., Burton-on-Trent. [5051

£24/10.—Royal Ruby, 2-stroke, late 1919, beautiful condition throughout, recently stove enamelled, replated, excellent tyres, tubes, electric light and horn, spare belt, 45 m.p.h., 90 m.p.g., guaranteed.—Grimston, 435, Portland Rd., West Hove, Sussex. [2802

Rudge.

3½h.p. Rudge, clutch, fast and reliable; 15 guineas.—67, Fernlea Rd., Balham [3374

1915 Rudge-Multi Combination, perfect condition; £30.—120, Argyle St., St. Helens. [2945

1923 Rudge Models; exchange and extended payments.—Wauchope's, 9, Shoe Lane, London. [3262

£50.—Rudge-Multi 1918 5-6h.p. Combination.—Elliott, Clearwater House, Whitebrook, near Monmouth. [2820

1916 Rudge-Multi, very little used, original tyres in good condition; £30.—R. E. Jones, Ltd., Dillwyn St., Swansea. [2767

3½h.p. Rudge-Multi, overhauled 1920, not used until 1921, accessories, tax paid; £39.—Evans Garage, Newport, Salop. [3112

RUDGE-MULTI, 1921, condition excellent, accessories, insured February; nearest £45.—Waterloo Villa, Tonbridge. [2974

RUDGE-MULTI, 1920, excellent appearance and condition, registered; £35.—Guthrie, 61, High St., Hawick, Scotland. [2863

SOUTHPORT.—1921 I.O.M. Rudge-Multi, Bonniksen speedometer, lamps, horn, etc.; 41 guineas; exchanges.—Kents, 417, Lord St., Southport. [3061

LATE 1921 Rudge-Multi I.O.M., fully equipped, as new, exceptionally fast; £38.—164, Revelstoke Rd., Southfields, S.W.18. 'Phone: Wimbledon 1185. [2972

AT Edwards.—1921 Rudge-Multi, fully equipped, speedometer, splendid condition; 42 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1850

RUDGE-MULTI, 1922, innumerable extras, taxed and perfect, any trial; £50.—4, Berkeley Mews, Connaught St., Marble Arch, London. 'Phone: Paddington 1177. [3172

1918 T.T. Rudge-Multi, fitted with new extra heavy Dunlop covers, condition of machine as new, lamps, etc.; £25.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [3165

ARE You Visiting Olympia? If so, call and see us on Stand No. 97, where we shall be pleased to give you full particulars of the Rudge motor cycle. We are agents for this machine; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal., London. [2530

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Illustrated list free. Trade supplied.—Forfield Motors, Forfield Place, Leamington Spa. [3163

Scott.

KINSEYS, of Croydon, for Scotts.

SOUTH London Scott Service Depot.—Being enthusiastic Scott riders ourselves you get the benefit of our experience.—John R. Kinsey and Co., Ltd., 350-352, Lower Addiscombe Rd., Croydon. [2687

£16.—3¾h.p. twin Scott, 2 speeds, good running order, taxed.—King, Egrove, Oxford. [3081

1923 Scott Models; exchanges and deferred payments; tuition free.—Wauchope's, 9, Shoe Lane, London. [3263

SCOTT 3½h.p., 1920, excellent condition, tax paid; £55. Similar machine, 1915 model; £35.—P. J. Evans, John Bright St., Birmingham. [3414

IMMEDIATE delivery of 1923 Scott models; exchanges and deferred payments arranged.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [3299

SOUTHPORT.—Instant delivery latest 1923 Scott Squirrel, latest improvements, £89; 1922 Scott Squirrel, lamp, horn, etc., nice condition, ideal sports solo, 59 guineas; exchanges.—Kents, 417, Lord St., Southport. [3063

Spare Parts:

KINSEYS, of Croydon.—Scott Spares and Repairs.—'Phone: Croydon 1129. [2688

WARD Motors, Ltd., 32, Hustler St., Bradford, for sound second-hand Scott parts at less than half-price; satisfaction guaranteed. List by return. [0889

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Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Sheffield-Henderson.

SHEFFIELD-HENDERSON, 350 c.c., n.h.v., 1922, specially built, used in I.O.M. T.T., genuine; money wanted; 69 guineas.—214, Albert Rd., Croydon. [2901

Singer.

2½h.p. Singer, 1913, T.T. model, splendid condition; photo; £14, or offer.—Barrett, 42, Wenham Drive, Westcliff. [3100

1914 Singer Combination, 4h.p., 2 speeds, clutch, all-chain, new tyres, all lamps, comfortable sidecar, perfect condition; £45.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3285

Spare Parts:

THE Promptest Firm for Genuine Singer Spares.—Forfield Motors, Forfield Place, Leamington Spa. [3368

GENUINE Singer Parts.—Let me quote you.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [2917

St. Quintin.

2¾h.p. St. Quintin, Bosch, Druids, equipped, perfect; £8/10.—17, Heaton Rd., Mitcham. [3120

Stuart.

3½h.p. Stuart, 3-speed, fast, any trial; £20, or offer.—88, Park Rd., Dulwich. [2966

Sun.

SUN-PRECISION 3¾h.p. 1916 coachbuilt Combination, 3-speed, clutch; £28.—2, Appian Rd., Bow. [2893

SUN-VILLIERS, in splendid condition and running order; £14/10.—30, Thornsett Rd., Earlsfield, London. [3158

BARGAIN.—Sun-Villiers 2-stroke, single speed; 15 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [1873

FOR Sun-Jap. or Sun-Vitesse, get in touch with the sole North London agents. Models in stock, single Special, 42 guineas; 2¾h.p. J.A.P., 2-speed, K.S., 60 guineas. Send for catalogues. Trade supplied.—Jones' Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM, latest 2¾h.p., 1923, all other models.—Clifford Motories, Eastwood, Notts. [9959

1922 Sunbeam Super-Sports 3½h.p., only done 500 miles; £100.—The Morris Garages, Oxford. [3209

1916 3½h.p. Sunbeam Combination, full accessories, hood and screen; £65.—Ross, 86, High Rd., Lee. [2923

SUNBEAM 1922 4¼h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £126.—7, Exhibition Rd., S.W.7. [5619

1921 Sunbeam Combination, new condition, fully equipped, Lucas accessories, tax paid; £110.—Evans Garage, Newport, Salop. [3107

SUNBEAM 3½h.p. Sporting, 1921, only done 3,000 miles, perfect condition, with lamps; £75.—Raymond Best, Burghill, Hereford. [2810

SUNBEAM 3½h.p. (October, 1916), 1922 sidecar, accessories, spares, excellent condition; £80.—K., Albert House, Henry St., Crewe. [2685

SUNBEAM, incomplete, less gear box, engine sprocket, believe 1916, T.B. magneto; £32.—Derrington, Grafton Rd., New Malden. [3407

1923 Sunbeam Models; exchanges and easy terms; delivery from works if preferred.—Wauchope's, 9, Shoe Lane, London. Central 5168. [3264

1920 3½h.p. Sunbeam Combination, completely equipped, condition practically as new; £110.—E. W. Roberts, Blencathra Garage, Keswick. [0972

1922 T.T. Sunbeam, fully equipped, Lucas head lamp, D.A. cylinder, Bonniksen, Best mechanical pump, 5 spare sprockets; £84.—Howard, Trinity, Cambridge. [2949

1921 Sunbeam Sports Competition Machine, winner of numerous gold medals, Lucas accessories and speedometer; £85.—A. R. Evans, 1, Lower Bar, Newport, Salop. [3108

SUNBEAM, 4h.p., black and gold, fully equipped, late model, semi-T.T., in excellent condition throughout; £55; no offers.—Service Co., 292, High Holborn, W.C.1. [2841

1920 Sunbeam 3½h.p. Combination, completely equipped with lamps, horn, and windscreen, and licence paid, very smart outfit; to clear at £90.—The Layton Garages, 30, Holywell St., Oxford. [3308

SUNBEAM Combination, 1919, 3½h.p., taxed, insured, 3-speed, rear and side tyres, new, all accessories, speedometer, mirror, Cameo, just overhauled; £95.—99, Woodberry Av., Winchmore Hill, N.21. [2894

MOTOR CYCLES FOR SALE.

Sunbeam

83 Guineas.—Guaranteed 1920 3½h.p. semi-sports Sunbeam Combination, lamps, Easting, appearance and condition as new, any trial or examination; evenings.—53, Patshull Rd., Kentish Town. [3394

1921 Sunbeam 8h.p. Combination, most luxuriously equipped, dynamo, spare wheel, hood, etc., many spares, as new; £130, nearest.—James, c/o Bradmores 482, Harrow Rd., Paddington. [9974

6h.p. Sunbeam Combination just been completely overhauled by makers, engine re-bushed, new clutch plates, gear box overhauled, perfect running order, new speedometer, Triplex screen; £70.—Speed Supply, London Rd., Tonbridge. [2811

1922 Sunbeam 3½h.p., with Whitley sidecar, complete with accessories, including Easting screen, perfect condition, fully insured; cost £190 in May, will accept £110. Owner proceeding abroad.—F. A., 76, Old Road West, Gravesend. [2693

SPEEDMAN'S 3½h.p. Sunbeam, delivered July, 1922, mileage 1,500, Amac racing, Bonniksen speedometer, mechanical lubrication, 2 sprockets for flat racing and hill-climbing, knee grips, complete set of tools, licence paid, fully insured, as new; cost 130 guineas; will sell £105, or nearest.—Arnott, Garth, Monmouth. [2909

Triumph.

PREMIER Motor Co., the Triumph Specialists.

SOLE Distributing Agents for Greater Birmingham for Triumph motor cycles; earliest possible delivery of improved 1923 models at latest reduced prices; carriage paid to any address; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [3360

1922 2¼h.p. Baby Triumph, 2 speeds, perfect; £39.—89, Spencer Place, Leeds. [3050

£10.—3½h.p. Triumph, m.o.v., Bosch, good running order.—King, Egrove, Oxford. [3082

4h.p. Triumph, type S.D, new, shop-soiled; £85.—Evans Garage, Newport, Salop. [3109

TRIUMPH, brand new, all-chain models, unscratched, makers' guarantee; £80.—Below.

TRIUMPH-GLORIA 1921, Easting, as new; £82/10—Below.

TRIUMPH-GLORIA, all-chain, Easting, many extras, spring footboards, indistinguishable from new; £87/10.—Below.

WARD and Co. (Albert Agg), 51, Upper Richmond Rd., East Putney. 'Phone: Putney 2754. [3383

BABY Triumph, A.1 order; genuine bargain. £25.—Box 4873, c/o *The Motor Cycle*. [3198

1919 Triumph-Gloria Combination, bargain, tax paid; £70.—Ross, 86, High Rd., Lee. [2924

1921 Triumph, chain drive model, Mackenzie sidecar; £100.—The Morris Garages, Oxford. [3210

1918 Countershaft Triumph Combination, perfect condition; £45.—9, Church Rd., Willesden. [2880

TRIUMPH-RICARDO, 1922, unused, shop-soiled; £100.—Mylam, 197, London Rd., Croydon. [3191

59 Guineas.—1921 all-chain Triumph, accessories, perfect condition.—40, Aynhoe Rd., W.14. [3009

1921 Triumph H 4h.p., licence paid; £65.—Williams, Bright View, Hadley Rd., New Barnet. [2883

1921 Triumph Combination very nice condition; bargain, 57 guineas.—67, Fernlea Rd., Balham. [3372

4h.p. Triumph, type H, in perfect order, Lucas accessories, tax paid; £39.—Evans Garage, Newport, Salop. [3111

1922 4h.p. Triumph, most lavishly equipped, used 3 times; £62/10.—24, Balliol Rd., North Kensington. [3137

£16.—1913 3½h.p. Triumph, single, clutch, in splendid order, ride away.—W. Puddey, 35, Gilpin St., Peterborough. [2733

4h.p. Triumph Combination, Millford sidecar, speedometer, screen, etc.; £48.—120, Sutherland Rd., Croydon. [3168

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TRIUMPH Combination, excellent condition, 2 new tyres; £65, or offer.—Taylor, Grocer, Esher. 'Phone: Esher 19. [3030

1922 Triumph, Model H, Smith's trip, F.R.S. set, horn, tax paid, shop-soiled; £85.—Read, Gillingham, Dorset. [2788

1918 Triumph 4h.p., countershaft, exceptional condition; £50; exchange.—37, Canterbury Rd., Dalston, N.1. [2865

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1922 Triumph, Model H, 4h.p., T.T. bars, not done 300 miles, as new, complete; £72.—25, Broad St., King's Lynn. [2805

1918 Triumph Combination, countershaft, Easting, Tan-Sad, splendid condition; £50.—63, Arlingford Rd., Brixton, S.W.2. [3130

TRIUMPH 1922 4h.p., model H, brand new, with or without sidecar, shop-soiled; price solo, £79.—The Morris Garages, Oxford. [3212

1919 4h.p. Triumph Combination, licensed, equipped, excellent condition; £65.—1, Wellington Rd., Watford, Herts. [3194

TRIUMPH Model H, brand new, accept £84 to clear; also S.D. combination, what offers?—Bunting's Exchange, Wealdstone. [3155

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £62.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3345

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TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

4h.p. Triumph, 1915 T.T. model, C.A.V., 1918 frame and tank, horn, lamp, tools, excellent condition; £21/10.—P. Willcocks, Datchet, Bucks. [2900

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1918 Triumph Combination, countershaft, reconditioned by Triumph Co., fully equipped; £65, or nearest.—Burnett, 29, Railway Terrace, York. [2783

60 Guineas.—1921 4h.p. Triumph, condition, appearance perfect, Lucas accessories, speedometer, tool-kit and spares.—4, Charles Lane, St. John's Wood, N.W.8. [2888

4h.p. 1916 Triumph, 3-speed, clutch and kick-starter, mechanically perfect; £45, with sidecar £50; after 6.—9, Hempstead Rd., Walthamstow. (Wood Street Station.) [2739

TRIUMPH, Model H, brand new and unused, listed at £105; our price 82 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

£48.—Countershaft Triumph, 1918, 4h.p., engine No. 58653; also another; 40 guineas.—Smith's, 86, Chalk Farm Rd. Opposite Chalk Farm Tube Station. [2521

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541 [9653

TRIUMPH, 4h.p., 1918, fully equipped, speedometer, etc.; £44.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

1922 Triumph Combination, brand new, all-chain; must realise; best offer secures.—4, Berkeley Mews, Connaught St., Marble Arch, London. 'Phone: Paddington 1177. [3171

AT Edwards.—1921 Triumph Combination, all-chain, Gloria sidecar, lamps, screen, speedometer, excellent condition; 85 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [2582

1918 4h.p. Triumph Combination, 3-speed, countershaft, Sandum sidecar, perfect condition; £47/10; any trial, all on, tax paid.—Baker, 21, High St., Chesham, Bucks. [2664

1922 Triumph-Ricardo 3½h.p., o.h.v. engine, brand new but shop-soiled; £105; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3277

£70.—Triumph-Gloria Combination, 1921 model, tax paid, numerous accessories; deferred terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2429

£12/10 down and 12 monthly payments of £3/2/6.—1918 4h.p. Triumph, perfect condition throughout, any trial; discount for cash.—Langford's, 37, Cricklewood Broadway, N.W.2. [3347

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3½h.p. Triumph, 3-speed, clutch, splendid condition, long exhaust, fast 'bus, just spent £12 on overhauling; £35, or nearest.—Brough, 22, Antrobus St., Congleton, Ches. [2944

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£68, sacrifice.—1921 Triumph 4h.p., all-chain, and sidecar, electric and acetylene lamps, fully equipped, insured; £100; sound condition. — 143, Ravensbury Rd., Earlsfield, S.W. [3311

1920 Triumph-Gloria Combination, lamps, Lucas horn, Cowey speedometer, Easting windscreen, beautiful condition; £65; any trial.—Jeweller, 605, Garratt Lane, Earlsfield, S.W.18. [3056

1919 Triumph Combination, Gloria sidecar, hood, screen, all lamps, etc., absolutely perfect condition, guaranteed; £65.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3284

1919 4h.p. Triumph and sidecar, complete with electric lamp, Lucas horn, licence paid, in excellent order and condition; bargain. £77/15.—Timberlake's Garage, Wigan. 'Phone: 512-513. [2659

£95.—Triumph Combination, 1922, all-chain drive, used for demonstration, complete with every accessory, tax paid; terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2423

1922 Triumph Model H, completely equipped with lamps and horn, and licence paid, very carefully used and in exceptional condition; bargain at £65 cash.—The Layton Garages, 30, Holywell St., Oxford. [3302

40 Guineas.—1917 4h.p. countershaft Triumph, semi-sporting combination, lamps, Klaxon, Tan-Sad, tax paid, guaranteed in perfect condition throughout.—239, Goldhawk Rd., Shepherd's Bush. [2385

TRIUMPH 1922 4h.p. chain drive Gloria Combination, footboards, Lucas lamps and horn, absolutely as new; £100.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [3224

£17 down and 12 monthly payments of £4/5.—1919 4h.p. Triumph Combination, perfect condition throughout, speedometer, full equipment, any trial; discount for cash.—Langford's, 37, Cricklewood Broadway N.W.2. [3348

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1915 Williamson Combination, guaranteed powerful lot; £50.—Ross, 86, High Rd., Lee. [2931

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1922 Wolf-Villiers, 2-speed, as new; 27 guineas.—19, Valnay St., Tooting. [3379

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29 Guineas.—1920 Wooler, a gift.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [2976

WOOLER 2¾h.p. 1920 model, reconditioned to 1922, lamps, horn, new tyres, speedometer, prior cost £55, seen by appointment; offers.—Shackleton, 135, Fawnbrake Avenue, Herne Hill, S.E.24. [2753

£27/10.—Wooler 1920 2¾h.p., flat twin, spring frame, variable gear, lamp, generator, Cowey mechanical horn, pump, tool kit, etc., tax paid.—Delancey St. Garage, Camden Town, N.W.1. [3003

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8h.p. Zenith Combination, all on, good order; sell cheap or exchange solo and cash.—Baverstock, 83, High St., Andover, Hants. [3098

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ZENITH 1920 8h.p Sports, almost new condition, mechanically perfect; £60; will ride 100 miles.—Hudson, The Croft, High Barnes, Sunderland. [2801

8h.p. Countershaft Zenith Combination, 1915, excellent condition, lamps, speedometer, electric horn, spares, good tyres; £42.—69, Kingston Rd., New Malden. [2991

1922 Shop-soiled 5-6h.p. Countershaft Zenith, to clear, £75; 1922 shop-soiled 3½h.p. Zenith-Bradshaw, £70.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W.1. [3274

55 Guineas.—1922 3½h.p. Zenith-Bradshaw, all-chain drive, 3-speed, clutch, K.S., cost £120 a few months ago, equipped, licensed, must sell.—A. V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [3089

1922 8h.p. Super Sports Chain Drive Zenith, Montgomery sporting sidecar, Magdyno lighting set, electric horn, Wex carburetter, large pipes; £130.—"Queensthorpe," Sydenham. 'Phone: 957. [3089

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BOOTHS Motories, Blackpool.—Four 2-speed P and M.'s; £17/10/6, £29/10/6, £32/10/6, £39/10/6.

BOOTHS Motories, Blackpool.—3½h.p. Triumph, Philipson pulley, £18/10/6 Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; Sun, 2-speed, £25/10/6.

BOOTHS Motories, Blackpool.—Lady's 3-speed motor cycle, £16/10/6; 6h.p. Rex combination, £17/10/6; 3½h.p. Humber, £19/10/6.

BOOTHS Motories, Blackpool.—6h.p. Bat, countershaft, 3-speed, £39/10/6; 3½h.p. Premier, £22/10/6; 5h.p. Rudge, 2-speed, £25/10/6; 8h.p. Rudge, 3-speed, £27/10/6.

BOOTHS Motories, Blackpool.—Singer, 2-speed countershaft, £24/10/6; 2h.p. lightweight, magneto, £11/10/6; 2-speed Douglas, £24/10/6.

BOOTHS Motories, Blackpool.—1921 Rudge-Multi, dynamo lighting, £52/10/6; 4h.p. Douglas, £55/10/6; 1920 Douglas, 3-speed, clutch, £52/10/6; 5h.p. Indian, 2-speed, £29/10/6; 7h.p. Indian, £29/10/6; 3h.p twin Enfield, £34/10/6.

BOOTHS Motories, Blackpool.—1920 Martinsyde combination, £85/10/6; 1919 Indian, aluminium sporting sidecar, dynamo lighting, £85/10/6; 1920 Matchless combination, £85/10/6; 3½h.p. New Hudson combination, £39/10/6; 8h.p. Premier combination, £39/10/6; Enfield combination, £39/10/6.

BOOTHS Motories, Blackpool, 1921 New Hudson, 2 speeds, kick-starter, £39/10/6; 1920 Douglas combination, £59/10/6; £90 Ruby spring frame lightweight, fully equipped, £55/10/6.

BOOTHS Motories, Blackpool.—8h.p. Carden Cycle Car, £32/10/6 Zebre light car, 4-cyl., electric ghting and starting, detachable wheels, £175/10, cost £345 Several others, cheap. Push cycles taken in exchange.—Booths Motories, 294, Waterloo Rd., Blackpool 'Phone: 1451 8294

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WANTED, 5-6h.p. Combination 1919-20, cheap for cash.—28, Gamston, Retford. [2732

SOLO or Combination wanted, cheap, for cash.—51, Upper Richmond Rd., Putney. [3387

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WANTED, 2-stroke, cheap, cash on sight, no waiting. Duval, 61, Grand Parade, Harringay. [1993

WANTED, Sunbeam 3½h.p. solo or combination; must be cheap.—King, Egrove, Oxford. [3083

1922 A.J.S. wanted; state price, particulars.—Lloyd Davies, Crumlin, Dyffryn, Merioneth. [3046

WANTED, late Combination, single-cyl.; about £40.—King, Egrove, Kennington, Oxford. [3084

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£20 for 3½h.p. to 4½h.p. countershaft and K.S. Solo; year and full particulars to H., 168, Paley Rd., Bradford. [2699

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WANDSWORTH Cash Buyers.—Triumphs, Enfields, Douglases, Sunbeams, A.J.S.s, Matchlesses, Rovers.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3368

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B.S.A. Auto-wheel, new condition, runs splendid; £6/10.—A. Hemingay, Whitley, Grenoside, Sheffield. [2814

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50 BRAND new lightweight and heavyweight sidecars, complete with tyre; £7/7.—Headley Manufacturing Co., Cumbernauld, Glasgow. [2736

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1923 Morgans are available from Gibb, Northgate, Gloucester. 'Phone: 852. [0969

8h.p. Pyramid-Jap, air-cooled, 2-seater cycle car; £30.—17, Heaton Rd., Mitcham. [3122

1922 Morgan De Luxe, water-cooled, M.A.G. engine; £120.—Avey 1, Park Rd., Teddington. [2740

T.B., 1920, splendid roomy 8h.p. 2-seater, new condition.—Bunting's Exchange, Wealdstone. [3153

A.V. Monocars, several in stock; from £35.—A.V. Specialist, 2a, Eleanor Grove, Hogger's Corner, Barnes [3071

1921 De Luxe G.N., every possible accessory; £90; exchanges.—24, Balliol Rd., North Kensington. [3141

ROVER Eight 1923 models from £180; motor cycle exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7517

AT Edwards.—1922 8h.p. Popular model Morgan, hood, screen, speedometer, in very nice condition; £100.—Below.

1920 8h.p. Morgan, De Luxe model, J.A.P. water-cooled engine, speedometer, discs, hood and screen, tax paid, splendid condition throughout; 90 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3353

1921 Carden 2-seater, dynamo lighting, equipped, as new, licensed, original tyres; £50.—47, Leigh Rd., East Ham [2879

MORGAN 1922 De Luxe Model, air-cooled J.A.P. engine, fully equipped; £95.—P. J. Evans, John Bright St., Birmingham. [3417

8h.p. 2-seater Alldays' Midget, hood, screen, wire wheels, etc., water-cooled engine; £60.—Eton and Co., Ltd., 260, Balham High Rd., S.W. [2695

COVENTRY PREMIER 1921 4-wheeler, dynamo lighting, spare wheel, small mileage, as new; £120.—51, Upper Richmond Rd., Putney. [3386

MORGAN 1921 De Luxe, M.A.G., speedometer, acetylene lighting, has been most carefully run; £120.—Summers, 70, Camden Mews, N.W.1. [2711

84 Guineas; exchange.—1914 Morris-Oxford 9h.p., 4 cyls., 2-seater, dickey, 5 detachables, new hood, screen; any examination and trial.—Seabridge. Below.

29 Guineas; exchanges.—Rover 2-seater 6h.p., hood, screen, lamps, high side doors, useful little runabout.—Seabridge. Below.

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1922 De Luxe G.N., dynamo lighting, spare wheel, discs, every accessory, £135; ditto 1920, £80; exchanges.—24, Balliol Rd., North Kensington. [3140

46 Guineas.—Bleriot Whippet, 1921, 5 detachable wheels, dual lighting, hood, screen, any trial.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [3072

1921 Carden 2-seater, fully equipped, hood, screen, electric lighting, fully guaranteed; £65.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3292

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G.N., 1920 Standard Model, electric lighting; £87/10 cash, exchange instalments.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3 'Phone: Avenue 5548. [0068

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AT Edwards.—1921 8h.p. Bleriot-Whippet, handle-starter, electric lighting, spare wheel, hood and screen; very nice condition throughout; 62 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3355

NEW 1922 De Luxe water-cooled Morgan, used twice, Lucas dynamo lighting, electric and bulb horn, hood cover and every other accessory; will accept £140; exchanges.—24, Balliol Rd., North Kensington. [3139

1921 Morgan De Luxe, 10h.p. w.c. M.A.G., fully equipped, dynamo lighting, perfect order, fully guaranteed, tax paid; £130.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. Phone: Dalston 2408. [3289

COVENTRY PREMIER 8h.p. 1922, new in June double dickey, dynamo lighting, tax paid, insurance inclusive, mileage 3,000, tyres unpunctured; £160; excellent condition.—Wilkins Simpson, opposite Olympia, London. [2791

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1922 Morgan, Family model, water-cooled Blackburne, Cowey speedometer, fitted with Jeff unpuncturable tube to rear wheel; mileage only 650; guaranteed; perfect order; £150.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3290

1923 Morgan De Luxe, w.c. J.A.P., dynamo lighting, all-black hood, aluminium dash and beading, brand new; immediate delivery; £170; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3287

TWO Slightly Shop-soiled 1922 G.N.'s, specially tuned up, dynamo lighting, hoods and screens, 2-seaters, with ample dickey; no reasonable offer refused; exchange or deferred payments for either.—The Motor House, 20, Finchley Rd., N.W.8. Tel.: Hampstead 7355. [3399

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HALIFAX.—1923 Lagonda, £265; cash, exchange, or Deferred.—Motor Exchange, Horton St., Halifax.

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HALIFAX.—1923 Stoneleigh 3-seater; £185.—Halifax Motor Exchange, 25, Horton St., Halifax. [2848

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£155.—Singer, 1920, dickey, dynamo lighting, spare wheel, perfect, drive 30 miles.—34, Clarence Rd., Horsham. [2773

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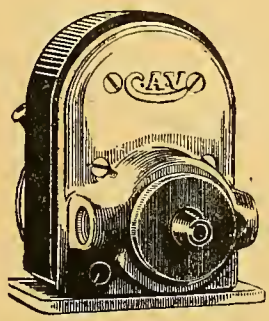

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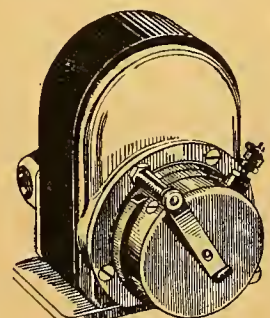

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119 Guineas.—Rover 1922, Lucas dynamo, spare wheel and tyre, hood, screen, mat, lamps, horn, pump, jack, and tool kit, tax paid.—Delancey St. Garage, Camden Town, N.W.1. [3004

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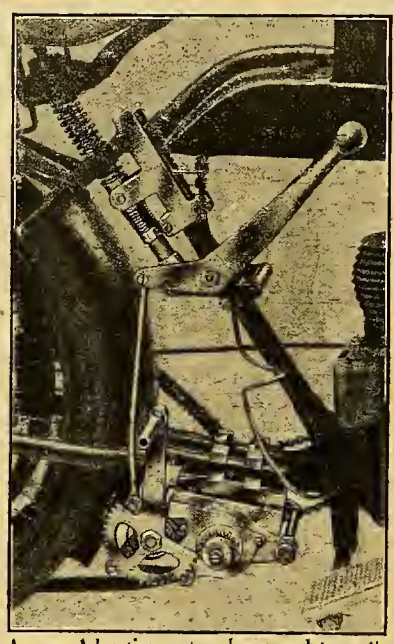

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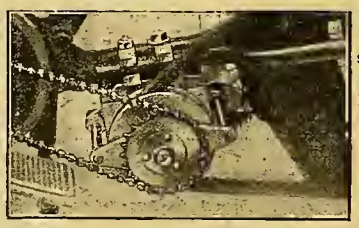

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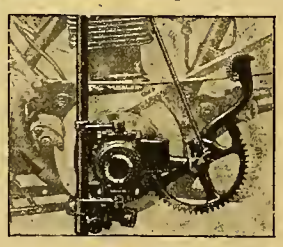

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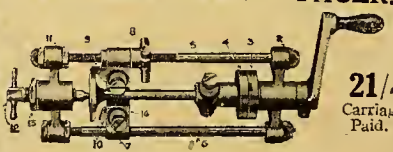

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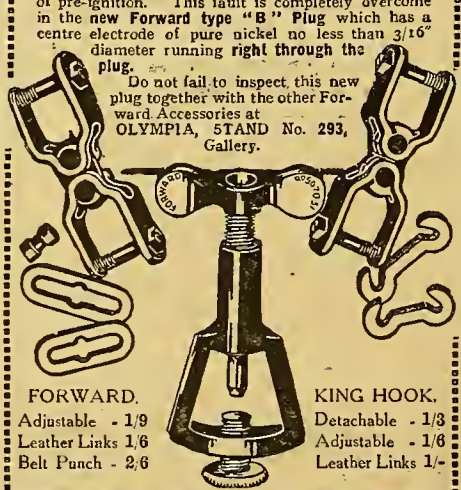

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SITUATIONS WANTED.

MOTOR Engineer (26), 12 years' experience in fitting, machining, tuning, testing, electrical equipment, all classes of repairs to motor cycles and light cars; excellent references.—82, Mill Hill Rd., Acton. [3099

EXPERT Motor Cycle Salesman Demonstrator, 23 years' experience, just returned from the Far East with 12 years' connection with Indians, Burmese, Chinese, Malays, Asiatics, etc., desires re-engagement as representative, last engagement 7 years, highest credentials, good organiser, ready to leave at once; appointment at Olympia Show.—S. J. G., 15, Coleridge Rd., Crouch End, London. [2679

CONSULTING ENGINEERS.

H. ALBAN BRAYSHAW, A.M.I.A.E., 9, Cuerdon St., Byrom St., Liverpool. 'Phone: North 168. [0945

FINANCIAL.—PARTNERSHIPS.

PARTNER Wanted with capital about £500 or more to manufacture useful motor accessories engines, etc.; very good prospects.—Box 4878, c/o *The Motor Cycle*. [3202

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

MOTOR Cycle and Cycle Business, profitable concern, market town Midlands, takings £2,300 p.a., excellent premises, house; price £900, all at.—Drake and Nutter, 19-21, Farringdon St., E.C. Others various parts. Particulars post free. [0954

PERSONAL.

TO Show Visitors.—Will would-be purchasers of second-hand machines please note that in addition to those advertised by us being from £5 to £50 under prices now ruling, the advertised date of every machine sold is quoted on buyer's receipt.—Delancey St. Garage, Camden Town, N.W.1 (5 minutes' 'bus ride from Gt. Portland St.). [2999

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms: 7½%, not chargeable if machine unsold; motor cycles and cars bought and sold for cash. Nearest goods stations: Falcon Lane, L. & N.W.R.; Wimbledon, L. & S.W.R. and G.W.R.—Sole address, Palmer's Garage, Tooting, London. [3243

WANTED.

KINGSBURY frame and forks, cheap.—76, Dalling Rd., Hammersmith. [2828

5-6h.p. Rex crankcase, Bonniksen for Indian; cheap for cash.—Worsell, Engineer, Sevenoaks. [3039

WANTED, Morgan G.P., 1920, round; £70.—Particulars, Brierley, 68, Moorhey St., Oldham. [2666

SECOND-HAND Tank for 7-9h.p. Harley; also sidecar, cheap.—Pennell, 36, Gordon Rd., Ealing. [2700

2¾h.p. Douglas engine, complete or incomplete; state lowest price.—Box 4866, c/o *The Motor Cycle*. [2851

WANTED, N.S.U., 2-speed, good condition, suit 3½h.p. Rudge.—Hammond, Waterloo Rd., Shepton Mallet. [2799

WANTED, 14-tooth Engine Sprocket, 4h.p. Blackburne.—Smith, Winton Cottages, Ashamp-stead, Reading. [2913

MORGAN wanted; Blackburne 4h.p. 1920 Combination and £40 offered.—Fred, 58, Malvern Rd., Dalston, E.8. [3390

WANTED, Antone 3h.p. cylinder and piston or engine, complete, cheap.—Matthews, Blacksmith, Tovilon, Mon. [2759

AUTO-WHEEL and Lightweight, condition immaterial; state lowest price.—97, Latchmere Rd., Battersea. [2217

ENFIELD Frame, tank, cut down underslung chassis, 6t 6-8h.p. J.A.P.—Howard, 4, Oakdale Terrace, London Rd., Sittingbourne. [2692

WANTED, rear forks and stays for 1914 3½h.p. Humber motor cycle, also kick-starter for same.—Knights, 53, Manor Rd., Rugby. [2962

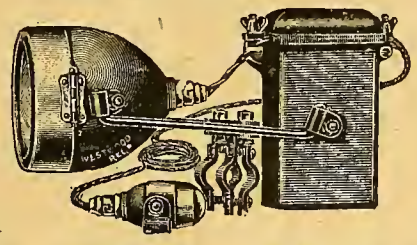
PHILIPSON or Grade Gear, also 2- or 3-speed gear box, also old Triumph motor cycle; state prices.—Jack Ward, 11, Radford Rd., Leamington Spa. [3124

OLD Man Hep. purchases engines, gears, spring forks, complete machines, J.A.P. engines, and parts.—19, Wilcox Rd., South Lambeth, London, S.W.8. 'Phone: 0858 Brixton. [3321

MOTOR Cycles, light car, spares, and accessories, new or S.H.; prompt cash paid for above.—McNeilie and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [7019

WANTED, second-hand motor cycle or stationary engine, complete, good condition, 3h.p. to 5h.p., cheap for cash.—Full particulars to Favarger, Alkham Rd., Kearsney, nr. Dover. [2755

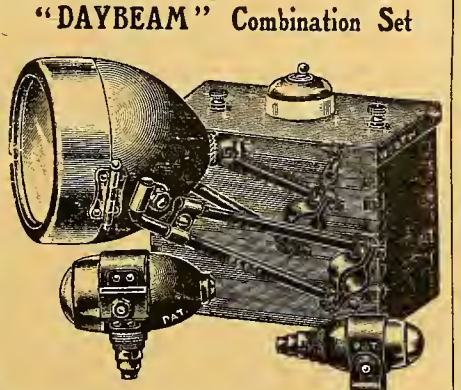
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

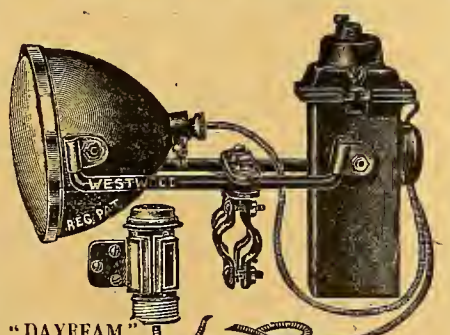
Complete Outfit, List No. 30/1, Price £5 5 0

"DAYBEAM" Combination Set



The set comprises Daybeam 7in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

Complete Outfits, List No. 30/2, Price £7 7 0



"DAYBEAM" Complete Electric Set for Lightweights

Solo Outfit, £3 3s.
Combination Outfit, £3 15s.

WRITE FOR LIST NO. 7

Westwood Special Lines are stocked by all reputable agents.

TRADE MARK
WESTWOOD
RIM & PATENTS LTD
LAWDEN RD BORDESLEY BIRMINGHAM.

EXCHANGE.

INDIAN Combination for late solo.—See advertisement under Indian. [2952

ALLDAYS Car.—See advertisement under Cars.—Whisstock, Weedbridge. [2908

SWIFT 2-seater, very nice; wanted, motor cycle and cash.—67, Fernlea Rd., Balham. [3380

KICK-START Gardo Gear (noused), exchange tyres.—Clark, Llangunnor, Carmarthen. [2910

NEW Jacobean design sideboard, solid oak, for lightweight.—1, Clevedon Cottages, Cobham. [2088

DOUGLAS 2¾h.p. 1915, good condition, cash, for combination.—Monk, Golf Club, Ware. [2684

1920 Douglas Combination for Norton or good 5½h.p.—Bridge, 48, Tweedale St., Rochdale. [2652

1914 4½h.p. Combination and £20 for good countershaft combination.—Dobney, Tongham, Surrey. [2821

EXCHANGE Rover 2-seater for combination; sell £35.—Fisher, Springwell Rd., Heston, Hounslow. [2954

SIZAIRE 12h.p. 4-cyl. 2-seater, £40; exchange motor cycle.—Clark, 37, Manor Place, Hackney. [2961

2¾h.p. Douglas, 2-speed, Clandel-Hobson, exchange for lathe.—Andrews, 11, Robsart St., Brixton. [2887

4-SEATER 12h.p. Alldays Touring Car for 2-seater, motor cycle, or Morgan.—63, Solon Rd., Brixton. [3044

EXCHANGE 1921 5-6h.p. Brough, Sturmey 3-speed, for Triumph or similar.—King, Egrove, Oxford. [3085

ROVER Light Car, overhauled, new tyres, for late Matchless; sell £120.—10, Clarendon Rd., W.11. [3057

3½h.p. Pengeot, Bosch, new carburetter, for tricar, less engine; sell £10.—38, Bromham Rd., Bedford. [2735

EXCHANGE new 8h.p combination for 3-ton lorry.—Norfolk, Dorset Mews, Dorset Rd., Clapham, S.W. [2941

EXCHANGE 1914 Scott, countershaft; Premier or Rudge-Multi preferred.—152, Holme Lane, Sheffield. [3412

1923 Harleys!—Liberal allowance exchanges.—Write, "Parwood," Harley Agents, East Hill, Wandsworth. [2971

EXCHANGE Countershaft Triumph Combination for lightweight.—239, Goldhawk Rd., Shepherd's Bush. [2886

3½h.p. Triumph, modernised, fast, reliable, all on; £20; exchange.—132, Silvermere Rd., S.E.6. [2868

EXCHANGE your present machine for a new car or motor cycle at Keys, 8 and 10, Bond St., Ealing. [9448

EXCHANGE Rudge-Multi, late model, and £10 for higher power twin.—Kennard, 78, Yerbury Rd., Holloway. [2796

CALTHORPE 2¼h.p., 2-speed, for higher power 2-speed, or sell £25.—46, Gladstone St., Longton, Staffs. [2698

1921 Triumph, 4h.p.; exchange lightweight, cash according date.—"Doriwyn," Cambridge Rd., Eastbourne. [2988

GRAMOPHONE, massive Louvre cabinet grand, 40 guinea model, for motor cycle.—Tovey, 76, Cromwell Rd., Luton. [2757

A.J.S. Combination, luxurious outfit, dynamo, hood, screen, spare wheel, £105, for 3-wheeler.—89, East Hill, Wandsworth. [2970

1922 Coventry Premier 4-wheeler, as new, for something cheaper and cash.—151, Amyand Park Rd., Twickenham. [3395

£10 and 3½h.p. B.S.A. with Watsonian sporting sidecar, good condition, for big twin; sell £25.—Peters, Itchenor, Chichester. [2683

WANTED, 3-wheeler in exchange 1921 Bleriot-Whippet, dynamo; sell £85.—10, St. Brides Rd., Egremont, Wallasey. [3047

EXCHANGE 10h.p. 2-seater car, electric lights, for motor cycle or combination and little cash.—The Fire, Kearsney, Dover. [2752

F.O.C.H., the exchange specialists; best prices allowed; easy payments arranged.—5, Heath St., Hampstead (near Tube). [3863

SCOTT Standard Sidecar Wanted; exchange gent's Raleigh 3-speed cycle, practically new.—42, Marine Terrace, Margate. [2964

1-TON Lorry, pneumatics, running, for P. and M. or Douglas combination; cash adjustment.—4, Auckland Rd., Doncaster. [3034

NEARLY new Henderson dynamo solo, exceptionally fast, consider cheaper machine and cash.—9, Red Hill, Bassett, Southampton. [2958

SOUTHPORT.—See A.J.S., A.B.C., B.S.A., Norton, Rudge, and Scott columns.—Kents, 417, Lord St., Southport. 'Phone: 1273. [3064

2¾h.p. Douglas Gear Box, perfect condition, for 1917 Harley-Davidson tanks.—3, Prospect Place, Combe Down, Bath. [3101

EXCHANGE.

EXCHANGE Posh 1920-21 Clyno Lightweight and cash for higher power or combination.—27, Cornnne Rd., Tufnell Park. [3393

EXCHANGE Ivy 2-stroke, 2½h.p., and cash for higher power solo or combination.—239, Winchester Rd., Highams Park. [3097

HALIFAX.—50 second-hand combinations; keen exchanges; deferred payments taken.—Halifax Motor Exchange, Horton St., Halifax. [2845

BLACKBURNE 4h.p., 1920, fully equipped, as new; exchange lightweight and cash; sell cheap.—143, Ravensbury Rd., Earlsfield, S.W. [3313

1922 Ivy Three, all-chain, Moss 3-speed, clutch, kick-start, and little cash, for late combination.—172, Rushby Mead, Letchworth, Herts. [2804

EXCHANGE 11h.p. 2-seater car, in perfect condition, for combination, or sell £75.—85, St. Stephen's Rd., Sneiton, Nottingham. [2995

SINGER 1920 2-seater, lighting and starting; £165; part exchange Morgan or combination.—J.S., 8, Conrthope Rd., Hampstead, N.W.3. [3037

15h.p. Humber Touring Car, 4-cyl., gate change, running order; £30, or exchange.—Ward, South Western Garage, New Malden. [3363

ITALA Ton Van, 24h.p., 4-cyl., 4 speeds, detachable rims, any trial; exchange; sell £40.—Ward, South Western Garage, New Malden, Surrey. [2555

COVENTRY PREMIER 1921, dynamo lighting, spare wheel, as new, exchange solo or combination and cash.—51, Upper Richmond Rd., Putney. [3385

DAIMLER Landaulet, splendid order, would accept motor cycle and cash.—Lieut. S., 12, Greville Place, Kilburn. 'Phone: Maida Vale 1819. [2673

SPRING Frame Ruby 3h.p., 1921, A1 condition, for a modern machine suitable for sidecar, or sell; £44.—8, Cornwall Mews South, S.W.7. [3022

EXCHANGE 1920-21 Triumph Combination, practically new, for lightweight and cash.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [3029

EXCHANGE 1917 6h.p. Campion-Jap Outfit, beautiful condition, equipped, tax paid, for something smaller and cash.—103, Moore Pk. Rd., Fulham. [3017

EXCHANGE Morgan, Grand Prix, registered as 1918, J.A.P., dynamo, speedometer, for 1921 Triumph combination.—Dennis, 5, Hitchin Rd., Shefford, Beds. [2835

MORGAN 1920, M.A.G., electrics, hood, screen, good tyres; exchange high-powered combination and cash; evenings.—53, Patshull Rd., Kentish Town. [3393

MORGAN, Grand Prix, 1921-2, M.A.G., dynamo lighting, aluminium dash, unscratched; exchange offers and cash.—7, Cowdrey Rd., Wimbledon. [3207

1922½ 8-10h.p. Royal Ruby Combination, as new, Lucas Magdyno, every gadget; exchanges; see Royal Ruby coluumn.—Ewers, Newton Rd., Burton-on-Trent. [3032

CHATER-J.A.P. Combination 8h.p., all chain, electric, Baks, Dunlops, Magnuma, sprung sidecar wheel, exchange Henderson solo; sale £60.—46, Cranbury Rd., Eastleigh. [2782

EXCHANGE Alldays-Allon 2½h.p., good condition, with cash, for countershaft Triumph or similar, or one needing repairs.—R. Davies, King Coed, nr. Usk, Mon. [2826

A.C. 1921 2-seater, dickey, perfect, as new, all on, exchange A.J.S. combinations, Morgans, cash adjustments, sell cheap.—Carter, Jeweller, 15, Fishergate Hill, Preston. [2678

HUMBER 3½h.p., 2-speed, lamps, horn, not taxed, good running order; £18; exchange with cash for modern motor cycle, combination, or car.—Kearsney Garage, Dover. [2751

TRIUMPH, brand new, all-chain combination, for Norton or similar and cash.—4, Berkeley Mews, Connaught St., Marble Arch, London. 'Phone; Paddington 1177. [3169

EXCHANGE brand new 1923 Rover 8h.p. for second-hand motor cycle or car and cash.—Wilkins Simpson, opposite Olympia, London. Tel.: Hammersmith 238. [2793

10h.p. Darracq 2-seater, dickey, 4-cyl., gate change, low, fast, smart, good puller; exchange combination or Morgan, cash either way.—Ewers, Newton Rd., Burton-on-Trent. [3033

MOTOR Cycle Show, Olympia.—We shall be there prepared to conclude exchange deals for anything. Happy to see you.—Buntings, Wealdstone. 'Phone: Harrow 193. [3205

ROVER 8h.p., late 1922, in new condition, original tyres, etc., paintwerk unscratched, exchange for combination and cash.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3340

EXCHANGE Ford 1919 Touring, overhauled, excellent condition, tax paid, for solo, combination, cycle car; cash adjustment.—Write, Heath, 4, St. Stephen's Rd., Hounslow. [3091

B.S.A. Combination 4½h.p., 1916, electric lighting, Easting, hood, B.S.A. sidecar, enamel and plating as new; exchange solo and cash.—17, Sussex Rd., New Malden. 'Phone: 138. [2983

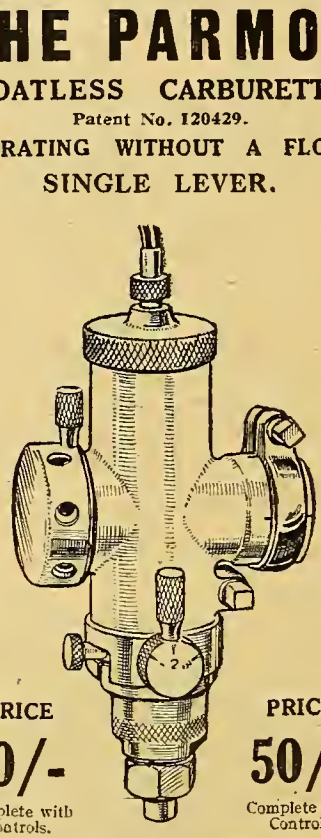
THE PARMOR

FLOATLESS CARBURETTER

Patent No. 120429.

OPERATING WITHOUT A FLOAT.

SINGLE LEVER.



PRICE 50/- Complete with Controls.

PRICE 50/- Complete with Controls.

All the advantages of the Float without the disadvantages.

WILL NOT FUNCTION ON TWO-STROKE ENGINES.

READ THIS!

GUARANTEED TO GIVE

BETTER RESULTS

ON ALL SINGLE CYLINDER ENGINES, 3 h.p. UPWARDS, AND TWINS.

NO FLOODING NECESSARY FOR STARTING UP.

NO PERIOD. EASY STARTING.

NO LOSS OF PETROL AT ANY SPEED.

GREATER POWER AT LOW SPEEDS.

GREAT FLEXIBILITY.

LOW PETROL CONSUMPTION.

SLOW RUNNING.

VIOLENT ACCELERATION AT ALL SPEEDS.

NO KONKING.

PERFECT ATOMIZATION.

THE PARMOR CARBURETTERS, Ltd.,

CARLTON HOUSE EXTENSION.

BIRMINGHAM.

EXCHANGE.

EXCHANGE Late 1919 6h.p. A.J.S. Combinatio spare wheel, speedometer, etc., for good s Triumph or combination.—Hillier (side bell), 127, Mark's Rd., North Kensington. [31

1921 2-seater Bleriot-Whippet, hood, screen, sp wheel, dynamo and acetylene lighting, privat owned; seen Berkshire; exchange for combinatio —Box 4833, c/o *The Motor Cycle*. [27

EXCHANGE brand new 1923 Coventry Prem 4-seater 10h.p. 4-cyl. for any motor cycle car and cash.—Wilkins Simpson, opposite Olymp London. Tel.: Hammersmith 238. [27

EXCHANGES a Speciality.—Good second-hand 2- a 4-seaters at bargain prices. I also supply n Matchless solos and combinations.—Seabridge, Hans Rd., East Dulwich. Sydenham 2452. [69

1918 A.V. Monocar, 6h.p. J.A.P., thoroughly ov hauled and repainted, as new, discs, electr lighting, etc., exchange for real good solo, late mod —Wigley, Walgrave, Northamptonshire. [30

1922 Dunelt Combination, 4 28×3in. interchang able wheels, legshields, lamps, horn, Cow speedometer, mileage under 2,000 for 8h.p. twin co bination.—Offers to Lucas, Builder, Usk, Mon. [30

B.S.A. 3½h.p. T.T., complete, less gear box, n handles, forks, tank, mudguard, tool bags, fra re-stoved, exchange Hobart 2¾h.p. J.A.P., gears simila Douglas, or sell.—Cooper, Charlotte Place, Margate. [28

EXCHANGE Rover 3½h.p. 1914 Combination, Luca lamps, 3-speed, speedometer, new tyres, hor and £1 per week for 15 months for good two-seat combination; Surrey.—Box 4874, c/o *The Moto Cycle*. [319

GOOD Landaulet in Exchange for good combinatio Matchless preferred, cash adjustment, value £12 dynamo lighting, speedometer, splendid condition; dri away.—Avenue Motors, 373, London Rd., Thornto Heath, Surrey. [331

EXCHANGE 10-15h.p. Seabrook R.M.C. Tourin Car, dynamo lighting, starter, hood, side cu tains, spare rim and cover, speedometer, all in pe fect condition, for landaulet.—188, High St., Win ford, Cheshire. [318

1917 Horstman 2-seater Car, 9h.p., monobloc, w.c 4 cyls., ready for the road, tax paid, spar wheel, etc., for good combination and cash either way; or sell £85.—Advertiser, 39, Essex Rd., Isling ton, London, N.1. [318

EXCHANGE 1915 W.D. 7-9h.p. Indian, spring fram kick-start, 2-speed, hand-foot clutch, all in firs class condition, for 3½h.p. Twin Indian or any chain driven lightweight.—John Turner, 84, Kirkman-Hulm Lane, Longsight, Manchester. [282

EXCHANGE 1921 G.N. 2-seater and dickey, dynam lighting, excellent condition; £100, or exchang for motor cycle or combination and cash to value.— Waldron Motor Mart, 645, Garratt Lane, Earlsfield S.W.17. 'Phone: Wimbledon 607. [305

MORGAN 1920 G.P., M.A.G. engine, disc wheels new tyres, speedometer, blue finish, as new, £89 also Rover Eight 1921, speedometer, in beautifu condition, £110; exchanges entertained.—30, Thornset Rd., Earlsfield, London. 'Phone: Latchmere 4388 [316

EXCHANGE 1922 6h.p. Combination, Coventry Victor engine, Sturmey-Archer 3-speed gear box kick-starter and clutch; accept £60 cash, or exchang for a lighter machine and cash.—Waldron Motor Mart 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wim bledon 607. [305

EXCHANGE your motor cycle for a light car Rover 8, Coventry, Premier, etc., always in stock trial run with pleasure. Deferred payments i required.—Newnham Motor Co., 223 and 245, Hammer smith Rd., London, W.6. 'Phone: Hammersmith 1325 and 80. [322

COWEY 1915 10h.p., 4-cyl., w.o., 2-seater, dickey C.A.V. dynamo lighting, hood, screen, 8 detach able wheels, a thoroughly sound and well-made car, an trial; for a posh combination or Morgan and cash or sell £120; appointment only.—20, Treen Av., Hop ger's Corner, Barnes. [307

EXCHANGE.—If you wish to exchange your presen machine for a new or other second-hand moto cycle, combination, or car you cannot do better tha get in touch with us. Best allowances, best deliveries best everything. Full list of new and second-han machines free on request. 100 to choose from. De ferred payments if required.—Newnham Motor Co., 22 and 245, Hammersmith Rd., London, W.6. 'Phone Hammersmith 1325 and 80. [322

EXCHANGES.—Any motor cycle or car taken i part exchange for a new car; very best price allowed; immediate attention upon full particulars distance no object; arrangements made anywhere call, write or 'phone; any make supplied; authorise agents for Coventry Premier, Rover, B.S.A., Calcot Singer, Swift, Bean, Chevrolet, Lea-Francis, Humber etc.; easiest of easy payments arranged; let u quote you for any make of car; established 30 years —Wilkins Simpson, opposite Olympia, London Tel.: Hammersmith 238. [279

REPAIRERS

REPAIRS and alterations to any make machine estimates free.—Bright and Hayles, 78, Church St Camberwell. [274

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).

BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2970 and 2971 Midland.

MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

The Show in Retrospect.

LIVING up to promise, the Olympia Show which closed last Saturday may be proclaimed unhesitatingly as one of the most interesting motor-cycle exhibitions ever held. Apart from the undoubted advance in design revealed, the Show was a standing monument to the British motor-cycle industry, which has grown from such small beginnings to a magnitude enabling it annually to hold an exhibition capable of attracting such large numbers of visitors.

Interest in motor cycles continues to increase, as evidenced by the fact that last week over 145,000 riders and potential motorcyclists bought *The Motor Cycle* Show report.

By drastic reductions in prices, the manufacturers have brought all types of motor cycles within the range of greatly increased numbers. In spite of more elaborate and costly specifications, prices are almost at pre-war levels, which, considering the present-day purchasing power of the pound sterling, means that 1923 motor cycles represent greater value than has ever before been offered. Furthermore, prices appear to be stable and likely to remain so, since it was apparent at Olympia that the majority were unable further to reduce their figures in order to compete with the, to them, alarming cuts made by one or two of the leading firms.

In addition there was an entirely new class of buyer at the Show. We refer to the hundreds who were drawn there by the new ultra lightweights and motorised bicycles. Undoubtedly there will be a great influx to the ranks of motorcyclists next year.

For the first time since the war there was also practical interest on the part of wholesale buyers from overseas, who were booking contracts for lightweights, a type of machine which Britain produces better than any other country.

Altogether, we think the exhibitor at Olympia has every reason to be as satisfied with the results of the Show as were the thousands of motorcyclists who expressed their approval of the efforts made to satisfy their demands.

An Amateur Road Race at Last.

AS recorded elsewhere in this issue, it is practically certain that a race for amateurs will be run in the Isle of Man next September. The Manx Motor Cycle Club has been promised an open permit, and this will be used for an amateur race over the Tourist Trophy course, the organising club being satisfied that the definition of an amateur suggested by *The Motor Cycle* in February this year, in every way covers requirements.

Now that the Manx Club and the Auto Cycle Union are in agreement over the race, *The Motor Cycle* has been invited (and agreed) to provide the trophy which shall be the premier award.

Without doubt the event will be an extremely popular one among amateur speedmen all over the British Isles, and as the term amateur has long needed a definition in the motor cycle world, the proposed amateur race may be regarded as a test of honour as well as of sheer riding ability. It will, therefore, behove every competitor to adhere strictly to the spirit and letter of the rules in order that motor cycling may take its place among those other sports in which the terms amateur and professional have a definite meaning.

The nature of the Manx course is such that super-tuning is not so important as skilful riding; therefore, no amateur in possession of a reasonably fast and controllable machine should hesitate to compete on this score.

The Manx Club is to be congratulated upon its perseverance and enterprise, which a very large section of riders will appreciate to the full.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY IXION

How is it Done?

A GOOD many British makers wish it were possible to construct motor cycles over here as cheaply as it is done in America. I heard two or three costing experts analysing the price of a certain imported twin-cylinder—and no dud at that. They decided that the actual cost f.o.r. at its trans-Atlantic town of origin, inclusive of overhead charges, but without allowing for manufacturers' profit, could not exceed £40. What would our roads be like next June if home conditions allowed the big Zeniths and Brough-Superiors and Matchlesses to be produced for retail sale at, say, £60?

What Did They Sell?

I WONDER what the exact volume of sales at the Show amounts to, apart from contracts with distributers and agents. I asked three friends on the Monday morning how they were doing. Their answers are appended (they were all small men):

A.—I've had over 1,000 inquiries.

B.—I sold one this morning.

C.—I sold 400 before I came up, and I've placed 160 more since the Show opened. As I'm only laying down 1,000 this year, I shall have a smile that won't come off by about Thursday.

Permutation and Combination.

THAT was the heading of the chapter in the algebra book which decided my schoolmaster that manual labour might prove to be my *forte*. But how I wished I'd mastered that chapter when I had to report how many models a certain firm turn out. They list eight different engines, and give you anything from three to six transmission options with each engine. Another concern's idea of a sound production policy is to stick rigidly to one size and type of engine and ring their changes on the fittings.

Transferable Dynamos.

AN electric lighting firm counter my demand for dynamos which shall be readily transferable from our 1922 to our 1923 machines by the remark that "Ours *is!*" I devoured their catalogue as a schoolboy tackles his second ice-cream—*l'appetit vient en mangeant*. Its brackets were ingeniously designed in all conscience; they would locate the dynamo adequately on almost any 'bus. The drive? Well, the type of drive which they push is a small friction wheel rubbing on the flywheel. As my flywheels are encased, I should have to cut a hole in the cheek of my crank case, and then make a cover to prevent the oil coming out; after which the aforesaid oil would undoubtedly destroy all grip between friction wheel and flywheel. A postscript added that pulleys were supplied for belt drive on inside flywheel machines. Quite apart from the trouble which a naked belt can give when it runs over small pulleys at short belt centres, there is absolutely no place on my machine for fitting a pulley. As the same is approximately true of very many machines on the market, I am driven to conclude that some of these electrical firms turn out dynamos without studying the motor cycles for which their dynamos are intended. Incidentally, the catalogue in question rather throws cold water on the so-called "dymags.," which are neat, efficient, and very easily fitted, though, unfortunately, too expensive for many of us.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

A Fact.

I SPOTTED a cheap machine labelled as possessing "automatic lubrication." Failing to discern any mechanism but a sump with a filler cap, I tackled the demonstrator. "You just fill it up through that hole, and it does the rest!" Unwilling to believe that he used nothing but flywheel splash on a constantly sinking oil level, I persisted, "Yes, but *how?*"

DEMONSTRATOR: "*The engine churns it into a kind of foam!*"

And there wasn't even a level peephole in the side of the crank case.

How to Draw a Crowd.

ACCORDING to an Olympia expert, there are three ways of causing a crowd to cluster around your exhibit. The first and simplest is to stage something that moves. (Gear boxes driven by concealed electric motors have been rather overdone. So have magnetos and speedometers. But an oil pump or a propeller mascot are a sure draw.) The next best is something that makes a noise. (Not a mere hooter. You can do the needful with a gear box if you are careful to look worried as you joggle the lever.) The best of all is to have an argument with a spectator. The man who criticises your exhibit foolishly is a god-send in disguise. You begin, loudly, "Hey, you, sir!" And then fall upon him. But you grow a little weary of it by the Wednesday.

Occasional Comments.—

Tantalising.

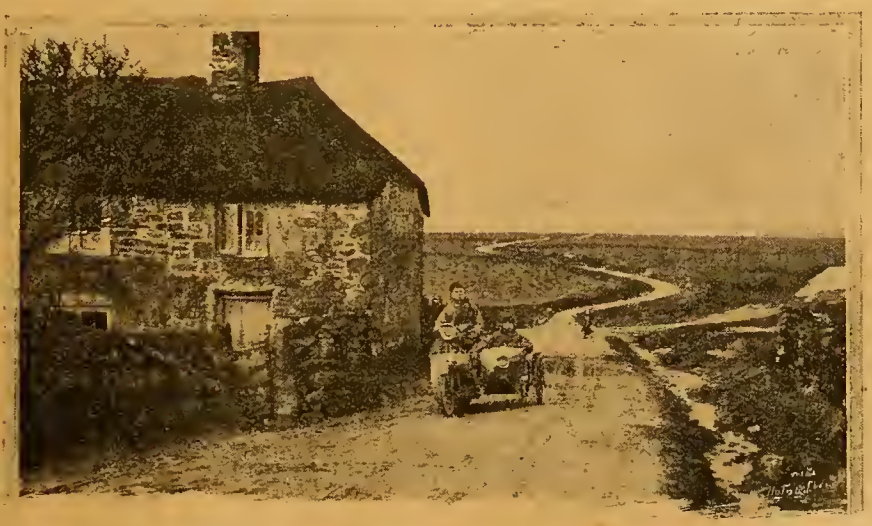
I HEAR rumours of a completely new lighting equipment, which eliminates oil, gas, and acetylene at one sheer swoop. What can it be? Is it a new radium paint to be applied to the rider's visage, or what? My lips are sealed for the moment, as the sergeant-major gurgled when a shell deposited a lump of fresh tarmac in his gullet.

Tempora Mŭtantur . . . .

I ALWAYS garnish my pages with Latin tags to camouflage the fact that I was educated partially in the gutter and partially at a Board school. What I want to say is that veterans like myself might be pardoned for going down on our hams and doing *pujah* to the modern sidecars and cycle cars, as the untutored Hindu did to the first locomotive which he beheld. My first passenger machine was a Century tandem—not at all bad. its chief merit being that the passenger was stuck right out in front to take the impact after any miscalculation on the driver's part. My second was an Excelsior forecar. You could remove the forecar, insert a spare wheel, and use the machine as a solo mount. If you did not deliberately take the forecar off in garage, it generally dropped off on the road. My third was a Dennis quad. Its best point was its mudguards—lovely rolled aluminium. The stage comedians junk car generally has four speeds—slow, slower, —— slow and ——, —— slow. My Dennis quad had only two—the two last. Then I bought a sidecar. It was a wonderful vehicle—but it went!

A Cloud on the Horizon.

THERE are those who say that the sidecar is past its zenith. Undoubtedly the modern "baby four" (otherwise a complete small car of Lilliputian dimensions) is going to hoist the red light over the passenger machine market. I am not so sure. Under equally scientific conditions of design and manufacture a 1,000 c.c. sidecar outfit *de luxe* must be appreciably cheaper than a 1,000 c.c. car. It should also be cheaper to run and have a better road performance. Second-hand small cars? Um! I do not like having to reap the harvest of another fellow's misdeeds. But, anyhow, the 500 c.c. sidecars are miles below small car prices; and whatever happens in the 1,000 c.c. sphere, the smaller outfits will remain.



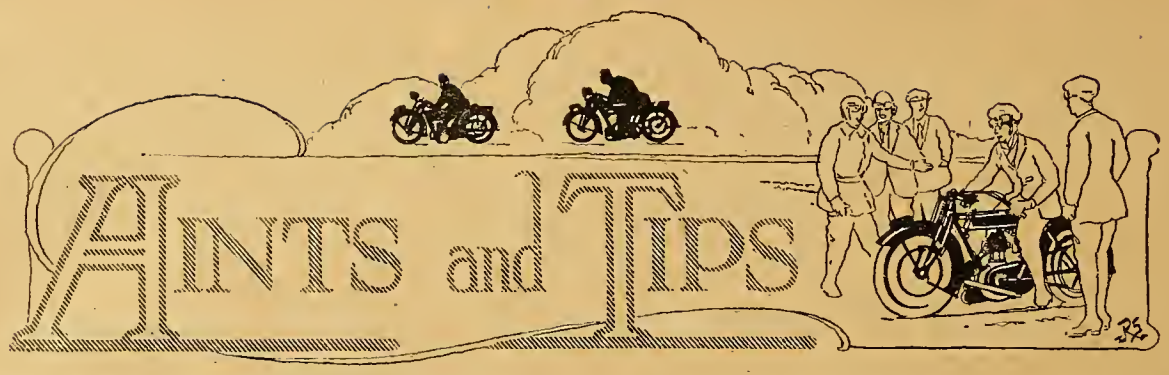
PICTURESQUE DARTMOOR. A typical moorland road near Tavistock. A district which Mr. Eden Phillpotts has freely portrayed in his epic novels set in that wild country.

Against Glare.

A READER has sent me a pair of experimental anti-dazzle goggles, which he will probably market shortly. Oddly enough I saw another pair next day designed on a trifling variation of the same principle. Both goggles had their lenses built up from two pieces of glass. In each case most of the peeping space was white, but each glass included a dark blue or green panel. In one case the subfusc insertion was a horizontal sector at the top of the glass; in the other it was a vertical sector on the right-hand side. On meeting a 30-98 h.p. Vauxhall at speed with huge lamps, the rider merely tilts his head downwards or to the left, according to which type of goggle he is wearing, and takes the glare through the coloured glass. A writer in *The Autocar* asserts that before glaring head lamps motorists behave like a small bird when fascinated by a serpent with a Svengali eye. That if we only had sufficient strength of mind not to look at head lamps, we shouldn't be dazzled. If that is so, I am a small bird, and have a weak will. I find the dark panels in both these goggles excessively comforting.

One Cause of "Bad Service."

INVESTIGATING one or two cases of riders receiving unsatisfactory "service" from factories, I have noticed that in more than one case the root cause does not lie at the door of the manufacturer. It is common knowledge that the weird oscillations of supply and demand since 1919 have at various times brought many concerns, little and big, into financial difficulties. In most cases these have ended at the introduction of fresh capital. Fresh capital has not infrequently implied a new management; and with the new management there has occasionally been a tolerably complete change of staff. It is obvious that these newcomers must flounder about a little before they can get all the ins and outs of a large and perhaps old-established business at their fingers' ends. They only discover gradually what their predecessors did, and how they did it. Card indices often get into a pretty muddle, for example, during the sequence of slack trade, dismissals, liquidator, fresh capital, new staff, and so forth. Such vicissitudes are very trying all round; and the unfortunate rider, who may suffer during the process, should remember that the harassed people at the factory end are having may be an even worse time than he is.



It has always been one of the chief aims of "The Motor Cycle" to assist the novice, and every issue since No. 1 appeared, twenty years ago, has contained authoritative and helpful articles so written that the most technical subjects are readily understood.

The following notes are intended exclusively for the beginner and are compiled in order to explain many points which at first may mystify the tyro. Even experienced motor cyclists are constantly exchanging "hints and tips," from which fact the novice must not, however, assume that the motor cycle as a vehicle is so complicated that it is necessary to acquire a technical and practical knowledge of motor mechanics before ownership may become a pleasure.

THE rawest novice, before he can understand anything about the running of his motor cycle, has to call to mind, without any prompting, the magic formula: induction, compression, explosion, exhaust. First get your gas into the cylinder, as a motorised version of Mrs. Beeton might say, then compress it—explode it—and finally push it out again. In the four-stroke engine the piston very obligingly assists in performing these operations automatically, stroke by stroke. In the two-stroke engine all four operations have to be contracted into one up and one down stroke of the piston. Thus the two-stroke engine has one power stroke every revolution of the flywheel, as against every other one of the four-stroke engine. Consequently the two-stroke engine ought to be a much smoother running power unit—equivalent, in fact, to a two-cylinder four-stroke with an even firing interval between its two cylinders.

TWO-STROKE AND FOUR-STROKE.

SUCH is actually the case when the engine is pulling under load. Then a two-stroke engine runs with an even, pleasing hum. There should be no jerkiness in the drive, even in top gear at a slow pace. Principally, however, the two-stroke engine scores by the absence of any valve gear, cam wheels, tappets, and valves themselves. The piston of a two-stroke engine is the only valve that is needed, and as it has got to go up and down the cylinder anyhow, it can quite easily open and close the inlet and exhaust ports on the way. The underside of the piston draws in the gas from the carburetter into the crank case, whilst the upper surface of the piston is compressing the next charge ahead on its way up the cylinder. When the explosion has taken place, the top of the piston uncovers the exhaust port, and the gas finds its own way out, aided by the rush of the incoming charge which the downward passage of the piston has compressed in the crank case until the piston uncovers the transfer port through which the gases pass to the cylinder from the crank case.

THE ADVANTAGES OF THE TWO-STROKE—

IF everything functioned as smoothly as it sounds in theory, one might imagine that the four-stroke engine, with its complicated valve gear, was an unnecessary elaboration. The two-stroke, however, falls short of the ideal in certain respects. In the first place, the intermingling of the incoming charge with the exhaust gas results in a proportion of new charge finding its way down the exhaust pipe without having served any useful purpose. This very naturally causes the fuel consumption of a two-stroke engine to be somewhat higher than that of an engine which usefully consumes all its fuel. Again, since the exhaust gas is left more or less to find its own way out of the cylinder, it follows that the silencing arrangements must offer absolutely no obstruction whatever to the passage of the gas, which will otherwise not quit the cylinder. Further, on small throttle openings there is insufficient inducement for the burnt charge to leave the cylinder, with the result that it dilutes the fresh gas and causes irregular firing. Hence a certain amount of spluttering with a two-stroke engine when running light.

—AND ITS DRAWBACKS.

IN weighing up the pros and cons of the two types of power unit, therefore, one may safely say that, for small machines of the kind known as "miniatures," the two-stroke engine has great advantages, in that there are no microscopical parts that should rightly be entrusted to a model-maker. For anything between 250 c.c. and 350 c.c. capacity the four-stroke possesses certain mechanical advantages which can be outweighed by the two-stroke only on the scores of economy and simplicity. Above 350 c.c. the four-stroke engine reigns supreme save for sundry unconventional types of two-stroke, of which one may instance the Dunelt, where the underside of the piston, which effects the induction of the fresh charge, and, later, its transference to the cylinder, is of greater diameter than the top, so that a larger volume of new gas is forced into the cylinder, and, correspondingly, more burnt gas is pushed out.

THE FOUR-STROKE ENGINE.

THROUGH A DESIGNER'S EYES.

A Technician Studies the Lessons of Present-day Motor Cycle Design.

Unit Construction. Vogue of Small Engines. Improved Manufacturing Methods.

AS one returns from Olympia and its maze of glittering motor cycles, two points stand out above all others in the mind of the observer. First the amazing price reductions effected on every hand, and secondly the influx of miniature motor cycles which are undoubtedly the skirmishers of a huge army of self-propelled vehicles suited to the requirements of that mysterious person "the man in the street."

Both of these features are directly attributable to technical improvements in design, manufacture, and production, and it is well that the buying public should realise that the present welcome tendencies have been brought about by hard work, competition, research, and road and track events.

When one comes down to detail, there is such a mass of minor improvement that it is impossible to do more than touch on some of the more important features, and the careful student of motor cycle design must rely to a certain extent on his own observation and on a careful perusal of the detail descriptions already published in the pages of *The Motor Cycle*.

Unit Construction.

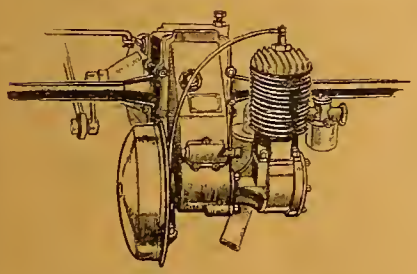
The limits in weight reduction, compact design, cheap construction, and efficiency are not likely to be reached until the question of unit engine and gear construction has been further explored. Yet until recently the British firms which had tackled the problem seriously were almost negligible, and this in spite of the fact that almost every post-war motor cycle of note emanating from either America or the Continent included this feature. Now, however, we see a change, and there is a definite lead in this interesting direction, while there are excellent grounds for believing that even further new units will appear before the next Olympia exhibition.

By the employment of unit construction it is possible to eliminate the primary chain or alternatively to let it run under ideal conditions, immersed in oil. It is possible also to eliminate at least part of the normal magneto drive and to provide a constant flow of oil to all engine and gear parts without employing a single external pipe. In addition the inclusion of an oil well of reasonable magnitude and a considerable increase in the crank case area should help to cool the engine. All these features, either in detail or in bulk, are included in the various designs now before the public, though it is doubtful if, as yet, any material saving in weight has been effected. The tendency to adopt unit construction runs throughout the range of sizes from the largest to machines of under 200 c.c.

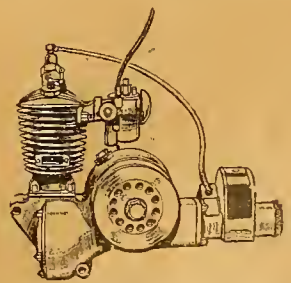
Six or seven makers dispense entirely with the front chain, while others still use a primary chain; an intermediate course of building up separate engine and gear box into a unit is followed by another school of design.

Pistons and Piston Rings.

On standard touring machines cast iron is retained almost universally as a piston material, and there has been very little alteration to the normal piston design. There



Power unit and gear transmission casing on the Argson invalid tricycle.



Transversely-set miniature two-stroke engine unit on the Peugeot.

1922 OLYMPIA IN FIGURES

100 exhibitors of motor cycles and miniatures (96 in 1921).

2-stroke engines were staged by 48 makers of motor cycles.

4-stroke engines were on 75 stands.

THE BATTLE OF TYPES.

1921-22-23 engines classified

	1921.	1922.	1923.
V twins	50	44	32
Single-cylinder four-strokes	48	63	130
Single-cylinder two-strokes	46	50	70
Flat twins	11	13	14
Four-cylinder	3	2	2
Two-cylinder 2-strokes	2	4	4
Water-cooled	1	1	2

LUBRICATION.

The trend in oiling systems is indicated by the following figures, which show the number of models at Olympia equipped with the various forms of oiling:

	1921.	1922.
Mechanical	25	30
Drip Feed	101	64
Hand Pump	18	25
Petroil	12	22

TYRE SIZES

Fitted on different models.

	1921.	1922.	1923
28×1¾ in.	3	1	3
16×2½	1	0	0
16×2⅝	3	0	0
18×2	1	3	0
24×2	4	5	5
24×2½	17	9	7
24×2⅝	0	0	1
550×65 mm.	1	0	0
26×2 in.	7	1	8
26×2½	32	57	52
26×2⅝	0	0	1
26×2½	27	30	24
26×3	8	9	13
650×65 mm.	21	13	13
700×80	12	19	10
28×3 in.	22	17	12

Through a Designer's Eyes.—

are usually two or three rings above the gudgeon pin. There is a tendency to increase the employment of narrow rings, however, and not a few designers have realised the importance of plenty of metal behind the rings.

Nevertheless, it is useless to provide an easy path for the heat flow from the piston head if the wall area below the rings is insufficient, and consequently the number of " waisted " or relieved pistons is somewhat surprising. If clearance at the gudgeon pin bosses is necessary to allow for distortion it is easy to arrange it without relieving the full circumference of the piston which spoils contact at vital points.

For sports models aluminium alloy pistons with narrow rings are common, and in some few cases a choice of cast iron or aluminium is available. Some of the best aluminium piston designs show but slight saving in weight over their cast-iron prototypes, since it has been found to be preferable to utilise to the full the heat dissipating qualities of the alloy rather than to cut reciprocating weight to the minimum. In spite of this, one or two of our best-known makers are fitting ultra-light slipper-type aluminium pistons in their speed mounts.

In the majority of cases the aluminium alloys contain a fairly heavy percentage of copper—up to 12% —but the magnesium alloys, which, on account of their very light weight and high conductivity, will undoubtedly make their presence felt in the near future, have not yet reached the public in production machines.

Piston slap, due to large clearances necessitated by the high coefficients of expansion of most aluminium alloys, is the main factor which is retarding the general adoption of aluminium pistons, but it is more than likely that this bugbear will be eliminated in the future as a result of increased knowledge of requirements and metallurgy. Steel pistons, as far as motor cycles are concerned, are, to all intents and purposes, extinct.

Flat-top pistons are the rule, but in most of the high-efficiency overhead-valve engines with hemispherical heads and inclined valves it has been necessary to dome the heads in order to obtain sufficiently high compression ratios.

Compression ratios have been raised to some considerable extent, and the average touring engine of medium capacity has a ratio of well over four to one, while some of the small racing engines go as high as seven to one.

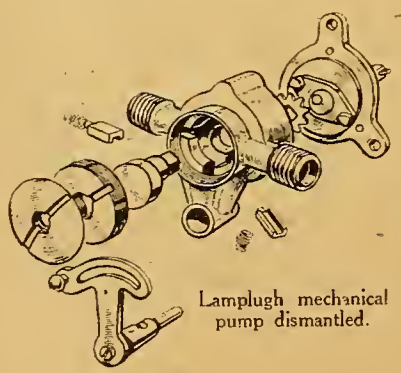
One-Piece Cylinders Popular.

Composite cylinders show no signs of multiplying, and in at least one of the few examples staged at Olympia the high-conductivity metal, in conjunction with a liner of comparatively low conductivity, was applied to the cylinder barrel only and not to the head, which latter is by far the most important point as regards heat dissipation. Cast iron, therefore, remains supreme for the construction of cylinder heads and barrels, yet great improvements have been made as regards cooling arrangements.

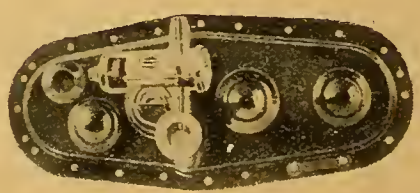
Not only have cylinder heads been thickened up to quite a considerable degree, but cooling ribs are more often disposed with some definite relationship to the direction of air flow. Both these points will help to reduce the number of engines given to pinking and to delay the necessity for decarbonisation.

Apart from an increase in the number of overhead-valve engines—by far the easiest type to cool—those who have decided to retain the side-by-side valve arrangement have obviously spent some thought on the problem of providing air passages to those important spots behind the exhaust port and at the junction of

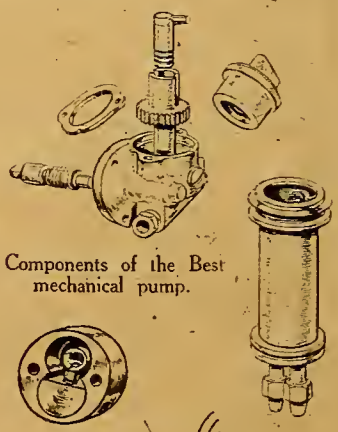
LUBRICATION DETAILS.



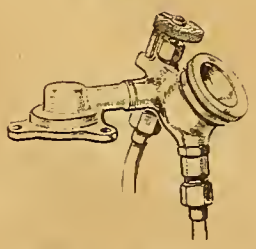
Lamplugh mechanical pump dismantled.



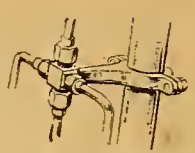
Oil pump on the Harley-Davidson, now a separate unit carried on the timing case.



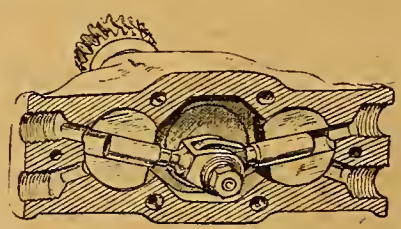
Components of the Best mechanical pump.



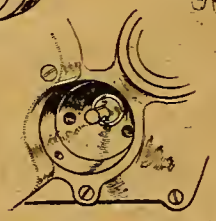
Showell mechanical oil pump sight feed adaption.



Four way pipe in Connaught lubrication system.

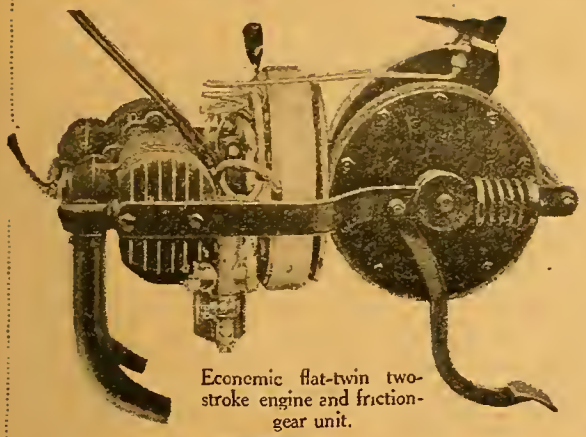


Section of the M.A.G. mechanical lubricator, showing its simple action.



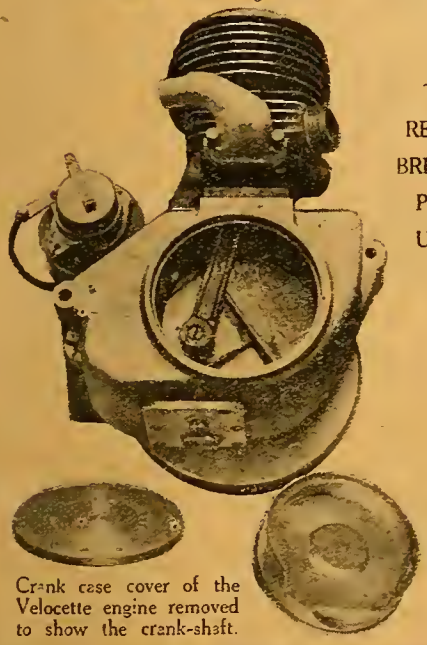
Mechanical oil pump on the 346 c.c. Triumph.

FOUR TYPES OF MODERN ENGINES

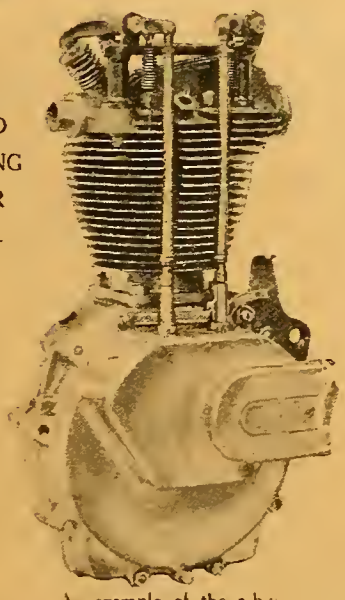


Economic flat-twin two-stroke engine and friction-gear unit.

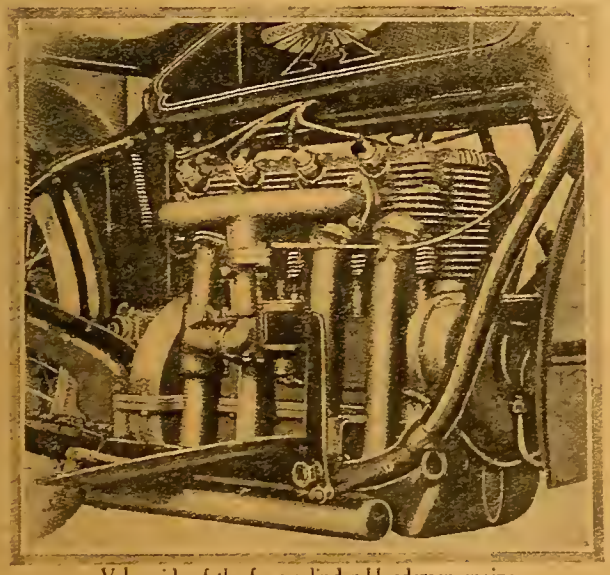
TWO RECORD BREAKING POWER UNITS.



Crank case cover of the Velocette engine removed to show the crank-shaft.

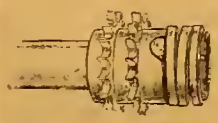


An example of the o.h.v. Norton engine.



Valve side of the four-cylinder Henderson engine.

Part section of the piston used in the o.h.v. Norton.



Engine shaft shock absorber on the P. & M. four-speed model.

the valve chest and cylinder walls. There were indeed some very fine pieces of cylinder design in the Show. One important point is the striking tendency to arrange almost the whole of the compression space above the valves in an endeavour to obtain greater turbulence and consequently a higher rate of flame propagation.

Between the overhead and side-valve types come the few examples of superimposed valves, usually with inlet over exhaust. This well-tried system has its advantages, but the type with exhaust over inlet would appear to be worthy of a greater following, since it should be an easier matter to provide ample cooling for the highly-heated exhaust port and valve stem.

Detachable cylinder heads are not on the increase, and it is particularly noticeable that one of the best-known proprietary engine manufacturers has instituted new models of small capacity with unit cylinder and head, though the earlier productions of the same make were of the detachable head type.

Whether the change is due to manufacturing reasons or to the fact that with unit construction a larger effective radiating area for the head is possible only the manufacturers can tell, but in these days of high-efficiency engines the latter point is not without importance. It is true that many of our high-efficiency engines have detachable heads on account of the difficulty of fitting inclined overhead valves with unit cylinder construction, but in these cases one is apt to make a virtue of necessity and to emphasise the improved accessibility of the type instead of treating it as an unavoidable and possibly even an undesirable feature

Valves and Valve Gear Mechanism.

With the improvement in modern alloy steel has come a corresponding improvement in valves. It is possible nowadays to produce a perfectly reliable valve which is no more than $\frac{1}{16}$in. thick in any part. Thus it has been possible to reduce reciprocating weights, valve spring pressures, and consequently the wear on operating gear.

An example of such extreme practice would have been hard to

Through a Designer's Eyes.—

find, but only a casual scrutiny was needed to reveal not only considerable improvements in this respect, but also attempts to design scientifically correct radii under the valve head in order to ensure the passage of the maximum possible amount of gas through a port of a given size.

As regards cam gear one finds an almost uninterrupted series of tangent or concave faced cams operating plain tappets through rocker gear. In just a few instances cams of this type operate direct on round base tappets, but it is curious to note that the flat base tappet and convex cam is almost unrepresented in the motor cycle world. One would have thought that, with all the efforts towards price reduction which have taken place in the last year or so, some effort would have been made to eliminate the numerous and weighty rocker arms with their attendant pivot pins, which are almost invariably hidden within the mysterious recesses of our timing boxes. There are several methods which have proved satisfactory in car practice and which are both cheaper and lighter than the rocker system.

Rockers

On the other hand there is a definite excuse for the existence of rockers in certain systems, notably when a single cam is utilised to operate both inlet and exhaust.

In a few cases some effort has been made to enclose valve gear, a point which is worthy of more consideration, for, though these covers have no very marked effect on the silence of a *new* engine, they should, if properly constructed, exclude dust and include oil, thus prolonging the period of comparative silence and preventing air and oil leaks and numerous attendant troubles of a minor nature.

Transmission.

Since the standardisation of the countershaft gear, one has not been led to expect any very startling changes in motor cycle transmission. As usual one may sum up the situation by saying that there are a few more chains and a few less belts, but there are in addition other features to be highly commended.

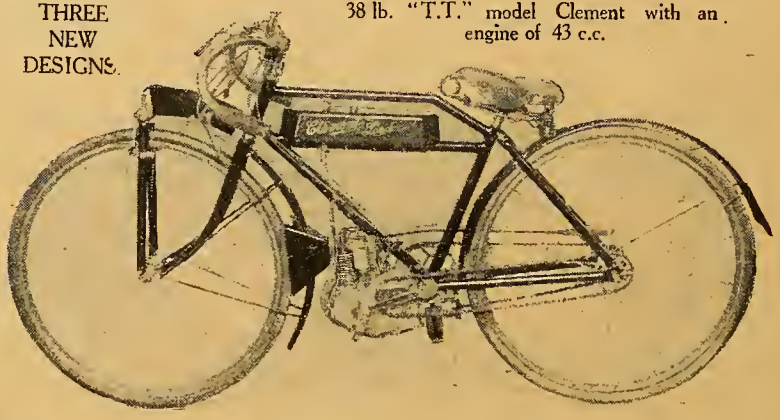
First, we have a new shaft-driven motor cycle of British manufacture, possibly a forerunner of future designs. Secondly, we find a considerable increase in the number of four-speed gears, while there are even more on the stocks which are likely to put in an early appearance; and, thirdly, we find a tendency on the part of gear manufacturers to include a shock-absorbing device in the clutch. Is this a reflection on some of our engine-shaft absorbers? Probably not; it is much more likely to be a genuine attempt to produce a real improvement which will increase the life of engine, gear box, chains, and tyres, and to provide the rider with a greater measure of comfort.

For the first time a machine containing a proprietary engine and gear box makes its appearance with totally-enclosed chains, while another ingenious designer utilises the long exhaust pipe as a chain guard with the addition of sheet steel flanges where necessary.

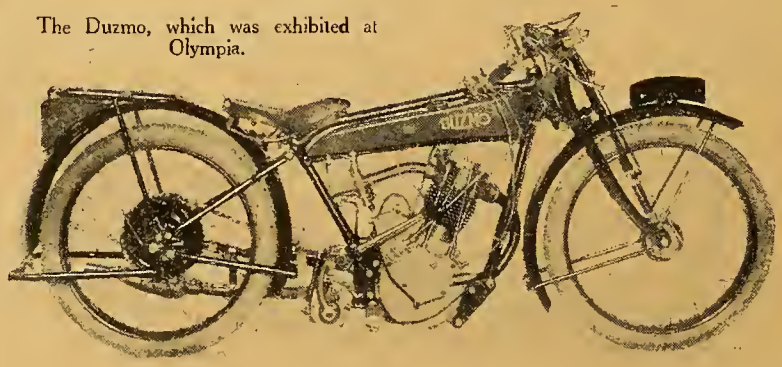
Shock absorbers are almost uni-

THREE NEW DESIGNS.

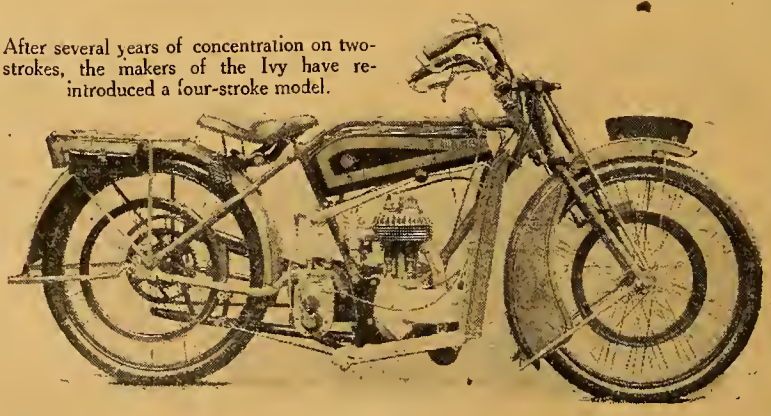
38 lb. "T.T." model Clement with an engine of 43 c.c.



The Duzmo, which was exhibited at Olympia.

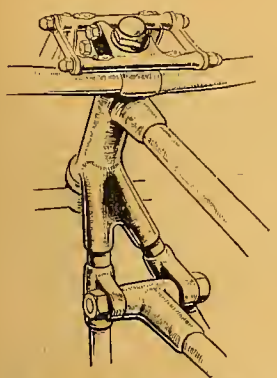


After several years of concentration on two-strokes, the makers of the Ivy have re-introduced a four-stroke model.

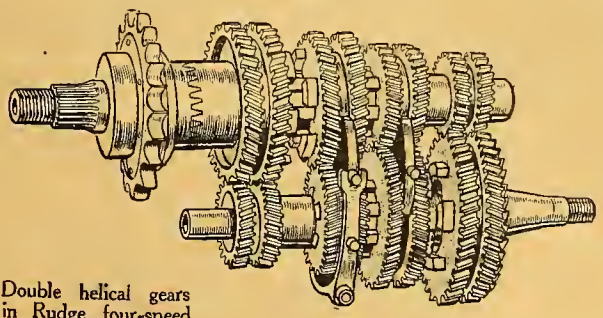


1923 IMPROVEMENTS.

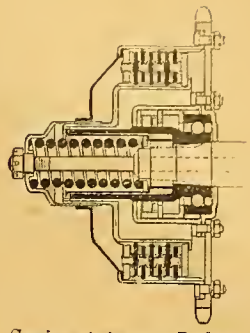
Details of Motor Cycles which were Exhibited at Olympia.



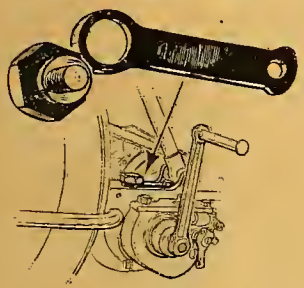
Steering head and arrangement of duplex down tubes on the Coventry Victor.



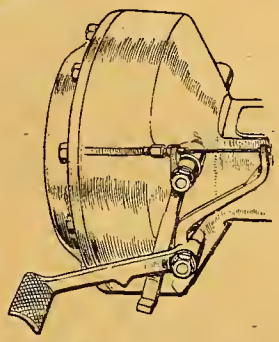
Double helical gears in Rudge four-speed gear box



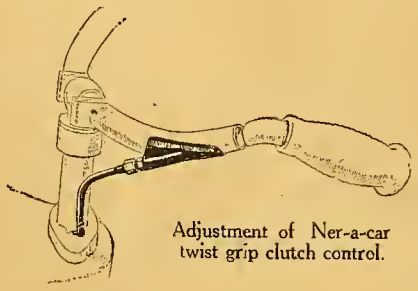
Section of the new Rudge countershaft clutch.



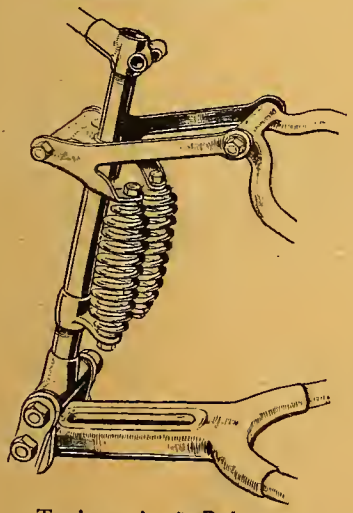
Cam-action gear box adjustment on the Cedos.



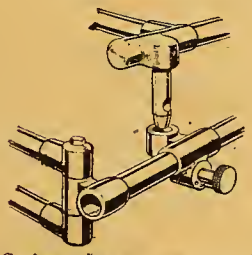
Shaft-driven G.S.D. clutch.



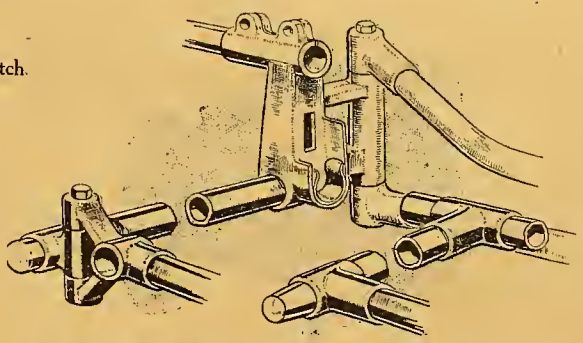
Adjustment of Ner-a-car twist grip clutch control.



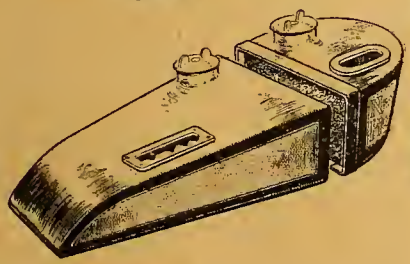
Tension spring in Radco rear suspension.



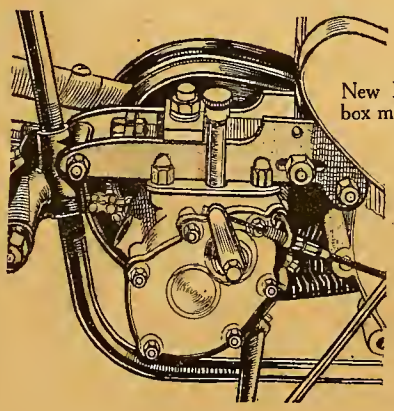
Spring plungers at two of the four corners lock the sub-frame of the collapsible chassis in the heavier type of Dorway sidecar.



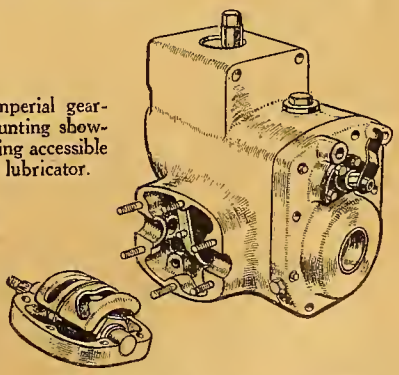
In the lightweight Dorway sidecar the sub-frame locks to the chassis by means of taper sockets in front, and tubular extensions dropping into the sockets at the rear.



Entirely separate oil and petrol compartments of the New Hudson tank.



New Imperial gear-box mounting showing accessible lubricator.



Detachable selector mechanism of the Rudge four-speed gear box.

Through a Designer's Eyes.—

versal and are divided into three main groups—the engine-shaft absorber (usually of the face cam type), the combined clutch and countershaft absorber, and the cush type rear-wheel drive.

Frame Construction.

When the average constructional engineer examines a motor cycle his first criticisms are usually directed against the arrangement of tubes which forms the frame. Theoretically, perhaps, he is right, but in practice it is extremely doubtful if he can evolve anything which is cheaper and lighter and which can show a reasonable reduction in weight. At any rate the epoch-making substitute has yet to be found. We have no intention of disparaging the ingenious pressed steel and tubular constructions which appear at intervals, but rather would we point out that motor cycle frames are not as bad as they are (sometimes) enamelled!

Olympia revealed a movement towards the duplex frame with tubes running direct from head lug to rear spindle, supported in some cases by a duplex loop construction forming a cradle for engine and gear box.

Spring frames remain more or less *in statu quo ante*, and not much improvement is noticeable in this direction, our old friends remaining without much fresh support. It is necessary to mention one important innovation which has taken place in front fork and sidecar suspension, which takes the form of a friction shock damping device working in conjunction with a weak spring. In the case of one fork a 7in. total movement is allowed, and the rebound is slow and smooth in action. Frame details show a genuine improvement, and there has been a general cleaning up of clips, head lugs, wheel adjustments, brake stops, etc., while grease gun lubrication of cycle parts is on the increase.

Lubrication.

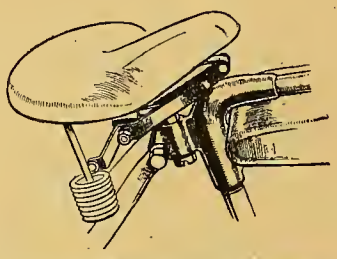
Since so much wear and tear, noise, and expense is due to faulty lubrication, it is encouraging to find that a large number of firms have decided to remove the matter from the somewhat inexpert hands of their customers and to refer it to some form of mechanical contrivance.

For the first time we have with us more than one genuine dry sump lubrication system, and its simplicity and efficacy are sure to attract others, though in the meantime we continue to rely in the main on the excellent productions of certain accessory houses which have been considerably strengthened by the addition of new designs and the improvement of previous articles.

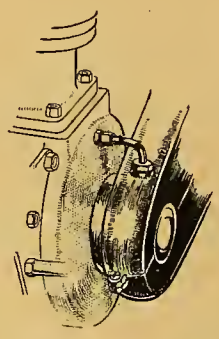
Special Engines.

Throughout the year much interest has been shown in the single-sleeve valve engine. Its performances have been so consistent that the reinforcement of the 350 c.c. single by a 500 c.c. single and 1,000 c.c. twin can hardly have been unexpected.

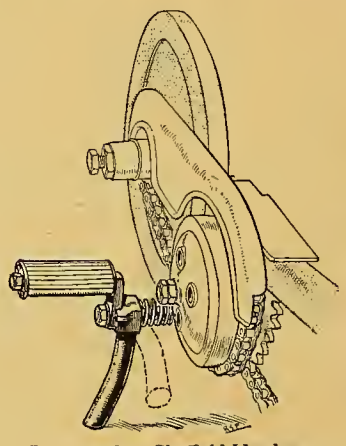
A 350 c.c. four-stroke with an overhung crank and a smaller four-stroke with flywheel magneto are novelties which attracted considerable notice, but in general the outline of the normal engine remains unaltered. Especially is this the case with two-strokes, where only detail modifications have taken place.



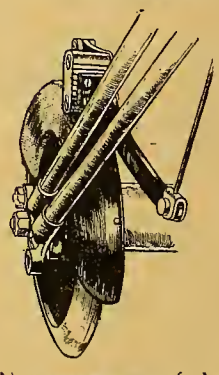
How a low saddle position is obtained on the big single Bradbury.



Lubrication of primary chain from the crank case on the single cylinder Abingdon.

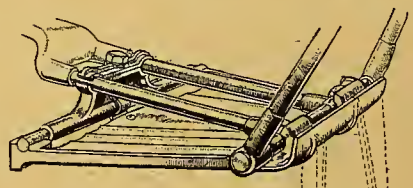


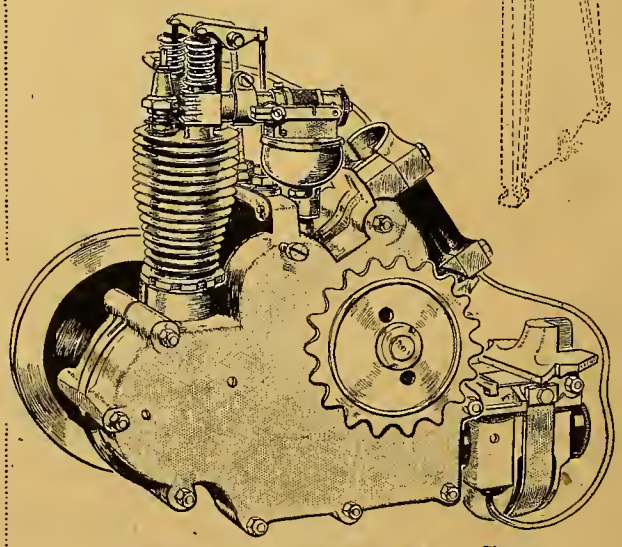
Prop stand on Sheffield-Henderson.



New arrangement of the Douglas front wheel brake.

An under-shield that is also a stand on the Coventry Victor





The smallest motor cycle engine—the 43 c.c. Clement.

Current Chat

Times to Light Lamps.

Dec.	7th	.. ..	4.20 p.m.
„	9th	.. ..	4.20 „
„	11th	.. ..	4.19 „
„	13th	.. ..	4.19 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

The Burning Question.

What shall it be next year?

Heard at Olympia.

"Oh, yes, that's the racing model. They fit a high-speed magneto and lubricated piston."

Lowered Prices.

To the chagrin of the few and pleasure of many, prices are down as much as £70 in the case of some sidecar outfits.

Still a Price Gap.

The big lowering of prices at Olympia silenced the prophets who forecasted the demise of the powerful sidecar because of competitive prices in the car world.

Why Not a Gramophone?

Many of the Olympia salesmen had apparently learned particulars of their exhibits by heart. When one asked a question they drew a deep breath, and repeated a long string of facts, parrot-like.

Catering for All.

In marked contrast to the several exhibitors at the Show who listed only one model was the firm whose catalogue contained details of no less than twenty-six distinct variations.

American Opinion.

American writers on motor cycle matters are keenly interested in the T.T. sidecar race. They maintain there will be less danger on the twisty Manx course than on a saucer track, because the drivers will so frequently be reminded of the perils that obviously exist and consequently take extraordinary precautions.

Double-acting Two-stroke Coming.

Wonderful efficiency is anticipated from a double-acting two-stroke engine now being built in Portsmouth; 12 i.h.p. and 7 b.h.p. are suggested; the total piston displacement is only 320 c.c. It will make an appearance on the road, and possibly on the track, in January, before which date we hope to describe it in full detail.

Why this Solemnity?

Few documents, with the exception, perhaps, of a summons, make duller reading than the average club announcement.

Possibilities in Czecho-Slovakia.

There is said to be a big opening for British machines in Czecho-Slovakia at the present time. Many well-known British machines are represented, and B.S.A. and Indians are the motor cycles used in the new Republic's army.

North-Country Enterprise.

So as to ensure booking an early date for *The Motor Cycle* film for 1923-4, Mr. W. A. Dovener, Secretary of the Bradford M.C. and L.C.C., has asked us to reserve the first three days for his club after it is released at the next Olympia Show.

Next Best.

The maker of one of the most popular runabouts used a Rolls-Royce car to get to and from the Show. On being twitted by a friend his excuse was that of Mr. Henry Ford on a similar occasion: His own works were so busy filling orders that he could not get delivery of a runabout, and so bought the next best.

A Royal Customer.

The Queen of the Belgians, an enthusiastic motor cyclist, has paid the British industry a high compliment by purchasing a lightweight model from the show for her personal use. At Olympia on Tuesday an official from the Royal Garage at Brussels purchased on her behalf a standard 169 c.c. McKenzie with nickel plated frame, wheels, and fittings, the petrol tank and mudguards being enamelled mauve with gold lining.

Lieut.-Colonel Charles Jarrott, O.B.E., the new Chairman of the A.A. and M.U. in succession to Sir William Joynson-Hicks.

Super Perfect.

We do not vouch for the truth of the rumour that a certain rider completes the cleaning of his shiny mount with a liberal application of eau-de-Cologne.

Satisfactory Route Marking.

At a recent reliability trial the course was marked by confetti, and the competitors agreed that it surpassed the more usual dye in every way; the white patches of confetti were visible at a long distance, and remained in place in spite of a fair wind.

Stymied.

An inquisitive policeman, equipped with an iron rod and the usual voluminous notebook, strolled round competitors' machines at the start of a trial, and found fault with every exhaust system. Presently he came to a competitor who, in view of possible watersplashes, had mounted an elaborate petrol can-cum-flexible piping silencer on his carrier. "Go on," said crestfallen Robert, "get orf with yer, quick."

The Amsterdam Show.

The fourteenth annual exhibition of cars, motor cycles, cycles, and accessories, organised by the Dutch Union "De Rywiel-en Automobiel-Industrie," will be held at Amsterdam from February 9th to 18th next, and the number of exhibitors has reached a total of 128, an increase of 50 on last year's figure. The growing popularity of motoring in Holland—and the cult of the motor cycle in particular—should enhance the appeal of this exhibition to British manufacturers.

"Not Technical."

In the last issue reference was made to the lack of knowledge of many of the stand attendants at Olympia. The lay press makes similar complaint, and the following dialogue was recorded in the *Evening Standard* of a few nights ago:—

"What are your gear ratios?"

"I am afraid I don't know."

"Have you a catalogue which gives them?"

"I am afraid not."

"How much does the tank hold?" (Hesitation.)

"Half a gallon?"

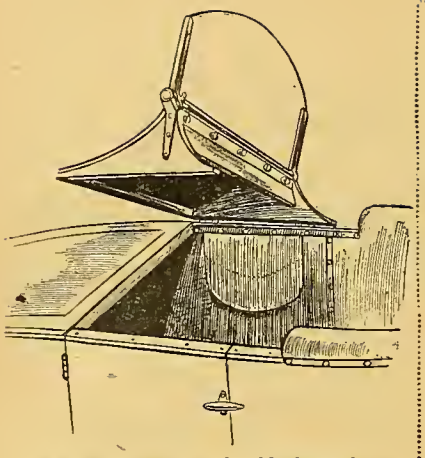
"Oh, I should think so."

"Two gallons?"

"I should think so."

"Is the machine over or under 200lb.?" (Meaning the difference between a thirty shilling and a three-pound licence.)

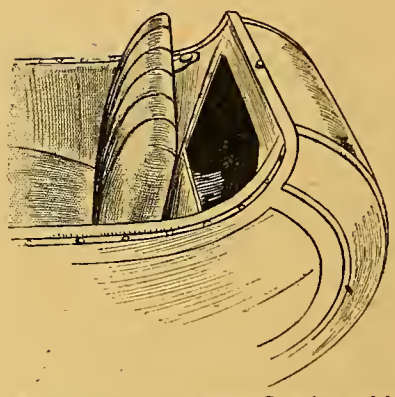
"I really don't know. You see there's nobody technical here!"



Scuttle and screen on the Hughes sidecar.

From the PASSENGER'S POINT of VIEW

Worth-while Detail Improvements on Sidecars.



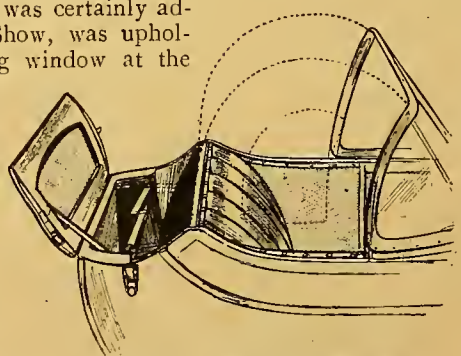
Ample locker on the touring Canoelet model.

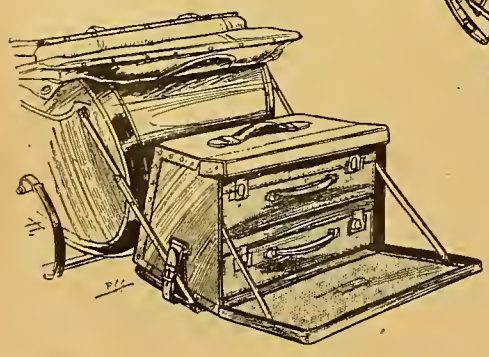
BY "FRIAR JOHN"

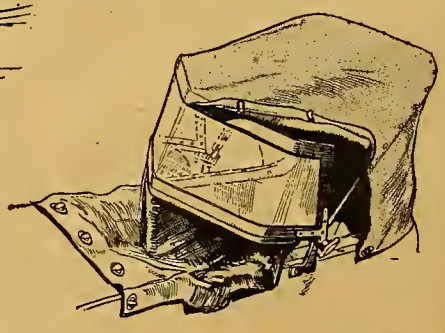
THERE were numerous gadgets and little refinements on many of the sidecars this year, but the bizarre and fantastic was absent. Though manufacturers are always willing to associate themselves with any new ideas, there was a reticence this year in adopting new designs unless there was a very good reason for so doing. And quite a wise plan too.

The resolve to improve existing patterns after finding out weaknesses is a saner policy than frequent redesigning. I say "frequent" for occasionally a thorough "scrapping" is justified and a restart the only cure for a tranquillity that may have turned to torpor. A walk among the exhibits and a talk to the manufacturers proved, however, that no apathy exists among makers. They are all anxious to please customers and to give them precisely what they want. Sidecars are there to meet all purses, from the £14 14s. sporting models, to the polished aluminium cabriolet shown attached to a Metro Tyler model at £64. This enclosed sidecar, which was certainly admired as much as anything in the Show, was upholstered in Bedford cord, had sliding window at the side, and swing "halfed" windscreen, a little locker for looking glass, gloves and powder puff; and then, to finish the effect of modernity, there were wireless receivers hanging in the corner. All metal parts were either nickel plated or highly polished aluminium. But the most admirable feature of the sidecar was its light, dainty appearance and comfortable-looking, electrically lit interior. But to speak of sidecars and sidecar details on the every-day models. Starting among the lower numbered stands there was the Coventry Victor "Ghost" materialised in a solid little sporting body—a nice little sidecar; the Massey designers, too, have evolved a little sidecar which looks small, yet provides astonishing room—a good design, too, with its cast aluminium dash.

The Clyno people have behind them years of experience in the making of sidecar outfits, and this year's sidecar model reveals the practised and practical mind. In providing a small locker that may be devoted solely for the passenger's use or for tools—on the floor of the sidecar adjoining the well of the seat, and a sidecar with a back high enough to protect the passenger, the Clyno designers are to be commended. But these are only details of a sidecar and chassis as attractive as any in the Show. Near by was the new Holt transparent hood on a Coventry Victor



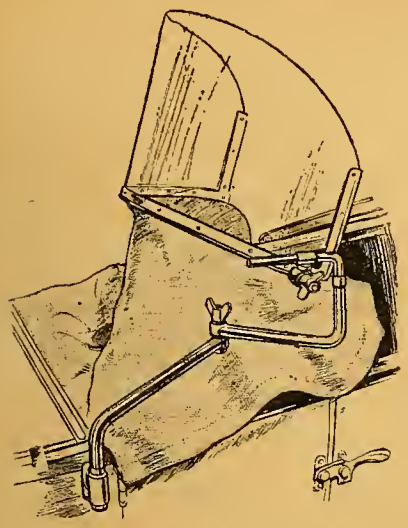


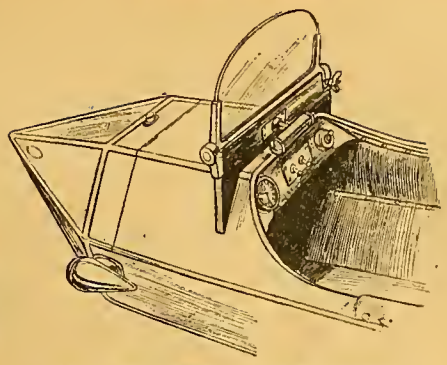


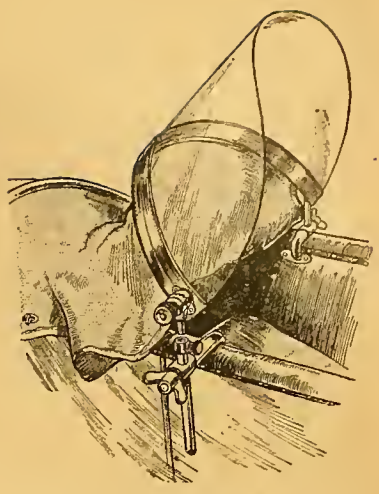
(Left) "Two in One" suit case designed specially for sidecars by Messrs. Dunhill.

(Top) Showing how completely the hood is concealed on the Coupette sidecar.

(Right) Sandum all-weather screen and hood.







(Left) Easily adjustable Grindlay screen for sporting models.
(Centre) Neat dashboard and screen of the Hawk sidecar.
(Right) Method of detaching the Montgomery adjustable windscreen.

outfit—a unique pattern that should be effective; it is light in weight and appearance, being made solely of celluloid. It is made to slip on the circular windscreen in the manner of the beaded edge of a tyre. It is simplicity itself, and rolls up when not in use into a case about as long as a six-piece fishing rod. A sidecar about which nothing but nice things can be said is the Martinsyde standard model; it was not a "frilled" specimen, so to speak, but one in which a person could tour in comfort. The body is roomy and ample luggage can be carried on the new folding grid, which is built to stand any reasonable stress. The little aluminium detachable screen and dash shown on the Watsonian stand was also attractive and showed incidentally what an amenable material sheet aluminium is, for it yields to the metal beater beautifully; this dash, complete with screen, sells for £4.

Neat Detail Work.

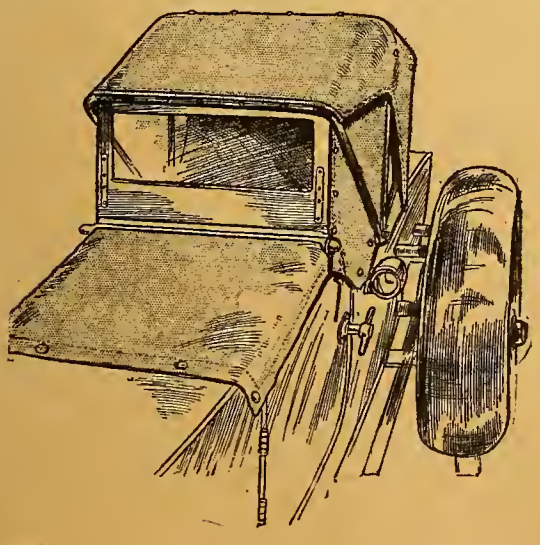
A sidecar of special appeal came from Nottingham. The black leather upholstery, and the screen which was carried in a leather-covered frame, the neatly folding hood, aluminium step, neat mounting of the electric lamp, and ample pockets for maps and gloves proclaimed the pains taken in the production of this Campion model.

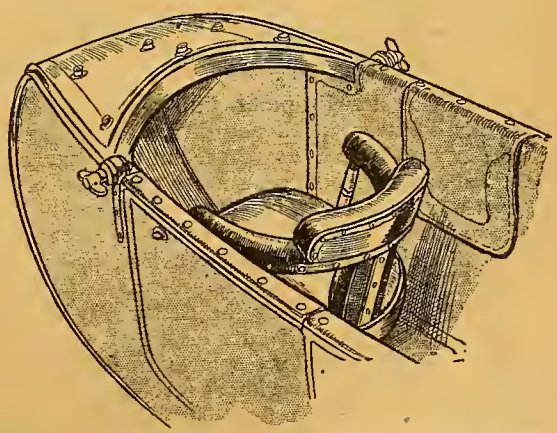
One passed the A.J.S. stand with its usual crowd, knowing from experience that the big sidecars staged were as perfect as can be. The double seater was there, too, poised up out of way of any but the most determined "triers."

If one is anxious to add distinction to the outfit when touring, Dunhill's "Two in one" case should be examined. It fits snugly on the grid, holds two suit cases, and is quite water tight. The cheap model is 45s., complete with two suit cases. A very noticeable detail on the two-seater sidecar was the fitting of mahogany arm rests instead of the usual padded variety.

Real Locker Accommodation.

Why the cream-painted *de luxe* sidecar was tucked away at the back of the O.E.C.-Blackburne stand I don't know, for I should place it as one of the most alluring in the Show. The resplendent mahogany dash complete with clock, speedometer, and, of course, mirror, triplex screen, and a felt-lined locker ample enough for a half dozen ladies' hats are details of this model. £39 18s. was the price asked.





(Left) An accurately fitting hood and screen on the Enfield touring sidecar.
(Right) The comfortable child's seat provided in the Millford family model.

From the Passenger's Point of View.—

The "star turn" on the Montgomery stand has already been mentioned—the blunt-nosed streamline sporting model, the polished aluminium mudguard of which would be worthy of a three-litre sporting car.

Turning to the familiar Douglas exhibits, one marked a slight alteration in the graceful scuttle dash and screen which pushes to and fro on runners instead of hinging in the more usual manner. The detailed alteration is in the shape of the screen.

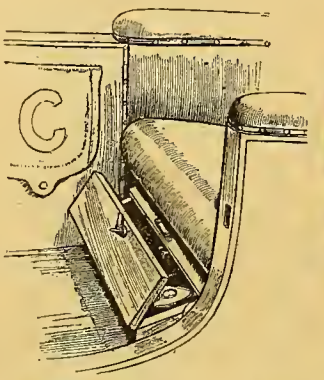
For the man who wants a thoroughly well-built sidecar in which his wife can repose in comfort and feel too that she is sitting in, instead of on, a sidecar, the Chater-Lea should attract, for the model exhibited was very roomy. On a stand near by—the P. and M.—there were several details of decided worth amongst the sidecars. The draught-proof fitting of the Bluemel screen for instance (a P. and M. device), the little locker beneath the dash for gloves, and the luggage grid on the semi-sports model were worth more than a passing glance; the designer, too, of the light sports model is to be congratulated. It has more *chic* than any in the Show, and a change from the usual streamline pattern.

On the Enfield sidecar there are two little gadgets worth mentioning. Turning the pocket of the sidecar door into a tool box is a cute idea that appealed to all who are not among those lucky individuals who motor 10,000 miles or so without touching the wrench, pliers, or tyre levers. To find the tools nicely arrayed ready for use by just opening the door is a simple but obvious advantage. Another Enfield fitment is the twill leg shield which clips on the body of the sidecar and the down tube on the near side of the machine.

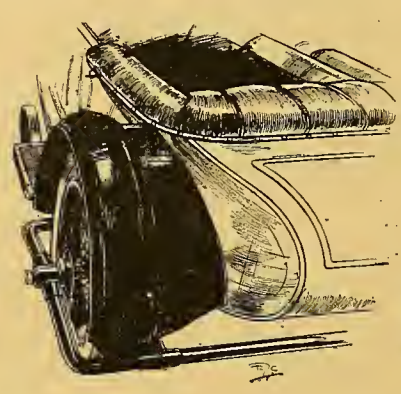
There was no end to the variety of screens this year, and amongst the neatest is the model on the Rex Acme; it is of good depth, which gives breathing space for the passenger. Another lightly and strongly made screen, attached to which is an apron, made from sheet rubber, was shown on the Velocette stand.

Of a quality thoroughly in keeping with the rest of the Triumph exhibits was the new sidecar in aluminium. It might be termed a semi-sporting type, though it has ample luggage space, and not the least of its merits is the ample mudguarding. An apron designed to embody a celluloid screen, and which extends also as a sidescreen, is a cleverly thought out job. On the big touring coach-built model a good-sized week-end bag can be accommodated.

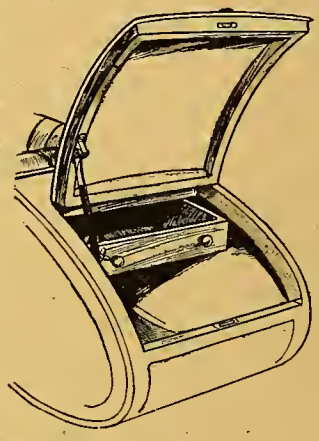
One could not pick out any striking innovation on the Sunbeam sidecar, yet it was a model that one could not pass by; inconspicuous and full of quality, the designers missed nothing in their endeavours after comfort for the rider. Several of the Sandum improvements were enumerated last week, but the folding semi-circular screen, designed for the rear passenger on the dual purpose model—or any two-seater for that matter—is a most ingenious device. When not in use it folds completely out of the way, and is locked with a special clip on the back rest of the front passenger—a thoroughly practical device that deserves as much publicity as it can get. To find a tandem seater which thoroughly screens both passengers is a rare thing. This device is one of many appertaining to sidecar comfort which exemplified the attention sidecar manufacturers are giving to devices which are likely to add to the comfort of the passenger.



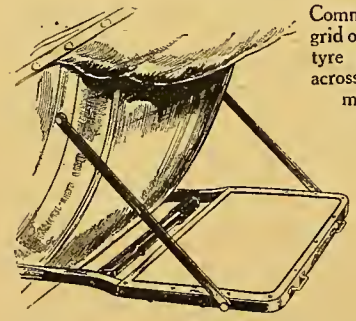
A useful locker on the Clyno sidecar.



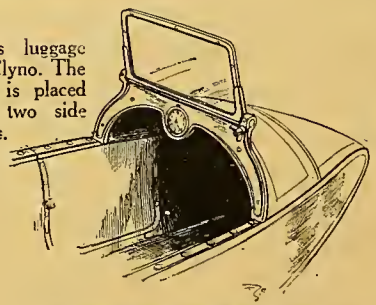
Improved wheel mudguarding on the new light touring Sunbeam sidecar.



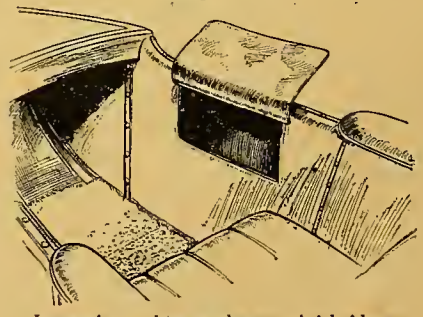
A useful little drawer for small tools is provided in the locker on the Blackburne sidecar.



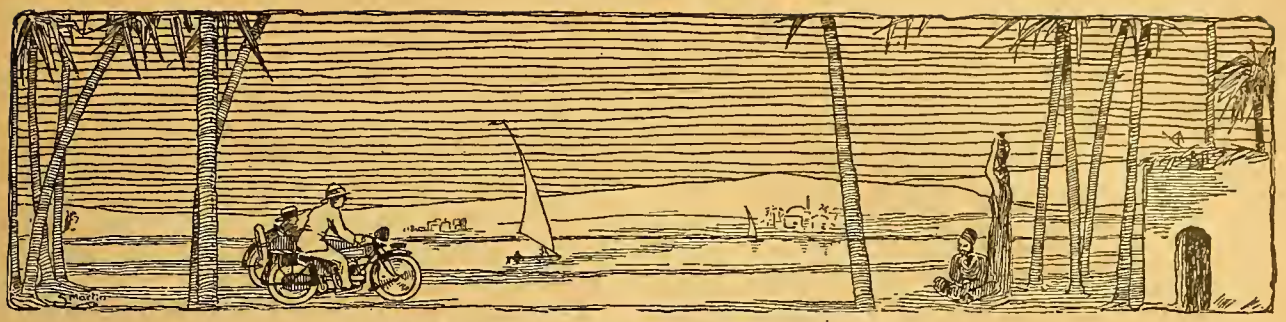
Commodious luggage grid on the Clyno. The tyre pump is placed across the two side members.



Cast aluminium instrument board on the Massey sidecar.



Large size pockets on the new Ariel sidecar.



IN THE NILE DELTA.

Exciting Road Conditions in Egypt. No troublesome Hills, but variations of Mud, Ruts and Dust

MOST people at home conjure up a vision of pyramids, palm-trees, and limitless sand when Egypt is mentioned, and, generally speaking, these are about all that the average tourist does see of Egypt.

Of course, the war largely increased the numbers at home who are now familiar with this country, but a thoughtful and romantic General Staff generally arranged matters so that all camps, etc., were amongst the sand and palm-trees (there were not enough pyramids to go round), so that even *they* received a somewhat similar impression.

Egyptian Road Making.

Egypt, modern Egypt that is, is really the Delta and nothing else. The roads in the immediate vicinity of the towns are very similar to those at home, but outside, although the main roads have a fair surface, they are made of the dried mud that is dredged out of the various canals, the "road" running along the embankment so formed. Consequently in winter they are hopeless, and it is practically an impossibility to keep upright on one's two feet. In the late summer also it is nearly as bad, for there is almost a foot of soft dust to negotiate.

Excluding Cairo and its environs, there are only four bridges—two over each arm of the Nile—in the Delta, consequently all roads diverge from these points. The bridges are all built to carry the railway, and have a small side-walk for ordinary traffic, over which a motor car can just pass with a few inches to spare. It requires careful driving for a quarter of a mile of this!

Leaving Zagazig (the writer's headquarters), the road follows the Delta Light Railway—to be exact, the railway follows the road, and the passengers jump on and off the train at their leisure (this latter very literally).

Through a Native Market.

In the villages, when the weekly market is being held, the procedure is necessarily slow, for the blast of the final trump will not disturb an Egyptian market crowd, and one has literally to cut one's way through the populace with hundreds of miserable, half-starved pariah dogs snapping at one's back tyre.

In Mit Ghamr, which is typical of the small provincial towns, the streets are very narrow and winding, and, the neighbouring buildings being comparatively high, one loses all sense of direction after a few minutes; enquiries made of the native policemen are never very exact or enlightening, and consequently half an hour may be lost in trying to find the bridge over the Nile, and it is not a bridge that would pass unnoticed in any part of the world!

From here it is only a short run to Tantah, and onwards it is an easy run to Kafr el Zayat, where the other branch of the Nile is crossed. Approaching the town, a dismount is necessary, because one crosses a small canal by a Delta Railway bridge, and there is nothing between the sleepers, whilst their distance apart is not conducive to comfort if one rides over them.

(Top) On the road to Damanhour.

(Left) The Mahmondieh canal near Alexandria.

(Right) An Egyptian fishing village.

In the Nile Delta.—

Having crossed the bridge, serious doubts arise as to whether one is really on the principal "main road" of Egypt or not, because it appears to be a sort of yard with outhouses on one side, stables on the other, and haystacks in the middle, with the usual accompaniment of cesspools, hens, dogs, donkeys, camels, and gamoos (Egyptian = buffaloes) all around.

Uninteresting but exciting.

Later the road becomes quite good but uninteresting as it follows the railway into Damanhour. The road leaves the railway at Damanhour and follows the Mahmondieh Canal. At Kafr-el-Dawar it is necessary to cross the canal by the swing bridge, which always seems to be "up" when one arrives. Soon after leaving this village the macadamised road, originally intended to reach Cairo, is met with. Thank goodness it never got any further, for now it is so covered with loose metal that it is impossible to avoid all the humps and bumps. Except for this piece of road, however, punctures are uncommon, as none of the animals are shod, and also there is very little vehicular traffic. Alexandria is easily reached from here.

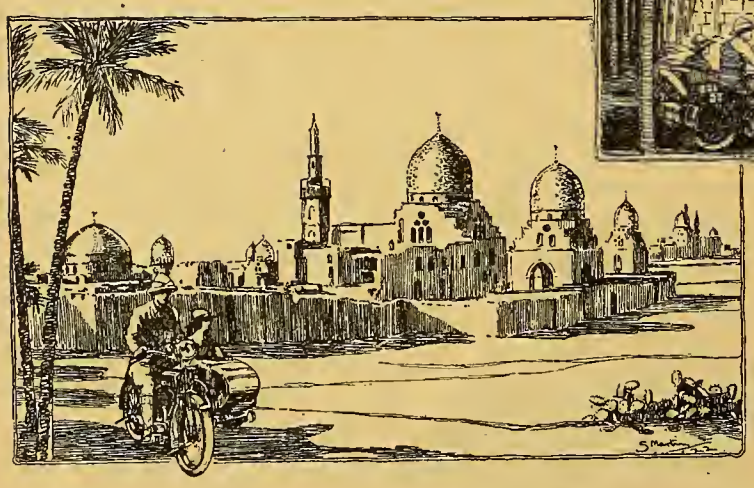
Another journey the writer has undertaken was to Sidi Salem, on the shores of Lake Borullos, mid-way between the two arms of the Nile.

The same road is covered to Damanhour, after which one turns sharp to the left for the Dessouk bridge. Under wet conditions the road surface is conducive to hair-raising skids with an inevitable tumble at the end of each.

The road from Dessouk to Kafr-el-Sheikh is worse, as there is heavy traffic on the road to the market. Without any exaggeration, there are ruts 8in. deep, not like those in English lanes, but all over the road.

Before reaching Kafr-el-Sheikh, one turns sharp to the left along the Nachart Drain bank, and from there is a straight line to Sidi Salem, where, when there is no rain, the dust is almost a foot deep, and it is very easy to fall into the canals on either side of the road.

T. W. E B.



(Left) Cairo has much of interest to the sightseer but probably the most famous place of historic interest is the Tombs of the Khalifs at the outskirts of the city. (Right) Although over two hundred miles from the Delta, the famous Pylon of Ptolemy Euergetes, cannot be out of place in any article on Egypt. This famous ruin is near the temple of Karnak, Luxor, the site of ancient Thebes, the capital of Egypt for 3,000 years. Remarkable discoveries were made there last week.

The sketches were actually made in Egypt and form an illuminating contrast with the author's description of conditions off the beaten path.

ENTRIES FOR THE LONDON-EXETER RUN.

ENTRIES for the M.C.C. London-Exeter Boxing Night run close definitely on Saturday (December 9th). Last year's entries amounted to 297, but this year the number may be less, as up to last week-end only a few more than half that number had been received. Entries will be accepted on Saturday up to the last post, addressed to the Trials Secretary, Mr. F. T. Bidlake, 84, North End Road, Golders Green, London, N.W.11. No provision whatever has been made for receiving entries after this date, nor is there any scheme for accepting entries at late fees. Of the 150 machines entered up to the present, there are 41 motor bicycles, 49 sidecar outfits, 4 three-wheeled cycle cars, and 56 cars.

The start of the run will take place, as usual, at Staines at 8 o'clock on Boxing Night, and again Peak Hill, near Sidmouth, will have to be climbed in the dark.

Better breakfast arrangements have been made at Exeter, so that no one will have to face the return journey without having had food.

Deviations from the normal return route will be made in order to include more severe hills than have formerly had to be negotiated, but the run remains essentially one which tests reliability and endurance rather than hill-climbing capacity.

Closer adherence to schedule time will be required than in previous Exeter runs.

WHAT INTERESTED ME.

Thoughts on Motor Cycle Design, Progress and Possibilities gathered on the Stands at Olympia.

By B. H. DAVIES.

The views expressed in this article are those of a technical journalist well-known in the motor cycle world from its earliest days. Comparison with the opinions of an ordinary motor cyclist as set forth on page 908 is interesting.

MONEY may be the root of all evil, but it was certainly the inspiration of a most excellent Show. The prices of sundry influential machines were jealously guarded secrets until the last minute, and their publication created a mild panic in factories which had done their 1923 budgeting with a more generous hand. The public rejoiced. The agents rejoiced. But those directors and technicians whose brains had not been concentrated on that elusive combination of quality and economy spent an extremely anxious day when the price cards began to go up. Anybody can build a low-priced machine to sell at a good profit, but only the supermen of the industry can give us good stuff at a low price and yet keep their shareholders in a good temper.

Nothing Sensational.

A few previous Shows have been rendered historic by the *début* of some epoch-making machine. Novelties were by no means scarce this year, but I did not see any exhibit which led me to hail the rise of a new genius among motor cycling engineers. I found nothing comparable to the sensations created by such machines as the Douglas, the Scott, and the A.B.C. at their first introduction. The four-speed G.S.D., however, is sensational in having an "ideal specification" as a material fact. On the other hand, it is quite clear that a new type of machine is emerging, and I would cite the 346 c.c. Triumph as the most prophetic of these pioneers. The standard "general purpose" solo machine of to-morrow will apparently have a 350 c.c. engine, unit gear box, possibly a gear primary drive, dynamo lighting, hub brakes, integral speedometer drive, and mechanical lubrication.

This specification includes many points for which all knowledgeable riders have been sighing these many years. It is already intensely attractive; and when more time has been lavished upon it, it should approach perfection. The designers were not demonstrating on any "350 c.c. unit" stand which I visited, and the attendants could not in any one instance explain why the unit principle had been adopted. They did not know whether it was cheaper than the two-item system (probably it is). They did not know whether it was quieter than the usual longish primary chain (possibly it can be made so). They did not know whether it keeps crankshaft and gearshafts more parallel (a short, stiff unit must be better on this score than two widely-spaced items in a light frame: and nobody wants a very heavy frame). Credit the single unit with lower production costs: with superior stiffness: and with the silence which such gears as the new Rudge four-speed box seems to possess:—then the unit is more than justified. Most of the units staged at Olympia were obviously a trifle immature. It is silly to employ two separate oil fillers when both engine and gear box use the same grade of oil. It is foolish to omit provision for verifying the tension of the primary chain—one primary chain actually permitted of no adjustment whatsoever. The units were seldom "clean." They offer a gorgeous chance for an absolutely symmetrical "barrel base." It would not matter if the bottom were a false bottom, a mere undershield, provided it were smooth and rounded; but several of the 1923 units will be harder to clean than many separate engines and gear boxes. Still, the principle is at last accepted *plus* the dynamo, and *plus* the mechanical oiling. With a little cleaning up of the exterior, a little stiffening of the rear frame, and a little re-designing of the drawbolts, we shall get a tidy machine with only one transmission adjustment, and that adjustment pinned down to permanent alignment. There were a great many units in the Show, and nearly all staged by big firms whose policy is deliberate and cautious—Triumph, Rover, Beardmore, and the like. I regard this innovation as the most important development of the year. It is—intentionally or accidentally—challenged by other 350 c.c. machines of at least equal eminence. To name a few, the A.J.S., B.S.A., and Matchless all fit separate gear boxes. Battle is joined: and the victor may not emerge in twelve months.

Position of the Miniatures.

The exact importance of the miniature motor cycle is remarkably difficult to gauge; I would as soon try to pick the winner of the 1924 Derby by studying the pedigree of the yearlings. To be offered a motor bicycle at less than £30 is most attractive. One remembers that in 1901 or thereabouts one paid £45 for an ostensibly similar machine with an inferior engine, an impossible transmission, and hardly any ignition or carburation to speak of; and that hardy, sporting youngsters solemnly toured all over the country on these ridiculous prototypes, pedalling, running and pushing up such hills as the machine would not climb under its own power. To-day, for 33 per cent. less money one gets an engine of, say, Villiers class, a Dunlop belt, a Burman two-speed box, dependable ignition, and a dependable carburetter. I am credibly assured that the Italian peasant dines very contentedly off spaghetti and macaroni. Would he do so if his next door neighbour were enjoying roast beef? When we oldsters rode the "1¾ h.p." Clement-Garrard or the "1½ h.p." Minerva twenty years ago, there were no Sunbeams or Nortons or Douglases. I *know* these new miniatures will do far more than their 1900-1902 forebears. I am not at all sure that most of the people who are expected to buy them won't squeeze their

What Interested Me.—

stockings or bully their bank managers and manage to run to something like the 349 c.c. B.S.A. Some of the miniatures were obviously very bad, and others as obviously very good: the two-speeded Omega Junior appealed to me as much as any of them.

For general utility runabout purposes, where speed is immaterial, there was nothing to touch the Harper. A genuine engineering job from stem to stern, embodying many brilliant details, its sheer unconventionality may hamper its progress. I fancy its first vogue will be for light delivery work with hard-headed commercial concerns who take strict account of costs. Then your genuine amateur—always a slow person to learn what is what—will come along. And, finally, all who want comfort and reliability *sans* sport—from the errand-boy to the country doctor, from Aunt Priscilla to Major Fitzhowitzer (retired—handicap 24 at Stoke Poges) will invest.

Weather Protection.

The Harper raises the big question of weather protection, at which several exhibitors are nibbling. No utility machine must land you at your destination looking as if you had rolled down Alms Hill on a wet day. No machine standardised more complete equipment than the Harper. Some had legshields. Some had muffs. Some had windscreens. My experience of weather protection is that you must have all—or none. With legshields and no windscreen, or windscreen and no muffs, I feel like a Polar explorer one of whose gloves has been mislaid in a blizzard, *i.e.*, I grow increasingly conscious of the naked part. Nothing covered the rider up *completely* except the I.O.M. outfit; but it was possible to rig up an assorted outfit from other stands, say, H.T. legshields, John Bull muffs, Easting apron and screen, etc.

A long, glad farewell to the stirrup brake; and a special putty medal to one designer, who, being compelled by other causes to re-draft his front fork, specially designed *a new stirrup brake* for it.

All motor cyclists owe much to the Triumph Co. They have put us under fresh obligations by standardising dynamo lighting. A bold lead, which will surely be widely followed, and will help electric firms to pare down their stupendous prices. In appraising Triumph prices, remember that they include an electric outfit listed at £22 odd retail.

Silencers.

I frankly dislike the new fashion of mounting the silencer on the off-side chain stay. It adds a needless and blobby excrescence to a layout which can never be too "clean" in its lines. The obvious advantages are that it is easily taken off (in localities where the police are tolerant) and is less liable to get encrusted with mud. But everybody has the wind up about noisy exhausts. The designer of a 976 c.c. twin boasted to me that his exhaust system had a capacity of 3,400 c.c., but I had just been looking at the P. and P., which boasts two chambers and a stove pipe totalling 5,000 c.c. for its 350 c.c. engine.

Mechanical lubrication is coming fast, but has not yet boomed. The neatest installations naturally occurred in units and on engines designed to embody a pump. For neat fitting of proprietary pumps commend me to the Best on the Barr and Stroud, or to the Showell on the Martinsyde (wholly enclosed inside the magneto chain case). The absence of mechanical oiling was the one and only blot on our big British twins. At last we have got America panting, both for masculine virility and feminine beauty. The shapely glitter of the Brough Superior and the rich, dark style of the big Zenith were respectively unsurpassable. The frame of the latter is worth close study. Le Vack has only used one frame on Brooklands both for solo and sidecar work: and I hear it is still true and sound.

32 h.p. from 350 c.c.

We shall wait anxiously to prove what the new model engines are like on the road. I hear on the best authority that the Douglas people have coaxed 32 b.h.p. on the bench out of a special stunt edition of their 350 c.c. That is equal to 137 b.h.p. out of a 1½-litre car racer!

Impoverishment has practically banished the "posh" sidecar, most of the exhibits being workmanlike rather than ornate. Despite alarmist rumours, the best cycle cars are doing as well as ever. The Morgan stand was only semi-approachable. The T.B. people seemed very happy, and the Scott Sociable reaped the benefit of a price cut not far short of £40.

Turning to smaller items, it was delightful to see two such leaders of fashion as Triumph and Rudge using a *designed* speedometer drive; and the latter firm's "top of the tank" toolbox is as good as their new double-helical gears are quiet. The Scott three-speed gear box will popularise this famous machine in its sidecar form. Steering head lubrication is at last catered for on at least a dozen makes; 3½in. tyres are quite common on big twins, and 3in. tyres are obtainable on most 500 c.c. singles. Spring frames are few, and the growing popularity of the 350 c.c. machine will soon lead to a demand for an increase in its comfort. Shall we see 3in. tyres extended to it in 1923-4?

Steps in the Right Direction.

Completely encased mechanism is rare. The P. and P. does the job very nicely. So does the Harper, and the H.T. has ideas in the same direction. But most "engine rooms" are neither encased nor smoothed over. In the way of small gadgets, the Lamplugh "two level" petrol tap was probably the best thing in the Show, and can easily be fitted to any standard machine.

Of course, all the interesting things at the Show were not of a mechanical nature. Crowds always intrigue me, and an Olympian crowd particularly. The old lady who asked for a suitable sidecar for the McKenzie miniature, for instance; or the breeched lady members of pedal cycling clubs who passed by the most alluring sidecars with something approaching disdain; or the two schoolboys who were more fascinated by the presence of George Dance, himself, than by all the glittering Sunbeam exhibit.

On the whole, a great Show with economical motor cycling as its keynote, but full of sound tendencies, all rather hampered by that cautiousness in design which is a mark of profound wisdom in a period of lean finance.

Dunlop First in 1888

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Tyres at Olympia

Total number of tyres fitted to motor cycles and light cars at the Show	1637	
DUNLOP - - -	**902**	DUNLOP 55·10%
Divided between 16 other makes -	735	
Total number of motor cycle belts fitted to machines at the Show -	171	
DUNLOP - - -	**116**	DUNLOP 67·83%
Divided between 9 other makes -	55	
Total number of tyres fitted to cycles at the Show - - -	1170	
DUNLOP - - -	**796**	DUNLOP 68·03%
Divided between 15 other makes -	374	

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All Models on view and for trial at District Agents and at our West End Showrooms:—

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QUALITY UNALTERED.

Not the slightest alteration to the quality of the material has been made; a degree of sturdiness, dependability and long life has been aimed at altogether beyond the general light car standard. For refinement of design, detail work and finish the G.N. at its new price has no rival.

Send for the G.N. Catalogue.

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When using Benzole it is advisable to drain the engine sump rather sooner than when Petrol is used.

THE grades of Wakefield Castrol recommended for use with Petrol engines are equally efficient for engines which use Benzole or a mixture of Petrol and Benzole. This has been proved in such searching tests as the successful R.A.C. Benzole Trial when a Rolls-Royce car (lubricated with Wakefield Castrol) tested the efficiency of Benzole over a distance of 10,000 miles.

8 NEW WORLD'S RECORDS on Nov. 24th: **100 MILES** to **400 MILES** by 3½ h.p. Douglas (J. Emerson) on Wakefield **CASTROL**

WAKEFIELD Castrol MOTOR OIL

Limit the feed and eliminate the carbon.

Pocket Lubrication Index and Price List sent on request.

C. C. WAKEFIELD & CO., LTD.,

All British Firm. Specialists in Motor Lubrication.

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CORRECTION.

It is regretted that, owing to a Printer's error, the price of the

O.H.V. 3½ h.p. NORTON

was stated in last week's issue of "*The Motor Cycle*" to be £78. This should have been

£98.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

BENEFITS OF RESEARCH WORK.

Sir,—As inventor and joint patentee of the brake described in your issue of the 16th ult., I appreciate your enterprise in giving it early publicity, but as Director of Research of the British Motor Cycle and Cycle Car Research Association, I beg leave to traverse, with all the emphasis consistent with courtesy, the statement that this brake is "the first practical evidence of the activities of the Research Association."

The brake in question was devised before the research work on the subject had begun, but as the results of the experiments became available, they confirmed fully and thoroughly the advantages and properties of the design, and these have been further confirmed in road tests.

My object is to bring into prominence the view that inventions and patents, however useful, are but a very small part of the rich harvest to be reaped by the methods of scientific research. H. S. ROWELL.

[The announcement of the brake design referred to was the first notification of any device or experiment to reach us from the Research Association.—ED.]

HUMIDITY AND POWER OUTPUT.

Sir,—In the discussion regarding "Humidity and Power Output" apparently the simple fact that dry atmosphere contains a greater proportion of *air* than moist atmosphere has been disregarded. The average motor cycle carburetter is adjusted to give a reasonable performance consistent with economy, and it follows that, if for a given volume of atmosphere induced less *air* is present, the resultant slightly richer mixture must improve that performance.

F. KEYS.

Sir,—My remarks having aroused criticism, I hasten to reply thereto.

By his "nom(bre)-de-plume" I recognise "49,867" as a departmental confrère. It is gratifying to note that he partially agrees with my view.

As to super-Rudging I can assure him and Mr. Andrews that it is neither provoked by imagination nor a species of D.T.'s as "Macbnus" suggests. On a gear of 3 or 4 to 1 an increase in engine revolutions is most noticeable. The speed-burst may last for a mile or more followed by a spell of normal running—this without alteration of controls or personal lubrication!

May I recommend Mr. Andrews to peruse my previous letter again. I fail to see how I suggest therein that water-vapour increases the density of the air—this point is precisely my bone of contention with "M.B.B.H." He also states that I appear to think the density of the atmosphere varies only with pressure. Has he noted my remark that the cold air in the valley must be slightly heavier (or denser) than the warmer air on the hill-tops? Surely an effect of temperature on the density of the air, explained, for Mr. Andrew's benefit, by terrestrial radiation. His statements are mainly a reiteration of my own.

"Research the carburetter" in his letter has my partial support, and I look forward to informative and not controversial replies to his queries. P. F. JARROLD.

HARDIER NORTHERNERS?

Sir,—Whence this undeserved laudation of the "hardier Northerners"?

Do we not remember the recent A.C.U. Six Days Trials wherein three of these Northerners, riding machines made up amongst the "rough stuff" and famed for stability, were afraid to take a sporting chance on a little pimple down south that even I (a mere Southerner) have often climbed on a baby sidecar outfit? UNCONVINCED.

Oxford.

Sir,—Oh, what an amiable sort of fellow "Southerner" must be! We surly hogs of the North think he is most fortunately situated just where he is—down south. He seems to have a marvellous capacity for turning a friendly jest into a most outrageous insult. I should advise him to procure a waterproof cover for his little sailor hat, as some of the rain in which he so evidently enjoys riding seems to have penetrated to his brain. BN 4518

Lancaster.

Sir,—So the hot blood of the Southerner is again aroused by the worthy comments of the "Lancashire Lad" with regard to the respective merits of the Northern and Southern rider.

Ah, well! Was there ever a page in history when absolute agreement was reached between the denizens of the hills and plains? I think not. And now the old, old question is again reaped up, only this time with additions regarding the manners of the Northerner.

I am indeed desolated to think of the low opinion held for us by your worthy correspondent of the great metropolis who rides his single-geared two-stroke on the Bath Road and the "Street" after dark, and who, I fancy, is mistaking manners for diplomacy.

If this is the case, I am in perfect agreement with him. The people of the North are (I regret to say it) not diplomatic. They are too abrupt. They have forgotten the old adage that a soft answer turneth away wrath, and they say just what they think. If their parlour tricks are not all that they should be, it is because of the fact that they spend most of their time in the saddle. In any case, their hearts are in the right place, and I am sure that none of them bear "Southerner" the slightest grudge for expressing *his* opinion. At least, they will not take it as an "insult."

With Mr. A. E. Jessop I can deeply sympathise. Being a secretary to a motor club, his thoughts are bound to be soured to a certain extent, but in any case, his geography is quite wrong. He speaks of the North as being the centre of the motor cycle industry, yet unless Birmingham, Wolverhampton, and Coventry have shifted their moorings lately, I have an idea that they are situated in the Midlands.

True, the Scott, the P. and M., and one or two others are natives of the North, but they form a very minute proportion of the motor cycle output, and I *have* heard of machines being made in very close proximity to London.

Again, with regard to our professing to enjoy bad roads, slag heaps, and the like, be that far from his mind. We

do not like them; they are merely a portion of the burdens we are compelled to bear, and we bear them as cheerfully as possible because of the delights which lie beyond.

But only in the industrial North are the eyesores to be found. In the real country (by which I mean anything North of Bradford and Leeds, and this is the district which I conclude to be indicated by "Ixion"), one will find the motor cyclist who delights in hills, cart-tracks, river-beds and the like, who does not take them because he is forced, but in a real spirit of discovery, in an attempt to find a piece of ground over which his machine will not take him —the man who turns the bows of his 'bus still further North, and who cannot bear to see a road snaking up the side of a precipice without attempting the climb.

Skipton. PARK-RASH.

Sir,—I read with much amusement the letters from the various injured Southerners which are the result of "Ixion's" (knowing old cuss) proposal that riders in the North are hardier than Southerners.

To put it plainly, it is, to my mind, a matter of practice or custom. Your Southerner has to ride at a grandfatherly speed on billiard table roads, owing to the efforts of the misguided set of nurses in blue uniform. On the other hand, the Northerner is more often far from the madding crowd (in blue).

Further, the Northerner is able to practise over rough surfaces, and so gets much more proficient than his Southern brothers; consequently, the hill or boulder-strewn surface which would dismay the Southerner would be calmly attempted by the other.

I sympathise with Mr. A. E. Jessop regarding the super-tuned policemen, and it will perhaps be a consolation to him to know that during a late motor show a party of simple Northerners went through a well-known police trap at speed, to experience the thrill of such sport; and, being simple people from the country, they were not in full possession of the rules of the game, and so did not stop to expose their birth-marks, etc., or as otherwise thought fit.

It is not a new experience to me to hear complaints after a Northern trial from Southern riders to the effect that the course has been "real murder." G. R. SYLVESTER.

Sir,—After the "Southern offensive" against "Ixion's" remarks in a recent issue I must say a few words in his support. As a Midlander now residing in the North I have sampled roads in most parts of the country on various types of machines and under varied conditions. His remark about "floundering over pot-holed setts and petrified kidneys" comes home to me very much at this time, which is my first winter up North for many years. He also forgets those steel skid-producers which some people use for running tramcars along. Though I have slithered about the wood setts in the heart of London and of Birmingham on fixed geared "90 bores" and sampled the greasy lanes and frost-covered tarmac of most counties in England for about fifteen years, there is one type of journey I have not yet raised the slightest enthusiasm for—even on a machine very near my ideal for ease of handling and steadiness (a standard Brough Superior)—that is, setting off for a night ride in foggy November drizzle over a road which has about forty solid miles of pot-holey cobbles and tramlines, through Lancashire traffic, with a pretty fair chance of landing under an umpteen-ton steam waggon if you fall at the wrong time! No, one only has to ride for a short time up here to say that the all-weather solo rider in Lancashire is a very "stout fellow"—it's a very different thing to pottering back from the "Hut" on a little two-stroke.

Oldham. BENUROW.

COMBINED PRIMARY AND IGNITION DRIVE.

Sir,—I should like to know, through the pages of your valued paper, the opinion of other motor cyclists on the design of a certain machine at the Olympia Show, in which the power of the engine passes to the gear box *via* the armature spindle of an M.L. ignition and lighting unit. The entire load is borne on this spindle as it is placed between the engine and gear box, on the *driving* side of the chain, therefore becoming the fulcrum, the engine being the power and the gear box representing the load. "MURCLUF."

London, E.10.

RECORDS BY PRIVATE OWNERS.

Sir,—I should like to suggest that next season records might be set up at Brooklands by private owners; I am sure that it would arouse a great deal of interest, as it would show what a standard machine can do in the hands of people who are in no way connected with the trade. PRIVATE OWNER B.M.C.R.C.

London, E.C.2.

HOW TO CLIMB ALT-Y-BADY

Sir,—Judging from his letter, Mr. Wills has misunderstood my letter on Alt-y-Bady.

I certainly did not mean to imply that Mr. Wills was throwing away any chances of making a clean climb by taking the hill in second gear in last year's Reliance Cup Trial. I have seen Mr. Wills climbing Alt-y-Bady and other hills far too often to infer anything of the sort.

What I meant to imply was that the only way for the *average rider* to climb Alt-y-Bady was by taking the hill as slowly as possible on a low gear ratio. As a matter of fact I distinctly remember hearing Mr. Wills himself say that Alt-y-Bady was not really difficult *if taken slowly on a low gear*; and this was what I meant to be the main point of my letter. I. WALTER BEVERS.

SEMI-SOLID TYRES.

Sir,—I have read the leaderette on "Solid Tyres on Touring Machines," in which you say "The difference in the 'bounce' of the former (pneumatic) and the dead thud of the latter conveys its own story." There is very little more difference here than there is between the bounce of a "Sorbo" unburstable ball and a piece of solid rubber.

The former consists of a rubber casing filled with a sponge-like rubber substance, and is an extremely "lively" type of bouncing ball. A motor cycle tube filled with the same substance should provide a tyre quite as resilient as the pneumatic tyre at present in use, if not more so.

I am convinced that, with a little experiment in this direction, an efficient motor cycle tyre could be produced.

Worcester. "SORBIST."

[Sorbo pedal cycle tyres are already made.—ED.]

FIRST TO CLIMB SKIDDAW.

Sir,—Mr. Rutherford (in his "Observations from the North-West") says that not long ago he saw a report in which a rider claimed to have made the first ascent of Skiddaw. If Mr. Rutherford can produce that statement I will contradict it, but I think that if he takes the trouble to read it instead of casting it aside with contempt he will find that the report says, "We think we are right in saying that this is the first time that Skiddaw has been climbed with a sidecar and passenger."

He will note from the report that my machine was a 498 c.c. Zenith-Bradshaw with a bottom gear of 16½ to 1—not so low when you consider that some of the 750 c.c. machines used a 25 to 1 in this year's English Six Days Trials. Mr. Rutherford then says the ascent was made quite recently by T. B. Westmoreland, R. Drinkall, W. B. Little and R. Braithwaite, all on single-geared machines. I suppose he can prove his statements, but in any case I ask him to make an appointment with me at Keswick any Sunday, when he can produce the machine and rider to prove what he says. As this time of the year is ideal for proving the efficiency of fixed-geared machines, "Oh, let it be soon!"

Being a member of clubs affiliated to the Northern Centre and the North-Western Centre A.C.U., I competed in the North-Western Centre Championship Trial this year, but the Northern Centre Championship Trial was cancelled through insufficient entries. Perhaps most of the riders were on picnicing jaunts.

Wrynose, Blae Tarn, etc., are not comparable with Skiddaw for gradient or surface, which can easily be proved.

In closing I hope that Messrs. Westmoreland, Drinkall, Little and Braithwaite will accept my apologies for being brought into this matter. I am not belittling their riding capabilities; I am only challenging Mr. Rutherford's statement. A. JEPSON.

GEARS OF 1912.

Sir,—"Ixion" alludes to hub gears as imitation alarm clocks, etc.

The hub gear led up to the box gear, which is a vast improvement, of course, but in its day we were very glad of the former. I don't know if "Ixion" ever had any experience with one, and could not get on with it. Maybe. Anyway, its chief fault was that it needed a little ordinary intelligence to keep it in trim. It was not, like the present-day gear box, practically fool-proof.

I have ridden thousands of miles with both the Sturmey-Archer and Armstrong, and had no particular trouble until they wore out, and I have heard say that even the present gears sometimes do that.

I can mention a much worse terror than a hub gear. Does "Ixion" remember the old "Benz"—I almost forget how to spell it now—car with its series of belt gears like the overhead shafting of an engineers' shop? "AN OLD 'UN."

Leicester.

Sir,—I am the proud, also impecunious, possessor of a 10-year-old Triumph, and to have this spoken of and compared to the mind of a Kaffir in this manner touches me to the raw.

Comparisons are indeed odious! True, there are vast improvements in the present models, but "my imitation alarm clock fixed in the back wheel" does not need the treatment "Ixion" prescribes. I give it a spot of oil every 2,000 miles or so, and that is all. Adjustment is not necessary save when taking out the back wheel, which I admit is a nuisance, but only occurs rarely; and gear changing is as easy as falling off a log. Silent and sure at any speed. And I have obtained 54 m.p.h. ont of this 10-year-old. And all the other component parts of this machine fall into line, to make it indeed a non-trouble 'bus.

I have just completed a 1,000-mile 8-day tour of Devonshire and South Coast from the Midlands—and never once touched a spanner. (Kaffir, indeed!) This would be quite a creditable performance for a 1922 'bus; and I am extremely doubtful if some of the 1922 makes will still be going in 1932 as well as my trusty Triumph does at the present day. I quite expect mine will even then be still emulating Johnny Walker and going strong! B.C.1499.

Leicester.

ABROAD ON AN AMERICAN MACHINE.

Sir,—From time to time one sees letters in which readers describe their experiences with various machines. These usually deal with English motor cycles ridden in England, and it may be of interest to know of the behaviour of an electrically-equipped Indian Scout in one of the Colonies.

Judging from what I have read, the word "colony" conjures up visions of frightful roads, abounding in potholes and young rocks, in the mind of the average motorist in England, so before I give an account of my experiences with the Scout, let me say that this little colony of Hong Kong boasts of roads with a magnificent surface. Indeed, it is a motorists' Paradise in miniature, the only drawback lying in the constant hill-climbing, many of these climbs being two miles in length.

During the months of May, June, and July of this year I rode a second-hand 1921 Indian Scout, taken over when it had done about 2,000 miles. In this period I covered 1,900 miles, more than a thousand of which were with a pillion passenger, and particulars of this mileage are here given :—

Petrol consumed : 23 gallons (82 m.p.g.)
Oil consumed : 1½ gallons (1,260 m.p.g.).
Highest speed attained : 54 m.p.h. (with two up).

The machine had plenty of power and excellent acceleration.

Troubles enconntered were as follows :—

Kickstarter.—The method of attachment was not sufficiently sturdy, as on all Scouts of 1920 and 1921. I think I am perfectly safe in saying this, because every Scout rider in Hong Kong has experienced the same trouble, more or less.

Clutch.—Trouble with this was due to the previous owner's harsh driving and lack of attention, as he omitted to oil the gear box as often as was required. Filing the clutch plates to a perfectly even surface and regular oiling remedied the defect.

Electric Equipment.—This gave trouble twice, again due to the first owner's carelessness. A mysterious short occurred in the battery box; this was easily cured. The generator then refused to charge. The fault was thought to be due to a defect in the wiring, but as changing it produced no difference the generator itself was attended to. The trouble was then found to be pitted platinum points. When these were filed down the generator regained its former efficiency.

Points which might be improved are the angle of the footrests, the ground clearance, and the method of chain protection. A chain-case like that fitted on the 1922 Harley flat twin, with the same system of chain-oiling, would be very desirable.

I have not ridden a medium-weight to beat the Indian Scout for ease of cornering, power, and all-round efficiency, coupled with remarkable silence, though there are one or two which are more comfortable and slightly smoother-running. LEO. D'ALMADA, Jr.

Hong Kong.

SILENT MACHINES OF LONG AGO.

Sir,—Eagerly we have awaited a fitting reply to "M.D.'s" amazing display of general "knowledge" in *The Motor Cycle* of October 19th. "M.D.'s" proof that the fitting of a silencer not only does not increase but actually decreases back pressure is too funny to be allowed to pass unnoticed.

Because the uncovering of a hole drilled in his exhaust pipe, two inches from the port, made his machine run worse than it did with this hole covered, *therefore* the fitting of a silencer (he does not specify any type) will actually improve the running of any machine. "So much for loss of power through an exhaust box," he says, and settles the whole question for ever—but perhaps only to his own satisfaction.

Does he fail to comprehend that the uncovering of such a hole would disturb the whole exhaust system, minimising the "extractor" effect of a straight-through pipe and causing innumerable eddies and other frictional disturbances in *any* exhaust system? I have omitted the fact that, were the hole in front, there would be a *direct* air current tending to prevent the exit of the exhaust gases, because even "M.D." might have realised this.

I would not exchange my 490 c.c. Norton for fifty 2⅛ h.p. Clement-Garrards, however many decades the Norton may be behind the C.-G. in design.

Where would "M.D." *like* his engine? Carried in a separate vehicle?

London, S.W.9. NUISANCE (*né* KNUT).

SECONDS COUNT, even in long distance records, and the method of filling the oil-tank of J. H. Mather's record-breaking Rudge shows that this rider has realised the fact.

THREE-SPEED SCOTT SQUIRRELS.

Sir,—As an admirer of the Scott Squirrel, though not an owner, may I ask why the three-speed gear box fitted to the standard Scott for 1923 is not fitted to the Squirrel model also? It seems to me that this would even further improve this already admirable machine. ALLAN HARTLEY.

H.P. OR FUEL TAX?

Sir,—It is evident from matter appearing in your correspondence columns that there are motor cyclists who fail to realise that a fuel tax would be a *fair* method of taxation, in so far that the contribution from each vehicle would be proportional to road usage.

I do not agree with "XR 3296" when he remarks that because a man buys a motor cycle for *pleasure*, he should be taxed. The Chancellor of the Exchequer does not intend it to be a "pleasure" tax, otherwise the man who spends £100 on a billiard table, for pleasure, should be in the same category. Why not a £10 tax on all beer drinkers, irrespective of the quantity of beverage consumed by the individual? Just as logical, isn't it! A. C. GILLMAN.

INTEREST ON EASY PAYMENTS.

Sir,—We were somewhat surprised at the contentions of "Not Likely," on the easy payment question.

For many years we have conducted our own deferred payments, and all we charge is 4 per cent. on the total sum, or 5 per cent. on the balance, and we have always had a system of discounts when account has been paid in two, four and six months, and we have just increased this to nine months. In addition, we have not insisted, as a great many firms do, on the client insuring the machine, although we advise everyone that it is the proper course to adopt.

The risks of easy payment business, and the costs of running, are very considerable. We speak from experience, our contention being that if this system was not in vogue there would be far fewer motorists on the road.

The above calculations, we think you will find, work out at 5 per cent. on the balance, $8\frac{3}{4}$ per cent. per annum, or 4 per cent on the total sum, 9 per cent. per annum, the figures being calculated on the basis of one quarter down and the balance in 12 monthly instalments.

R. RICHARDSON,
Secretary for LAMBS, LTD.

Sir,—We were intensely amused at "Not Likely's" letter, always assuming (as we must assume, since, so far as we are aware, we are the only firm advertising these figures) that his remarks refer to the Tripp Lightweight.

We have always had a very high opinion of the nerve displayed by most of the motor cycling fraternity, but we can hardly appreciate it when exhibited in this new form. Surely ordinary courtesy would demand that one makes as sure as possible of the facts before rushing into print, even under the cloak of anonymity.

The fallacy in "Not Likely's" letter is that while £24 3s. buys a Tripp motor cycle only, the deferred payment terms, amounting in all to £27 10s., buy a Tripp motor cycle, *plus* a full insurance policy for twelve months, and include interest charges at the rate of 1s. 10d. per month. Your commercial readers will, no doubt, see at a glance what an enormous profit this monthly figure produces after meeting the overhead charges of receiving, recording, banking, and acknowledging receipt of a large remittance like £1 17s. 6d.

Perhaps "Not Likely" will oblige with another of his lightning calculations and tell us how we do it?

J. K. CARRUTH,
Managing Director,
THE TRIPP CYCLE CO., LTD.

PILLION RIDING IN SAFETY.

Sir,—Considerable experience of pillion riding has convinced me that the best method, from the driver's point of view anyhow, is when the passenger sits side-saddle on an ordinary strapped-on cushion, *and not on a sprung pillion seat.* Whether the majority of passengers agree is another matter. NOAH.

London, N.W.8.

Sir,—I quite agree with "A.B.C." that side saddle is the best and safest style of pillion riding. I have done scores of miles with my wife up on my Allon, and if we come to a stiff hill she can just slide off and walk on to the top without my stopping the machine. C. H. HILL.

Wiveliscombe.

Sir,—If Mr. Killingbeck will make a trial of an ordinary saddle fixed to the carrier on a motor bicycle he will soon find out why this shape is not suitable. In order to clear various obstructions, such as the carrier and driver, the passenger's knees have to be considerably wider apart than those of the driver, which fact alone makes an ordinary saddle rather uncomfortable.

We agree, of course, that the ordinary pillion seat is not suitable for astride riding, and have conducted very many experiments with a view to evolving the best seat for the

J. SHELLY,
Manager, SAXESSORIES, LTD.

Sir,—Your correspondent, "A.B.C.," expresses rather amusing views when he says that in emergencies a side-saddle passenger of a motor cycle can alight, and thus only the rider may come to grief. Has it occurred to "A.B.C." that alighting from a machine travelling at speed is much harder than it seems? Besides, it would upset the balance of the motor cycle and thus probably bring about an accident which might otherwise have been avoided.

"A.B.C." has touched 58 m.p.h. with his passenger-seated side-saddle, and, in my opinion, had an emergency then arisen, the passenger would have been just as badly hurt through jumping off as by hanging on.

In the course of the last six years I have covered about 20,000 miles with tandem passengers, who have always been seated astride, with feet resting on firmly-fixed footrests. I find I can attain higher speeds with a passenger than without, as the additional weight makes for steadiness.

In all, I have had about half-a-dozen crashes, and only in one of these was I carrying a passenger. This happened in Hong Kong, China, and may interest your readers. The doubting Thomases will, no doubt, ridicule me, but I have eye-witnesses.

Three of us were speeding along on a fine stretch of roadway skirting the sea, when the leader got speed wobble at about 45 m.p.h. He crashed just ahead of me. I had no alternative but to ride over his machine, yelling to my passenger to hang on. Unfortunately, the Tan-Sad he hung on to was not firmly fixed to the carrier (which was not tubular), and so, when we bumped, Tan-Sad and passenger went sailing into the air, to land, after a couple of somersaults, in the sea! The miracle of it is that I was not unseated, and continued for a few yards before coming to a stop. I think I rode over the back stand and rear wheel of the other machine. "KOWLOON HARLEY."

London, E.C.2.

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CURRENT CHAT (continued from p. 887)

Flying Motor Cyclists.

In France a club has been formed to encourage motor gliding.

After the Club Dinner.

Seen on the Birmingham-Warwick road: A leather-clad, be-helmetted and be-goggled speedman vainly attempting to inflate one of the security bolts of his Norton.

Organisation of Paris-Nice Trial.

Next year's Paris-Nice trial will be held in the middle of February. The whole control will be in the hands of M. Bonnet, 102, Rue de Charonne, Paris, the general secretary of the *Motocycle Club de France*.

A New Era!

Among the novelties of the Show, as discovered by a Sunday newspaper, were a "£25 cycle and sidecar for the family" and a "machine capable of pulling out to 200 m.p.h." Certainly (still quoting from the same source) "Olympia presents the vision of a new era."

Road Improvements.

In connection with the proposed British Empire Exhibition numerous road improvements are being made in the neighbourhood of Wembley Park, Kingsbury, and Neasden.

Where the Ford Shines.

That the most efficient car headlamps are not always the most dazzling is proved by the fact that motor cyclists often complain that Ford cars are the worst offenders of all.

Sleeve Valves for India.

"Push the sleeve valve engine for all you are worth," says a correspondent in India. "It is *the* engine for the East."

New Officers of the A.A.

Owing to his appointment as a member of H.M. Government, Sir William Joynson-Hicks, Bt., M.P., D.L., has had to tender his resignation as Chairman of the A.A. and M.U. Lt.-Col. Charles Jarrott, O.B.E., who for a long time occupied the post of Chairman of the Motor Cycling Club, has been elected to fill the vacant position. Lt.-Col. Sir Walter Gibbons, K.B.E., D.L., and the late Hon. Treasurer, Mr. Charles McWhirter, will be Vice-Chairmen, and Mr. W. Ballin Hinde fills the post of Hon. Treasurer.

A "Sporting" Sidecar.

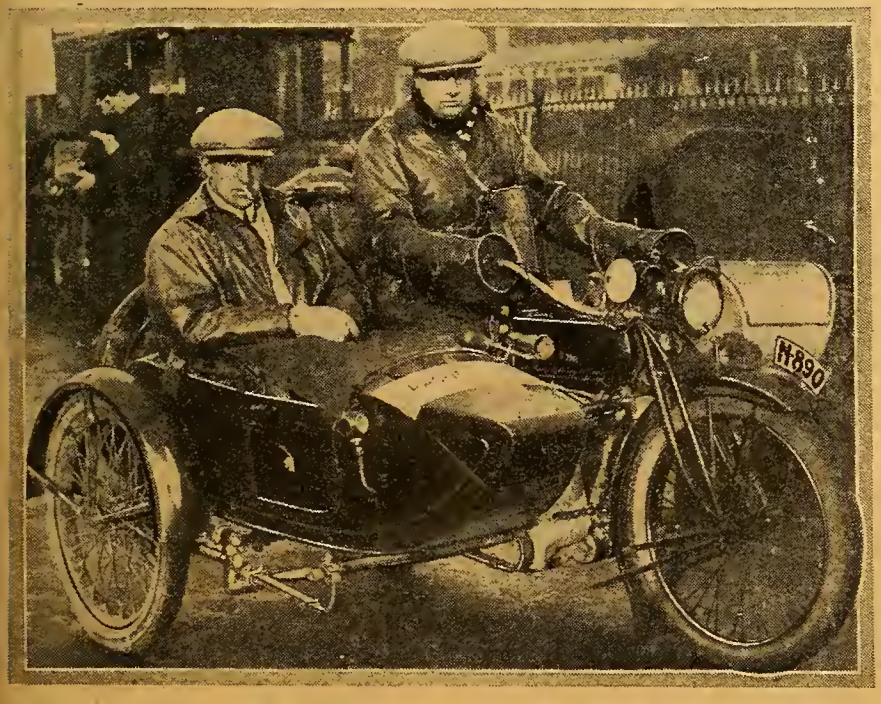
A new use for the sidecar—and its "silencer"—is described by an Australian contributor to *The Field* this week. In a reference to the shooting of bush fowl he writes:—"In this district the bush fowl usually lie up near the road in the evening, and on one occasion, when we had nothing to do, my boss suggested that he should drive up the road with me in the sidecar armed with a 12-bore, trusting that the noise of the motor would put the birds up. . . . We saw only a brace; the first got up about fifteen yards away and rather in front (we were doing about twelve miles an hour), and I missed him. Another got up in the same place, so I swung round in the sidecar and loosed off the choke, and down he came."

Exclusively Social.

The newly-formed Wigan M.C.C. caters for sidecarists only.

Essential Spares.

A correspondent in the East sends a long list of spares and equipment which he deems it wise to carry. After enumerating them all, one by one, he concludes, "and lastly, an orderly, who can help with repairs."



ESTABLISHING A NEW RECORD. This driver and passenger rode from Prague, Czecho-Slovakia, a distance of nearly 1,000 miles, in order to visit Olympia. Such enthusiasm would be hard to beat even among British riders.

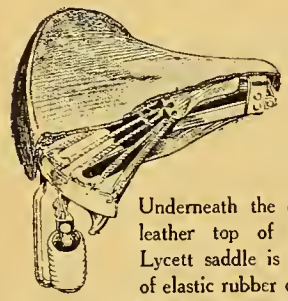
Next Year's Competition Programme.

Provisional dates for various important and open competitions during 1923 have now been arranged as follows:—

Sat., Feb. 24th—Colmore Cup Trial.
Wed., Mar. 14th—A.C.U. Stock Machine Trial.
Sat., Mar. 17th—Victory Cup Trial.
Sat., Mar. 24th—Essex M.C. Hill Climb.
Easter Monday, April 2nd—Northern Centre Hill Climb.
Sat., April 7th—Western Centre Reliability Trial.
Sat., April 14th—Wessex Centre Speed Trials.
Sat., April 21st—Eastern Centre Reliability Trial.
Sat., April 28th—North-Eastern Centre Reliability Trial.
Sat., May 5th—South Midland Centre Speed Trials or Hill Climb.
Sat., May 12th—Midland Centre Reliability Trial or Hill Climb.
Fri., May 18th-19th—M.C.C. London-Edinburgh Run.
Whit-Monday, May 21st—North London M.C.C. London Rally.
Sat., May 26th—Northern Centre Reliability Trial.
Mon., June 11th—Junior T.T. Race.
Wed., June 13th—Lightweight and Sidecar T.T. Races.
Fri., June 15th—Senior T.T. Race.
Sat., June 23rd—M.C.C. Team Trial for "The Motor Cycle" Cup.
Sat., June 23rd—South-Western Centre Reliability Trial.
Sat., June 30th—Yorkshire Centre Reliability Trial.
Sat., June 30th—East South Wales Centre Speed Trials.
Thurs., July 5th—Eastern Centre Speed Trials.
Sat., July 7th—Midland Centre Reliability Trial.
Sat., July 14th—South-Eastern Centre Reliability Trial.
Sat., July 21st—B.M.C.R.C. 500 Miles Race.
Sat., July 21st—North-Western Centre Trial.
Sat., July 21st—Yorkshire Centre Speed Trials.
Sat., July 28th—North Wales Centre Reliability Trial.
Sat., Aug. 4th—East Midland Centre Speed Trials.
Mon., Aug. 6th—West-South Wales Centre Speed Trials.
Wed., Aug. 29th, to Wed., Sept. 5th—A.C.U. Six Days Trials.
Sat., Oct. 13th—East Midland Centre Paskell Cup Trial.
Sat., 27th—Cheshire Centre Reliance Cup Trial.

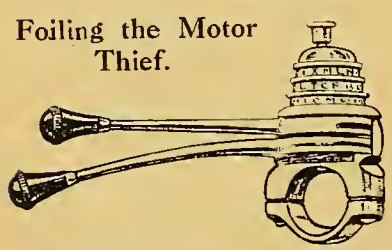
AMONG THE ACCESSORIES.

Elastic for Saddle Suspension.



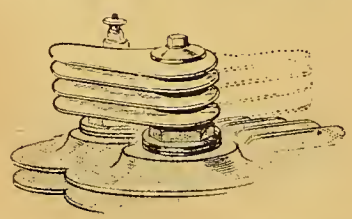
Underneath the detachable leather top of the new Lycett saddle is a network of elastic rubber cords, thus giving a very flexible and comfortable seat. (Lycett Saddle and Motor Accessories Co., Ltd., Bromley Street, Birmingham.)

Foiling the Motor Thief.



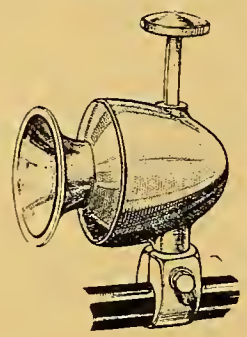
To make the ways of the motor cycle thief more difficult a combination letter lock for the carburetter levers is marketed by the Firmus Co., Ltd., 4-6, Earl Street, Westminster, London, S.W.1. The idea suggests possibilities.

Swivelling Valve Cap Radiator



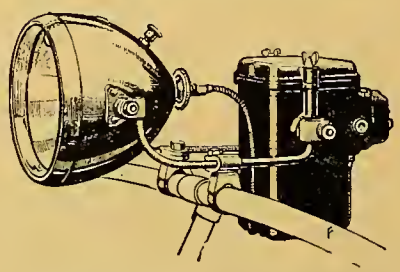
To allow an extensive radiator to be fitted in a proscribed space, the finned portion of the F.E.W. valve cap cooling tower swivels into any desired position. 7s. 6d. (F.E.W. Patents Co., 217, Gordon Road, Peckham, London, S.E.15.)

Neat Mechanical Horn.



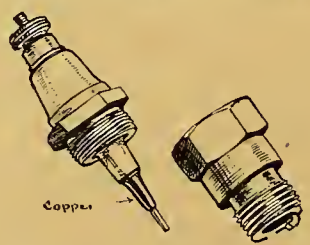
Two good features of the latest Pennant mechanical horn are its neat clip and its "clean" appearance. 27s.6d. (Pennant Manufacturing Co., Ltd., Watery Lane, Birmingham.)

Clean and Workmanlike.



Considerable neatness now characterises the head lamp and battery of the M-L Maglita combined lighting and ignition set. (M-L Magneto Syndicate, Ltd., Victoria Works, Coventry.)

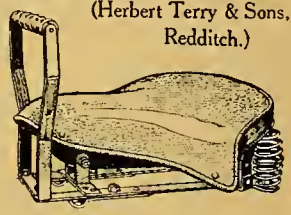
Copper Electrode Plug.



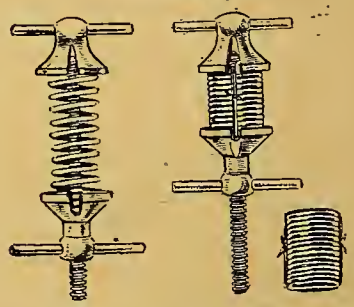
With the exception of a nickel tip, the whole central electrode of the new touring Sphinx sparking plug is of copper. (Sphinx Manufacturing Co., Ltd., Bradford Street, Birmingham.)

Saddle Type Pillion Seat.

Terrys have now produced a pillion seat on the lines of their well-known spring saddle with the addition of a handle. 63s. (Herbert Terry & Sons, Ltd., Redditch.)

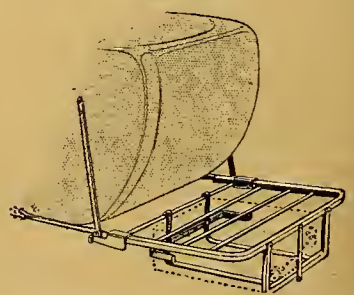


Valve Spring Replacement Facilitated.



Valve springs compressed and tied up with the Nesthill tool are easily replaced. With "needle" and twine the device costs 3s. 9d. (Ernest H. Hill, Ltd., Sheffield.)

Combined Grid and Fuel Can Carrier.



Underneath the Linco sidecar luggage grid is a rack to carry a spare tin of petrol. 12s. (F. Line and Co., 12-14, Buckingham Street, Birmingham.)

WHO'S WHO *in the* MOTOR CYCLE WORLD.

Brief Biographies of Personalities Associated with the Motor Cycle Movement.

Cyril George Pullin, Engineer, Brooklands.—C. G. Pullin was born at Wandsworth, and is 29 years old. He has accomplished many outstanding performances both before and since the war, solo and sidecar. In 1913 and 1914 he won seven cups in nine races, and in the latter year won the Senior T.T. on a Rudge-Multi. In 1913, on a similar machine, he set up new 6 hour record figures, while more later achievements include 91.68 m.p.h. mean speed on a 350 c.c. Douglas. He was the first rider to exceed 100 m.p.h. on a 500 c.c. motor cycle by official timing. His favourite type of machine is a solo mount, and his hobbies are shooting and golf.

Tom Corbett de la Hay, Engineer, Wolverhampton.—T. C. de la Hay was born at Ross, Herefordshire, and is 33 years of age. He has been a successful prize winner in motor cycle competitions over a long period. He won the Senior T.T. in 1920, was a member of the team winning the team prize in the 1914 T.T., and in 1922 won a gold medal in the T.T., a gold medal in the Colmore Cup competition, and a similar award in the English Six Days Trials. He has also won awards too numerous to mention in hill-climbs, speed events, etc. His present mount is a Sunbeam. His favourite type of machine is a 500 c.c. sports single.

John Arthur Watson-Bourne, Motor Agent, Atherstone.—Watson-Bourne is barely 27 years of age, but he has had experience with some of the earliest types of motor cycles, for two of his early machines were a 1902 Minerva and a Griffon-Zedel. During 1922 he has ridden a Brough Superior with great success. He was second in the Junior T.T., 1920, and fifth in the Senior T.T. Present mounts: 976 c.c. Brough-Superior, two Blackburne engined sporting machines and an old 499 c.c. Singer. Favourite type of machine: Big solo twin. Hobbies: Golf, fishing, shooting, motoring of any sort.

John Westwood Wills, Motor Cycle and Car Competition Driver, Wrexham.—Westwood Wills, born at Upholland 28 years ago, first came into prominence by gaining a gold medal in the Scottish Six Days Trials of 1919. He was one of two solo riders who climbed the Wrymore Pass successfully in the Cumberland Open Trial, 1921, and amongst his many successes in reliability trials is the winning of a gold medal, the North Wales Challenge Cup, the Powell Challenge Cup, and the North Wales Championship in the N. Wales Open Trial this year. Favourite type of machine: 350 c.c. solo, or sidecar. Hobby: Freak hill-climbing.

George Brough, Motor Cycle Manufacturer, Nottingham.—Few riders have so fine a record of successes in competitions of all sorts as George Brough, who possesses 89 gold medals and 34 cups. He was successful in the London to Edinburgh and back run three years in succession—1910, 1911, and 1912. He piloted a single-geared machine throughout the 1912 Scottish Six Days Trials under *The Motor Cycle* observation without opening a toolbag. Three appearances at this year's Brooklands have given him three firsts. Present mount: Brough Superior. Favourite type of machine: Big twin.

Fred W. Dixon, Motor and Motor Cycle Agent, Middlesbrough.—F. W. Dixon, who was born at Stockton-on-Tees thirty years ago, has been particularly successful with high-powered machines, both in this country and abroad. Among his major successes are the following: 1st in the Scottish Championship 1,000 c.c. Class, 1919; 1st in the Yorkshire Championship 1,000 c.c. Class, 1921 and 1922; 2nd in Senior T.T., 1921; 2nd in 500 Mile Race, 1921; 3rd in the Belgian Grand Prix, 1921; and 4th in the French Grand Prix, 1921. Present mount: 998 c.c. Harley-Davidson. Favourite type of machine: Big twin.

Howard Raymond Davies, Wolverhampton.—H. R. Davies, born in Birmingham, and 27 years of age, has scored many successes with machines of relatively small power. His greatest achievement was his win in the 1921 Senior T.T. with a Junior machine, *i.e.*, 349 c.c. A.J.S. He was second in the Junior T.T., and the first rider in the world to attain a speed of 80 m.p.h. on a 350 c.c. machine. He came in second in the 1914 Senior T.T. on a Sunbeam, and was in the winning team. Davies has won trophies for swimming. He drives a Cubitt car, but his favourite type of motor cycle is one of the 350 c.c. o.h.v. pattern. Hobbies: Riding, tennis, motoring.

Ernest Searle, Trade Rider and Fitter, Sheffield.—Searle, who was born in Sheffield 23 years ago, has been very successful in post-war reliability trials. Outstanding performances have been his winning of the Raleigh Cup for speed, hill-climbing, and reliability, a performance which gave him the coveted motor cycling championship of the North. This year he made the best individual solo performance in the Six Days Trials on a 348 c.c. Sheffield-Henderson. Present mount: 492 c.c. Sunbeam. Favourite type of machine: Single-cylinder sports. Hobby: Photography.

THE MOTOR CYCLISTS' PARLIAMENT.

A.C.U. General Committee Meeting. A Cycle Car Race Proposed for 1923. Attention to be paid to Silencing.

THE fourth meeting of the 1922 session of the Auto Cycle Union held at the Royal Automobile Club on Friday last, continued for four hours, under the able chairmanship of Col. Brereton.

Perhaps the most interesting matter brought up was the proposal, arising out of the report of one of the competition committee meetings, which dealt with a cycle car T.T. race in 1923.

The A.C.U. and the R.A.C.

In the course of the discussion which followed Mr. T. W. Loughborough pointed out, in reply to Major Axford, who considered cycle cars of the four-wheel type to be outside the A.C.U.'s scope, that it was the Union's duty to look after all vehicles used by the poorer classes. Since the war the A.C.U. had catered for three-wheelers and the R.A.C. for four-wheeled cycle cars, a simple arrangement; but on the Continent the original definition had been adhered to, which involved a capacity limit of 1,100 c.c. and a weight limit. In France this had resulted in the French Government accepting this F.I.C.M. original definition in its taxation scheme, with the result that the French four-wheel cycle car was taxed on the same basis as a motor cycle. Also, a further effect had been the losing by England of a number of cycle car records. This week the matter was under discussion at the Congress of the International Association of Recognised Automobile Clubs, and if the old F.I.C.M. regulation was upheld, the A.C.U. would have an excellent case with the R.A.C. in persuading it to recognise the old definition. The matter was eventually adjourned until such time as the control of such vehicles was again in the hands of the A.C.U.

Record Conditions to be Revised.

Under the same heading, it was announced that a special sub-committee had been appointed to deal with the regulations under which records should be run, and it was also reported that representatives of manufacturers and of the Institution of Automobile Engineers were to be invited to attend a sub-committee to deal with the all-important question of silencers.

A propos of receiving subscriptions towards a trophy to perpetuate the memory of the late Mr. Alec Ross, it was pointed out by the secretary that as the affairs of the late vice-president of the Union were in a not very happy condition, it would be more suitable, when further details were known, to collect funds towards the education of the deceased's children, which was agreed.

Much time was occupied in discussing the advisability of the A.C.U. running its own Gazette for free distribution among its own members. This idea had clearly the support of the management committee, but it was by no means certain that those present were unanimously in favour of the idea. It was finally left to the management committee to go into the matter thoroughly and report to the next meeting.

The Year's Work.

Dealing with the preparation of the report of the A.C.U.'s work during the past season, Mr. T. W. Longhborough mentioned that for the first time in the history of automobilism all organisations had worked together in harmony in their efforts to secure a more equitable form of taxation. Six thousand home and nine hundred foreign tours had been worked out by the Touring Department. One thousand members had availed themselves of the Get-you-home Scheme, and four hundred cases had been dealt with under the free legal defence arrangement.

After the accounts had been gone through, which incidentally showed that the A.C.U. competitions were run in such a manner as just to pay their way, the date of the annual general meeting was decided. This will be held on Friday, January 19th, at 2.45 p.m., at the Royal Automobile Club.

The following clubs were affiliated to the parent body:—Wessex Centre: Devizes and District M.C., Melksham and District M.C.; and Southwick M.C.C.; E. Midland Centre: Gainsborough and District M.C.C.; N.W. Centre: N. Liverpool M.C.C.; and S. Midland Centre: St. Albans and District M.C.C.

AN AMATEUR RACE IN THE I.O.M.

Manx Motor Cycle Club to Organise a Race over the T.T. Course next September.

AMATEUR speedmen will welcome the news that it is practically certain that an amateur road race over the T.T. course will materialise next year. Since the idea was first mooted the Manx M.C.C. has been convinced that it is possible satisfactorily to define the term amateur and has framed provisional regulations based upon the suggestions put forward by *The Motor Cycle* when the race was proposed last spring.

Nothing has yet been definitely settled, except that an open competition permit has been promised by the Auto Cycle Union. The purpose for which the permit was required was made quite clear to the governing body, and the difference between a promise and a grant may be accepted that in the former case the actual date had not been fixed. It is to be assumed that immediately the date is decided, the promised permit will be granted to the Manx Motor Cycle Club.

Many motor cyclists are doubtful whether a purely amateur race is a practicable proposition, and discussion on this point is bound to occur.

Now that the governing body appears to be amicably inclined towards the race and no friction is likely to occur between the Manx Club and the A.C.U., *The Motor Cycle* repeats its former offer to provide a trophy for the premier award.

MOTOR TAXATION REFORM.

Opposition by Industrial Motor Users to the Petrol Tax.

THE Memorandum in favour of motor spirit taxation signed by eleven organisations representing all classes of motor vehicle users, including, of course, the R.A.C., the A.A. & M.U., and the A.C.U., which has been previously referred to in these pages, is shortly to be considered by the Departmental Committee appointed for that purpose, but considerable opposition has been received from the users of industrial motor vehicles to a scheme of taxation based on the amount of motor spirit used, with a smaller vehicle tax.

Fair to All.

What has happened is that, although road usage as a basis of taxation is both logical and equitable, the big transport concerns cannot see any virtue in a system which means that they might have to pay more. The Motor Taxation Reform Committee feels that the Commercial Motor Users' Association would have best served the interests of the commercial vehicle community by accepting the opportunity of supporting a scheme which it must know is fair to the vast majority of commercial motor users, even though it may be that the large road users—whether motor omnibus, heavy lorry, private motor car, or motor cycle—must pay proportionately the larger taxes.

ROYAL VISIT TO THE SHOW.

H.R.H. the Duke of York Inspects Representative Motor Cycle Exhibits.

ON Friday last at 10.30 a.m. in glorious weather H.R.H. the Duke of York paid a visit to the Motor Cycle Show in company with his equerry, Flight-Commander Louis Greig.

He was received by Sir Harold Bowden, President of the Motor Cycle Manufacturers' Union, and Mr. H. R. Watling, the manager. His Royal Highness was first of all conducted to the Morgan stand, where he took a great interest in the plated Morgan runabout which is equipped with an Anzani engine, the same make as was fitted to the Duke's racing machine. He then visited the Norton, Beardmore, and B.S.A. stands.

A True Miniature.

On the Rudge stand he spent some considerable time talking to Mr. Victor Holroyd, and there closely examined the one-twelfth size model of a Rudge sidecar outfit made for the Queen's doll-house. He remarked to Mr. Holroyd that number plates were devoid of numbers, so Mr. Holroyd replied that he presumed London numbers would have to be fixed. "Not at all," smilingly replied His Royal Highness, "the King's vehicles require no numbers at all." He spent some time chatting with Mr. Duncan Watson on the Harley-Davidson stand, then proceeded to take great interest in the Argson invalid tricycles and closely examined the A.J.S. stand, where the Dorway folding side-car was demonstrated to him. He next spent a little time talking with Mr. W. H. Wells, and mentioned to him that he thought the red finish of the Indian was a considerable asset to the firm as it rendered the machine easily distinguishable on the road. The O.E.C.-Blackburne taxi also occupied his attention. He then proceeded to the stand of Douglas Motors, Ltd., and spent a few minutes in conversation with Mr. S. L. Bailey, asking to be introduced to Pullin and Emerson, who are joint holders of 57 world's records.

H.R.H. the Duke of York, who is patron of the Auto Cycle Union, showed keen interest in the exhibits at Olympia.

It was particularly gratifying to note that the Duke of York did not neglect the smaller stands, as he spent a considerable period having the interesting G.S.D. explained to him.

Nor did the accessories escape H.R. Highness's notice, for he made a complete tour of the Gallery, where he had Le Vack presented to him. It is clear that the patron of the A.C.U. takes great interest in motor cycle racing.

"THE MOTOR CYCLE" FILM.

NUMEROUS visitors to the Show went to the Broadway Cinema, Hammersmith, last week and there viewed *The Motor Cycle* film, which was exceedingly well received. Hearty applause greeted many of the incidents in the film, and the appearance of the popular winners of the T.T. races was vociferously acclaimed.

During the week an application for the film has been received from the Eton Scientific Society for an early date in December, stating that if the 1922 film was not available the 1921 edition would be just as acceptable. An application for the film has also been received from France, and it is quite possible that at the end of its British tour the film will go to certain Continental clubs. An application has been made for the 1921 film to be shown in Australia.

To-day the Southern film is being exhibited by the Aberdare and District M.C.C. at Haggers Kosy Cinema, Market Street, Aberdare; on Friday by the Blaina and District M.C.C., at the Gaiety, Blaina, and on Saturday by the same club at the Empress, Abertillery. The Northern film was shown at Southport yesterday, and will be on view by the Widnes M.C.C. at the Co-operative Hall, Widnes, this evening; on Friday, by J. M. Mottershead, 157, Palatine Road, West Didsbury, and on Saturday by the County High School Old Boys' Club, 16, Market Street, Altrincham, near Manchester.

Next week the Southern film will be exhibited by the Gloucester M.C. and L.C.C. at the Theatre de Luxe, Gloucester, and on the 14th by the Richmond and District M.C. at the Princes Hall, Richmond, while the Northern film will be shown by the Cosy Cinema Co., Co-operative Hall, Queen's Ferry, near Chester, on Monday, the 11th, and by the Shirebrook M.C. at the Shirebrook Empire on Thursday, the 14th.

CHATER-LEA TRACK SUCCESSES.

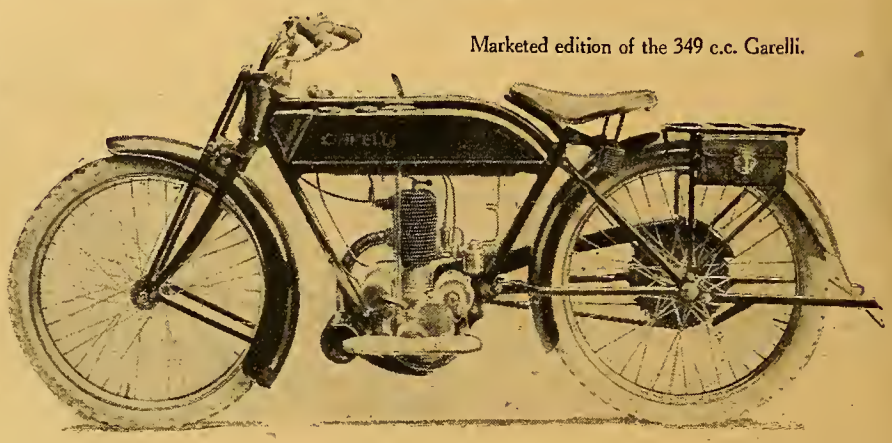
THOUGH possessing an enviable and world-wide reputation for reliability, the firm of Chater Lea, Ltd., has until the present rigidly abstained from speed events. It is now to be recorded that the first Chater-Lea record attempts have been rewarded with brilliant success. Using a 348 c.c. o.h.v. Blackburne engine (also a new departure for the firm), W. D. Marchant, on a Chater-Lea sidecar outfit, captured the 50 miles record, time 50m. 21.92s., and the one hour—57 miles 1,305 yards, averaging 59.26 m.p.h. for the 50 miles, and 57.74 m.p.h. in the hour.

AN ITALIAN TWO-STROKE.

The 349 c.c. Garelli Now Available in England.

THOUGH described in *The Motor Cycle* immediately after its success in the 350 c.c. class of the French Grand Prix, a further reference to the unconventional Garelli two-stroke cannot fail to be of interest, especially as the makers are now represented in England.

Few examples of departures from accepted practise, such as the Garelli is, have attained success at the very outset of their careers, but with this machine success was obtained not only in the small field at Strasbourg but in a much larger and more dangerous one of 39 riders on the Monza track in the Gran Premio delle Nazioni. It must be mentioned here that the engine design is not actually novel and owed its origin to an English inventor, but the Cavaliere Garelli was the first to adapt the principle to a motor cycle engine.



Marketed edition of the 349 c.c. Garelli.

Two Pistons on One Rod.

Briefly the Garelli engine (50 × 89 mm.) has two cylinders with clear air space between, two pistons and a common combustion chamber. Of the two pistons which are of chrome nickel steel the right-hand one has a flat top and the left-hand one a domed top, which acts as a deflector and prevents turbulence. These pistons, which are, of necessity, very long, are connected at their base by a single gudgeon pin in the centre of which works the small end of the single connecting rod.

On the mixture supplied by a one-lever Zenith carburetter (fitted with additional extra air inlet) being drawn into the crank case and compressed, the transfer port, which is inside the cylinder (actually in the dividing wall between the two) is uncovered by the left-hand piston, fills the left-hand cylinder and the combustion chamber and helps to expel the residue of burnt gases in the right-hand cylinder as the exhaust port is still uncovered; the pistons then rise and compress the charge which is fired by the plug in the left-hand cylinder, but as there is a common combustion chamber both pistons receive the explosion pressure.

Following the tendencies of modern Italian design unit construction is followed, but otherwise the lower part of the engine follows standard two-stroke practice in the main, but there are two inside flywheels, one of which incorporates a most ingenious transmission shock absorber.

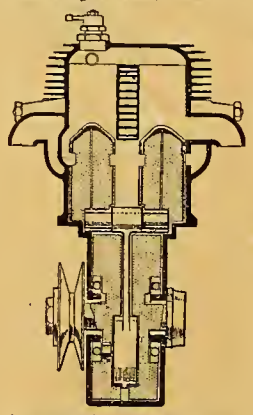


Diagram showing the double piston and cylinder. The flywheels are carried on ball-bearings mounted on fixed bosses to the crank case.

A star-shaped piece forms part of the main shaft and between the points of the stars there engage corresponding spring-loaded plungers, which work in steel bushes in the flywheel of the racing engine, while in the case of the touring engine a disc clutch pattern shock absorber is employed. Particular mention should be made of the clutch, which is of the multi-disc variety and is entirely enclosed in the unit, which, of course, contains the first reduction gear by spur wheels and the change speed gears.

Magneto Completely Enclosed.

Equally as neat as the clutch is the Mea-Garelli magneto, which is likewise entirely enclosed in the unit, but is easily detachable therefrom.

The result of this design is that the whole of the mechanism is enclosed and the only visible moving part is the final transmission chain.

Not the least interesting part of the machine is the internal expanding brake in the back hub, which possesses two sets of shoes, with the result that two independent brakes are incorporated in the one shell, each separately controlled.

Detachable wheels are fitted, and the front forks, which are of a special design, are extraordinarily flexible.

All controls are entirely enclosed, no naked wires being visible, while the change speed lever acts directly on the gear box, there being no intermediate toggles or rods.

Owing to the high-class finish and the fact that there is a heavy import duty on the machine the price is high, being £135.

Now that the Garelli has arrived in England its road performances will be as eagerly awaited as its victories in races were acclaimed in the most important Continental events during the past season. A. F. Lago, Ltd., 2, Featherstone Buildings, High Holborn, London, W.C.1, are handling the machine.

A cylindrical gear-driven magneto is housed in the crank case.

Grand Prix pattern of the Garelli with twin exhaust pipes.

DEVELOPED AT BROOKLANDS.

Trump Models with Single- and Twin-cylinder Engines.

PRODUCED at a comparatively small factory, Trump motor cycles owe their success mainly to two reasons: firstly, that the said small factory is within easy reach of Brooklands track, and secondly that their designers are practical riders whose successes on road and track date from the founding of the B.M.C.R.C. and even before that period.

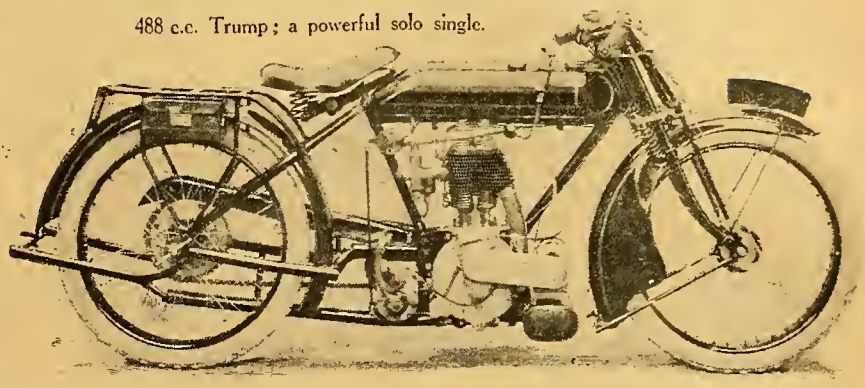
One of the most attractive of the 1923 Trump machines is the 346 c.c. model, fitted with a 70×90 mm. sports J.A.P. engine. Its lines are symmetrical, and it has a most pleasing appearance, and though it departs little from accepted principles it embodies several excellent features.

In company with many other makes, the question of silence has received very careful attention. Placed as close to the exit of the exhaust gases from the cylinder as possible is an oval expansion chamber possessing an area more than four times the capacity of the cylinder, while the tail pipe is carried rearward to a point beyond the level of the rear wheel spindle.

Pannier Tanks.

Mention should also be made of the tank design, which is unconventional. A flat sheet of steel is bent over the top tube and bolted beneath the secondary frame tube, while each half of the tank is attached by rivets and soldering to each side. The oil tank is a separate unit built into the offside tank compartment, so there is no danger of leakage. The result of this design is that the two tanks sit astride the two upper frame tubes are immensely strong, have no internal soldered joints, and are free from leaks. Each tank is connected to a common pipe with the usual taps, allowing either or both tanks to be used. Two gallons of petrol and three-quarters of a gallon of oil are carried. In this model a Webb front brake is fitted, while the rear brake is of the shoe type acting on a dummy belt rim.

488 c.c. Trump; a powerful solo single.



Closely resembling the 346 c.c. machine is the J.A.P.-engined 488 c.c. model, 85.5×85 mm. Both have the close ratio Sturmey-Archer gear boxes incorporating a transmission shock absorber, but the larger machine has not only the Webb front brake but the Chater Lea back hub, which incorporates an internal expanding brake, and both hubs possess knock-out spindles.

Both machines have Lycetts racing saddles, of which the peak as well as the rear portion is sprung.

In addition to these models, Trump Motors, Ltd., Foxlake Works, Byfleet, Surrey, produce a fast twin-cylinder, which may be had either with the 770 c.c. J.A.P. engine (76×85 mm.) or the 976 c.c. (85.5×85 mm.) super-sports J.A.P. engine; the latter has a guarantced speed of 80 m.p.h. This machine is also suitable for pulling a sidecar.

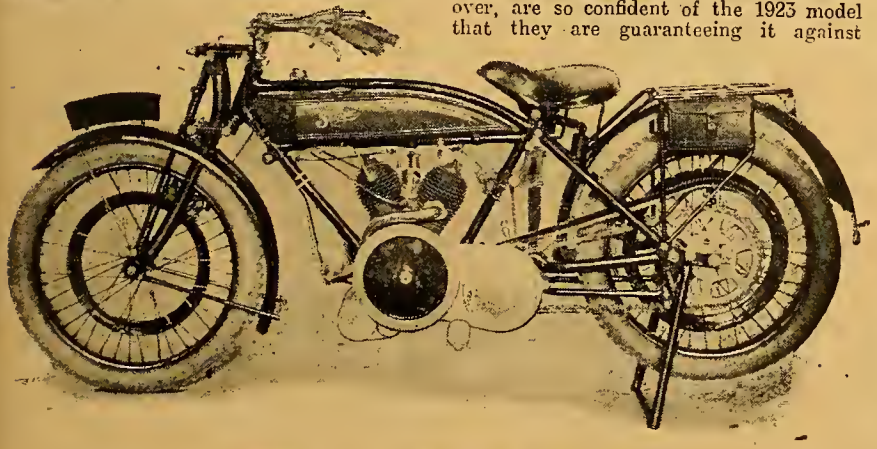
Finally, the 996 c.c. Anzani-engined racing model must be mentioned. The engine is of the most efficient design, having overhead valves (four per cylinder), and a bore and stroke of 83×92 mm. It was on one of these machines that Col. R. N. Stewart broke the Class E. two hours' record on June 14th this year.

Trump prices for next year are:—346 c.c. sports model, £70; 488 c.c. model, £95; 770 c.c. twin-cylinder model, £120; and the 996 c.c. Anzani-engined racer, £135.

THE ONLY TWO-STROKE V-TWIN.

Detail Improvements in the 1923 Stanger. Bigger Tyres and Better Brakes.

UNIQUE in being the only two-stroke machine which has a V-twin engine, giving the same torque impulse sequence as a four-cylinder four-stroke, the 538 c.c. Stanger is a thoroughly practical machine, with a very satisfactory spring frame, as we have proved from personal experience. Its makers, moreover, are so confident of the 1923 model that they are guaranteeing it against mechanical defects for twelve months. So as to avoid tyre troubles and to render the machine more comfortable, new wheels with flat base rims to take 26×3in. tyres have been incorporated in the next season's pattern, while the braking system has also been considerably improved, firstly by the fitting of a Bowden belt rim brake to the front wheel, and secondly by fixing the rear brake pedal on the right-hand side, independently of the footrests.



Stanger V-twin two-stroke, with spring frame

Adequate Ground Clearance.

Overseas users will be interested to know that one inch greater ground clearance has been provided in the new model. Both mudguards are of ample dimensions and are 5½in. across. Greater flexibility has been obtained by the fitting of a two-jet Binks carburetter, and all-chain drive is a feature, flexible transmission being obtained by the use of the Brampton spring-link chain.

Stanger motor cycles are made by The Stanger Engine Co., 13, Steele Road, Tottenham, London, N.17.

Club News

Yorkshire Centre A.C.U.

At a meeting of the Centre Board held at Leeds on November 18th, the resignation was accepted, with regret, of Mr. J. N. Longfield from the post of chairman and A.C.U. delegate.

North London M.C.C.

On December 9th the annual dinner is taking place at the Holborn Restaurant, when the president of the club, Major Sir Philip Lloyd-Greame, K.B.E., M.C., M.P., president of the Board of Trade, will present the awards won by members during the year.

Newport and County M.C.C.

The club was strongly represented at the annual dinner on the 15th ult., over one hundred being present. Several toasts were proposed and responded to, while the Mayoress presented a large number of medals and prizes.

Ashford M.C. and L.C.C.

The Motor Cycle film will be shown at the Palace, Tufton Street, Ashford, on the 22nd prox., twice during the evening. Members should arrange among themselves to attend either the first or second "house."

North Wales M.C.C.

The third annual dinner takes place on Saturday, the 9th inst., at The Castle Hotel, Ruthin, when the trophies and other prizes won during the year will be distributed. Tickets may be obtained from Mr. J. H. Davies, 1, Ruthin Road, Denbigh.

Bristol M.C. and L.C.C.

About one hundred and thirty persons were present at the club's annual dinner and presentation of prizes, held at the Full Moon Hotel, Bristol, on the 18th ult. The guests of the evening were Mr. T. W. Loughborough (secretary of the A.C.U.) and Councillor A. Taylor (president of the Bath and West of England M.C.). Toasts were responded to by the president of the Wessex Centre A.C.U., and great tribute was paid to the Bristol club's hard-working secretary, Mr. Rex Poweraker.

Epsom and District M.C.C.

A reliability trial took place on November 26th over a sporting course of 43 miles, starting from the King's Head Hotel, Epsom. The premier award was a silver cup presented by the club. The course led to Headley Heath, then over tracks and main roads to Broadmoor, where, although the going was rough, all made good climbs except Ede (490 Zenith), Masters (348 Douglas), Chamberlain (499 Triumph), and Longhurst (Morgan). Final awards were:—

Silver Cup for best performance, R. B. Furniss (678 Martynside sc.), lost no marks.

Silver Medals were gained by E. G. Tyler (499 Sunbeam sc.) lost no marks, and H. Garland (550 Triumph), P. C. Polhill (348 Zenith), J. A. Chuter (488 Zenith), all of whom lost 5 marks each.

A Bronze Medal was awarded to R. Chamberlain (499 Triumph) with a loss of 15 marks.

Ipswich and District M.C.C.

Clay, mud, sand and watersplashes played a prominent part in the club's recent one-day trial for a cup presented by the Motor Trade Association. The forty miles course had to be covered twice, and included some very stiff obstacles, including a sandy hill with a 1 in 3 gradient. On this hill the easiest path was purposely blocked, and only three competitors, E. H. Gowing (499 Sunbeam), V. Ollson (492 Sunbeam), and E. C. Claxton (550 Triumph), made clean ascents. Most of the riders checked in very late. Results:—

WINNER OF M.T.A. CHALLENGE TROPHY.—F. K. Portway (633 Norton sc.), 48 marks lost.

RUNNER UP.—R. Fenn (499 Triumph sc.), 69 marks lost.

350 c.c. SOLO.—A. V. Adams (249 Diamond), 118 marks lost.

UNLIMITED SOLO.—E. H. Gowing (499 Sunbeam), 99 marks lost; V. Ollson (492 Sunbeam), 107 marks lost.

600 c.c. SIDECARS.—V. Revett (499 Rudge sc.), 125 marks lost; C. O. Rose (598 Beardmore-Precision), 168 marks lost.

UNLIMITED SIDECARS.—H. O. Goldsmith (976 Brough Superior sc.).

Hull M.C.

The annual night trial for the Morrell trophy was run off on Saturday. Results have not yet been announced.

Cork and District M.C.C.

Although "things are very quiet," as regards motor cycling, the club is very active, and has opened a club-room at 10, Winthrop St., Cork.

Matlock and West Derbyshire M. and M.C.C.

Owing to the growing area from which members are being recruited, the club will be known in future as the "West Derbyshire M. and M.C.C."

Wigan M.C.C.

It is proposed to form a club as above, and those in the Wigan district who are interested should communicate with Mr. D. M. Kaye, 1, Thornhill, Boar's Head, Wigan. The club will cater only for sidecar enthusiasts, and will be run more on the lines of a social club than one devoted to sporting events.

Keighley M.C.C.

The chief award in the 56 miles non-stop trial on the 26th of last month was the "Sportsman Trophy" and gold medal. The course consisted of four circuits of 14 miles each, and with the exception of a short stretch of main road near Addingham, was composed of rough moorland tracks in which the well-known ascent to Keighley Gate was included. Some good sport was witnessed, and the best all-round performance was that of W. Smith (481 Scott Squirrel), who completed the course with the loss of only five marks.

Central Wolverhampton M.C.C.

The winter programme of social evenings was opened on the 11th ult., when a most enjoyable musical entertainment arranged by one of the lady members was given at the Talbot Hotel, King Street. The club members availed themselves of this opportunity of entertaining as their guests Mr. and Mrs. F. W. Giles, and congratulating Mr. Giles on the numerous honours awarded him during the past season. Mr. Giles, in respondiog, said that nothing would please him better than to be numbered amongst its members; he wished the club success in its future developments.

Imposing trophy presented by the Neath and District M.C. for the Welsh T.T.—a 100 mile race on Pendine Sands, won this year by C. P. Wood on a Scott.

Yorkshire Centre A.C.U.

At a meeting of the Centre Board held on the 18th ult., it was decided that the second annual general meeting be held at the Guildford Hotel, Leeds, on the 15th prox., at 7 p.m.

Surbiton M.C.

The club dinner will be held at the Hotel Cecil, Strand, on the 16th inst. After dinner the cups won during the season will be presented, and the function will be concluded by a dance.

Bradford M.C. and L.C.C.

On the 10th inst. the club will run off its annual winter trial for the "Richmond" trophies. The route is about ninety miles in length, and is confined entirely to main roads.

Coatbridge, Airdrie and District M.C.C.

On the 17th ult. the club held its annual supper and presentation of prizes at the Eagle Hotel, Coatbridge. After an excellent supper the prizes were handed over by the chairman to the winners.

South-East Essex M.C.C.

Formed only recently, the above club is growing steadily, and has nearly fifty members. Those wishing to join should communicate with the hon. secretary, Mr. H. T. Baldwin, The Bungalow, South Woodham, Essex.

Basingstoke M.C.C.

Forty members were present at the annual dinner held on the 7th ult. After several bright speeches had been made, cups and medals won during the season were presented, and the evening was concluded with a musical entertainment.

Worcester and District M.C.C. and Worcestershire M.C.

To-day, the 7th inst., is the date fixed for the annual dinner. In addition to the prize distribution, a comprehensive orchestral and vocal programme has been arranged. The annual general meeting, followed by a smoking concert, will be held at the Pack Horse Hotel, Worcester, on the 11th inst.

Richmond and District M.C.C.

The Motor Cycle film will be shown at Prince's Hall, Richmond Green, on the 14th inst., at 7.30 p.m. The exhibition will be followed by a dance. Tickets (price two shillings and tenpence) may be obtained from the hon. secretary, Mr. S. I. Elfick, 64, London Rd., Isleworth, from any member of the committee, or at the door.

North Liverpool M.C.C.

A whist drive will be held on the 19th inst. at the Stanley Park Assembly Rooms, Walton Lane, Kirkdale, Liverpool, commencing at 7.45 p.m. A number of very handsome prizes are offered. Tickets (price 2s. 6d., including refreshments) may be obtained from Mr. W. J. Sergent, 25, Spellow Lane, Walton, Liverpool.

Southport A.C.

The annual general meeting will be held at headquarters, the Queen's Hotel, Southport, on the 19th inst., at 8 p.m. The annual dinner and presentation of prizes will be held at the same place on the 21st inst. at 7.30 p.m. Tickets (7s. 6d. each) may be obtained from the hon. secretary, Mr. Rowland Hill, 75, Selton St., Southport.

Aberdeen and District M.C.

The annual dinner and prize presentation was held at the Douglas Hotel, Aberdeen, on the 24th ult., over sixty members and friends being present. Cups and prizes were presented at the conclusion of an enjoyable musical entertainment. Members are reminded of the whist drive and dance on the 15th inst., and the dance and exhibition of *The Motor Cycle* film on the 19th prox.

They're going down like ninepins!

THE WORLD'S FASTEST STANDARD MOTOR CYCLE and the FIRST TO DO 100 M.P.H. in the 3½ h.p. and 6 h.p. classes And the FIRST MOTOR CYCLE AND SIDECAR TO DO 1,000 MILES officially timed IN 24 HOURS.

THE VIBRATIONLESS TWIN-CYLINDER

Douglas

WON'T STOP ITS WHOLESALE MUTILATION OF RECORDS.

After a whole week's continuous record breaking, Jack Emerson has concluded the period with a remarkably brilliant performance, smashing the following eight records in the 3½ h.p. solo class (class "C"):

WORLD'S 100 MILE RECORD - 76·97 M.P.H.
WORLD'S 200 MILE RECORD - 69·03 M.P.H.
WORLD'S 300 MILE RECORD - 66·79 M.P.H.
WORLD'S 400 MILE RECORD - 66·65 M.P.H.
WORLD'S 3 HOUR RECORD - 68·99 M.P.H.
WORLD'S 4 HOUR RECORD - 67·38 M.P.H.
WORLD'S 5 HOUR RECORD - 66·32 M.P.H.
WORLD'S 6 HOUR RECORD - 66·65 M.P.H.

In the Paskell Cup Trial, the 3½ h.p. Sports Model Douglas Team were undoubtedly the star performers, and were awarded

THREE SILVER CUPS

being placed first in the

AMATEUR TEAM PRIZE

1923 models are now available, and at remarkably low figures, made possible by modern methods in a modern factory, so that the Douglas is

NOW LESS THAN PRE-WAR PRICE!

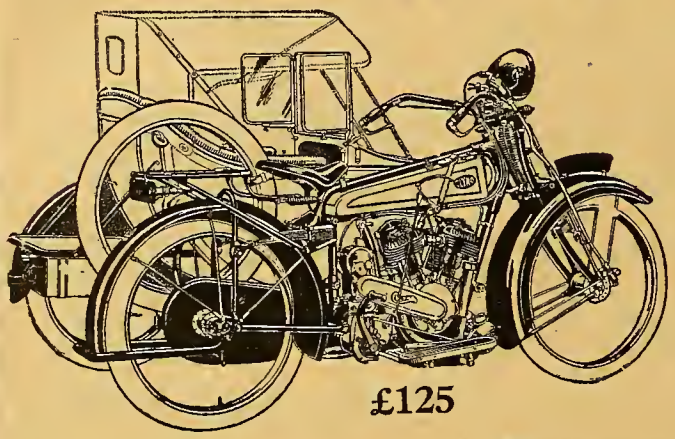
Take advantage of this honest value and

BOOK YOUR MOUNT NOW.

The little 2¾ h.p. 2-speed model, fully equipped for you to ride away, with head lamp, tail lamp, generator, horn, licence holder, full kit of tools, tool roll and all other accessories, is selling at **£50**

DOUGLAS MOTORS LTD., 30, HANHAM ROAD, KINGSWOOD, BRISTOL

"The" Sidecar Motor Cycle



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THE CHIEF ATTRACTION AT OLYMPIA WAS
The "SPRING 8"

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VALUE FOR MONEY

Spare Parts Stockists and Service Agents:
KAYS, 8, Bond Street, EALING, W.5.
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The CLYNO ENGINEERING Co. (1922), Ltd., Pelham St., WOLVERHAMPTON.

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MAXALDING is the Most Perfect Method of DRUGLESS HEALING.

A MAGNIFICENT EXAMPLE of all-round supple development and control secured entirely by MAXALDING methods without apparatus of any kind. N.B.—No chairs, hassocks, chests of drawers, or other furniture required in Maxalding.

EXTRACTS FROM TESTIMONIALS RECEIVED FROM CORRESPONDENCE PUPILS AND PATIENTS

NOT "TOO OLD" AT 56.

Gentleman, age 56, residing in Antwerp, Belgium. Desired eradication of Constipation and increase in general fitness. Writes:—"I feel a different man altogether since starting your course. Constipation is cured and I am 100 per cent. fitter. I am getting into good condition, all flabbiness going and muscles taking shape. For two nights running I had a game of football with the boys and felt no bad effects. About ten days ago the carpenter had a job to start the tackle on a frozen shackle of a three-ton anchor. I gave him a hand. It took us over an hour to make it workable. We took spells about, using an eight-pound hammer. When finished, the carpenter, used to manual labour and 25 years younger than myself, complained about feeling sore. I felt splendid, and did some writing afterwards. A good test. A year ago if I had done any running or used a hammer, I should have been crippled. It is getting a common thing now to be asked how I keep in such good condition. I tell them to apply to Maxalding, London, who will keep them the same."

CONVINCED MAXALDING IS A PERMANENT CURE.

Lady, aged 29, residing at Weston-super-Mare. Desired eradication of Constipation and Insomnia, and increase in vitality. Writes:—"I am glad to say that the constipation is much better. I have mastered the exercises quite well and enjoy going through them. I sleep much better and wake quite refreshed in the morning. Also I certainly look better and feel better since starting your course. I am convinced that Maxalding is a permanent cure."

VERY MARKED PROGRESS IN FOURTEEN DAYS.

Gentleman, age 45, suffering from Constipation, Indigestion, Biliousness, and Insomnia, writes after taking only two lessons:—"Having been away, I only received your two lessons on my return on September 4, on which day I started the exercises. I am very glad to be able to tell you that I have already made marked progress. I have not taken any laxative since I started the exercises, and am already getting a regular movement of the bowels. My tongue is slightly cleaner and my complexion is also clearer. Thanking you for the interest you are taking."

Free diagnosis and explanatory Booklet will be sent post free. When writing please state whether you desire (1) Eradication of Functional Disorder; (2) The Development of Nervous Energy; or (3) Great strength, speed and Heavy Muscular Development.

Alfred M. Saldo, MAXALDING,
2b, Cranbourn Chambers, Leicester Square, London, Eng.

Economical and Trouble-free Lighting

is ensured if you fit a

WATES
ELECTRIC LIGHTING SET

It will need no attention . . . a touch of the switch will instantly light your path with brilliant light.

Designed carefully in every detail to withstand vibration and all bad weather conditions. Up-keep cost is much less than with acetylene lighting.

Night riding becomes a pleasure with a reliable lighting set.

You can convert your existing acetylene lamps to electric or completely equip your mount with new lamps.

Solo Sets from ... **£2 5 0** Combination Sets from ... **£3 5 0**

In the Solo-Conversion Sets the accumulator fits on the existing Acetylene Lamp Brackets. The following lamp sets are all suitable for holding the accumulator case; they are not the only sets that can be converted, but give an idea of what is required. Powell & Hanmer Lamps, Nos. 127 H.B., 127 S.B., 128 H.B., 128 B., 125 H.B.; Miller's Lamps, Nos. 29 H., 31 H., 24 S., 22 H.; Lucas Lamps, Nos. 462, 341, 331.

A SENSATIONAL ACCUMULATOR OFFER.

Wates Standard Accumulators are priced as follows:—

4 Volts	40 Amps.	. . . . .	15/9
4 ,,	60 ,,	. . . . .	19/11
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6 ,,	40 ,,	. . . . .	26/0
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All carriage forward. Trade enquiries invited, generous discounts.

WATES BROS.,
13-14, Great Queen Street, Kingsway, W.C.2.
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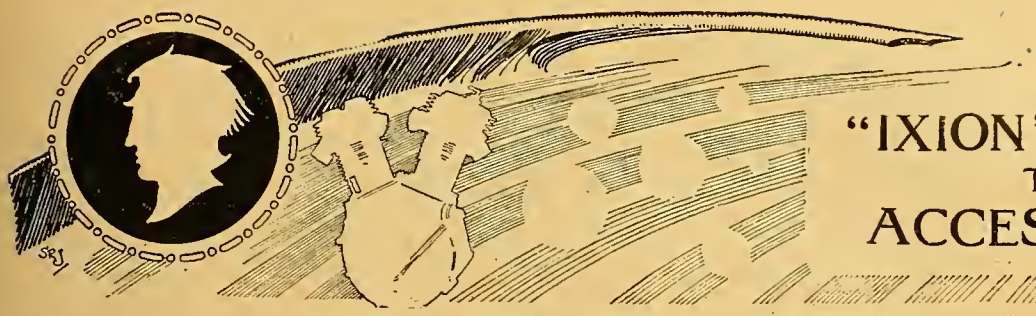
Illustrated list describing complete range of Electric Lighting Sets for solo and combination work free on receipt of your address.



"IXION" AMONG THE ACCESSORIES.

Novelties in Items of Equipment at Olympia.

WHEN I have familiarised myself with the new motor cycles at the Show, I always rake over the accessories in the gallery, and generally discover some dozen or so of novelties which simply *have* to be bought at once. This year proved no exception to the rule, and I came downstairs again with bulging pockets. My first treasure is a new tool by Ernest H. Hill, Ltd., 56, Broomhall Street, Sheffield, for compressing stiff valve springs prior to tying them up for replacements; we all know how the spring usually leaps out of the vice and disappears. This inexpensive gadget consists of a screwed rod carrying two steel cups large enough to embrace any size of spring and slotted to allow the threading of the string.

From the Pennant Mfg. Co., Watery Lane, Birmingham, I purchased several excellent spanners and an aluminium-handled screw-driver. But I was principally charmed by the railway-carriage key for sidecar or car toolboxes: these keys are a terrible incubus in one's pocket, but the Pennant edition has hinged side arms to its T.

J. A. Ryley, of 73, Weaman Street, Birmingham, sold me a set of spring steel clips for fastening gas piping to the frame tubes.

More than one stall staged the "Atlantic" bulb box, which carries spares for a dynamo lighting outfit as flatly and securely as the facts permit. At present these are only made in car size to carry five bulbs; but they are "the best yet."

S. Smith & Sons were noted down as having standardised a solo instrument board, made of polished aluminium and fitted with universal brackets for ready attachment to any type of handlebar: the exhibition sample mounted speedometer, clock, ammeter and switches.

Alfred Smith, of George Street, Birmingham, had quite a counter full of interesting gadgets. A folding petrol funnel for the pocket, made of leather, quite flat, and very cheap. The "Stedilite," fittable to any acetylene generator, and calculated to equalise the water flow and prevent the water valve from choking. The Vici solderless union for oil and petrol pipes, a sound article of which my stock needed replenishing. The Vici solderless nipple for control wires: this I did not know, but am carrying for roadside emergencies.

The Chemico Works, Birmingham, presented quite a new version of the old "3 in 1" liquids with which all pedal cyclists are familiar. Sold as "T.P. Car Polish," this dope is equally efficient for cleaning metal; sidecar coachwork; or the human hands. On Brown Bros. stand I found a very handy tank stopper with which an oil gun is incorporated.

"DESOLATION" rather aptly describes the camera's reproduction of this scene near Glencoe

SHOW IMPRESSIONS OF AN ORDINARY RIDER.

Things that Struck a Non-technical but Enthusiastic Everyday Motor Cyclist.

This article sets forth the ideas of a typical reader of "The Motor Cycle." Not a journalist, not an engineer, in no way connected with the motor cycle trade, he has expressed the view of a practical user to whom definite advantages in design rather than theoretical talking-points would appeal.

THIS year's Show reveals to the ordinary rider a degree of advancement that must surely be without parallel in the history of the motor cycle.

Apparently, at last, manufacturers have begun to realise that it is only by the designers having actual experience with the machines they produce or, at any rate, by their drawing upon the experience gained in competition work, that they can ever hope to design a machine that for ordinary use approaches the ideal.

Two notable examples of the advantages of this procedure are afforded by the A.J.S. and New Imperial productions, both of which, in the light of knowledge gained, have, where necessary, been modified in design so that they are well-nigh perfect.

In view of the speed capabilities of the modern machines, the question of "braking" is one of the utmost importance, and it is indeed pleasing to note that much attention has recently been paid in this direction. It is now the rule rather than the exception for a machine to be fitted with brakes of the internal expanding variety on both the front and rear wheels. One or two manufacturers, however, no longer fit a front brake, but apply both brakes to the rear wheel, apparently neglectful of the fact that there are occasions, such as the descent of a greasy hill, when the front brake is of far greater avail than the back.

Work Still to be Done.

Unfortunately, there still remain three faults in the present-day machine, all of which must be eradicated before "the man in the street" becomes a convert to motor cycling, and these are mudguarding, silence, and comfort. For years *The Motor Cycle* has attempted to make manufacturers appreciate that the vast general public will not take up motor cycling as a sporting pastime, but merely as a utilitarian mode of travel, with the consequence that if a journey by motor cycle must needs mean that they arrive at their destination tired out and plastered with mud, then they will never be motor cyclists. It is difficult to name more than a couple of machines which do not embody at least one of these three faults.

Some excellent attempts to solve the problem of mudguarding are, however, to be seen, and on some machines the mudshields not only keep the rider clean, but also deflect air on to the engine, and so assist the cooling instead of detracting from it, as is usually the case. Silencing the exhaust has in most cases been carefully considered, but only in few has the elimination of mechanical noise received due attention. The valve gear is generally considered to be the noisiest mechanical feature of the modern motor cycle, and yet there are few side-valve machines on which the ingress of dirt to the valve stems and guides is prevented by enclosure. Backlash is largely the cause of the noise, and this cannot help but occur if the mechanism has to work in an abrasive mixture of oil and road grit, as is usually the case.

As regards comfort, it seems strange that, while no one in his senses would consider the purchase of a car possessing a rigid chassis, yet year after year we are, almost entirely, provided with sidecar outfits that are rigid except for the front forks. Surely it is not beyond the ingenuity of the modern designer to produce machines on which the only unsprung weight is the wheels! True, several firms have produced satisfactory systems of springing, but these are only exceptions which prove the rule. Concerning the present-day spring forks of proprietary make, it is, indeed, regrettable to note that apparently only on the Montgomery has any adequate provision for lubrication been made. The sensible arrangements made for this on the Cedos and 976 c.c. New Imperial are worthy of examination.

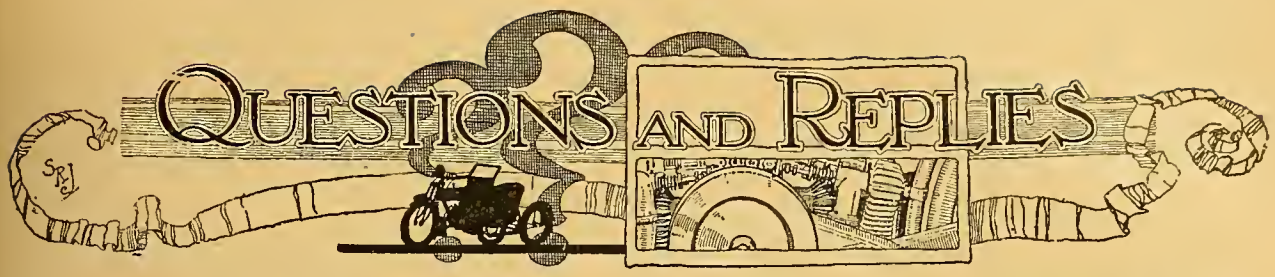
More Speeds.

Last year the manufacturers of lightweight machines commenced fitting three-speed gear boxes, and now these are a standard feature of every make; some designers have even gone a step further in realising the truth of the axiom that the smaller the engine the greater the number of gear ratios necessary, and are fitting four gears instead of three. Notable among the machines so equipped is the renowned J.E.S. and the new but beautifully designed shaft-driven G.S.D.

Nowadays there is hardly a lightweight that is not listed as suitable for both solo and sidecar work, and so perhaps a description of the actual capabilities of these mounts, when used as sidecar outfits, may be of more than passing interest. The writer, in the course of over three years' experience, with outfits of this type, has found that with an efficient engine used in conjunction with a three-speed gear (four, for preference), a most economical form of motoring for two is obtained, provided that consideration is shown to the engine and machine as a whole.

An enormous amount of attention has been paid to detail work, especially as regards increasing the efficiency, but few makers, however, appear to remember that even more important is the ability for a machine to be cleaned or at any rate made to look presentable in a few minutes. A clean machine is always a good advertisement, and but few machines will be kept thus, unless it be a simple matter. The smoothing off of crank case and gear box exteriors, the enclosing of valve gear, the brazing on of all clips, and the fitting of domed nuts, as on the new Massey, are a few points well worthy of attention. That it is by no means impossible to obtain smooth exteriors is proved by several examples of unit construction and by the new Moss three-speed gear box. Finally, why can't we have more machines embodying but four sizes of nuts, as is the case on the Wooler?

A. B. B.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

GEARING.

Could you let me know what gear I have on my 1917 Clyno outfit? There are 13 teeth on the engine shaft driving to 28 teeth on gear box. Then 13 teeth driving to 34 teeth on the back wheel. The wheel size is 650 × 65 mm. with 700 × 80 mm. tyre fitted. I find that I never use the lowest gear, also second gear very seldom with full load. I thought of fitting a 15-tooth sprocket on the engine shaft. Would you think the gear would be too high?—J.T.M.

At present the gear ratio is approximately 5½ to 1 with the 700 × 80 mm. tyres (the actual ratio is 5.6 to 1). We do not recommend you to fit a larger engine sprocket than one with 14T, as a rather low gear seems to suit these machines best.

MECHANICAL NOISE.

My 770 c.c. twin B.S.A. is more noisy than I should like it to be. I have adjusted the tappets, and have tried advancing the ignition, without effect. Can I make it less noisy without a great loss of power?—A.G.B.

You do not state the age of your machine, but if the noise is not eliminated by adjusting the tappets and taking up the slack in the driving chains, we should imagine that it is due to some of the parts being worn, particularly the timing gear or the valve tappets. A possible source of noise is fracture of the engine-shaft shock absorber springs; these should be examined.

PREPARING FOR A HILL CLIMB.

I am tuning a Mark 2 Villiers engine for a speed event. (1) What oil is most suitable for the actual event? (2) How soon before the event ought I to decarbonise? (3) Are new piston rings desirable? (4) Are an aluminium piston and drilled connecting rod advantageous on a two-stroke? (5) What jet do you recommend? (6) The drive is direct with a ratio of 6 to 1. Would it be advisable to raise the gear for a hill of about 1 in 15? (7) How should I time the ignition?—C.P.

(1) Use the oil which you have found satisfactory for ordinary running. (2) It would be inadvisable to decarbonise the engine unless you could give it about 50 miles running before the event. If you cannot do this only clean out the exhaust port and pipe, and the piston top and cylinder head if very heavily encrusted. (3) If the compression is good, it is not necessary to fit new piston rings. (4) It is doubtful whether an aluminium piston would effect any improvement and the same applies to drilling the connecting rod; one effect of drilling the rod of course, is a slight lowering of crank case compression which is undesirable. (5) 26-28 or experiment with a variable jet. (6) It would not be advisable to raise the gear ratio appreciably. (7) Time the spark so that it occurs just before top dead centre on full retard.

Important Dates.

Tues., Dec. 26th, and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th, to Wed., Jan. 24th.—The Belgian Salon.

Fri., Jan. 26th, to Sat., Feb. 3rd.—Scottish Motor Show.

Mon., June 11th—Junior T.T. Race.

Wed., June 13th—Lightweight T.T. Race and Sidecar T.T. Race.

Fri., June 15th—Senior T.T. Race.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

LAW AND BRAKES.

A week ago I lent my sidecar outfit to an unemployed friend of mine to go after a position and he was stopped for not having a front brake, and has to appear at the police court at some future date; also last night a detective came to my house and told me I was to be charged with aiding and abetting in the offence. Will you advise me as to my position, as I do not want to go to the court in ignorance?—H.C.G.

A motor cycle requires two independent brakes in good working order, and of such efficiency that the application of either to the machine will prevent the wheel revolving. If your machine has two effective brakes, separately controlled, neither you nor your friend should be prosecuted for not having one of the brakes on the front wheel. There is nothing in the regulations as to which wheel the brakes shall be applied. Assuming, however, that your friend has committed an offence, then you, as owner, would be liable for aiding and abetting, seeing that you loaned the machine to a driver knowing that he would commit an offence by driving a motor cycle not complying with the regulations.

POWER FOR FAMILY SIDECAR.

I am about to purchase a sidecar outfit, and the proposed load is three persons weighing 6, 10, 12 stones respectively (28 stones); the sidecar must come well up at the back to give shoulder support, and must be roomy enough to take a seat for the child. I have been trying an old single-cylinder Humber, but find it a struggle to climb quite ordinary grades on this, so would like you to tell me (1) What power is required to take the proposed load? (2) Would a 1915 twin, described as "5-6 h.p.," be powerful enough? (3) Would a modern single-cylinder do the work?—P.R.

(1) No single-cylinder machine of less than 550 c.c. cylinder capacity should be selected, and a twin of 750 c.c.-1,000 c.c. would be even better. (2) If in good condition the type of machine you mention should answer your purpose, but a new machine would be preferable. (3) A modern 550 c.c. single would do the work you require in all but the most mountainous districts; on long journeys, however, the average speed is lower than that obtained with a big twin.

GOGGLES OVER SPECTACLES.

Being troubled with short-sightedness in one eye, I have to wear eye-glasses at all times, but while motor cycling I also wish to wear goggles. Can I obtain goggles that will fit over my eye-glasses? If it is possible, I do not wish to go to the expense of having special lenses made and fitted in to a pair of ordinary goggles.—A.R.

You should not have the slightest difficulty in procuring a pair of goggles that project sufficiently far from the eye to allow of eye-glasses being worn at the same time. Those fitted with side extension pieces, obtainable from most accessory dealers, should be suitable, and are quite inexpensive.

CHECKING THE VALVE TIMING.

My late 1919 single-cylinder Rover gets overheated and knocks prematurely. I have decarbonised it and find that the bearings, etc., are perfect. Recently I had the engine retimed according to the makers' diagram, and find that the inlet valve opens about $\frac{1}{4}$in. down. The exhaust closes about $\frac{1}{32}$in. before top centre. Will you give me the actual distances required, measuring from the piston top, so that I might check the valve opening and closing? I already have the manufacturers' timing diagram, but have not got perfect results.—G.B.

To get the required distances draw a full-sized diagram of the crank path (i.e., an 88mm. circle) and the cylinder axis, and on this set off the connecting rod length (which you would get by actual measurement on the engine) at the various crank positions required. The timing you give certainly appears to be unusual, and in any case we would advise you to reset and try the following: Piston on top dead centre, exhaust just closing and inlet just commencing to open. Ignition should be timed so that the contact-breaker points just separate when the piston is on top dead centre of compression stroke, the magneto control being two-thirds retarded.

A TINY ENGINE.

I have a "2 h.p." Humber four-stroke motor cycle which overheats very quickly after about a mile or so. Could you tell me a remedy for this trouble, as the engine is in perfect condition? Is this small engine any good or not?—T.A.

The small single-cylinder Humbers of 1913-1914 are quite good little machines, but of course the power is low. At the same time, however, your machine should answer quite satisfactorily for runabout purposes in a level district. Without having more particulars of the engine it is impossible to tell you the cause of the overheating, but it may be due to belt slip, late opening or early closing of the exhaust valve, permanently retarded ignition timing, or an air leak, possibly at the inlet valve stem. Attend to the tappet clearances; note if cams are badly worn and renew if necessary and verify the correctness of working of the lubricating system.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

W.W. (Barnsley).—Binks three-jet on 994 c.c. Matchless sidecar.

J.M. (Dunbar).—398 c.c. spring frame Royal Ruby.

"A.E.W." (Birkenhead).—Showell or other automatic lubricator on 398 c.c. A.B.C.: cost of fitting and mudguard clearance if fitted to magneto shaft.

"R.A." (Liverpool).—499 c.c. Rex-Acme: steering and stability.

"H.T." (Buxton).—398 c.c. A.B.C.: fitting of oversize tyres and Cox Atmos carburetter.

"W.P.S." (Surbiton).—596 c.c. Indian Scout: performance with sidecar, primary drive.

"J.W.F." (Wallasey).—398 c.c. A.B.C.

"G.L." (Manchester).—398 c.c. A.B.C.

"C.H.P." (Acton).—499 c.c. Triumph.

"J.N.M." (Staines). Tuning 348 c.c. Douglas for speed.

SPARKLETS.

Fork Shock Absorbers.

Victor Horsman has recently been using B. and D. stabilisers on his Druid front forks with conspicuous success in his successful Norton record attempts at Brooklands.

Found.

On the Bath Road, near Hounslow, Indian kick-starter (Ref. No. 115).

On the Romsey-Winchester Road, lady's hat from sidecar (Ref. No. 116).

On the Kingston Road, Staines, a road map from a (?) 350 c.c. Sunbeam (Ref. No. 117).

Price Correction.

Owing to some misunderstanding, the price of the 346 c.c. Humber was given in our Show report as £55. The actual fixed price is £65.

Spring Fork Lubrication.

By the provision of grease cups, which are a great advance over the old type of lid lubricator, Brampton spring forks have been considerably improved.

A Successful "Failure."

In our report last week of the pre-Show activity at Brooklands, mention was made of the failure of Hawke's Anzani engine as his Morgan flashed successfully over the timing line. It has since transpired that what happened was merely a fracture of an excessively lightened alloy piston.

A Sporting Offer.

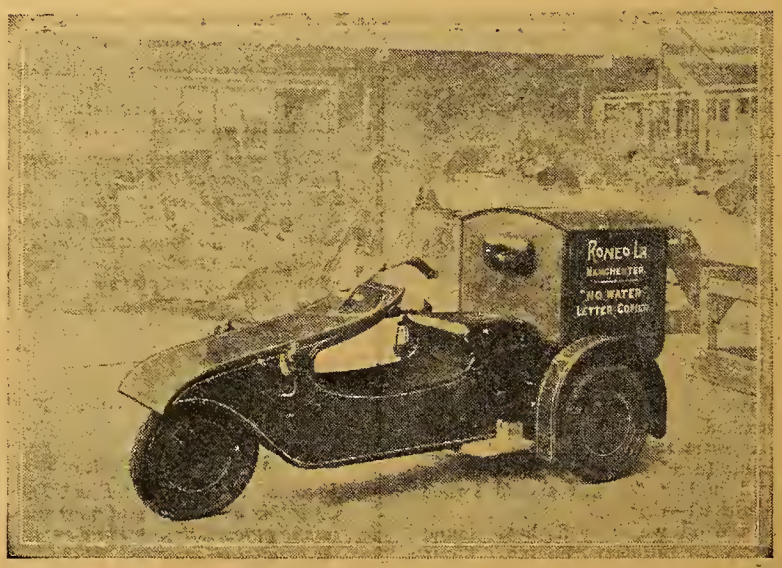
Well known and popular in the competition world, Mr. F. Olai, of Amac carburetter fame, is of Swedish origin, and he has already offered his services to the A.C.U. in connection with the 1923 International Six Days Trials which are to be held in his native country.

To Prague by Road.

During last week-end two brave Czecho-Slovakians, A. Sulc and F. Nusl, left the B.S.A. Birmingham works on a B.S.A. sidecar outfit for Prague in an endeavour to get there in the shortest possible time. Their transport arrangements (*via* Dover and Ostend) have been made by the A.C.U. They are agents for the B.S.A. and A.J.S. machines in Prague.

Toggle Link Chain Punches.

We have been asked to make it clear that the Coventry Chain Co. does not now make a chain rivet extractor embodying the principle of toggle links, an earlier patent for this system having been granted to the firm of Saxelbys, Ltd., of George Street, Coventry, which now, of course, markets an improved tool of this nature.



FOR LIGHT DELIVERY. By reason of its excellent performance, ease of handling and simple construction, the Harper Runabout lends itself readily to a variety of light trade purposes. Efficient springing allows safe carrying of fragile goods.

1923 BINKS 3-JET CARBURETTOR

CONTROLLED BY A SINGLE LEVER

increases the speed of a machine and greatly adds to the pleasure of driving, owing to the remarkable flexibility of the mixture. Whilst in traffic the owner has a real sense of control over his machine, and can drive slowly or get away at will without any fear of stopping his engine or causing it to race.

THE PATENT 3-JET DAMPING SYSTEM USED ONLY IN THIS INSTRUMENT WILL SAVE AT LEAST 25% OF YOUR PETROL BILL

The carburettor contains a real extra air valve to allow you to coast down hill on pure air.

Any machine, however old, erratic, or extravagant, can be transformed into a docile, powerful, and economical machine to the surprise and delight of the owner.

Please write or ask for interesting catalogues. **Price £4 and 2/- postage.** *Sold on Approval.*

IF YOU ARE ORDERING A NEW MACHINE SPECIFY THE NEW BINKS 2-JET 2-LEVER CARBURETTOR.

It is wonderfully flexible—starts easily—makes even the most sensitive twin tick over slowly—and has a wide range of speed that is unexcelled. Several first-class manufacturers have shown their appreciation of it by fitting as standard, and many makers will fit it by request without extra charge.

C. BINKS (1920), LTD., PHOENIX WORKS, ECCLES, MANCHESTER.

NEW RECORDS

ESTABLISHED BY MR. H. LE VACK ON J.A.P.
NEW IMPERIALS FITTED WITH THE WORLD FAMOUS

A.V. Magnetos
BRITISH THROUGHOUT

Class A (solos not exceeding 250 c.c.)
November 25th, 249 c.c. machine.
50 miles at 68.61 m.p.h.
100 miles at 67.41 m.p.h.
1 hour at 68.54 m.p.h.
2 hours at 67.84 m.p.h.

Class B (solos not exceeding 350 c.c.)
November 23rd, 346 c.c. machine.
Flying 5 miles at 85.75 m.p.h.
Standing 10 miles at 81.13 m.p.h.
November 25th, 249 c.c. machine.
2 hours at 67.84 m.p.h.

MODEL K U 1.
The New 1922-3 Lightweight Model
£5 : 0 : 0

ALL THE ABOVE ARE WORLD'S RECORDS.

A. Vandervell & Co., Ltd.
ACTON VALE, LONDON, W. 3.

MODEL K U 2.
For Flat Twins up to 3½ h.p.
£5 : 10 : 0

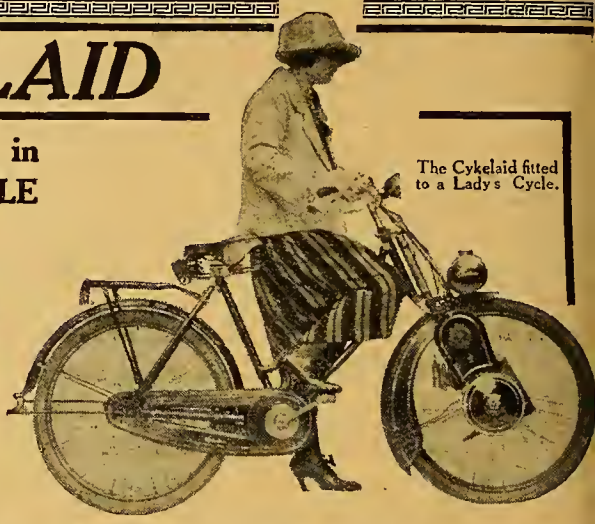
The NEW CYKELAID

A WONDERFUL SUCCESS. PERFECT in BALANCE and ACTION. A MOTOR CYCLE OR A PEDAL CYCLE AT WILL.

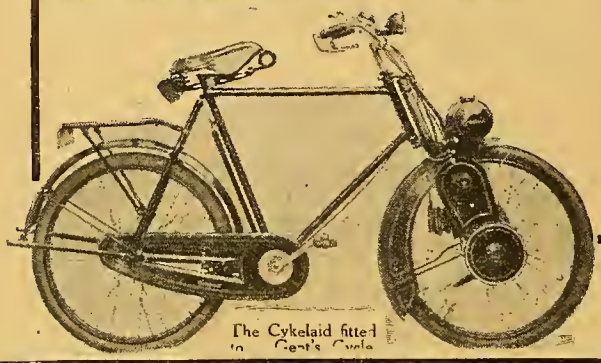
A High-Class Production — not a Makeshift.

Ball and Roller bearings throughout. Chain drive. Clutch operated from handlebars. Machine can be pedalled and engine started and stopped as desired. The clothing is never in contact with engine, driving mechanism or grease.

A perfect mount for even the most nervous man or woman. A pedal cycle or a motor cycle at the will of the rider.



The Cykelaid fitted to a Lady's Cycle.



The Cykelaid fitted to a Gent's Cycle

PRICES FROM 23 GUINEAS

Can be fitted to your existing cycle, or supplied as complete cycles for both ladies and gentlemen.

Catalogue giving full particulars from all dealers or the makers.

Sole Makers:

THE SHEPPEE MOTOR CO., LTD., 59, Thomas Street, YORK.

KOP HILL

South Midland Centre
A.C.U. Hill Climb. Oct. 7

350 c.c. Solo Class:
1st—G. L. WERTS.
(Machine) Curtis Barr and Stroud.

500 c.c. Solo Class:
1st—G. L. WERTS.
(Machine) Curtis Barr and Stroud.

Unlimited Solo Class:
2nd—E. G. BARAGWANATH.
Matchless M.A.G.
3rd—E. A. MARSHALL:
Matchless M.A.G.

1,000 c.c. Sidecar Class:
1st—O. DE LISSA.
Motosacoche M.A.G.

Fastest Time of Day.
Unlimited Sidecar Class:
1st—O. DE LISSA.
Moto-acoche M.A.G.

Inter-Club Race. 500 c.c. Class:
1st—E. A. MARSHALL.
Matchless M.A.G.

Unlimited Sidecar Class:
1st—E. G. BARAGWANATH.
Matchless M.A.G. Record for Hill.
Sidecar.

Bates
REGD. TRADE MARK
MOTOR CYCLE
TYRES, BELTS & ACCESSORIES
Season 1922

6 Firsts
1 Second
1 Third

—including Fastest Time of the Day!

Once again BATES have proved their mettle and established their superiority over tyres of all other makes. Look at their wonderful performance in the stiff contest held at Kop Hill on Oct. 7th.

Where riders of experience find such security in Bates it is not surprising that motorcyclists everywhere are fitting them to their machines.

O. DE LISSA, Motosacoche M.A.G., who made fastest time of the day.

RIDE BATES TO WIN!

Write for Illustrated Tyre-Guide — FREE.

W. & A. BATES, LTD, (Rubber Manufacturers since 1863), St. Mary's Mills, Leicester. Depots in London, Manchester, Glasgow, Newcastle, Belfast and Bristol

COLONIAL WHOLESALE STOCKHOLDERS.

AUSTRALIA: A. G. Healing & Co., Pty., Ltd., 354, Post Office Place West, Melbourne; Bennett & Barkell, Ltd., Meagher and Clippen Sts., Chippendale, Sydney; Cornell, Ltd., 122, Pirie St., Adelaide. BURMA: Skippers & Co., Ltd., 3, Merchant St., Rangoon. F.M.S. AND S.S.: A. C. Davis, Penang. INDIA: Skippers & Co., Ltd., 86/1, Clive St., Calcutta; 16, Elphinstone Circle, Bombay, and at Cawnpore. NEW ZEALAND: Cycle and Motor Supplies, Ltd., Featherstone and Johnstone Streets, Wellington; 140, Lichfield St., Christchurch, and at Dunedin. SOUTH AFRICA: H. E. A. Smith, London House, 21, Loveday St., Johannesburg. BRITISH EAST AFRICA: Sultani, Kampalar and Jinja, Uganda. RHODESIA: Motor and Cycle Supply Co., Bulawayo, Salisbury, etc. EGYPT: G. David and Co., Cairo. WEST INDIES: Frederick N. Martinez, Barbados. CANADA: Associated British Industries (of Canada), Ltd., 39, Richmond Street East, Toronto, Ontario.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. . Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable & Co. to ILIFFE & SONS Ltd., and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle" by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue on which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

1922 (late) A.B.C., mileage about 1,000, just overhauled by makers, dynamo lighting, Cowey speedometer and horn, full tools, spares worth £3, will ride 50 miles; £80.—Nalder, 4, Hornton Court, Kensington, London. [3730

The Sign of G Good Service

THINK IT OUT.

Thousands will join the ranks of motor cyclists this Season because prices have not only been reduced to zero but are stabilised.

It does not require a prophet to foretell an early shortage of machines.

Our advice is to order now—for forward delivery if you like,

BUT ORDER NOW.

SOME OUTSTANDING EXAMPLES OF VALUES.

B.S.A. MODELS.

B.S.A. 4½ h.p. Chain-cum-belt ..	£72	0	0
B.S.A. 4½ h.p. Chain drive	£75	0	0
B.S.A. 6 h.p. Twin Cylinder.. ..	£85	0	0
B.S.A. 8 h.p. Twin Cylinder.. ..	£90	0	0

INDIAN MODELS.

4 h.p. Indian Scout	£96	10	0
4 h.p. Indian Scout Combination ..	£118	10	0
7 h.p. Indian Standard, Spring Frame and fully equipped combination ..	£149	0	0
8 h.p. Indian Chief, fully equipped combination	£158	0	0

LEVIS MODELS.

Popular Model, 211 c.c., single geared	£38	0	0
Model "S" 211 c.c., 2-speed, clutch and kick-starter	£48	0	0
Model "T" 211 c.c., 2-speed, clutch and kick-starter	£49	0	0
Model "H" 247 c.c., 3-speed, clutch and kick-starter	£65	0	0

TRIUMPH MODELS.

Type "H" 4 h.p. chain-cum-belt, equipped with Lucas Magdyno Lighting Set and Bulb Horn ..	£84	10	0
Type "S.D." 4 h.p. all-chain drive, equipped with Lucas Magdyno Lighting Set and Bulb Horn ..	£93	10	0

RALEIGH MODELS.

2¾ h.p., 2-speed, belt drive	£55	0	0
2¾ h.p., 3-speed, chain drive ..	£60	0	0

EXCELSIOR.

1½ h.p., 2-speed	£28	10	0

Exchanges and Deferred Payments.

YOU CAN SEE ALL THE NEW MODELS AT GODFREY'S.

ANY CATALOGUE SENT ON REQUEST

GODFREY'S

Limited,

208, GT. PORTLAND ST., LONDON, W.1.

'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

Spare Parts:

A.B.C.—All spares from stock.—Maudes', 100, Great Portland St., W.1. [3883

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0964

Ace.

ACE Combination 1920, dynamo lighting, excellent lot, in perfect condition, new tyres; £95.—5, Canning Place, Grove Lane, Camberwell. [4034

A.J.S.

A.J.S. 2¾h.p. Sports, unscratched; £60.—Powell, 67, Castle St., Reading. [3667

1922 2¾h.p. A.J.S., lamp, Cowey, etc., small mileage; £65.—114, Brixton Hill. [3801

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

A.J.S., 2¾h.p., 1923 models, for immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0974

A.J.S. 4h.p. Twin Combination, good condition; £65.—Waterloo House, North Cheam, Surrey. [3670

F.O.C.H. invite inspection; A.J.S. and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1375

A.J.S. 1922 2¾h.p. Semi-sports, brand new, the last one; £70.—Will Chapman's Garage, Belgrave Rd., Leicester. [3583

60 Guineas.—Practically brand new 1922 2¾h.p. Touring A.J.S., equipped.—284, South Lambeth Rd., S.W.8. [3685

A.J.S. 1922 7h.p. Combination, less spare wheel, brand new; £130.—Will Chapman's Garage, Belgrave Rd., Leicester. [3582

FOR A.J.S. 1922 models, 2¾h.p. solo, or 7h.p. combinations, get in touch with the N. London agents. —Jones' Garage, The Broadway, Muswell Hill. [0785

A.J.S.—Immediate delivery; 2¾h.p. touring, £77; 2¾h.p. Sports, £77; 7h.p. Combination, £152/10. —Will Chapman's Garage, Belgrave Rd., Leicester. [2816

1921 Dynamo A.J.S. Combination, every accessory, including spare wheel and cantilever saddle; £85; exchanges.—24, Balliol Rd., North Kensington. [3687

A.J.S. Combination, 3-speed, complete throughout, oversize tyres, many extras, including 2 new chains, etc.; £48.—3, Stamford Brook Rd., Hammersmith. [4012

A.J.S. 1920 6h.p. Combination; £110, or would exchange for a water-cooled 2-seater; full particulars on application.—Anderson, 54, Abingdon Rd., Kensington. [3588

A.J.S. 1919 6h.p. Combination, completely equipped with lamps, horn, spare wheel, etc., tax paid, excellent condition; bargain, £75.—P. J. Evans, John Bright St., Birmingham. [3570

A.J.S. 7h.p. Combination, new 16/9/21, exceptional condition, fitted Triplex screen, legshields, side screen, Bonnikseu, electric and gas lamps, spare wheel, etc.; £110.—Owner, 12, Leaside Avenue, Muswell Hill, N.10. [2960

SOUTHPORT.—1922 A.J.S. B1 Combination, polished aluminium sidecar, gift, 69 guineas; 1916 A.J.S. 6h.p. Combination, fully equipped, new sidecar body, gift, 52 guineas; exchanges.—Kents, 417, Lord St., Southport. [3642

LATE 1920 A.J.S. Combination, hood, screen, speedometer, spare wheel, all lamps and accessories, excellent condition; £75.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [3794

7h.p. A.J.S. and sidecar, delivered from works, August, 1921, complete with spare wheel, hood, side and tail lamps, Lucas mirror, P. and H. horn, Smith's speedometer, licence paid, done 3,860 miles, bargain for immediate sale; £120.—Timberlake's Garage, Wigan. 'Phone: 512-513. [2658

SEPTEMBER, 1922, 7h.p. A.J.S. Combination, Lucas Magdyno lighting set, hood, screen, electric horn, spare wheel, clock, speedometer, numerous accessories, cost over £225 less than 3 months ago, indistinguishable from new; £120.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [3793

A.J.S. 1921 7h.p. Combination, with spare wheel, dynamo lighting, first-class order, £115; also 1921 7h.p. Combination, with spare wheel, Lucas battery lighting, speedometer, Binks' carburetter, exceptionally fine condition, £110. Full particulars of these and 50 other machines free on request. Exchanges and deferred payments.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [3222

MOTOR CYCLES FOR SALE.

A.J.S.

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £33.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [3267

£28, Bargain.—Alldays Allon, late 1920, 2-stroke, 2 speeds, clutch, K.S., fully equipped, sound order. —143, Ravensbury Rd., Earlsfield, S.W. [3889

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

22 Guineas, exchange.—Allon 2-stroke, 2 speeds, footboards, lamps, horn, watch, smart, any examination; trial.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [3336

1920 Allon 2¼h.p., 2 speeds, C. and K.S., fully equipped, lamps, Klaxon, etc., guaranteed perfect, tax paid; £35.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3902

Ariel.

SOUTHPORT.—1921 3½h.p. Ariel, lamps, horn, tax paid, nice condition; 49 guineas; exchanges. —Kents, 417, Lord St., Southport. [3648

1920 Ariel 3½h.p., lamps, speedometer, aluminium piston and discs, 60 m.p.h. guaranteed, as new; £60.—Parsons, Warwick St., Earlsdon, Coventry. [3467

ARIEL.—All models cash or gradual payme . Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 3½h.p., brand new, touring model, 3-speed, countershaft, and kick-starter; sacrifice £65.—Smith Bros., 2, St. Ann's Well Rd., Nottingham. [4077

ARIEL 1919 3½h.p., 3-speed, Swan sidecar, new tyre, belt, spares, speedometer, lamps, insured June, just overhauled; £50.—3, Binden Rd., Stamford Brook. [3671

1920 6-7h.p. Ariel Combination, fully equipped, speedometer, Easting windscreen, excellent condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1856

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones' Garage, Broadway, Muswell Hill. N.10. [0804

Atlas.

ATLAS Motor Cycle for sale, new August, 1922, Atlas engine; price £19/10.—Amac, Ltd., Lion Works, Witton, Birmingham. [3517

Beardmore.

BEARDMORE, brand new, spring frame; £45.—S. E. Porter and Co., Whitchurch, Salop. [3440

BEARDMORE-PRECISION 1922 4¼h.p. Combination, cantilever spring frame, 700×80 tyres, fully equipped, insured up to April, cost with accessories over £170 this year, practically new; £90, or near offer.—Wyatt, 76, Old Rd. West, Gravesend, Kent. [3464

1920 Beardmore-Precision 3½h.p., 2-speed, clutch and kick-start, spring frame, S.P. jet, Xtra air, B.T.H. electric lighting set, etc., licensed, perfect throughout; 42 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4019

Spare Parts:

BEARDMORE-PRECISION Spares. Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

Blackburne.

SOUTHPORT.—Olympia, actual only Show model, 250 c.c. o.h.v. Blackburne-O.K., the prettiest little machine at Olympia, instant delivery; £76; unique opportunity; exchanges.—Kents, 417, Lord St., Southport. [3605

SOUTHPORT.—Olympia, actual Show models, o.h.v. Blackburne and o.h.v. Bradshaw models, Sheffield-Hendersons, instant delivery; £85 and £72 respectively; unique opportunity; exchanges.—Kents, 417, Lord St., Southport. [3604

Spare Parts:

ALL Blackburne Engine Spares; list on application; trade supplied.—Maudes', 100, Great Portland St., W.1. [3884

Bradbury.

BRADBURY 1921 4h.p., 3-speed, K.S., with Montgomery Sporting sidecar; £48.—Burnett, Rowsley, Derbyshire. [3620

BARGAIN.—Bradbury 4h.p. Combination, 2-speed, kick, excellent condition throughout; £26.—Thompson, 91, Queen St., Retford. [3757

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £68; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2286

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1922 Brough Superior, Montgomery sidecar, dynam lighting, electric horn, Bonniksen, 8h.p. J.A.P. super-sports engine; outfit is what a Brough shoul be; £132/10.—51, Upper Richmond Rd., East Putney [407

SOUTHPORT.—Olympia, actual Show models, Mark I. and Mark II. Brough Superior, instant d livery; £130 and £115 respectively; unique oppor tunity; exchanges.—Kents, 417, Lord St., Southport [360

Spare Parts:

SPARES.—All engine, gear box, and frame spare for Brough Superior in stock; write for lists.— G. and J. Dawson, The Ideal Garage, Cambridge. [083

B.S.A.

PROMPTEST Deliveries of 1923 Models.—The B.S.A specialists.

COUNTY Cycle and Motor Co. Ltd., Broad St., Birmingham. [3162

1922 B.S.A. Combination, 4¼h.p., shop-soiled only £85.—114, Brixton Hill. [3798

B.S.A. 1920 4¼h.p. chain Combination, taxed, all accessories; £70.—Will, 769, Romford Rd., Manor Park, London, E.12. [3268

B.S.A. 4¼h.p., late 1921, little used, unscratched, lamps Tan-Sad, tax paid; sacrifice £60.—Powell, 11, Wilputte Terrace, Ebbw Vale, Mon. [3449

£52.—B.S.A. 4¼h.p., 1920 (Sandum exquisite side car, nearly new), hand clutch, lamps, tools.— 222, Brighton Rd., South Croydon. (P) [3621

B.S.A. 4¼h.p., all-chain 3-speed, clutch, kick-start coach sidecar; 35 guineas, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3927

1919-20 4¼h.p., B.S.A., equipped, tax paid, and guaranteed perfect order; solo, £45; with side car, as new, £52.—S. E. Porter and Co., Whitchurch, Salop. [3436

B.S.A. 1921 4¼h.p. Combination, fitted with Easting Royal windscreen, lamps, bulb and mechanical horns, numerous spares; £75.—Timmins, Barlaston, Stoke-on-Trent. [3728

4¼h.p. B.S.A. Combination, 3-speed gear box, all-chain drive, splendid condition; £36.—Waldron Motor Mart, 646, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [3796

1922 B.S.A. 6h.p., Model E, De Luxe, with No. 4 sidecar, slightly shop-soiled only, maker's full guarantee; 95 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4020

SOUTHPORT.—1921 (September) 4¼h.p. B.S.A. all-chain Combination, electric head lamp, Cowey speedometer, Cowey horn, windscreen, Brooks' cantilever saddle; 65 guineas; exchanges.—Kents, 417, Lord St., Southport. [3645

B.S.A. 4¼h.p., 3-speed, K.S., with well-sprung coach-built sidecar, fully equipped, engine perfectly sound, plating, enamel, and sidecar unscratched; quick sale £60, or near offer: purchasing twin combination.— Prebble, De Vere Hotel, Kensington. [3490

B.S.A. 1920 4¼h.p. Combination, 3-speed, electric lighting, dynamo, Cowey speedometer, Lucas horn, portable grid, spare belt, tube, all accessories, perfect running order; £80; seen by appointment only.—Seymour, 24, St. Marks Crescent, N.W.1. [3586

B.S.A. 6h.p. Twin De Luxe Combination, 1923 model, Show finish, at new reduced prices; just delivered; £115. 4¼h.p. H.2 model, chain drive; £75. 4¼h.p. K.2 chain-cum-belt; £72. Deferred payments or exchanges.—Eagles and Co., 275, High St., Acton, London. [3880

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4805

B.S.A. Spares definitely by return, post free, trade supplied.—Pitts, B.S.A. Service, Redditch. [1761

THE B.S.A. Specialists.—County Cycle and Motor Co., Ltd., Broad St., Birmingham. Catalogue free on request. [3163

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all B.S.A. spare parts always in stock. Write for free spare part list, stating year of manufacture. [0750

MOTOR CYCLES FOR SALE.

Excelsior.

1923 Excelsior lightweight Villiers, 2 speeds, wonderful power; £28/10; new.—Keen, Leominster. [1228

1920 Excelsior 2¾h.p., J.A.P., 2-speed, equipped, in perfect condition; £23.—51, Upper Richmond Rd., East Putney. [4068

F.N.

F.N. Lightweight, 2-speed, kick-start, hand clutch, shaft drive; 28 guineas, take pedal cycle part.—7, Kenbury St., Camberwell, London. [3741

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

G.L.

CHEAPEST Combination in England.—G.L.-J.A.P., late 1919, 5h.p. twin, Sturmey-Archer 3-speed, clutch, kick-starter, all-chain drive, luxurious skiff decar, detachable wheels, spare wheel and tyre, cantilever saddle, dynamo lighting, 3 lamps, Lucas switchboard with volt and ampere meters, apron, Easting windscreen, Stewart mechanical horn, Cowey speedometer, pump, and tools, tax paid; 59 guineas.—Delancey St. Garage, Camden Town, N.W.1. [3678

Grigg.

GRIGG, brand new, 2-speed Sturmey, kick-start, clutch; £30.—51, Upper Richmond Rd., East Putney. [4074

Hamilton.

£20.—3½h.p. Hamilton, Senspray, Bosch, oversize tyres, splendid order, travel anywhere.—Reed, 5, Kensington Place, W.8. [3459

Harley-Davidson.

£45.—1918 7-9h.p. Harley-Davidson Combination, perfect condition; exchanges.—Restall, New Rd., Oxford. [3768

1923 Harleys, dynamo; £112; exchanges entertained.—Agents, Parwood Garage, East Hill, Wandsworth. [3592

1919 Harley Solo, 3-speed, clutch, kick-start, fully equipped and in excellent condition; an opportunity for you; £38.—Below.

1918 Harley Combination, 3-speed, clutch, kick-start, large bulbous sidecar with new Easting screen, fully equipped; £49.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 941. [3872

HARLEY 1918 Combination, electric lighting, hood, Cameo windscreen, posh condition; best offer.—"Roydene," The Drive, Sidcup. [3813

HARLEY-DAVIDSON 1921 4h.p., flat twin, perfect; 52 guineas; exchanges, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3925

LUXURIOUS 7-9h.p. Harley-Davidson Combination, purchased from Harley's last August, as brand new; £85; exchanges.—24, Balliol Rd., North Kensington. [3688

HARLEY-DAVIDSON Combination, 1918, fully equipped, licence, Montgomery Sporting sidecar, splendid condition; £58, instalments.—63 Solon Rd., Brixton. [3712

£1 Guineas; exchange.—1915 Harley, 3 speeds, clutch, K.S., roomy coachbuilt sidecar, fully equipped, nice condition, any examination.—Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [4000

HARLEY-DAVIDSON Combination (August, 1920), hood, screen, Tan-Sad, grid, Lucas dynamo, lamps, insured to October, 1923, any trial; sacrifice, £75.—129, Grove Green Rd., Leytonstone, E.11. [3935

1920 Harley-Davidson Combination, 4h.p. flat twin, 3 speeds, C. and K.S., all lamps, horn, speedometer, etc., absolutely as new, guaranteed; £75; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3903

YOUR Motor Cycle or Combination taken in part payment for a Harley, any model; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal, London. [4062

£58.—1919 7-9h.p. Harley-Davidson with special large coachbuilt sidecar, fully equipped, electric and acetylene lights, long exhaust with handle-bar controlled cut-out, splendid condition; any trial.—88, Fitzjohn's Av., Hampstead, N.W. (D) [2876

1922 Harley-Davidson 7-9h.p. handsome 2-seater Combination, dynamo, electric motor horn, lamps, Bluemel windscreen, Lucas mirror, Bonniksen speedometer, tools, tip-top condition, any trial; cost £215, accept £120.—752, High Rd., Leytonstone. [3491

£48.—Special 1918 speed model solo Harley, plated exhausts (legal), Specialloid pistons, racing Amac, T.T. bars, new tyres, solo gears, fully equipped, many spares, tax paid, 70 m.p.h. guaranteed, a super hog bus; after 6.0.—88, Fitzjohns Av., Hampstead, N.W. (D) [3704

Spare Parts:

HARLEY-DAVIDSON Second-hand W.D. Spares, all genuine; competitive prices; practically any parts.—Maudes', 100, Great Portland St., W.1. [3886

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Enfield, 8 h.p., comb..... £120 0
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Triumph, 1922, S.D., new £84 0
Triumph, 1922, 2¼ h.p., new.... £40 0
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Harley, 1919, elec. comb., ex. gd. £92 10
Martinsyde, 1920, 6 h.p. comb... £79 10
Rudge-Multi, 1920, 5-6 h.p. comb. £69 10
Scott, 3½ h.p., 2-sp. comb., tax pd. £45 0
Scott, 1920 comb., scrn., etc. £75 0
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H.F.G., 1920, 8-10 h.p., 2-sr., dyn. £97 10
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Rex, 5-6 h.p., 2-sp. and sc. £29 10
Rex, 1913, 6 h.p., coach cb. £42 10
Rudge-Multi, 1920, 5-6 h.p. comb., small mileage .. £69 10
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WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

Hawker.

1923 Models. Hawkers on extended payments. Wauchope's, 9, Shoe Lane, London. [3941

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YOUR Motor Cycle or Combination taken in part payment for a Henderson, any model; cash, deferred payments, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully, Bal, London. [4061

Hobart.

2¾h.p. Hobart, Binks, 3 speeds, equipped; bargain, £16.—Fisher, Springwell Rd., Heston, Hounslow. [3627

Humber.

2¾h.p. Humber Twin, Vici carburetter, Bosch; £12.—Fisher, Springwelf Rd., Heston, Hounslow. [3626

HUMBER 3½h.p., 2-speed, clutch, etc.; £10.—Rhind and Co., Stone Place, Rusholme, Manchester. [3574

4½h.p. Humber, 1922, sound, complete, all-black; £80.—W. Thompson, Harelaw, Annfield Plain, Durham. [3529

1923 Models. Humbers; exchanges and extended payments; generous terms. Wauchope's, 9, Shoe Lane, London. [3942

HUMBER 1921 4½h.p. Combination, Grindlay sidecar, lamps, horn, windscreen, Brooks cantilever saddle, exceptionally fine condition; bargain, £85.—P. J. Evans, John Bright St., Birmingham. [3569

HUMBER Combination, 3½h.p., just overhauled by Humber, £35, would consider exchange and cash for Matchless or leading maker; by appointment only.—B., 10, Colestown St., Latchmere, Battersea. [3602

Indian.

1923 Indian Scouts (new); exchanges or cash.—Parwood Garage, East Hill, Wandsworth. [3591

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1916 Powerplus Indian Combination, many extras, nice condition; £55.—3, Parker Lane, Burnley. [3834

1923 Models. Wauchope's, 9, Shoe Lane, London. Central 5168. Indians; exchange and extended payments. [3943

LUXURIOUS 5-8h.p. Indian Combination, fully equipped, lamps, hood, screen; special, £35.—17, Heaton Rd., Mitcham. [3788

1914 7-9h.p. Indian, clutch model, nice running order; £24/10, or exchange for lightweight or goods.—93, Ormerod Rd., Burnley. [3833

7-9h.p. Indian 1919, 3-speed, clutch, kick-start, lamps, speedometer, etc., excellent condition, little used; best offer.—Ovington Hall, Winston, Darlington. [3505

£70.—Indian Combination, 1919, electrical equipment, windscreen, tax paid.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3408

1922 Indian Scout, electric lighting, horn, speedometer, not done 3,000 miles, taxed, equal to new; 60 guineas.—Klaveness, Balliol College, Oxford. [3433

INDIAN Combination, late model, 1921 Dunhills' sidecar, lamps, speedometer, taxed, splendid condition; real bargain, £55.—3, Stamford Brook Rd., Hammersmith. [3150

34 Guineas.—1916 Indian Combination, 7-9h.p., T.T., 3-speed, spring frame, 2in. exhausts; exchange clutch Indian and cash.—Bramwell, Lauriston Rd., Wimbledon. [3697

LATE 1919 Indian Combination, 7-9h.p. Powerplus model, hand and foot clutch, Millford sidecar, tax paid, special racing model, guaranteed to 70 miles hour, perfect order; sell 58 guineas, or lightweight part.—D. Shorter, Broad St., King's Lynn. [3725

INDIAN 7h.p. Combination, with dynamo lighting, speedometer, Easting, condition absolutely as new, delivered new May, 1922, £95; also 1920 combination, with similar equipment, and in very good order, £75.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4037

Spare Parts:

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Longford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

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Indian.

Spare Parts:

FOR Indian spares and overhauling try Horswill, Indian Specialist, over 10 years' experience, 42, Bridge St., Chester. [1277

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [3767

Invicta.

INVICTA Lightweight, almost new; 22 guineas, take pedal cycle part.—57, Kenbury St., Camberwell, London. [3742

1921 Invicta 2¾h.p., 2-speed, fully equipped, licensed, excellent condition; 27 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3339

Ivy.

IVY 2½h.p., 2 speeds, clutch, K.S., Lucas 462, Cowey trip, electric horn and rear lighting, pillion, excellent condition, cost £89; sell £37/10 cash. Wanted, Ivy Three.—5, Albany Rd., Ealing. [3737

IVY 3h.p., 1922, 2-speed, clutch, kick-starter, with Watsonian polished aluminium torpedo sidecar, dynamo lighting, 3 lamps, mechanical horn, legshields, apron, Easting windscreen, mat, Watford speedometer, and tool kit, tax paid, practically brand new and one of the prettiest outfits in England; 59 guineas.—Delancey St. Garage, Camden Town, N.W.1. [3679

Spare Parts:

IVY.—Engine Spares.—Maudes', 100, Great Portland St., W.1. [3885

Ixion.

1920 Ixion brand new, fixed gear, £35; 1921 Ixion, 2-speed, £45.—Saunders, 32, High St., Hampstead. [2502

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AT Edwards.—1922 3½h.p. Sports James, equipped, tax paid, indistinguishable from new; 59 guineas. —Below.

1919 3½h.p. Twin James, 3-speed, all-chain drive, equipped lamps, horn, etc.; 38 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4005

1920 3½h.p. James, twin cyl., all-chain drive, 3-speed, clutch, K.S.; £32; exchanges.—24, Balliol Rd., North Kensington. [3686

JAMES 5-6h.p. 1921 Combination, 7h.p. 1922 gear box, just completely overhauled by makers, new back tyre, absolutely perfect condition.—Apply, Orr, 3, Newhall St., Birmingham. [3431

1922 James, practically new, 2¾h.p., 2-speed, clutch, kick-starter, fully equipped and unscratched; cost £68; accept £35.—The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [3726

Spare Parts:

JAMES Spares.—Immediate delivery.—Kaya, 8 and 10, Bond St., Ealing. [9449

WHITBY'S.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [9777

J.E.S.

J.E.S. 1½h.p. 1921 B Model, little used, perfect order; 19 guineas.—Rev. Goodwin Courtman, Awre, Gloucestershire. [3718

Lea-Francis.

1921 3½h.p. Lea-Francis, twin, 2-speed, perfect condition, under 2,000 miles, all accessories; £45.—Nott-Bower, Brompton Barracks, Chatham. [3589

Levis.

1923 Models. Wauchope's, 9, Shoe Lane, London. Levis; exchange and extended payments. [3944

LEVIS 1921 2¼h.p., 2-speed, clutch, all accessories, as new; £30.—145 Widmore Rd., Bromley. [3785

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone: 852. [0966

SPORTS Model Levis, 2-speed, clutch, chain drive, perfect, going abroad; £36.—7, Inverine Rd., Charlton, S.E.7. [3756

LEVIS, late 1921, 2-speeds, hand clutch, speedometer, lamps, etc., beautiful condition; £35.—30, Thorsett Rd., Earlsfield, London. [3157

16 Guineas.—2½h.p. Levis, believed 1917, Bifax forks, discs, lamps, good tyres, unridden 2 years and never licensed, genuine machine.—7, St. Mark's Mansions, N.4. [3856

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

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'Phone: Brixton 2417. Wires: Burlington Motors, Clapham.

Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

L.M.C.

£50.—1920 6h.p. L.M.C. Coachbuilt Combinatio perfect condition, equipped.—King, Egrov Oxford. [37

Martinsyde

1921-22 6h.p. Martinsyde, beautiful combinatio practically unscratched; sacrifice, 67 guineas 67, Fernlea Rd., Balham. [40

1921 Martinsyde Combination, Lucas lamps, et perfect condition, delivered free; £80; M lands.—Box 4958, c/o *The Motor Cycle.* [35

ROBERTSONS Motors, Limited, are the Lond Martinsyde Service agents; trial runs arrange 1923 models now available at the new prices, spa stocked.—157B, Gt. Portland St., W.1 [11

1922 Martinsyde 6h.p. Combination, complete wi Millford sidecar, cost £160, has only been us a few times; a gift at £130; cash or deferred.—Ma borough (Motor House), 20, Finchley Rd N.W [68

YOUR Motor Cycle or Combination taken in pa payment for a Martinsyde, any model; cash, d ferred payments, or exchanges.—Barker's Motors, 19 Balham High Rd., S.W.12. 'Phone: 4441 Latchmer 'Grams: Pushfully, Bal, London. [40

Spare Parts:

MARTINSYDE Spare Parts are obtainable fro stock at Jones' Garage, The Broadway, Muswe Hill, London, N.10. [09

Matador.

BUY a Matador! It's different—but better!

READ This.—2¾h.p. o.h.v. Bradshaw engine, 7 ×80 Dunlop tyres, perfect mudguarding, quick detachable tank giving easy access to engine for a adjustment, capable of from 7 to 70 m.p.h.; pri £75.

BEAUTIFULLY finished and of particularly sma appearance; not a "mushroom," but a machi which has been making good since 1908.

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Matchless.

1921 H Matchless Combination, as new, mu realise; 84 guineas.—67, Fernlea Rd., Balhar [40

A 6h.p. Matchless-Jap, 2-speed and clutch ful equipped, perfect order; £27/10.—11, Hanso Mews, Holland Rd., W.14. [35

1923 Models. Wauchope's, 9, Shoe Lane, Londo Central 5168. Matchless Combinations; e change and extended payments. [39

MATCHLESS, all models, 1923 prices; best e change allowances; deferred.—Agents, R. Clark and Co., 7, Exhibition Rd., S.W.7. [11

MATCHLESS Combination. 8h.p., 2-speed, lamp horn, etc., overhauled, good running order; guineas.—Edwards, 50, Harrington Rd., South Ke sington. [11

MATCHLESS, brand new, Model H2, M.A.G. engine spring frame, Lucas lamps, horn, screen, shield etc.; £130, only one at this price.—Mason's Garag Letchworth, Herts. [16

1921 Model H Matchless, dynamo lighting, hood sids screens, spare wheel, speedometer, etc., new, fully guaranteed; 92 guineas.—51, Upper Rich mond Rd., East Putney. [40

1921 Matchless Model H Combination, dynam lighting, spare wheel, speedometer, hood, screen M.A.G. engine, small mileage; £85.—Hillier, side bel 127, St. Mark's Rd., North Kensington. [37

AT Edwards.—1919 8h.p. Victory Model Matchles Combination, Lucas lamps, Bonniksen speedo meter, spare wheel, new condition throughout; 7 guineas; exchanges or deferred.—101, Great Portlan St., W.1. [40

LATE 1921 Matchless Combination, M.A.G. engine Magdyno lighting, hood, screen, speedometer watch, lavishly equipped, insured for £180; accep 100 guineas; exchanges entertained.—30, Thornsett Rd., Earlsfield, S.W. [38

YOUR Motor Cycle or Combination taken in par payment for a Matchless, any model; cash, de ferred payments, or exchanges.—Barker's Motors, 19 Balham High Rd., S.W.12. 'Phone: 4441 Latchmere 'Grams: Pushfully, Bal, London. [40

THE Best Bargain in this issue, Matchless 498 c.c. 3-speed, clutch, kick-start, Millford sidecar, Blue mel windscreen, thoroughly overhauled July, appear ance and mechanical condition as new; first cheque ove £35 secures.—Freeman, 69, Titchfield Rd., Enfield Wash. [38

1923 Matchless Combinations.—T. J. Ross, of 80 High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery Exchanges and deferred payments arranged; demon stration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [32

MOTOR CYCLES FOR SALE.

Rudge.

h.p. Rudge, clutch, fast, guaranteed; 15 guineas. —67, Fernlea Rd., Balham. [4050

21 Rudge-Multi, very little used, fully equipped; £45.—26, Tulse Hill, Brixton. 'Phone: Brixton 2. [3976

T Edwards.—1921 Rudge-Multi, fully equipped, speedometer, splendid condition; 40 guineas.—ow. [3774

20 3½h.p. Rudge-Multi, lamps and horn, tax paid, exceptional condition; 30 guineas; exchanges or rred.—101, Great Portland St., W.1. [4003

18.—Exchange 1920 7-9h.p. Rudge-Multwin coach-built combination, had little use.—King, Egrove, ord. [3774

UDGE-MULTI, I.O.M., guaranteed fast, acces-sories, recently overhauled; £35, or offer.—8, msley Place, Hackney. [3843

CRIFICE.—3½h.p. Rudge, clutch model, in good running order and condition; £14, carriage .—Kerswell, 56, Laurence Hill, Bristol. [3527

UTHPORT.—1921 I.O.M. Rudge-Multi, Bonnik-sen speedometer, lamps, horn, etc.; 41 guineas; anges.—Kents, 417, Lord St., Southport. [3644

21 3½h.p. Rudge, sidecar, excellent condition, un-punctured, lamps, Cowey horn, speedometer, e belt; £50.—Sims, 15, Railway St., Chatham. ne: 450. [3699

OUR Motor Cycle or Combination taken in part payment for a Rudge, any model; cash, de-ed payments, or exchanges.—Barker's Motors, 194, am High Rd., S.W.12. 'Phone: 4441 Latchmere. ms: Pushfully, Bal, London. [4065

pare Parts:

UDGE Spares.—Immediate delivery.—Shepherd, En-field Highway, N. [0901

IE Promptest Firm for Rudge Spares.—Illustrated list free. Trade supplied.—Forfield Motors, For-Place, Leamington Spa. [3163

Scott.

20 3¾h.p. Scott, excellent condition, electric lighting, speedometer; £50.—16, Pont St., .1. [3766

23 Scott Models. Wauchope's, 9, Shoe Lane, London. Exchanges and deferred payments; on free. [3951

OTT 3¾h.p., 1920, excellent condition, tax paid, £55; similar machine, 1915 model, £35.—P. J. s, John Bright St., Birmingham. [3568

OTT Combination, 1911, recently stove enamelled, new chains, engine requires attention; £12/10.— ner, 70, Camden Mews, Camden Rd. [3617

OW the show is over have a demonstration run on a Scott.—John R. Kinsey and Co., Ltd., 350, er Addiscombe Rd., Croydon. 'Phone: 1129. [3871

OTT 1920 3¾h.p., sidecar, lamps, horn, speedo-meter, excellent performance and condition; trial ; £60.—Carne, 13, Lassa Rd., Eltham, S.E.9. [3612

OTT 1912 and Bax aluminium sidecar, splendid engine, thorough overhaul last year, little used e; £50, or near offer.—Write, 19, Margery Park Forest Gate. [3470

20 Scott Combination, engine 4114, forks, transmission, engine all overhauled by God-, splendid condition, Aero discs; £60.—Clarkson, gh Corner, Colchester. [3836

OTT 3¾h.p., 2-speed, Lucas lamps and horn, double lubricators, very good order; £32.—Newn-Motor Co., 223 and 245, Hammersmith Rd., . 'Phone: Hammersmith 1325. [4039

UTHPORT.—Instant delivery latest 1923 Scott Squirrel, latest improvements, £89; 1922 Scott rrel, lamp, horn, etc., nice condition, ideal sports 59 guineas; exchanges.—Kents, 417, Lord St., hport. [3646

pare Parts:

ARD Motors, Ltd., 32, Hustler St., Bradford.—Everything for a Scott, new or good second-hand, ualled for repairs. [0889

ODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always tock. Write for free spare part list, stating year anufacture. [0751

Singer.

NGER 3h.p., 3-speed, clutch, kick-start, lamps, speedometer, pillion, very good condition; £27/10.—Epsom Rd., Croydon. [3461

14 Singer Combination, 4h.p., 2 speeds, clutch, all-chain, new tyres, all lamps, comfortable ar, perfect; £45; exchanges.—Homac's, 243, Lower ton Rd., N.E. 'Phone: Dalston 2408. [3906

pare Parts:

IE Promptest Firm for Genuine Singer Spares.—Forfield Motors, Forfield Place, Leamington [8368

ENUINE Singer Parts.—Let me quote you.—All Holland, Hearsall Lane Corner, Coventry. ne: 1945. [3808

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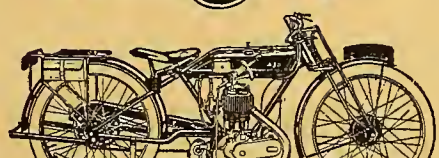

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MOTOR CYCLES FOR SALE.

Sun.

SUN-VILLIERS, in splendid condition and running order; £14/10.—30, Thornsett Rd., Earlsfield, London. [3158

FOR Sun-Jap or Sun-Vitesse, get in touch with the sole North London agents. Models in stock, single Special, 42 guineas; 2¾h.p. J.A.P., 2-speed, K.S., 60 guineas. Send for catalogues. Trade supplied.—Jones' Garage, Broadway, Muswell Hill, N.10. [0790

Sunbeam.

SUNBEAM 1921 3½h.p., lamps, horn, speedometer, spares, taxed, excellent condition; £75.—Ogle, Digs-well, Welwyn. [3450

SUNBEAM 1916 3½h.p., in good condition, with comfortable sidecar; £55.—Kersley, 37, Mt. Pleasant, Alton, Hants. [3543

SUNBEAM 1922 4½h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £120. —7, Exhibition Rd., S.W.7. [5619

£79.—Late 1920 3½h.p. Sunbeam combination, fully equipped; any trial or examination, evenings.—4, Elm Gardens, Hammersmith. [3814

SUNBEAM 3½h.p. Sporting, 1921, only done 3,000 miles, perfect condition, with lamps; £75.—Raymond Best, Burghill, Hereford. [2810

1923 Sunbeam Models. Wauchope's, 9, Shoe Lane, London. Central 5168. Exchanges and easy terms; delivery from works if preferred. [3952

1920 3½h.p. Sunbeam Combination, completely equipped, condition practically as new; £110.—E. W. Roberts, Blencathra Garage, Keswick. [0972

1920 3½h.p. T.T. Sunbeam, new 650×65 Dunlops, electric lights, any examination; £70 for quick sale.—16, Gt. Marlborough St. 'Phone: Gerrard 6563. [3964

1921 Sunbeam Combination, 8h.p., dynamo, many special fittings, cost £300, condition as new; best offer or exchange.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3931

SUNBEAM 8h.p. Combination (1920 model, de-livered Dec., 1919), in perfect order, comp'ete with Lucas lamps, speedometer, windscreen, spare wheel, etc.; £100.—T.H.A., Denstone College, Staffs. [3531

SPORTS Sunbeam 3½h.p. 1921-22, and Moutgomery Sports sidecar, electric lighting, speedometer, Klaxon, Tan-Sad, legshields, knee grips, screen, apron luggage grid, and step; £115.—Taylor, York Rd., Leicester. [3496

SUNBEAM Combination, November, 1920, 3½h.p., new 700×80 tyres (Avon), speedometer, Tan-Sad, Klaxon, Lucas lamps, spare tyre, specially built outfit for Dutch Trials, cost £240; price £90. —Davis, 10, St. Martin's St., Worcester. [3424

EXCEPTIONAL Bargain.—Sunbeam 1922 4½h.p. and Watsonian sidecar, Dunlops, Easting screen, Klaxon, tax paid, only done about 300 miles, abso-lutely like new; £110; just cost £172; inspection invited.—Wilkins, Simpson, opposite Olympia, London. [3519

T.D.C.

T.D.C. 2-stroke, 2¾h.p., splendid order; £18; ride 40 miles to purchaser.—186, Minstead Rd., Erd-ington, Birmingham. [3760

T.D.C. 2¾h.p. 2-stroke, exceptional engine, fully equipped, new tyres, take two anywhere; 19 guineas.—135, Acre Lane, Brixton. [3894

T.D.C. 2-stroke, perfect order, just overhauled, nearly new Palmer tyres, Saxon forks, all acces-sories; £15.—Snodgrass, Lightwater, Bagshot. [3850

Torpedo

TORPEDO-PRECISION 1915 2½h.p., perfect; 11 guineas.—Peter Gordon, Ltd., 110, Upper Rich-mond Rd., East Sheen. [3929

Triumph.

BRAND New All-chain Triumphs, unpacked; £80.—Below.

TRIUMPH-GLORIA, all-chain, elaborately equipped, extras, indistinguishable from new; £85.—Ward and Co., 51, Upper Richmond Rd., E. Putney. [4066

1922 4h.p. Triumph, shop-soiled; £70.—114, Brixton Hill. [3800

£65.—Triumph Combination, in good order; all on.—Trowell, 40, Wrotham Rd., N.W. [3481

3½h.p. Triumph, 2-speed, equipped, taxed, ridden daily; £25.—19, Spring St., Cannock. [3832

4h.p. Triumph, Millford sidecar, speedometer, screen, perfect; £43.—120, Sutherland Rd., Croydon. [3821

1921 Triumph H 4½h.p., licence paid; 60 guineas. —Williams, Brightview, Hadley Rd., New Barnet. [3614

BRAND New 1922 All-chain Triumph, packed ex-port case; £76.—20, Woodville Gardens, Ealing. [3793

TRIUMPH 4h.p., November, 1918, 50% new parts, licence; £48, instalments.—63, Solon Rd., Brix-ton. [3715

BRAND New All-chain Model Triumph, unpacked, maker's guarantee.—16, Devonport Rd., Hammer-smith. [4069

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue B29
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

1918 Countershaft Triumph, in perfect order, fully equipped, licensed; £42.—14, Kildoran Rd., Brixton. [3710

1918 Triumph Combination, 4h.p., countershaft, lamps, etc., nice condition throughout; £47/10. —Below.

1920 Triumph Combination, fully equipped, just overhauled, guaranteed perfect; £60.—Below.

TRIUMPH Coupette Combination, all aluminium sidecar, my speciality. Call and inspect.—Goad, 122, Maida Vale, W.9. 'Phone: Maida Vale 1353. [3892

TRIUMPH Junior, excellent order and condition, equipped; £26.—Spencer, Surveyor, Wigton, Cumberland. [3762

TRIUMPH 4h.p., Millford sidecar, Lucas fittings, perfect; £65, offers.—Woodroofe, 40, Varna Rd., Birmingham. [3493

TRIUMPH 1923 models, orders now accepted, don't delay your order.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0978

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

TRIUMPH 1918-19, countershaft, guaranteed perfect order; £48.—S. E. Porter and Co., Whitchurch, Salop. [3438

1921 Triumph (August), 4h.p., all-chain, excellent condition; £70, lowest.—King, Market St., Highbridge, Somerset. [3811

19 Guineas.—Late T.T. Sporting Triumph, dropped frame, very fast.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [3634

TRIUMPH 1918, all on, disc wheels, excellent condition 3 months' guarantee; £45.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [3977

TRIUMPH Combination, 1921, mileage 500, equipped; £67/10.—M. Hillier, 216, Portobello Rd., North Kensington, W.11. [3866

1919 Triumph 4h.p., 3-speed, Sturmey-Archer countershaft, perfect condition; best offer.—Jones, c/o Boulton, Park Drive, Trentham. [3492

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £55.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3345

1918 Countershaft Triumph, new Dunlop tyres, fully equipped; £35.—Hillier, side bell, 127, St. Mark's Rd., North Kensington. [3780

1923 Triumph Models. Wanchope's, 9, Shoe Lane, London. Central 5168. Exchanges and easy terms; tuition free; generous terms. [3953

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

BABY Triumph, completely equipped, including speedometer, just overhauled and tuned; bargain, £28.—Johnson, Toddington, Horsham. [3619

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

4h.p. Triumph Coachbuilt Combination, late 1920, Easting, accumulator lighting, Lucas horn, good condition; £70.—62, Queen's Rd., Walthamstow. [3521

1913 Triumph 3½h.p., 3-speed Sturmey-Archer hub gear, clutch, in excellent condition; any trial; £25.—Frater, Poles Hill, Sarratt, Rickmansworth. [3554

1919 Triumph Combination, Gloria sidecar, perfect condition, in owner's possession since new; £55.—Stratton Manor Farm, East Dean, Chichester. [3429

TRIUMPH, Model H, brand new and unused, listed at £105; our price 82 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [3653

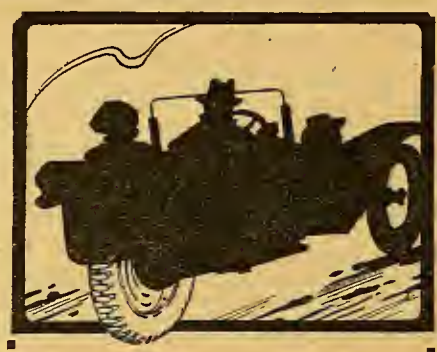
3½h.p. Triumph, 1914, 3 speeds, hub gear, engine and gear just overhauled, hand control, clutch, lamps, horn, taxed; first offer.—Easter, Five Ways, Swanley, Kent. [3729

1916 Triumph motor cycle, licensed, 3-speed, chain-cum-belt, Tan-Sad, lamps, tools, etc., all on, good condition, any trial; £40.—Ball, 4, Park View Villas, Hove, Sussex. [3428

£70.—Triumph-Gloria Combination, 1921 model, tax paid, numerous accessories; deferred terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2429

TRIUMPH, modern refinements, all on, Grado, K.S., aluminium discs, pan saddle, lamps, stands, brakes; £15.—Box 4951, c/o *The Motor Cycle*. (Will advertiser please send name and address.) [3514

1922 Triumphs at clearance prices. New and to standard specification. Lightweight, £40; Model H., £75; Model S.D., £84; Ricardo, £87/10; Ricardo and Sports Gloria sidecar, £109; Model H. and Sports sidecar, £96/10.—Meeten, Triumph Agent, Dorking. [3652



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Dear Sirs,

I had a Stepney Road Grip Tyre on the back wheel of my Morgan and it did over 5,000 miles and then I put it on the front wheel for about 1,000 miles **and it never burst** but just wore through the canvas. **They are splendid.**

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Yours truly,
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P.S.—If any one does not believe my statement I have the old Stepney (6,000 miles) to show.—E. H. B.

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A. W. Weston Service.

MOTOR CYCLES FOR SALE.

Triumph

1922 Triumph-Ricardo Engine, 3½h.p., o.h. brand new but shop-soiled, greatly reduce exchanges or deferred.—Homac's, 243, Lower Clapt Rd., N.E. 'Phone: Dalston 2408. [38

1919 4h.p. Triumph and sidecar, complete wi electric lamp, Lucas horn, licence paid, in cellent order and condition; bargain, £77/15.—Timb lake's Garage, Wigan. 'Phone: 512-513. [26

£95.—Triumph Combination, 1922, all-chain driv used for demonstration, complete with eve accessory, tax paid; terms if desired.—Midland Carag 166, Shaftesbury Av. 'Phone: Gerrard 8461. [24

1920 Triumph-Gloria Combination, Lucas lamps a horn, Cowey speedometer, Easting screc original receipt shown, absolutely perfect; £58/10; tr anywhere.—605, Garratt Lane, Earlsfield, S.W.18. [36

TRIUMPH 1922 4h.p. chain drive Gloria Combin tion, footboards, Lucas lamps and horn, absolute as new; £100.—Newnham Motor Co., 223 and 24 Hammersmith Rd., W.6. 'Phone: Hammersmi 1325 [32

1921 Triumph Combination, all-chain drive, speed meter, legshields, Lucas dynamo set, few mi only, guaranteed as new throughout, very careful handled; £100.—135, Ashley Rd., Loughborou Leicestershire. [34

1919 Triumph Combination, fitted with Glor sidecar, hood, screen, all lamps, etc., in abs lutely perfect condition, guaranteed; £65; exchange —Homac's, 243, Lower Clapton Rd., N.E. 'Phone Dalston 2408. [39

1922 4h.p. Countershaft Triumph, special plate exhaust, hand and foot clutch, rear drive speedometer, mechanical horn, mirror, watch, be lamps, condition brand new; £60; exchanges.—2 Balliol Rd., North Kensington. [38

TRIUMPHS.—Special offer, brand new chain-cu belt, £74 or all-chain, £85; Triumph 1920, new condition but not renovated, £55.—Light Car a Motor Cycle Engineering Co., Ltd., 26, Tulse Hi Brixton. 'Phone: Brixton 1292. [39

TRIUMPH 4h.p. countershaft Combinations, in goo order, from £50. Full list of these and 50 oth Combinations at prices from £20 free on reques Exchanges.—Newnham Motor Co., 223 and 245, Ham mersmith Rd., W.6. 'Phone: Hammersmith 1325. [32

1922 Triumph Combination, shop-soiled only, fitte with all-weather patent coupette sidecar, al chain machine, S.D. model; worth £115; tak £100 to clear, or exchange cheaper machine wit cash adjustment.—E. A. Callum, Bryanston Garage Bourne Av., Windsor. [35

SEPTEMBER, 1921, Triumph, all-chain drive, wit Gloria sidecar, paint and enamel unscratched Lucas lighting set, Easting windscreen, and severa other fittings; cost £200, and is in every respec equal to new, mileage under 3,000; will accept £110 cash or deferred payments.—Motor House, Ltd., 20 Finchley Rd., N.W.8. [40

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, Bond St., Ealing. [48

CYRIL WILLIAMS, Chapel Ash Depot, Wolver hampton.—Every Triumph part by return; list free. [81

TRIUMPH Spares.—Second-hand or new, for all models; prices right.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [38

TRIUMPH Spares, every part in stock, no waiting prices right.—Ward and Co., 51, Upper Rich mond Rd., East Putney. 'Phone: Putney 2754 [113

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free gear overhauls by specialist.—Jones' Garage, Triumph Agents, Broadway, Muswell Hill, N.10 [08

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph re pairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [73

Velocette.

£23.—Velocette, 2-speed, all chain, lamp, horn, tax —94, Gowthorpe, Selby, Yorkshire. [37

1923 Velocette Models, Wanchope's, 9, Shoe Lane, London. Exchanges and extended payments; tuition free. [39

1921 2-speed Velocette, Maglita electric lighting, very carefully driven, 4,700 miles only, looks brand new, perfect condition, engine 91721; £52.—Hardy, Waterside, Shaldon, Devon. [38

Verus.

VERUS-BLACKBURNE 2¾h.p., nearly new, 2-speed, K.S., hand clutch, lamp, tools, excellent condition, any trial; offers.—Nodder, Ashover, Chesterfield. [34

MOTOR CYCLES FOR SALE.

Victoria.

'23/10.—Victoria-Villiers 1921 2¾h.p., 2-speed, fly-wheel magneto, lamps, Klaxon horn, Cowey speedo-ter, and pump, tax paid.—Delancey St. Garage, nden Town, N.W.1. [3680

Werner.

VERNER 4h.p., low, fast, powerful; £22, take pedal cycle part.—57, Kenbury St., Camberwell, ndon. [3743

Wooler.

9 20 Wooler 2¾h.p., variable gear, speedometer, fully equipped, licensed, any trial; £23.—rd, South Western Garage, New Maldeo, Surrey. [3852

Zenith.

LLAN GRUZELIER, the Zenith Specialists.

UR very best thanks to you.

HE orders for Zenith motor cycles placed with us during the Olympia Show have far exceeded best expectations, and we are proud of the t that so many have been recommended to us by clients, who, by their past experience of our cialised service, have every confidence in ng so.

9 22 Models from stock; 2¾h.p. super-sports, £77; 2¾h.p. touring, £69/15; 3½h.p. Brad-w, £95.

ELIVERY 14 days.—8h.p. super-sports, £125; 8h.p. standard model, £115.

ECOND-HAND Bargain.—1920 8h.p. Sports, all on, £50; with sidecar, £60.

ASH or deferred terms, as you wish; you know the address, Ulster Chambers, 168, Regent St., 1. [3815

6h.p. Sports Zenith, 1917, perfect; any trial; £35. —40, Walford Rd., N.16. [3650

.O.C.H. iovite inspection; Zenith and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1374

9 21 5h.p. Sports Zenith, lamps, horn, tools, prac-tically new; £42/10.—37, Arlington Rd., Surbiton. ione: Kingston 1274. [3960

ENITH 8h.p. 1920 Sports, magnificent machine, Lucas lamps, new tyres, very hot; £55.—4a, nly Grove, Camberwell. [3673

ENITH 1920 Coachbuilt Combination, speedo-meter, luggage carrier, insured March; £65.—, Widmore Rd., Bromley. [3787

9 19 8h.p. Zenith, sports model, re-enamelled, re-nickelled throughout; £70.—Little Henlye, En-l Rd., Old Southgate. (P) [3538

.p. Zenith Combination, countershaft, overhauled, large sidecar, Easting, accessories, licence; 2/10.—Ling Dene, Farnham Common, Bucks. [3755

ENITH 8h.p., 1921, Millford-Zenith sidecar, posh outfit, excellent condition, all on; £57, or sell rate.—Wilcock, Park Mansions, Knightsbridge. [3736

ENITH Combination 1920, Swan sidecar, 8h.p., in excellent condition, head and side car lights; a gain, £50.—W. H. Stuart, Silver St., Axminster. [3498

3 Guineas.—8h.p. 1921 Zenith sports, as new, Canoelet sidecar, electric lighting, Brooks can-ver, Binks; exchanges.—122, Lower Mortlake Rd., hmond. [3825

ENITH 1921 5-6h.p. Sports, electric lights, discs, horn, spare belt and tube, etc., perfect, last; l willingly; £65; consider lightweight exchange.—cknell, Duke St., Ruabon. [3528

0 Guineas.—1922 Zenith-Bradshaw, all chain, 3-speed Sturmey-Archer, absolutely unscratched, dly ridden; approval deposit.—McNeille and Platt, Gt. George St., Liverpool. 'Phone: 1092 Royal. [3819

8h.p. Zenith, 1915, very good mechanical order, Cowey speedometer, acetylene lamp, brand new alop rear, very fast machine, buying new bike; £33. ieutenant Wemyss, Cameronians, Ramillies Barracks, ershot. [3489

ENITH 5-6h.p., clutch, kick-starter, roomy Swan sidecar, appearance excellent, Easting screen, s, perfect order throughout, fully equipped, nsed; £75, or near offer.—"Ivy Lodge," Risby, Bury Edmunds. [3839

9 21, very late, 5h.p. Sports Zenith, in beautiful order, registered February, 1922; tax paid, ed tank, fully equipped; £55.—Whitley, 9, Great nberland Mews, Seymour Place, Marble Arch, W.1. ldington 5970. [3878

ENITH 1921 8h.p. Countershaft Model with Mill-ford Rock sidecar, electric lighting, Cowey speedo-er, condition like new, £78; also 4 other Zenith binations from £49. Full list of these and 50 er outfits free on request. Exchanges.—Newnham or Co., 223 and 245, Hammersmith Rd., W.6. one: Hammersmith 1325. Open on Saturdays. [4038

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MOTOR CYCLES FOR SALE.

Zenith

19 19 5-6h.p. Zenith Combination, countershaft, kick-start, clutch, Rally double-seater sidecar, as new, Easting windscreen, all accessories, perfect condition; sacrifice, 48 guineas.—Harvey, Thornlea, Extons Rd., King's Lyon. [3869

Spare Parts:

ZENITH Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9447

Miscellaneous.

J. HEBDEN and Sons, Nelson.

BRAND New 1922 Motor Cycles.

3½h.p. Norton, Model 16H, 1923 price £79; our price, £70.

4h.p. Triumph, Type H; £70.

3½h.p. James, 1923 price £75, our price £67; 7h.p. James combination, 1923 price, £133, our price, £119.

4½h.p. P. & M. Combination, 1923 price, £125; our price, £110.

8h.p. Matchless 2-seater Combination, dynamo lighting, spare wheel, etc., 1923 price, £173; our price £155.

8h.p. Enfield Combination, 1923 price, £120; our price, £109; also new 1921 combination, £99.

MUST be Cleared to make room for 1923 models.

J. HEBDEN and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [3874

HOUCHIN.—1922 McKenzie Lightweight, new, lamp and generator; £25.

HOUCHIN.—1919 2¾h.p. Douglas, all on; £35, or offer.

HOUCHIN.—1920 Armis 3½h.p., Precision, 2-speed, clutch and kick-start; £35.

HOUCHIN.—1916 Calthorpe-Jap, overhauled and re-enamelled, all on; £30.

HOUCHIN.—1920 Harley-Davidson Combination, all on; £80, or offer.

HOUCHIN.—1916 Allon 2-speed, Lucas lamps; £20, or offer.

HOUCHIN.—1919 8h.p. Matchless Combinations, all on, screen, spare wheel; £75, or offer.

HOUCHIN.—1917 Douglas 2¾h.p. all on, good order; £25, or offer.

ALL the above guaranteed against punctures.—R. G. Houchin, 189A, High St., Peckham, S.E.15. [3733

BOOTH'S Motories, Blackpool.—1923 Morgans in stock; motor cycles taken in exchange.

BOOTH'S Motories, Blackpool.—1923 Levis, New Imperials, Quadrants, Rudges, Ariels, Martinsydes; exchanges.

BOOTH'S Motories, Blackpool.—Lightweights O.K. 2-speed, £16/10/6; Levis, 2-speed, £22/10/6 Centaur, 3-speed, £15/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, Douglas, 2-speed, £18/10/6; Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; new 1922 Bradbury, £49/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, 2h.p., £10/10/6; Edmund-Jap, spring frame, £26/10/6; 1921 Viper-Jap, £32/10/6.

BOOTH'S Motories, Blackpool.—3½h.p. New Scale, £29/10/6; 1921 3-speed New Imperial, £37/10/6; 1920 Edmund-Jap, £34/10/6; 3½h.p. Humber, £16/10/6; 3½h.p. Singer, 2-speed, £19/10/6.

BOOTH'S Motories, Blackpool.—Three 5h.p. Rudges, 2-speed, £25/10/6; 3-speed, £25/10/6; Multi, £22/10/6.

BOOTH'S Motories, Blackpool.—Four Phelon and Moores, £15/10/6, £25/10/6, £29/10/6, £33/10/6; 3½h.p. Premier, £19/10/6.

BOOTH'S Motories, Blackpool.—Combinations, 1922 Quadrant, £79/10/6; 1920 4h.p. Douglas, £55/10/6; 1920 Martinsyde, £75/10/6; 6h.p. Enfield, £35/10/6; 8h.p. Premier, £39/10/6; 1920 Matchless, £79/10/6; 1920 Harley-Davidson, £85/10/6; new 1922 Rudge and Royal Ruby, cheap.

BOOTH'S Motories, Blackpool.—8h.p. Carden Cycle-car, £26/10/6; 1920 A.V. Cyclecar, £39/10/6; 7h.p. Indian, £29/10/6; 5h.p. 2-speed Indian, £29/10/6.

BOOTH'S Motories, Blackpool.—1920 3-speed Douglas, £42/10/6; 4h.p. Douglas, £47/10/6; 1920 Zebre light car, cheap; several others cheap. Push cycles taken in exchange. Motor cycles purchased for cash.—Booth's Motories, 294, Waterloo Rd., Blackpool. Tel.: 1451. [3982

3½h.p. Rudge, £30; 3½h.p. P. and M., £20; cash. —Letter, 29, Chapel Lane, Daventry. [3758

4h.p. J.A.P. Single, 1920, but never used, M-L, B.B.; £15; write first.—W. Thompson, 28, Fairfield St., Manchester. [3524

MOTOR CYCLES FOR SALE.
Miscellaneous

WANDSWORTH Motor Exchange.—Finest selection of real good cheap motor cycles; easy terms.

WANDSWORTH.—Easy terms. Easy terms. Weekly instalments taken on any motor cycle.—Below.

WANDSWORTH.—First deposit secures immediate delivery any motor cycle. Weekly instalments suit yourself.

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WANDSWORTH.—F.N. 4½-5h.p., 4-cyl., shaft drive, good tyres; only 15 guineas. Weekly instalments.

WANDSWORTH.—Triumph 3h.p., magneto, good tyres, belt drive; clear, 15 guineas. Weekly instalments.

WANDSWORTH. — Triumph 3½h.p. sporting machine, low built, runs splendidly; 19 guineas. Weekly instalments.

WANDSWORTH.—Motosacoche Lightweight, 2h.p., belt drive, nice little runabout; 14 guineas. Weekly instalments.

WANDSWORTH.—F.N. 2½h.p. 2-speed gear box, shaft drive; 22 guineas. Weekly instalments.

WANDSWORTH.—Enfield 3h.p. Twin, 2 speeds, chain drive, lamps; 26 guineas. Weekly instalments.

WANDSWORTH.—P. and M. 1918 3½h.p., 2 speeds, kick, lamps; gift, 29 guineas. Weekly instalments.

WANDSWORTH.—Scott Sports Model (water-cooled), twin, very fast machine; 29 guineas. Weekly instalments.

WANDSWORTH.—Indian 1915 T.T. 7h.p., clutch, good tyres, fast; 29 guineas. Weekly instalments.

WANDSWORTH.—Indian Sporting Coachbuilt Combination, 5-6h.p., 3 speeds, lamps; 45 guineas. Weekly instalments.

WANDSWORTH.—Indian Coachbuilt Combination, 7-9 twin, 2 speeds, lamps; gift, 39 guineas. Instalments.

WANDSWORTH.—Bat-Jap 4h.p. Combination, 2 speeds, lamp; clear 29 guineas. Weekly instalments.

WANDSWORTH.—Humber 3½h.p., 2 speeds, kick, lamps, hooter, great bargain; 19 guineas. Instalments.

WANDSWORTH.—Zenith 3½-4h.p. J.A.P., Gradua gear, good running machine; 29 guineas. Weekly instalments.

WANDSWORTH.—Lincoln-Elk, almost new combination, 4¼h.p., 3 speeds, kick; cheap, offers.

WANDSWORTH.—Harley-Davidson Coachbuilt Combination, 7h.p. twin, 2 speeds, kick; gift, 39 guineas.

WANDSWORTH.—Royal-Enfield Combination, 8h.p. J.A.P., 2 speeds, giving away; 39 guineas. Instalments.

WANDSWORTH.—Four 1922 lightweights, Triumph, Enfield, Diamond, Douglas; from 25 guineas. Weekly instalments.

WANDSWORTH.—1921 A.B.C., beautiful coachbuilt combination, everything fitted; only 59 guineas. Weekly instalments.

WANDSWORTH.—List free. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [3895

NAYLOR and Kirk offer the following bargains.—Villiers, 1920 2-speed, fully equipped; £20.—Below.

CONNAUGHT 1920 2½h.p. 2-speed, fully equipped, smart and fast machine; £23.—Below.

1920 Omega 2¾h.p. J.A.P., 2-speed, clutch, kick-start, sound and good condition, fully equipped; £29.—Below.

1919 Douglas 2¾h.p. 2-speed, not W.D., fully equipped and in perfect running order; £29.—Below.

WE have six 1918 Douglases, 2¾h.p., 2-speed, thoroughly overhauled and renovated with 50% new parts, fully equipped; £26.—Below.

5-6h.p. Rex Combination, 2-speed; this machine, although cheap, is reliable and good; £19.—Below.

3½h.p. Rover Combination, 3-speed, fully equipped; an exceptional bargain, £26.—Below.

3½h.p. Precision, for hard work and reliability, £12; 1921 Matchless Combination, dynamo lighting, spare wheel, windscreen, in new condition; £79.—Below.

NAYLOR and Kirk, 406, Garratt Lane, Earlsfield, S.W.18. 'Phone: Wimbledon 2041. [3873

F.O.C.H. for New and Second-hand Cycles, cars, etc.; bargains, cash, or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube). [3864

8h.p. overhead-valve J.A.P. and sidecar, 3-speed countershaft, kick-starter, over 70 m.p.h., solo; best offer accepted, must sell.—51, Gloucester St., Norwich. [3522

RIDEEZI

will supply you with any make of

1923 SOLO OR COMBINATION

fully equipped to your desire, Insured and Tax Paid, by paying a deposit of 25 per cent. of the value and the balance spread over twelve or

EIGHTEEN MONTHS

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The Rideezi System gives you a DISCOUNT if you pay earlier than agreed.

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MOTOR CYCLES FOR SALE.
Miscellaneous

JONES Garage, The Broadway, Muswell Hill, N.10.—London's lowest prices. Severe trials given before purchase. Free tuition.

JONES Garage.—Triumph 4h.p., as new; £45; came from Triumphs in 1920, plating and enamel perfect.

JONES Garage.—3½h.p. Premier Sports model 1914, nice little bike, in excellent condition; £20.

JONES Garage.—Our special bargain of the week.—3½h.p. Chater-Lea-Jap Combination; £25; completely equipped, tax paid, coachbuilt, 3-speed, 1914, perfectly sound and trustworthy.

JONES Garage.—1920 Ariel 3½h.p.; £45; 3-speed, countershaft, clutch, K.S., silent, and as new.

JONES Garage.—2½h.p. Economic; £20; exactly as new, done about 200 miles only, 6 speeds, clutch, dynamo for lighting, large tyres, all unscratched.

JONES Garage.—1918 4h.p. Triumph, complete; £39/10; our special bargain of the week, excellent condition, a fast and reliable solo mount.

JONES Garage.—1921 Wooler 2¾h.p., horizontal twin, variable gear, mechanical oiling, fully equipped, clutch, etc., marvellously flexible and fast, will crawl on top gear owing to heavy flywheel, 140 m.p.g.; £29. 1920 ditto, £25, equally good.

JONES Garage.—Any machine tested on Muswell Hill before purchase. We have a large stock of new and second-hand machines; list free; very easy deferred terms.—Jones Garage, Broadway, Muswell Hill, N.10. 'Phone: Hornsey 2917. 'Buses from Highgate and Finsbury Park stop at the door, takes 20 minutes. [3990

FOR Sale, 2¾h.p. J.A.P. engine, complete, magneto, aluminium footboards, carburetter, and all controls, and Enfield 2-speed gear; £9.—34, Manchester Rd., Swindon. [3584

HALIFAX.—1923 New Imperial, B.S.A., Enfield, Douglas, Triumph, and Levis models from stock; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [3594

CLYNO Combination, in good order, £20; also 3-wheeler 2-seater, £14; and 4-wheel chassis with gears for building light car, factory built, £6.—H. R. Hall, Woodlands Film Studio, Whetstone, London. [3479

MOTOR CYCLES FOR HIRE.

HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

OUR Terms are most favourable. Send for full particulars, solo or combination.—Mandes', 100, Gt. Portland St., London. [0950

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

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EDWARDS and Co.,

101 Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027 [0870

T.B.

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500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [0948

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SOLOS, Combinations, cycle cars. If in town, write, phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0332

GOOD cheap solo, full particulars, letters only; cash waiting.—42, Park St., Slough. [3655

WANTED, Motor Cycle, lowest spot cash.—Kendrick, 154, Star Rd., Peterborough. [3482

2-SPEED, 2-stroke, Metro-Tyler, or similar; about £18.—38, Avonmore Rd., W.14. [3824

WANTED, damaged machine, cheap; Harley or Indian.—17, Herschel St., Slough. [3548

WANTED to purchase, cheap, motor cycle; about £10.—Box 4966, c/o *The Motor Cycle*. [3778

WANTED, P. and M. motor cycle; about £15; m.o.v.—Box 4965, c/o *The Motor Cycle*. [3777

SOLO Motor Cycle or Combination wanted; must be cheap.—97, Elsenham St., Southfields, S.W.18. [3696

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

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PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction-sale held every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale, a nominal auction fee is charged for motor cars, 20/-; motor cycles under £50 value, 7/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogue free.—Tel.: 208 Streatham. Grams: Palmer's Garage, Tooting. [3915

WANTED, modern Lightweight, must be cheap.—Harrington, 21, Brent St., Hendon, N.W.4. [3861

NEW IMPERIAL and Omega wanted, any condition, must be cheap.—82, Brassey Rd., Winchester. [3533

TRIUMPH, Sunbeam, or similar, recent date; must be cheap.—Humphrys, 269, Rye Lane, S.E.15. [4035

WANTED, several second-hand motor cycles; must be cheap.—Derrett, Orwell Rd., Clacton-on-Sea. [1336

CHEAP Motor Cycles, any quantity, cash on the spot.—Jones' Garage, Broadway, Muswell Hill, N.10. [0947

WANTED, solo, Morgan, combination, good, cheap.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [2205

GOOD Solo or Combination wanted for cash.—Write, F. Lacey, 115, Engadine St., Southfields, S.W.18. [3537

WANTED, late 2-3½h.p. solo; cheap; offers.—Particulars, Thomas, 1A, Bevan Terrace, Stockton-on-Tees. [3763

WANTED, Douglas 2¾h.p., must be first-class condition.—Write Pearson, Cycle Agent, Wollaston, Northants. [3480

1920.—Cash waiting for best sporting solo offered, not earlier 1920.—Holder, 15, First Av., Acton Vale, W.3. [3845

TO Garage Proprietors.—Advertiser will buy up to 20 machines at right price. Send list. Cash waiting.—King, New Rd., Oxford. [3775

WANTED, several cheap solo motor cycles for spot cash.—Maynard, 161, Bowes Rd., Bowes Park, N.11. 'Phone: Palmers Green 19. [3623

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards & Harrington Rd., South Kensington. [0604

ANY Motor Cycles Wanted in exchange for new Martinsydes, 1923; the most marvellous value in the market.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [3403

WANTED, genuine racing model Indian, Harley, American X, or Zenith, solo or combination; standard models entertained.—Box 4645, c/o *The Motor Cycle*. [1245

WANTED, at once, Triumph Junior or Levis, 2-stroke, 2-speed, 1921-22, must be guaranteed perfect and cheap for cash.—Stanley Goodwin, Sutton Lodge, Liddermuister. [3475

BUNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction distance immaterial.—Bunting's Motor Exchange, Weald Rise. [0822

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition. Call, write, or 'phone, Short and Glass, Ltd., 485-493 Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363 [037'

SEND your motor cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt Nearest station Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Code address, Palmer's Garage, Tooting. [3916

MOTOR SCOOTERS.

A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £18; wonderful bargain.—Frank Whitworth, 159, New St., Birmingham. [5085

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MOTOR SPECIALISTS

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1922 SOLO MACHINES (shop soiled).

NORTON BIG FOUR	£79
NORTON, 3½ h.p., 3-speed model, 16H	£73
INDIAN, 4 h.p., Scout Model	£89
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SUNBEAM, 3½ h.p., 3-speed, chain	£112
HUMBER, 4½ h.p., 3-speed, chain	£78
HAWKER, 4½ h.p., 3-speed, chain	£75
BEARDMORE, 3 h.p., Barr & Stroud, 3-sp.	£73
DIAMOND, 3 h.p., Barr & Stroud, 3-speed	£69
ALLON, 2¾ h.p., 2-stroke, 2-speed	£48
NEW HUDSON, 2½ h.p., 2-speed, chain	£49
SUN, 2¾ h.p., 3-speed	£58
EDMUND, 2¾ h.p., 3-sp., chain, spring frame	£73
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NEW HUDSON, 2-stroke, 2-speed	£37

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HARLEY-DAVIDSON, 4 h.p., 1922, as new	£78
NEW HUDSON, 3-speed, hub, 1914	£25
NORTON, B.R.S. Racer, 1921	£55
N.U.T., 3½ h.p., 1922, Electric	£79
SCOTT, 1919, 3¾ h.p., lamps, horn	£49
SUNBEAM, 1922, 3½ h.p., detachable wheels	£95
P. & M., 1916, 3½ h.p., 2-speed, kick-start	£32

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MARTINSYDE, 6 h.p. Sports	£118
BEARDMORE, 4½ h.p., spring frame	£114
BRADBURY, 6 h.p. Twin	£128
NEW SIDECARS for Spring Frame Indians	£23

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CAMPION, 8 h.p., 1919	£69
JAMES, 1916, 4½ h.p.	£63
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DOUGLAS, 4 h.p., 1920, speedometer, windscreen, as new, exceptional	£85
DENE, 8 h.p., with Millford Sidecar	£69

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COVENTRY-PREMIER, 8 h.p., 2-3-seater	£195
NEW HUDSON, Runabout, 3-wheeler	£195
CALTHORPE, 2-seater, all-weather de Luxe	£299

LIGHT CARS. SECONDHAND.

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TRUMBULL, 14 h.p., 2-seater, Electric	£58

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SCOOTERS.—Limited number of Skootamotas, £17/10, brand new; Mobile Pups, new, £12/10; slightly used, £10.—Egertons (Ipswich), Ltd., Northgate, Ipswich. [2842

MOTOR ATTACHMENTS.

AUTO-WHEELS, 5 guineas, perfect condition; repairs and replacements.—J. W. Robins, 97, Latchmere Rd. Battersea. [2216

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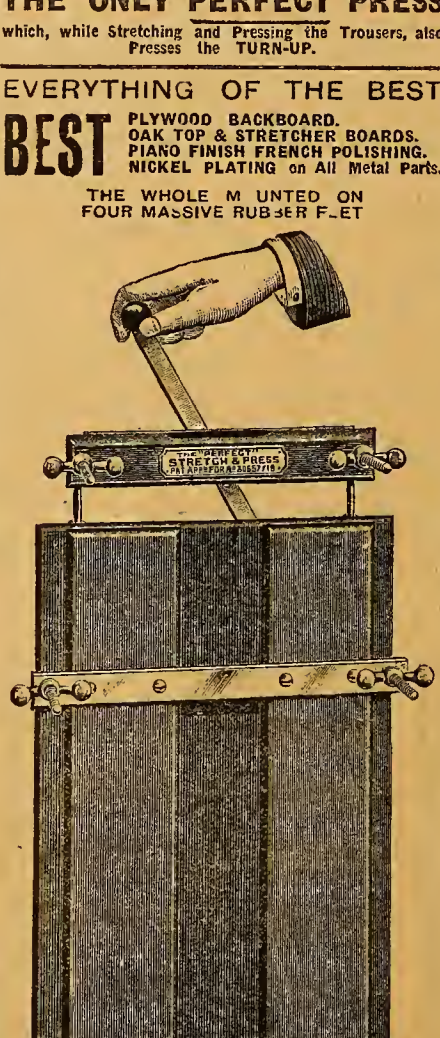

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MORGAN 1922 De Luxe Model, air-cooled J.A.P. engine, fully equipped; £95.—P. J. Evans, John Bright St., Birmingham. [3571

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MORGANS.—Hall, 91, St. Peter's St., St. Albans, can give early delivery of this famous runabout; Grand Prix £160, De Luxe £165, Family Model £170. [0935

£48.—Morgan, A.C., in perfect running order, hood, screen, taxed, lamps, tools, etc.; owner bought car; bargain.—Whisstock and Lingley, Woodbridge, Suffolk. [3618

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1915 Morgan Grand Prix, w.c. J.A.P., hood, screen, 5 lamps, in splendid condition.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3911

1921 Carden 2-seater, fully equipped, hood, screen, electric lighting, fully guaranteed; £65; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3912

1921 G.N., dynamo lighting, speedometer, hood, mirror, disc wheels, spare; a bargain, £85.—Whitley, 9, Great Cumberland Mews, Seymour Place, Marble Arch, W.1. Paddington 5970. [3879

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1923 Morgan De Luxe, w.c. J.A.P., dynamo lighting, all-black hood, aluminium dash and beading, brand new; immediate delivery from stock; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3908

1922 Morgan, family model, water-cooled Blackburne, Cowey speedometer, Jeff tube to rear wheel, exceptionally nice condition, mileage only 650, guaranteed perfect; £150.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [3910

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MORGAN Spares from stock for all models.—Send your enquiry to Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [0936

MORGAN Spare Parts Depot.—Spares for all models from stock; list free.—Elce, Ltd., 13, 15, & 5, Bishopsgate Av., Camomile St., E.C.3. 'Phone: 48. [0065

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CHEVROLET late 1922 5-seater; £130.—77, Acre Lane, S.W.2. [3921

CRIPPS-BOOTH 1917 2-seater; £75.—Miss May, 25, Jeffries Rd., Clapham, S.W.4. [3920

HALIFAX.—1923 Stonelcigh 3-seater; £185.—Halifax Motor Exchange, Horton St., Halifax. [3600

HALIFAX.—1923 Lagonda; £265; cash, exchange, or deferred.—Motor Exchange, Horton St., Halifax. [3597

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PALMER'S Garage, Tooting.—10h.p. 1921 A.B.C. sports 2-seater, 4 speeds; £165

PALMER'S Garage, Tooting.—16-20h.p. Argyll limousine, 4-cyl., runs well, roomy; £47/10.

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PALMER'S Garage, Tooting.—Any above cars supplied on easy payments. We shall be pleased to quote special terms to meet client's requirements. All are in running order. [3914

HALIFAX.—1923 Calthorpe; 285 guineas; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [3598

MARTINI 20h.p., 4 speeds and reverse; £38; or exchange for combination.—Jack Ward, 11, Radford Rd., Leamington Spa. [3706

DE DION 7h.p., 2-cyl., nice tradesman's lot, £35; also Thames 2-cyl. ditto, £35; exchanges.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [3731

OVERLAND Landaulet, dynamo lighting, self-starter, 4-cyl., gate, good tyres, lamps; sacrifice 59 guineas; exchange motor cycle; easy terms.

VIOLETTE, splendid 2-seater (water-cooled), hood, screen, lamps; only 39 guineas; exchange motor cycle; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3896

1923 8h.p. Rover, all-weather curtains, fitted with clock, mirror, petrol can carrier, and mats, not done 500 miles; £165.—Catt, Jnr., Northampton. [3446

15-18h.p. Bedford-Buick 5-seater Tourer; £110; or exchange for landaulet, Army Vauxhall preferred, cash adjustment.—379, Cambridge Rd., Bethnal Green. [3986

ROVER 8h.p. 1922, exceptional engine, full equipment, condition as new; £140 or exchanges.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3933

ROVER 8h.p. Standard model, £180; 8h.p. 4-seater model, £190; 4-seater model De Luxe, £210; 2-seater De Luxe, £200.—Ratcliffe Bros., 200, Gt. Portland St., W. [0729

A.B.C. Car, Sports 1921 model, many extras, in original and new condition, mileage 2,000, £140; exchanges.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [3934

ROVER 1923 8h.p., £180, in stock; your combination taken in part payment; 1921 model, blue, in excellent condition, £120; another, standard model, £115.—114, Brixton Hill. [3802

179 Guineas. Exchange.—Really ultra-smart 1920 Sports Singer 2-seater, lighting, starter, spare wheel, lovely condition.—Seabridge, 35, Hausler Rd., East Dulwich. (Sydenham 2452.) [2400

AT Edwards.—1921 8h.p. Richardson 2-seater and large dickey, 4-speed and reverse, electric lighting, tax paid, nice condition; 57 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [3356

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MODEL 83 Overland 5-seater Touring, lovely condition, repainted, new hood, new starter, tax paid; £100; take combination part exchange.—Rhind and Co., Stone Place, Rusholme, Manchester. [3578

FIVE Light Cars, 2- and 4-seaters, to be exchanged for motor cycles, in part payment for cash, deferred or exchange.—The Motor House, Ltd., 20, Finchley Rd., N.W.8. Tel.: Hampstead 7355. [3400

8h.p. Rover Cars for immediate delivery. Standard 2-seater £180, 4-seater £190; deferred payments if desired; your motor cycle taken in part payment.—Official Agents: Kays, 8-10, Bond St., Ealing. [2177

CASTLE THREE, 1922, 3-speed and reverse, dynamo lighting, spare wheel, speedometer, used few times only; cost £230; accept £135; exchanges.—Hillier, Side Bell, 127, St. Mark's Rd., North Kensington. [3782

ROVER—Godfrey's are authorised agents for the 8h.p. model; early deliveries of 1923 models; 2-seater, £180; 4-seater, £190; exchanges; gradual payments.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [035?

ROVER 8h.p., late 1921, double oiler, fully equipped, very fast, used by the Rover Co. for some competition work, like new throughout; £110; exchanges.—Hillier, side bell, 127 St. Mark's Rd., North Kensington. [3781

T.B. 3-wheeler, new 2 months ago, 8h.p. w.o. J.A.P. engine, 3 speeds and reverse, shaft drive, mileage about 500, spare wheel, dynamo lighting, luggage carrier, tools, etc.; £140 cash, deferred.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [4021

ERIC CAMPBELL 1922 10h.p. 2-seater, all aluminium body, dynamo lighting, spare wheel, speedometer, clock, small mileage; cost over £500; accept £185; exchanges.—Hillier, Side Bell, 127, St. Mark's Rd., North Kensington. [3783

ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

1923 Salmson, immediate delivery; list 235 guineas, exchange or instalments; French type (1,100 c.c.) chassis with English model De Luxe body, full guarantee, all accessories, shuts up like a coupe, holds the road like a leech.—Graff, Hayes, Kent. 'Phone Bromley 532. (No 54 bus.) [0951

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2½h.p. Villiers, excellent condition, less magneto, carburetter; £7, or offer.—Braeside, Eastcote, Middlesex. [3893

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2¾h.p. 2-stroke Engines. A few only to clear at £4/15 each; brand new.—Forfield Motors, Forfield Place, Leamington Spa. [401?

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1922 Chater-Lea 2½h.p. new two-stroke Engine complete, less magneto, £9/10; ditto 2-speed countershaft gear box, £4.—Murrays, 37A, Charles St., Hatton Garden, Holborn. [355?

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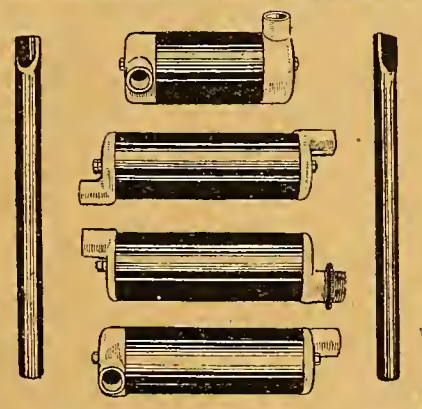

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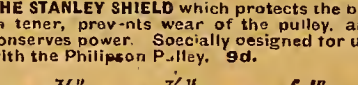

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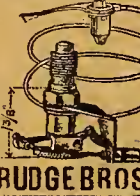

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ECONOMIC Tyre Co., 314, New Cross Rd., S.E. 'Phone: New Cross 1393. [25

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REAL, good, reliable, second-hand motor cycle tyres, all sizes and makes, 10/- each, plus 1/- carriage; other sizes and makes on application.—Emanuel and Co., Tyre Factors, 37A, Balls Pond Rd., Dalston, N.1. 'Phone: Dalston 3161. [08

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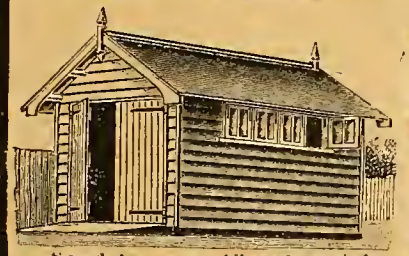

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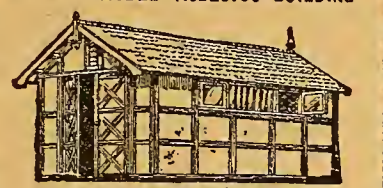

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WANTED, 2¾h.p. Douglas engine, not later than 1915, cheap.—145, Broadway, Plaistow. [3512

TRIUMPH Engine, also wheels; state prices.—Jack Ward, 11, Radford Rd., Leamington Spa. [3705

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WANTED, Calthorpe frame complete, suitable for 2¾h.p. J.A.P., with Enfield gears.—34, Manchester Rd., Swindon. [3551

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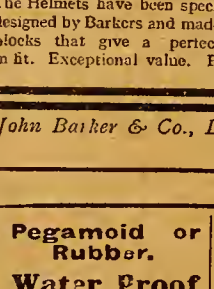

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1914 Morris-Oxford De Luxe 2-seater, dickey, dynamo lighting, exchange good combination, cash adjustment.—26, Tulse Hill. Brixton 1292. [3440

SOUTHPORT.—See A.J.S., A.B.C., Ariel, B.R.S., Norton, Rudge and Scott columns.—Kents, 417 Lord St., Southport. 'Phone: 1273. [3647

HARLEY-DAVIDSON Sports Combination, 4h.p. exchange Triumph, 4h.p. Douglas, cash either way.—7, Linda St., Battersea, S.W.11. [3865

EXCHANGE Royal Ruby, 2-speed, 2-stroke, and £10 for good 3½-4h.p. machine.—Avery, Little York Cottage, Back Pantiles, Tunbridge Wells. [3495

EXCHANGE Calthorpe 2-seater, dickey, dynamo self-starter, for combination and cash; sell £135.—83, Pensburst Rd., Thornton Heath, S.E. [3791

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1920 Rudge-Multi and Sports Sidecar, speedometer, windscreen, for late solo Triumph or similar.—Balmoral, Downhall Rd., Rayleigh. [3568

15-9h.p. Super Sporting Richmond, 5 R.W. wheels, 4-speed, do 60, for 1921, Indian, Warley combination; sell £120.—30 Northfield Rd., Coventry. [3440

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1921 I.O.M. T.T. Multi, lamps, Klaxon, speedometer, overlap cams, spares, as new; exchange; cash either way.—42, Tranmere Rd., Earlsfield. [3867

EXCHANGE Douglas 1918 2¾h.p., 3-speed, clutch, K.S., beautiful condition, for Baby Triumph, Connaught similar.—Duval, 61, Grand Parade, Harringay. [3657

MORGAN 1920 G.P. M.A.G. engine, disc wheels, new tyres, speedometer, blue finish, as new; 1919 also Rover Eight 1921, speedometer, in beautiful condition, £110; exchanges entertained.—30, Thornsett Rd., Earlsfield, London. 'Phone: Latchmere 4388. [3161

THE MOTOR CYCLE

ESTABLISHED IN 1903

TWENTIETH YEAR OF PUBLICATION

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The Show in the Balance.

IN trade circles discussion is rife as to the desirability of a Show every year for motor cycles and accessories. That the public is distinctly interested in the annual Show of motor cycles is amply demonstrated by the crowds which regularly throng the stands.

On the other hand, it is felt by a section of the trade that an exhibition every two, or even three, years would prove of distinct relief to manufacturers in the matter of expense; it is also contended that a Show curtails sales during the autumn months by reason of prospective buyers postponing their orders "until the Show." No decision has, of course, been made, but the matter is one which will be seriously considered by the Motor Cycle Manufacturers' Union in the near future.

Our own view is that an annual Show is of incalculable value to the movement. Now that motor cycles have reached such a high state of perfection, propaganda among prospective owners is what is most desired. The very fact that so many visited the recent Show is in itself evidence of the appreciation of the public of the opportunity to examine side by side and so compare the scores of makes and types of motor cycles available. The Show, too, is an annual re-union of private riders as well as agents from all parts of the country—even the world—and the cancellation of such an opportunity to get together in the Metropolis would be in every way regrettable.

A Show of the importance of Olympia is in itself a magnificent tribute of the strength and stability of this large and ever-growing industry; it is, too, a harbinger for the following year. To break away from the annual series would convey an impression of weakness with which the movement most definitely should not be saddled neither at home nor abroad. It has been found in the past that a manufacturer can more conveniently gauge possible demand in the succeeding year by an exhibition in October or November, and so during the winter months better arrange his plans for the busy season. Without a Show there would be no starting-off mark, so to speak; instead one would see new models introduced all the year round, so perplexing the buyer, who would be afraid of purchasing a particular model lest a newer or later edition be produced unexpectedly soon after his purchase.

At the present time a buyer knows and appreciates that a machine purchased subsequent to a Show represents the succeeding year's current model and has more faith in placing his order on that account.

Who's Who in the Motor Cycle World.

THIS issue contains the second instalment of a feature which was introduced last week: "Who's Who in the Motor Cycle World." Names are constantly recurring in our pages of persons who are prominent in the motor cycle movement, either in an official capacity or as actual participants in the sporting and competitive fields, and it is to satisfy the general reader as to who and what manner of men they are of whom he reads—from whence they hail, their ages, their activities in other spheres of life and their hobbies—that the series has been commenced.

Our aim is to include everyone of any note at all, and the necessary material is being collected unceasingly. All past and present competition riders who have been or are in any way prominent will be included, as well as all whose official duties have made their names household words in the motor cycle world.

An index to the advertisements in this issue will be found on the page facing the back cover.

Occasional Comments:

by "IXION"

The Pramotor.

I NEVER take ladies to motor exhibitions. They ask such silly questions. Not of me. They know better than that. But of the stand attendants. Who look sympathetically at me, while they explain. I resent sympathy from dudes unknown to me. I had to break my rule at last month's Car Show. As a peace offering. I had been detected in something, and this was my ransom. So we went. I led her straight to the Dunkley Pramotor. (Knew I'd got to buy her something after what had happened, and thought a Pramotor would be cheaper than a Rolls.) No luck. Not a bit of it. One disdainful glance, and I was dragged off to study the 50 h.p. Sizaire-Berwick. Her expert opinion is that Mr. Dunkley is either a bachelor or a grandfather. At least, he knows nothing about babies. I hadn't noticed it before, but it is true. The bisected scooter on which Nursie stands is at the *back* of the Pramotor. Screened from the infant's view by the rear leather panel of the saloon. So that Baby can't see Nursie. Now, when our *n*th Ixionette loses sight of Berenice (Berenice is our nurse) even momentarily, it makes a noise compared to which the last trump intensified through a Magnavox is the first bleat of a young lamb. (I compromised with a Trojan saloon eventually.)

Technical or Financial?

EVERY good motor cyclist has noted the fact that successful cycle cars are as scarce as auks' eggs. It is generally held that the technical problems are responsible. There is the Morgan and the G.N. Hardly any other cycle car has held its market for a long term of years and brought gladdening "divis." to its parent brain. Perhaps finance is quite as strong an element in the selectness of the cycle car ranks. The plain fact is that the profit on a £100 proposition is at the best small. On the other hand, the disgruntled buyer of a £100 cycle car can give a manufacturer quite as much trouble as the buyer of a £1,000 car. In fact, it is long odds that the former will give much more trouble. For he will *have* much more trouble. In a high-souled world there will ultimately be found a man who, seeking to employ his brains, cash, and plant, will select the opening which offers the maximum difficulty and the minimum profit. But great souls are particularly scarce in these post-war days.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Some Day.

HOWEVER, as the small engines become impregnated with ever more and more ginger I foresee the tardy advent of tiny four-wheelers, in which a lath chassis supports a 500 c.c. engine and transports two people with speed, economy and comfort. I hope it will come in my time. It would be so jolly to have a pure utility 'bus which one could keep in the garden, lend to a neighbour, let the children play with, and have as a permanent reserve for one's real motor. At present one can't do it. The simplest affair costs too much. First price, tax, insurance, etc. But if ever we can get this sort of layout at about £50 new, and £25 second-hand, it would serve the really poor as their one and only motor, and the class who can afford to own more expensive vehicles would keep one in general reserve. It sounds impossible, I dare say. But you know the Ford used to cost £77 f.o.r. Detroit; and club talk ran to the effect that of the £77 a third was profit, a third salesmanship costs and overhead charges, and a third was actual material and labour costs. Allowing for errors in this public guess, it is still not absolutely outside our dreams that a simple little lath-and-string cycle car of modest durability may eventually arise at £50 net cash.

Occasional Comments.—

Two Snags.

IN the meanwhile, our sidecars and cycle cars are alike so good that it is rare to hear the most jaundiced critic make any but two complaints. The one ineradicable weakness of three-wheelers is their lack of driving grip on freak hills; this is a very pardonable shortcoming, for only sports maniacs really want to climb shale slopes with a grade of 1 in 3, and on all rational roads the single driving wheel has loads of grip. It may not be so in the Colonies, and perhaps we may yet see the sidecar with two driving wheels developed for overseas use. The other complaint is that the driver of a sidecar resembles a parrot on a perch, and that in winter time such a position is not good enough for anybody over eighteen years of age. But even this is being met. Mr. Easting has a really nice driver's screen; I am using one at the moment. The B.S.A. people have a sort of gun-shield, behind which one can grin at a blizzard. And the T.O.M. concern is busy with a protection system designed to let one ride in a lounge suit through a British winter. This small snag will never seriously interfere with the future of sidecars.

Standardise the Dynamo.

MY own chief ambition for the motor cycle industry as a whole, and *à fortiori* for the passenger trade in particular, is that lighting dynamos should be standardised. The utility era is upon us, and no vehicle is utilitarian until it can conveniently be used *at night*. Now it is indisputable that the bulk of our motor cycles very seldom take the road after dark. Their illumination is largely to blame. Gas lighting can be perfectly efficient and perfectly reliable; it is not always either in unskilled hands, and in anybody's hands it entails work. The dynamo system is efficient, reliable, and automatic. Finance is the sole cause of its still very limited application. Dynamo lighting is an expensive extra. When you sell it you get next to no consideration for it. Nor can you easily transfer it bodily to your next machine.

Two Remedies.

THERE are two obvious ways of dealing with this regrettable situation. The first is to cheapen dynamo sets till they cease to be an expensive extra. This has long since been done in America, where dynamo sets add very, very little to the cost of a machine and are of reasonable quality, if still below British standards. The other is to take steps to render a dynamo lighting set easily and completely transferable from one machine to another. The former method is obviously preferable, as well as easier to carry out. I would not emphasise these crying needs if the demand were impossible. But the failure to offer electrical equipment of a standardised character at a rational price is a big factor in strangling our exports. Moreover, if it be true that motor cycling is becoming daily more utilitarian, the first electrical firm to cheapen its equipment will profit enormously, and the first motor cycle designer to allow for easy dynamo transfer will also improve his sales. Already I know of riders who are adopting this system on private lines. I say to Smith, "You should try a Blizzard next year; they are very good now. He replies, "No, thanks, old man. I shall be on Whirlwinds for three or four seasons now. You see, I've fitted a £20 electric set to my 1922 Whirlwind, and I can shove it on to the 1923 model straight off."

A TOKEN OF GRATITUDE. Probably most London motor cyclists have passed this monument on the Embankment without knowing much about it. Actually it was erected by Belgian refugees in grateful appreciation of this country's hospitality during the war.

Sidecar *v.* Cycle Car.

FROM all I had been told, I went to the Car Olympia prepared to purchase crape bows wherewith to decorate the superseded sidecar at the Motor Cycle Olympia. I returned much refreshed in spirits. So far as new cars go, there is nothing to threaten even the 1,000 c.c. outfit *de luxe* as yet. Our 1923 prices are putting the biggest sidecars out of the danger zone in which serious competition need be feared from any brand new car. Certain second-hand small cars will unquestionably be available at less than new sidecar prices in due course. But a very cheap car is a dubious second-hand bargain. It was generally somebody's first car. He bought his experience on it, and I shouldn't like to buy the fruits. Moreover, the performance of these little miseries is not comparable to motor cycle performance. I do indeed know a man who set out in cold blood to drive from Brighton to Liverpool on one of the cheap small cars which are alleged to be formidable rivals of such superb monsters as the big Matchless. He survived to tell the tale, and he made the return journey as well. Sixteen m.p.h. average, and half an hour's wait to cool the engine at the top of several hills. Any 500 c.c outfit would have done better. So long as there is red blood in English youth, the sidecar will sell freely against the cheap car, and if we lose a few old gentlemen to the car trade their grandsons will re-fill the ranks.

An Autumn Trip

A Family Outing. Speed Sensations and Real Speed. Pillion Comfort.

By "AURIGA."

IT is not often that one can lunch in comfort by the side of a brook in the British Midlands when November is well advanced, so that it is well to take advantage of such opportunities when they present themselves.

It so happened that I had the loan of a 499 c.c. Rover and sidecar, so a family party of five set out for a run into the country, three and a spaniel on the sidecar outfit, and the other two on an A.B.C., a cushion having been placed on the carrier. A start was made from the neighbourhood of Coventry, not too early, and our objective was Weeford, a pretty village situated on the famous Watling Street, which is part of the London to Holyhead road, about three miles from Lichfield.

We left the main road at Stonebridge and made for Coleshill over a road crowded with motors.

Speed—Real or Estimated.

After passing through Coleshill we overtook two solo riders who, by means of a total indifference to the rules of the road, kept ahead for a time. Presently this became a nuisance, and though I do not race on the public roads, I opened my throttle a trifle and slipped by. One of the riders called out something as I passed, so I slowed up to find out what he wanted. When he came up he asked me how fast I was going when I passed him. The speed was but moderate, and I had not noticed the speedometer reading at that moment. After letting him lead for a minute or so I again quickened up, and, keeping an eye on my Bonniksen, called out to him that we were then doing 35 m.p.h. "Fifty-five," he said in a pleased tone. "No," said I, "thirty-five," and, quickening up to forty, I went ahead, and saw no more of him or his friend.

This little story has a moral, which is that speed is not always as reported. My chance acquaintance was apparently quite ready to believe that he was doing fifty-five when his speed was in reality 20 m.p.h. less than this, and my opinion is that many riders who talk glibly of sixty and seventy miles an hour have really no conception of what fifty means on an ordinary road. If every motor cycle had an accurate speedometer there would, I am sure, be fewer claims of 40-50 m.p.h. averages from experts or novices.

At the start with the A.B.C. and Rover sidecar.

Roads.

At the Bassetts Pole we left Warwickshire and entered Staffordshire, and the roads immediately changed in their quality. Warwickshire roads have been the subject of much abuse of late, and not altogether undeservedly, for in some places they are atrocious, but on this particular route they compare very favourably with those of

An Autumn Trip.—

the next county. For the most part they are tarmac and have an excellent surface, while the Staffordshire roads hereabouts are loose and rough.

In this connection it is interesting to note that a plain felt cushion on the carrier of the A.B.C. made a more comfortable seat than a spring seat on the sidecar machine. This is no reflection upon the general comfort of the Rover or its sidecar, for both were most comfortable (N.B.—The Rover was equipped with a Brooks cantilever saddle), but it illustrates the difference from the pillion rider's point of view over a rough road—and it was in Staffordshire that the difference was most noticeable—between a solo machine and a rigid sidecar outfit. The A.B.C. has, of course, a spring frame, but the carrier is not sprung, so this makes no difference. The reason is, I think, to be found in the sideways movement of the sidecar outfit when the wheels, either of the sidecar or bicycle, strike potholes, and in the greater difficulty of avoiding unevennesses of the road when two tracks have to be considered.

The Rover had a heavy load, but in spite of this showed plenty of speed and hill-climbing ability, and its steering is remarkably good. Some sidecar outfits have a powerful tendency to pull one way or the other, but the Rover was entirely free from this, and steers as easily as a solo machine.

USING THE EXHAUST VALVE LIFTER.

Notes on an almost Forgotten Habit. Securing Piston Ring Lubrication.

By H. MORTIMER BATTEN.

IN these days of decompressors and efficient kick-starters, the exhaust valve lifter becomes more and more a back number.

At one time it was the hinge on which our lives swung, and I remember well, in the salubrious town of Northampton, knocking the hind legs clean from under a burly dray horse through a broken exhaust valve wire.

In those days exhaust valve wires invariably broke, chiefly because they did more work than anything else barring the engine and the rider. And when an exhaust wire broke we proceeded on our way in dire peril. I remember thinking a friend of mine no end of a hero because he rode fifty miles with this vital accessory inoperative. So he was. To-day no one cares if an exhaust wire breaks. I have ridden for months with it removed from my present machine because the convenience it afforded was not worth the trouble of re-soldering the nipple.

Tradition, however, dies hard, and a great many riders still regard the exhaust valve lifter as a means of controlling the engine.

On Down Grades.

This practice was widely discouraged in the Press, despite the fact that not so many years ago it was customary always to recommend the use of this fitting on down grades—a practice which is excellent if intelligently done. Its internal cooling effect is great, and the exhaust valve lifter can safely and advantageously be used if the carburetter levers be so set that the engine does not pop repeatedly during the idle periods. This, of course, can be avoided by the use of a switch, and with a very sloppy piston oiling up can be avoided if the rider resorts to the exhaust valve instead of closing the throttle. With an overloaded low-powered rather ancient machine it is certainly advisable in a hilly country to raise the valve whenever distance makes it worth while, but normally, with present-day engines, it is quite unnecessary.

The best plan is first to close the throttle and let the engine pump over for about forty yards, then to raise the exhaust valve. This is good from a lubrication point of view, besides which it allows the valve to cool a little before it comes in contact with the outside air. As a matter of fact, the valve does not immediately come in contact with cold air when lifted, as many writers have argued. With the throttle closed the engine merely partially displaces the hot air in the exhaust and silencer and draws it back and forth, so that the cooling effect is graduated and moderated and is not violent until the exhaust pipe and silencer have cooled, by which time the valve also has dissipated a good deal of its heat.

With a Tight-fitting Piston.

With a new engine it is not advisable to use the exhaust valve—or, rather, it is beneficial to control on down grades by the throttle. A new piston is very apt to dry up unless subjected to periodical doses of oil. By closing the throttle at regular intervals one creates a partial vacuum in the cylinder, which has the effect of sucking the oil up to the top ring. Thus a new tight-fitting piston is very apt to grip unless, at intervals, the throttle be closed, and this drying up of the pistons more often occurs with a new car—despite excellent lubrication systems and water cooling—than it occurs with a motor cycle, for the reason that the motor cyclist periodically "stops" his engine by closing the throttle, thus causing oil to be sucked up the cylinder walls, whereas the car driver attains the same end by removing his foot from the accelerator pedal and placing it in the clutch, leaving the engine to tick over on its own instead of being dragged round against the vacuum of its own creating.

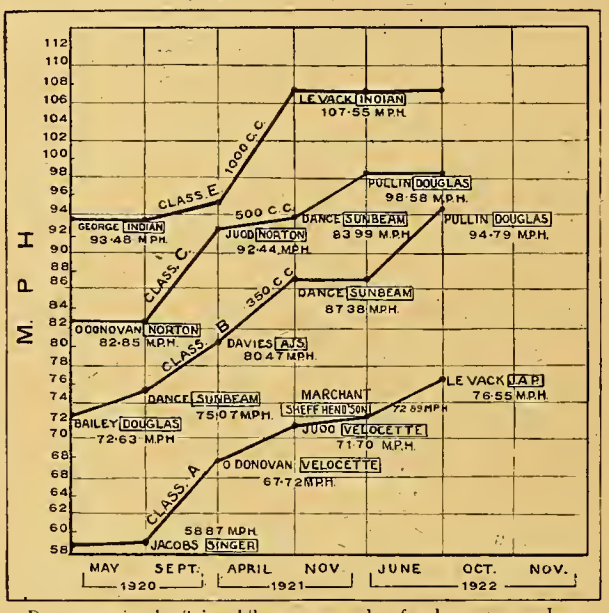
Summing up, then, it would seem—at any rate from the writer's viewpoint—that with an old machine—especially if it be overloaded, as so many old machines are, it is advantageous to use the exhaust valve lifter whenever possible, but that a new machine calls for and expects that overdose of oil which can be obtained only by closing the throttle. Needless to say, all speed regulating should be done by the carburetter, as otherwise one obtains a very snatchy, uneven drive, which is bad for the tyres and the transmission, and which much enhances the likelihood of skidding

SPEED AND PROGRESS.

Record Lists as an Index to Engine Development. Track Riders' Forecasts for 1923.

THERE can surely be no clearer proof of the improvement which is taking place in motor cycle engines than is afforded by a study of the record lists, past and present. These valuable lists are compiled by Mr. A. V. Ebblewhite, the well-known time-keeper, who has officiated with the watch at practically every record attempt.

A comparison of post-war record lists with those of pre-war days reveals very clearly the reason for the hold which the small machine has latterly obtained upon the popular fancy. Increased speed upon the track is the forerunner of more efficient touring machines. Brooklands has been the testing ground for every improvement in engine design; the vast expanse of concrete is a hard teacher, but it does its work thoroughly. It deals harshly with bad design, and with poor material, but it has been largely instrumental in keeping the British motor cycle ahead of its rivals.



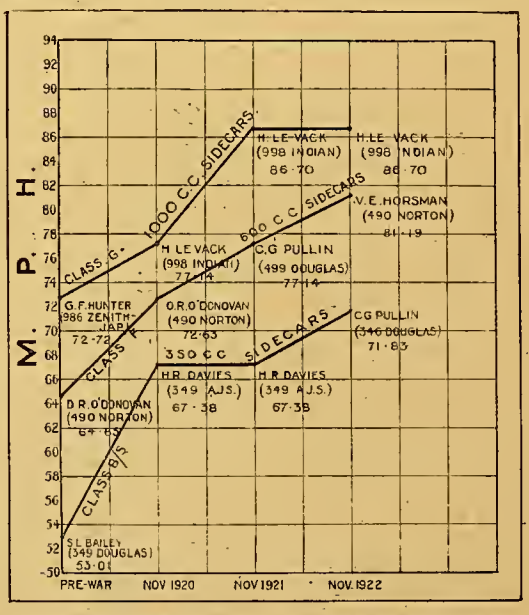
Post war rise in flying kilometre speeds of solo motor cycles.

A Fallacious View.

"Speed," says many a motor cyclist who likes to consider himself a hard-headed business man, "is all right for the madman who wants to tear about the country at 60 miles an hour. All I want is a machine that will get me about at a reasonable speed. What I need is reliability, pure and simple." Maybe. Reliability is undoubtedly the best asset any motor cycle can have; but surely a machine which has been proved capable of sustaining 60 m.p.h. for twelve—or for twenty-four—hours can be considered more free from liability to defects, such as broken valves, weak frame, warped cylinder, or stripped gears than another, the sponsors of which hesitate to submit it to such a gruelling test? Not for publicity alone does the average manufacturer indulge in track work; rather is he endeavouring to prove that his design is right, and, if it is not, to discover its weak points, later to rectify them on his standard production.

The charts which accompany this article demonstrate very clearly the manner in which the speeds of the various classes have yearly tended upwards. Observe how the graph denoting each engine capacity has encroached on the past maximum speed of its bigger neighbour, until to-day the small machines are attaining speeds which were out of the reach of their bigger brethren a year or so ago.

Admittedly, the maximum speed records are not a true reflex of the capabilities of "standard" type machines. The majority of these record speeds have been attained over a comparatively short distance, although it should be noted that no record of less than one kilometre ($\frac{5}{8}$ mile) is officially recognised so far as motor cycles are concerned. Favourable weather conditions, too, have played no inconsiderable part in the putting up of maximum speed records, and it is an undoubted fact that the mean speed records are a much fairer criterion of a machine's real performance. Mean speed records, however, were not instituted until 1921, so that no comparison is possible with similar achievements of earlier date. Nevertheless maximum speed figures are interesting as showing the highest speeds which have yet been attained over a distance officially recognised for records.


M. P. H.
1000 C.C. SIDECARS
H. LE VACK (998 INDIAN) 86·70
H. LE VACK (998 INDIAN) 86·70
CLASS G
600 C.C. SIDECARS
V. E. HORSMAN (490 NORTON) 81·19
H. LE VACK (998 INDIAN) 77·14
C. G. PULLIN (499 DOUGLAS) 77·14
G. F. HUNTER (986 ZENITH-J.A.P.) 72·72
O. R. O'DONOVAN (490 NORTON) 72·63
C. G. PULLIN (346 DOUGLAS) 71·83
CLASS F
350 C.C. SIDECARS
H. R. DAVIES (349 A.J.S.) 67·38
H. R. DAVIES (349 A.J.S.) 67·38
D. R. O'DONOVAN (490 NORTON) 64·85
CLASS B/S
S. L. BAILEY (349 DOUGLAS) 53·01
PRE-WAR
NOV 1920
NOV 1921
NOV 1922

Maximum speeds of sidecars over the flying kilometre.

108·68 m.p.h. for 5 miles.

It should be pointed out, however, that the world's record speed for any motor cyclist still remains the property of America. It is 108.68 m.p.h., and it was accomplished by E. Walker on April 14th, 1920. Walker's machine was a 998 c.c. Indian, and the speed mentioned was that at which he broke the five-mile record at Daytona Beach, Florida. The course was, naturally, dead level, and of perfect surface; somewhat different, be it noted, from the conditions obtaining at Brooklands. All credit, however, to

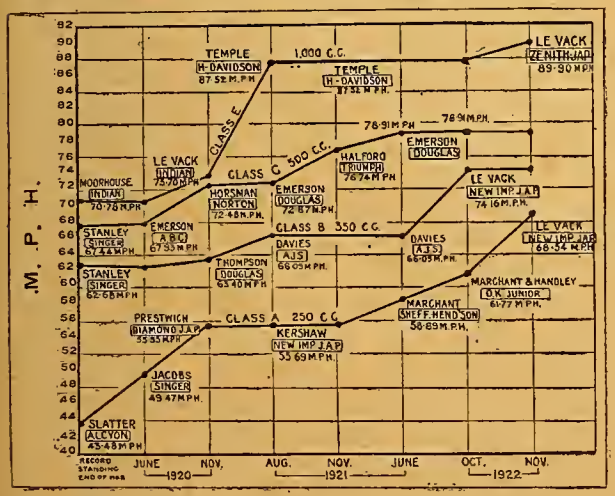
Speed and Progress.—

Walker; remember, he put up this record over two and a half years ago, when the highest speed standing to the credit of any British rider was 93.40 m.p.h. It is sufficient that, the record having passed the stringent scrutiny of the F.I C.M., the conditions under which it was made may be taken as satisfactory.

Strenuous Testing.

Very little reflection is needed to make it apparent that there is no surer test of reliability than that constituted by sustained speed. For short-distance record-breaking, machines may be somewhat freakishly tuned; pistons, connecting-rods, valves, timing gear, etc., may be lightened to perilous limits. Not so, however, for long-distance record attempts. To pound round the track at full throttle, hour after hour, demands sturdy working parts combined with efficient design. Nor is the surface of Brooklands track so smooth that no jars are imposed upon the frame, wheel spindles, etc., while the long-continued strain of transmitting the drive is not without some testing effect upon the clutch and gear box.

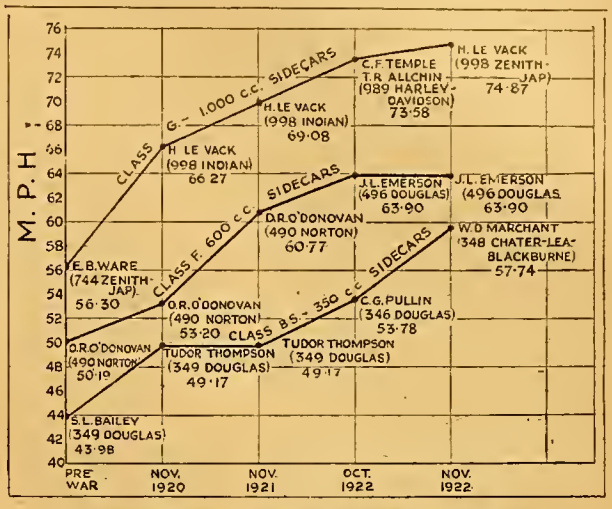
There is but one successful continuous twenty-four-hour record attempt recorded in England; it is that of Harry Collier at Canning Town track on May 5th and 6th, 1909. Collier used an 862 c.c. Matchless-J.A.P., and his average speed throughout was 32.32 m.p.h. As most people are aware, it is not possible to attempt a similar run upon Brooklands track, whilst, taking into consideration the fact that Collier alone rode the machine throughout the whole period, and that several hours were those of night, it is not practicable to compare this achievement with any of the recent "double twelve" and "triple eight" hour records. Two "double twelve" hour records made this year deserve mention, however; one was that of Horsman,


M. P. H.
1,000 C.C.
CLASS E
CLASS C 500 C.C.
CLASS B 350 C.C.
CLASS A 250 C.C.
TEMPLE H-DAVIDSON 87.52 M.P.H.
TEMPLE H-DAVIDSON 87.31 M.P.H.
LE VACK ZENITH-JAP 89.30 M.P.H.
78.91 M.P.H.
LE VACK (INDIAN) 78.70 M.P.H.
MOORHOUSE (INDIAN) 70.76 M.P.H.
HORSMAN NORTON 72.48 M.P.H.
EMERSON (DOUGLAS) 72.87 M.P.H.
HALFORD (TRIUMPH) 76.74 M.P.H.
EMERSON (DOUGLAS)
LE VACK NEW IMP J.A.P. 74.16 M.P.H.
STANLEY (SINGER) 57.43 M.P.H.
EMERSON A.B.C. 67.93 M.P.H.
DAVIES AJS 66.05 M.P.H.
DAVIES AJS 66.05 M.P.H.
LE VACK NEW IMP J.A.P. 68.54 M.P.H.
STANLEY (SINGER) 62.68 M.P.H.
THOMPSON (DOUGLAS) 63.40 M.P.H.
MARCHANT & HANDLEY OK JUNIOR 61.77 M.P.H.
PRESTWICH DIAMOND J.A.P. 53.53 M.P.H.
KERSHAW NEW IMP J.A.P. 55.69 M.P.H.
MARCHANT SHEFF-HENDSON 56.69 M.P.H.
JACOBS (SINGER) 49.47 M.P.H.
SLATTER (ALCYON) 45.48 M.P.H.
RECORD STANDING END OF 1919
JUNE 1920 NOV. AUG. NOV. 1921 JUNE OCT. 1922 NOV.

Upward trend of the solo hour records since 1919.

Judd, and O'Donovan on a 490 c.c. Norton at 60.31 m.p.h., and the other was that of Pullin and Marvin on a 350 c.c. Douglas and sidecar at 41.76 m.p.h. Of course, the machines were not allowed to be touched between each twelve-hour period.

A very fair record from which to trace the progress of design when speed combined with reliability is in question is the "one hour." To capture this record, the tuning process has to be carried to just that limit where a sufficient degree of reliability will be retained. On this account, the hour records are generally admitted to be the most difficult to secure; there can be no question that the successful machines—and engines—are right in design, and have been skilfully tuned.


M. P. H.
CLASS G 1,000 C.C. SIDECARS
CLASS F 600 C.C. SIDECARS
CLASS B.S. 350 C.C. SIDECARS
H. LE VACK (998 INDIAN) 66.27
H. LE VACK (998 INDIAN) 69.08
C.F. TEMPLE T.R. ALLCHIN (989 HARLEY-DAVIDSON) 73.58
H. LE VACK (998 ZENITH-JAP) 74.87
E.B. WARE (744 ZENITH-JAP) 56.30
O.R. O'DONOVAN (490 NORTON) 53.20
J.L. EMERSON (496 DOUGLAS) 63.90
J.L. EMERSON (496 DOUGLAS) 63.90
O.R. O'DONOVAN (490 NORTON) 60.77
W.D. MARCHANT (348 CHATER-LEA-BLACKBURNE) 57.74
O.R. O'DONOVAN (490 NORTON) 50.19
TUDOR THOMPSON (349 DOUGLAS) 49.17
TUDOR THOMPSON (349 DOUGLAS) 49.17
C.G. PULLIN (346 DOUGLAS) 53.78
S.L. BAILEY (349 DOUGLAS) 43.98
PRE WAR
NOV. 1920
NOV. 1921
OCT. 1922
NOV. 1922

Sustained speed of sidecar machines for one hour.

Is there a Limit?

The upward soar of the graphs makes one wonder whether—if ever—finality in speed will be achieved. It may be that, in a few years' time, speeds which we now consider impossible will have been attained; on the other hand, it may be that progress in engine design will be checked by insuperable difficulty in holding the machine, so that attention will more than ever be directed towards more diminutive engine capacities.

Interest, therefore, attaches to the views held by the men who have been prominent in the high speed direction. Three of the best-known riders, on being asked to give an estimate of the maximum speeds which the various classes will have attained by this time next year gave the following figures, in considering which it should be borne in mind that the estimates are contingent upon an equal amount of development being recorded by each class, and upon favourable weather conditions obtaining when the machines are at their highest tune:

Solo.	Le Vack.	O'Donovan.	Pullin.
250 c.c. ...	90 ...	86-90 ...	91 m.p.h.
350 c.c. ...	103 ...	96-100 ...	102 m.p.h.
500 c.c. ...	105 ...	102-106 ...	108 m.p.h.
750 c.c. ...	110 ...	106-110 ...	112 m.p.h.
1,000 c.c. ..	115 ...	114-118 ...	117 m.p.h.

In O'Donovan's opinion, the 250 c.c., 350 c.c., and 500 c.c. machines have arrived at a stage of equal efficiency; he regards the 750 c.c. and 1,000 c.c. machines, however, as being not yet fully developed. The margin which he allows between his estimates of each class speed is on account of his views regarding the unsuitability of Brooklands for the highest speeds. The higher of the speeds which he indicates he intends to apply to a perfect, straight, speedway; the lower to the same machine on Brooklands.

MOTOR CYCLE RECORDS OF 1922.—

CLASS A.—Motor Bicycles Not Exceeding 250 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	C.C.	Time or Distance.	Speed.	
	Distance.					h. m. s.	m.p.h.	k.p.h.
A	(f.s.) Kilometre	28/ 9/22	H. Le Vack	J.A.P. (1)	245	29.22	76.55	123.20
A	(f.s.) Mile	28/ 9/22	H. Le Vack	J.A.P. (1)	245	47.03	76.55	123.20
A	(f.s.) Kilometre*	29/ 9/22	W. D. Marchant	D.F.R. Blackburne (1)	248	31.17	71.77	115.49
A	(f.s.) Mile*	10/ 4/22	W. D. Marchant	Sheffield Henderson Blackburne (1)	248	50.08	71.88	115.68
B	(s.s.) Kilometre	27/10/22	R. N. Judd	Velocette (1)	249	38.02	58.83	94.68
B	(s.s.) Mile	27/10/22	R. N. Judd	Velocette (1)	249	57.32	62.91	101.24
B	(s.s.) Kilometre*	23/ 9/22	G. S. Davison	Levis (1)	249	40.38	55.39	89.15
B	(s.s.) Mile*	23/ 9/22	G. S. Davison	Levis (1)	249	61.78	58.27	93.78
A	5 miles	28/ 9/22	H. Le Vack	J.A.P. (1)	245	3 55.49	76.43	123.09
A	10 miles	28/ 9/22	H. Le Vack	J.A.P. (1)	245	8 10.17	73.44	118.19
A	50 miles	25/11/22	H. Le Vack	New Imperial J.A.P. (1)	245	43 44.63	68.61	101.41
A	100 miles	25/11/22	H. Le Vack	New Imperial J.A.P. (1)	245	1 29 00.00	67.41	108.41
A	200 miles	6/ 9/22	W. D. Marchant and W. L. Handley	O.K. Jun. Blackburne (1)	248	3 31 14.16	56.80	91.41
A	300 miles	6/ 9/22	"	"	248	5 16 28.54	56.87	91.52
A	400 miles	6/ 9/22	"	"	248	7 3 27.41	56.67	91.20
A	500 miles	2/ 7/21	B. Kershaw	New Imperial J.A.P. (1)	249	9 59 5.00	50.07	80.58
	Time.					mls. yds.		
A	1 hour	25/11/22	H. Le Vack	New Imperial J.A.P. (1)	245	68 955	68.54	110.30
A	2 hours	25/11/22	H. Le Vack	New Imperial J.A.P. (1)	245	135 1,201	67.84	109.18
A	3 hours	6/ 9/22	W. D. Marchant and W. L. Handley	O.K. Jun. Blackburne (1	248	175 340	58.40	93.98
A	4 hours	6/ 9/22	"	"	248	228 167	57.02	91.76
A	5 hours	6/ 9/22	"	"	248	283 1,089	56.72	91.28
A	6 hours	6/ 9/22	"	"	248	341 917	56.92	91.60
A	12 hours	19/ 6/22	Mrs. G. M. Janson	Trump J.A.P. (1)	249	556 57	46.33	74.56
A	Double 12 hours	19-20/6/22	"	"	240	1,071 1,180	44.65	71.86

CLASS B.—Motor Bicycles Not Exceeding 350 c.c.

	Distance.					h. m. s.		
A	(f.s.) Kilometre	27/ 9/22	C. G. Pullin	Douglas (2)	346	23.60	94.79	152.54
B	(f.s.) Mile	12/ 9/22	H. Le Vack	Imperial J.A.P. (1)	344	39.18	91.88	147.87
B	(f.s.) Kilometre*	27/ 9/22	C. G. Pullin	Douglas (2)	346	24.40	91.68	147.54
B	(f.s.) Mile*	20/11/22	C. G. Pullin	Douglas (2)	346	41.20	87.38	140.62
B	(s.s.) Kilometre	23/11/22	F. A. Longman	A.J.S. (1)	349	35.90	62.31	100.28
B	(s.s.) Mile	25/11/22	F. A. Longman	A.J.S. (1)	349	53.98	66.96	107.32
B	(s.s.) Kilometre*	23/11/22	F. A. Longman	A.J.S. (1)	349	36.00	62.14	100.00
B	(s.s.) Mile*	25/11/22	F. A. Longman	A.J.S. (1)	340	54.40	66.17	106.49
A	5 miles	23/11/22	H. Le Vack	New Imperial J.A.P. (1)	344	3 29.90	85.75	138.00
A	10 miles	23/11/22	H. Le Vack	New Imperial J.A.P. (1)	344	7 23.73	81.13	130.56
A	50 miles	21/ 7/22	H. Le Vack	New Imperial J.A.P. (1)	344	40 32.40	74.00	119.09
A	100 miles	21/ 7/22	H. Le Vack	New Imperial J.A.P. (1)	344	1 22 22.40	72.81	117.17
A	200 miles	21/ 9/21	Tudor Thompson	Douglas (2)	350	3 12 37.20	62.29	100.24
A	300 miles	7/11/22	A. Fergnagni and E. Visioli	Garelli (2)	349	4 47 36	62.58	100.722
A	400 miles	7/11/22	"	"	349	6 19 58	63.16	101.649
A	500 miles	7/11/22	"	"	349	7 52 45	63.45	102.124
A	600 miles	20/ 9/20	J. S. Holroyd	Blackburne (1)	348	11 57 11.80	50.20	80.78
	Time.					mls. yds.		
B	1 hour	21/ 7/22	H. Le Vack	New Imperial J.A.P. (1)	344	74 291	74.16	119.34
B	2 hours	25/11/22	H. Le Vack	New Imperial J.A.P. (1)	245	135 1,201	67.84	109.18
B	3 hours	21/ 9/21	Tudor Thompson	Douglas (2)	350	186 1,511	62.28	100.23
A	4 hours	7/11/22	A. Fergnagni and E. Visioli	Garelli (2)	349	249 968	62.20	100.104
A	5 hours	7/11/22	"	"	349	314 570	62.70	100.907
A	6 hours	7/11/22	"	"	349	379 75	63.01	101.405
A	7 hours	7/11/22	"	"	349	444 332	63.29	101.855
A	12 hours	20/ 9/20	J. S. Holroyd	Blackburne (1)	348	602 658	50.20	80.79

CLASS C.—Motor Bicycles Not Exceeding 500 c.c.

	Distance.					h. m. s.		
B	(f.s.) Kilometre	23/ 3/22	C. G. Pullin	Douglas (2)	490	22.69	98.58	158.64
B	(f.s.) Mile	23/ 3/22	C. G. Pullin	Douglas (2)	499	36.15	99.58	160.25
B	(f.s.) Kilometre*	20/11/22	V. Horsman	Norton (1)	490	23.90	93.59	150.62
B	(f.s.) Mile*	20/11/22	V. Horsman	Norton (1)	490	38.82	92.72	149.21
B	(s.s.) Kilometre	23/11/22	J. L. Emerson	Douglas (2)	496	33.90	65.99	106.19
B	(s.s.) Mile	20/11/22	W. H. Sheraton	Norton (1)	490	53.55	67.23	108.35
B	(s.s.) Kilometre*	23/11/22	J. L. Emerson	Douglas (2)	496	34.15	65.50	105.41
B	(s.s.) Mile*	20/11/22	W. H. Sheraton	Norton (1)	490	53.57	67.19	108.13
A	5 miles	21/10/22	V. Horsman	Norton (1)	490	3 21.66	89.25	143.63
B	10 miles	18/11/22	V. Horsman	Norton (1)	490	7 5.79	84.55	136.06
A	50 miles	6/ 5/22	J. L. Emerson	Douglas (2)	494	38 5.07	78.77	126.77
B	100 miles	24/11/22	J. L. Emerson	Douglas (2)	496	1 17 57.04	76.97	123.87
B	200 miles	24/11/22	J. L. Emerson	Douglas (2)	496	2 53 50.24	69.03	111.09
B	300 miles	24/11/22	J. L. Emerson	Douglas (2)	496	4 29 29.63	66.79	107.49
B	400 miles	24/11/22	J. L. Emerson	Douglas (2)	496	6 0 4.30	66.65	107.26
B	500 miles	4/ 9/22	V. Horsman	Norton (1)	490	7 59 40.47	62.54	100.64
B	600 miles	4/ 9/22	R. N. Judd	Norton (1)	490	9 40 9.20	62.05	99.86
B	700 miles	4/ 9/22	D. R. O'Donovan	Norton (1)	490	11 16 49.39	62.05	99.86
	Time.					mls. yds.		
A	1 hour	6/ 5/22	J. L. Emerson	Douglas (2)	494	78 1,601	78.91	126.99
A	2 hours	11/10/22	R. N. Judd	Norton (1)	490	147 1,261	73.86	118.87
B	3 hours	24/11/22	J. L. Emerson	Douglas (2)	496	206 1,714	68.99	111.03
B	4 hours	24/11/22	J. L. Emerson	Douglas (2)	496	269 873	67.38	108.44
B	5 hours	24/11/22	J. L. Emerson	Douglas (2)	496	331 1,049	66.32	106.73
B	6 hours	24/11/22	J. L. Emerson	Douglas (2)	496	399 1,584	66.65	107.26
A	12 hours	4/ 9/22	V. Horsman, R. Judd and D. R. O'Donovan	Norton (1)	490	741 431	61.77	99.49
B	Double 12 hours	4-5/9/22	"	Norton (1)	490	1,447 839	60.31	97.06

International and British Speed Performances. Compiled by A. V. Ebblewhite, Official Timekeeper to The Royal Automobile Club, The Auto Cycle Union, and The British Motor Cycle Racing Club.

CLASS D.—Motor Bicycles Not Exceeding 750 c.c.

Excepting the undermentioned, the whole of the records in Class C apply to Class D.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	C.C.	Time or Distance.	Speed.	
	Distance.					h. m. s.	m.p.h.	k.p.h.
	(f.s.) Kilometre	27/ 9/22	C. G. Pullin	Douglas (2)	736	22.45	99.64	160.35
	(f.s.) Kilometre*	27/ 9/22	C. G. Pullin	Douglas (2)	736	22.88	97.77	157.34
B	(s.s.) Kilometre	12/ 9/22	Col. R. N. Stewart	Trump J.A.P. (2)	744	36.92	60.59	97.51
B	(s.s.) Mile	12/ 9/22	J. Hall	Trump J.A.P. (2)	744	54.66	65.86	105.95
	(s.s.) Kilometre*	12/ 9/22	Col. R. N. Stewart	Trump J.A.P. (2)	744	38.04	58.80	94.63
	(s.s.) Mile*	12/ 9/22	J. Hall	Trump J.A.P. (2)	744	57.17	62.96	101.33
	5 Miles	24/ 7/22	C. G. Pullin	Douglas (2)	736	3 21.10	89.50	144.03
	10 Miles	24/ 7/22	C. G. Pullin	Douglas (2)	736	6 59.68	85.78	138.04
A	50 Miles	29/11/21	H. H. Bowen	Martinsyde (2)	745	37 52.20	79.21	127.47
	200 Miles	11/10/22	R. E. Dicker	Bradbury (2)	749.7	2 55 58.99	68.19	109.74
	300 Miles	11/10/22	R. E. Dicker	Bradbury (2)	749.7	4 41 23.87	64.02	103.03
	Time.					Miles. Yards.		
	3 Hours	11/10/22	R. E. Dicker	Bradbury (2)	749.7	204 1417	68.26	109.85
	4 hours	11/10/22	R. E. Dicker	Bradbury (2)	749.7	271 1350	67.94	109.34

CLASS E.—Motor Bicycles Not Exceeding 1,000 c.c.

	Distance.					h. m. s.		
B	(f.s.) Kilometre	17/11/21	H. Le Vack	Indian (2)	994	20.80	107.55	173.08
B	(f.s.) Mile	31/11/22	H. Le Vack	Zenith J.A.P. (2)	998	34.71	103.71	166.90
A	(f.s.) Kilometre*	14/ 4/20	E. Walker	Indian (2)	994	21.60	103.56	166.67
	(f.s.) Mile*	14/ 4/20	E. Walker	Indian (2)	994	34.70	103.75	166.96
B	(s.s.) Kilometre	1/ 9/22	E. Remington	Blackburne (2)	998	31.12	71.88	115.68
B	(s.s.) Mile	1/ 9/22	E. Remington	Blackburne (2)	998	45.58	78.98	127.10
	(s.s.) Mile*	1/ 9/22	E. Remington	Blackburne (2)	998	48.08	74.87	120.49
	5 Miles	14/ 4/20	E. Walker	Indian (2)	994	2 45.62	108.68	174.91
	10 Miles	18/11/22	H. Le Vack	Zenith J.A.P. (2)	998	6 26.90	93.04	149.74
	50 Miles	21/11/22	H. Le Vack	Zenith J.A.P. (2)	998	32 42.56	91.71	147.60
	100 Miles	17/11/22	H. Le Vack	Zenith J.A.P. (2)	998	1 6 43.4	89.92	144.71
	200 Miles	4/10/22	C. F. Temple and	Harley-Davidson (2)	989	2 30 32.30	79.71	128.28
	300 Miles	4/10/22	T. R. Allchin	Harley-Davidson (2)	989	3 53 3.22	77.23	124.28
	400 Miles	4/10/22	"	Harley-Davidson (2)	989	5 10 41.22	77.24	124.30
	500 Miles	25/11/22	J. H. Mathers and	Rudge (2)	998	6 40 12.43	74.96	120.63
	600 Miles	25/11/22	R. E. Dicker	Rudge (2)	998	8 25 7.00	71.27	114.70
	700 Miles	4/ 9/22	V. Horsman, R. N. Judd, and D. R. O'Donovan	Norton (1)	490	11 16 49.39	62.05	99.86
	Time.					Miles. Yards.		
	1 hour	17/11/22	H. Le Vack	Zenith J.A.P. (2)	998	89 1591	89.90	144.68
	2 hours	4/10/22	C. F. Temple and	Harley-Davidson (2)	989	163 606	81.67	131.43
	3 hours	4/10/22	T. R. Allchin	Harley-Davidson (2)	989	228 708	76.13	122.51
	4 hours	4/10/22	"	Harley-Davidson (2)	989	307 361	76.80	123.59
	5 hours	4/10/22	"	Harley-Davidson (2)	989	385 1712	77.19	124.22
	6 hours	25/11/22	J. H. Mathers and R. E. Dicker	Rudge (2)	998	450 654	75.06	120.79
	12 hours	4/ 9/22	V. Horsman	Norton (1)	490	741 431	61.77	99.40
	12 hours	4/ 9/22	R. N. Judd	Norton (1)	490	741 431	61.77	99.40
	12 hours	4/ 9/22	D. R. O'Donovan	Norton (1)	490	741 431	61.77	99.40

CLASS B/S.—Sidecars Not Exceeding 350 c.c.

	Distance.					h. m. s.		
B	(f.s.) Kilometre	27/ 9/22	C. G. Pullin	Douglas (2)	346	31.14	71.83	115.59
B	(f.s.) Mile	2/ 8/22	C. G. Pullin	Douglas (2)	346	54.03	66.63	107.23
A	(f.s.) Kilometre*	27/ 9/22	C. G. Pullin	Douglas (2)	346	31.59	70.81	113.95
	(f.s.) Mile*	2/ 8/22	C. G. Pullin	Douglas (2)	346	56.62	63.58	102.32
B	(s.s.) Kilometre	23/11/22	C. G. Pullin	Douglas (2)	346	45.45	49.21	79.20
B	(s.s.) Mile	23/11/22	C. G. Pullin	Douglas (2)	346	66.40	54.21	87.24
	(s.s.) Kilometre*	23/11/22	C. G. Pullin	Douglas (2)	346	45.87	48.76	78.47
	(s.s.) Mile*	23/11/22	C. G. Pullin	Douglas (2)	346	66.52	54.11	87.08
	5 miles	22/11/22	C. G. Pullin	Douglas (2)	346	4 27.71	67.24	108.21
	10 miles	22/11/22	C. G. Pullin	Douglas (2)	346	9 21.53	64.11	103.17
	50 miles	24/11/22	W. D. Marchant	Chater-Lea Blackburne (1)	348	50 21.92	59.26	95.37
	100 miles	17/ 6/22	C. G. Pullin	Douglas (2)	346	1 54 56.52	52.20	84.01
	200 miles	17/ 6/22	C. G. Pullin	Douglas (2)	346	3 51 51.39	51.76	83.29
	300 miles	31/ 8/22	C. G. Pullin and	Douglas (2)	346	6 42 33.91	44.71	71.95
A	400 miles	31/ 8/22	J. D. Marvin	Douglas (2)	346	9 22 1.34	42.70	68.72
	500 miles	31/ 8/22	"	Douglas (2)	346	11 44 4.04	42.57	68.57
	Time.					Miles. Yards.		
	1 hour	24/11/22	W. D. Marchant	Chater-Lea Blackburne (1)	348	57 1305	57.74	92.92
	2 hours	17/ 6/22	C. G. Pullin	Douglas (2)	346	104 665	52.19	83.99
	3 hours	17/ 6/22	C. G. Pullin	Douglas (2)	346	156 1239	52.23	84.06
	4 hours	17/ 6/22	C. G. Pullin	Douglas (2)	346	201 189	50.28	80.92
	5 hours	31/ 8/22	C. G. Pullin and	Douglas (2)	346	222 932	44.50	71.61
	6 hours	31/ 8/22	J. D. Marvin	Douglas (2)	346	266 1362	44.46	71.55
	12 hours	31/ 8/22	"	Douglas (2)	346	510 1623	42.57	68.57
B	Double 12 hours	31/ 8/22	"	Douglas (2)	346	1002 343	41.76	67.20

CLASS F.—Sidecars Not Exceeding 600 c.c.

	Distance.					h. m. s.		
	(f.s.) Kilometre	20/11/22	V. Horsman	Norton (1)	490	27.53	81.19	130.67
A	(f.s.) Mile	20/11/22	V. Horsman	Norton (1)	490	44.55	80.81	130.05
	(f.s.) Kilometre*	20/11/22	V. Horsman	Norton (1)	490	27.87	80.24	129.15
	(f.s.) Mile*	20/11/22	V. Horsman	Norton (1)	490	45.05	79.91	128.60
B	(s.s.) Kilometre	27/10/22	C. G. Pullin	Douglas (2)	496	38.71	57.78	93.00
	(s.s.) Mile	27/10/22	C. G. Pullin	Douglas (2)	496	55.35	65.04	104.67
	(s.s.) Kilometre*	27/10/22	C. G. Pullin	Douglas (2)	496	39.60	56.48	90.89
	(s.s.) Mile*	27/10/22	C. G. Pullin	Douglas (2)	496	57.55	62.55	100.66
A	5 miles	21/10/22	V. Horsman	Norton (1)	490	4 4.72	73.55	118.38
	10 miles	6/ 9/22	V. Horsman	Norton (1)	596	8 38.79	69.39	111.67
	50 miles	21/ 9/22	J. L. Emerson	Douglas (2)	496	46 46.52	64.13	103.21

A World's Record. B British record. * Average mean speed. f.s. Flying start. s.s. Standing start.
(Note.—The Garelli records in Class B also include 400-800km. distances.)

CLASS F.—Sidecars not exceeding 600 c.c.—*continued.*

	Record.	Date.	Holder.	Machine and No. of Cylinders.	C.C.	Time or Distance.	Speed.	
	Distance.					h. m. s.	m.p.h.	k.p.h.
	100 miles	21/ 9/22	J. L. Emerson	Douglas (2)	496	1 37 30.18	61.53	99.02
	200 miles	13/ 8/22	D. R. O'Donovan	Norton (1)	588	3 24 29.41	58.68	94.43
	300 miles	16/ 8/21	H. H. Beach	Norton (1)	490	5 39 3.60	53.08	85.43
	400 miles	16/ 8/21	H. H. Beach	Norton (1)	490	7 37 19.20	52.48	84.46
	500 miles	23/ 9/22	H. H. Beach	Norton (1)	588	9 31 48.37	52.46	84.42
	600 miles	23/ 9/22	H. H. Beach	Norton (1)	588	11 23 38.86	52.65	84.73
A	Time.					Miles. Yards.		
	1 hour	21/ 9/22	J. L. Emerson	Douglas (2)	496	63 1586	63.90	102.84
	2 hours	21/ 9/22	J. L. Emerson	Douglas (2)	496	120 1297	60.37	97.11
	3 hours	15/ 8/22	D. R. O'Donovan	Norton (1)	588	176 1097	59.54	95.82
	4 hours	23/ 9/22	H. H. Beach	Norton (1)	588	221 1082	55.40	89.15
	5 hours	16/ 8/21	H. H. Beach	Norton (1)	490	269 6	53.80	86.59
	6 hours	16/ 8/21	H. H. Beach	Norton (1)	490	318 933	53.09	85.44
	12 hours	23/ 9/22	H. H. Beach	Norton (1)	588	631 1396	52.65	84.73

CLASS G.—Sidecars Not Exceeding 1,000 c.c.

	Distance.					h. m. s.		
B	(f.s.) Kilometre	17/11/21	H. Le Vack	Indian (2)	994	25.80	86.70	139.53
A	(f.s.) Kilometre*	31/10/22	H. Le Vack	Zenith J.A.P. (2)	998	25.82	86.62	139.40
B	(f.s.) Mile	31/10/22	H. Le Vack	Zenith J.A.P. (2)	998	41.99	85.83	138.13
A	(f.s.) Mile*	31/10/22	H. Le Vack	Zenith J.A.P. (2)	998	42.15	85.40	137.43
B	5 miles	27/10/22	H. Le Vack	Zenith J.A.P. (2)	998	3 40.24	81.72	131.51
	10 miles	27/10/22	H. Le Vack	Zenith J.A.P. (2)	998	7 36.40	78.88	126.94
	50 miles	22/11/22	H. Le Vack	Zenith J.A.P. (2)	998	39 41.20	75.59	121.65
	100 miles	22/11/22	H. Le Vack	Zenith J.A.P. (2)	998	1 20 12.88	74.79	120.36
	200 miles	17/ 6/22	H. Le Vack	Zenith J.A.P. (2)	988	3 5 4.70	64.84	104.35
	300 miles	25/11/20	H. Le Vack	Indian (2)	998	4 48 13.80	62.45	100.50
	400 miles	16/ 8/21	H. H. Beach	Norton (1)	490	7 37 19.20	52.48	84.46
	500 miles	23/ 9/22	H. H. Beach	Norton (1)	588	9 31 48.37	52.46	84.42
A	600 miles	23/ 9/22	H. H. Beach	Norton (1)	588	11 23 38.86	52.65	84.73
	Time.					Miles. Yards.		
	1 hour	23/11/22	H. Le Vack	Zenith J.A.P. (2)	998	74 1,532	74.87	120.49
	2 hours	17/ 6/22	H. Le Vack	Zenith J.A.P. (2)	988	134 465	67.13	108.04
	3 hours	17/ 6/22	H. Le Vack	Zenith J.A.P. (2)	988	193 1,060	64.53	103.86
	4 hours	25/11/20	H. Le Vack	Indian (2)	998	247 928	61.88	99.59
	5 hours	25/11/20	H. Le Vack	Indian (2)	998	308 1,423	61.76	99.40
	6 hours	25/11/20	H. Le Vack	Indian (2)	998	363 688	60.57	97.48
	12 hours	23/ 9/22	H. H. Beach	Norton (1)	588	631 1,396	52.65	84.73

CLASS J1.—Single-seater Cycle Cars Not Exceeding 750 c.c.

	Distance.					h. m. s.		
B	(f.s.) Kilometre	2/ 8/22	A. E. Taylor	A.V. (2)	697	31.01	72.10	116.09
	(f.s.) Mile	2/ 8/22	A. E. Taylor	A.V. (2)	697	50.40	71.43	114.95
	(f.s.) Kilometre*	26/ 9/22	Seneschal	Seneschal (4)	744.7	31.05	72.03	115.94
	(f.s.) Mile*	2/ 8/22	A. E. Taylor	A.V. (2)	697	50.78	70.89	114.08
	5 miles	2/ 8/22	A. E. Taylor	A.V. (2)	697	4 18.54	69.62	112.04
A	10 miles	25/ 7/14	E. B. Ware	Morgan J.A.P. (2)	744	10 5.00	59.50	95.74
	50 miles	28/ 3/14	E. B. Ware	Morgan J.A.P. (2)	744	1 3 7.80	47.52	76.48
	Time.					Miles. Yards.		
	1 hour	28/ 3/14	E. B. Ware	Morgan J.A.P. (2)	744	47 457	47.26	76.06

CLASS J2 —Two-seater Cycle Cars Not Exceeding 750 c.c.

	Distance.					h. m. s.		
A	(f.s.) Kilometre	26/ 9/22	Seneschal	Seneschal (4)	744.7	31.45	71.12	114.46

CLASS H1.—Single-seater Cycle Cars Not Exceeding 1,100 c.c. Maximum weight 772 lb.

B	(f.s.) Kilometre	17/ 8/22	A. Lombard	Salmson (4)	1,097	24.49	91.31	147.00
	(f.s.) Mile	17/ 8/22	A. Lombard	Salmson (4)	1,097	40.46	88.97	143.18
	(f.s.) Kilometre	26/ 9/22	A. Lombard	Salmson (4)	1,087	23.50	95.19	153.19
	(f.s.) Mile*	17/ 8/22	A. Lombard	Salmson (4)	1,097	40.64	88.58	142.39
A	(s.s.) Kilometre	7/10/20	Frazer Nash	G.N. (2)	1,086	36.28	61.66	99.24
	(s.s.) Mile	7/10/20	Frazer Nash	G.N. (2)	1,086	53.28	67.57	108.74
	5 miles	17/ 8/22	A. Lombard	Salmson (4)	1,097	3 26.60	87.12	140.20
	10 miles	17/ 8/22	A. Lombard	Salmson (4)	1,097	7 13.78	82.99	133.56

Class H2.—Two-Seater Cycle Cars not exceeding 1,100 c.c. Maximum weight, 772 lb.

B	(f.s.) Kilometre	25/11/22	W. D. Hawkes	Morgan Anzani (2)	1,078	23.73	86.94	139.91
	(f.s.) Mile	25/11/21	E. B. Ware	Morgan J.A.P. (2)	1,096	43.80	82.19	132.27
	(f.s.) Kilometre*	27/ 9/22	A. Benoist	Salmson (4)	1,097	26.95	83.00	133.58
	5 miles	23/11/22	W. D. Hawkes	Morgan Anzani (2)	1,078	3 31.40	85.14	137.02
	10 miles	23/11/22	W. D. Hawkes	Morgan Anzani (2)	1,078	7 20.60	81.70	131.48
	50 miles	19/ 8/22	Frazer Nash	G.N. (2)	1,086	38 4.82	78.78	126.78
	100 miles	19/ 8/22	A. Benoist	Salmson (4)	1,097	1 15 12.69	79.77	128.37
	200 miles	19/ 8/22	A. Benoist	Salmson (4)	1,097	2 28 10.00	80.99	130.34
	300 miles	23/ 9/13	F. Burgess and J. Wetton	Calthorpe (4)	1,088	4 30 38.20	66.51	107.04
	400 miles	23/ 9/13	F. Burgess and J. Wetton	Calthorpe (4)	1,088	6 6 37.00	65.46	105.35
	500 miles	30/ 9/13	B. H. Haywood and G. Baker	Singer (4)	1,096	7 56 50.80	62.91	101.25
A	Time.					Miles. Yards.		
	1 hour	19/ 8/22	A. Benoist	Salmson (4)	1,097	79 141	79.08	127.28
	2 hours	19/ 8/22	A. Benoist	Salmson (4)	1,097	161 182	80.55	129.63
	3 hours	29/ 9/13	B. H. Haywood	Singer (4)	1,096	200 1,542	66.95	107.77
	4 hours	23/10/13	F. Burgess and J. Wetton	Calthorpe (4)	1,088	263 878	65.88	106.01
	5 hours	23/10/13	,,	Calthorpe (4)	1,088	330 919	66.10	106.38
	6 hours	23/10/13	,,	Calthorpe (4)	1,088	393 450	65.54	105.48
	7 hours	30/ 9/13	B. H. Haywood and G. Baker	Singer (4)	1,096	438 1,384	62.68	100.87
	8 hours	30/ 9/13	,,	Singer (4)	1,096	502 1,353	62.85	101.14
	9 hours	30/ 9/13	,,	Singer (4)	1,096	564 1,524	62.76	101.00

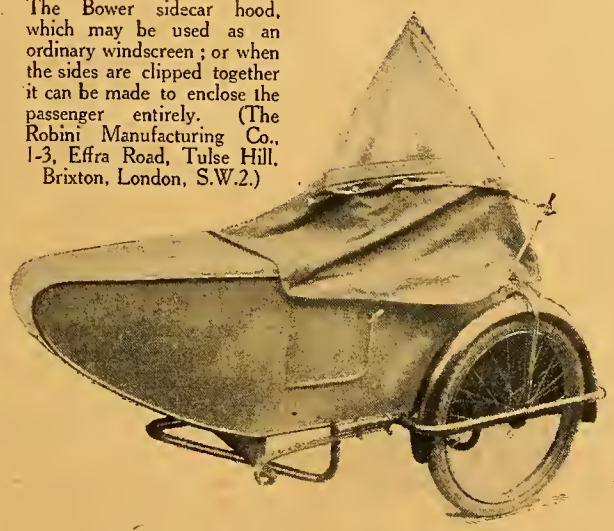
A World's Record. *B* British record. * Average mean speed. f.s. Flying start. s.s. Standing start.

Flying start kilometre records have also been set up in two new classes (Y, 175 c.c. scooters; and Z, 125 c.c. motor-assisted bicycles) by Janin (Monet Guyon) and Barthelemy (Rovin) respectively at 48·57 m.p.h. and 51·20 m.p.h.

Feeling Cold on Winter Runs. Advertised Price of Complete Outfits. Size of Bodies.

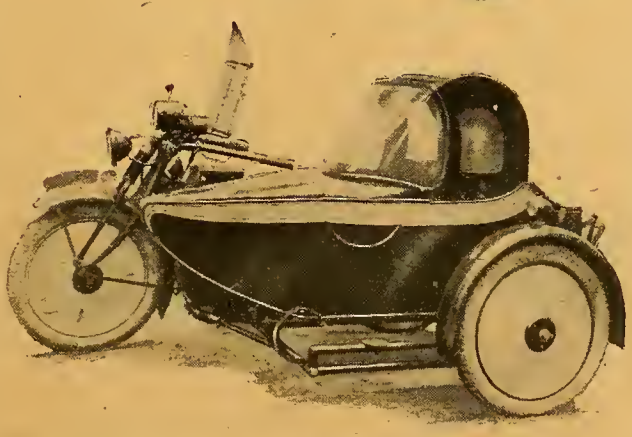
I LIKED the pose of a few of the stand attendants at the Olympia Show, who were, fortunately, in the minority. But the type is familiar at all trade exhibitions. I don't know the psychological effect of a canary waistcoat, immaculately creased trousers, and varnished hair on the average individual; but when a group of three or four attendants thus arrayed pose about the stand and lay down the law to each other with pompous gestures, the diffident little man who leaves his business for the day to come up with the "Missus," hesitates before disturbing these egregious males. He thinks they are directors at least, and goes on to the next stand.

What he should do, of course, is to go up to the "knuttiest," and say, loudly and imperiously, "You a director? Then just tell me this . . ." The polished attendant would have been up like a shot, and his colleagues would have melted mysteriously away.



The Bower sidecar hood, which may be used as an ordinary windscreen; or when the sides are clipped together it can be made to enclose the passenger entirely. (The Robini Manufacturing Co., 1-3, Effra Road, Tulse Hill, Brixton, London, S.W.2.)

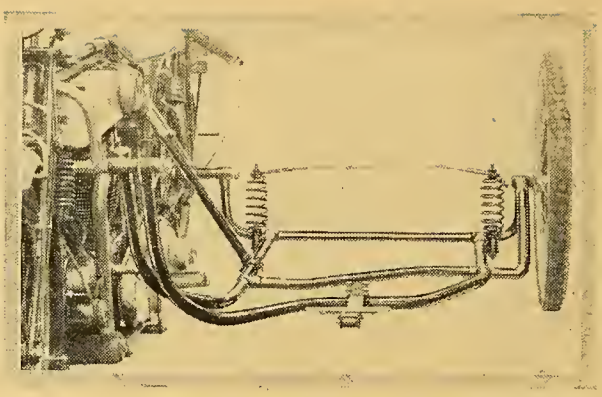
ONE of my colleagues, a hardy individual, hails from Cromarty. My most vivid memory of Cromarty is of a young, tousle-headed, kilted Scottie dancing a hornpipe with bare feet on a cold granite slab in a north-east wind that came in a hurry from Scandinavia. That was whilst sidecarring in the Highlands, and indicates the type of men they breed there. My colleague, who little thinks I am using him as a peg, rides in a thin coat in midwinter, and practically naked in the summer. We started an argument the other day as usual—that is the one thing that makes his life worth living. He started talking when he saw me envelop myself in layer after layer of clothing preparatory to a long journey north with my 595 c.c. Douglas outfit, which has seen its best days (we are not always riding new models). He contended that imagination has a good deal to do with "cold, shivery feelings," and that one becomes obsessed with the idea of feeling cold simply because a long journey confronts one on a motor cycle. I don't believe that. It certainly does seem strange why some individuals feel the cold more than others, and it is not always the fat folk that are able to smile in the face of a freezing wind. I am nearly always cold whilst motoring in frosty weather, although leg-guards have mitigated the evil of cold feet somewhat, and handle-bar muffs help to keep the fluid circulating in my fingers. I wish someone would reveal the secret of keeping warm on a 100-mile run when the thermometer is shy of rising. Imagination and the subconscious mind do play pranks, but they are not guilty in this particular case.



The Coupette sidecar, with rigid disappearing hood—a very graceful design and particularly suitable for medium-powered machines.

ASKED the other day where lay the most room for improvement in sidecars, I answered, "Body space." This opinion I strongly uphold. There is no part of an outfit that I could criticise so strongly. I may grumble at the inefficient mudguarding and leg-guarding, the paltry equipment offered outside the "extras" list, draughty hoods, or inefficient screens. But these things don't rouse my ire so thoroughly as when presented with an outfit to test, the body of which is low at the back, low at the side, and so narrow that the passenger has to sit stiffly in one position. Roomy bodies were decidedly scarce at the Show; roomy bodies are getting scarcer. I wonder why the A.J.S. concern altered its

Passenger Machine Topics.— 1919 design? The present one is undoubtedly amongst the most comfortable to-day, but the large model of 1919 was roomier still. Although I criticise that change, I appreciate the retention of the high back and the refusal to pander to the ridiculous tendency of offering semi-sporting patterns as touring models. I have heard any amount of criticism of the latter, and very just criticism, too.



The strong, simple and lightly constructed Copwill sidecar chassis, showing the method of attachment to the motor bicycle. The wheel has a detachable spindle.

WHILST grousing, I may as well do it thoroughly. So I will go off at a tangent on the question of "extras." Tell me a firm which boldly advertises the price of an outfit equipped with hood, screen, and side screens, lighting, speedometer, spare wheel, and grid. I cannot find one. A buyer has to reckon up the extras for himself, which is, from a psychological point of view, a bad thing to force a buyer to do. There seems no end to the "extras," just as there is no end to the "extras" when buying a new house. Not only should the big outfits be quoted complete, but so should the lower-priced one, too, for surely we have got beyond the stage of being influenced by a low advertised price which may be perfectly legitimate but somewhat misleading. The thoughtful man, of course, thinks of all the extras he needs before giving a definite order, and makes plans accordingly. But we are not all thoughtful, and it is annoying to find the bill piling up as we add accessory after accessory.

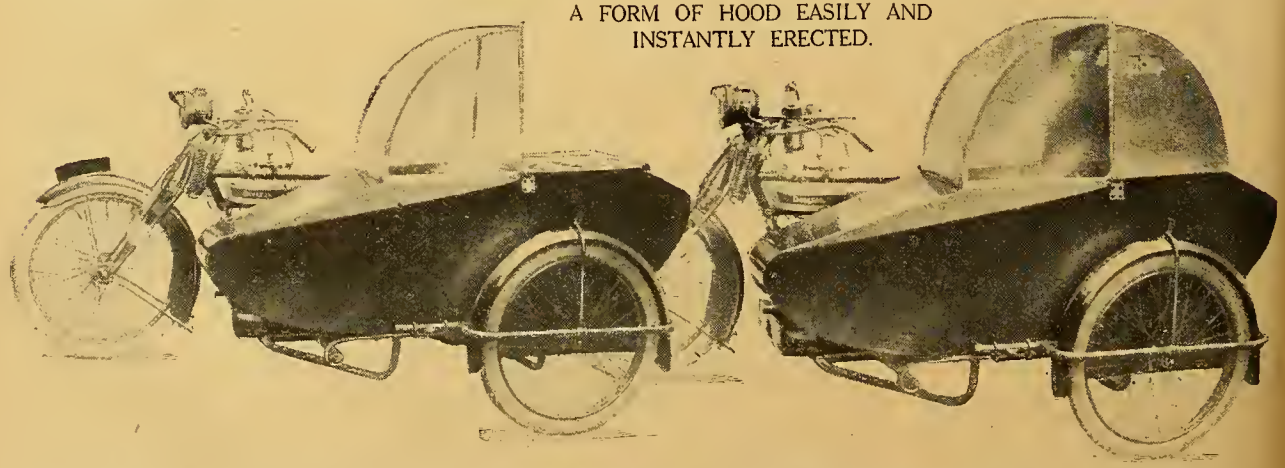
THE Motor Cycle has never hesitated to give publicity to any practical and well-conceived idea, even though from a comparatively small firm.

The Coupette hood and screen is a case in point. I have mentioned it before, and I contend again that Mr. Goad is on the right track in producing a hood and screen that is light and graceful (a most exceptional thing). Not only is there this advantage, but the hood is instantly swung back, leaving an effective screen in position. Note the last half dozen words. Now this type of hood and screen appear to me to be admirable for medium-weight machines, and may in the future become quite a standard type when manufacturers have abandoned the ancient flat screens which necessitate extra side curtains or celluloid panels. Of a similar type is the hood and screen conceived by Mr. H. W. Prockter, who has also aimed at lightness and quick adjustability.

THE pros and cons of carrying petrol whilst touring are often discussed. Though I rarely carry a spare tin myself, I thoroughly agree with those who argue that a spare tin does away with that subconscious worry of running out of fuel through some mischance and getting stranded in an outlandish spot. I saw the other day a specially made petrol can fixed in a bracket beneath the step of the sidecar. Another alternative would be to extend the sidecar step and carry the can (one-gallon) as on a car running-board

NOWADAYS there are not many variations in sidecar construction, but the Copwill chassis certainly shows some originality. Both inner and outer longitudinal members are curved upwards and are brought up to a post forming part of a special headclip, which is supported both on the top tube of the motor bicycle frame and the diagonal tube as well. The makers are the Light Car & Motor Cycle Engineering Co., 22, Tulse Hill, London, S.W.2.

A FORM OF HOOD EASILY AND INSTANTLY ERECTED.



A swinging hood and a curved screen which obviate the necessity of side curtains. The former, made of aluminium, swings back into the locker, leaving the sidecar clean and tidy in appearance. Mr. H. W. Prockter, 109a, Streatham Hill, London, S.W.2, is the maker.

WHO'S WHO in the MOTOR CYCLE WORLD.

The Second of a Series of Brief Biographies.

Ernest Ashford Bridgman, Assistant Manager, London.—E. A. Bridgman, who was born 53 years ago in Islington, was at one time well-known on the vaudeville stage as Frasetti. It was whilst associated with the "Halls" that Bridgman first took up motor cycles, and he used a trailer machine and later a sidecar on his tours. Successes in reliability trials led to his engagement in the motor cycle industry. As a motor cyclist he has had many successes in competitions, including the 200-mile sidecar race, the Mellano Cup Trial, the Kop Open Hill Climb, and a Southampton to Aberdeen trial. Present mount: Indian. Favourite type of machine: Indian light sporting sidecar outfit. Hobby: Motor cycling.

Frederick Lindsay Lloyd, Col. R.O., C.M.G., C.B.E.—From the earliest days of motoring, Colonel Lloyd has taken an active part in the development of mechanical transport. When serving in the R.E. he was a member of the Motor Transport Committee at the War Office. Within a very short time of the completion of Brooklands track, Colonel Lloyd became Clerk of the Course of the B.A.R.C. He is a Vice-President of the A.C.U., and has often acted in the capacity of judge at its competitions. Colonel Lloyd served with distinction both in the South African war and also in the great European war, receiving the C.M.G. and C.B.E. for services rendered. During the war he was in command of various R.A.S.C. M.T. depôts.

Archibald Montgomery Low, D.Sc., A.C.G.I., M.I.A.E., F.C.S., F.R.G.S., etc., Consulting Engineer and Professor of Physics, London.—Professor Low (born at Purley 36 years ago) is a prominent official of the A.C.U. He is attached to the Royal Artillery College and is author of various technical works. During the war he commanded as Major, R.A.F., the R.F.C. experimental works, and for his services was twice mentioned by the Secretary of State. His inventions are too numerous to mention, but the two best known to motor cyclists are his Audiometer for photographing sound and the Low generator. Professor Low has held many high offices in the A.C.U., and is a well-known judge in competitions. He is vice-chairman of the Junior Car Club and the A.C.U., vice-president of the A.C.U., and president of many provincial and London district clubs. Present mounts: Dunelt sidecar and Economic, Douglas, and Low solo machines. Favourite type of machines: Multi-cylinder two-stroke, with positive transmission, four-cylinder F.N., and Scott. Hobbies: The study of high speed motion by cinematography and the investigation of problems of atomic motion.

Cyril Williams, Motor Agent, Wolverhampton.—Cyril Williams was born at Wolverhampton, and is 34 years of age. He was one of the first motor cyclists in Wolverhampton in days when "there was more tinkering than riding," and has been actively connected with motor cycles ever since, both as rider and dealer. His principal successes in competitions were in 1914 and 1920. In 1914 he came second in the Junior T.T. and first in the Brooklands race for Junior T.T. machines. In 1920 he won the Junior T.T. Between those years he was serving his country in the Army with distinction, as witness his decorations: the Military Medal, the Mons Star, and "Mentioned in Despatches." Present mounts: G.N.-Vitesse and 349 c.c. A.J.S. Favourite type of machine: "Anything fast." Hobby: Motoring.

Archibald George Cocks, Commercial Representative, Aberdovey.—"Archie" Cocks was born at Burton Overy, Leicestershire, and his experience with cycles and cars goes back to the earliest days of motoring. In 1899 he drove a 12 h.p. Daimler car with four-cylinder engine and tube ignition, later taking up motor cycling with a Clement-Gerrard engine fitted in the frame of a pedal cycle. In pre-war days he was a successful trials exponent of the Connaught two-stroke (both solo and with sidecar), and his climb of the Great Orme on a single-geared Levis was an outstanding one. In 1919 he competed in the Irish End-to-End trial, on a 269 c.c. Clyno, and was among the few who finished the run. Present mount: 598 c.c. Beardmore-Precision sidecar. Favourite type of machine: Single-cylinder sidecar or single-cylinder two-stroke. Hobbies: Wireless telegraphy, sailing, motor-boating, and freak hill-climbing on a solo motor cycle.

Mrs. Gwenda Mary Janson, Racing Motor Cyclist and Competition Rider, London.—Mrs. Janson, who was born in Ireland, is one of the most successful of women competition riders, and has several records to her credit. These successes include a double 12 hours world's record at Brooklands and a standing mile British record, both were made on a 249 c.c. Trump-Jap machine. Mrs. Janson rode the Ner-a-car for 1,000 miles under A.C.U. observation in November, 1921, and won one of the Ealing Club's three-lap handicaps at Brooklands this year. Mrs. Janson has also a very remarkable war record. While attached to the Russian Army she drove a field ambulance on the Rumanian and Russian fronts, rewards for conspicuous service being the medal of St. George (2nd class), medal of St. Stamstans (2nd class), Order of St. Anne (3rd class), and mentioned in Russian Army despatches. She holds, of course, the British War and Victory medals. Present mount: Trump. Favouite type of machine: 500 c.c. sporting single.

MOTOR CYCLES FOR ALL PURSES.

A Price-Classified List of 680 Models produced by Manufacturers who Exhibited at the Olympia Show.

MOTOR BICYCLES.

The lists of prices given in this and the following pages are compiled from the catalogues of manufacturers who exhibited at the recent motor cycle exhibition. They illustrate the wide range of models now available to the public, and include solo models from £21 3s. to £160 and passenger machines from £63 to £200. Specifications are briefly outlined where they depart from the standard equipment of three-speed gear, clutch, and kick-starter.

£30 and Under.

£24 3s., Clement, 43 c.c., single spd.
£25, Victoria, 147 c.c., single spd.
£25, Omega, 170 c.c., single spd.
£25 4s., Clement, 43 c.c., single spd. (lady's model).
£26, J.E.S., 169 c.c., T.S., single spd.
£26 5s., Sun, 147 c.c., T.S., single spd.
£26 5s., Sirrah, 211 c.c., T.S., single spd.
£26 5s., Ajax, 147 c.c., T.S., 2 spd.
£27 6s., McKenzie, 169 c.c., T.S., single-spd.
£27 10s., Bown, 147 c.c., T.S., single spd.
£27 16s., Airolite, 110 c.c., T.S., single spd.
£27 16s., Airolite, 110 c.c., T.S., single spd. (lady's model).
£28, Victoria, 147 c.c., T.S., 2 spd.
£28 10s., Excelsior, 147 c.c., T.S., 2 spd.
£28 17s. 6d., Economic, 165 c.c., T.S., 9 spd., C.
£29 8s., Weaver, 150 c.c., single spd.
£30, Sun, 147 c.c., T.S., 2 spd.
£30, Omega, 170 c.c., T.S., 2 spd.
£30, Calthorpe, 245 c.c., T.S., single spd

Over £30, Under £40.

£31 10s., Sirrah, 211 c.c., T.S., 2 spd.
£31 10s., Radco, 247 c.c., T.S., single spd.
£31 10s., Wolf, 147 c.c., T.S., 2 spd.
£31 15s. Bown, 147 c.c., T.S., 2 spd.
£32, Excelsior, 147 c.c., T.S., 2 spd., K.S. and C.
£32 18s. 6d., Rex Acme, 170 c.c., T.S., 2 spd., K.S. and C.
£32 18s. 6d., Hobart, 170 c.c., T.S., 2 spd., K.S. and C.
£33, Omega, 170 c.c., T.S., 2 spd, K.S. and C.
£33 10s., Wolf, 147 c.c., T.S., 2 spd., C.
£33 10s., McKenzie, 169 c.c., T.S., 2 spd., C.
£34 13s., Sirrah, 211 c.c., T.S., 2 spd., K.S. and C.
£34 13s., Cykelaid, 133 c.c., T.S. (gentleman's model).
£35, Powell, 247 c.c., T.S., single spd.
£35, Sparkbrook, 247 c.c., T.S., single spd.
£35, O.K., 292 c.c., T.S., single spd.
£35, Diamond, 147 c.c., T.S., 2 spd.
£35 3s. 6d., Cykelaid, 133 c.c., T.S. (lady's model).
£35 10s., Wolf, 147 c.c., T.S., 2 spd., K.S. and C.
£35 14s., Connaught, 293 c.c., T.S., single spd.
£35 14s., Metro-Tyler, 269 c.c., T.S.,
£35, Wolf, 250 c.c., T.S., single spd. single spd
£37, Sparkbrook, 247 c.c., T.S., single spd.
£37 16s., Cykelaid, 133 c.c., T.S. (lady's model "de luxe").
£37 16s., Cykelaid, 133 c.c., T.S. (gentleman's model "de luxe").
£37 16s., Radco, 247 c.c.
£37 16s., Grigg, 191 c.c., 2 spd.
£37 17s. 6d., Wolf, 250 c.c., T.S., single spd.
£38, Ajax, 269 c.c., T.S., single spd.
£38, Victoria, 247 c.c., T.S., single spd.
£38, Omega, 348 c.c., T.S., single spd. (sports model).
£38, Powell, 343 c.c., T.S., single spd.
£38, Levis, 211 c.c., T.S., single spd.
£38, J.E.S., 169 c.c., 3 spd.
£39 18s., Metro-Tyler, 269 c.c., T.S., 2 spd.
£39 15s., Hawker, 292 c.c., T.S., 2 spd.

£40 to £50.

£40, Monopole, 269 c.c., T.S., single spd.
£40, Calthorpe, 245 c.c., T.S., 2 spd., K.S. and C.
£40, Chater-Lea, 269 c.c., T.S., 2 spd.
£40, Clyno, 269 c.c., T.S., 2 spd., C
£40, Mohawk, 247 c.c., T.S., single spd.
£40 19s., Ray, 198 c.c., 2 spd., C.
£40 19s., Radco, 247 c.c., T.S., 2 spd., K.S.
£41, New Hudson, 211 c.c., T.S., 2 spd.
£41 10s., Bown, 247 c.c., T.S., single spd.
£42, P.V., 269 c.c., T.S., single spd.
£42, Ivy, 249 c.c., T.S., single spd.
£42, Powell, 247 c.c., T.S., 2 spd.
£42 10s., Grigg, 199 c.c., 2 spd., K.S. and C.
£43, Chater-Lea, 269 c.c., T.S., 2 spd., C.
£43, Ajax, 269 c.c., T.S., 2 spd., K.S. and C.
£43 10s., Wolf, 247 c.c., T.S., 2 spd., C.
£44, P.V., 269 c.c., T.S., single spd., C.
£44, Omega, 348 c.c., T.S., 2 spd.
£44 2s., Radco, 247 c.c., T.S., 3 spd., K.S.
£45, Powell, 343 c.c., T.S., 2 spd.
£45, Victoria, 247 c.c., 2 spd.
£45, Sparkbrook, 247 c.c., 2 spd., K.S. and C.
£45, Powell, 247 c.c., T.S., 2 spd., K.S. and C.
£45 3s., Radco, 247 c.c., T.S., 2 spd., K.S. and C. (lady's model).
£46, P.V., 269 c.c., T.S., 2 spd.
£46, Sparkbrook, 247 c.c., T.S., 2 spd.
£46 4s., Metro-Tyler, 269 c.c., T.S., 2 spd. (sports model).
£46 10s., Sun, 269 c.c., T.S., 2 spd., K.S. and C.
£46 10s., Wolf, 247 c.c., T.S., 2 spd. K.S. and C.
£47, Bown, 247 c.c., T.S., 2 spd.
£47 10s., Chater-Lea, 269 c.c., T.S., 2 spd., K.S. and C.
£48, Powell, 343 c.c., T.S., 2 spd., K.S. and C.
£48, Victoria, 247 c.c., 2 spd., K.S. and C.
£48, Cedos, 247 c.c., T.S., 2 spd., K.S. and C.
£48, Calthorpe, 249 c.c., 2 spd., K.S. and C.
£48, Sparkbrook, 247 c.c., T.S., 2 spd., C.
£48, Diamond, 247 c.c., T.S., 2 spd., K.S. and C.
£48, Excelsior, 247 c.c., T.S., 2 spd., K.S. and C.
£48 6s., Radco, 247 c.c., T.S., 2 spd., K.S. and C.
£48 6s., Radco, 247 c.c., T.S. (lady's model).
£49, Levis, 211 c.c., 2 spd., K.S. and C.
£49, Cotton, 247 c.c., T.S., 2 spd., K.S. and C.
£49, O.K., 292 c.c., T.S., 2 spd., K.S. and C.
£49 13s., Sun, 269 c.c., T.S. (with rotary valve), 2 spd., K.S. and C.
£49 7s., Metro-Tyler, 269 c.c., T.S., 2 spd., K.S. and C.
£49 17s., Connaught, 293 c.c., T.S., 2 spd., K.S. and C.

Over £50, Under £60.

£50, Sirrah, 292 c.c., T.S., 2 spd., K.S. and C.
£50, Douglas, 348 c.c., 2 spd.
£50, James, 239 c.c., T.S., 2 spd., K.S. and C.
£50, P.V., 269 c.c., T.S., 2 spd., K.S. and C.
£50, Victoria, 343 c.c., 3 spd.
£50, Cedos, 247 c.c., T.S., 2 spd., K.S. and C. (lady's model).
£50, Mohawk, 247 c.c., T.S., 2 spd., K.S. and C.
£50, Sparkbrook, 247 c.c., T.S., 2 spd., K.S. and C.
£50, Omega, 348 c.c., T.S., 2 spd., K.S. and C.
£50, Royal Enfield, 225 c.c., T.S., 2 spd. (sports model).
£50, Royal Enfield, 225 c.c., T.S., 2 spd., K.S.
£50, Campion, 247 c.c., T.S., 2 spd., K.S. and C.
£50, Bown, 247 c.c., T.S., 2 spd., K.S. and C.
£50, Excelsior, 247 c.c., T.S., 2 spd., K.S. and C. (open frame model).
£50 8s., Radco, 247 c.c., T.S., 2 spd., K.S. and C. (sports model).
£51 9s., Radco, 247 c.c., T.S.
£52, Monopole, 269 c.c., T.S., 2 spd., K.S. and C.
£52, Ivy, 249 c.c., T.S., 2 spd., K.S. and C. (lady's model).
£52, Ivy, 249 c.c., T.S., 2 spd., K.S. and C.
£52, P.V., 293 c.c., single spd.
£52 10s., Metro-Tyler, 269 c.c., T.S.
£52 10s., Sun, 269 c.c. T.S.
£52 10s., New Hudson, 211 c.c., T.S., 2 spd., K.S. and C.
£52 10s., Sirrah, 250 c.c., 2 spd., K.S. and C.
£52 10s., Triumph, 249 c.c., T.S., K.S., C., electric equipment.
£52 10s., Wolf, 293 c.c., 2 spd.
£52 10s., Diamond, 247 c.c., T.S., 2 spd., K.S. and C. (all-chain drive).
£53 11s., Radco, 247 c.c., T.S. (sports model).
£54, P.V., 269 c.c., T.S.
£54, Omega, 348 c.c., T.S.
£54, Omega, 348 c.c., T.S., 2 spd., K.S. and C. (all-chain drive).
£54 12s., Metro-Tyler, 269 c.c., T.S., 2 spd.
£55, Sun, 293 c.c., 2 spd.
£55, Raleigh, 348 c.c., 2 spd., K.S. and C.
£55, Orbit, 261 c.c., T.S.
£55, Victoria, 343 c.c.
£55, Raleigh, 348 c.c., 2 spd., K.S. and C. (semi-sports model).
£55, Sirrah, 293 c.c., 2 spd., K.S. and C.
£55, Wolf, 293 c.c., 2 spd., K.S. and C.
£55, Beardmore-Precision, 348 c.c., 2 spd., K.S. and C.
£55, Peugeot, 110 c.c., T.S., single spd.
£55, J.F.S., 247 c.c., T.S., 4 spd., K.S. and C.
£55 10s., Sun, 269 c.c., T.S. (with rotary valve), 2 spd., K.S. and C.
£55 10s., O.K., 348 c.c., 2 spd., K.S. and C.
£55 13s., Connaught, 293 c.c., T.S., 2 spd., K.S. and C. (all-chain drive).
£56, Ivy, 249 c.c., T.S., 2 spd. K.S. and C. (lady's model, all-chain drive).
£56, P.V., 293 c.c., 2 spd.
£55, Ivy, 249 c.c., T.S., 2 spd., K.S. and C. (all-chain drive).
£56, Grigg, 247 c.c., 2 spd., K.S. and C.
£56, Hobart, 249 c.c., 2 spd., K.S and C.
£56, Rex Acme, 293 c.c., 2 spd., K.S. and C.
£56, Peugeot, 110 c.c., T.S., single spd. (lady's model).
£56 10s., Henley, 249 c.c.
£56 10s., O.K., 292 c.c., T.S.
£57, Ivy, 349 c.c., T.S., 2 spd., K.S. and C.
£57, Cotton, 249 c.c., 2 spd., K.S. and C.
£57, Sirrah, 348 c.c., 2 spd., K.S. and C.
£57, Cedos, 247 c.c., T.S.
£57, Omega, 2 spd., K.S. and C.
£57, Diamond, 293 c.c., 2 spd., K.S. and C.
£57, Campion, 293 c.c., 2 spd., K.S. and C.
£57 10s., Ariel, 249 c.c., 2 spd., K.S. and C.
£57 10s., Wolf, 348 c.c., 2 spd.
£57 10s., Beardmore-Precision, 348 c.c.
£57 15s., Rex Acme, 293 c.c., 2 spd., K.S. and C. (all-chain drive).
£57 15s., B.S.A., 349 c.c.
£57 15s., Hobart, 249 c.c., 2 spd., K.S. and C. (all-chain drive).
£58, Mohawk, 293 c.c., 2 spd., K.S. and C.
£58, Raleigh, 378 c.c., 2 spd., K.S. and C.
£53, Monopole, 293 c.c., 2 spd., K.S. and C.
£58, Omega, 348 c.c., T.S. (all-chain drive).
£58, Campion, 348 c.c., 2 spd., K.S. and C.
£58, Alecto, 345 c.c., T.S., 2 spd., K.S. and C. (sports model).
£58 10s., Bown, 293 c.c., 2 spd., K.S and C.
£58 10s., Hobart, 249 c.c.
£58 10s., Raleigh, 348 c.c.
£58 10s., Raleigh, 348 c.c. (semi-sports model).
£58 10s., Rex Acme, 293 c.c.
£59, Cedos, 247 c.c., T.S. (lady's model).
£59 15s., Connaught, 348 c.c., 2 spd., K.S. and C. (sports model).
£59 17s., Metro-Tyler, 349 c.c., 2 spd., K.S. and C.
£59 17s., Allon, 292 c.c., T.S., 2 spd., K.S. and C.

£60 to £70.

£60, Raleigh, 348 c.c. (all-chain drive).
£63, Cotton, 348 c.c., 2 spd., K.S. and C.
£60, Dot, 293 c.c.
£60, Sirrah, 292 c.c., T.S.
£60, F.N., 282 c.c., 2 spd., K.S. and C.
£60, Monopole, 293 c.c., 3 spd., K.S. and C.
£69, Norton, 490 c.c., single spd., C.
£69, Alecto, 345 c.c., T.S., 2 spd., K.S. and C.
£60, P.V., 293 c.c., 2 spd., K.S. and C.
£60, Sirrah, 293 c.c.
£60, Wolf, 348 c.c., T spd., T.S., K.S. and C.
£60, Diamond, 293 c.c., 2 spd., K.S. and C. (all-chain drive).
£60 5s. Hobart, 249 c.c. (all-chain drive).
£63 5s., Rex Acme, 293 c.c. (all-chain drive).
£60 15s., Rex Acme, 349 c.c., 2 spd., K.S. and C.
£60 15s., Hobart, 348 c.c., 2 spd., K.S. and C.
£63 15s., Bown, 293 c.c.
£61, Sun, 293 c.c., 3 spd., K.S. and C.
£62, Velocette, 249 c.c., T.S., K.S. and C. (sports model).
£62, Cotton, 348 c.c.
£62, Velocette, 249 c.c., T.S., 2 spd., K.S. and C.
£62, Ajax, 348 c.c., 2 spd., K.S. and C.
£62, Sparkbrook, 346 c.c. (semi-sports model).
£62, Francis-Barnett, 293 c.c., 2 spd., K.S. and C.
£62, Campion, 293 c.c.

MOTOR CYCLES FOR ALL PURSES (*continued*).

Motor Bicycles.—

£62 10s., Hobart, 348 c.c., 2 spd., K.S. and C. (all-chain drive).
£62 10s., Diamond, 293 c.c.
£62 10s., Rex Acme, 349 c.c., 2 spd., K.S. and C. (all-chain drive).
£63, Velocette, 249 c.c., T.S., 2 spd., K.S. and C. (lady's model).
£63, Allon, 292 c.c., T.S.
£63, Quadrant, 490 c.c.
£63, Campion, 348 c.c.
£63 5s., Hobart, 348 c.c.
£63 5s., Rex Acme, 348 c.c.
£63 10s., Omega, 292 c.c., 2 spd., K.S. and C.
£63 10s., Henley, 349 c.c.
£64, Sirrah, 349 c.c.
£64, P.V., 293 c.c.
£64, Francis-Barnett, 293 c.c.
£64 1s., Metro-Tyler, 349 c.c., 2 spd., K.S. and C. (all-chain drive).
£64 5s., Bown, 348 c.c., 2 spd., K.S. and C.
£65, Hobart, 348 c.c. (all-chain drive).
£65, Humber, 349 c.c.
£65, Monopole, 346 c.c., 2 spd., K.S. and C.
£65, Rudge-Multi, 499 c.c.
£65, Velocette, 249 c.c., T.S. (sports model).
£65, Ner-a-car, 283 c.c., T.S., 5 spd., K.S. and C.
£65, Victoria, 346 c.c.
£65, Levis, 247 c.c., 3 spd., K.S. and C.
£65, Chater-Lea, 348 c.c.
£65, Alecto, 345 c.c., T.S., 2 spd., K.S. and C. (sports model, all-chain drive).
£65, Ivy, 349 c.c., T.S.
£65, Zenith, 293 c.c., 2 spd., K.S. and C.
£65, Ajax, 348 c.c.
£65, Velocette, 249 c.c., T.S.
£65, New Imperial, 293 c.c.
£65, New Hudson, 346 c.c., 3 spd. and C. (sports model).
£65, Hazlewood, 293 c.c.
£65, New Hudson, 346 c.c.
£65, Weatherell, 249 c.c., 2 spd., K.S. and C.
£65, Wooler, 345 c.c., 3 spd., C.
£65, Omega, 348 c.c., T.S., 2 spd., K.S. and C.
£65, Omega, 292 c.c.
£65, Douglas, 348 c.c.
£65, Rex Acme, 348 c.c. (all-chain drive).
£65 2s., Allon, 346 c.c., 2 spd., K.S. and C.
£65 2s., Connaught, 348 c.c. (De Luxe model).
£65 10s., O.K., 348 c.c.
£65 15s., Rex Acme, 348 c.c., 2 spd., K.S. and C. (B. and S. model).
£66, Sparkbrook, 346 c.c. (semi-sports model, all-chain drive).
£66, Raleigh, 348 c.c. (sports model).
£66, Velocette, 249 c.c., T.S. (lady's model).
£66, Verus, 349 c.c., 2 spd., K.S. and C.
£66, Ivy, 349 c.c., 2 spd., K.S. and C.
£66, Bown, 348 c.c.
£66 10s., Sun, 348 c.c.
£67, Cotton, 348 c.c. (all-chain drive).
£67, Excelsior, 346 c.c.
£67, Excelsior, 348 c.c.
£67, Coventry-Mascot, 348 c.c., 2 spd., K.S. and C.
£67 4s., Metro-Tyler, 349 c.c.
£67 5s., Monopole, 346 c.c.
£67 10s., Mohawk, 346 c.c.
£67 10s., Abingdon, 499 c.c.
£67 10s., Orbit, 349 c.c. (Bradshaw model).
£67 10s., Well, 250 c.c., 2 spd., K.S. and C. (sports model).
£67 10s., Orbit, 349 c.c. (B. and S. model).
£67 10s., Monopole, 346 c.c., 2 spd., K.S. and C. (all-chain drive).
£67 10s., Rex Acme, 349 c.c., 2 spd., K.S. and C. (B. and S. model, all-chain drive).
£68, Weatherell, 348 c.c.
£68 5s., Allon, 346 c.c., 2 spd., K.S. and C. (all-chain drive).
£68 5s., Allon, 346 c.c.
£68 5s., Rex Acme, 348 c.c. (B. and S. model).
£68 10s., Henley, 349 c.c. (Bradshaw model).
£68 10s., Henley, 249 c.c. (sports model).
£68 17s. 6d., Rex-Acme, 249 c.c., 2 spd., C. (o.h.v. model).
£69, Gnome-Rhone, 499 c.c.
£69, Sparkbrook, 349 c.c., B. and S.
£69, Omega, 348 c.c., T.S.
£69, Coventry-Mascot, 349 c.c.
£69 6s., O.E.C.-Blackburne, 249 c.c.
£69 10s., Hobart, 346 c.c., 2 spd., K.S. and C. (sports model).
£69 10s., Monopole, 346 c.c. (all-chain drive).
£69 15s., Zenith, 346 c.c.
£70, Hazlewood, 293 c.c. (all-chain drive).
£70, Matchless, 348 c.c.
£70, Ivy, 349 c.c.
£70, Quadrant, 654 c.c.
£70, B.S.A. (sports model), 493 c.c.
£70, Dunelt, 499 c.c., T.S.
£70, Cotton, 249 c.c. (o.h.v. model).
£70, Douglas, 348 c.c. (all-chain drive).
£70, Beardmore-Precision, 496 c.c.
£70, Massey, 348 c.c.
£70, Orbit, 348 c.c. (o.h.v. model).
£70, Rex Acme, 349 c.c. (B. and S. model, all-chain drive).
£70, Martinsyde, 346 c.c.
£70, Weatherell, 249 c.c., 2 spd., K.S. and C. (o.h.v. model).
£70, H.B., 349 c.c.
£70, Francis-Barnett, 346 c.c. (sports model).
£70, H.B., 348 c.c. (sports model).

Over £70, Under £80.

£71, P.V., 346 c.c.
£71 7s. 6d., Rex Acme, 249 c.c., 3 spd., C. (o.h.v. model).
£71 8s., O.E.C.-Blackburne, 346 c.c.
£71 8s., Allon, 346 c.c., all-chain drive.
£71 10s., Rex Acme, 348 c.c., 2 spd., C. (o.h.v. model).
£72, Martinsyde, 346 c.c. (sports model).
£72, Coventry-Mascot, 348 c.c.
£72, Hobart, 346 c.c. (sports model).
£72, Sheffield-Henderson, 348 c.c.
£72, Cotton, 348 c.c. (o.h.v. model).
£72, Sheffield-Henderson, 350 c.c.
£72, Sheffield-Henderson, 348 c.c. (sports model).
£72, B.S.A., 557 c.c.
£72, Coventry-Mascot, 348 c.c. (sports model).
£72, Francis-Barnett, 346 c.c.
£72 10s., Wolf, 345 c.c.
£72 10s., Massey, 348 c.c. ("Brooklands" model).
£72 10s., Massey, 346 c.c.
£72 10s., Chater-Lea, 348 c.c. (o.h.v. model).
£72 10s., Henley, 545 c.c.
£72 10s., Henley, 348 c.c. (sports model).
£72 10s., Diamond, 348 c.c.
£73, P.V., 349 c.c. (B. and S. model).
£73, New Imperial, 249 c.c., 3 spd., C.
£73, Grigg, 350 c.c. (sports model).
£73, Beardmore-Barr and Stroud, 349 c.c.
£74, P.V., 346 c.c. (all-chain drive).
£74, Rex Acme, 348 c.c., 3 spd., C. (o.h.v. model).
£74, Zenith, 249 c.c. (sports model).
£75, Ariel, 493 c.c. (sports model).
£75, B.S.A., 557 c.c. (all-chain drive).
£75, Francis-Barnett, 346 c.c. (T.T. model).
£75, Chater-Lea, 545 c.c.
£75, Dot, 349 c.c. (Bradshaw sports model).
£75, Victoria, 545 c.c.
£75, Sirrah, 249 c.c. ("Brooklands" model), 3 spd., C.
£75, Dunelt, 499 c.c., T.S. (all-chain drive).
£75, Quadrant, 645 c.c. (all-chain drive).
£75, Orbit, 500 c.c. (B. and S. model).
£75, James, 499 c.c.
£75, New Hudson, 499 c.c., 3 spd. and C. (super sports model).
£75, Wolf, 545 c.c.
£75, Hazlewood, 346 c.c.
£75 10s., Massey, 346 c.c. ("Brooklands" model).
£75 10s., Wooler, 345 c.c., 3 spd., C. (all-chain drive).
£75 12s., Hawker, 348 c.c.
£76, P.V., 349 c.c. (B. and S., all-chain drive model).
£76, O.K., 249 c.c. (sports model).
£76, Verus, 348 c.c.
£77, Sirrah, 249 c.c. (o.h.v. "Brooklands" model).
£77, Zenith, 346 c.c. (sports model).
£77, A.J.S., 349 c.c. (sports model).
£77, A.J.S., 349 c.c.
£77 10s., Wolf, 545 c.c. (all-chain drive).
£77 10s., Diamond, 349 c.c. (B. and S. model).
£77 10s., Lea-Francis, 496 c.c.
£78, Dot, 349 c.c., C. (sports model).
£78, New Imperial, 346 c.c., 3 spd., C.
£78, H.B., 348 c.c., 3 spd. and C. (o.h.v. model).
£78 15s., Edmund, 348 c.c. (sports model).
£78 15s., Edmund, 348 c.c.
£78 19s., Edmund-B. and S., 349 c.c.
£79, Norton, 490 c.c. (sports model).
£79, Ariel, 493 c.c.
£79 16s., Metro-Tyler, 349 c.c. (o.h.v. model).

£80 to £90.

£80, Norton, 490 c.c. (touring model).
£80, Sirrah, 346 c.c. ("Brooklands" model), 3 spd., C.
£80, Dot, 348 c.c. (o.h.v. sports model).
£80, Wooler, 345 c.c., 3 spd., C.
£80, Sirrah, 349 c.c. ("Overseas" model).
£80, Weatherell, 348 c.c. (o.h.v. model).
£80, Beardmore-Precision, 598 c.c.
£80, Powell, 547 c.c.
£80, Wolf, 345 c.c. (all-chain drive).
£81 18s., O.E.C.-Blackburne, 249 c.c. (o.h.v. model).
£82, Monopole, 499 c.c.
£82, Norton, 490 c.c. (Colonial model).
£82 10s., Ariel, 993 c.c. (sports model, all-chain drive).
£82 10s., Powell, 547 c.c. (all-chain drive).
£84, Sirrah, 348 c.c. ("Brooklands" model), 3 spd., C.
£84, Edmund, 348 c.c. (o.h.v. model).
£84, Edmund, 346 c.c. (special J.A.P. engine).
£84, Norton, 633 c.c. (utility model).
£84, O.E.C.-Blackburne, 346 c.c. (o.h.v. model).
£84, Hawker, 545 c.c.
£84, Hawker, 348 c.c., 2 spd., C. (o.h.v. model).
£84 10s., Monopole, 499 c.c. (all-chain drive).
£84 10s., Triumph, 550 c.c., electrical equipment.
£85, Campion, 550 c.c.
£85, Douglas, 595 c.c.
£85, Verus, 249 c.c. (sports model), 3 spd., C.
£85, Rudge, 499 c.c., 4 spd., K.S. and C.
£65, G.S.D., 349 c.c., 4 spd., K.S. and C.
£65, B.S.A., 770 c.c.
£85, Abingdon, 624 c.c.
£87, A.J.S., 349 c.c., 3 spd., C. (o.h.v. model).
£87, Ariel 493 c.c. (all-chain drive).
£87, Verus, 249 c.c. (o.h.v. sports model), 3 spd., C.
£87 3s., O.E.C.-Blackburne, 545 c.c.
£89, Humber, 600 c.c. (sports model).
£89, Scott, 486 c.c., T.S., 2 spd., K.S. and C.
£90, Verus, 348 c.c. (sports model), 3 spd., C.
£90, Douglas, 595 c.c. (all-chain drive).
£90, Zenith, 494 c.c., variable gear.
£90, P.V., 493 c.c.
£90, Quadrant, 654 c.c. (De Luxe model, all-chain drive).
£90, Sheffield-Henderson, 348 c.c. (o.h.v. model), no kick-starter.
£90, B.S.A. (De Luxe model), 770 c.c.
£90, Rex Acme, 550 c.c.

Over £90, Under £100.

£93 10s., Triumph, 550 c.c. (all-chain drive), electrical equipment.
£94, Wooler, 499 c.c., 3 spd., C.
£94, Verus, 348 c.c. (o.h.v. sports model), 3 spd., C.
£94 10s., Metro-Tyler, 698 c.c.
£94 10s., Sunbeam, 347 c.c.
£95, Ariel, 665 c.c.
£95, P.V., 493 c.c. (super-sports engine).
£95, Abingdon, 795 c.c.
£95, Ariel, 776 c.c.
£95, Douglas, 494 c.c.
£95, Zenith, 494 c.c.
£95, James, 749 c.c.
£95, Duzmo, 496 c.c.
£95, Rex Acme, 499 c.c. (B. and S. model).
£95, Scott, 532 c.c., T.S., 2 spd., K.S. and C.
£96 10s., Indian, 595 c.c.
£96 10s., Triumph, 499 c.c., electrical equipment.
£96 10s., Lea-Francis, 592 c.c.
£97 10s., Coventry Victor, 688 c.c.
£97 10s., Coventry Victor, 688 c.c. (sports model).
£98, Norton, 490 c.c. (o.h.v. model).
£98, Excelsior, 680 c.c.
£98 10s., Coventry Victor, 688 c.c. (special model).
£98 10s., Zenith, 654 c.c., variable gear.
£99, Humber, 600 c.c. (touring model).

£100 to £110.

£100, P.V., 680 c.c.
£100, P. and M., 555 c.c., 4 spd., K.S. and C.
£100, P. and M., 555 c.c., 4 spd., K.S. and C. (sports model).
£100, Raleigh, 700 c.c.
£100, Rudge, 998 c.c., 4 spd., K.S. and C.
£100, Bianchi, 498 c.c.
£100, Ariel, 776 c.c. (all-chain drive).
£103, Excelsior, 980 c.c.
£105, Mohawk, 770 c.c.
£105, Ariel, 994 c.c.
£105, Harley-Davidson, 584 c.c.
£105, Sunbeam, 499 c.c.
£105, Monopole, 680 c.c.
£105, P. and M., 555 c.c., 4 spd., K.S. and C.
£105, Douglas, 733 c.c.
£105, Weatherell, 696 c.c.
£105, American X, 999.5 c.c.
£107, Indian, 997 c.c. (standard model).
£107, B.S.A., 986 c.c.
£107 15s., Harley-Davidson, 988 c.c.
£109, Zenith, 976 c.c., variable gear.
£110, Scott, 532 c.c., T.S.
£110, Scott, 486 c.c., T.S., 2 spd., K.S. and C.
£110, Coventry Victor, 688 c.c. (super-sports model).
£110, F.N., 748 c.c.
£110, Matchless, 976 c.c. (sports model).
£110 5s., Sunbeam, 492 c.c. (T.T. sports model).
£110 5s., Sunbeam, 499 c.c. (sports model).

£111 to £120.

£111 6s., O.E.C.-Blackburne, 696 c.c.
£112 10s., Harley-Davidson, 988 c.c. (electric model).
£113, Indian, 596 c.c. (electric model).
£113 8s., O.E.C.-Blackburne, 998 c.c.
£115, Zenith, 976 c.c.
£115, Matchless, 976 c.c. (super-sports model).
£115, Brough Superior, 740 c.c.
£115, Weatherell, 696 c.c. (o.h.v. model).
£117, New Imperial, 976 c.c.
£120, Harley-Davidson, 1,203 c.c.
£120 15s., Sunbeam, 599 c.c.

£121 to £130.

£123, Indian, 997 c.c. (electric model).
£124 15s., Harley-Davidson, 1,208 c.c. (electric model).
£125, Brough Superior, 740 c.c. (sports model).
£125, Zenith, 976 c.c. (super-"eight" model).
£125, Martinsyde, 673 c.c.

£131 to £140.

£131, Zenith, 976 c.c., 4 spd., K.S. and C.
£132, Indian, 997 c.c.
£135, Bianchi, 600 c.c.
£137, Henderson, 1,301 c.c.
£137, Indian, 1,204 c.c.
£140, Dot, 976 c.c. (sports model).

Over £140.

£141 15s., Sunbeam, 976 c.c.
£145, P.V., 976 c.c.
£150, Brough Superior, 976 c.c.
£160, Brough Superior, 976 c.c. (with 80 m.p.h. certificate).

MOTOR CYCLES FOR ALL PURSES (*continued*).

PASSENGER MOTOR CYCLES AND RUNABOUTS.

Under £70.

£33 12s., Airolite, 110 c.c., T.S., with child's sidecar.
£32 12s., Airolite, 110 c.c., with trade carrier.
£60 18s., Radco, 247 c.c., T.S., with trade carrier.
£63, Radco, 247 c.c., with T.S., "No. 2" sidecar.
£67, Sirrah, 292 c.c., T.S., with sidecar.
£69 10s., Powell, 343 c.c., T.S., with sidecar.

£70 to £80.

£70, Victoria, 343 c.c., with sidecar.
£70 7s., Radco, 247 c.c., T.S., with sidecar.
£72, Sirrah, 293 c.c., with sidecar.
£72 10s., Grigg, 343 c.c., T.S., with sidecar.
£72 10s., Orbit, 261 c.c., T.S., with sidecar.
£73 15s., Radco, 247 c.c., T.S., with sidecar (sports model).
£74, Sirrah, 349 c.c., with sidecar.
£74 10s., O.K., 292 c.c., T.S., with sidecar.
£75, Beardmore-Precision, 348 c.c., with sidecar.
£75, Sparkbrook, 346 c.c. with sidecar.
£75, Calthorpe, 349 c.c., 3 spd., K.S. and C., with sidecar.
£75, Omega, 348 c.c., T.S., with sidecar.
£77 10s., Wooler, 345 c.c., 3 spd., C., with sidecar.
£78 15s., Connaught (De Luxe model), 348 c.c., with sidecar.
£80, Victoria, 346 c.c., with sidecar.
£80, 499 c.c. Rudge-Multi.
£80, Quadrant, 490 c.c., with sidecar.
£80, Grigg, 343 c.c., with sidecar.
£80 17s., Allon, 346 c.c., with sidecar.

Over £80, Under £90.

£83, Raleigh, 378 c.c., with sidecar.
£83, Raleigh, 378 c.c., with trade carrier.
£84, Allon, 346 c.c., with sidecar.
£85, Argson, 170 c.c., single spd. (invalid carriage).
£85, Orbit, 349 c.c. (B. and S. model), with sidecar.
£85, Orbit, 349 c.c. (Bradshaw model), with sidecar.
£85, Velocette, 249 c.c., T.S., with sidecar.
£85, Sun, 348 c.c., with sidecar.
£85, Francis Barnett, 346 c.c., with sidecar.
£85, New Imperial, 346 c.c., with sidecar.
£87, Coventry-Mascot, 348 c.c., 2 spd. K.S. and C., with sidecar.
£87, Ivy, 349 c.c., T.S., with sidecar.
£87 10s., Orbit, 348 c.c. (o.h.v. model), with sidecar.
£88, Sheffield-Henderson, 350 c.c., with sidecar.
£88, Sheffield-Henderson, 348 c.c., with sidecar.
£89, Coventry-Mascot, 249 c.c., with sidecar.
£89 10s., Dunelt, 499 c.c., T.S., with sidecar.

£90 to £100.

£90, Victoria, 549 c.c., with sidecar.
£90, Victoria, 549 c.c., with trade carrier.
£90, Sheffield-Henderson, 350 c.c., with sports sidecar.
£90, Quadrant, 654 c.c., with sidecar.
£90, Sheffield-Henderson, 348 c.c., with sports sidecar.
£90, Beardmore-Precision, 496 c.c., with sidecar.
£90, Sheffield-Henderson, 348 c.c. (sports model), with sports sidecar.
£90, Beardmore-Barr and Stroud, 349 c.c., with sidecar.
£90, Alecto, 345 c.c., T.S., with sidecar.
£92 10s., Massey, 346 c.c., with sidecar.
£92 10s., Orbit, 499 c.c. (B. and S. model), with sidecar.
£94 10s., Xtra Car, 247 c.c., T.S., 2 spd., hand-starter and C.
£95, Dunelt, 499 c.c., T.S. (all-chain drive), with sidecar.
£95, Quadrant, 654 c.c. (all-chain drive), with sidecar.
£95 10s., Wooler, 345 c.c. with sidecar.
£96, Verus, 348 c.c., with sidecar.
£96 10s., Henley, 345 c.c., with sidecar.
£97, B.S.A., 557 c.c., with sidecar.
£97 13s., O.E.C.-Blackburne, 346 c.c., with sidecar.
£97 15s., Edmund, 348 c.c. (sports model), with sidecar.
£97 15s., Edmund, 348 c.c., with sidecar.
£99, A.J.S., 349 c.c., with sidecar.
£99 15s., Lea-Francis, 496 c.c., with sidecar.
£99 15s., Xtra Car, 343 c.c., T.S., 2 2 spd., hand-starter and C.
£100, Harper Runabout, 269 c.c. (single-seated three-wheeler).
£100, Rudge, 499 c.c., 4 spd., K.S., and C., with sidecar.
£100, Chater-Lea, 545 c.c., with sidecar.
£100, Beardmore-Precision, 598 c.c. (rigid frame), with sidecar.

Over £100, Under £110.

£101 10s., Norton, 490 c.c., with sporting sidecar.
£102, Ariel, 498 c.c., with sidecar (all-chain drive, sports model).
£102 10s., Powell, 547 c.c., with sidecar.
£102 10s., Powell, 547 c.c., with trade carrier.
£103, Sheffield-Heoderson, 348 c.c. (o.h.v. model), with sports sidecar).
£105, Xtra Car, 343 c.c., T.S., 2 spd., hand-starter and C.
£105, Hawker, 545 c.c., with sidecar.
£105, Beardmore-Precision, 598 c.c., with sidecar.
£105, Humber, 600 c.c. (sports model), with sidecar.
£105, Dunelt, 499 c.c., T.S., with De Luxe sidecar.
£105 17s. 6d., Triumph, 550 c.c., with trade carrier, electric equipment.
£106 17s. 6d., Triumph, 550 c.c., with sports sidecar, electric equipment.
£107, Ariel, 498 c.c., with sidecar.
£108, Dunelt, 499 c.c., T.S. (all-chain drive), with De Luxe sidecar.

£110 to £120.

£110, Douglas, 595 c.c., with sidecar.
£110, Quadrant, 654 c.c., with sidecar (De Luxe model, all-chain drive).
£110, Hazlewood, 654 c.c., with trade carrier.
£110, Hazlewood, 654 c.c., with sidecar.
£112, New Hudson, 595 c.c. (sports model), with sports sidecar.
£112, New Hudson, 595 c.c., with sidecar.
£112, Hazlewood, 654 c.c. (sports model), with sidecar.
£112, Norton, 633 c.c., with Family sidecar.
£112 2s. 6d., Triumph, 550 c.c., with sidecar, electric equipment.
£113 8s., O.E.C.-Blackburne, 550 c.c., with sidecar.
£113 10s., Norton, 633 c.c., with Doorway sidecar.
£114 17s. 6d., Triumph, 550 c.c. (all-chain drive), with trade carrier, electric equipment.
£114 18s. 6d., Rex Acme, 550 c.c., with sidecar.
£115, Hazlewood, 976 c.c., with sidecar.
£115, Chater-Lea, 976 c.c., with sidecar.
£115, Douglas, 595 c.c. (all-chain drive), with sidecar.
£115 17s. 6d., Triumph, 550 c.c. (all-chain drive), with sports sidecar, electric equipment.
£117, Coventry Victor, 688 c.c., with sidecar.
£118, Hazlewood, 654 c.c., with sidecar.
£118, Excelsior, 680 c.c., with sidecar.
£118 10s., Indian, 596 c.c., with sidecar.
£118 17s. 6d., Triumph, 499 c.c., with sports sidecar, electric equipment.
£119 10s., Ariel, 776 c.c., with sidecar.
£119 18s. 6d., Rex Acme, 499 c.c. (B. and S. model), with sidecar.
£120, Campion, 976 c.c., with sidecar.
£120, Scott, 532 c.c., T.S., 2 spd., K.S. and C., with sidecar.
£120, Coventry Victor, 688 c.c., with sidecar (special model).
£120, Royal Enfield, 976 c.c., with sidecar.
£120, Royal Enfield, 976 c.c., trade carrier.
£120, Humber, 600 c.c. (touring model), with sidecar.
£120 10s., Lea-Francis, 592 c.c., with sidecar.

£121 to £130.

£121 2s. 6d., Triumph, 550 c.c. (all-chain drive), with sidecar, electric equipment.
£122, P.V., 680 c.c., with sidecar.
£122 17s., Xtra Car, 976 c.c., 2 spd., hand-starter and C.
£123, Excelsior 976 c.c., with sidecar.
£123, Hazlewood, 654 c.c., with sidecar (all-chain drive).
£124, Lea-Francis, 592 c.c., with coupette sidecar.
£125, Royal Enfield, 976 c.c., with 2-seater sidecar.
£125, Clyno, 925 c.c., with sidecar.
£125, James, 749 c.c., with sidecar.
£125, P. and M., 555 c.c., 4 spd., K.S. and C., with sidecar.
£125, Rudge, 998 c.c., 4 spd., K.S. and C., with sidecar.
£125, Raleigh, 700 c.c., with sidecar.
£125, New Imperial, 976 c.c., with sidecar.
£125, New Hudson, 595 c.c., with De Luxe sidecar.
£125, New Hudson, 595 c.c., with Family sidecar.
£125 12s. 6d., Triumph, 499 c.c., with super-sports sidecar, electric equipment.
£127, New Imperial, 976 c.c., with trade carrier.
£127 10s., Coventry Victor, 688 c.c., with two-seater sidecar.
£128, Morgan, 976 c.c. or 998 c.c., 2 spd., handle-starter and C.
£130, Matchless, 976 c.c. or 993 c.c., with sidecar.
£130, Raleigh, 700 c.c., with De Luxe sidecar.
£130, New Imperial, 976 c.c., with tandem sidecar.
£130, Dot, 976 c.c., with sidecar.
£130, Brough Superior, 976 c.c.
£130, Martinsyde, 678 c.c., with sidecar.
£130, Matchless, 976 c.c., with sports sidecar.
£130, Martinsyde, 678 c.c., with sports sidecar.
£130, Martinsyde, 678 c.c., with trade carrier.
£130 5s., American X, 999.5 c.c., with sidecar.

£131 to £140.

£133, Indian, 997 c.c. (standard model), with sidecar.
£134, New Imperial, 976 c.c., with coupé sidecar.
£134 10s., Ariel, 994 c.c., with sidecar.
£135, F.N., 748 c.c., with sports sidecar.
£135, F.N., 748 c.c., with sidecar.
£135, Royal Enfield 976 c.c., with sidecar, electrically equipped.
£135, Scott, 532 c.c., T.S., with sidecar.
£135, Indian, 596 c.c., with sidecar (electric model).
£135, Harley-Davidson, 998 c.c., with sidecar.
£136, P. and M., 555 c.c., 4 spd., K.S. and C., with sidecar.
£138 12s., O.E.C.-Blackburne, 700 c.c., with sidecar.
£139 15s., Harley-Davidson, 998 c.c., with sidecar (electric model).
£140, B.S.A., 986 c.c., with sidecar.
£140, F.N., 748 c.c., with De Luxe sidecar.
£140, Douglas, 733 c.c., with sidecar.
£140, Matchless, 976 c.c. or 993 c.c. (model "H"), with sidecar.
£140, F.N., 748 c.c., with "Family" sidecar.
£140, Matchless, 976 c.c. or 993 c.c. with sidecar (sports model).
£140, Royal Enfield, 976 c.c., special trade carrier.
£140, Harley-Davidson, 988 c.c., with two-seater sidecar.
£140 14s., O.E.C.-Blackburne, 998 c.c., with sidecar.

£141 to £150.

£141 15s Sunbeam, 499 c.c., with sidecar.
£145, Harley-Davidson, 988 c.c., with two-seater sidecar (electric model).
£145, Matchless, 976 c.c. or 993 c.c., with sidecar (super sports model).
£145, Matchless, 976 c.c. or 993 c.c., with two-seater sidecar.
£145, Coventry-Victor, 688 c.c., with sidecar (De Luxe model).
£145 19s., L.S.D., 976 c.c. (three-wheeler).
£147 5s., Harley-Davidson, 1,208 c.c., with sidecar.
£149, Indian, 997 c.c. (electric model), with sidecar.
£150, Bianchi, 600 c.c. with sidecar.
£150, Campion, 980 c.c., with sidecar (De Luxe model).

£151 to £160.

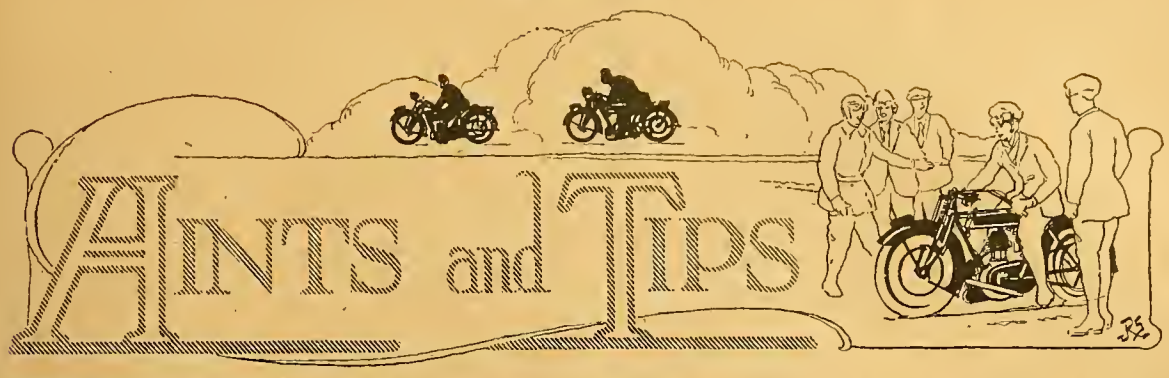
£152, Harley-Davidson, 1,208 c.c., with sidecar (electric model).
£152 10s., A.J.S., 799 c.c., with sidecar.
£152 10s., Harley-Davidson, 1,208 c.c., with two-seater sidecar.
£155, T.B., 976 c.c., 3 spd., reverse, handle-starter and C.
£157, Campion, 976 c.c., with sidecar (sports model).
£157 5s., Harley-Davidson, 1,208 c.c., with two-seater sidecar (electric model).
£157 10s., Sunbeam, 599 c.c., with sidecar.
£157 10s., A.J.S., 799 c.c., with two-seater sidecar.
£158, Indian, 997 c.c., with sidecar.
£158, Morgan, 976 c.c. or 998 c.c., 2 spd., handle-starter and C. ("Family" model).
£160, Morgan, 976 c.c., 2 spd., handle-starter and C. (Grand Prix model).

£161 to £170.

£163, Indian, 1,204 c.c., with sidecar.
£163 5s., Henderson, 1,301 c.c., with sidecar.
£165 10s., T.B., 976 c.c., 3 spd., reverse, handle-starter and C. (De Luxe model).
£167, P.V., 976 c.c., with sidecar.
£167, Indian, 1,204 c.c., with two-seater sidecar.
£170, Dot, 976 c.c., with sidecar (sports model).

Over £170.

£175, T.B., 976 c.c., 3 spd., reverse, handle-starter and C. (sports model).
£176 8s., Scott Sociable, 578 c.c. (three-wheeler).
£184, Brough Superior, 998 c.c., with sidecar.
£186 18s., Sunbeam, 976 c.c., with sidecar.
£200, Morgan, 976 c.c., 2 spd., handle-starter and C. ("Aero" model).



The Third of a New Series of Notes for the Beginner Explaining in Non-technical Language Points which may have Mystified Him.

TIMING THE ENGINE.

PROBABLY the timing gear of an engine is the most mysterious department to the man who but rarely dabbles in technical matters. There is, however, one golden rule for re-assembling valve timing gear which is guaranteed to put anyone who understands it on the right road to timing any engine in half a minute. Assuming the cam wheels are not punch marked, and the timing is unknown, proceed as follows: place the piston on top dead centre (on a twin-cylinder engine the back cylinder is No. 1—time from that) and bear in mind that the engine is now at the end of the exhaust stroke and at the beginning of the induction stroke. Insert the exhaust cam wheel in such a position, therefore, that the slightest revolution of the engine will cause the cam just to pass from under the rocker which lifts the valve. Place the inlet cam wheel in mesh with the small pinion on the engine shaft so that the cam is just about to lift the valve. Every engine yet made is correctly timed if the exhaust valve shuts immediately past the top dead centre whilst the inlet valve is just lifting as the exhaust closes. One tooth either way will make a great deal of difference, and the incorrectness of the timing will be immediately apparent. If the timing of a strange engine is approached from the other direction —*i.e.*, the opening of the exhaust valve—the process is not nearly so simple.

NOISY TIMING GEAR.

THE timing gear of an engine can give rise to noises which an unpractised ear may blame on to other inoffensive parts, such as big end bearing and piston. If the teeth of the cam wheels are not a perfect fit, they will set up either a "sing," or else a rattle, depending on whether they are too deep in mesh or too loose fitting. A rattling timing gear will lead many people to wager that the big end bearing has developed slackness. A good way to trace noise due to timing gear is to leave the engine running slowly on the stand, and, with a long wood-handled screwdriver, to place the business end on the outside of the timing case near to one of the cam wheels and to press the ear against the wood handle. This simple stethoscope can be turned to good account in locating quite a number of elusive engine noises, the sounds being intensified in an extraordinary manner.

MAKERS' TIMING BEST.

ONE of the first parts of the engine to which the would-be tuner-up turns when he feels that he is a budding Pullin is the valve timing gear, under the impression that, by making the exhaust or inlet valve open earlier or later, more speed will be obtained. Don't fall into this trap. No advantage whatever can accrue from such procedure, provided the timing gear has been assembled correctly in the first place. If incorrect valve timing is suspected, remove the compression tap and place the piston at top dead centre of the exhaust stroke. If the exhaust valve is on the point of closing, and the inlet valve is just lifting from its seating, the timing is perfectly correct, and any alteration of the cam wheels by one tooth will make matters worse instead of better.

MAGNETO TIMING.

SOMETIMES it is possible to make an improvement in running by adjusting the setting of the magneto. If it is not sufficiently advanced, the engine runs sluggishly and uses more fuel than it should. It will also run hotter. The spark must occur before the piston reaches the top of the compression stroke, in order that the explosion may have raised the pressure of the gas inside the cylinder to its maximum by the time the piston is on the point of descending on the working stroke. If the spark occurs too late, the gas is not properly ignited, and consequently some portion of its expansion power is lost. It is easy to tell if the spark is timed late; with the machine running on the road, retard the ignition slightly. If the power immediately falls off and the engine becomes "dead" and sluggish, will not accelerate, and has no speed, then the spark is late. Correctly timed, it should be possible to retard the spark a trifle without any appreciable effect upon running being felt. To make a rough test on the stand, set the throttle to allow the engine to run fairly slowly and then retard the spark fully. If the engine peters out altogether, it may be taken that the ignition is late. The engine should continue to run on full retard, but in a ponderous, deliberate sort of fashion. A good all-round method of timing the magneto is to place the piston on top dead centre of the compression stroke and, retarding the ignition lever *almost* fully, set the contact-breaker points just separating.

MOTOR CYCLISTS' INTERNATIONAL CONGRESS.

Ten Countries Represented at the Winter Conference of the F.I.C.M.

A.C.U. not to Control Cycle Cars. Record Conditions to be Altered. Next Year's International Six Days Trials in Sweden.

DELEGATES from ten large motor cycling countries met in London last week. For the first time since 1919 the International Federation of Motor Cycle Clubs, known as the F.I.C.M., held congress in England.

A sub-committee sat for the purpose of confirming and checking claims for world's records, with the result that for the first time since motor cycle records have been placed on a proper footing Continental nations figure in the world's records list. Consequently in the list, published elsewhere in this issue, Italy has several records to her credit in Class B, and France has a record in the new Class Z for motor-assisted bicycles, another in the "scooter" class (Class Y, for machines not exceeding 175 c.c.), and two more in the cycle car classes.

Ten Nations Represented.

The delegates of the *Fédération Internationale des Clubs Motocyclistes* were entertained at an official luncheon by Great Britain, and ten nations were represented—the United States of America, Spain, Holland, Italy, Belgium, France, Denmark, Sweden, Switzerland, and Great Britain.

At the conference the chair was occupied by the Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O., who was ably supported by M. Jules Neher, President of the Swiss Motor Cycle Union, who rapidly translated every speech into French.

Arising out of the minutes of the last meeting at Geneva on August 11th was a point concerning tyre sizes for Class E (1,000 c.c.) machines on racing tracks. On the occasion of the last meeting it was decided that such machines need not have tyres exceeding 65 mm., as owing to the extreme angle at which these machines lean over at high speeds large tyres prove a source of danger. This matter was again brought up, and after a little discussion it was decided that the rule might also apply to sidecars. Mr. W. H. Wells (U.S.A.) pointed out that, naturally, with sidecars the question of danger did not arise, but it might prove awkward to change over tyres during a race meeting, and consequently it was agreed that the rule might apply to Class G sidecar outfits also.

A considerable amount of time was devoted to hearing reports on the state of motor cycle affairs in Spain, which are still in a somewhat chaotic condition. Assurance, however, was received from the Spanish delegate, Señor Gutierrez, who reported that the Royal Spanish Motor Cycle Club was using every effort to form a representative motor cycling body in his country, but difficulty was experienced in getting the Cataluña Club, which also aspires to govern the pastime, to see eye to eye with the R.S.M.C.C. He assured the meeting that his club had the support of all the Spanish clubs except the last-named, and that even the Hispano-American Federation had approached it with a view to representation. In consequence, the chairman stated that all that could be done would be to accept the assurance of the Spanish representatives that they would do all in their power to bring the Cataluña Club into the family.

Control of Four-wheel Cycle Cars.

An interesting discussion followed respecting the control of cycle cars. In all Continental countries cycle cars with engines up to 1,100 c.c. and not exceeding 350 kilogrammes in weight (770 lb.) were looked after by the motor cycling bodies, but at the present moment in

OFFICIALS AND DELEGATES AT THE F.I.C.M. CONGRESS IN LONDON.

(1) The Hon. Sir Arthur Stanley, G.B.E., C.B., M.V.O., President F.I.C.M. (2) Count Albert Bonacossa, Vice-President F.I.C.M. (Italy). (3) M. Jules Neher, Vice-President F.I.C.M. (Switzerland). (4) Sir Julian Orde, Secretary R.A.C., Vice-President A.C.U. (5) Col. F. S. Brereton, C.B.E., Chairman A.C.U. (6) T. W. Loughborough, General Secretary F.I.C.M., Secretary A.C.U. (7) L. B. Gutierrez (Spain). (8) E. Collignon (Belgium). (9) A. V. Ebblewhite (Great Britain). (10) M. Pire (Belgium). (11) A. W. Polack (France). (12) G. K. Anderson (Sweden). (13) F. Ribed (Spain). (14) Major Dixon Spain, D.F.C., Assistant Secretary A.C.U. (15) A. C. Reynolds (Great Britain). (16) H. P. E. Harding (Great Britain). (17) Capt. Axel Tryde (Denmark). (18) Baron C. Nothomb, President Belgian Motor Cyclists' Federation. (19) J. G. van Turenhout (Holland). (20) H. R. Watling, General Manager British Motor Cycle Manufacturers' Union. (21) W. H. Wells (U.S.A.). (22) M. Zegers Veeckens (Holland). (23) E. M. P. Boileau (Great Britain). (24) E. d'Eternod (Switzerland). (25) J. W. G. Brooker, Chairman Competitions Committee A.C.U. (26) Prof. A. M. Low, Management Committee A.C.U.

Motor Cyclists' International Congress.—England every pleasure vehicle with four wheels remains under the ægis of the Royal Automobile Club.

Mr. W. H. Wells (U.S.A.) strongly supported the existing arrangement, but the Continental representatives—M. A. W. Polack (France), Baron Nothomb (Belgium), and M. Jules Neher (Switzerland)—took the other view, and on the suggestion of Mr. E. M. P. Boileau (Great Britain) the chairman put the matter to the vote, and the meeting expressed itself in favour of adopting the general Continental policy.

The matter was then left to be decided finally by the Congress of Recognised Automobile Clubs, held last Thursday (where it was decided that the R.A.C. would continue to control the cycle car movement in this country).

International travelling arrangements also received the attention of the meeting, but after some discussion it was felt that it would be wiser to leave the existing formalities as they were. M. Neher stated that the whole matter was an extremely delicate one, but it was hoped that eventually one document would suffice for the purpose of driving licence, customs facilities, insurance, and so forth.

Records in More Than One Class.

A somewhat important decision was come to regarding the rules under which records were run, the question involved being whether a machine of a smaller class, owing to its superior speed, might hold records in the class above it. The matter was very fully thrashed out, and it was eventually decided that such a procedure would not be allowed unless the smaller machine conformed to the limits applicable to the superior class—*e.g.*, as regards weight and size of tyres.

Interesting news was forthcoming concerning the 1923 International Six Days Trials. Mr. G. K. H. Anderson (Sweden) stated that since 1913 his club had organised trials every year, of which the most important were the May Trials over a course of more than 1,700 kilometres (approximately 1,056 miles), and for which last year eighty entries were received. Next year's International Trials would be organised in conjunction with the Norwegian club, and two days would be spent in Norway. The rules would be mainly on the lines of those followed in the 1922 event which was held in Switzerland, but no marks would be lost for condition. He also pointed out that whereas the speed limit in Sweden was 36 km.p.h. (22.3 m.p.h.), in Norway it was 30 km.p.h. (about 18.6 m.p.h.). The trial will include several hill climbs and a flying kilometre speed trial.

The next business of the meeting was to draw up the International Fixture List for 1923, which stands as follows :—

June 10th.—Swiss Grand Prix.
June 11th, 13th, 15th.—T.T. Races (I.O.M.).
June 23rd-24th.—Fanoe Speed Trials (Denmark).
June 30th.—The Spanish Twelve Hours Race.
A date between July 1st-15th.—French Grand Prix.
15 days after French Grand Prix.—Belgian Grand Prix.
August 6th-12th.—International Six Days Trials (Sweden).
August 29-September 5th.—English Six Days Trials.
September 10th.—Italian Grand Prix.

Count Bonacossa (Italy) asked for details of rules affecting the running of records, and the inclusion of records from 7 to 11 hours, which had been previously omitted. This request was also put forward by Great Britain, as it was felt to be illogical to leave a gap between the 6 and 12 hours records.

Mr. W. H. Wells (U.S.A.) asked that no record made by one man should be superseded by one made by team riders, which was referred to the Special Records Sub-Committee.

Details of rules affecting records were left to a special Sub-Committee consisting of Count Bonacossa (Italy), Messrs. T. W. Loughborough, A. V. Ebblewhite (Great Britain), and Mr. W. H. Wells (U.S.A.).

Count Bonacossa also called for a definition between motor-assisted bicycles and lightweight motor bicycles, and this was finally left to the Records Committee to deal with.

Additional Trophy.

Mr. Zegers Veeckens (Holland) proposed that a cup should be offered in the International Six Days Trials for competition among international teams composed of riders of machines of foreign manufacture. It will be recalled that in this year's event in Switzerland the Norwegians desired to enter, but were precluded on account of the fact that there is no Norwegian-made motor cycle.

A complaint of the Royal Dutch M.C.C. regarding the failure of England to send a team to the Anglo-Dutch trial last summer was fully discussed. Matters were gone into in great detail by Mr. J. W. G. Brooker, chairman of the A.C.U. Competitions Committee, who showed that there were faults on both sides; but Colonel F. S. Brereton, chairman of the A.C.U., admitted that the fault was largely his, and tendered the Dutch club a humble apology, and sincerely hoped that he would be able to visit Holland with an English team next year.

After the vote of thanks to the chairman, Count Bonacossa presented to the Hon. Sir Arthur Stanley a handsome badge of the Moto-Club d'Italia.

A BANQUET TO THE F.I.C.M. DELEGATES.

A BANQUET was given to the delegates of the F.I.C.M. at Jules' Restaurant, Jermyn Street, London, W., at which the chair was occupied by Lt.-Col. F. S. Brereton, C.B.E. After the loyal toasts, Prof. A. M. Low rose to propose "The Motor Cycle Movement." The motor cycle, he said, is the most efficient form of transport known. He remembered cases during the war where wireless had failed but motor bicycles managed to win through. He hoped it would not be long before people would be saying that a man had not really lived who had not ridden a motor bicycle. The movement provided the finest sport in the world and health for all.

Rivalling the Ford.

Mr. H. R. Watling, in reply, said that he thought that the international representatives who had come to London were brave men and jolly good fellows. The movement could not progress without users' organisation and the Press. He sincerely hoped that the movement would prosper in other countries as it had done in England, but he thought that we heard a little too much of the sport and pastime, and he would prefer to regard the motor cycle as a serious competitor to the railway. He thought the sidecar outfit the best competitor the Ford had. He was assured that it cost £5 a week to run a Ford. Did, he asked, any sidecar outfit, British, American, or Swiss, cost as much to run as that? (Cheers.)

CHRISTMAS HOLIDAYS.

Publishers' Announcement.

Readers who wish to insert Miscellaneous Advertisements in the issue of "The Motor Cycle" dated December 28th should note that, due to the Holidays intervening, instructions must be in our hands by first post on Wednesday, December 20th, addressed to Dorset House, Tudor Street, London, E.C.4.

ILIFFE & SONS LIMITED.

In rising to propose the toast of the visitors, Col. Brereton said he was sure that such meetings as had been held that afternoon did more for international friendship than the various serious political meetings of which we have heard so much recently. He sincerely hoped to see union in Spain, and on the next occasion that the Spanish representative would come with the good news that the Catalunian Club had joined the fold.

Other Toasts.

M. Jules Neher and Mr. Zegers Veeckens replied. It then fell to Mr. J. W. G. Brooker to propose the toast of the Press, which was replied to by Messrs. Geoffrey Smith and E. M. P. Boileau (*The Motor Cycle*).

Mr. W. H. Wells proposed the toast of the President, who was unfortunately absent from the dinner, mentioning the wonderful work he had done in the war in connection with the British Red Cross Society and the Order of St. John of Jerusalem, and his work as President of the A.C.U. and chairman of the R.A.C. Colonel Brereton replied.

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

PILLION RIDING IN SAFETY.

Sir,—May I say that I entirely agree with "A.B.C." in his opinion that when seated "side saddle" a passenger can alight quickly in an emergency, and I might add that one gets just as used to keeping one's balance like this as one does astride. "PILLION GIRL."
Westcliff-on-Sea.

Sir,—I have been following closely your correspondence columns in reference to pillion riding. The letter of Mr. H. Killingbeck is surely an inspiration.

Most of your correspondents agree that the astride position is by far the safest, and to get this position the saddle is the obvious way. The difficulty, however, seems to be a method of fixing the saddle to the rear of the machine.
J. E. JONES.

[A pillion adapter is marketed by Cundle's, 26-28, Byrom Street, Liverpool, at 6s. 9d.—ED.]

ROAD-DESTROYING TYRES.

Sir,—I am afraid "Surveyor" is rather hard on the pneumatic tyre. Has he ever noticed what twin solid tyres do on a tar covered road? It is more noticeable than on macadam; in hot weather there are two furrows with a high ridge in the centre, so deep sometimes that one can almost allow a sidecar to follow the tracks with hands off. I admit that a pneumatic tyre fitted with steel studs does tear the road up, but even so it only finishes off what the solid tyre has left. BEAVER.
Manchester.

Sir,—Your correspondent signing himself "Surveyor" must be a Rip van Winkle. His observations about the damaging sucking action of pneumatic tyres on roads would, of course, apply to the old-fashioned untarred macadam roads of fifteen or twenty years ago, but on the modern tarred road of to-day the effect of the sucking action is absolutely nil. I am sorry to take a diametrically opposed view to a brother surveyor, but really I disagree entirely with every assertion he makes. In my experience, and I think this is the generally accepted view of most road engineers, the vehicle that does the most damage is the heavy commercial vehicle fitted with solid tyres. The terrific wear and tear on roads nowadays is chiefly due to *impact* of fast, heavy commercial vehicles. It would be interesting to know what were the "best materials" of which the portion of the Bath Road was constructed which was "torn up" by the action of pneumatic tyres during the recent week-end of which "Surveyor" speaks.
GEORGE PLUMMER, A.M.Inst.C.E.

PRICE MAINTENANCE OF SPARES.

Sir,—I should like to convey, through your columns, my congratulations to those who have brought the prices of their machines down to the pre-war level.

They deserve a very successful season next year, and will, I trust, receive every support from the buying public.

However, there is one thing that still requires attention, viz., *spares*. Recently I wrote the makers of the machine that I am at present riding asking if their prices of spares had been reduced, but in reply was told that there had been no reduction, nor was one anticipated.
Cheshire. HUBBLE-BUBBLE.

CASTOR OIL IN ENGINE LUBRICATION.

Sir,—I have been much interested in the letter by Mr. Wright, but to say viscosity plays a minor part in lubrication requires explanation, since the force preventing the surfaces—between which the lubricant is interposed—from coming into contact is evoked by the viscosity of the lubricant. Frictional resistance per unit area of bearing surface is given by $F=\frac{\eta V}{d}$.

η = coefficient of viscosity.
V = relative velocity of surfaces.
d = distance between surfaces.

To prevent d from becoming infinitely small η has to be large. That an engine will attain higher revs. using castor oil than one using a mineral oil is due to this property of viscosity. The high viscosity at high temperatures makes castor oil ideal for speed work. TAN-Y-BWLCH.
Bangor.

H.P. OR FUEL TAX?

Sir,—"XR 3296" seems to think that anyone who rides a motor cycle for pleasure must be fairly wealthy. He says that a man or woman who can afford to pay £50 for a solo or £150 for a sidecar machine can afford to pay an extra 30s. or £4 tax per year. He does not consider the man who has to be content with a pre-historic mount picked up for about £18 or £20. FAIRPLAY.
Smethwick.

Sir,—One of the arguments in favour of imposing a tax on petrol is that motorists will be taxed in proportion to the use they make of the roads.

But will they?

A, B and C set off together for a week's touring, during which they cover 600 miles. A rides a Rat-tat which does 120 miles per gallon; B a Cz-z-z, which does 90, and C a Woff-woff (in poor tune), which only does 60, so that in running the 600 miles A uses 5 gallons, B 6⅔, and C 10. Again, D uses a motor cycle while taking orders in a busy hilly town. He does a lot of stopping and starting on gradients and a good deal of low gear work in getting through the traffic, so that his petrol consumption works out at 40 m.p.g. By the time he has covered 600 miles he will have used 15 gallons of petrol. If the tax is 6d. per gallon A will be taxed 2s. 6d., B 3s. 4d., and C 5s. for same length of journey under same conditions, and D 7s. 6d. for same distance under different conditions. The tax, too, would operate unfairly against motor cyclists as compared with motor lorries and cars. A heavy laden motor lorry, with solid tyres, and a heavy touring car, each doing 12 m.p.g., would do more damage to the road in one 60-mile run than C (above) would do in a dozen runs; yet for those runs the lorry and car would be taxed 2s. 6d. each and C 6s.

At the same time I agree it is unfair that the cost of improving the roads should be borne solely by the present generation of motorists. Why not transfer some of the costs to future ones? It might be done by some such method as the following:—Raise a loan of, say, £50,000,000, repayable in 100 years, to be expended immediately in road improvements. Then a tax graduated on the h.p. basis and sufficient to pay the interest, and 1/100th of the loan could be

imposed each year. This would amount to a quarter of the present tax, and as more and more persons took up the pastime, the tax would be still further reduced. The repayment part of the tax as it accrued year by year could be invested and the interest on it allocated for further improvements or the upkeep of roads.

Of course, this is only a suggestion as to method—not amount. G. G. ACTON.

BORROWED NOMENCLATURE.

Sir,—As a motor cycle is neither a clock nor a musical instrument, it would be interesting to many to know who first applied the words "timing" and "tuning" to motors. Surely "setting" and "adjusting" would be nearer the mark? MUGGINS.

London, E.9.

LIMITATIONS TO SPEED.

Sir,—Mr A. O. Russell deplores the modern tendency to speed and states that the effect of wind resistance set up is extremely detrimental on medical grounds. Especially, one imagines, for those poor dear young men who had to stand in the nasty wet trenches from 1914 onwards.

He then expresses the astounding opinion that if the speed limit were abolished someone would be killed! The local policeman, who is a good man, confirms this view. Possibly the local policeman thinks he will be the one man, but as he is good (oh, rare policeman!), why need he worry?

Finally he remarks that, by reducing the capacity, engine efficiency would be increased. In fact these "babies" would, in a very short time, be sold under a speed guarantee of 60 m.p.h. G. F. W.

Essex.

Sir,—I should like to know who were the motor cyclists who became converted to Mr. Russell's ideas. I shrewdly suspect that they agreed as a means to an end, and that they all breathed a sigh of relief when Mr. Russell had departed. H. T. LANE.

Sir,—With fervid interest I have read Mr. Russell's letter. It's as good as *Punch*. My knees shake when I think of the risks I take by walking in a high wind. My push-bike must be at once equipped with a T.O.M.

G. E. MEADE.

Sir,—I find myself in complete agreement with Mr. Russell's suggestions except in one small point. I consider his suggested cylinder capacity of 250 c.c. for a sidecar outfit to be too high.

Practical experience with my A.B.C. Skootamota and sidecar in Devonshire has convinced me that 150 c.c is ample for all reasonable sidecar touring, provided that a pillion passenger is not carried and that the sidecar is not too heavy.

An inexperienced rider with little tuning ability might find 150 c.c. insufficient for sidecar work. If engines of 250 c.c. are to be allowed, I suggest that the sidecar connections be sealed by the police to prevent the machine being detached and ridden solo.

MIGHTY ATOM.

Newton Abbot.

OFF THE BEATEN TRACK IN BANFFSHIRE.

Comparatively few tourists to Scotland use the more southernly road from Aberdeen to Grantown. Nevertheless, although off the beaten track, the road itself is fairly wide and usually in good condition and the scenery has a fascination of its own.

Sir,—We are much intrigued by the letter from Mr. A. O. Russell on road speeds of over-powered bicycles, and beg, as four of the unbiassedly spectated, to protest against the limits he would impose on us as being excessively high.

We habitually use our Brooklands model 2½ c.c. o.h.v. long stroke Brouglases for road work; they do 1,000 miles to the bottle of 30 u.p., and 100,000 to the bottle of castor oil. In order to observe the speed limit we find it necessary to push them between large towns, and carry them through villages; notwithstanding this, we have each killed our man, to the grave concern of our local police constable, who is another extremely good man—gone wrong (*entre nous*, you know).

We are, we know, silly men, but we were born like it.

Rugby. T. T. ORTOISES.

Sir,—The limitation of solo machines to 150 c.c. and sidecar machines to 250 c.c. would no doubt "bring motor cycling within the means of many more." It would also put out of court a large number of motor cyclists, of whom I am one, who use their machines for travelling, and would, under those circumstances, infinitely rather go by train, or push-bike, or walk. The once-more-repeated fallacy of the small engine, *ipso facto*, being cheaper to run than the large one, is not, I think, worth commenting upon.

London, S.E.1. A.E. 3675.

Sir,—Mr. A. O. Russell rather takes the bun when he proposes limiting the power to 150 c.c. and 250 c.c. for the solo machine and the sidecar machine.

What about *Paterfamilias*, who has to take his wife and several children with him for a joy ride? Has he to stay at home and buy the children a pedal cycle or a scooter each, or has he to take a pony with him to pull the outfit up all the steep hills and to assist in the acceleration?

What "dope" did Mr. Russell use to get his friends to agree with his "silly man" notions? I don't think ordinary Adam's Wine would manage such a feat.

Grimsby. 349 DOUGGIE.

Sir,—If Mr. Russell really believes what he wrote to be true, then no lengthy comment is necessary, as he obviously is one of the small but pernicious band of "cranks" whose sole effort in life is to try to spoil the normal citizen's pleasure by robbing the latter of qualities which Mr. Russell and his disciples will never possess, to wit, the real Britisher's spirit, and, to use an expression that I am sure will meet with Mr. Russell's disapproval, British "guts."

Cheshire. "H.F. 1706."

Sir,—During the past year we have seen some rather ridiculous opinions on the subject of speed and fast machines, but surely Mr. Russell's letter gets a first.

"If the present 20 m.p.h. speed limit were abolished, someone would be killed." Possibly the extremely good local constable, who agrees with Mr. Russell, has a nervy bit of point duty, at which he is not as good as he might be. Nobody, of course, has ever been killed yet.

"RICUMPH."

London, N.W.6.

HUMIDITY AND POWER OUTPUT.

Sir,—I was very interested in "Humidiffuser's" letter, though not as a motorist but as a chemist.

He states that he found that the water droplets broke up into hydrogen and oxygen during the compression. Would he be kind enough to let us know how he found that out?

To me it seems very, very strange for this to happen, because if one starts with a mixture of hydrogen and oxygen and compresses it sufficiently and rapidly—*à la* Diesel ignition—water vapour is formed.

Also the dissociation temperature of water is very high, so high that "Humidiffuser's" cylinder—if it remained one—would be a dazzling white. X.Y.Z.

Handsworth.

Sir,—I have read with great surprise "Humidiffuser's" theory regarding the decomposition of water under compression.

If he finds that a mixture of water vapour, petrol vapour, and air, under compression, results in the water becoming resolved into its constituent gases, oxygen and hydrogen, surely it might be advantageous to have a small boiler working somewhere, say, in the exhaust box, with a tube leading into the air intake of the carburetter. This would prove to be an auxiliary source of fuel, as the mixed oxygen and hydrogen gases formed from the water vapour would be highly explosive, as indeed they are in the proportions as contained, or combined to form water. "Humidiffuser" has, however, lost sight of the fact that when hydrogen burns with an aliquot part of oxygen, water is again formed, so that his reaction might go on *ad infinitum* with the same quantity of water present, that is—if he cares to design an engine for the purpose.

"Humidiffuser" has indeed made a great discovery that he should take immediate steps to patent. I think that the only practicable way of decomposing water known at present is by means of hydrolysis. There are other ways of bringing about decomposition of water vapour, but without the actual separation of its constituents in the pure form. HUMIDICONFUSER.

London, S.E.27.

TOO MANY T.T. RACES?

Sir,—Allow me to enter a—necessarily, owing to my living in India—belated protest against the decision of the A.C.U. to hold a T.T. race for sidecars. This race will mean very large sums of money being spent by makers of machines, tyres and accessories, and these will be eventually recouped out of the pockets of the buying public. As a rider, and therefore a purchaser of tyres and accessories, and as a prospective buyer of new machines in time to come, I strongly object to paying indirectly for the race, to however small an extent. Members of the A.C.U. unconnected with the trade would do the public—and, personally I am inclined to think, the trade too in the long run—a great service if they were to insist upon this light-hearted decision to encourage uncalled-for expenditure being reversed.

It is constantly repeated that the T.T. races are justified by their "improving the breed," but I am unaware of any real evidence to support this view, and should very much like to see some concrete facts in place of the usual generalities. It will be difficult to convince the private owner that they are now much more than advertising on a large scale, or that he gets an adequate return for the money that finally comes out of his pocket. What he wants is a reduction in prices all round, and I believe that this would also be of great benefit to the trade in the long run, and therefore both should be hostile to the new race.

The figures showing the condition of the motor cycle trade quoted by "Ixion" in your issue of October 26th seem to me to indicate that the position is not at all sound, and that the cost of the sidecar T.T. race will not be so spread over a large number of machines as to be negligible. Far from introducing a new one, we should aim at suspending many of the costly races and trials until such time as prices are really well down and the trade is flourishing.

Meanwhile it would make trials of much greater interest and use if competitors who retire were compelled to account accurately and fully for their retirements. At present failures are frequently wrapped in mystery, and as often "magneto trouble" is given as the reason. This becomes less and less convincing to the private owner, who, I should say, finds his magneto remarkably reliable. We hear all about the successes, down to the last accessory that helped, and all about those who had "bad luck." Let us hear, too, all about the failures: they are just as instructive.

A. L. HILL.

AVENUES TO PERFECTION.

Sir,—I have returned from the Olympia Show, disappointed in general with the exhibits. The dazzling glitter everywhere of machines, made apparently rather to sell than to use, did not damp the impression I gained that what progress has been made in design has been gained solely from experience on the T.T. course and Brooklands track, and that those makers whose improvements emanated from successes on the above-named courses have had their designs slavishly copied by the less successful.

Are there *no* motor cycle designers who own and use one machine for, say, 10,000 miles on the road only? They all would seem to be (1) speed fiends, (2) as hard as nails, and (3) patient of trouble. To take just one example: the spring frame. This is less in evidence, if possible, than last year. As the owner of a 595 c.c. Douglas, on which I have used 2⅜in., 2½in., and 3in. tyres at all pressures, and finally fitted a spring frame and now use hard 2⅜in. tyres, my experience is that (with respects to "Ixion"!) no pneumatic tyre, of whatever size or pressure, comes within streets of a spring frame, either for comfort or ability to travel long distances (200-250 m.p.d.) without fatigue.

We still have pneumatic tyres with their attendant potential troubles. (Here may I thank "Surveyor" and Mr. Stuart Leslie, the correspondents who have sufficient temerity and originality to cast doubt on the popular irreplaceability-of-the-pneumatic-tyre fetish, for having done so.)

We still have chains, which, for all their efficiency and superiority over belts, are *not* trouble-free (sole exceptions, F.N and G.S.D.).

We have poppet valves, which stick up when the machine is wanted in a hurry (sole exception, Barr and Stroud).

And the engine "improvements" are largely conversions of the woolly pre-war engine to the high-rev., high-efficiency type, which, personally, I consider—from a purely *touring* point of view—a retrograde step.

In short, there are only two machines for which I would change my four-year-old "Doug.," if I thought the advantage of a "more modern" machine worth the inevitable loss financially—which I do not—the 680 c.c. P.V. and the 698 c.c. Raleigh. Their only advantage over my 'bus is the all-chain drive. AE 8675.

London, S.E.1.

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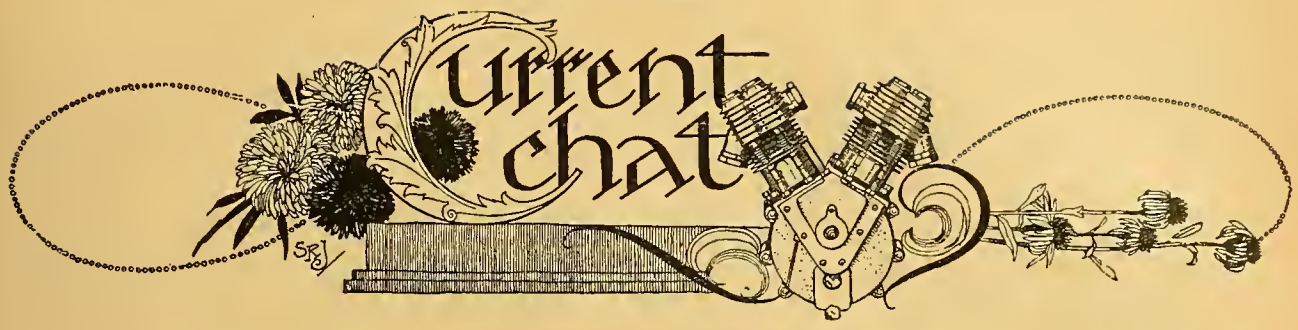

Times to Light Lamps.

Dec.	14th	4.19 p.m.
,,	16th	4.20 ,,
,,	18th	4.20 ,,
,,	20th	4.21 ,,

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Next Thursday.

Next Thursday's issue of *The Motor Cycle* will contain many seasonable Christmas features.

Club Enthusiasm.

Five members of the Richmond and District M.C.C. paraded Richmond streets last week with sandwich boards advertising *The Motor Cycle* film, which is to be shown at the Princes Hall to-day.

The Hospitality of the R.A.C.

At the unofficial luncheon given to the delegates of the international federation of motor cycle clubs, Sir Julian Orde expressed his admiration of the sporting propensities of motor cyclists, and invited the foreign delegates to consider themselves honorary members of the R.A.C. during their visit.

West Country Enthusiasm.

Driving a 1913 Rex sidecar outfit, Mr. A. Liversedge, who only recently took up motor cycling after 30 years of pedal cycling, left Bristol at 6.30 on a Saturday morning for the Motor Cycle Show at Olympia, arrived there at 1 p.m., left at 5 p.m., and reached home again at midnight after considerable trouble owing to his generator freezing. He sends us details of this long trip—for a comparative novice—in confirmation of the recent article on "West Country Enthusiasm."

Power Alcohol from Prickly Pears.

The possibility of obtaining commercial quantities of power alcohol from prickly pears is discussed in the *Times* Trade and Engineering Supplement. There are 2,000,000 acres of prickly pear in the Union of South Africa, and spirit from a formula invented by an Orange Free State farmer has been tested in motor cars of different types and has been reported on very favourably. Government analysts find it free from corrosive or other properties detrimental to engines. Its commercial possibilities have yet to be ascertained, but, if found satisfactory, an annual production of 350,000,000 gallons of spirit is considered possible.

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Profitable.

At Woburn it is said that £1,500 has been accumulated in fines inflicted for speed limit and technical motor offences.

Examination for Driving Licenses.

A town council in the Pottery district is seeking parliamentary powers to institute an examination before issuing driving licences.

100 Entries for Winter Trial.

Approximately 100 entries have been received for next Saturday's London-Gloucester-London Trial of the North-West London M.C.C. As last year, there will be a Chilterns non-stop section in the dark.

The Only Way.

Recently a motor cyclist proceeding homewards late at night collided with a coal-cart. He continued his journey, however, and was subsequently stopped by the police for having his number plate inadequately illuminated. He pointed out that his lamp was badly damaged as the result of a crash which had just occurred. "Well, you shouldn't have come out!" was the extraordinary reply.

Eight £25 Machines for £200.

No! said the man with a large family covertly examining the £200 Aero Morgan. I'll buy a fleet of solo machines instead.

New Trade Number Plates.

New patterns of trade number plates, in substitution for the existing type, will be issuable to motor traders by the licensing authorities on and after 1st January, 1923, in connection with the new system of trade licences under Section 15 of the Finance Act, 1922.

O.h.v. J.A.P. Engine Available Soon.

A new type of overhead valve single-cylinder J.A.P. engine is now being put into production by Messrs. J. A. Prestwich and Co., Ltd. It is modelled on the engine which Le Vack has used with such success during the present year, but the valves are operated by long push rods instead of by an overhead camshaft. The 350 c.c. model will be ready for delivery in January.

Another Record Exeter Entry.

The continued popularity of the M.C.C. winter run (London-Exeter and back) is evidenced by the fact that this year 307 entries have been received—ten more than last year. These are made up of 92 solo machines, 93 sidecar outfits, 14 three-wheelers, and 108 cars.

Entrants are warned that particular attention will be paid to noise. Not only will an examination of silencers be made at the start, but travelling and other marshalls will be specially instructed to note the noise of the exhausts, and if a machine is found to possess an inefficient silencer a competitor will run grave risk of disqualification.

Coventry Hospital Motor Ballot.

Results have now been announced of the motor ballot held recently in aid of the Coventry and Warwickshire Hospital. The four premier awards, a Crouch car, a Coventry Mascot sidecar outfit, a Triumph Junior motor cycle, and a McKenzie miniature, went to Mr. J. C. Griffiths, 15, Broadway, Earlsdon, Coventry; Miss Ruth Groom, 3, Howard Street, Coventry; Mr. H. Deacon, 2, Market Place, Nuneaton; and Mr. T. Tunstall, 40, Melbourne Road, Coventry, respectively. The actual result of the voting was: 1, Rover; 2, Rolls-Royce; 3, Standard; 4, Daimler; 5, Morris-Cowley; 6, Humber; 7, Crouch; 8 Morris-Oxford; 9, Calcott; 10, Austin; 11, Sunbeam; 12, Wolseley; 13, Armstrong Siddeley; 14, Singer; 15, Napier.

This Week's Limit.

The man who tried to "weaken the mixture" by diluting his petrol with water.

Excellent!

"The car people do, so why shouldn't we?" say many firms who are now selling their machines completely equipped with electric lighting, etc.

De-tuning for Economy.

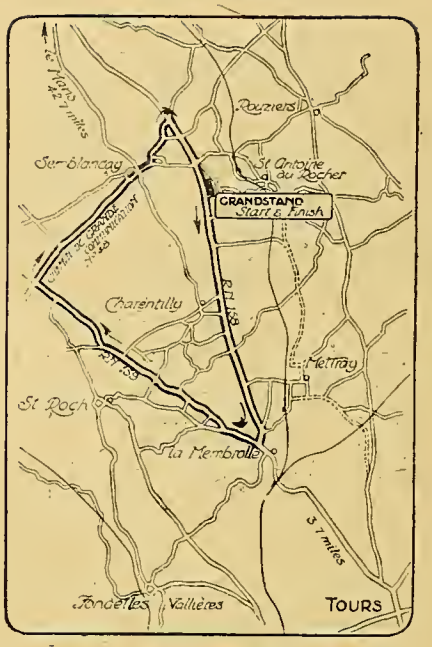
Maximum fuel economy, according to the theorists, is only obtained from a well-tuned engine. On the other hand, we know of a certain o.h.v. engine that gives an additional 10 m.p.g. when its inlet push rod has a $\frac{3}{16}$in. clearance.

Was He Serious?

In reply to an advertisement offering a Morgan for sale, a Welsh reader received a letter beginning "I notis you haff a Morgan's car for sale," and suggesting "a very fine motor bike and 2 ferrets and 1 case of stuffed birds" in exchange.

Among the Accessories.

". . . summoned for riding a motor cycle without an efficient sidecar . . . ." and "lamp sets . . . suitable for exciting lamp brackets"—this week's best misprints—suggest new fields of activity in the accessory market.



Map of the 1923 Grand Prix course.

A.C.U. Horse-power Rating—

At the Olympia Show, as we mentioned, apparently only one firm, and that American, accepted the A.C.U. method of engine rating. Now we have received the 1923 catalogue of a pioneer firm of two-stroke makers who follow the same system. Evidently it is making but slow progress.

—And Another Method.

One maker roundly and vehemently refused to state a horse-power to our representative; he gave the capacity of his engine as 500 c.c. and the power "as much as we can get out of it"!

Help Wanted.

Mr. G. F. Burns, "Lyncairn," Devonshire Park, Birkenhead, hon. secretary of the Liverpool M.C., is anxious to obtain films of motoring interest for the club's gala night at the Trocadero Super Cinema, Liverpool, on the 20th inst.

Carnival Ideas Wanted.

Readers who have decorated motor cycles successfully for a carnival are asked to pass on schemes to a reader who is organising a similar event in aid of his local hospital. His address is Mr. A. H. Richards, Grassington, Wellington, Somerset.

NEXT YEAR'S GRAND PRIX.

14 Miles Circuit near Tours chosen for Big French Race.

FOR the 1923 Grand Prix race, the Automobile Club of France has definitely decided on a triangular circuit lying north-west of Tours, the centre of the Château district of France and a popular region easily reached by road from Le Havre. An idea of its position can be gauged from the fact that its northern corner lies about 180 miles from Havre.

The circuit is 14 miles 240 yards in extent, and consists of the following roads: National Road No. 158 (Tours to Caen), National Road 159 (Tours to Rennes), and Chief Communication Road No. 48. There are three acute turns—that at La Membrolle being encountered at the end of a long descent of 1 in 14.

It is proposed to establish the grandstand near the northern extremity of the western leg of the triangle, one kilometre from the station of St. Antoine du Rocher. The village of La Membrolle is 3.7 miles from Tours.

The motor cycle Grand Prix is usually held before the motor car Grand Prix, (the date of which has not been definitely decided), consequently full advantage is gained of the careful preparation of the roads which is undertaken for the latter.

NORTH LONDON M.C.C. DINNER.

SIR PHILIP LLOYD-GREAME, K.B.E., M.C., M.P., the President of the Board of Trade, attended the third annual dinner of the North London M.C.C., at the Holborn Restaurant, on Saturday in his capacity as president of the club.

In the absence of Mr. Bernard Staley, Mr. A. F. J. Beaurain ably undertook the duties of chairman. Ten toasts in all were proposed, but the speeches were short and to the point, being generally in a humorous vein.

The president confessed that he was not a motor cyclist himself, and told an amusing story of a motor cyclist during the recent election who frantically chased him all round the constituency with a letter marked "Urgent" that turned out to be a request from a lady voter for the prospective member's views on vivisection. He also made some good-humoured comments on the popularity of pillion riding.

In proposing the toast of the President, Mr. A. J. M. Iveson paid tribute to the club's former president, the late Mr. Kennedy Jones, M.P., remarking that the club had always been fortunate in finding officials who took a live interest in its activities.

Later on the lady members were thanked for the important part they played in attending to the social side during the winter months, to which Miss Myrtle Baxter made a suitable reply.

An entertaining musical programme was interspersed between the speeches, a thoroughly enjoyable evening concluding with the presentation by the president of a fine array of cups, trophies, shields, medals, and ash-trays won by members.

HELP FOR THE TYRO.

LONG continued popularity has again called for another edition (the 23rd) of "Motor Cycles and How to Manage Them" (Iliffe and Sons Ltd., 2s. 6d., by post 2s. 9d.).

This much used handbook has been revised once again and deals thoroughly with all those problems which confront the beginner.

The choice of a motor cycle, its care and maintenance, use on the road, minor repairs and tuning, are all dealt with. Motor cycle construction and the functioning of the various parts are discussed and the working of both four-stroke and two-stroke engines is fully explained. A chapter on magnetos is included, which treats the subject fully but simply.

Modern machines have, of course, reached such a high state of reliability that the novice need not prepare himself with a highly specialised mechanical knowledge; nevertheless such information as is contained in the handbook under review is just what it is advisable to have to be independent of external assistance in the event of a temporary derangement.

CLUB NEWS

Bradford M.C. and L.C.C.

Fifty-one enthusiasts started in the club's annual winter trial, which took place on the 10th inst. The 90 miles' course included some stiff hills, notably in the neighbourhood of Pateley Bridge, Greenhow, Appletreewick, and Burnsall. The weather proved much more favourable than on previous occasions, with the result that surfaces were fairly good. Results were not to hand at the time of going to press.

Aberdovey Institute and District M.C.C.

At a general meeting held on the 20th ult. it was unanimously decided to form a club under the above title. Officials were appointed as follows:

Chairman of Committee: Capt. Hieron Kershaw, O.B.E., J.P.
Captain: Mr. A. G. Cocks.
Vice-Captain: Mr. Richard Williams.
Secretary: Mr. McKie.
Treasurer: Mr. J. H. Meirion Jones.

Prospective members should send in their names to the secretary or treasurer.

Dublin Ramblers M.C.C.

The club recently held a series of hill-climbing competitions on a hill near Cornels Court, and included in the programme were two open events. The weather was favourable, and with good fields in the various classes a very enjoyable afternoon's sport was enjoyed. The results of the various classes were as follows:—

CLASS A. (CLOSED).—2-STROKES UP TO 275 C.C.

	Handicap time.
1. H. Phillipson (Enfield), ⅜s. ...	30⅘s.
2. W. Hewett (Enfield), scr.	31⅖s.
3. R. Le Faun (Enfield), ⅝s. ...	33⅜s.

CLASS B. (CLOSED).—ALL TYPES UP TO 350 C.C.

1. S. Woods (Cotton), scr.	19⅜s.
2. W. Hewett (Enfield), 10s.	19⅘s.
3. R. Hill (Velocette), 11s.	25⅖s.

CLASS C. (CLOSED).—351 C.C. TO 650 C.C.

1. C. C. Callaghan (Norton), scr. ...	22½s.
1. J. Hamilton (Humber), 5s. ...	22½s.
3. C. Pitman (Sunbeam), scr.	22⅗s.

CLASS D. (OPEN).—UNLIMITED C.C.

1. W. Hewett (Enfield), 12s.	18s.
2. T. V. Murphy (Coventry-Eagle), 9s.	18⅘s.
3. C. C. Callaghan (Norton), 3s. ...	19s.

CLASS E. (OPEN).—SIDECARS AND CYCLE CARS.

1. D. Allen (Norton sc.), 1s.	29s.
2. C. D. Maguire (Matchless sc), scr. ...	29½s.
3. J. A. Carville (B.S.A. sc.), 3s. ...	30s.

Coventry and District W.M.A.

The termination of a successful season was marked by a general meeting and prize distribution which took place on the 8th inst.

West Kent M.C.

As a conclusion to a very successful season, the annual general meeting will be held on the 23rd inst. at the Swan and Mitre Hotel, Bromley. Next year's policy will be outlined and discussed, and all motorists interested are invited.

Rotherham and District M.C.

A social run will take place on the 17th inst. Particulars of a whist drive and dance and of the annual general meeting, to be held early in the new year, will be announced later. Members are reminded of the new year prize drawing, tickets for which may be obtained from the hon. secretary.

Devizes and District M.C.

The Motor Cycle film will be shown on Saturday and Monday next (the 16th and 18th inst.) at the Palace Theatre, Devizes. Times of showing the film are as follow: Saturday, 2.45 p.m., 5.45 p.m., 8 p.m.; Monday, 5.45 p.m. and 8 p.m. Members of the club wishing to book seats should apply to the joint hon. secretaries, Mr. L. V. Burn, Market Place, Devizes, and Mr. L. K. Lawton, Beach Villa, Devizes.

Challenge cup presented by Mr. G. Packman for competition between University clubs. It was won this year by the Birmingham University M.C.C.

Barrow and District M.C.C.

Nearly one hundred were present at the second annual dinner held on the 7th inst. at the Duke of Edinburgh Hotel. After several speeches had been made, Mr. Bryan Jefferies, chairman of the Northern Centre A.C.U., presented prizes won during the season.

Rochdale and District M.C.C.

A motor cycling club has been formed as above, and affiliation with the A.C.U. is intended. It is intended to run the usual reliability and speed events during the next season. An opening run was held on the 5th inst. under arctic conditions, belt-drive machines becoming completely stranded: it was only owing to the valiant efforts of the captain and vice-captain that some of the unfortunates reached home. Those interested in the club should communicate with Mr. G. G. Wood, Ye Three Cups, Sudden, Rochdale.

Richmond and District M.C.C.

Held under favourable weather conditions on the 19th ult., the club's "Follow-the-Confetti Trial" was a great success. Taken as a whole, the 60-mile course was easy, but a wide water-splash, over a foot deep, stopped practically every competitor. Two observed hills, Pebblecombe and Bagden, were included in the route. First place was taken by R. O. Lowe (490 Norton), whose error at the time checks amounted to only a few seconds; he is therefore the winner of a rose-bowl presented by the Palmer Tyre Co. Second place was taken by R. Harrison (490 Norton). Only three others finished the course.

North West London M.C.

This year's London-Gloucester Trial will take place on Saturday, and will be run on lines similar to those of last year. It has been found impossible to conduct the trial as an open event, but it is being arranged as an inter-club contest. Up to the present the following clubs (in addition to the promoting one) have entered:—Coventry and Warwickshire M.C.C., Essex M.C., and Surbiton and District M.C.C., there being 100 riders.

In order that the participants and officials in the London-Gloucester trial may meet as soon as possible after the event to recount experiences, a social meeting at Berkhampstead has been arranged for the 17th. Tea will be taken at the King's Head Hotel, Berkhampstead, at 4 p.m., and it is hoped that as many as possible will attend. In view of the increasing use of motor cycles among schoolboys the club is promoting a competition open to students at the recognised public schools and to those who are entered for such schools. The club has a membership for schoolboys at a fee of 5s., which allows participation in the club events during the regular school holidays.

Shirebrook M.C.

The Motor Cycle film is being shown at Shirebrook Empire by the above club to-day (the 14th inst.).

Levis Athletic Club.

Full results of the Levis single gear are now to hand, and are given below in order of merit:—1, A. R. Edwards (211 Levis), 204 marks; 1st Class "A," winner Yardley Cup and Godfrey gold medal. 2, S. Jones (Samjo), 204 marks; 1st Class "B," silver medal for best performance in class, also premier prize (belt) for best performance by a private owner on a machine between 250 and 350 c.c. in Classes "B" and "C." 3, G. S. Davison (211 Levis), 201 marks; 2nd Class "A," bronze medal. 4, E. C. Myhill (211 Levis), 184 marks; special medal for best performance on observed hills. 5, J. Knibbs (247 Levis), 176 marks; 1st Class "C," silver medal, also silver medal for best performance on Levis with 26in. wheels. 6, W. S. Hawcutt (211 Levis), 176 marks; 2nd Class "B," bronze medal. 7, P. Platts (490 Norton), 158 marks. 8, N. D. Pickering (499 Triumph), 152 marks; 2nd Class "C," bronze medal. 9, D. S. Griffiths (211 Levis), 142 marks; premier prize for best performance by a private owner on a machine up to 250 c.c. in Classes "B" and "C." 10, J. H. V. Wood (499 Triumph), 140 marks; premier prize for best performance by a private owner on a machine over 350 c.c. in Classes "B" and "C." 11, F. E. Thacker (498 Singer), 130 marks. 12, F. L. Edmonds (211 Levis), 125 marks. 13, J. Robinson (499 Triumph), 90 marks. Special medal for best performance under adverse conditions in any class was awarded to A. Manley, junr. (292 Rades-Union). Team prize won by A. R. Edwards' team (G. S. Davison, A. R. Edwards, Sam Jones).

Cheshire Centre A.C.U.

Official awards made in the one day open trial held on October 21st are as follows:—

SILVER CUP, awarded by J. Crowther Walker, Esq., for best performance.—J. Graham Oates (248 Grindlay).

CHESHIRE CENTRE CHAMPIONSHIP.—J. Graham Oates (248 Grindlay).

CLASS AWARDS.

250 c.c.—J. Graham Oates (248 Grindlay), gold medal.

350 c.c.—J. B. Donaldson (348 Raleigh), gold medal; E. Foster (348 Raleigh), silver medal; J. H. Roberts (348 Scale-Blackburne), certificate.

500 c.c.—S. Smith (492 Sunbeam), gold medal; S. A. Crabtree (492 Sunbeam), silver medal; G. L. Falck (499 Rover), silver medal; W. E. Smithies (490 Norton), certificate; P. G. Thomason (398 A.B.C.), certificate; L. Randles (492 Sunbeam), certificate.

750 c.c.—Miss Cottle (547 Powell), gold medal; C. Guthrie (698 Raleigh), silver medal; S. Baldwin (490 Norton), certificate.

UNLIMITED.—P. C. Ralli (976 Brough Superior), gold medal.

600 c.c. SIDECARS.—M. Gavson (550 Triumph sc.), gold medal.

UNLIMITED SIDECARS.—P. Platt (749 Bradbury sc.), gold medal.

CYCLE CARS.—B. Davenport (1,087 G.N.), gold medal.

AWARDS FOR COMPLETING COURSE WITHOUT LOSS OF MARKS.—J. Graham Oates (248 Grindlay), gold medal; S. Smith (492 Sunbeam), gold medal.

Mid-Bucks M.C.C.

The club's annual dinner and prize distribution took place recently at the Bull's Head Hotel, Aylesbury. After a number of bright speeches had been made the chairman presented four cups and twenty-three medals won by members during the past season.

Oxford M.C.

Several well-known figures in the motoring world will be present at the club's annual dinner, to be held at the Clarendon Hotel, Oxford, on Saturday next (the 16th inst.), at 6 p.m. An excellent musical programme is also promised. Tickets (7s. 6d.) may be obtained from Mr. E. J. E. Knowles, 36, Holywell Street, Oxford.

Richmond and District M.C.C.

It is hoped that every member will do his best to "turn up" and see *The Motor Cycle* film at Princes Hall, Richmond, to-night (the 14th) at 7.30 p.m., and so ensure a jolly evening. The film will be followed by a dance. Those who have not yet bought tickets will be able to do so at the door.

Cardiff M.C.C.

The annual dinner will be held on Saturday next (the 16th inst.) at the Royal Hotel, Cardiff. A wireless concert will be given during the dinner. Tickets (price 10s. 6d.) are obtainable from the hon. secretary, Mr. A. Davies, 91, Penywain Road, Roath, Cardiff. Results of a trial for the Webber Cup, run off on the 18th ult., are as follows:—

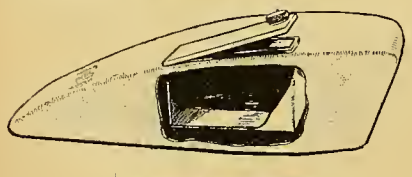
WEBBER CUP AND GOLD MEDAL.—R. S. Bevan (996 New Hudson three-wheeler).

85 M.P.H. FOUR-CYLINDER.

Improvements to the 1922 Ace. Introduction of a Sporting Model.

THERE are few more interesting or fascinating machines on the market than the four-cylinder Ace, which is designed by Mr. W. G. Henderson, a name long connected with four-cylinder motor cycles.

Only those who have driven a four-cylinder machine can fully appreciate its charm of smooth running, wonderful acceleration, and flexibility. To the man who has not, such a machine as the Ace, weighing 365lb., might seem to be so unwieldy as to be uncomfortable, but we can assure him that once inertia has been overcome the riding balance is perfect. Few of us are trick riders or want to emulate the performances of the Ace experts, but it is distinctly interesting to know that this machine can be turned in about one-third of the width of an average street with the rider leaning over to such an angle that the footboards are within one inch of the ground.



Tool box in petrol tank.

The Ace engine and gear box follow car practice right through. The 1,229 c.c. (68.58 mm. × 82.55 mm.) engine in its latest form still preserves the feature of overhead inlet valves, with the result that since the inlet is directly over the exhaust the incoming charge cools the latter; this system also allows the sparking plug to be situated so that its points are well within the inlet chamber and are constantly swept by the incoming charge. The large 1½ in. valves with ¼ in. lift are in cages which are separate castings made in pairs, while the actuating mechanism, consisting of rockers and tappet rods, is enclosed in a casing provided with a door which, when pushed back over dead centre, remains open.

Lubrication is effected by means of a mechanical oil pump driven off the main timing pinion and disclosed by removing the front engine cover. Since the timing wheels are not contained in a separate chamber, on the cover being removed not only the oil pump, but the whole of the interior of the crank case is visible.

Lubrication.

The primary function of the oil pump is to distribute the oil under pressure to the big ends, which dip into troughs, while the main bearings are oiled by means of a gap formed in the casting, which leads the lubricant to the bearing surfaces. Lubrication is therefore mainly on the splash system, and the pump also supplies oil for the clutch and transmission.

Contained in the rear portion of the crank case is a three-speed gear, a plate clutch being mounted car fashion on the end of the engine shaft.

From engine to back wheel the transmission is by single chain.

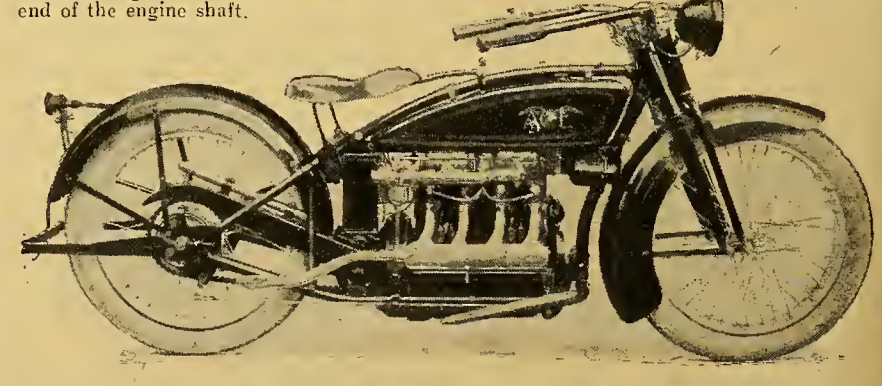
Strongly constructed and of the duplex variety, the frame is built of 1⅛in. heavy gauge tubing. There is no saddle pillar, but vertical struts serve as extra supports between the chain stays and back forks, and, moreover, steady the engine in the frame.

Another interesting feature of the Ace is a three-gallon tank, which incorporates a spacious tool compartment.

Both brakes are of the external contracting variety working on two drums, one on each side of the rear hub.

The price of the standard Ace is £125, a sports model sold at £132 being fitted with aluminium alloy pistons, lightened connecting rods, sharper angle cams, and a slightly higher compression. No vital points are lightened, yet the more expensive model is guaranteed to attain a speed of 85 m.p.h.

Ace motor cycles are being handled in this country by Robertsons Motors, Ltd., 159b, Great Portland St., London, W.1.



85 m.p.h. is guaranteed from this sports model four-cylinder Ace.

THE FUTURE OF THE SHOW.

Movement to Make the Motor Cycle Exhibition a Biennial Event.

IT will probably come as a surprise to many of the motor cycle public that a number of the exhibitors at the recent Olympia Show are desirous of making this important event a biennial, instead of an annual, fixture. Indeed, in some quarters it was recommended that the next motor cycle exhibition should not be held until 1925. We understand that the manufacturers responsible for this suggestion (and some of the most prominent firms are included) circulated a "round robin" to this effect during Show week.

As to the wisdom of this course, our views are given in a leading article on page 911. The annual Show is a firmly-rooted fixture, and it is undoubtedly much more than the mere social reunion which some people allege it has lately become. It affords a valuable means of bringing the motor cycle movement into prominence, and gives tangible proof of the importance to which the industry has attained.

It is said that home sales of new machines from the middle of August until the spring are few and far between. Prospective purchasers, if approached, say they would prefer to wait until they see the next year's models at the Show in November. When the Show arrives it is frequently apparent that the "new" models are, to all intents and purposes, identical with those of the current season. Here and there is something entirely novel, but, in the majority of cases, such machines are not bought in any quantity until they have proved themselves in open competition.

It is claimed in certain quarters, therefore, that the Show actually tends to curtail sales during the period of the year when the motor cycle manufacturer is most in need of business. Some makers, in fact, would prefer to list their models by a distinguishing symbol instead of by the year of manufacture. The "Model X," for instance, might be current during two or three years, a guarantee to this effect being advertised by the maker from time to time. Such a procedure, it is claimed, would benefit the purchaser, because the second-hand value of his machine would depend only upon its condition, and not vary arbitrarily with its year of manufacure. Entirely new models would make their *début* in competitions.

The foregoing puts forward the views of a minority. The majority appear to appreciate more fully the value of the Show both as a means of popularising the motor cycle movement and for giving opportunity to buyers to see their goods and to compare them with their contemporaries.

MANVILLE TROPHY TRIAL.

ON Saturday the annual Manville Trophy Trial of the Coventry and Warwickshire Motor Club was re-run, the previous run a few weeks ago having been cancelled owing to the number of competitors losing their way, a very intricate course and insufficient marking being the cause of this.

The marking of the course last week-end was good.

Starting from Coventry the route was plain sailing for the first 40 miles, lying through Warwick, Stratford-on-Avon, Mickleton and Weston to Saintbury, where the first time-check 30 miles from the start was held. Immediately following the check, Saintbury Hill was ascended, a stop and restart test taking place just before the second bend. Seldom has this hill been seen in a more treacherously greasy condition, the same remark applying to practically the whole of the course throughout the day. However, performances on the hill were good, as also was the restarting, despite the surface.

Well-known Hills.

Turning sharp right at the top of the hill, Willersey was descended, and then on through Broadway and Winchcombe, turning off the main road here and going up Sudeley Hill.

Bearing right at the top of Sudeley, the course led through several gates and over a fairly rough surface to Brockhampton. Fog encountered after the top of Sudeley Hill made riders who were unacquainted with this section of rough "going" rather wary, but it was not thick enough to be a great hindrance; one could always see fifteen or twenty yards ahead, and very soon the sun was making an effort to get through. The course now lay through Andoversford to Birdlip, a time check being held at the top of Birdlip Hill.

Immediately after the check an acceleration test was held, competitors being timed over a distance of about a hundred yards from a standing start. Through Cranham, a sharp left-hand turn down a narrow rough lane, Stancombe Hill was reached. Although this hill might be expected to cause failures, particularly amongst the sidecars (from wheel-slip), there was not a single stop recorded. The surface was completely hidden by a thick carpet of brown wet leaves. F. T. Sibley (499 Rudge sc.) had his passenger practically on the carrier for wheel-grip.

Stroud was reached four miles further, where the lunch check was held. Several competitors had failed to maintain their average over the last section, and lost several minutes at the lunch check. Amongst these were: D. Radford (688 Coventry Victor), S. A. Thomson (550 Triumph) and J. L. Hardy (Humber).

Cotswold's Difficulties.

It was rumoured during lunch that a 20 mile an hour average was going to be a difficult thing for the 12½ mile section before the next check, and such proved to be the case. Wall's Quarry Hill was the first obstacle after lunch, three miles out of Stroud. Although not an officially observed hill, it accounted for many failures and a great loss of time.

In less than a mile Knapp Hill was encountered: the surface was a thin slime, as was to be expected. No sidecar succeeded in getting up, but there were some creditable solo performances. Amongst the latter, the following made clean and steady ascents:—D. Radford (688 Coventry Victor), W. L. Danskin (499 Rudge), P. H. Johnson (499 Rudge), A. J. Elliot (249 Rover), L. Crisp (600 Humber), H. J. Stretton Ward (499 Triumph), H. S. Perry (349 B.S.A.), M. Scally (600 Humber). E. A. Barnett (346 Francis-Barnett) touched once, tackling the hill a little too fast, and otherwise made a clean ascent. R. Grindlay (600 Humber) and S. A. Thomson (550 Triumph) footed to steady themselves, as did J. W. Moxon (348 Monopole).

Amongst the sidecars, B. Kershaw (346 New Imperial sc.) climbed the highest, and W. J. Montgomery (976 Brough Superior sc.) only failed after a valiant effort. Wheel-slip was the sole cause of failure, of course.

After Knapp, the Nailsworth "W" was climbed, and thence on through Amberley to St. Chloes Lane. This again caused trouble with several sidecars. At the check at the top of Woodchester Hill there were very few competitors up to time. From Woodchester the course lay through Paganshill and Whiteshill to Portway Hill. At the top of Portway was the finishing check. Very few competitors reached this to their schedule time, so difficult had been the afternoon's run—although only 24 miles long!

1923 INTERNATIONAL TRIALS.

Scandinavia as a Testing Ground; Rule of the Road and Speed Limits; No Steam Rollers in the Country!

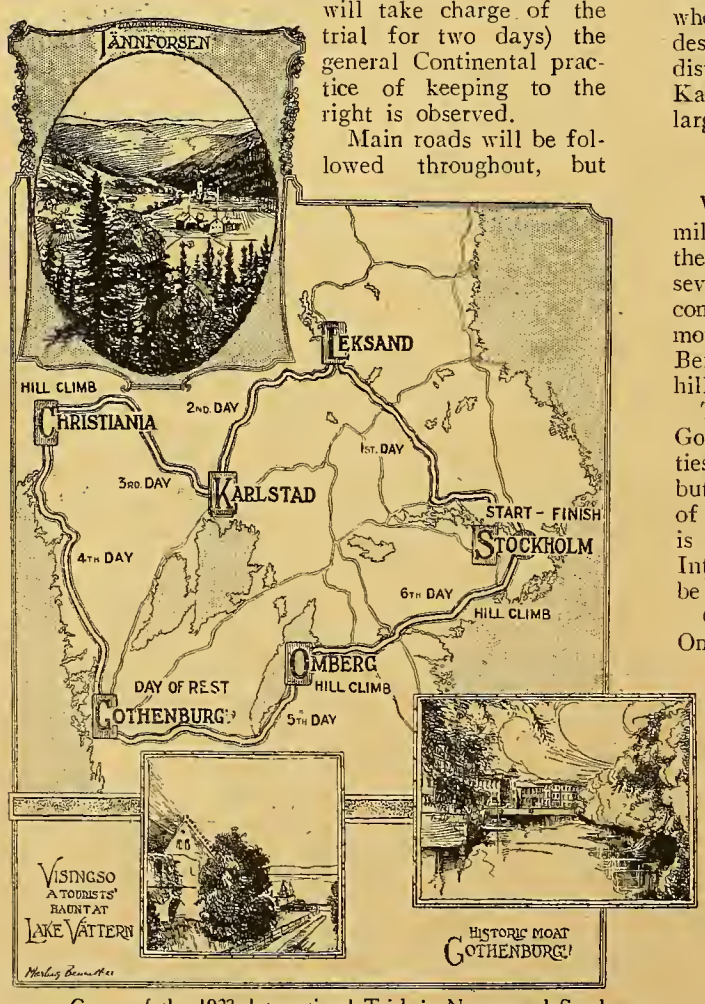
ONE of the delegates who attended the recent F.I.C.M. meeting in London was Mr. G. K. H. Anderson, who is chairman of the Competitions Committee of the *Svenska Motocykel Klubben*. Mr. Anderson, who is exceedingly enthusiastic over the coming International Six Days Trials which his club is organising in Sweden, gave us some useful information concerning the nature of the roads to be traversed by the competitors, as well as about conditions generally in his country.

There is no doubt that there are many keen motor cyclists in Sweden, and it is quite evident that British machines, properly represented, would find a ready sale on account of their reliability and suitability for rough usage.

"Keep to the Left" Rule of the Road.

British competitors should have no traffic difficulties in Sweden as the rule of the road is the same as in Great Britain, but in Norway (where the Norwegian Club will take charge of the trial for two days) the general Continental practice of keeping to the right is observed.

Main roads will be followed throughout, but Swedish main roads are very much different from those in England; it is said that there is not a steam roller in the country. The legal limit of speed in Sweden is about 25 m.p.h., but in Norway it is only 18½ m.p.h., and these limits are, of course, reduced in towns. The time schedules will be worked accordingly, while the roads will be marked by blue dye.



Course of the 1923 International Trials in Norway and Sweden.

Over 200 Miles on the First Day.

The event starts on August 6th, and the first day's run of 218½ miles will be from Stockholm to Leksand, on the shores of the Lake of Siljan, a tourist centre in the heart of Dalecarlia, a very beautiful district where the peasants still wear the national costume. Lunch will probably be at Vasteras. The roads are good all the way. The route for the next day is from Leksand to Karlstad (175 miles). For some distance the roads are good, and the beautiful country of South Dalecarlia will be traversed. Later on, however, deep sand will be encountered. Then forests will be passed where the road is better. Before reaching their destination the competitors will pass through a mining district, where iron is produced in great quantities. Karlstad is situated at the head of Lake Vänern, the largest lake in Europe.

A Hill Climb in Norway.

Wednesday's run from Karlstad to Christiania (180 miles) will probably be long remembered, as it marks the entrance into a mountainous region, increasing in severity as the Norwegian frontier is approached. The competitors will lunch in Norway, a land of high mountains, rushing rivers and picturesque waterfalls. Before Christiania is reached there will be an observed hill-climb.

The following day's route, from Christiania to Gothenburg (220.5 miles), should present few difficulties. About one-third of it is in Norwegian territory, but the lunch stop will be in Sweden. The remainder of the journey lies over ordinary roads. Gothenburg is one of the principal ports of Sweden, and as an International Exhibition will be in progress there will be a day of rest for the competitors.

On Saturday the journey is from Gothenburg to Omberg (152 miles). From the starting point to Jönköping the road is rough, stony, and full of pot-holes, but nearing Omberg (a pretty town situated on a high hill overlooking Lake Vättern) it improves considerably.

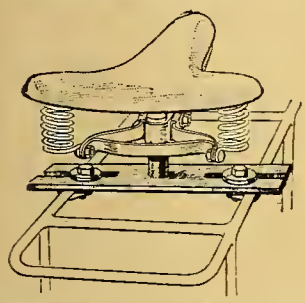
Flying Kilometre Speed Trial.

On the final day's run from Omberg to Stockholm (169 miles), the road is said to be good all the way, and there are not many hills, save one known as Sillerskogen, which is short and steep and contains hairpin corners. Before reaching Stockholm there will be a flying kilometre speed trial on the Isle of Mörkö.

The total length of the route is 1,115 miles.

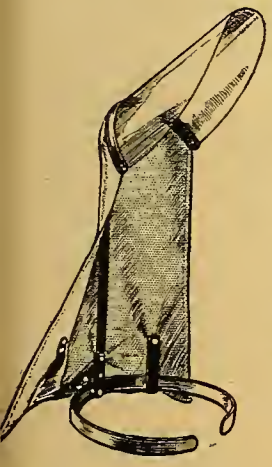
AMONG THE ACCESSORIES.

Saddle as Pillion Seat.



Simply an adaptor that allows an ordinary saddle to be attached to the carrier as a pillion seat, the Cundle device is marketed at 6s. 9d. by Cundle's, 26-28 Byrom Street, Liverpool.

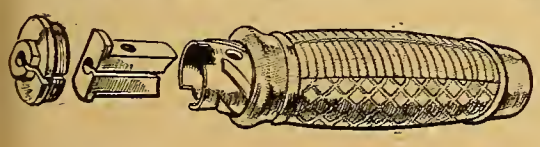
Face Screen Attached to Rider.



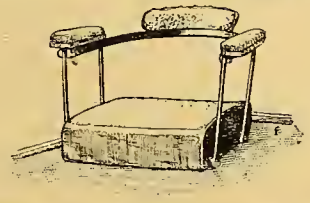
Something new in weather protecting devices for the motor cyclist is the Bristol face screen and chest apron, the whole being carried on a spring strap on the rider's waist. It is easily detachable and weighs only 18 ozs. (The Bristol Sidecar and Motor Co., 11, Stokes Croft, Bristol.)

Twist Grip for Single Lever Carburetters.

Brown & Barlow, Ltd., manufacturers of the well-known B. & B. carburetter, have introduced a simple form of twist grip control for one-lever instruments.

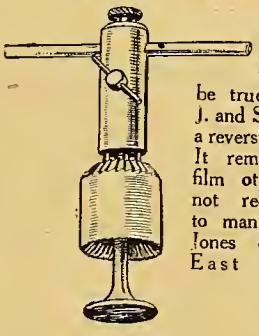


For the Extra Passenger.



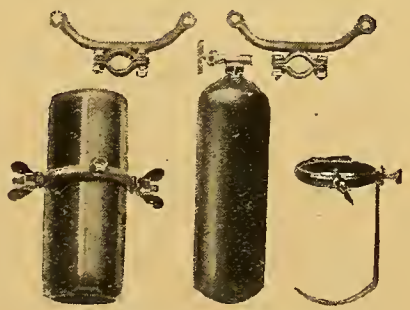
Padded back and arm rests give this Saxillary pillion seat quite an armchair appearance. 35s. (Saxelbys, Ltd. [Saxessories], George Street Works, Coventry.)

Valve Care Facilitated.



Both valve and valve seating may be trued up with the J. and S. tool, which has a reversible milling cutter. It removes a very fine film of metal and does not require an expert to manipulate it. A. A. Jones & Shipman Ltd. East Park Road, Leicester.

Dissolved Acetylene for Motor Cycles.



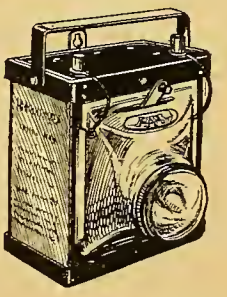
As already announced in "The Motor Cycle," motor cycle sizes of dissolved acetylene cylinders are now available. (Allen-Liversidge, Ltd., 106, Victoria Street, London, S.W.1.)

Balanced Speedometer-watch Mounting.

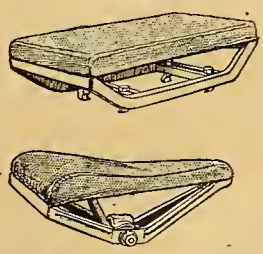
It is claimed that the watch mounted integrally with the latest Smith speedometer "balances" the whole instrument on the handle-bar. £4 10s. 0d. complete. (Smith's (M.A.), Ltd. (S. Smith & Sons (M.A.), Ltd.), Cricklewood Works, London, N.W.2.)

Lasting Inspection Lamp.

Noted for the long life of its battery, the H. H. hand lamp is now offered in an improved form at 22s. 6d. (A. H. Hunt Ltd., H. A. H. Works, Tunstall Road, East Croydon.)



Lightweight Saddles and Pillion Seats.



Particularly light weight is an attribute of both the Austin saddle and the pillion seat, which have aluminium frameworks. They weigh 4½ lb. and 5 lb. respectively. (A. T. Austin, Eckersall Rd., King's Norton, Birmingham.)

21st ANNIVERSARY DINNER OF THE M.C.C.

Reminiscences of Club Life in 1901. Origin of Classic Runs.

MANY gallons of petrol have been used since the Motor Cycling Club was formed by those gallant enthusiasts of 1901, who laid the foundation of the largest club of its kind in Great Britain, and that it has lasted for twenty-one years as a going concern is no small item to its credit. Not only has it lasted; it has grown in strength and prosperity.

Its annual dinner and 21st anniversary, last Thursday, was largely attended by members and their guests, who completely filled the big hall of the Wharnecliffe Rooms at the Great Central Hotel, Marylebone. It was gratifying to see so many of the older members present.

A Ladies' M.C.C.?

The chair was occupied by Mr. J. K. Starley, the club's president, who, after proposing the toast of "The King," proposed that of the "Health of the Motor Cycling Club." His was an amusing speech, in the course of which he referred to the club's competitions, which fostered a sporting spirit of the highest possible form. Few people realised the beneficial effects of such runs and trials on business and employment. In his opinion the Motor Cycling Club was the finest sporting organisation which existed. The chairman concluded by asking why the ladies did not form their own branch of the M.C.C. and run their own competitions.

In reply, the present chairman of the club, Mr. C. S. Baddeley, stated that he rose with a certain amount of diffidence to reply to the toast of the evening. One jagged edge in a season of unbroken success was caused by the death of Mr. Robert Head, one of the club's most wise and just counsellors. He also had to deplore the absence of Mr. Arthur Candler.

As regards reminiscences, Mr. Baddeley referred to Mr. J. van Hooydonk as the originator of the London-Edinburgh Run (a statement corrected later, the originator being Mr. Arthur Candler); the London-Exeter Run was "discovered" by Mr. E. B. Dickson (now in India); while the London-Land's End Trial was, he believed, a joint affair originated by Mr. H. G. Bell and himself.

Further reminiscences of twenty-one years ago were then given by some of the older officials, but these were sadly interrupted by an unruly portion of the gathering.

Mr. Ernest Arnott, first captain of the M.C.C., said that it was nineteen years since he had had anything to do with motor cycles, regarding which his chief recollection were of flat belts, surface carburetters, and hard pedalling. He had competed in the Circuit des Ardennes. Van Hooydonk was there and he had got the better of him. He remembered Mr. Charles Jarrott's advice that the best thing to do in a race was to get to the finish, as it often happened in those days that a finisher had an excellent chance of being the winner.

Mr. J. H. Reeves, one of the earlier secretaries, said that his acquaintance with the Motor Cycling Club dated from the first day of the S. F. Edge Cup Trials in 1903. During his term of office he had hoped to get 200 members but he was disappointed, and that happy event was left to his successor, Mr. Arthur Candler. He well remembered the grief of the then treasurer, Mr. E. Marsh, at the conclusion of the 1904 London-Edinburgh run when he discovered that the club would have to find the money for 22 gold medals. He also referred to the early history of the Team Trial Trophy, concerning which he was approached by Mr. B. H. Davies (*The Motor Cycle*), whose wit had largely added to the success of The Motor Cycling Club Gazette, of which he held a bound copy in his hand. That journal would be deposited in the South Kensington Museum.

Mr. Charles Jarrott, for many years the club's president, also "reminisced." Twenty-five years ago, he said, motor cyclists went into the unknown on unknown machines. As those present were aware, the greatest offence that could be committed in London by any user of the streets was to pass a refuge on the left side. He well remembered an occasion when an offending motor tricyclist had committed this heinous crime and the arm of the law had with disastrous results attempted to pull him back by grasping the cylinder. He also told how Mr. A. J. Wilson (who was present that evening) first appeared with a tricycle which had so fierce a clutch that every time he let it in the driver fell off behind.

Early Difficulties.

Mr. J. van Hooydonk told some interesting stories of the club's early history. How the first treasurer ran off with the club's money; how at the Bexhill speed trials the police trapped the members on their way down, and how, to ensure an easy start, the speed trials were started downhill, but that even then many of the machines failed to fire. He correctly ascribed the origin of the Edinburgh run to Mr. Arthur Candler, whose idea was then thought to be perfectly insane. The great success of the run was largely due to the fact that they first approached the police in all the counties traversed, with the result that they were given every assistance. He would remind his audience that in 1904 the run started from the G.P.O., and that when he left the timekeeper with Mr. G. E. Roberts (also present) as his passenger in a Trimo, the betting was 200 to 1 against their getting through.

Following the speeches came the distribution of the prizes and finally a dance.

"THE MOTOR CYCLE" FILM.

Many Appreciations. 800 Witness First Northern Exhibition. Where to See it Next Week.

APPRECIATIONS from many of those who have already seen *The Motor Cycle* film have reached us by almost every post since the Show when the film was first shown at the Broadway Cinema, Hammersmith. One enthusiast, whose letter is typical, writes:

> "Allow me to congratulate all concerned in the production of *The Motor Cycle* film. I consider it to be a really fine piece of work and a film which should appeal to every motor cyclist worthy of the name, as it enables the man in the street to form a good idea of the reliability of the modern machine. I have but one criticism to make, which I heard expressed by more than one member of the audience last Wednesday, namely, 'What a pity there isn't more of it!'"

The first club to receive the Northern film was the Southport Motor Club, and it was exhibited on the evening of the 6th inst. at the Coliseum Cinema, Southport. Over 800 people witnessed it, and at an informal meeting of the Southport M.C. afterwards the committee expressed appreciation for the film, which had undoubtedly done a great deal for the club.

Where to see the Film.

To-day (Thursday) the Southern film is being exhibited by the Richmond and District M.C. at the Princes Hall, Richmond; on Saturday (16th) and Monday (18th) the Devizes and District M.C. will show it at the Electric Theatre, Devizes; Tuesday (19th), the Abingdon Kinema, Stert Street, Abingdon; Wednesday (20th), the Yeovil and District M.C.C., at the Central Hall Picture Palace, Yeovil; while on Thursday (21st), the West Kent M.C. will have the film on exhibition at the Grand Hall Cinema, High Street, Bromley.

The Northern film will be shown during the present week by the following clubs: To-day by the Shirebrook M.C. at Shirebrook Empire, Shirebrook; to-morrow, the Matlock and W. Derbyshire M. & M.C.C., at the Matlock Picture Palace; on Saturday (16th), the Stafford and District M.C.C.; Monday (18th), North Derbyshire M.C.C., at the Coliseum, Chatsworth Road, Chesterfield; Tuesday (19th), the Blackpool and Fylde M.C., the Tripoli Picture House, Blackpool; Wednesday (20th), the Liverpool M.C., the Trocadero Super-Cinema, Liverpool; and on Thursday (21st), the Saltcoats and District M.C.C., at La Scala Picture House, Saltcoats.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

OBSOLETE ENGINE AND WIRED TYRES.

(1) Where are parts for a Fafnir motor cycle obtainable? (2) Are "wired" tyres still manufactured? (3) Would "beaded edge" tyres (26×2¼in.) fit 26×2in. rims for wired tyres?—P.G.

(1) So far as we know it is now impossible to obtain spare parts for Fafnir engines. (2) Very few of the British tyre manufacturers have continued to make wired tyres in motor cycle sizes. Possibly some could be made specially. (3) Beaded edged tyres cannot be fitted to "wired on" rims; your best plan is to have the wheels rebuilt with beaded rims. This would not be expensive.

LONG EXHAUST PIPE ENTHUSIASM.

Is it legal for me to run a Rudge-Multi without a silencing box if the exhaust pipe extends beyond the back wheel? If so, what distance must the exhaust pipe extend behind the back wheel? If I want a Rudge-Multi without a silencer, must I order it especially, or are they made like that?—R.A.R.

There is no legal definition of a silencer other than it must be an apparatus sufficient for reducing the noise of the exhaust to reasonable proportions. Long pipes are not regarded as "sufficient" in most cases. The standard machines are fitted with silencers; if you *must* have a straight-through exhaust pipe you will have to fit it after removing the standard exhaust system.

50° MAGNETO ON 45° ENGINE.

I have a twin Rex motor cycle which has been running perfectly on accumulator and coil ignition. Lately I bought a 50° magneto, and have fitted it and timed it to fire at top dead centre when the control is two-thirds retarded, but I find it very difficult to start when cold. Once it is warm it runs perfectly. I have since received information from the makers to the effect that the cylinders are set at 45°; would this make any difference to the starting?—R.V.M.

In all probability the starting trouble is due partly to the fact that the magneto is not of the correct angle, and also that the spark of the magneto is weak at low speeds. You do not say the make of the magneto, but if the contact breaker cams are detachable it would be easy to have them ground off to make the necessary slight correction for the difference in angle. Any reputable magneto repairing concern should do this for you at a low cost. The magneto might be re-magnetised with advantage.

Important Dates.

Tues., Dec. 26th and Wed., Dec. 27th—M.C.C. London-Exeter Run.

Sat., Jan. 13th to Wed., Jan. 24th—The Belgian Salon.

Fri., Jan. 26th to Sat., Feb. 3rd—Scottish Motor Show.

Sat., Feb. 24th—Colmore Cup Trial.

Wed., March 14th—A.C.U. Stock Machine Trial.

Sat., Mar. 17th—Victory Cup Trial.

Fri., March 30th and Sat., March 31st—M.C.C. London-Land's End Run.

Fri., May 18th—M.C.C. London-Edinburgh Run.

Mon., June 11th—Junior T.T. Race.

Wed., June 13th—Lightweight T.T. Race and Sidecar T.T. Race.

Fri., June 15th—Senior T.T. Race.

Sat., July 21st—B.M.C.R.C. 500 Miles Race.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday 4d.

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

OUT OF TUNE.

I have a single-cylinder Humber with two-speed hub gear, which, when it has run, say, a mile on high gear, begins to tick and appears to be over-heated, and finally stops of its own accord.—E.P.

From your brief description the cause of your trouble would appear to be due to faulty lubrication in conjunction, probably, with general lack of tune. You do not say what oil you are using, but a thinner grade might improve matters during the cold weather. This symptom of over-heating and "getting tired" is often caused by excessive carbon deposit in the engine, by a faulty plug or by bad compression due to worn valves or piston rings. A general engine overhaul including decarbonisation, grinding in the valves, tappet clearance adjustment, and fitting new rings and valve springs, should restore the machine to normal running.

RATIO AND TIMING FOR SIDECAR.

On the back wheel of my 550 c.c. Triumph sidecar (year 1917 or 1918) I have fitted a 28×3in. tyre in place of the 26×2¾in. When going up an incline or against a fairly strong head wind the machine seems to lack power and tends to knock, although it is free from carbon. The spark is timed rather more retarded than usual. There are 15 teeth on the engine sprocket and 30 on gear box, while the circumference of the pulley is 25in. and the belt drum 61in., which, I believe, gives a top gear of 4.88 to 1. (1) Is it advisable to fit a smaller engine sprocket. If so, with how many teeth? (2) What is the correct valve and ignition timing?—E.J.C.

(1) The machine should be quite capable of drawing a sidecar with the gear ratio now in use, and it would not be advisable in any case to use a smaller sprocket than 14 teeth. (2) The correct magneto timing is as follows:—With the ignition control lever about two-thirds retarded the contact breaker points should be just commencing to open when the piston is on top dead centre. The valve timing is as follows:—The inlet valve should be just opening and the exhaust valve just closing when the piston is at top dead centre. The change in tyre size should not have an appreciable effect on the running of the machine.

OIL LEAKAGES.

(1) Does oil leaking from the cylinder-crankcase joint and also from the oil pipe on the front cylinder make any difference to power? (2) When I half fill my gear box, the oil is thrown all over back wheel and my coat. How can this be remedied?—H.J.S.

(1) Loss of power will not be caused unless the engine is receiving insufficient oil. (2) We should advise using a mixture of half oil and light grease (*not* heavy) for the gear box lubrication. This would probably remedy the "oil-slinging" of which you complain.

FIRST STAGES WITH A TWO-STROKE.

(1) Is castor oil suitable for lubricating the 1920 Clyno two-stroke engine (lubrication is petroil)? (2) How long must I carefully run in the engine? (3) Can I fix a 26×2¼in. tyre on to the back wheel, as 26×2in. is rather on the small side? (4) If the machine is in good tune, what speed should I get under good conditions? (5) Can I get spares from the makers?—W. R. D.

(1) You should use mineral oils for the petroil lubrication system. (2) If the engine is new and unused, about 400 to 500 miles. (3) A 26×2¼in. tyre will fit the 26×2in. rim, but you should make quite sure that there is sufficient clearance between the latter and the mudguards for the larger size tyre. (4) About 40 m.p.h. (5) Spares are obtainable.

HORSE-POWER RATING.

I notice that the 1922 models of the single-cylinder Rover, although apparently with the same engine as my 1919 model (bore and stroke, 85×88 mm.), are rated as "4 h.p." What is the reason for this, and am I entitled to do the same?—G.B.

No doubt an improvement in power output justifies the makers in now calling their machine a "4 h.p." model. As a matter of fact, you will notice that we have discontinued to classify machines by arbitrary "horse-power" ratings, as classification by cubical capacity obviates any confusion which may arise.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"W.R.B." (Northampton). — 211 c.c. Levis, "Popular" model: suitability for beginner.

"F.M." (Address Wanted.—Ed.).—799 c.c. A.J.S. two-seater sidecar: side-pull, alignment, and tyre wear as compared with single-seater and pillion.

"D.A.J." (Lancaster). — Grado pulley (with or without K.S.) on heavy solo machine.

"W.T." (Merton).—499 c.c. Dunelt sidecar: long journeys with heavy loads.

"W.H.B." (Dartford).—Union, Orbit, or T.D.C. two-stroke engines, single geared.

"D.J.S." (Ramsgate).—993 c.c. Matchless sidecar: spring frame, electric lighting.

"T.W.B." (Grove Park).—490 c.c. Norton and 998 c.c. sports Harley-Davidson: suitable carburetter.

"J.P.B." (Sheffield).—1,301 c.c. Henderson with heavy sidecar in hilly country: ease of obtaining spares.

"E.E.S." (Leicester).—557 c.c. and 770 c.c. B.S.A. for dual-purpose work

"A.B.C." (Middlesbrough).—398 c.c. A.B.C.: tuning for speed and slow running.

SPARKLETS.

Scottish Motor Show.

The Scottish Motor Show will be held at the Kelvin Hall, Glasgow, and not in Edinburgh, as previously reported.

Protest Upheld.

J. H. Davies (492 Sunbeam) has now been awarded a gold medal for his performance in the Liverpool M.C. Reliance Cup Trial.

Change of Address.

Stanley Parker, the well-known northern rider, informs us that the business of Parker's, automobile engineers, has now been transferred to the fine building, Nos. 246-252, Deansgate, Manchester, previously occupied by the North British Rubber Co.

Cheaper Cycle Cars.

Owing to an increasing number of orders Tamplin Motors, Ltd., have reduced the price of the Tamplin cycle car to £136 10s.

New Polish.

Dunhill's, Ltd., have marketed a polish for enamelled or coachwork surfaces, for which very excellent results are claimed. It is bottled at 2s. and 3s. 9d.

Windscreen Prices.

Current revised list prices of the Sandum V-shaped windscreens are as follows: Standard, £3 10s.; Popular, £2 10s.; Super (opening with door), £3 12s. 6d.; combined hood and screen, £4.

Price Reductions.

Solo and sidecar prices of the 496 c.c. Lea-Francis are now £77 10s. and £99 15s. respectively.

Considerable reductions in prices are announced in Brooks' saddles and equipment, as sold by J. B. Brooks & Co., Ltd., Great Charles Street, Birmingham.

Cata'ogues Received.

Seal Motors, Ltd., 348, Stretford Road, Manchester.—Catalogue of the Seal Sociable, the price of which is now £145.

Dunhill's, Ltd., 359-361, Euston Road, London, N.W.1.—A complete review of Dunhill triangular frame sidecar chassis and bodies.

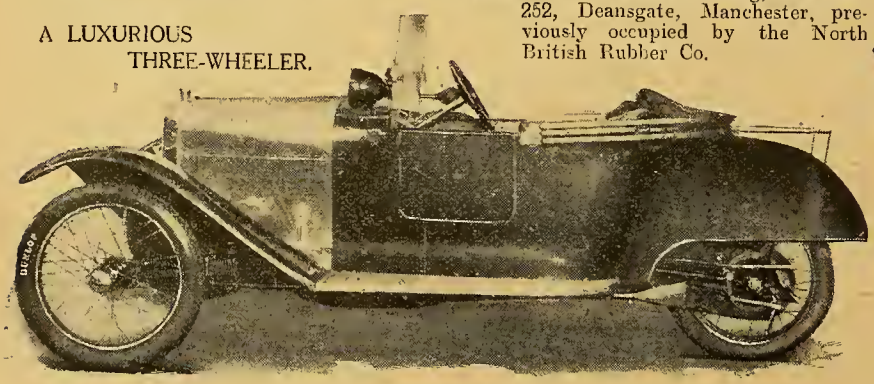
The Skefko Ball Bearing Co., Ltd., Luton, Beds.—Descriptive catalogue of ball bearings chiefly of interest to the manufacturer.

Dunford & Elliott (Sheffield), Ltd., Bath Street, Birmingham.—A folder giving details of all the various model Dunelt motor cycles, with full particulars and prices.

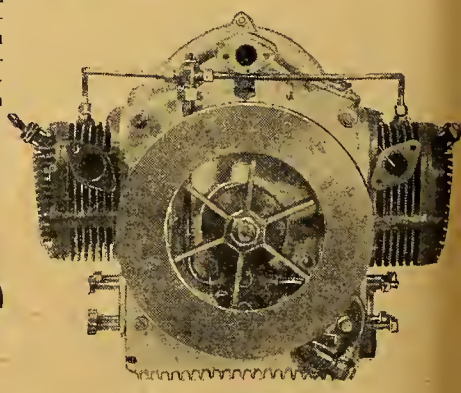
Norton Motors, Ltd., Bracebridge Street, Birmingham.—Illustrated booklet telling the prospective purchaser all he wants to know concerning the popular Norton models.

The Whitley Manufacturing Co., Ltd., Charterhouse Mills, London Road, Coventry.—List of sidecars, chain adjuster for use with Sturmey-Archer gear boxes, a foot control for clutches on Sturmey-Archer gear boxes, and spare plug carriers.

A LUXURIOUS THREE-WHEELER.



Fitted with a 1,098 c.c. water-cooled M.A.G. engine, the New Hudson three-wheeler is one of the most highly developed machines of its type. In specification it is a complete small car on three wheels. The drive is by shaft to a three-speed and reverse gear box, the final reduction being by chain.



OIL-COOLED FLAT-TWIN FOR CYCLE CARS.

Bradshaw oil-cooled flat-twin engine for lightweight runabouts. In the 750 c.c. class, it has side valves entirely enclosed in the crankcase extensions, and it is available with a four-speed and reverse unit gear box.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle" by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

59 Guineas; easy terms, exchanges.—A.B.C. 1921 coachbuilt combination, everything fitted.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4819

The Sign of Good Service

WHEN DO YOU WANT THAT NEW MACHINE?

IF IMMEDIATELY:

Make your choice from Godfrey's unique stock of 1923 models. The machine, registration, licence, insurance—everything, in fact—ready within an hour or so.

IF NEXT MONTH, THE MONTH AFTER, OR LATER STILL:

Place your order with Godfrey's now, and by the date appointed your new model, solo or combination, will be waiting for you. You will not be expected to pay until you take delivery.

Sterling values and low, stabilised prices mean an enormous demand. That is why we advise our friends to ORDER NOW.

Secure these 1923 models whilst available.

B.S.A. MODELS.

B.S.A., 4½ h.p. chain-cum-belt	£72 0
B.S.A., 4½ h.p. chain drive	£75 0
B.S.A., 6 h.p. twin-cylinder	£85 0
B.S.A., 8 h.p. twin-cylinder	£90 0

INDIAN MODELS.

4 h.p. **INDIAN** Scout	£96 10
4 h.p. **INDIAN** Scout combination	£118 10
7 h.p. **INDIAN** Standard, spring frame and fully equipped combination	£149 0
8 h.p. **INDIAN** Chief, fully equipped combination	£168 0

LEVIS MODELS.

Popular Model, 211 c.c., single geared	£38 0
Model "S," 211 c.c., 2-speed, clutch and kick-starter	£48 0
Model "T," 211 c.c., 2-speed, clutch and kick-starter	£49 0

NEW IMPERIAL.

2¾ h.p. Model 3 Solo	£65 0
2¼ h.p. Model 4A Combination	£85 0

RALEIGH MODELS.

2¾ h.p., 2-speed, belt drive	£55 0
2¼ h.p., 3-speed, chain drive	£60 0

DOUGLAS.

2¾ h.p., fully equipped	£80 0

EXCELSIOR.

1½ h.p., 2-speed	£28 10

LIGHT CARS.

ROVER, 8 h.p., Standard	£180 0
COVENTRY-PREMIER, 10 h.p., 2- or 4-seater	230 gns.

Godfrey's will post you any catalogue you may require and particulars of their deferred payment system, which provides for your present mount being taken in part exchange.

Just a post card with your name and address, and our full list of new and guaranteed second-hand machines will reach you by return of post.

GODFREY'S

Limited,

208, GT. PORTLAND ST., LONDON, W.1.

'Phone: Langham 1300 (2 lines).

IMPORTANT NOTICE.

Owing to the Christmas Holidays, the issue of "The Motor Cycle" for December 28th must be closed for press earlier than usual. Insertion of Miscellaneous Advertisements in that issue can only be guaranteed if in our hands by FIRST POST, Wednesday, December 20th.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., new, Lucas lamps, horn, taxed, many spares; £80.—Chequers Café, Tring. [4294

£45.—1920 3h.p. T.T. A.B.C., fully equipped, splendid condition; after 6.—88, Fitzjohn's Av., Hampstead, N.W. (D) [4510

1921 A.B.C., lamps, speedometer, recently overhauled by makers; £45.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [4565

1921 3h.p. A.B.C. and Cancelet sporting sidecar, electric lighting, Klaxon, good condition; £57.—Dennis, 5, Box Ridge, Purley. [4424

A.B.C. 1922 Standard Combination, 1,500 miles, Palmer cords, 2 unpunctured, dynamo lighting, new accumulator, electric and bulb horns, Cowey trip, watch, spring puttees, accessories, tools, spares, trial London; £100.—Box 5027, c/o *The Motor Cycle.* [4254

Spare Parts:

A.B.C.—All spares from stock.—Maudes', 100, Gt. Portland St., W.1. [4837

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0964

Abingdon.

ABINGDON 3½h.p. Combination, coachbuilt, 2-speed, perfect; £20.—17, Heaton Rd., Mitcham. [4845

Ace.

ACE 1921 Combination, dickey seat, screen, lamps, excellent condition and appearance; £75; or exchange for lower power and cash.—Box 5063, c/o *The Motor Cycle.* (Herts.) [4717

ROBERTSONS Motors, Ltd., the British Concessionnaires for this wonderful Ace machine, invite inspection of the latest models; £125 with full electric equipment.—157B, Great Portland St., W.1. [4883

Acme.

ACME Combination 1920, 8h.p. J.A.P., Sturmey gear box, dynamo lighting, interchangeable wheels, hood, screen; £65 or exchange.—3, Stamford Brook Rd., Hammersmith. [4666

A.J.S.

NEW 1922 B1 A.J.S., shop-soiled; accept £65.—391, King St. Hammersmith. [4710

BRAND New 1922 2¾h.p. A.J.S. Touring Model; £73.—Cross, Agent, Rotherham. [4363

1923 A.J.S. models for immediate delivery.—Premier Motor Co., Birmingham. [4689

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries.—Clifford Motories, Eastwood, Notts. [4098

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

A.J.S., 2¾h.p., 1923 models, for immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0974

F.O.C.H. invite inspection; A.J.S. and other makes: bargains.—5, Heath St., Hampstead (near Tube). [1375

A.J.S. 1923 2¾h.p. Touring and Sports Models; £77; delivery from stock.—Marston, 31, Bridge St., Chester. [4650

1920 6h.p. A.J.S. Combination, spare wheel, hood, speedometer, etc., complete; £94.—Cross, Agent, Rotherham. [4367

A.J.S. Combination, 1922, spare wheel, speedometer, perfect condition; £125.—Gray, 6, St. Nicholas Mansions, S.W.17. [4752

SOUTHPORT.—Immediate delivery 1923 models. A.J.S.; o.h.v. shortly; exchanges.—Kents, 417, Lord St., Southport. [4909

A.J.S. 2¾h.p. Stripped Sports, 1922, engine No. 2265, plated tank, all on; £58.—Brockbank's, 53, Lord St., Southport. [4765

NORTH London for A.J.S., all models from £77.—Your promptest agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0803

MOTOR CYCLES FOR SALE.

A.J.S

1922 2¾h.p. A.J.S. B1, equipped. mileage 500, indistinguishable from new; 65 guineas.—Chadwick, 37, Marine Parade, Brighton. [4459

A.J.S. 1920 6h.p. Combination, Easting, D.A. lighting. spare wheel, full equipment, good condition; £80.—16, Uplands Pk. Rd., Enfield. [4318

1920 6h.p. A.J.S. Combination, dynamo lighting, electric horn, hood, spare wheel, and guaranteed perfect; £80.—Kays, 8-10, Bond St., Ealing. [4553

A.J.S.—Immediate delivery; 2¾h.p. touring, £77; 2¾h.p. Sports, £77; 7h.p. Combination, £152/10. —Will Chapman's Garage, Belgrave Rd., Leicester. [2816

A.J.S. and Sidecar 1913, 3-speed, 5-6h.p., K.S. and clutch, lamp, horn, and generator, hood and screen; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4395

£43.—5h.p. A.J.S. Combination (C.B.), perfect condition, hood, screen, pillion, lamps, Binks, nearly new tyres. Seen at Coventry Supply Garage Holyhead Rd., Coventry. [4738

A.J.S. Combination, 1915, 5-6h.p., complete with lamps, hood, windscreen, spare wheel; £42/10. —Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

A.J.S. (August, 1921) 7h.p. Combination, spare wheel, screen, speedometer, lamp, Tan-Sad, etc.; £100.—S. and D. Motors, King's College Rd., Swiss Cottage. 'Phone: Hampstead 6782. [4849

A.J.S. Combination, 1919, usual accessories, 80-ampere-hour chloride accumulator, mechanical pump, genuine; best offer; or exchange new or later model, cash adjustment.—Taylor, 75, Roundwood Rd., Willesden. [4680

LATE 1920 A.J.S. Combination with special engine, Lucas Magdynamo lighting set, hood, screen, tyres unpunctured, perfect and in first-class condition; £100.—Letters for appointment to 30, Golders Gardens, N.W.11. [4414

A.J.S. 1921 7h.p. Combination, with Lucas battery lighting, spare wheels, speedometer, screen, etc., perfect condition throughout; £105. Full particulars of this and 50 other machines free on request; exchanges.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4794

A.J.S.—New 1923 models in stock for immediate delivery. 7h.p. combination, Magdyno lighting, etc., £152/10; 2¾h.p. 3-speed, all-chain drive, £77; deliveries of the 70 mile per hour 2¾h.p. o.h.v. model, price £87, commence shortly.—Avoid disappointment by placing your order with P. J. Evans, John Bright St., Birmingham. [4359

Spare Parts;

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

£29.—1921 2½h.p. Allon, 2-speed, clutch, and kick-starter, fully equipped; evenings.—42, Castelnau Mansions, Castelnau, Barnes. [4947

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £33.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [3267

5-6h.p. Alldays Allon, twin 2-stroke, Sturmey-Archer 3-speed, C., K.S., overhauled by makers, perfect; bargain, £35.—Elliott, 1, Park Av., Southport. [4461

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

American X

ROBERTSONS Motors, Ltd.—1921 American X Combination, complete with all accessories; £72.—157B, Great Portland St., W.1. [4880

Ariel.

£45.—4h.p. Ariel, 3 speeds, clutch, K.S., very fast, equipped.—King, Egrove, Oxford. [4571

NORTH London.—Ariel Riding Agents, all models from £57/10.—Jones' Garage, Broadway, Muswell Hill, N.10. [0804

SOUTHPORT.—1921 3½h.p. Ariel, lamps, horn, tax paid, nice condition; 49 guineas; exchanges.—Kents, 417, Lord St., Southport. [4914

23 Guineas; easy terms.—Ariel 3½h.p., 3-speed gear box, beauty.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4818

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency. Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

1920 3½h.p. Ariel, standard model, 3-speed, clutch, K.S., fully equipped, fast and quiet, equal to new; £45.—Jones Garage, Broadway, Muswell Hill, N.10. [4902

ARIEL Combination, 3-speed, kick-starter, electric lighting, Cameo windscreen, pillion, excellent condition; £40, or exchange lightweight.—Thomas, 24, Townley Rd., East Dulwich. [4212

1920 6-7h.p. Ariel Combination, fully equipped, speedometer, Easting windscreen, excellent condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1856

Order Your 1923 Model NOW.

OUR AGENCIES INCLUDE:

MOTOR CYCLES.

A.J.S.	O.K.
B.S.A.	ROYAL ENFIELD
CALTHORPE	RALEIGH
DOUGLAS	RUDGE
LEVIS	SUNBEAM
NEW IMPERIAL	TRIUMPH

LIGHT CARS.

CROUCH	MORGAN
MORRIS COWLEY	ROVER
MARSEAL	

SECOND-HAND MACHINES.

1921	CONNAUGHT 2-spd., clutch and k/str. ...	£32 10
1922	ENFIELD lightweight, 2-spd., k/str.	£37 10
1920	AMERICAN EXCELSIOR, 7/9 h.p.	£85 0
1914	BRADBURY & Sidecar	£20 0
1915	WOLF single-speed ...	£15 0
1921	TRIUMPH & Sidecar...	£85 0
1920	TRIUMPH & Sidecar...	£68 10
1920	RUDGE 7/9 h.p. & Sidecar	£79 10
1914	DOUGLAS	£20 0
1922	A. J. S. Comb., fully equipped	£145 0
1922	QUADRANT Comb. ...	£75 0
1922	NEW HUDSON Comb.	£95 0
1919	ENFIELD Comb. ...	£88 0
1916	ENFIELD Comb. ...	£65 0
1915	CALTHORPE	£22 0
1922	RUDGE fully equipped	£52 10
1921	RUDGE fully equipped	£42 10
1922	NEW COMET all access., 2-spd., k/str.	£34 10
1921	O.K. 2-spd. clutch ...	£37 10
1922	O.K. single speed, with clutch	£32 10
1922	McKENZIE	£17 10

Secondhand machines taken in part payment.
Deferred payments arranged.

LAMB'S Ltd

WALTHAMSTOW, London, N.E.
151, High Street.
Car Hire Dept. 'Phone: W'stow 418 & 13.
WOOD GREEN, London, N.
50, High Road.
EUSTON ROAD, London, N.W.
(Opp. Gt. Portland St. Stn.)

MOTOR CYCLES FOR SALE.

Ariel.

SPORTS Ariel, 3½h.p., 1922, new engine, electric, Cowey horn; any trial; perfect, ride 50 miles to genuine buyer; £58 for immediate sale.—P. Chamberlain, 25, Wellington Rd., Edgbaston. [4695

Bat.

8h.p. Bat Combination 1920, electric, Bonniksen, overhauled, Showell pump, any trial; £80.—Hughes, Esplanade, Rochester. [4991

BAT Combination, dynamo lighting, complete with all accessories; £55.—Houghton Bros., Woodcote Parade, Wallington, Surrey. [4302

39 Guineas; easy terms, exchanges.—Bat-Jap coach-built combination, 8h.p. twin, 3-speed gear box, kick, lamps.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4820

BAT 5-6h.p. J.A.P. Combination, 1917 engine, 2-speed gear, clutch rear wheel, Best and Lloyd's drip feed, Amac carburetter, lamps, horn, taxed, and in good running order; £35.—Harvey and Lane, Saxmundham, Suffolk. [4897

Beardmore.

BEARDMORE 3½h.p., 1921, splendid condition, spring frame, all-chain drive, 2 speeds, Cowey horn and speedometer, Lucas lamps, wants seeing; absolute bargain, £35.—308, King's Rd., Chelsea, S.W. [4333

1920 Beardmore-Precision 3½h.p., 2-speed, clutch and kick-start, spring frame, S.P. jet, Xtra air, B.T.H. electric lighting set, etc., licensed, perfect throughout; 42 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4019

Spare Parts:

BEARDMORE-PRECISION Spares. Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

Blackburne.

1920 4h.p. Blackburne, 3-speed, Sturmey, fully equipped, licensed; £42.—99, Cannon Hill Lane, Merton, S.W. [4564

BLACKBURNE 1920 4h.p. Combination, accessories, windscreen, beautiful condition; bargain, £50.—Allery and Bernard, 30, Thornsett Rd., Earlsfield, London, S.W. [4885

Spare Parts:

BLACKBURNE Engine Spares: list on application. —Maudes', 100, Gt. Portland St., W.1. [4838

Bradbury.

£10.—3½h.p. Bradbury, m.o.v., Bosch, single speed, good climber.—King, Egrove, Oxford. [4572

BRADBURY 4h.p., N.S.U. gear, in perfect running order; £15.—H. Wenfield, Han Castle, Saundersfoot, S. Wales. [4263

BRADBURY 1922 2¾h.p., 2 speeds, K.S., clutch, lamp and generator, horn, Tan-Sad, as new, unscratched; £42/10.

1922 2¾h.p., 2 speeds, K.S., clutch, tax paid; £37/10.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4396

£39/10.—4h.p. Bradbury Combination, new coach-built sidecar, rear seat, dress guard.—Harwood, 100, Avenue Rd., Swiss Cottage, N.W.3. [4278

1921 Bradbury Combination, 6h.p., A.J.S. engine, Grindlay sidecar, every possible accessory; £55; exchanges.—24, Balliol Rd., North Kensington. [4504

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £65; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

1920 4h.p. Bradbury, 3-speed, clutch, kick-starter, all-chain, lamps, horn, B. and B. needle jet, Thomson-Bennett, good condition; £42, or exchange lightweight and cash; seen after 6 p.m.—76, St. Michael's Rd., Aldershot. [4445

BRADBURY, late 1920, 4h.p., 3-speed, clutch, kick-starter, all-chain, handsome sidecar, lamps, horn, apron, Tan-Sad, etc.; cost, without sidecar, £141/4/3; our price, with sidecar, £45.—Delancey St. Garage, Camden Town, N.W.1. [4446

Brough Superior.

LONDON.

BROUGH SUPERIOR Service and Sales Depot.

THE Allen-Bennett Motor Co., Ltd.

SOLE Agents for London and thirty miles radius.

THE Sporting Rider's Ideal. Immediate delivery of Mark 2 6.5h.p. solo, £125; Mark 2 combination, £150; Mark 1 solo, £150; Mark 1 combination, £180. S.S. 80 supplied, with Brooklands certificate of 80 m.p.h., £165, delivered ten days. Demonstration models in stock, catalogues post free on request. Extended payments and exchanges.—9, 10, 11, Royal Parade, West Croydon. 'Phone: 2450-1. 'Grams: Track Croydon. [0733

BROUGH SUPERIOR, o.h.v., as new, Bonniksen, Lucas lamps; £110; exchange lightweight and cash.—Day, Broomfield, Chelmsford. [4378

BIS All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

1916 2¾h.p. Douglas, thoroughly overhauled and in perfect condition, new cover, driving chain, lamps, discs, taxed; bargain, £31.—Harvey and Lane, Saxmundham, Suffolk. [4898

1919 Douglas Combination, 4h.p., fully equipped, lamps, horn, tools, etc., in perfect order, guaranteed; £65.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4825

1915 Douglas 2¾h.p., tank Douglas colours, P. and H. head lamp, Lucas horn, Dunlops practically new, new pistons, just overhauled; first cheque £25.—Walbro, Ely, Cambs. [4762

1921 Douglas Combination, 4h.p. (detachable cylinder heads), speedometer, lamps, mechanical horn, etc., exceedingly smart; 55 guineas.—Fersfield, Westbury Rd., New Malden. [4587

1918 Douglas Combination, 4h.p., fully equipped, Easting screen, Tan-Sad, lamps, etc., splendid condition, guaranteed; £55.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4824

DOUGLAS 1917 2¾h.p., 2 speeds, fast, powerful, good tyres, guaranteed perfect, luggage carrier, tools, lamps; trial any time; tax paid; bargain, £26.—Owner, 45, Charles St., Exmouth St., Stepney. [4525

DOUGLAS 4h.p. Combination, believed 1921, engine No. 10251, frame No. 11197, fitted with speedometer and many special extras, very little used, paint and enamel as new, a magnificent turnout, licensed and insured; £72/10, or near offer.—Weybridge Automobiles, Ltd., Weybridge. 'Phone: 236. [4807

DOUGLAS 1920-21 4h.p., 3-speed, clutch, kick-start, standard specification, specially fitted latest Binks 3-jet carburetter, all accessories, including Lucas King's Own lamp set, Cowey speedometer, horn, all tools, etc.; the machine is in practically new condition, mileage 3,000 only, tyres and belt as new, guaranteed perfect mechanically and appearance; will accept £45 for quick sale.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [4673

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4803

ROBERTSON'S Motors, Ltd., can supply all usual Douglas spares requirements.—157*b*, Gt. Portland St., W.1. [5930

FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

DOUGLAS Spares.—Large stocks of new genuine Douglas spares at lowest cash prices. See our advertisement under Parts and Accessories.—The Edwards Engineering Co., 225, Acton Lane, Chiswick, W.4. [0927

Dunelt.

DUNELT.—£89/10 secures one of these famous combinations. Write for catalogue. Cash, exchanges, easy payments.—P. J. Evans, John Bright St., Birmingham. [4361

Economic.

ECONOMIC, as new, black and gold; snip, £18.—Day, Friars Place, Chelmsford. [4377

ECONOMIC 1922, as new, mileage 50, dynamo and acetylene lighting, taxed; £23 or near.—60, Baring Rd., Lee, S.E. 12. [4080

1922 2h.p. Twin Economic, new July, cost £36; accept £18; bought car.—Fielden, Naval Transport Depot, Pitsea, Essex. [4442

ECONOMIC Motor Cycles, £34; immediate delivery 2½h.p. opposed twin, variable gear, clutch, dynamo lighting; trial runs given.—London agents: Denmac Motor Agency, 4, Denmac Place, Piccadilly Circus. Tel.: Regent 986. [0893

Edmund.

EDMUND 1921 2¾h.p., J.A.P., 2 speeds, clutch, equipped, new condition; £45.—63, Solon Rd., Brixton. [4513

EDMUND (Levis engine), spring frame, 2-speed, clutch, tax paid; £38.—A. W. Platts, 602, King's Rd., Fulham, S.W.6. [4457

EDMUND-BLACKBURNE 2¾h.p., spring frame, 1922 special sports model, 3-speed, all-chain, plated tank, mileage about 700; price with Canoelet sporting sidecar, £65.—Marston, 31, Bridge St., Chester. [4653

1922 Spring Frame Edmund Combination, Blackburne engine, Burman 3-speed, clutch, kick-starter, lamps, speedometer, horn, etc., brand new; £25 sidecar, wonderful condition; gift at £75; would separate if necessary.—The Motor House, Ltd., 20, Finchley Rd., N.W.8. [3401

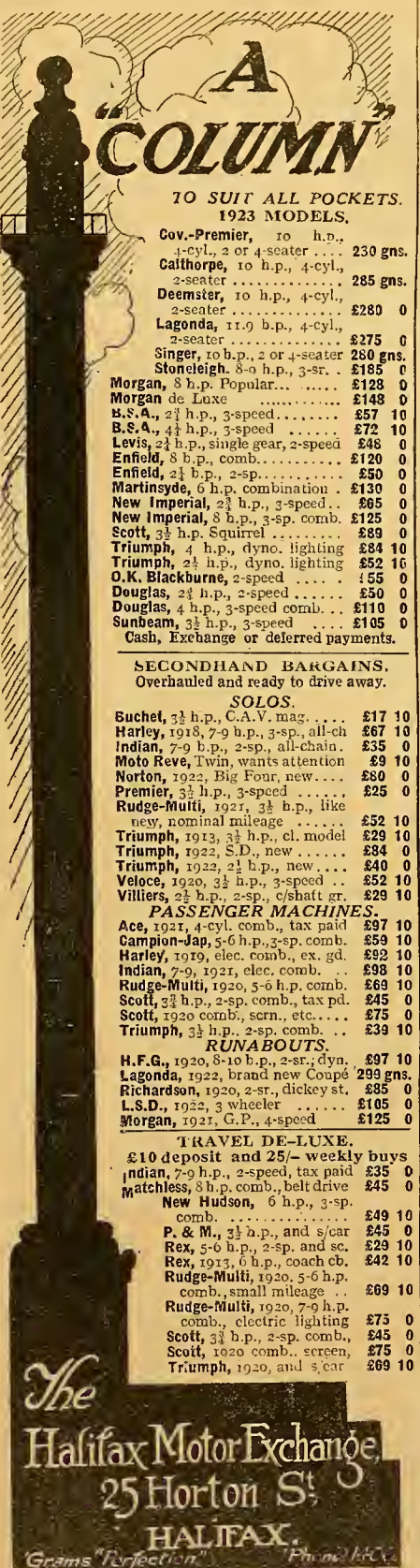
Enfield

1921 Enfield Lightweight; 26 guineas.—67, Ferulea Rd., Balham. Exchanges. [4955

1923 Enfields in stock; immediate delivery.—Premier Motor Co., Birmingham. [4690

ROYAL ENFIELD 3h.p., lamps, horn, ride away; £6/10.—11, Shelley Rd., Harlesden, N.W.10. [4432

PRACTICALLY new Dynamo Enfield Combination, every accessory; £95; exchanges.—24, Balliol Rd., North Kensington. [4507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Triumph, 1922, S.D., new £84 0
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Rudge-Multi, 1920, 5-6 h.p. comb. £69 10
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Scott, 1920 comb., scrn., etc..... £75 0
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Rudge-Multi, 1920, 7-9 h.p. comb., electric lighting £75 0
Scott, 3½ h.p., 2-sp. comb., £45 0
Scott, 1920 comb., screen, £75 0
Triumph, 1920, and s/car £69 10
The Halifax Motor Exchange,
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Enfield.

1919 Royal Enfield 3h.p. twin, 2-speed, clutch, K.S., mechanical lubrication, perfect; £40.—39, Ashford Rd., Swindon. [4264

ENFIELD Combination, 1917, not W.D., perfect condition; £48.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3344

ROYAL ENFIELD 1923 models now in stock. 8h.p. Combination, £120; 2¼h.p. 2-stroke, £50.—G. E. Dominy, Winchester. [4745

ENFIELDS.—Delivery from stock of all 1923 models from the Enfield agents, The Layton Garages, 30, Holywell St., Oxford. [4773

1917 3h.p. Enfield, 2 speeds, kick-start, fully equipped, new tyres, first-class order; £35.—198, King St., Hammersmith. [4465

NORTH London for Enfield.—All models, from £50.—Your promptest agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0809

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [5600

1921 Enfield Combination, dynamo lighting, hood, screen, condition perfect; £90.—Honghton Bros., Woodcote Parade, Wallington, Surrey. [4305

ENFIELD 2¼h.p. 1922 Sports, 2-stroke, T.T. bars, all on, new condition; £40.—Wanchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [4401

ROYAL ENFIELD 2-stroke 1921, kick-start, 2 tool-bags, little used, perfect condition; £37/10.—Kettridge, 49, Blenheim Park Rd., South Croydon [4095

ENFIELD 2¾h.p., 2-speed, lady's, drop frame, overhauled, enamelled and nickelled, new tyres; £25, or nearest.—13, Charles St., Barnes, S.W.13. [4558

ENFIELD 1920 8h.p. Combination, lamps, horn, mirror, etc., mileage 400, splendid condition, very little used; £100.—Brierley, Glanhavan, Llanfairfechan. [4275

1922 Royal Enfield Combination; cost £180 in summer; insured, trial run, expert examination invited; accept £120.—Mashford, 7, Park Rd., Kingston Hill. [4337

22 Guineas.—Enfield 2-stroke, 2-speed, clutch, late model, speedometer, thoroughly sound and reliable.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4602

1917 6h.p. Enfield Combination, lamps, Klaxon, hood, windscreen, thoroughly overhauled and guaranteed; willing ride any reasonable distance; price £75.—Alford, Loxbeare, Tiverton. [4741

CHEAPEST Advertised; 70 guineas.—1921 Enfield-Vickers Combination, 8h.p., Lucas horn, lamps, luggage grid, mat, apron, pump, tools, tax paid; trial.—Smith's, 86, Chalk Farm Rd., N.W.3. [4804

AT Edwards.—1920 8h.p. Enfield Combination, lamps, horn, pillion seat and speedometer, tax paid, superb condition; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4868

1921 Enfield Combination, 8h.p., Lucas dynamo, hood, screen, speedometer, etc., absolutely unscratched, tax paid, perfect; exchanges; £100.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4826

YOUR Motor Cycle or Combination taken in part payment for an Enfield, any model; cash, deferred, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal. London. [4927

57 Guineas; exchange.—1918-19 Enfield Combination, 8h.p., Colonial model, electric lighting, Easting, legshields, luggage grid, nice condition, any examination.—Seabridge, 35, Hausler Rd., East Dulwich. Sydenham 2452. [4002

ENFIELD Combination (1921), 8h.p., Magdyno, absolutely as new, engine and magneto overhauled by makers this week, enclosed hood, new Dunlop cord cover, 2 new tubes; £105; owner buying new Morgan.—Scholes, Campden, Glos. [4557

ENFIELD.—Immediate delivery of all 1923 models. 8h.p. combination, £120; 2¼h.p. 2-speed, kick-start, all-chain drive, £50.—Write or call for catalogue, and ensure satisfaction by placing your order with P. J. Evans, John Bright St., Birmingham. [4360

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ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

EXCELSIOR 1923 1½h.p., 2-speed; £28/10; in stock.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4876

NEW 1923 Excelsior Lightweights, 2 speeds, wonderful power; £28/10, carriage paid.—Keen, Leominster. [3452

SALE or exchange for Ford landaulet, Excelsior combination, J.A.P. 8h.p., Magdyno lighting, 4 detachable wheels, luxuriously equipped; £93.—W. Sparks, 19, Longford Crescent, St. Thomas, Swansea. [4286

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15 Guineas; easy terms.—F.N., 4½-5h.p., 4 cyls., shaft drive, good tyres, runs well.

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29 Guineas; easy terms.—F.N. 5-6h.p., 4 cyls., 2 speeds, clutch, kick.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4821

MOTOR Cycle, 4-cyl. F.N.; £10.—H. R. Hall, c/o Green Man Hotel, Whetstone, London. [4324

F.N. 1923 8h.p., 4-cylinder shaft-drive Combination, single-seater, £135; two-seater, £140. London and district agents.—Bartlett's, 93, Great Portland St., W. [4967

7 h.p. F.N. Combination, fully equipped, mechanical valves, 3 speeds, clutch, kick-starter, excellent condition; cheap, £45.—32, Boston Park Rd., Brentford. [4422

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [1353

Harley-Davidson.

£42.—1918 Special Speed Model Solo Harley, splendid, fast 'bus; after 6.—88, Fitzjohn's Av., Hampstead, N.W. (D) [4511

£68.—Harley-Davidson Combination 1918, electric lighting, Bosch magneto, perfect order.—W. Bennett, 19, Ferrand St., London, S.E.1. [4292

HARLEY-DAVIDSON Combination, 2-seater sidecar, all on, recently overhauled, re-enamelled, plated; £95, near offer.—17, Sydney Rd., Raynes Park. [4478

HARLEY-DAVIDSON 1921 4h.p., flat twin, perfect 52 guineas; exchanges, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3925

HARLEY-DAVIDSON Combination, 1916, Bosch magneto, Amac, gas lamps, Lucas horn, disc wheels, Cameo windscreen; bargain, £45.—Walbro, Ely, Cambs. [4763

39 Guineas; easy terms, exchanges.—Harley-Davidson coachbuilt combination, 7h.p. twin.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [4822

41 Guineas; exchange.—1915 Harley, 3 speeds, clutch, K.S., roomy coachbuilt sidecar, fully equipped, nice condition, any examination.—Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [4090

1920 Harley Combination, 4h.p., all lamps, horn, speedometer, etc., absolutely as new, guaranteed; £70; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4827

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; cash, deferred or exchanges. Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal, London. [4925

LATE 1920 Harley-Davidson, 7-9h.p., Montgomery sidecar, luxuriously upholstered, overhauled last month, and in splendid condition, Easting windscreen, Tan-Sad, new heavy Dunlop tyre and tube, new chain, lamps, spares, etc.; any trial given; owner buying a car; best offer about £100 will secure.—Write for further particulars, Griffith, c/o Midland Bank, Ltd., Llanrhaiadr, Mont., near Oswestry. [4482

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HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4804

HARLEY-DAVIDSON second-hand W.D. spares, all genuine; competitive prices; practically any parts.—Maudes', 100, Gt. Portland St., W.1. [4839

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

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ROBERTSONS Motors, Ltd.—1920 Henderson Combination, all accessories; £78. 1915 combination, luxurious sidecar, speedometer, accessories, £48.—157B, Great Portland St., W.1. [4878

79 Guineas; Easy Terms, Exchanges.—1920 Henderson magnificent Coachbuilt Combination 10h.p., 4-cyl., dynamo lighting, 3 speeds, disc wheels, 2 screens.—Wandsworth Motor Exchange, Ebner St., Wandsworth. (Town Station.) [4814

BARKER'S Motors are authorised Agents and Repairers for 4-cylinder Henderson Motor Cycles; moderate charges; work guaranteed. New machines supplied for cash, deferred, or exchanges.—194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal. London. [4928

HENDERSON late 1921 De Luxe Combination, electric lighting, Ace discs, speedometer, horn, Triplex windscreen, fitted out regardless of cost; accept £120 or offer; mileage under 1,000, and as new in every respect.—Oaklands, The Grove, Finchley. 'Phone: 868. [4433

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1921	2½ h.p. **VELOCETTE,** 2-speed	£35
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1920	7-9 h.p. **INDIAN** Comb., dynamo	£55
1920	5-6 h.p. **ZENITH,** speedometer, etc.	£48
1920	6 h.p. **A.J.S.** Comb., as new	£100
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1920	2½ h.p. **CLYNO,** 2-speed and clutch	£25
1920	8 h.p. **ENFIELD** Comb.	£75
1920	3½ h.p. **I.O.M. RUDGE-MULTI**	£33
1920	4 h.p. **DOUGLAS** Comb.	£55
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1919	7-9 h.p. **INDIAN** Powerplus	£45
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1919	4 h.p. **TRIUMPH** Comb., model "H"	£58
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1917	4 h.p. **DOUGLAS** Comb.	£50
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1919	4 h.p. **TRIUMPH,** as new	£49
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HOBART 2½h.p. 2-speed, very slightly soiled; £32. Also one as above, very good condition; £28; complete.—Marston, 31, Bridge St., Chester. [4652

Humber.

HUMBER 2-speed, lamps; £12/10, bargain.—Rhind and Co., Stone place, Rusholme. [4353

HUMBER Water-cooled Flat Twin 6h.p. Combination; one of their noted 1917-18 models, fully equipped; accept £52/10.—Bunting's Exchange, Wealdstone. [4670

HUMBER 1917 6h.p., water-cooled horizontal twin, Montgomery sidecar, mechanically perfect, makers' 1922 £10 overhaul; £45.—Ernest Kann, 239, Willesden Lane, N.W.2. [4521

HUMBER 4h.p. Combination, 3 speeds, clutch, kick-start, windscreen, accessories, splendid condition; £32.—Allery and Bernard, 30, Thornsett Rd., Earlsfield, London, S.W. [4884

HUMBER Flat Twin.—Place your order now for early delivery of the sports model; £89; and the 2¾h.p. model at £65.—The Layton Garages, 30, Holywell St., Oxford. [4785

Indian.

INDIAN 5-6h.p., 2-speed, perfect, £22; 7-9h.p. clutch model, £24.—17, Heaton Rd., Mitcham. [4843

39 Guineas; Easy Terms.—Indian Coachbuilt Combination 5h.p. Twin, 3 speeds, lamps.—Below.

45 Guineas; Easy Terms.—Indian Coachbuilt Combination 7-9h.p. Powerplus, 3 speeds, lamps.—Below.

29 Guineas; Easy Terms.—Indian, clutch, 7-9h.p Twin, very fast, beauty.—Wandsworth Motor Exchange, Ebner St., Wandsworth. (Town Station.) [4813

INDIAN, 1922, Scout, like new, taxed; 68 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3592

1921 Indian Combination, dynamo, standard sidecar, must sell; 62 guineas.—19, Valnay St., Tooting. [4958

INDIAN Combination, 7-9h.p. model, 1914, faultless; £27, gift.—Simmonds, Firs, Cotterill Rd., Surbiton. [4285

1919 Indian Combination, 7-9h.p., new Splitdorf magneto, new gears, perfect; £55.—Braham, 43, City Rd., E.C.1. [4757

£50.—Powerplus Indian Combination, 1918-19, fully equipped, splendid condition; instalments.—63, Solon Rd., Brixton. [4514

1920 Powerplus Indian Combination, speedometer, etc., whole combination in lovely condition; £70.—Walbro, Ely, Cambs. [4759

NORTH London for Indian, all models.—Scouts, £96/10.—Your agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0785

£60.—Indian Combination 1919, full electrical equipment, windscreen.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [4877

ANY Offers, exchanges.—1920-21 7-9h.p. Indian Combination, polished discs, electric light, Binks.—Argyle Lodge, Newton Rd., Burton-on-Trent. [4624

1915 Indian, 2-speed, hand clutch, speedometer, electric lights, new tyres, in perfect condition, guaranteed; 24 guineas.—51, Upper Richmond Rd., East Putney. [4931

INDIAN Scout 1920, lamps, horn, 80 m.p.h., speedometer, Tan-Sad, fast, only done 4,000 miles, guaranteed sound mechanical condition, taxed and insured; 48 guineas.—Macfarlane, Ardquin, Hindhead, Surrey. [4427

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INDIAN 7h.p. Spring Frame Combination, with dynamo lighting, speedometer, hood, screen, etc., in perfect condition, new May, 1922, £95; also 1920 model, similar to above, in very good order, £70; exchanges. Full particulars of these and 50 other machines free on request.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4797

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GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares.—New and second-hand for all models; all second-hand spares sent on approval; write, call, or 'phone; we can save you money.—Langford's, 37, Cricklewood Broadway, N.W.2. Hampstead 8616. [1354

Invicta.

1921 Invicta 2¾h.p., 2-speed, fully equipped, licensed, excellent condition; 27 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3339

Ivy.

IVY 2½h.p., June, 1921, under 1,000 miles, stored 6 months, original tyres unpunctured, condition as new, lamps, Klaxon, 2-speed clutch, kick-start; cost £70; trial after 6 p.m., Saturday 2 p.m.; £42, or near offer.—B., 6, Ringstead Rd., Catford, S.E. [4347

Spare Parts:

IVY Engine Spares.—Maudes', 100, Gt. Portland St., W.1. [4841

James

1920 3½h.p. Twin James, all-chain drive; £32/10.—24, Balliol Rd., North Kensington. [4503

AT Edwards.—1922 3½h.p. Sports James, equipped, tax paid, indistinguishable from new; 59 guineas —Below.

1919 3½h.p. Twin James, 3-speed, all-chain drive, equipped lamps, horn, etc.; 38 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4005

1918-19 Twin James Combination, 3-speed, kick-start, fully equipped; £56.—Rhind and Co., Stone Place, Rusholme. [4354

4¼h.p. James Combination, 1919, perfect condition; offer wanted; seen by appointment.—2, Flodden Rd., Camberwell. [4102

1922 James 2½h.p., uncrated, kick-start, 2-speed, T.T. bars, P.H. lamp; big bargain, £47.—25, Broad St., King's Lynn. [4330

JAMES 2¼h.p., 1922. 2-stroke, 2 speeds, K.S., clutch, as new; 30 guineas.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [4403

1921-1922 7h.p. James De Luxe Combination, Lucas Magdyno, excellent order and condition; must be sold, a genuine bargain, £100 or best.—H. Tibbetts, Church Sq., Bellbroughton, Stourbridge. [4486

Spare Parts:

JAMES Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9449

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J.E.S.

J.E.S., running order; £6/10; also 1¼h.p. engine, 20/-.—Carter, Mount Rd., Cranleigh. [4479

J.H.

1915-16 J.H. Combination, 5h.p. M.A.G., Sturmey-Archer 3-speed, Lucas accessories, trial; £48/10.—Glover, Hereford Villa, New Barnet. [4418

Juno.

2½h.p. Juno-Precision, 3-speed, clutch, engine just thoroughly overhauled, nearly new Dunlops, good running order; £12, bargain.—F. C. Lingley, New St., Woodbridge, Suffolk. [4547

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LEA-FRANCIS Cycle fitted Simplex connection; £15.—Rhind and Co., Stone Place, Rusholme. [4355

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LEA-FRANCIS 3½h.p., twin J.A.P., 2-speed, clutch and K.S., lamps, horn and speedometer, solo or with nearly new sidecar; offers.—38, Lordship Lane, S.E.22. [4444

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PREMIER Motor Co., the Levis Specialists.

IMMEDIATE delivery of all 1923 Levis models; 2¼h.p. Popular, single gear, £38; Model T, 2¼h.p., 2-speed, clutch, kick-start, £49; the nearest agents to the Levis works; buy direct from the firm on the spot; deferred payments 4 per cent. extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4692

£18.—2½h.p. Levis 2-stroke, just had new piston.—King, Egrove Farm, Oxford. [4574

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone: 852. [0966

LEVIS Popular, excellent order, smart appearance, fully equipped, taxed; £18.—58, Stafford Rd., Bow. [4094

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BROUGH "Sports," 3½ h.p., 3-spd., chain drive	£70

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TRIUMPH type S.D., chain drive, Millford No. 6 sidecar	£102
TRIUMPH type S.D.C. Combination, chain drive, Gloria No. 9 sidecar	£107
RALEIGH 5/6 h.p. 3-spd., spring frame, Montgomery "Sporting" sidecar	£110
CLYNO 8 h.p. Combination, spring frame, detachable wheels, wind screen	£115
RALEIGH 5/6 h.p. model de luxe Combination, spring frame, detachable wheels, wind screen	£120

TRIUMPH type H. 4 h.p., 3-speed, chain-cum-belt drive, Sturmey-Archer 3-spd., c and k. s.	£75
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The PREMIER MOTOR CO., Aston Rd., BIRMINGHAM.

MOTOR CYCLES FOR SALE.

Levis

1922 Levis model S, brand new, shop-soiled; 40 guineas.—Knights, 126, Upper Tooting Rd., S.W.17. [0980

LEVIS 1922, as new, 2-speed, K.S., horn, tools, etc., bargain, special tyres; £35.—Write, 79, Castleton Mansions, Barnes. [4561

1923 Levis, brand new, cost £52, fully equipped, going abroad at once; first offer over £30.—Bucklord Royal Automobile Club, London. [4231

LEVIS, late 1921, 2-speeds, hand clutch, speedometer, lamps, etc., beautiful condition; £35.—30, Thornsett Rd., Earlsfield, London. [3157

LEVIS 2¾h.p. 2-speed, all-chain drive, perfect order; £30. 2¼h.p. single-speed; £20. Including accessories.—Marston, 31, Bridge St., Chester. [4651

LEVIS T.T., makers' guarantee of 50 m.p.h., Philipson and all accessories, perfect condition, as new; cost £85.—The Cottage, Pembroke Rd., Kensington. [4348

LEVIS Sturmey-Archer, 2-speed, K.S., enamel and plating like new, any examination, absolutely perfect, accessories; £28, a bargain.—Weybourne, Aldershot Rd., Guildford. [4316

LEVIS.—Sole Wholesale and Retail Agents for Southern London and district, and service depot.—United Auto Agencies, 7, 8 and 9, Cambridge Place, Praed St., Paddington, W.2.

LEVIS.—Show models now on exhibition in our showrooms as above. [4371

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

Lincoln-Elk.

4h.p. Lincoln-Elk, Bosch enclosed magneto, Senspray, Druid forks, lamps, horn, excellent condition; £10/10.—P. Willcocks, Datchet, Bucks. [4518

LINCOLN-ELK 3½h.p., excellent condition; £12; ride to deliver 100 miles, lamps, horn, etc., fitted; £14.—Hodge, 46, Bridge St., Maidenhead. [4265

L.M.C.

£9/19/11.—3½h.p. L.M.C., Bosch, B. and B., low, sporty.—Fisher, Springwell Rd., Heston, Hounslow. [4645

Martinsyde.

1921 Martinsyde Combination 7h.p., absolutely as new; bargain, 65 guineas; cost £170.—67, Fernlea Rd., Balham. [4952

BRAND New 6h.p. Standard Martinsyde Combination, £117; also 3½h.p. model, with sidecar, new, £100.—Please write S. K. Bricknell, 17, Harbledown Rd., S.W.6. [4631

ROBERTSONS Motors, Limited, are the London Martinsyde Service agents; trial runs arranged, 1923 models now available at the new prices, spares stocked.—157B, Gt. Portland St., W.1. [1122

1922 Martinsyde 6h.p. Combination, complete with Millford sidecar, cost £160, has only been used a few times; a gift at £130; cash or deferred.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6560

COMBINATION Martinsyde 6h.p., new last January, perfect condition, electric light, speedometer, luggage grid, owner going abroad; £95, or offer; any trial by appointment.—14, Edge Hill, Wimbledon. Tel.: 1896. [4250

MARTINSYDE Quick Six.—Almost brand new 1923 model, guaranteed perfect; must sell; mileage under 1,000, Ricardos, lamps, speedometer, etc., any speed without tuning; cost £150 few weeks back; sell all-on £95.—Fison, Sudbury, Suffolk. [4712

Spare Parts:

NORTH London for Martinsyde spares and complete machines from stock. It's Jones' Garage, Broadway, Muswell Hill, N.10. [0786

Matador.

MATADORS are creating a sensation by reason of their wonderful value. Don't be left without one for the spring. Orders are rolling in daily.

A 2¾h.p. o.h.v. Bradshaw engined machine that can do 60 miles per hour with ease is a machine to be seriously considered. The finish is exceptionally good, the tyres are Dunlop 700×80, the mudguards sensibly wide, Burman 3-speed, clutch, and kick-starter. There is a host of other good points. Come along and see it.

AT £75 they are excellent value.

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1, know a good thing when they see it! Come and see it too.

A FEW Agencies still open in London, Surrey, Sussex. [4810

Matchless.

MATCHLESS.—Actually in stock, 1923, 3h.p. sports; £70.—The Layton Garages, 30, Holywell St., Oxford. [4783

MOTOR CYCLES FOR SALE.

Matchless.

1921-22 H Matchless Combination, absolutely as new; 84 guineas.—19, Valnay St., Tooting. [4948

1922 Matchless Combination, super sports J.A.P., lamps, horn, tax; 92 guineas.—67, Flaxman Rd., Camberwell. [4755

MATCHLESS-M.A.G. model H2, fully equipped, carefully used, under 6,000, spares; £100.—Chequers Café, Tring. [4293

1921 Model H Matchless Combination, equipped with every accessory; £80; exchanges.—24, Balliol Rd., North Kensington. [4505

MATCHLESS 1921 M.A.G. Spring Frame Combination, 2-seater sidecar, dynamo lighting; bargain, £100.—Bartlett's, 93, Great Portland St. [4969

MATCHLESS, all models, 1923 prices; best exchange allowances; deferred.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [1155

1921 Matchless Combination, Magdyno, spare wheel, speedometer, etc.; best offer over £80.—N., "Kilworth," Ray Park Avenue, Maidenhead. [4234

1921 (April) Matchless 8h.p., M.A.G., 2-seater sidecar, full equipment, electrics, carefully driven, and in excellent order; £100.—Thomas, 157, Well Hall Rd., Eltham, S.E.9. [4443

MATCHLESS Model H M.A.G. Combination, Lucas equipped, screen, side screens, spare wheel, etc., in perfect condition throughout; 73 guineas.—51, Upper Richmond Rd., East Putney. [4933

1921 Model H Matchless-M.A.G., dynamo lighting, hood, screen, side screens, side curtains, speedometer, many extras, as new; 88 guineas.—51, Upper Richmond Rd., East Putney. [4936

MATCHLESS-J.A.P. Combination, model H, 1920, Magdyno, speedometer, clock, leg shields, spare wheel, tools, etc., condition perfect, enamel plating like new; £97.—121, Breakspears Rd., Brockley. [4429

MATCHLESS 1920 (late) Model H Combination, spare wheel, hood, Triplex windscreen, Lucas Magdyno, speedometer, fully equipped, small mileage; 100 guineas.—Athens, Bowes Rd., Walton-on-Thames. [4420

AT Edwards.—1919 8h.p. Victory Model Matchless Combination, Lucas lamps, Bonniksen speedometer, spare wheel, new condition throughout; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4006

LATE 1920 Matchless 8h.p. J.A.P., Magdyno electric lights, spring frame, speedometer, bulb and electric horns, spring pillion, hood, Easting, etcp, Binks, unused spare wheel, tyre; £80.—13, Royal Hospital Rd., Chelsea, after 7. [4240

YOUR Motor Cycle or Combination taken in part payment for a Matchless, any model; cash, deferred, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone 4441 Latchmere. 'Grams: Pushfully Bal. London. [4924

MATCHLESS Model H, late 1920, M.A.G. Combination, dynamo lighting, detachable wheels, new tyres, speedometer, hood, screen, side curtains; £87.—Chinery, 1, Hammersmith Rd., Kensington. 'Phone: Western 4140. [4534

1921 Matchless 2-seater Combination, dynamo lighting, £40 worth extras, including hood, screens, speedometer, spare wheel unused,, etc., whole outfit as new, mileage negligible; owing to indisposition of owner; to-day's cost, £195; accept £125.—52, Dunlston Rd., Upper Clapton. [4756

MATCHLESS 1923 models and prices are the most interesting proposition before the public. Why not exchange your present mount for one of these desirable combinations, we allow highest exchange values, liberal deferred payment terms, tuition free.—Edwards, 50, Harrington Rd., South Kensington. [4870

1923 Matchless Combinations.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone Lee Green 774), will be pleased to take your orders for prompt delivery. Exchanges and deferred payments arranged; demonstration model always in stock. Purchasers taught free. Large assortment of new and second-hand motor cycles always in stock. [3244

MATCHLESS, new October, 1921, M.A.G., with 2-seater sidecar, Lucas horn, Lucas head lamp, electric side and tail lamps, mirror, legshields, 2 windscreens with apron and side curtains, spare wheel and tyre, luggage grid, hood, feet warmer for sidecar passengers, tools, etc., a very smart outfit, indistinguishable from new; £130 secures.—Wilkins, Simpson, Opposite Olympia, London. [4309

MATCHLESS 1923 Models.—Greenwich.—Many thanks to clients for orders placed at the Show. We are now delivering the goods. Send your order along to Sam. E. Clapham and secure satisfaction. Special note.—In addition to Matchless we are agents for all leading makes of motor cycles and cars. Cash, exchange, or easy terms.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [3938

MATCHLESS 1921 2-seater Combination, fully equipped and in perfect condition, £115; also 1920 spring frame combination with dynamo lighting, spare wheel, and all accessories, £90; also 5 other Matchless combinations from £60. Full particulars of these and 50 other machines free on request; exchanges.—Nunnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4795

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We are contracting agents for the following leading makes and can give immediate delivery of all latest 1923 Models at lowest prices. The 1922 and Second-hand machines enumerated below are worth buying now for next season at the prices quoted.

All machines carriage paid to any address.

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1922 SOLO (NEW).

NORTON, 3½ h.p., all-chain, 3-sp., K.S. ..	£69
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N.U.T., 5 h.p., 3-speed, K.S.	£78
HAWKER, 4¼ h.p., 3-sp., all-chain, K.S. ..	£73
BEARDMORE, Barr & Stroud, 3-sp., chain, K.S.	£69
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IVY, 3 h.p., chain, 3-speed, K.S.	£59
ALLON, 2¾ h.p., 2-sp., elec. lamps, K.S. ..	£53
NEW HUDSON, 2¼ h.p., 2-stroke, 2-speed	£38
EDMUND, 2¾ h.p., spring frame, 3-sp., K.S.	£69
DIAMOND, Barr & Stroud, 3-sp., chain ..	£69
SUN, 2¾ h.p., J.A.P., 3-sp., K.S.	£55
REVERE, 2½ h.p., Villiers, 2-speed	£35

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NORTON Big Four, Sporting sidecar ...,	£99
MARTINSYDE, 6 h.p. twin, chain, detachable wheels	£115
BEARDMORE, 4½ h.p., spring frame, chain	£110
COVENTRY EAGLE, 4 h.p., 3-sp., chain ..	£99

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NORTON, 1921, 3-sp., chain, K.S.	£48
SCOTT, 1920, 3¾ h.p., lamps, horn	£45
N.U.T., 1921, 2¾ h.p., twin, actual I.O.M. machine	£68
HARLEY, 1922, 4 h.p., flat twin, 3-speed, chain	£73
A.B.C., 1921, 3 h.p., 4-speed, chain	£45
DIAMOND, 1922, 2¾ h.p., 3-sp., Blackburne	£40
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NEW HUDSON, 1914, 3-sp. hub, good order	£23

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SCOTT, 3¾ h.p., 1916, lamps and horn	£45
HARLEY, 7-9 h.p., De Luxe sidecar, 1921	£79
JAMES, 4 h.p., lamps and horn, 1916	£61
CAMPION, 8 h.p., J.A.P., lamps and horn, 1919	£69
NORTON, Big Four, De Luxe sc., lamps, 1919	£65
HENDERSON, 10 h.p., 4-cyl., reverse electric, 1921	£98

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Several 1922 shop-soiled models at greatly reduced prices. Particulars on request.

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Matchless.

Spare Parts:

MATCHLESS Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9446

McKenzie.

MCKENZIE, all on, taxed, new June; £20.—25, Brewster Rd., Leyton, E. [4678

MCKENZIE 1922, excellent running order; 19 guineas.—96, Whittington Rd., Bowes Park, N.22. [3565

1922 McKenzie, fitted with Philipson pulley, practically new; £22.—Devey's, 50, Darlington St., Wolverhampton. [4496

Moto-Reve.

Spare Parts:

MOTO-REVE Spares for all models, also repairs, overhauls, gears, new engines.—Motor Supply Co., Sole Concessionnaires, 223a, High St., Lewisham, S.E. [4888

Ner-a-Car.

NER-A-CAR, 1921, run less than 700 miles; bargain, £40.—Ben-Ledi, Douglas Terrace, Stirling. [4382

IMMEDIATE Delivery, 1923 Model B 2¾h.p. Ner-a-Car, the popular all-weather utility machine, ready for the road; £65.

2¼h.p. Model A also in stock; £55.—South Eastern Garage, Herne Hill, S.E.24. [4890

NER-A-CAR (October, 1921), perfect condition, hardly used, licensed, insured; London area; £45, or nearest offer.—Box 5081, c/o *The Motor Cycle.* [4930

36 Guineas.—1922 Ner-a-Car, dynamo electric and acetylene lighting, unscratched, done 300 miles only.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [4606

New Comet.

NEW COMET Combination, 1922 2½h.p., 2 speeds, K.S., clutch, C.B. sidecar, shop-soiled; £56/10; suit lady or gentleman.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4399

New Hudson.

1922 Model De Luxe New Hudson, 2 speeds, K.S., £42.—Cross, Agent, Rotherham. [4368

NEW HUDSON 2-stroke, low, fast; £24; take pedal cycle part.—57, Kenbury St., Camberwell, London. [4471

£16/10.—New Hudson-Jap, 2½h.p., Armstrong 3-speed, clutch, equipped; ride 50 miles.—36, Mayfield Rd., Gosport. [4535

1920 4h.p. New Hudson Combination, as new, speedometer, screen, and extras; £50.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4790

1920 New Hudson 4h.p. Combination, as new, 3-speed, kick-start, Easting, etc.; £62/10; exchange.—Rhind and Co., Stone Place, Rusholme. [4351

1919 2¼h.p. New Hudson motor cycle, 2-speed, 2-stroke, completely equipped, excellent order; £30.—E. W Roberts, Blencathra Garage, Keswick. [0973

NEW HUDSON 1923 Models.—Full stock of cycles and combinations; immediate delivery; deferred payments; trade supplied.—New Hudson Depot, 45, Gray's Inn Rd. [0851

New Imperial.

AT Edwards.—1923 2¾h.p. New Imperial, Olympia Show Model No. 3; list price, £65.—Below.

1920 8h.p. New Imperial Combination, 3-speed, all-chain drive, electric lighting, Cameo windscreen, Tan-Sad, tax paid, perfect condition; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4863

NORTH London for New Imperial. Your promptest agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0790

£26.—2¾h.p. New Imperial-Jap, 2-speed, clutch, K.S., aluminium discs, smart.—King, Egrove, Oxford. [4575

NEW IMPERIAL-J.A.P., 2-speed, countershaft, excellent running order; £20.—109, Leavesden Rd., Watford. [4481

NEW IMPERIAL 8h.p. Combination, 1918, many extras, £50; Portable Garage, £10.—Binder, Gerrards Cross. [4331

NEW IMPERIAL-J.A.P. 2½h.p., 2 speeds, 1918, splendid condition; £24.—30, Thornsett Rd., Earlsfield, London. [3159

NEW IMPERIAL 1920, 2-speed, kick-start, new tyres, excellent condition; £30.—Williams, 28, High St., Burnham-on-Sea. [4313

SMART Racing New Imperial Lightweight, special J.A.P. competition engine, already won several events; £38.—Bunting's, Wealdstone. [4671

NEW IMPERIAL 2¾h.p., brand new, No. 2 model, all-chain, makers' guarantee; cost £75; accept £58/10.—391, King St., Hammersmith. [4709

NEW IMPERIAL 1920 8h.p., Millford sidecar, Easting, electric lighting, mechanically as new; £60, no offers.—132, High Rd., East Finchley. [4542

MOTOR CYCLES FOR SALE.

New Imperial.

27 Guineas.—1920-21 New Imperial, 2¾h.p. J.A.P., 2-speed, new condition throughout.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [4604

£27/10.—1917 New Imperial Combination 2¾h.p., 2-speed, fully equipped, go anywhere, perfect; offers.—Barnes, 83c, Trinity Rd., Balham, S.W. [4683

NEW IMPERIAL 2¾h.p., 1922, J.A.P., 3-speed, K.S., clutch, all on; £45.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [4404

£17.—1916 New Imperial-Jap, 2-speed, good lamps and horn, new pulley, driving chain, and valve, topping running order.—1, St. Mary's Cottages, Newmarket. [4315

1922 New Imperial, 2¾h.p. 3-speed, all-chain, lamp, horn, ridden 200 miles, condition as new; £55.—9, Friern Watch Av., North Finchley. [4344

1922 New Imperial 8h.p. Special Super Sports with Grindlay Sports sidecar, dynamo lighting, new condition, low mileage, cost £197; bargain, £115, or exchange fast solo and cash.—198, King St., Hammersmith. [4389

1921 New Imperial-Jap 2¾h.p., 2-speed, countershaft gear, tax paid, P. and H. lamp, mechanical horn, E.I.C. magneto, Amac carburetter, Dunlop tyres; this machine has just been rebushed throughout, and is in excellent condition; any trial or inspection; a bargain at £29/10.—Allen, Station House, Aldeburgh, Suffolk. [4860

Spare Parts:

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NEW IMPERIAL Spare Parts.—London stockists, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 6 p.m., 1 o'clock Saturdays. [0855

Norton.

PREMIER Motor Co., the Norton Specialists.

WE are the nearest agents to the Norton works; buy from the firm on the spot; all 1923 models for immediate delivery; 16H 3½h.p. 3-speed Sports, £79; No. 2 3½h.p. standard, £80; Model No. 1 Big Four, £84; sidecars from £22; deferred payments 4 per cent. extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4693

NORTH London for Norton. Agents and riders, Jones' Garage, Broadway, Muswell Hill, N.10. [0918

NORTON.—Delivery from stock of all 1923 models.—The Layton Garages, 30, Holywell St., Oxford. [4780

1923 Big Four Norton Combination, new, unridden; £5 under list.—Box 5074, c/o *The Motor Cycle*. [4428

NORTONS, 1923, all models, latest prices; immediate deliveries.—Clifford Motorics, Eastwood, Nottingham. [4101

BRAND New Norton 1922 16H, oversize tyres; cost £117/10; accept £77, or exchange.—391, King St., Hammersmith. [4707

NORTON Big Four Combination 1922, countershaft, kick-start, equipped, taxed; £93.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3270

NORTON 1922 16H., countershaft, Brooklands special racer, kick-start, taxed, as new; £98.—Walker, 769, Romford Rd., Manor Park, London, E.12. [3271

BRAND New o.h.v. Norton, £85; nearly new 1922 H16, unscratched, 3-speed Norton, fully equipped, £58; inspection, trial any time.—Green, Wine Merchant, Reigate. [4423

1921 16H Norton, over 70 miles per hour, Ricardo and cast iron pistons, spare sprockets, etc., perfect condition; £55.—James, 26, Home Park Rd., Wimbledon Park. [4531

£48 or near offer.—Norton 1922 Sports, hand-controlled Philipson pulley, fully equipped, perfect condition; write or call owner.—Sharvell, 8, Stanley Parade, Wembley. [4582

1922 Norton Motor Cycle model 16H, complete with Lucas lamps and accessories, Klaxon, only run few hundred miles; accept £62/10 for quick sale.—1, Lethbridge Rd., Southport. [4299

75 m.p.h.—3½h.p. Norton, 3-speed, 1921, under 2,000, specially balanced engine, Ricardo piston, racing gear box, perfect condition, insured; £60.—Sissons, St. Mary's Rd., Sheffield. [4078

AT Edwards.—1916 3½h.p. Norton, 3-speed, countershaft, kick-starter and clutch, lamps and horn, in splendid order; 34 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4865

SOUTHPORT.—Immediate delivery 1923 Nortons o.h.v., shortly; 1922, B.R.S., superb condition, little used, Mabon clutch, Lucas horn, gift; 42 guineas; exchange.—Kents, 417, Lord St., Southport. [4912

1922 Norton 3½h.p. 16H, fully equipped, licensed, indistinguishable from new, 65 guineas; also Big 4h.p., Lucas lamps, speedometer, Klaxon, kneegrips, watch, mileage 500, guaranteed perfect; £70; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4869.

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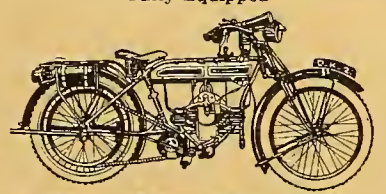

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NORTON 1921, as new, Philipson, all on; £42/10.—3, Stamford Brook Rd., Hammersmith. [4665

N.S.U.

3h.p. N.S.U., modernised throughout, fine little mount; nearest £20, bargain.—Palmer, Peasedown, Bath. [4940

N.U.T.

N.U.T. 1922 5h.p., special engine, Magdyno, as new; 72 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3925

N.U.T. 1920, October, 3½h.p., has just been entirely overhauled and rebuilt and painted by makers, in good running order, electric light and horn, also all accessories, owner going abroad; £75, or offer.—Herbert, 37, The Park, Mitcham. [4262

O.K.

O.K. 1920 2¾h.p., excellent condition; £18.—Brockbank's, 58, Lord St., Southport. [4767

1920 O.K., 2-stroke, owner bought combination; 16 guineas.—67, Feralea Rd., Balham. [4953

O.K.-VILLIERS, 1920-21, 2-speed, clutch, K.S., all on, splendid condition; £25.—1, Mayfield Avenue, West Ealing, W.13. [4383

16 Guineas.—1916 O.K. 2½h.p., 4-stroke, 2-speed, countershaft, new lamps and tyres, taxed; evenings.—42, Castelnau Mansions, Castelnau, Barnes. [4946

SOUTHPORT.—Olympia actual show model O.K., 250 c.c. o.h.v. Blackburne, prettiest machine of show; £76; unique opportunity; exchanges.—Kents, 417, Lord St., Southport. [4908

Omega.

OMEGA 2¾h.p., 1922, shop-soiled, 2-stroke; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4405

OMEGA 1923, all models, £25, £30, £33; also Combinations, 3-speed chain drive, £75.—Bartlett's, 93, Great Portland St. [4968

OMEGA, 2¾h.p. J.A.P. engine, late model; £21; 2 speeds, free engine, excellent order.—Caretaker, 25, Camden Rd., N.W. [4894

Orbit.

ORBIT 2¾h.p. 2-speed and clutch model, brand new; clearance, bargain, £46.—Stones Cross Garage, Midsomer Norton. [4376

Overstone.

1921 Overstone-Villiers 2¾h.p., E.I.C. magneto, Amac carburetter, lamps, horn, taxed, good sale; £30.—Waite, Booth, Waterfoot. [4484

P. and M.

P. and M. less magneto and carburetter and tyres, R.A.F. model; £15.—9, Church Rd., Harlesden. [4393

P. and M. 1922 Shop-soiled Combination, 4½h.p., 4-speed; £90; bargain.—Brockbank's, 58, Lord St., Southport. [4768

P. and M. 1909, new cylinder, exceptional condition, all on; nearest £10.—Write 2, Saltcoats Rd., Chiswick, W.4. [4291

P. and M. R.A.F. Combination 1918, complete lamps, horn, front brake, good order and condition; £35.—Reeves, 56, Cavendish Avenue, Cambridge. [4215

29 Guineas; Easy Terms.—1918 P. and M. 3½h.p., 2 speeds, kick, renovated.—Wandsworth Motor Exchange, Ebner St., Wandsworth. (Town Station.) [4816

P. and M. Combination, fully equipped, screen, etc., and many extras, in exceptional condition; 37 guineas.—51, Upper Richmond Rd., East Putney. [4932

P. and M., late 1920, original tyres, £20 extras, guaranteed perfect, £65; also 3½h.p. water-cooled engine, less ignition, £4.—Milnthorp, Dalton, Thirsk. [4532

P. and M. Combination, late model, splendid condition; any trial; £38; or lightweight and cash.—Patterson, 36, Grenfell Rd., Mitcham, near Tooting Junction. 'Phone: Mitcham 1599. [4929

P. and M., late R.A.F., 2-speed, K.S., complete in parts, new cylinder and piston, new wheels, new mudguards, new tyres, requires assembling; £25.—1, Springfield Park Crescent, Catford, S.E.6. [4887

1923 P. and M. solos or combinations at 1923 reduced prices. Immediate delivery from the authorised agents. Exchanges invited.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., London. 'Phone: Padd. 1177. [4703

Spare Parts:

P. and M. second-hand W.D. spares, all genuine; competitive prices; practically any part.—Maudes', 100, Gt. Portland St., W.1. [4840

ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

Precision.

3h.p. Precision 1922, 2-speed, kick-start, complete with accessories, condition as new; £40.—71, Church St., Camberwell. [4081

MOTOR CYCLES FOR SALE.

Premier.

PREMIER Combination 3½h.p., Brampton gear, new forks and carburetter, licensed; £25.—Hammond, Square, Arundel. [4436

PREMIER Combination, 3½h.p., 3-speed countershaft; 36 guineas; take lightweight part.—57, Kenbury St., Camberwell, London. [4474

3½h.p. Premier Combination, 1913, 2-speed, fully equipped, in excellent running order; £25, or offer.—15, Alexandra Rd., Uxbridge. [4485

Spare Parts:

PREMIER Parts.—I have a large consignment of genuine parts purchased direct from the makers. Write for quotations.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [4597

GENUINE Premier Spares.—We have purchased from the Coleshill Trading Company, the tremendous stock of genuine Premier parts (the largest and only complete stock in the world) purchased by them from the makers, and are offering the same at knock-out prices.—Forfield Motors, Forfield Place, Leamington Spa. [1864

PREMIER Genuine Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Forfield Motors, Forfield Place, Leamington Spa. 'Phone: 631. [8369

Priory.

1922 Priory, 2¾h.p., J.A.P., 2-speed, clutch and kick-start, brand new and unused, three months' guarantee; £43; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1143

Quadrant.

£55.—1921-22 Quadrant combination, accessories.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1838

£90, or reasonable offer.—Brand new 1922 Quadrant combination.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1837

IMMEDIATE Delivery of all 1923 Quadrant models direct from Olympia.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3409

Spare Parts:

CLIFFORD WILSON Manufacturing Co., Quadrant official repairers and spare parts stockists, 177, Westminster Bridge Rd. (opposite Waterloo Station Approach), London, S.E.1. Tel.: Hop 210. [9989

Radco.

RADCO, 2-speed, perfect condition, tyres, belt new; £25, near offer.—42, Perran Rd., Tulse Hill. [4431

SHOP-SOILED Bargain.—2½h.p. No. 2 Radco lightweight; £36, guaranteed.—Stones Cross Garage, Midsomer Norton. [4375

RADCO, brand new, bought June, 1922, not been used, countershaft 2-speed model, electric lighting, selling owing to illness.—Cook, Baltic House, Slough, Bucks. [4900

Raleigh.

PREMIER Motor Co., the Raleigh Specialists.

IMMEDIATE delivery of all Raleigh 1923 models; many improvements, huge price reductions; 2¾h.p., 2-speed, chain-cum-belt, £55; 3-speed, all-chain drive, £60; 3½h.p., 3-speed, all-chain drive, £63; exchanges and deferred payments arranged; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4694

RALEIGH, 1922, 2-speed, 2¾h.p., brand new, shop soiled; £50.—7, Exhibition Rd., S.W.7. [3588

1922 Raleigh 2¾h.p., perfect condition, no reasonable offer refused.—659, High Rd., Leytonstone. [4227

RALEIGHS, 1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [4100

AT Edwards.—1922 6h.p. Raleigh, spring frame, lamps, horn, etc., indistinguishable from new; 65 guineas.—Below.

1922 6h.p. Raleigh Combination, spring frame, Bonniksen speedometer, horn, tax paid, exceptional condition; 85 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4864

NORTH London for Raleigh, all models. Your promptest agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0810

1922 2¾h.p. Raleigh, 2-speed, clutch, kick-start, equipped, licensed, as new; £39.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [4566

THE best bargain, Raleigh 1923 models and prices, prompt delivery; exchanges or deferred payments arranged, tuition free.—Edwards, 50, Harrington Rd., South Kensington. [4871

RALEIGH 1923 models in stock for immediate delivery, 2¾h.p., 2-speed, K.S.; £55; exchange and easy terms; spare part stockists.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0975

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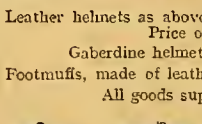

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Lamp Set, as illustrated .. .. £4 : 10
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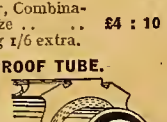

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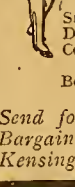

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Raleigh.

RALEIGH 1923 models offer the utmost value for money. Prices from £55 for machines equipped with clutch, kick-starter, and Sturmey-Archer gear box; delivery from stock; deferred payments if required.—Newnham Motor Co., 223 and 245, Hammersmith Rd., London, W.6. 'Phone: Hammersmith 1325 and 80. [4793

Reading-Standard.

READING-STANDARD Combination, 1921, demonstration model, 10h.p., dynamo lighting; £80.—Brockbank's, 58, Lord St., Southport. [4770

Rex.

REX Combination, N.S.U. gears, in running order; £15.—Rhind and Co., Stone Place, Rusholme. [4352

REX Acme 2¾h.p., 1922, Blackburne engine, 2-speed gear, K.S., clutch, all on; £65.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4406

Rover.

ROVER 1915 4h.p. 3-speed Combination; £48.—Bartlett's, 93, Great Portland St. [4971

ROVER 1917 3½h.p., excellent condition; £25.—Brockbank's, 58, Lord St., Southport. [4769

ROVER 3½h.p. 1915 T.T., unridden 1922, overhauled, sound; £19.—6, Lancaster Rd., Rugby. [4641

3½h.p. Rover, Lycett saddle, Druids forks; £8; after 6 o'clock.—10, Galesbury Rd., Wandsworth, S.W.18. [4528

13 Guineas.—1915 T.T. Rover, 3½h.p., fast, perfect.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4607

ROVER 3½h.p. 1919 Combination, windscreen, lamps, horn, spare new tyre; £47/10.—Reyre, Sun St., Hitchin. [4743

ROVER 3½h.p. N.S.U., 2-speed, in first-class condition, complete with accessories; £24.—Devey's, 50, Darlington St., Wolverhampton. [4498

ROVER 3½h.p., 1914, fitted with Philipson pulley, all on, in excellent order; £27/10.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4407

ROVER 3½h.p. Combination, 1920 about, kick-start, countershaft, all on, taxed; £63.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [3272

ROVER 3½h.p. 1920 Sports, speedometer, lamps, pillion seat, fast, absolutely reliable; £35.—Tinson, Ronalda, Station Rd., Netley. (D) [4495

65 Guineas.—Late 1921 4h.p. semi sports Rover, lavishly equipped, registered, speedometer, mileage 3,000; bargain.—2A, Eleanor Grove, Hogger's Corner, Barnes. [4614

ROVER 3½h.p., 3-speed, hand-clutch, kick-start, 29 guineas; with underslung Rover sidecar, 38 guineas; photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3928

34 Guineas.—Rover 1921-22 T.T., 3½h.p. Rover, Philipson, clutch, very fast, splendid sporting solo, unscratched.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4601

AT Edwards.—1920 3½h.p. Rover, all-chain drive, equipped with electric lighting, horn and speedometer, absolutely indistinguishable from new; 55 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1149

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9445

Royal Ruby.

ROYAL RUBY 1919 2½h.p., 2-stroke, equipped, perfect; £14/10.—10, Baronsmead Rd., Barnes. [4559

1919 8h.p. Royal Ruby Combination, large bulbous back sidecar, perfect condition; £47/10.—9, Church Rd., Harlesden. [4391

ROYAL RUBY, 1922, 8h.p., spring frame Combination, all accessories, screen, etc., spare wheel, brand new; to clear, £150.—Bartlett's, 93, Great Portland St. [4972

Rudge.

1919-20 Rudge-Multi; bargain, 24 guineas.—67, Ferulea Rd., Balham. [4950

RUDGE 1915 Multi and clutch; clear, £27/10.—Bartlett's, 93, Great Portland St. [4970

£14.—3½h.p. Rudge, hand clutch, splendid running order.—King, Egrove Farm, Oxford. [4576

1922 3½h.p. Multi, brand new, shop-soiled; £55.—Knights, 126, Upper Tooting Rd., S.W.17. [0979

RUDGE-MULTI 3½h.p. Combination, hand clutch, perfect; £24; separate.—17, Heaton Rd., Mitcham. [4844

3½h.p. Rudge, clutch model, good condition, lamps, horn; £15.—Wilkins, 78, North St., Guildford. [4329

AT Edwards.—1921 Rudge-Multi, fully equipped, speedometer, splendid condition; 40 guineas.—Below.

1920 3½h.p. Rudge-Multi, lamps and horn, tax paid, exceptional condition; 50 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4003

MOTOR CYCLES FOR SALE.

Rudge.

RUDGE-MULTI 1916 3½h.p. Combination, good condition; £40, or near offer.—53, Wendell Rd., W.12. [4464

5h.p. Rudge-Multi, in perfect order, good tyres; must sell, £17/10.—85, St. Stephens Rd., Snemton, Nottingham. [4554

RUDGE-MULTI 5-6h.p. and Millford Sidecar, complete, all accessories, splendid hill-climber; £40.—Marston, 31, Bridge St., Chester. [4655

SOUTHPORT.—Two excellent 1921 I.O.M. Rudge-Multis, well equipped; 39 guineas each; exchanges.—Kents, 417, Lord St., Southport. [4913

MOTOR Cycle and Sidecar for sale, in good going order, fitted with Grado gear, Rudge; £25.—58, Keildon Rd., Battersea Rise, Clapham Common, S.W. [4295

RUDGE, 1922, Watford trip, electric, unworn Dunlops, etc.; £42.—14, Ritherdon Rd., Balham, S.W.; or 'phone: Streatham 2765. Seen any time. [4642

RUDGE Combination, C.B. sidecar, variable gear, 3½h.p., good order; £16; overhauled recently, 2 lamps, generator, etc.—68, Gloucester Rd., Camden Town. [4892

RUDGE-MULTI, 1922, innumerable extras, perfect condition; any trial; £45; exchange considered. —4, Berkeley Mews, Connaught St., London. 'Phone: Padd. 1177. [4702

RUDGE.—3½h.p. Rudge Multi, 1922, as new, £50; 3½h.p. Rudge, 1920, all on, excellent order, £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [4408

RUDGE-MULTI 1921, with starter, Sports Sunbeam bars, fully equipped and insured, in perfect condition, Tan-Sad, and other extras; £40.—Smith, Market Place, Willenhall, Staffs. [4242

1921 3½h.p. Rudge, electric lighting, Cowey speedometer, Lucas horn, mileage only 4,000; price £30; the condition is excellent; sidecar to fit, £5.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W.1. [4809

34 Guineas.—1921-22 Rudge-Multi, I.O.M., practically indistinguishable from brand new, equipped, licensed. Another 1921 ditto, with speedometer; £33. —A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [4603

1921 3½h.p. Rudge-Multi, tax paid, Lucas lamps, Cowey speedometer, M.L. magneto, B. and B. carburetter, Lucas horn, fitted with multi gear, Dunlop tyres, guaranteed in sound mechanical condition and very smart in appearance, 65 m.p.h. on the road, complete with all spares, trial and inspection welcomed; £40.—Allen, Station House, Aldeburgh, Suffolk. [4861

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Illustrated list free. Trade supplied.—Forfield Motors, Forfield Place, Leamington Spa. [3163

Scott.

SCOTT SQUIRREL, 1923.—Immediate delivery; £89. —The Layton Garages, 30, Holywell St., Oxford. [4781

SOUTHPORT.—Immediate delivery 1923 Scott Squirrel; exchanges.—Kents, 417, Lord St., Southport. [4912a

1921 Scott Combination, 3in. Palmer light car tyres, lamps, horn, etc.; £87/10; perfect condition, cost £185.—Hadfield, Webheath, Redditch. [4218

29 Guineas; Easy Terms.—Scott rebuilt Sports Twin, water-cooled; looks beauty.—Wandsworth Motor Exchange, Ebner St., Wandsworth. (Town Station.) [4815

1921 Scott Squirrel, splendidly equipped, Bonniksen, T.T. induction system, beautiful condition and tune; owner buying car; £60.—Ward Motors, Ltd., Bradford. [4661

EDWIN W. BALL, 6, Wheeley's Rd., Edgbaston, Scott Motor Cycle Specialist and Agent since 1911, has now been granted the additional agency for Mr. A. A. Scott's latest production, The Scott Autocar, price 168 guineas, tax £4. Send for list and particulars, or better still, 'phone: Mid. 2192, making appointment, and my son will bring o Sociable to you and give a practical demonstration of this ingenious machine. [4288

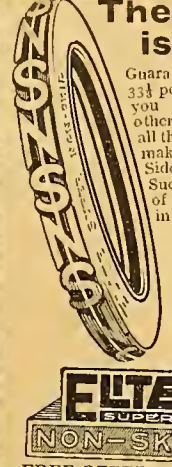
Spare Parts:

WARD Motors, Ltd., 32, Hustler St., Bradford.—Everything for a Scott, new or good second-hand, unequalled for repairs. [0889

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Sheffield-Henderson.

SOUTHPORT.—Olympia actual show model Sheffield-Henderson, o.h.v. Bradshaw 350 c.c. engine, actually here; £72; unique opportunity; exchanges. —Kents, 417, Lord St., Southport. [4907



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SUPER Bargain.—W. H. Sheraton offers his 80 m.p.h. 1922 2¾h.p. o.v. Sheffield-Henderson, fitted special T.T. type Blackburne, Druids, 3 speeds, new tyres, unscratched, perfect, small mileage; £58, no offers.—1, Lancaster Rd., Brighton. [4644

Singer.

1914 Singer Combination 4h.p., 2 speeds, clutch, all-chain, new tyres, all lamps, comfortable sidecar, perfect; £45; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4828

Spare Parts:

THE Promptest Firm for Genuine Singer Spares.—Forfield Motors, Forfield Place, Leamington Spa. [8368

GENUINE Singer Motor Cycle Parts. Let me quote you.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [4599

Sirrah.

1923 Sirrah 2-speed, clutch and K.S.; 33 guineas; carriage paid anywhere. All models Sirrah and Verus stocked. Write for lists.—H. Beardwood, 147, Burlington St., Liverpool. [4918

Sparkbrook.

1920 2½h.p. Sparkbrook, countershaft, chain-cum-belt, fully equipped, in excellent condition; £24. —F. C. Lingley, New St., Woodbridge, Suffolk. (D) [4546

Stanger.

1922 (June) Stanger 5h.p., twin 2-stroke, spring frame, not done 300 miles; cost £97; £57.—Aldridge, 205, Wellingboro' Rd., Northampton. [4637

Sun.

SUN 1914 2¾h.p. 2-stroke, good order; £12.—Brockbank's, 58, Lord St., Southport. [4771

SUN-VILLIERS, in splendid condition and running order; £14/10.—30, Thorosett Rd., Earlsfield, London. [3158

13 Guineas.—1916 Sun-Vitesse, single-speed, good condition.—Phillips, 65, Wavendon Avenue, Chiswick. [4085

Sunbeam.

1920 3½h.p. Sunbeam and Millford sidecar, complete; £92.—Cross, Effingham Sq., Rotherham. [4366

SHOP-SOILED 4½h.p. Sunbeam: list price 135 guineas; to clear, £115.—Cross, Agent, Rotherham. [4365

SUNBEAM 3½h.p., 1916, little used, exceptional condition; 55 guineas, offers.—45, Park Rd., West Ham. [4686

1919 Sunbeam Combination, 3½h.p., lamps, horn, etc.; £75; all in good order.—Walbro, Ely, Cambs. [4760

SUNBEAM 1922 Special T.T., with special cams, T.T. tanks, very small mileage; £85, bargain.—Marston, 31, Bridge St., Chester. [4654

SUNBEAM Combination, 3-speed, K.S., all-chain, electric lighting; £58; exchange lightweight.—Day, Friars, Chelmsford. [4379

1921 Sunbeam 3½h.p., touring model, Magdyno, condition guaranteed; price £95, or rear.—Waite, Booth, Waterfoot. [4483

SUNBEAM 1922 4¼h.p. Combination, electric lamps, scarcely used, unscratched, beautiful outfit; £120. —7, Exhibition Rd., S.W.7. [5619

£77/10.—Late 1920 3½h.p. Sunbeam combination, fully equipped; bargain for cash.—2a, Eleanor Grove, Hogger's Corner, Barnes. [4616

SUNBEAM 8h.p. Combination, fully equipped, new condition, new tyres, electric light; £115.—Wood, 2, Hillfield Rd., West Hampstead. [4290

SUNBEAM 1920 3½h.p., Henderson sidecar, numerous accessories, new tyres, perfect; 80 guineas.—29, Cuba St., Sunderland. [4470

SUNBEAM 1918 3½h.p. and Sidecar, Easting, E.L., insured to April, in good condition; nearest £65. —47, Elsenham St., Southfields, S.W. [4585

1920 3½h.p. Sunbeam Combination, completely equipped, condition practically as new; £110.—E. W. Roberts, Bleucathra Garage, Keswick. [0972

SUNBEAM Combination 3½h.p., cape spring, Lucas lamps, horn, etc., whole combination like new, written guarantee; £97/10.—Reyre, Sun St., Hitchin. [4744

1922 (July) 3½h.p. dual-purpose model Sunbeam, Bonniksen, Lucas lamps, guaranteed perfect; £85, or exchange Sports Sunbeam.—111, Ashgate Rd., Chesterfield. (P) [4314

SUNBEAM 8h.p. 1921 De Luxe Combination, dynamo, electric horn, hood, screen, and many luxurious fittings; £125.—James, c/o Bradmores, 482 Harrow Rd Paddington. [4789

1922 T.T. Sunbeam, July, mileage 1,800, fast. Bonniksen, Showell mechanical lubrication, spare sprockets, Lucas lamp, all accessories, cost over £150, condition new; bargain, £100; insured.—Lomas, Vine St., Norton, Malton. [4246

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM Super Sports (new June, 1922), as new, Lucas lamps, horn, certificate issued with this machine for over 75 miles per hour; cost £140; sacrifice £79; wants seeing; taxed.

1920 Sunbeam 3½h.p., and new Sandum Sunbeam sidecar and screen, all accessories, interchangeable wheels, original tyres, magnificent condition; £82/10; taxed.—391, King St., Hammersmith. 'Phone: 2837 Hammersmith. [4711

SUNBEAM Combination, 1921 model, 8h.p., dynamo lighting, electric horn, speedometer, luggage grid, hood, screen, perfect order; £110.—Alexander, 263, Deansgate, Manchester. 'Phone: 2775 Central. [4674

SUNBEAM 8h.p. Combination (1920 model, delivered Dec., 1919), in perfect order, complete with Lucas lamps, speedometer, windscreen, spare wheel, etc.; £100.—T.H.A., Denstone College, Staffs. [3531

SOUTHPORT.—Immediate delivery 1923 Sunbeams, 2¾h.p. models shortly; 1922 late 3½h.p. Sunbeam, Lucas best accessories, superb new condition, done 200 miles; 95 guineas; exchanges.—Kents, 417, Lord St., Southport. [4911

EXCEPTIONAL Bargain.—Sunbeam 1922 4¼h.p. and Watsonian sidecar, Dunlops, Easting screen, Klaxon, tax paid, only done about 300 miles, absolutely like new; £110; just cost £172; inspection invited.—Wilkins, Simpson, Opposite Olympia, London. [4306

Torpedo.

TORPEDO-PRECISION 1915 2½h.p., perfect: 11 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3929

Triumph.

PREMIER Motor Co., the Triumph Specialists.

SOLE Distributing Agents for Greater Birmingham for Triumph motor cycles; earliest possible delivery of improved 1923 models; huge price reductions; carriage paid to any address; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham. [4687

3½h.p. Triumph, fast, splendid order; £12.—15, Alfred Road, Acton, W.3. [4737

1918 Countershaft Triumph, perfect; £35.—24, Balliol Rd., North Kensington. [4502

£30.—1921 Triumph Junior, 2 speeds, small mileage, as new.—King, Egrove, Oxford. [4578

53 Guineas.—1921 Triumph Model H, as new; offer.—239, Goldhawk Rd., Shepherd's Bush. [4959

1920 4h.p. Triumph, complete, lamps, horn, Nos., etc.; £55.—Cross, Agent, Rotherham. [4364

TRIUMPH 3½h.p., clutch model, good condition; £17.—Young, 24, Albion Rd., Lewisham. [4586

1919 Triumph 4h.p., equipped, exceptionally good, top gear change, overhauled; £45.—Below.

1918 Triumph 4h.p. Countershaft, overhauled and guaranteed, not rubbish; £40.—Below.

TRIUMPH Combination, practically brand new, fully equipped, child's seat in car, fine lot; £68.—Goad, 122, Maida Vale. 'Phone: Maida Vale 1353. [4660

TRIUMPH, model H, £75; also S.D. combination, at clearance.—Bunting's Exchange, Wealdstone. [4672

1921 Triumph H 4½h.p., licence paid; £60.—Williams, Brightview, Hadley Rd., New Barnet. [4421

BRAND New All-chain Triumph, complete, lamps, horn; £87/3.—Cross, Effingham Sq., Rotherham. [4362

1919 Triumph Countershaft, 3-speed, in new condition; £35.—64, Church St., Edgware Rd., W. [4923

£20.—Smart 1914 4h.p. Triumph, dropped frame, decompressor, perfect, fast.—King, Egrove, Oxford. [4577

£14.—Triumph 4h.p. Combination, good running order.—Robins, 97, Latchmere Rd., Clapham Junction. [4419

1919 Triumph Combination, every accessory, beautiful condition; £50.—24, Balliol Rd., North Kensington. [4506

TRIUMPH, brand new, all-chain, unpacked, makers' guarantee; £76/10.—51, Upper Richmond Rd., East Putney. [4935

TRIUMPH 1923 models, orders now accepted, don't delay your order.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0978

TRIUMPHS.—A large assortment in stock; solos and combinations at prices to suit all.—Ross, 86, High Rd., Lee, S.E. [3245

32 Guineas.—Countershaft Triumph, fully equipped. A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4608

1914 3½h.p. Triumph, clutch model, excellent condition, any trial; £20.—Chapman, 13, Edith Rd., Kensington. [4338

TRIUMPHS.—Two brand new S.D. all-chain models, makers' guarantee; £79 each to clear.—391, King St., Hammersmith. [4708

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MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Countershaft, 3-speed, K.S. and clutch, perfect order; bargain, £40.—Marston, 31, Bridge St., Chester. [4656

NORTH London for Triumph, all models. Your promptest agents are Jones' Garage, Broadway, Muswell Hill, N.10. [0811

BRAND New Triumphs, unpacked, all-chain £74, chain-cum-belt £70; instalments.—20, Woodville Gardens, Ealing. [4517

LATEST Countershaft Triumph, used few times, condition new, well equipped; £60.—24, Balliol Rd., North Kensington. [4501

ROBERTSONS Motors, Ltd., 1922 Triumph all-chain drive Combination, with accessories; £76.—157B, Great Portland St., W.1. [4881

BARGAINS.—1918 Countershaft Triumph, perfect, £35; another Countershaft, £28; any trial.—7, Cowdrey Rd., Wimbledon. [4729

TRIUMPH 1919, 3-speed, countershaft, complete with all accessories; £38.—Houghton Bros., Woodcote Parade, Wallington, Surrey. [4303

4h.p. Triumph, came from Triumphs in 1920, quite as new, fully equipped; £45.—Jones Garage, Broadway, Muswell Hill, N.20. [4901

TRIUMPH Combination, 1921, mileage 500, equipped; £67/10.—M. Hillier, 216, Portobello Rd., North Kensington, W.11. [3886

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; £55.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3345

17 Guineas or nearest, exchanges.—3½h.p. Triumph Sporting model, lamps, fax, running order.—181, Newton Rd., Burton-on-Trent. [4622

TRIUMPH.—Early delivery of all 1923 models. Place your order now to secure.—The Layton Garages, 30, Holywell St., Oxford. [4779

TRIUMPH, Model H, brand new and unused; our price £75; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

1920 Triumph Junior, excellent condition, all accessories, tax paid; £45, or nearest.—Thornton, Blenheim Terrace, Field Hill, Batley. [4320

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

3½h.p. Triumph, single-speed, guaranteed perfect throughout; £19; ride 50 miles purchaser.—Seward, Red Hill, Bassett, Southampton. [4493

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

JUNIOR Triumph, late 1919, exceptional condition, carefully used, engine 3318; £33; seen appointment.—Hawkins, Whitehall, Chesham, Bucks. [4311

1919 Triumph, Henderson sidecar, screen, aluminium discs, footboards, D.A. cylinder; owner buying car; £65.—Nicklin, Gothersley, Rushall, Staffs. [4097

TRIUMPH-GLORIA, late 1921, chain driven, lamps, speedometer, hood, screen, unsoiled, mileage 1,000; bought car.—266, London Rd., Thornton Heath. [4684

1919 Triumph-Gloria Combination, splendid condition, carefully kept, all accessories; £75, or offers.—Write H.M., 24, Maryland St., Liverpool. [4628

3½h.p. Triumph 1919; £50; excellent condition, just overhauled by makers at cost £30; no reasonable offer refused.—Prideaux's Garage, Barnstaple. [4089

TRIUMPH 3½h.p., clutch model, everything on, in perfect order; £25.—Can be seen between 3 and 5 at 100, Alderney St., Pimlico, London, S.W.1. [4728

1918 Countershaft Triumph, new Dunlop tyres and tubes, nice condition throughout; £35.—Hillier (side bell), 127, St. Mark's Rd., North Kensington. [4592

TRIUMPH-GLORIA Combination, mechanical condition perfect, any trial, lamps, spare tyres; owner buying car; 60 guineas.—156, High St., Merton. [4533

19 Guineas; Easy Terms.—Triumph 3½h.p., good tyres, nice condition, complete.—Wandsworth Motor Exchange, Ebner St., Wandsworth. (Town Station.) [4817

1918 Triumph 4h.p. countershaft, perfect condition, fully equipped, £40; also 3h.p. Triumph, 1916, renovated, £35.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [9653

1922 Triumph-Ricardo, brand new but shop-soiled; greatly reduced; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4823

TRIUMPH-GLORIA Combination, 4h.p., type H, September, 1919, sidecar new December, 1921, Easting, lamps, splendid condition; £70.—Cleaver, Sittingbourne. [4701

1920 Triumph Combination, Gloria sidecar, Easting windscreen, P. and H. lighting set, Klaxon horn, very small mileage, guaranteed perfect, insured and tax paid; price £65 or near offer.—Hall, 91, St. Peter's St., St. Albans. [4663

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Triumph.

1919 Triumph Combination, coachbuilt sidecar, Cameo windscreen, lamps, horn, spare tyre, the whole in good condition; £45.—Hall, 91, St. Peter's St., St. Albans. [4664

1921 Triumph H Combination, Gloria sidecar, luggage grid, speedometer, watch, lamps, horn; owner desires laster machine; take £75.—Baker, Grafton House, Ouudle, Northants. [4083

LATE Triumph Combination, footboards, legshields, Lucas lamps, Easting Royal, new tyres, etc., many spares, excellent condition; £65, or nearest.—S. Dixon, Grendon, Atherstone. [4540

1920 Triumph-Gloria Combination, Easting, new Cowey speedometer, horn, lamps, spare chain new and belt, excellent order, tax paid, fully insured March next.—Colonel Downing, Yelwell, Totnes. [4244

£95.—Triumph Combioation, 1922, all-chain drive, used for demonstration, complete with every accessory, tax paid; terms if desired.—Midland Garage, 166, Shaftesbury Av. 'Phone: Gerrard 8461. [2428

1921 Triumph Combination, all-chain drive, speedometer, legshields, Lucas dynamo set, few miles only, guaranteed as new throughout, very carefully handled; £100.—135, Ashley Rd., Loughborough, Leicestershire. [3458

THE following 1922 Shop-soiled Triumphs to be cleared: Model H., £78; Model S.D., £84; Ricardo Sports, £87; cash or extended payments.—The Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [4921

£45.—1916 4h.p. Countershaft Triumph Combination (not W.D.), engine 44674, complete overhaul 1921, 3,200 miles since, horn, speedometer, Easting, 6-volt accumulator, lighting, perfect running order, owner going abroad.—Col. Day, Netley Hospital, Hants. [4251

WE have a few Countershaft Triumphs at £45; fully overhauled and renovated, new Dunlop tyres and tubes; splendid opportunity; cash or extended paymeots; send for particulars.—Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [4920

TRIUMPH.—4h.p., 1922, 3 speeds, K.S., clutch, special engine, £40; 4h.p., 1915, and sidecar, all on, £57/10; 4h.p., 1914, 3 speeds, and sidecar, £38; 4h.p., 1914, 3 speeds, solo, £35; 4h.p., 1914, 3 speeds, solo, £35.—Wauchope's, 9, Shoe Lane, Fleet St., E.C.4. 'Phone: Central 5168. [4409

TRIUMPH-GLORIA 1922 Chain-drive Combination, in new condition, £90; also 1920 Triumph, renovated Gloria combination, £57; exchanges. Full particulars of these and 50 other machines free on request.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4796

1921 Triumph 4h.p., all-chain model, Magdyno lighting, lavishly equipped, including speedometer, watch, gradometer, Klaxon, Tan-Sad, additional pannier map case, automatic extra air inlet giving 100 m.p.g., total mileage 2,500, exceptionally smart outfit, any trial; £95.—20, Claremont Rd., Surbiton. [4543

SEPTEMBER, 1921, Triumph, all-chain drive, with Gloria sidecar, paint and enamel unscratched, Lucas lighting set, Easting windscreen, and several other fittings; cost £200, and is in every respect equal to new, mileage under 3,000; will accept £110; cash or deferred payments.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [4022

Spare Parts:

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CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

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Vasco.

1922 2¾h.p. Vasco, 2-stroke, Burman 2-speed, fully equipped, taxed, insured till August, 1923; £35.—15, Northampton Park, Canonbury, N.1. [4635

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STARTLING offer of a few brand new 1922 Velocette models at £10 below maker's 1923 price; E.2, 2-speed, clutch, kick-start, all-chain drive, £52; E.3, 3-speed, £55; carry maker's full guarantee; easy payments 4 per cent. extra; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4688

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3 h.p., 3-speed, clutch and kick-starter, and No. 5a sidecar	£78 6 0
3 h.p., Semi Sports	£61 10 0
3 h.p. Semi Sports, All-chain, with Sports sidecar	£77 5 0
2¾ h.p., 3-speed, clutch and kick-starter	£60 0 0
2¾ h.p., 3-speed, clutch and kick-starter, Sports	£66 0 0
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3 h.p. Combination	£83 0 0

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VELOCETTE.—Delivery from stock of all 1923 models.—The Layton Garages, 30, Holywell St., Oxford. [4782

Verus.

2¼h.p. Verus, late 1920, as new, all on, electric lighting, splendid condition, not done 1,000 miles, privately owned; £30, no offers.—25, Santos Rd., Wandsworth, S.W.18. [4751

Wolf.

WOLF-J.A.P. 4h.p., 3-speed, all-chain; £25.—Write Burnell, Wootton Courtenay, Somerset. [4239

WOLF-BLACKBURNE, late model, 4h.p., 3-speed, clutch, kick-start, all on; £50.—Lyme Villa, Mottingham, S.E.9. 'Phone: Lee Green 500. [4581

Werner.

WERNER 4h.p., low, fast, powerful; £22; take pedal cycle part.—57, Kenbury St., Camberwell, London. [4472

Wooler

1921 Wooler, 2¾h.p. horizontal twin, variable gear, mechanical oiling, spring frame, clutch and fully equipped, perfect condition; £29/10.—Jones Garage, Broadway, Muswell Hill. [4903

WOOLER 2¾h.p. Flat Twin 1921, complete with Cowey speedometer, Klaxon horn, P. and H. lamps, generator, and all other accessories, for £38.—6, Stockwell Park Crescent, S.W.9. [4748

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ALL-CHAIN Eight, only 8 weeks old, fitted Bonniksen speedometer, horn, lamps, mechanical lubrication, absolutely as new, Super Sports engine; £90.

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ALL 1923 models for immediate delivery from stock. 2¾h.p. Touring, £69/15; Sports, £77; Show models; Super Eight, £125; Touring, £115; Bradshaw, £95.

THE demand for 1923 Zeniths is exceptionally good. Don't be left without one.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W.1. [4808

45 Guineas.—8h.p. Zenith, 1918, must sell; enquiries.—32, Stanley Rd., N.1. [4583

F.O.C.H. invite iospection; Zenith and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1374

8h.p. Countershaft Zenith Combination, 1915, K.S., lamps, electric horn, speedometer, perfect; £35.—69, Kingston Rd., New Malden. [4588

ZENITH late 1919 5-6h.p. Sports, all on, good condition, climbs, Perlock, tyres as new; £41.—12, Leaside Avenue, Muswell Hill, N.10. [4962

ZENITH-BRADSHAW, brand new, 3½h.p. 1922, oil-cooled, Gradua gear, £68.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. 'Phone: Central 5168. [4410

PRACTICALLY New late 1921 8h.p. Zenith Countershaft Combination, electrically equipped, speedometer, original tyres; £65.—Hillier (side bell), 127, St. Mark's Rd., North Kensington. [4591

5-6h.p. 1921 Zenith Countershaft, kick-start, full equipment and spares, Zenith sidecar, Easting, excellent condition, would separate, photograph on request; best offer; London district.—Box 5080, c/o *The Motor Cycle*. [4916

YOUR Motor Cycle or Combination taken in part payment for a Zenith, any model; cash, deferred, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. Grams: Pushfully Bal, London. [4926

1920 8h.p. Zenith Combination, in perfect running order, Model H, countershaft, electric lighting, speedometer, clock, spares, etc., luxurious coachbuilt sidecar with windscreen; £65; inspection invited Sunday next.—Tomes, St. Leonard's House, Mortlake. [4287

ZENITH 1920, special engine No. 20/74126, 8h.p. sports, 5-stay sports cancelet, Eastlag, Cowey, kneegrips, Tan-sad, lamps, splendid sporty 'bus; £70, or exchange with cash for 1921-22 G.P. Morgan; after 6 o'clock evenings, on Saturday.—103, Winstanley Rd., Battersea, S.W.11. [4757

ZENITH 1921 8h.p. Countershaft Model, with Millford Rock sidecar, electric lighting, Cowey speedometer, condition like new, £75; also several other Zeniths at attractive prices. Full particulars of these and 50 other machines free on request; exchanges.—Newnham Motor Co., 223 and 245, Hammersmith Rd., W.6. 'Phone: Hammersmith 1325. [4798

80m.p.h. Zenith-Bradshaw 1922, specially tuned, Brooklands winner, total mileage 1,400, new pistons, new steering head races, special racing frame, Sturmey close-ratio 3-speed box with K.S., silencer, Amac, Hutchinsons, 3 sprockets, spare chain, and tools; capable in skilled hands of winning any club event; £75.—Mallet, 7, Collingham Rd., S.W.5. [4742

MOTOR CYCLES FOR SALE.
Zenith.

Spare Parts:

ZENITH Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9447

Ladies' Motor Cycles.

KENILWORTH 1½h.p., 4-stroke, suitable for a lady driver; £27/10.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [4411

Miscellaneous.

J. HEBDEN and Sons, Nelson.

BRAND New 1922 Motor Cycles.

3½h.p. Norton, model 16H; list £79; our price £70.

4h.p. Triumph, type H; £70.

3½h.p. James Sports Model, list £75, our price £67; 7h.p. James combination, spare wheel, etc., list £133, our price £119.

8h.p. Matchless 2-seater Combination, Magdyno, spare wheel, etc.; list £173; our price £155.

8h.p. Enfield Combination, list £120, our price £109; also new 1921 Enfield combination, £99.

NEW 1922 G.N. Light Car; £179.

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CONNAUGHT 1920 2½h.p. 2-speed, fully equipped, smart and fast machine; £23.—Below.

1920 Omega 2¾h.p. J.A.P., 2-speed, clutch, kick-start, sound and good condition, fully equipped; £29.—Below.

1919 Douglas 2¾h.p. 2-speed, not W.D., fully equipped and in perfect running order; £29.—Below.

WE have six 1918 Douglases, 2¾h.p., 2-speed, thoroughly overhauled and renovated with 50% new parts, fully equipped; £26.—Below.

5-6h.p. Rex Combination, 2-speed; this machine, although cheap, is reliable and good; £19.—Below.

3½h.p. Rover Combination, 3-speed, fully equipped; an exceptional bargain, £26.—Below.

3½h.p. Precision, for hard work and reliability; £12; 1921 Matchless Combination, dynamo lighting, spare wheel, windscreen, in new condition; £79.—Below.

1920 8h.p. Enfield Combination, dynamo lighting, absolutely as new, hood, screen, luggage carrier, speedometer; £73.—Below.

1921 Henderson Combination, dynamo lighting, in exceptionally good condition, electric horn, screen, luggage carrier, any trial, guaranteed; £79.—Below.

1919 Villiers, 2-speed, fully equipped, mechanically sound; £20.—Below.

1916 Connaught, in fine order; £15. 1921 Temperino 2-seater car, 3-speed and reverse, hood, screen, all lamps, in exceptional condition; any trial; bargain, £45.—Below.

1921 3½h.p. Ariel Combination; fully equipped, as new; £48; one Rover sidecar with screen, £8; one P. and M. sidecar with hood and screen, £8.—Below.

EXCHANGES entertained on any of above.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 2041. [4850

3½h.p. motor cycle, running order; £15, or part exchange cheap combination.—204, Stoughton Rd., Guildford. [4739

MOTOR Cycle Combination, 4¼h.p., Clyno engine, frame and wheels; Saturday afternoon.—50, Capworth St., Leyton, E. [4570

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8-10h.p. J.A.P., water-cooled twin, Bosch enclosed, Zenith carburetter, fitted universal joint, just overhauled; £25, or offer.—Sills, 68, Stopford Rd., Gillingham, Kent. (D) [4340

HALIFAX.—1923 New Imperial, B.S.A., Enfield, Douglas, Triumph, Norton, and Levis models from stock; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [4976

DOUGLAS, 2-speed, dropped frame, running, £10; Coventry 3½h.p., running, £8; Rudge-Multi 1919 combination, perfect, £35; Triumph engine, complete, £5/10.—Perrin, 6, Etna Rd., St. Albans. [4584

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BOOTH'S Motories, Blackpool.—Lightweights O.K. 2-speed, £16/10/6; Levis, 2-speed, £22/10/6 Centaur, 3-speed, £15/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, Douglas, 2-speed, £18/10/6; Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; new 1922 Bradbury, £49/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, 2h.p., £10/10/6; Edmund-Jap, spring frame, £26/10/6; 1921 Viper-Jap, £32/10/6.

BOOTH'S Motories, Blackpool.—3½h.p. New Scale, £29/10/6; 1921 3-speed New Imperial, £37/10/6; 1920 Edmund-Jap, £34/10/6; 3½h.p. Humber, £16/10/6; 3½h.p. Singer, 2-speed, £19/10/6.

BOOTH'S Motories, Blackpool.—Three 5h.p. Rudges, 2-speed, £25/10/6; 3-speed, £25/10/6; Multi, £22/10/6.

BOOTH'S Motories, Blackpool.—Four Phelon and Moores, £15/10/6, £25/10/6, £29/10/6, £33/10/6; 3½h.p. Premier, £19/10/6.

BOOTH'S Motories, Blackpool.—Combinations, 1922 Quadrant, £79/10/8; 1920 4h.p. Douglas, £55/10/6; 1920 Martinsyde, £75/10/6; 6h.p. Enfield, £35/10/6; 8h.p. Premier, £39/10/6; 1920 Matchless, £79/10/6; 1920 Harley-Davidson, £85/10/6; new 1922 Rudge and Royal Ruby, cheap.

BOOTH'S Motories, Blackpool.—8h.p. Carden Cyclecar, £26/10/6; 1920 A.V. Cyclecar, £39/10/6; 7h.p. Indian, £29/10/6; 5h.p. 2-speed Indian, £29/10/6.

BOOTH'S Motories, Blackpool.—1920 3-speed Douglas, £42/10/6; 4h.p. Douglas, £47/10/6; 1920 Zebre light car, cheap; several others cheap. Push cycles taken in exchange. Motor cycles purchased for cash.—Booth's Motories, 294, Waterloo Rd., Blackpool. Tel.: 1451. [3987

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ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

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EDWARDS and Co.,

101, Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

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WANT

500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [0948

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ALWAYS Buy

SOLOS, Combinations, cycle cars. If in town, write, phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 5391. [0332

WANTED, Enfield 2-stroke.—Oakley, Hurst Green, Sussex. [4096

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WANTED, lightweight, £10 to £15.—103, Moore Park Rd., Fulham, S.W. [4456

SOLO Motor Cycle Wanted; must be cheap.—51, Engadine St., Southfields, S.W.18. [4555

MOTOR Cycle, old type, must be cheap.—Write 61, St. Maur Rd., Parsons Green, S.W.6. [4296

2-STROKE Motor Cycle Wanted; must be cheap.—97, Elsenham St., Southfields, S.W.18. [4556

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PALMER'S Garage, Tooting, will make you a cash offer at sight.

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PALMER'S Garage, Tooting.—Catalogue free. Tel.: 208 Streatham. 'Grams: Palmer's Garage, Tooting. [4773

WANTED, good combination, Enfield or B.S.A. preferred.—J. R. Baker, Osiers Farm, Petworth. [4336

WANTED, Rudge-Multi, I.O.M. preferred; must be modern and cheap.—King, Egrove, Oxford. [4579

LATE Rudge, Morgan, or other machine; cheap, condition immaterial.—27, Gayhurst Rd., Dalston. [4477

GOOD Solo or Combination wanted for cash.—Write, G. F. Lacey, 115, Engadine St., Southfields, S.W.18. [3537

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£30 Offered.—Best 3-speed combination, B.S.A. preferred, not earlier than 1916.—24, Ulverston Rd., Walthamstow. [4416

WANTED, late C.S., K.S. combination, 3½h.p.-4½h.p., perfect condition, lowest cash.—124, Grove Rd., Bow, E.3. [4270

MATCHLESS Model H Combination Wanted Immediately; cheap for cash.—143, Ravensbury Rd., Earlsfield, S.W. [4801

URGENTLY wanted, lightweight motor cycles, any condition, cash on sight.—Duval, 61, Grand Parade, Harringay, N.4. [4698

1922 Light Solo Sunbeam Wanted; state lowest price for cash.—Marshall, 29, Westward Rd., S. Chingford, E.4. [4230

WANTED, Triumph or other (above 350 c.c.); cash up to £20 plus Douglas given.—Willsou, 81, Addison Gardens, W.14. [4282

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

WANTED, 7-9h.p. Harley-Davidson Solo, about 1918-19 model, one needing attention not objected to, but must be cheap.—45, Oliver St., Northampton. [4455

A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes, offer spot cash on sight for any solo or combination of any make, condition and date. Bring or send. [4613

ANY Motor Cycles Wanted in exchange for new Martinsydes, 1923; the most marvellous value on the market.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [3403

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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MOTOR SCOOTERS.

1921 Motor Scooter for Sale; cost £45; perfect condition, £12.—70, Titterton St., Sheffield. [4529

6 Guineas.—Kingsbury Scooter, all-chain drive, new condition.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4610

SCOOTERS.—Limited number of Skootamotas, £17/10, brand new; Mobile Pups, new, £12/10; slightly used, £10.—Egertons (Ipswich), Ltd., Northgate, Ipswich. [2842

"GOOD THINGS" for CHRISTMAS, COMFORT, & PROTECTION

WATERPROOF MOTOR CYCLE SUIT WITH FLEECE LINING.

Fig. 1.

Fig. 1.

SPECIFICATION.

MADE from hard-wearing double texture fawn material with an interlining of Rubber. Double Breasted Jacket, with all-round Belt and Leather Buckle, large Patch Pockets, and converted collar to button right up to neck, to fasten with Throat Tab. Wind Cuffs in sleeves. All seams of the Suit are rubber cemented and taped with extra material, making the garment absolutely waterproof. Overall Trousers with spat-shaped leg; wind gussets to keep the wind from the leg and boots; fastened with patent clasp fasteners, enabling the trousers to be pulled off in a moment. The Jacket is fitted with warm and cosy fleecy lining and can be detached when not required. This suit is constructed to fully protect the rider from chill, as well as being WATERPROOF.

State chest measurement and height when ordering.

Suit complete with Jacket (fleece lined) and Overalls	**45/-**	Without fleece 35/-
Suit complete with Jacket (fleece lined) and Seatless Trousers	**52/-**	Without fleece 42/-

NO EXTRA CHARGE FOR CARRIAGE.

WATERPROOF TRENCH COAT WITH DETACHABLE FLEECE LINING.

Fig. 2.

SPECIFICATION.

MADE of fawn material, rubber lined, with all-round belt and buckle. Convertible collar, wind cuffs in sleeves, and fitted with warm, woolly, detachable fleece lining. An ideal coat for motor cycling, walking, and all outdoor purposes. This garment is impervious to rain, comfortable and warm for winter wear.

FLEECE LINING CAN BE DETACHED.

PRICE, FLEECE LINED 37/6

Without fleece lining 25/-

Should you prefer to see patterns before ordering, these will be sent by return on receipt of a postcard.

Fig. 2.

NOTE

SIZES 34", 36", 38", 40", 42" 44" in stock. Special sizes can be made in 5 DAYS, and no extra charge made if you decide to avail yourself of this opportunity. Send your measurements today. We guarantee a perfect fit in every way.

MONEY REFUNDED IN FULL IF NOT PERFECTLY SATISFIED & GARMENTS RETURNED TO US IN 7 DAYS.

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Martin Waterproof Co.

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MOTOR SCOOTERS.

A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £18; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

SCOOTER.—Autoped, scarcely used, dynamo lighting, free engine; nearest £10 secures.—Grange Park Garage, 26, Grangeway, Winchmore Hill. [4233

MOTOR ATTACHMENTS.

AUTO-BI 2h.p., as new; bargain, £12.—Bevis, 29, Queen's Rd., Basingstoke. [4733

JOHNSON Twin, hardly used, all fittings and good cycle; £14.—Crump, 33, Station Rd., Folkestone. [4268

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AUTO-WHEELS, 5 guineas, perfect condition; repairs and replacements.—J. W. Robins, 97, Latchmere Rd., Battersea. [2216

WALTHAM Motor Attachment, fitted to specially made cycle, practically new; £14/10.—Devey's, 50, Darlington St., Wolverhampton. [4497

AUTO-WHEEL, by B.S.A., in excellent condition, fitted with shock absorber, tax paid; £9/10.—Crespin, Mumford, Wittersham, Kent. [4301

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COUPE Hood and Windscreen, nearly new; 30/-.—66, Belgrave Avenue, Watford, West. [4279

HERCULES Hoods, aprons, etc., cheapest and best. Cameos, 35/-; celluloid, 1/6 sq. ft.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [0853

CELASTOID Strong Windscreens, 50×10 7/-, 25×20/- 7/-, 16×10 2/6; thinner quality, for poultry houses, 50×20 5/-, 10×10 1/-; post paid.—B. Smith and Son, Woodhouse Lane, Leeds. 'Phone: 22576. [3553

BRISTOL Windscreens, will fit any sidecar, adjustable any angle, neat and efficient, Popular, 35/-, complete with apron; De Luxe, £2/12/6. Why pay more? Send for illustrations.—Patentees and Manufacturers, Bristol Sidecar Co., Stokes Croft, Bristol. [4370

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BOWER Adjustable Windscreens, coverall aprons, all fittings manufactured under patent numbers 108,334 of 1916, and 109,601 of 1916. A few shop-soiled at 25/-; aprons from 10/-; Easting and Sandum supplied; new panels fitted from 12/-. Write for catalogues.—Robini Manufacturing Co., 1-3, Tulse Hill, Brixton, London, S.W. 'Phone: Brixton 1585. [4373

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BURTON Sidecars.—1923 touring bodies, £5, carriage paid; our catalogue illustrates six models.

ROCK bottom prices, finest workmanship and materials, latest designs.—Sidecar Co., Broadstairs. [2789

COUPETTE Sidecar body, delivered July, 1922, dark blue, perfect; £10; London.—Box 5026, c/o *The Motor Cycle*. [4255

LIGHT 2-seater bodies complete, fitted tank and aluminium bonnet, suitable for runabouts; £8/10.—Wadden, 5, Broadway, Weybridge. [4095

BRAND new 2-seater, latest type, factory built, £7; also a second-hand ditto, £2.—H. R. Hall, c/o Green Man Hotel, Whetstone, London. [4323

W.J.C. for Sidecar Bodies.—We have some real end of season bargains. All models from sports to 2-seaters. It will pay you to get our quotation.—Below.

W.J.C.—500 Bodies, ex-W.D., Douglas, Mills, Fulford, Sunbeam, from 10/- each; need painting and re-upholstery.—W.J.C. Motors, 5, Addison Av., Holland Park, W.11. Park 2071. [4987

COBB Speedman Sidecar Bodies, bulbous, 2 lockers, sprung, upholstered, finished any colour, fit any chassis, £4/10; sports ditto, £3; trade supplied.—Cobb Sidecars, Nottingham Rd., Burton Joyce, Notts. [4312

BASTONE'S Great Clearance of Sidecar Bodies (stock soiled); semi-sporting lightweight, £2/15 each; ditto, not painted or upholstered, 20/- each; touring models, 70/- each; ditto, not painted or upholstered, 30/- each.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [2707

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HELEN Sidecars.—Clearance of end of season's stock, wonderful bargains; bodies complete from £2/15; full bulbous back touring bodies, completely upholstered and coachpainted, coverall apron, etc., £5/10. Write for catalogues. Chassis complete, new, from £6.—Robini Manufacturing Co., 1-3, Tulse Hill, Brixton, London, S.W. 'Phone: Brixton 1585. [4372

BODIES.

BULBOUS, Douglas type, bodies, upholstered in Rexine, sprung seat and back, painted lead colour; £4/15; photo, stamp.—Stock and Sons, 107, Coningham Rd., Shepherd's Bush. [4462

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FOR

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SANDUM (V-shaped) windscreen, a hood, screen and apron. The Popular £2/15, and the Standard £3/18. Write for list.

SANDUM (V-shaped) windscreen. Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

SANDUM Dual-purpose Sidecar (patented). The only sidecar of reasonable length capable of carrying two adults in comfort. Bodies supplied separately if required.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0019

SIDECAR Bodies, coachbuilt, usual price £10/10 (20) only, to clear £5; send for photo.

SIDECAR Bodies, cane and wicker, cost from £3 to £10 new, slightly soiled; 20/- to 50/- each, absolute gifts; all carriage paid.

ALSO quantity sidecar chassis, wheels, castings, tyres, tubes, and various fitments, money-making opportunity for maker-up.—Melville Cars (Halifax), Ltd., opposite Fire Station, Halifax. 'Phone: 999 Hx. [0976

1921 Montgomery Touring Sidecar, screen, apron; £8.—37, Arlington Rd., Surbiton. [4567

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BASTONE'S.—If you are buying a sidecar, kindly inspect our stock before purchasing elsewhere, and save money.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [2708

CHASSIS, brand new, remainder of Birch Aircraft stock; £6.—Durant, Bourne, Farnham. [4734

£6.—Lightweight Canoelet Sidecar, 26in. wheel, as new.—239, Goldhawk Rd., Shepherd's Bush. [4961

BOOTHS Motories, Blackpool.—New coach bodies, full size, with locker, £5/17/9; usually £9/10.

BOOTHS Motories, Blackpool. — New step-pattern coach bodies, £5/17/6; sporting bodies, £4/17/6.

BOOTHS Motories, Blackpool.—Canoelet chassis, like new, £5/19/6; shop-soiled £25 sidecars to suit Triumph, B.S.A., £16/10/6; second-hand sidecars, cheap; springs, mudguards, hubs, lugs, fittings; state requirements.—Booth Motories, 294, Waterloo Rd., Blackpool. [3984

DOUGLAS, Indian, Triumph Sidecars; from £6, complete; bargains.—17, Heaton Rd., Mitcham. [4846

SIDECARS, several second-hand, very cheap; room wanted.—57, Kenbury St., Camberwell, London. [4475

30/- Each.—2 heavyweight sidecar chassis, new. —Lea, Breakespeare Rd., Abbots Langley. [4634

MILLFORD Sidecar, 1922 bulbous body, off Triumph; £7/10; after seven.—Parker, 65, Clifton Avenue, Wembley Hill. [4716

SIDECARS.—Several good coachbuilt sidecars from £3/10.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [4609

SIDECAR (Coachbuilt) suit 3½-4h.p. machine, new late last year; bargain, £10.—2, Chinley Av., Moston, Manchester. [4491

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PARAGON Folding Sidecar was first on the market, and is still the best. Call and see 1923 improved model demonstrated.

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HARLEY-DAVIDSON (genuine) Sidecar, metal body, complete, 28in. wheel, tyre, all fittings; first £6/10.—56, Tollington Park, N.4. [4385

EXTENDED Payments accepted for sidecars; models for all makes.—Send for catalogue, etc., Rideczi Sales, Ltd., 5, Victoria St., S.W.1. [0829

DORWAY Folding Sidecar saves garage. When folded (10 seconds) combination passes through ordinary doorway. Unnoticeable appearance when open, no freakishness; send for descriptions. Frank Whitworth, 139, New St., Birmingham. [5085

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Brand new and fully guaranteed 1922 O.K.-Junior 2¼ h.p. Villiers or 2¾ h.p. O.K. Engine for **29 Gns.** Cash, or on Extended Payments, including comprehensive insurance policy, **£8** deposit and 12 monthly payments **£2:7:2.** Send your order and deposit now as we have only a few left.

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7 h.p. A.J.S. Combination, with spare wheel	**£130**
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W.J.C.—500 Mills-Fulford Chassis (ex-Irish M.T.), complete with new bulbous back body; £12/10. Attachments for any machine. 12 months' guarantee.—Below.

W.J.C.—We have a huge quantity of other chassis, Douglas, Montgomery, Empire, all renovated as new; 12 months' guarantee; from £5.—Below.

W.J.C. Sporting Model, £12/10; 2-seater bodies, £9/10; etc. Over 50 models in stock.—Below.

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A.B.C. Grey Touring Sidecar, late 1921, excellent condition, with apron and electric side lamp; £18.—Swinglehurst, 145, Gisburn Rd., Barrowford, Lancashire. [4488

MIDDLETON'S Spring Wheel Sidecar again wins Championship at Brooklands, making third successive year. Lo Vack (Zenith-Jap) first, O. de Lissa (Motosacoche) second.

MIDDLETON'S Spring Wheel Sidecar again used for records. 50 miles, 100 miles, one hour, by Messrs. Temple and Allchin, on the famous Harley-Davidson.

MIDDLETON'S Spring Wheel Sidecar was used by the winners in the 200-mile race, Messrs. Davidson (Indian) and Le Vack (Zenith).

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REPAIRS to Frames, Chassis, Bodies of every description. Trade inquiries invited.

MIDDLETON'S, London's oldest established sidecar makers. Business hours 9 to 6, Saturdays close 12.—27, Stroud Green Rd., Finsbury Park. 'Phone, Hornsey 1584. [0522

HOPLEY Folding Sidecar Saves Garage; attached to motor will go through passage 28in.; tandem bodies fitted; suits motors up to 10h.p.; changed from pleasure to commercial in few seconds; tested 8 years.—F. Hopley, Upper Highgate St., Birmingham. [0152

HELEN Sidecars.—Clearance of end of season's bargains. A few lightweight outfits, complete, brand new, tyre and tube, etc., all fittings, £9; shop-soiled outfits for Triumphs, etc., bulbous back body, apron, chassis complete all fittings, tyre and tube, £12/15.—Robini Manufacturing Co., 1-3, Tulse Hill, Brixton, London, S.W. 'Phone: Brixton 1585. [4374

CANOELET Coachbuilt Touring Body, 28×3 wheel and tyre, 4-point fixing, £20, shop-soiled; Canoelet sports racing, £15, 26×2¼ wheel and tyre; Ariel coachbuilt, £20, 26×2¼ wheel and tyre; four Williamson coachbuilt 4-point, 26×2¼ wheel and tyre, £10 each; New Comet chassis for Triumph, £6/10, new. A few second-hand sidecars from £5, to clear; inspection invited.—Wauchope's, 9, Shoe Lane, E.C.4. 'Phone: Central 5168. [4412

RUNABOUTS AND CYCLECARS.

1923 Morgans are available from Gibb, Northgate, Gloucester. 'Phone: 852. [0969

MORGAN 1920 Grand Prix; bargain, £77.—Richardson, 20, Heath Hurst Rd., Hampstead. [4283

MORGAN De Luxe, perfect order, complete; 75 guineas.—17, Graham Rd., Weston-super-Mare. [4537

ROVER Eight 1923 models from £180; motor cycle exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [7517

REYNOLDS Runabout 1922, not done 200 miles, as new, fitted with hand-starter; £50, or near offer.—Skinner, Sleaford. [4260

MORGAN Grand Prix water-cooled J.A.P., just overhauled by makers; bargain, £90.—Marston, 51, Bridge St., Chester. [4658

G.N., 1921, dynamo lighting, spare wheel, oversize tyres, etc., £98; similar model, 1920, electric lighting, £85.—Below.

MORGAN, 1916, air-cooled M.A.G. engine, lamp, horn, etc.; £57/10.—Elce, Ltd. 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

CARDEN 5-6h.p., single-seater, torpedo body, in excellent order; £45.—Wauchope's, 9, Shoe Lane, Fleet St., E.C.4. [4415

1920 8.7h.p. G.N., fully equipped, oversize tyres, excellent condition, any trial; £62/10.—Rodwell, 8, Red Lion Square, W.C.1. [4524

1914 A.C. Sociable, 2-seater, acetylene and electric lighting, in splendid condition; £16.—64, Church St., Edgware Rd. [4922

EXCEPTIONAL De Luxe G.N., dynamo lighting, spare wheel, any trial; £85; exchanges.—24, Balliol Rd., North Kensington. [4509

1920 Morgan Grand Prix Aero special disc speedometer, all accessories; £85.—Appointment only, 20, Heathurst Road, Hampstead. [4983

RUNABOUTS AND CYCLECARS.

MORGAN Grand Prix, 4 months old condition as new, complete; £135.—Houghton Bros., Woodcote Parade, Wallington, Surrey. [4304

1922 Dynamo De Luxe Water-cooled Morgan, every possible accessory, used twice; £135; exchanges.—24, Balliol Rd., North Kensington. [4508

A.V. Garage, 12A, Elcanor Grove, Hogger's Corner, Barnes, have several specially tuned A.V. Monocars, fully equipped, in stock, from £35. [4611

1922 Scott Sociable, spare wheel, etc., mileage small, oversize tyres; price £130; any trial.—Welford, Scott Agent, James St., Brighton. [4434

BABY Peugeot, 1915, splendid condition, tyres as new, accessories; £75; or exchange for motor cycle and cash.—48, Lavender Vale, Wallington. [4441

MORGANS.—Hall, 91, St. Peter's St., St. Albans, can give early delivery of this famous runabout; Grand Prix £160, De Luxe £165, Family Model £170. [0935

1913 Morgan, remodelled, painted, upholstered, engine overhauled, fast, powerful, chains, as new, spares, tyres good, any trial; £65.—Bungalow, Botany Bay, Enfield. [4265

1920 A.V. Monocar, excellent running order; exchange high-power motor cycle; sell £55.—Hollis, Junr., Brent Bridge Hotel, Golders Green, N.W.11. [4235

A.B.C. Sports, like new, mileage only 2,000, many new spares and special fittings, great bargain, £135.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4791

72 Guineas, exchanges.—Baby Peugeot, De Luxe 2-seater, 7h.p., 4-cyl., 3 speeds, hood, screen, luggage grid, lamps, spare rim, smart and good, tax paid.—Seabridge. Below.

59 Guineas, exchanges.—1914-15 Humbrette 2-seater, water-cooled, hood, screen, lamps, Stepney, smart, any examination, trial.—Seabridge. Below.

80 Guineas; exchanges.—1920 G.N. 2-seater, dynamo, 5 detachables, speedometer, hook, screen, any examination; trial.—Seabridge. Below.

29 Guineas; exchanges.—Rover 2-seater 6h.p., hood, screen, lamps, high side doors, useful little runabout.—Seabridge. Below.

ALL the above and many other bargains at Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [4874

1921 Temperino 9h.p., 2-seater, 3-speed, reverse, spare wheels, hood, screen, lamps, etc., exchange motor cycle, sell best offer.—Mitchell, 12, Caoonbury Place, N.1. [4632

1920 Morgan Family, 8h.p. w.c. J.A.P., dynamo lighting, Bonniksen, perfect; £110.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4832

1921 Carden 2-seater, fully equipped, hood, screen, electric lighting, fully guaranteed; £65; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4831

1915 Morgan Grand Prix, w.c. J.A.P., hood, screen, 5 lamps, in splendid condition; £80.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4830a

1921 Coventry Premier, 3-wheeler, dynamo lighting, dickey seat, spare wheel, condition and appearance as new; bargain, or exchange good combination and cash.—Joll, Tailor, 139, St. Michael's Hill, Bristol. [4735

1923 Morgan De Luxe, w.c. J.A.P., dynamo lighting, braod new; £168; immediate delivery from stock; exchanges or deferred.—Homac's, Morgan Service Depot, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [4829

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ALLEN-BENNETT Motor Co., Ltd., Official Morgan distributing agents, immediate delivery of all models. Your present machine accepted in part exchange; deferred payments over 18 months.—9, 10 and 11, Royal Parade, London Rd., W. Croydon. 'Phone: Croydon 2450-51. [0734

TWO Slightly Shop-soiled 1922 G.N.'s, specially tuned up, dynamo lighting, hoods and screens, 2-seaters, with ample dickey; no reasonable offer refused; exchange or deferred payments for either.—The Motor House, 20, Finchley Rd., N.W.8. Tel.: Hampstead 7355. [3399

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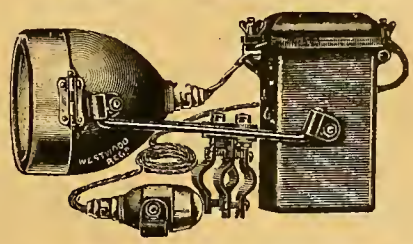
WANDSWORTH Motor Exchange.—Bargains in cars. Zebre 2-seater, 39 guineas; Victor 2-seater, 49 guineas; Humberette 2-seater, dickey, 59 guinas; Bleriot-Whippet, 59 guineas; 1921 Carden, 59 guineas; Belsize landaulet, 125 guineas; Overland landaulet, dynamo lighting, self-starter, 69 guineas; Unic coupe, 69 guineas. Motor cycles; part, easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [4811

"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

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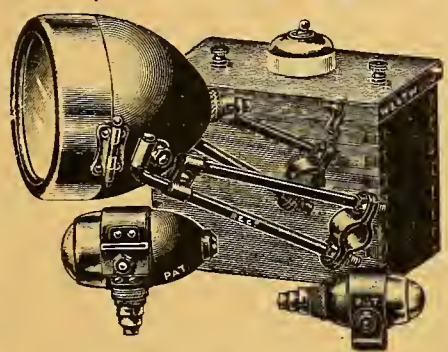

The set comprises Daybeam 7in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C. Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting, and will give very satisfactory service in use.

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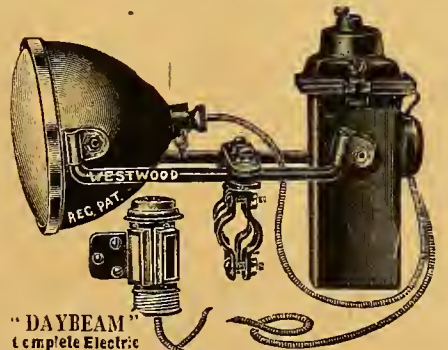

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MORGAN Spares from stock for all models.—Send your enquiry to Hall, Morgan Specialist, 91, St. Peter's St., St. Albans. [0936

MORGAN Spare Parts Depot.—Spares for all models from stock. List free.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

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A.V. 1921 2-seater, 8h.p. twin J.A.P., 5 lamps, tax paid; £55.—77, Acre Lane, S.W.2. [4856

HALIFAX.—1923 Stoneleigh 3-seater; £185.—Halifax Motor Exchange, Horton St., Halifax. [4982

HALIFAX.—1923 Lagonda; £265; cash, exchange, or deferred.—Motor Exchange, Horton St., Halifax. [4979

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HALIFAX.—1923 Calthorpe; 285 guineas; cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [4980

HALIFAX.—1923 Coventry Premier, 230 guineas; Singer, 280 guineas; cash, exchange, or deferred. Motor Exchange, Horton St., Halifax. [4981

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ROVER Eight 1922, latest type, original tyres, perfect, dickey, any trial; bargain, 125 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4875

CARS FOR SALE.

ROVER 8h.p. 1921 model, Lucas dynamo lighting, just overhauled by makers; bargain, £100; tyres, etc., perfect.—Marston, 31, Bridge St., Chester. [4659

1922 Coventry Premier, dynamo, spare wheel, speedometer, electric horn, in perfect condition; 115 guineas.—51, Upper Richmond Rd., East Putney. [4938

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1921 Rover 8h.p., full equipment, double oiler, small mileage; £107/10; exchanges.—Hillier (side hell), 127, St. Mark's Rd., North Kensington. [4594

1921 Emscote 2-3-seater, Lucas dynamo lighting, 3-speed and reverse; exchange good combination, part.—Rhind and Co., Stone Place, Rusholme, Manchester. [4349

ROVER 8h.p. Standard model, £180; 8h.p. 4-seater model, £190; 4-seater model De Luxe, £210; 2-seater De Luxe, £200.—Ratcliffe Bros., 200, Gt. Portland St., W. [0729

2-SEATERS.—Swift 7-9h.p., 1920; Richardson 8h.p.; J.A.P.; Laurence-Jackson, similar engine; all in excellent condition; £75-£80.—Bunting's Motor Exchange, Wealdstone. [4669

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G.N. 1922.—A few slightly shop-soiled, demonstration, touring, sporting, and racing models available; extremely attractive prices.—G.N. Motors, Ltd., 22, Gt. Portland St., W.1. 'Phone: Museum 2271. [4258

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HORSTMAN 1920 Sports 2-seater, dynamo lighting and starter, indistinguishable from new; any trial; £145, or near offer; exchange considered.—4, Berkeley Mews, Conuaught St., London. 'Phone: Padd. 1177. [4705

ROVER—Godfrey's are authorised agents for the 8h.p. model; early deliveries of 1923 models; 2-seater, £180; 4-seater, £190; exchanges; gradual payments.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

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ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190; De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

1923 Salmson, immediate delivery; list 235 guineas, exchange or instalments; French type (1,100 c.c.) chassis with English model De Luxe body, full guarantee, all accessories, shuts up like a coupe, holds the road like a leech.—Graff, Hayes, Kent. 'Phone: Bromley 532. (No. 54 'bus.) [0951

ROVERS.—1923 models; immediate delivery. Motor cycles, combinations taken in part payment and treated as first payment down, remainder in equal monthly payments. 2-seater standard, brown finish, £180; 2-seater model De Luxe, any colour, £200; 8h.p. 4-seater standard, brown finish, £190; 8h.p. 4-seater model De Luxe, any colour, £210; self-starter on any model, £15 extra; tuition free; delivery Rover works or London. Write for list.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C. 'Phone: Central 5168. [3956

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6h.p. J.A.P., complete unit, magneto, latest single Amac, etc.; stamp, full particulars.—Saker, Wentworth, Chessington, Surbiton. [4327

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8h.p. J.A.P., with Bosch waterproof, £15; 6h.p. 1913 Rex, with Bosch waterproof, £9/10; 4h.p. J.A.P., £8; 1911 Triumph, £7; heaps of engines.—Syd. Pearson, Gate House, Cheylesmore, Coventry. [4539

SCOTT w.c. Engine, complete with magneto, carburetter, and radiator, £12; 4-cyl. Anzani engine, £35; 1920 B.S.A. engine, complete, £12/10; vertical twin 2-stroke cycle car engine, complete, £11. See Parts and Accessories.—Williams, 17, Maiden Lane, Strand. [4945

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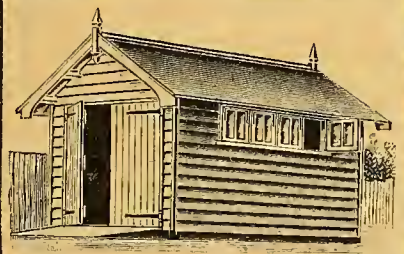

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We erected it on Wednesday and it went together like clockwork. I am very pleased we left the order with you, as all who have seen it think the value is remarkable and admire the artistic appearance. Trusting and believing it will get you further orders from this district.

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OUR Offer.—We shall be pleased to allow you to see your magnete on test after repair at our works. How many others can make the same offer?

RELIANCE have the following magnetos in stock, all fully guaranteed and on approval.

THOMSON-BENNETT.—Singles and twins, new, any degree, waterproof, variable, suit any engine; price 55/-.

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GUARANTEE.—Every magneto, no matter what the price or make, is guaranteed by us. Not merely that same is in good order at time of sale, but a plainly written statement that we guarantee each machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors. List sent post free upon application.

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CAN be speedily and thoroughly repaired by any one of our Service Depots. All spares in stock.

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E.T.C. Magnetos, 2-stroke, variable, latest pattern, new, and not W.D.; £2/5, carriage paid.—4, Frederick Rd., Gravelly Hill, Birmingham. [4732

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READY to fit on your machine; there are no alterations to make.

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ARE You a Discerning Douglas Owner? Do you want a reliable magneto with 12 months' guaranteed service that will give you starting without worry, a smoother running, and more powerful engine and better results from your Douglas? Then send for a latest enclosed waterproof type Bosch XA2 magneto now; price only £5, carriage 1/6.

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EXPRESS Dixie Repair Service. Your Dixie magneto, no matter what size, rebuilt equal to new and returned in 12 hours, at 30/-; a small extra charge for necessary replacements.

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ARMATURE rewinding, no matter what make, type, or size, 11/6. Wound cores from stock.

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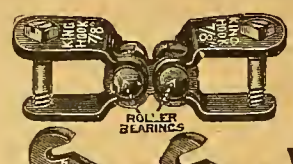

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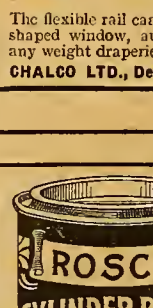

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26×2½×2¼.—Palmer Cord, 30/-; Heavy, 32/6; Wood-Milne 3-ply, 22/6; 4-ply, 27/6; tubes, 5/3.—Below.

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ALL the above new goods are sent on seven days' approval against remittance, plus 1/- for postage.

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MASONS.—Dunlop Extra Heavy Rubber Studded, 26×2½, 27/6; 650×65, 25/-, soiled, fully guaranteed.

MASONS.—Great offer; Moseley Cable cord, large studded, perfect. 26×2½×2¼, 30/-; 650×65, 700×80, 37/-; 28×3 (American), 38/6; large studded, heavy, fabric, 24×2¼, 19/6; 26×2¼, 22/6; 26×2⅜, 23/6; 26×2½×2¼, 25/-; 26×2½, 26/-.

MASONS.—Wood-Milne Key-grip covers, 4-ply, 26×2½, 24/6; 26×2⅜, 23/-; 26×2¼, 22/-; 26×2½×2¼, 25/-; 650×65, 25/-; 3-ply, 24×2¼, 18/-; 700×80, 28/6; 28×3 (American), 27/6; 28×2½ (American), 24/6; approval against remittance; carriage paid.—Masons, The Tyre House, Ipswich. [0916

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SCOTTISH readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 436, Argyle St., Glasgow. List post free. [3483

ECONOMIC Tyre Co.—The following new clearance covers now in stock and sent on 7 days' approval against remittance; carriage paid, passenger train.

ECONOMIC.—24×2 Clipper heavy, 12/6; tubes 4/6; 24×2¼ (also fits 2in. rims) Clincher heavy, 15/-.

ECONOMIC.—26×2¼ Clincher extra heavy, 22/6; tubes, 4/9; 25×2⅜ Clincher extra heavy, 24/6; tubes 4/9.

ECONOMIC.—26×2½×2¼ Goodyear Diamond, 30/-; Avon extra heavy rubber stud, 25/-; tubes 5/6.

ECONOMIC.—26×2½ (old standard Clipper extra heavy, 29/6; 28×3 Goodyear Diamond, 37/6; 650×65 Clipper extra heavy, 27/6; 700×80 Avon extra heavy, 35/-.

ECONOMIC.—Dunlop Rubberstud, fully warranted, 24×2, 16/3; 24×2¼, 17/9; 26×2, 17/9; 26×2¼, 18/6.

ECONOMIC Tyre Co., 314, New Cross Road, S.E.14. 'Phone: New Cross 1393. [4917

PIRELLI Tyres, rubber non-skid treads, brand new goods: 26×2½, 16/6; 26×2⅜, 17/6; 650×65, 18/6; 28×3, 24/6; approval against cash.—Broadway Motor Co., 998, Garratt Lane, Tooting. [4460

MAUDE Rubber Co., 58, Praed St., W.—Special Christmas box for all tyre purchasers to the value of 20/-. We are presenting, absolutely free, a 10/6 Swan fountain pen, self-filling, and fitted with usual 14ct. gold nib. Write for our list, which contains all makes advertised herein, and at similar prices [4895

GENUINE GOODS.—3,000 New Beldam Motor Cycle Covers. All sizes 15/- each to clear; 28×5, 20/-; 650 × 65, 27/6; 700 × 80, 32/6; postage 1/6 extra; new tubes, all sizes, 4/6 each; secondhand covers, any size, 10/- each.—The Homerton Rubber Works, 11, Upper St., Martin's Lane, W.C.2, and 46, Brookeby's Walk, Homerton, E.9. [0331

WOULD you throw away a £5 note annually? Of course not. Yet you actually do by running your tyres to their death instead of having them re-rubbered by the Melton Rubber Works, Melton Mowbray, who guarantee the treads to last as long as new ones. Patterns 3-rib and cross-grooved, time taken a few days; look round your machine and send those worn tyres to-day; cost, 26in. tyres 15/-, 28in., 18/9. [0348

BASTONES.—24×2 Clincher De Luxe, extra heavy, 17/6; 24×2¼ Hutchinson, T.T., 18/6; 26×2¼ Hutchinson, T.T., 18/6; Dunlop rubber stud, heavy, 26/9; Goodrich safety tread, 26/-; Clincher De Luxe, extra heavy, 21/-; 26×2⅜ Hutchinson, T.T., 19/6; Clincher De Luxe, ex heavy, 23/-; Bergougnan rubber non-skid, heavy, 23/-; 26×2½×2¼ Goodrich safety tread, 31/6; Dunlop rubber non-skid, ex heavy, 39/9; Dominion Usco heavy, 22/-; 26×2½ Hutchinson, T.T., 22/-; Goodrich safety tread, ex heavy, 29/-; 700×80 Dunlop Magnum, 41/3; Goodrich safety tread, 37/6; 28×3 Dunlop Magnum, 42/6; Goodyear, all-weather tread, 37/6. Tubes, 24×2, 24×2¼, 3/9; 26×2¼, 26×2½, 4/9; 28×3, 700×80, 6/9. The above new and clearance goods: sent on approval against remittance. Estd. 17 years.—Bastones, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [4872

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TANKS for B.S.A., new, 35/-; 1910, 1922.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [3237

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I SPECIALISE in Repairs, re-builds, and tanks to measure Enamelling to any pattern. Quick delivery.—Below

DOUGLAS Pattern Tanks, new and enamelled, complete with all fittings and B. and L. pump; 55/-; folder with photo on request.—G. Day, 85, Cheapside Birmingham [6602

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MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

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The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins

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THE LION FASTENER, guaranteed for 5,000 miles—1id

Our goods are World-renowned for their Reliability. A STANLEY FASTENER free with each belt.

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Adjustable Punches 2/-
Per ft.
⅝" 1/2
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Stanley Motor Belts & Fasteners,
BRITISH THROUGHOUT.
(STANLEY WEBB, inventor of the original Hook Belt Fastener and other Practical Belt Aids.)
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MANUFACTURERS and Enamellers.—Old tanks overhauled, repaired, and re-enamelled equal to new, complete, 27/6; tested under pressure; new tanks, any make, made by experts; satisfaction guaranteed.—Green Bros., 19A, Tenerife St., Gt. Clowes St., opp. Broughton Baths, Manchester. 'Phone: 727 Hr. Broughton. [2709

BELTS.

BALATA and Chrome Belts for winter use; ¾in., 7/4; ⅞in., 1/6; 1in., 1/9; 1¼in., 2/- per ft.; fasteners, 9d. each; postage 1/-.—Sole Manufacturers, W. Pollin and Son, Hollington, St. Leonards-on-Sea. [2987

CHEAPEST way to buy your belt, and genuine guaranteed material. Dunlop, Avon; and Pedley, cut as required, 1¼in. 2/-, 1in. 1/9, ¾in. 1/5, ⅝in. 1/4 per foot; John Bull, 7ft. 6in. lengths, 1¼in., 16/-; ⅞in. 12/6; hook fasteners, 1/4.—Maude Rubber Co., 58, Praed St., W. [4896

BELTS.—Clincher clearance, not W.D., ⅝in., 6ft. 6in., 8/2; 7ft. 6in., 9/5; ⅞in. 7ft. 6in., 9/5; 8ft., 10/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1¼in., 8ft., 16/-; Bates short lengths, ¾in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

CARBIDE.

CARBIDE, highest grade Norwegian, 18/6 cwt., 11/6 ½-cwt., immediate delivery.—Kemp's Garage, Importers, Louth. [4274

CARBIDE, guaranteed highest grade, lowest price; immediate delivery nearest depot.—Write, Jackson and Co., High St., Chesham, Bucks. [2919

CARBIDE, finest quality, ½in., 19/6; larger meshes, 18/6 cwt., f.o.r. nearest depot; coated, 25/-, ex Bristol only.—Hodge and Co. Warwick Rd., Bristol. [4681

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 21/-, ½-cwt. 12/6, 28 lb. 7/6, drums free. (Depots in all parts.) 1 lb. carbide tins 17/6 gross. Hundreds testimonials. Established over 30 years.—Young, Importers, Misterton, Somerset. [3511

CARBIDE.—Guaranteed to British Acetylene Association's standard, coated and uncoated, in 1 lb., 2 lb., 4 lb., 7 lb. and 14 lb. lever top canisters; get our price at once; in 1 and 2 cwt. drums, ex 22 stock depots, 18/- cwt.; immediate delivery.—Elloc Cycle Works, Gedney Drove End, Wisbech. [3323

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [4808

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672. [7917

H. N. and W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E., Associate I.E.E., etc.; W. S. Skerrett, A.I.E.E., Registered Patent Agent).—Patents, designs, and trade marks—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1971

PATENTS, EXPERIMENTAL WORK, ETC.

EXPERIMENTAL Work.—My tool room, engineering works, drawing office, and laboratory are devoted entirely to experimental engineering; secrecy guaranteed.—Leopold Ward, B.Sc., A.C.G.I., Harmood Place, Chalk Farm, N.W.1. 'Phone: Hampstead 7559. [0945

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate 3d. per word, minimum 3/-.

INSURANCE.

£3 Covers All Risks for 2¾h.p., others at competitive rates.—Ernest Bass, 40, Chancery Lane, W.C.2. 'Phone: Holborn 328. [0005

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

SITUATIONS VACANT.

LOCAL Agents wanted in all districts; tyre repairs; 3,000 mile retreads; rubber boot soles, heels, and protectors; liberal commission.—Write Melton Rubber Works, Melton Mowbray. [0549

SITUATIONS VACANT.

WANTED, smart young man for North of England to take charge of and develop publicity department as applicable to the motor cycle trade, must be conversant with motor cycles and have initiative and originality.—Applications, stating age, experience, and salary expected, to Box 5009, c/o *The Motor Cycle*. [4224

SITUATIONS WANTED.

SUCCESSFUL competition rider desires engagements, T.T. Race, 500 miles, and other open events; 260 and 350 machines preferred.—Box 5065, c/o *The Motor Cycle*. [4719

SALESMAN-DEMONSTRATOR in South Wales, young, good rider and mechanic, competition riding, moderate salary, or opening in established business considered, iovest £100 to commence, more later; small town preferred, living accommodation necessary.—Box 5026, c/o *The Motor Cycle*. [4253

CONSULTING ENGINEERS.

H. ALBAN BRAYSHAW, A.M.I.A.E., 9, Cuerdon St., Byrom St., Liverpool. 'Phone: North 1168. [0945

FINANCIAL.—PARTNERSHIPS.

SITUATION offered to smart Salesman, with cash to invest, to push sales, cycle, motor cycle, and light cars; market town, Hampshire.—Box 5073, c/o *The Motor Cycle*. [4746

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

MOTOR Cycle Business, popular town, 80 miles from London; takings £1,500 p.a.; accountants' figures; all motor cycle work, splendid agencies; suit capital £1,000.—Drake and Nutter, 19-21, Farringdon St., E.C. [0954

COMPLETE Engineering Works, Acton, lavishly equipped, modern machine tools, machine and fitting shops, stores, outbuildings, yard, suite of furnished offices, valuable leases, forced sale; take £1,250 all in if immediate purchase.—Box 5029, c/o *The Motor Cycle* [4256

GARAGES.

IMPORTANT.—Store your car or motor cycle till the fine weather comes again; special low rates offered for cars, etc., for any period.—Wilkins, Simpson, Opposite Olympia, London. [4308

GENERAL TRADE.

MARKING Punches. High-class steel stamps of every description.—Murray, 282, Thimble Mill Lane, Nechells, Birmingham. [4228

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London; terms 7½ per cent., not chargeable if machine unsold; motor cycles and cars bought and sold for cash; nearest goods stations, Falcon Lane (L. and N.W.R.), Wimbledon (L. and S.W.R. and G.W.R.). —Sole address, Palmer's Garage, Tooting, London. [4776

WANTED.

FORD Ton Lorry Wanted.—Rhind and Co., Stone Place, Rusholme. [4358

WANTED, Vindec connecting rods 5h.p.—Davies, Post Office, Cwmbran, Mon. [4273

WANTED, Sturmey-Archer 3-speed, J.S. hub.—98, Bevais Valley, Southampton. [4086

PAIR Ace Discs, 26in., also leather overcoat.—Bradbrook, 110, Camberwell New Rd. [4334

WANTED, Cylinder for 1914 A.C. Humberette.—Particulars, 38, Lord St., Redcar, Yorks. [4236

WANTED, Easting Screen, Standard, cheap.—Sydenham, 12, Herschell Rd., Forest Hill, S.E. [4232

MORGAN Wanted for cash, or 1920 N.U.T. in part payment.—F.S., 58, Malvern Rd., Dalston, E.8. [4941

WANTED, Indian dynamo lighting set complete, new condition.—Jackson, 4, Alexandra Rd., Grimsby. [4223

AUTO-WHEEL and Lightweight, condition immaterial; state lowest price.—97, Latchmere Rd., Battersea. [2217

WANTED, 4h.p. Douglas sidecar springs, wheels, and connections; cheap.—2, Fortune Gate Rd., Harlesden, N.W.10. [4499

WANTED, Front Wheel and Forks for B.S.A. 4½h.p. 1920; state price.—Dyson, Glencruitchery Rd., Douglas, I. of M. [4426

GRADO Gear, Philipson pulley, two or three-speed gear box; state lowest price.—Jack Ward, 11, Radford Rd., Leamington Spa. [4619

MOTOR Cycles,—light cars, spares and accessories, new or second-hand; prompt cash paid for above. —McNeille and Platt, 57, Great St., Liverpool. 'Phone: 1092 Royal. [3820

SPOT Cash Buyers.—Motor cycles, combinations, cars. Bring machine, take cash.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town-Station). 'Phone: Latchmere 4686. [4812

MOSS BROS.

The Motorist's Clothier,

Have the following lines at cut prices :

DINNER & DRESS SUITS.
Second-hand 40/- to 80/-
New - - 80/- to 120/-

LEATHER FLYING COATS.
Second-hand, 45/-
These coats were used by the Air Force and have had a fair amount of wear, but are ideal for motoring.

REGULATION TRENCH COATS.
New, 55/-
(The four coats in one), check-lined, fleece-lined, and oilskin interlined in light and dark fawn. We have sold hundreds of this line, and are really a bargain at the price.

BLUE TRENCH COATS.
45/- Check-lined. 52/6 Check-lined and interlined.

NEW LEATHER MOTOR COATS.
Double breasted, with belt all round. £5 15 0 Fleece lined and wind cuffs.

BEDFORD CORD BREECHES.
26/6 Self strappings. 29/6 Buckskin strappings.

New and Second-hand **OVERCOATS** For all purposes.

Before buying elsewhere call and inspect our stock. If unable to call, send requirements and we will quote by return.

ALL GOODS SENT ON SALE OR RETURN. MONEY RETURNED IN FULL IF GOODS NOT APPROVED.

MOSS BROS. ('Phone Park 4817)
83-5, High Street, Notting Hill Gate, W.11 and 224, High Road, Kilburn, N.W.6.

VELO PUMPS for CARS & MOTOR CYCLES.
No. 154"
Brass Barrel, Detachable Handle, 24" Connection with Adaptor.

POST FREE 8/- Net.
Will Inflate any Tyre.
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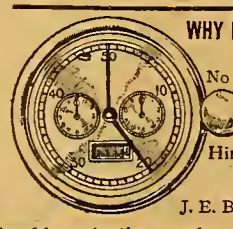

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No Extra Charge for Deferred Payments.
THE BONNIKSEN
Hire Sales & Repair Service
165, TACHBROOK ROAD, LEAMINGTON SPA.
J. E. BONNIKSEN, Son of Inventor.

EXCHANGE.

A.C. 2-seater runabout for good solo or combination.—10, Baronsmead Rd., Barnes. [4580

EXCHANGE 1921 4h.p. Triumph; £66.—238, Goldhawk Rd., Shepherd's Bush. [4360

EXCHANGE 4-seater car for 1-ton lorry or van.—Box 5070, c/o *The Motor Cycle*. [4724

6h.p. 1920 Rover Combination for American, or sell.—Bryant, Easterton, Devizes. [4522

EXCHANGE 1912 G.W.K. 2-seater for combination and cash.—82, Whitley St., Reading. [4225

TAN-SAD, Amac 7½in. 2-lever, perfect, for Bonniksen trip.—8, Ashley Park, Bristol. [4621

EXCHANGE New Furniture for Sporting Sidecar for Zenith.—35, Elm Rd., New Malden. [4629

ADAMS Reflex Camera, etc., for lightweight.—Particulars, Box 5030, c/o *The Motor Cycle*. [4257

3-TON Lorry, 1918, perfect, for late Morgan; sell cheap.—Toyer, 76, Cromwell Rd., Luton. [4480

SMART Humberette 2-seater; £60; exchange combination.—4a, St. John's Wood Rd., W. [4848

PIANO, unused, slight cash if necessary, for powerful twin.—40, Trinder Rd., Crouch Hill, N.19. [4081

EXCHANGE Magneto for N.S.U. gear, one needing repair would do.—Box 5067, c/o *The Motor Cycle*. [4721

1922 2-speed 2¾h.p. Connaught, 4h.p. machine; cash adjustment.—98, King St., Hammersmith. [4466

4-SEATER 12h.p. Alldays Touring Car, for 2-seater, motor cycle, or Morgan.—63, Solon Rd., Brixton. [4515

MATCHLESS Combination, late model; £90; exchange light car.—48, Gt. Western Rd., Paddington. [4847

RADCO 2½h.p., perfect, and £10, for best 3½h.p. Rudge-Multi offered.—Box 5006, c/o *The Motor Cycle*. [4109

EXCHANGE Morgan G.P., w.c., for motor cycle and cash.—3, Stamford Brook Rd., Hammersmith. [4667

1923 Indian Scouts, dynamo; £113; exchanges arranged.—Agents, "Parwood," East Hill, Wandsworth. [4452

EXCHANGE your present machine for a new car or motor cycle at Kays, 8 and 10, Bond St., Ealing. [9448

B.S.A. Combination, 4½h.p., 1916, and cash for higher-power combination.—69, Kingston Rd., New Malden. [4590

EXCHANGE 3h.p. Cleveland, 1920, for sidecar, to suit Triumph, or sell; £15.—6, Gladstone St., Leicester. 4699

EXCHANGE 1914 Bugatti 2-seater for Morgan, G.N., combination.—3, Stamford Brook Rd., Hammersmith. [4668

EXCHANGE 1921 Indian Scout, lighting, speedometer, cash either way.—284, South Lambeth Rd., S.W.8. [4600

A.C. Sociable, excellent condition; £35; sell or exchange good solo machine.—Tottery, Clark St., Stourbridge. [4489

SINGER Coupe, 1915 and 1921 models; motor cycle or combination part exchange.—Bartletts, 93, Gt. Portland St. [4975

WHAT Offers in Exchange? G.N. 5h.p., tandem seats, 2 speeds, lamps, licensed; £30.—200, High St., Tooting. [4639

ALLDAYS Allen 2-speed, discs, any trial, for Triumph or similar, cash, or sell.—22, Winthorpe Rd. Putney. [4317

1922 Coventry-Premier, dynamo, spare wheel, dickey, 4-wheeler, for Morgan and cash.—67, Fernlea Rd., Balham. [4956

GAUMONT Cinematograph and Films, value £30, for motor cycle or combination.—89, Spencer Place, Leeds. [4487

EXCHANGE 4h.p. Norton, 3-speed, all chain, for Triumph, B.S.A., similar, and cash.—King, Egrove, Oxford. [4580

TRIUMPH, Omega, F.N. 8h.p. machines taken in part exchange on these makes.—Bartletts, 93, Gt. Portland St. [4973

EXCHANGE good 3½h.p. motor cycle, 2-speed countershaft, for good lightweight.—Box 5072, c/o *The Motor Cycle*. [4726

ADVERTISER will exchange 2 good suits, nearly new, for anything in motor line.—Box 5069, c/o *The Motor Cycle*. [4723

4¼h.p. B.S.A. Combination for 8h.p. Sunbeam, late model; cash adjustment.—Baughan, Wyre St., Colchester, Essex. [4714

A.B.C. 1921 Light Car; also 1922 model sports motor cycle or combination in part exchange.—Bartletts, 93, Gt. Portland St. [4974

SPORTING Triumph, aluminium discs, copper exhaust; exchange for lightweight and cash or sell, £25.—Forge, 2, Worton Rd., Isleworth, Middlesex. [4335

THE MOTOR CYCLE
ESTABLISHED IN 1903
· TWENTIETH YEAR OF PUBLICATION ·

EDITORIAL, ADVERTISING, AND PUBLISHING OFFICES: DORSET HOUSE, TUDOR STREET, LONDON, E.C.4.
Telegrams: "Cyclist, Fleet, London." *Telephone:* City 2847 (13 lines).

COVENTRY: Hertford Street. *Telegrams:* "Motorcycle Coventry." *Telephone:* 10 Coventry (5 lines).
BIRMINGHAM: Guildhall Buildings, Navigation Street. *Telegrams:* "Autopress, Birmingham." *Telephone:* 2270 and 2971 Midland.
MANCHESTER: 199, Deansgate. *Telegrams:* "Iliffe, Manchester." *Telephone:* 8970 and 8971 City.

Subscription Rates: Home, 19s. 6d.; Canada, 19s. 6d.; other countries abroad, 23s. 10d. per annum.

Winter Trials.

LAST Saturday's London-Gloucester and next week's London-Exeter runs demonstrate by their large entries that winter competitions, properly run, may be very successful. They also serve several useful purposes, notably demonstrating that the motor cycle is not a mere fine-weather machine for use in the summer months.

Ordinary roads, such as the ordinary all-weather motor cyclist uses, become difficult enough to ensure that only a good rider on a good machine scores full marks. Thus the old objection to many trials, *i.e.*, that no sane man would wish to take a motor cycle over the freakish lanes and hills included, disappears without leaving an event too easy to be of any practical value.

Lamps, too, are tested, and from our observations they are at present often found wanting. More night trials would help greatly the production of reliable and effective forms of lighting for motor cycles.

Mudguarding, too, is bound to improve by the intensive testing of motor cycles under the worst conditions of winter, especially when the route selected leads away from the tarred main roads on to the water-bound macadam lanes of the country.

Christmas 1922.

IT is now four years since the Armistice was signed and motor cycle matters assumed their normal aspect. The period intervening proved one of unexampled difficulty, first a boom and then an inevitable slackening in demand. The year 1922 has not proved so full of prosperity as everyone anticipated.

At this season optimism usually runs high—higher perhaps than is sometimes justified. This Christmas, however, optimism has a more substantial foundation, for there are definite signs of a revival of trade. We are not referring specifically to the production of motor cycles, but rather to industry generally. Any improvement in trade must reflect upon the British motor cycle industry, perhaps proportionately more greatly than upon any other individual industry not confined to the production of the absolute essential.

The interest in motor cycles continues to increase, and this at a time when one might have expected it to abate owing to trade depression. It only requires a slight impetus to national prosperity for 1923 to exceed any preceding year in the numbers of motor cycles which will take the road.

There is every justification for optimism. The British Empire is successfully emerging from one of the most difficult phases in its history, and the motor cycle industry, we sincerely think, may regard "bad trade" as a thing of the past.

It is the pleasant duty of *The Motor Cycle* to be of service to rider and manufacturer alike and to help forward the motor cycle movement by every means in its power. Its campaigns for genuine improvement have borne fruit, and the ever-increasing number of readers encourages us in the belief that our efforts to help, to record history and to assist in its making, to entertain and, sometimes, to amuse, are appreciated.

Our heartiest greetings go alike to all those interested in motor cycles. To manufacturers we extend the hope that all their plans may be successful; to agents, that their efforts will be supported by both rider and maker; and to riders we say: May you obtain the object of your desires; may you spend many happy days awheel.

And to *every* reader, at home, in overseas dominions, and in far-off foreign lands: A Happy Christmas!

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

by "Ixion"

Greeting!

HEARTY good wishes for a merry Christmas to all my readers, critical, appreciative, and bored sniff. May a pale British sun (December model) camouflage the extreme cold of the afternoon as they manfully take the road after far too much dinner, and help them to pretend that they are enjoying themselves. For myself, I have chopped a huge limb off the ancestral holly in the back yard of Benzole Villa. I have filtered half a pint of aviation wherewith to illuminate the pudding. I have locked up the garage, lost the key, and disconnected the telephone in case the editor should suddenly require my services (which is his abominable habit on public festivals). All the motor cycling I shall do on Christmas Day is to open parcels. I circulated my list of wants round my relatives and acquaintances in good time, and I sincerely hope that my place at the dinner table will be fortified with a great sangar of parcels. Lots of new gadgets. Large cheque from pa-in-law (I sent him a box of Coronas in *very* good time). Etc., etc., etc. But the open road? Archibald, certainly not!

A White Christmas.

PREACHERS and publicists often croak to the effect that Englishmen are becoming decadent. The climate certainly is. I can remember when nearly every Christmas was a white Christmas. But latterly the most the Exeter procession has had to contend with is fog and rain. It would be rather a rag if sometime a real snowstorm would suddenly descend upon these unfortunates, say, about Sherborne or Chard, and bury the roads thigh deep. Not if it were my job to report it, of course; except that I should probably learn quite a lot of new swears; and a good reserve of cusses comes in very handy for a motor cyclist on occasions, doesn't it? Suppose by the law of averages it will happen some day, won't it? And *what* fun we shall have! Wish I hadn't thought of it. But, you see, I am going to Exeter this year. Solo, too.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Who Is It?

ONE of the latest metallurgical processes is known as Pescol, and consists of building up a worn metal part, such as a crankshaft, with nickel, iron, or copper to its original dimensions. The treatment is largely analogous to electro-plating, though the details are secret, and there are several points worthy of mention. Being a cold treatment, it does not spoil heat-treated steels. The deposit does not peel off after the manner of cheap plating, or of plating which has been "done too thick"; for when a deposited part is tested to destruction, a film of the underlying metal comes away with the deposit. The deposit can be case-hardened, if desired. I am informed that a well-known racing motor cyclist is experimenting with nickel-plated valves *à la* Pescol in order to avoid oxidisation and pitting on long-distance records.

Thoughtless.

AS a journalist of some standing (ahem!) I expect, and sometimes receive, deferential treatment from firms in the trade. The other day I ordered one of the well-known dynamo-less accumulator lighting sets for a steed in my stud. It duly arrived, and after unpacking I fell a-musing as to how some folk continue in business. Item. No switch of any sort or kind was provided. I know full well that the merry urchin is prone to agitate visible switches and run down our cells. But no switch at all! I can only put the light out by pulling the plug out of the

Occasional Comments.—

bayonet socket, and leaving it to dangle cheerily about my bars. Item. The cable supplied to unite cell and lamp was not split or reeved through permanent terminals at the accumulator end; and was not long enough to permit of any accident, such as a very sharp penknife may originate. Item. The bulb socket was, as usual, pushed through a hole in the lamp and secured by a lock-nut. Being a standardised part in the electric trade, it had far more threads than the thickness of the back of the lamp required. No cover was provided, so that a solid inch of naked, wirelike threads, all rather flimsily plated, stuck out as a magnet for rust. I rapidly wound insulating tape over them, thereby fixing the lock-nut, but not without disfiguring a well-made and otherwise handsome installation. About three bobs' worth of sense and material would have cut out all these obvious criticisms. Perhaps one should add that all such sets should include one spare bulb, and a tough tag specifying the sort of bulb recommended for further replacements, seeing that certain types of bulb consume about twice as much current as others of similar voltage, and these plain accumulator sets have no surplus current at the best of times.

Those Hub Gears.

I SEE that my slighting remarks anent hub gears have wounded one or two earnest owners to the quick. Perhaps my reminiscences were founded too exclusively on trials experiences. "An Old 'Un" inquires if I ever rode a hub gear. I should have retired on a competency years ago, but for hub gears; for one of the flies in my ointment is that I am often set to ride a new gadget before it is marketed, and ever since about 1905, when *The Motor Cycle* started to clamour for variable gears, I have been testing experimental gear boxes, most of the early types being "hub." I have had them so heavy that the wheel wilted; so soft that they melted; so brittle that they sheared; so full of friction that when the engine had finished turning the low gear round, it had no power left to propel the machine or me. But coming to the comparatively recent types of which our correspondents speak, I will readily admit that for light work on ordinary roads they were not half bad. I owned early editions of the two most famous types, including that which was direct on middle and geared up on top. "Solo on the Portsmouth Road" sort of going, they only wanted a little care to last a season, after which even their manufacturers stated that a factory overhaul was desirable. In a "Six Days," if used solo, they needed adjustment and lubrication daily at lunch. With sidecars in such an event they generally gave serious trouble.

North and South.

I CONTRIBUTE a parable to this discussion. Once in the South and once in the North I lived in hilly country at a considerable distance from railhead. When my engine was temporarily seized up or otherwise *hors de combat*, I would reluctantly hire a horse trap wherewith to reach the slow but reliable train. The southron gee-gee merchant, at the first sign of a declivity, reined in his nag, and proceeded down the hill at a cautious crawl, with his eyes popping from their sockets, and every muscle of his frame rigid. *Per contra*, the stalwart northerner emitted a war-howl, lashed his horse to a gallop, and took the precipice at a hand-gallop. When examined as to his tactics, he would explain:—

(1) If one has to die, die like a man.

(2) Creeping down hills is boring.

(3) Anyhow, a horse is much less likely to stumble at a gallop.

His combination of humour, sportsmanship, and common sense appeals to me.

Sponge Rubber Tyre Fillings.

THE correspondent who sighs for a tyre filled with Sorbo unburstable balls can probably obtain his heart's desire after a fashion. A Canadian and an American firm have long been manufacturing tyre fillings composed of sponge rubber sausages. You buy the stuff by the yard; chop it into lengths; pack it out circumferentially with a pair of scissor levers; run it a few hundred miles; stick in another length to take up any clearance; and then forget about it for 10,000 miles or so. It is quite largely used, especially on Ford one-tonners. I have tested it on two touring cars, but it hardly struck me as sufficiently resilient for motor cycle purposes—at any rate, not on rigid frames. It is not to my knowledge sold in a small enough section for our ordinary tyres, but I imagine that anybody who uses car-size tyres, from 80 mm. up, could probably try it on his machine. Naturally, it would take some levering into our fixed rims. It certainly procures an astounding mileage from the cover, which is continuously maintained at its correct bulge.

A Waterproof Glove at Last.

LOVERS of the pre-war continental waterproof glove will be glad to hear that arrangements are at last in train for the production of a somewhat similar article in the Midlands. I have a pair under test, which seem, so far as short wear affords any evidence, to be equal to their famous predecessors. I will publish full particulars as soon as production commences.

More About Dynamos.

THE lighting dynamo question is more complex than at first sight appears. The ideal, of course, is an installation which gives a tremendous light, and which can be trusted to keep a powerful battery well up to snuff under the worst imaginable conditions, such as arise when a man uses his machine almost exclusively after dark in winter. These data call for a biggish instrument, run off the engine or countershaft, so as to obtain the benefit of heavy charging in the free engine and low gear positions. Then weight and size and cost begin to complicate matters. Combined with the ignition apparatus, the output of a dynamo is generally limited by space considerations. Driven off a wheel by the speedometer type of transmission, the dynamo speed covers a wide range, and the instrument is inactive in free engine.

The Fourth Selection of a Series of Instructive Notes for the Beginner.

Explaining in Non-technical Language Points which may have Mystified Him.

WITH the valves, the piston rings share the duty of rendering the combustion chamber compression tight. Piston rings are made of close-grained cast iron, and their inherent springiness causes them to bear outwards upon the cylinder walls. If they bear upon the cylinder evenly all round their circumference, they form a perfectly gas-tight joint, but it occasionally happens that at one or two places a slight "flat" destroys this seal. An inspection of the rings will quickly reveal such defects: the rings will be polished in places, but stained where the burning gas has been escaping. Now and again a score in the cylinder may be responsible, but generally the fault can be attributed to the ring, which should be replaced. In fitting a new ring, see that it fits freely in its groove, but without up and down play and that it does not jam into the groove when it is compressed, as it will be when the cylinder is in position. With cylinder up-ended on the bench, place the ring in the bore in its working position, and see (in the case of a diagonally cut ring) that there is next to no gap between the ends of the ring. (About 6-1,000ths inch is the gap generally allowed.) Many riders polish a new ring into the cylinder by placing it on the piston, and, using a piece of wood for a dummy connecting rod, work the piston up and down the cylinder bore, in which a small quantity of paste metal polish (*not* grinding compound) has been previously smeared. As the work proceeds, "flats" on the new piston ring can be traced, and the lapping-in continued until the ring is bright all the way round. This, however, is a tedious process.

POINTS ABOUT PISTON RINGS.

ONE term in particular which appears to be much misunderstood concerns the compressed ratio of an engine. Because he can rest his weight upon the kick-starter crank, one occasionally hears a novice remark that the engine has "high" compression. All that it really signifies, however, is that the engine has no leakage around valves or rings—in other words, "good" compression. The compression ratio, upon which "high" or "low" compression depends, has reference to the degree to which the charge of gas is compressed before it is fired. The higher the compression, the more powerful will be the resultant explosion, but the more prone will be the engine to knock. An average touring engine has a compression ratio of about 4½ to 1; a sports engine may have a ratio of 5½ to 1 or even slightly more. The use of alcohol fuel, which has been referred to in *The Motor Cycle* recently, permits of the compression ratio being increased without the pre-ignition which would be inevitable with petrol.

"HIGH" VERSUS "GOOD" COMPRESSION.

TO return to the question of improving petrol consumption, however; assuming the compression of the engine is good and the ignition sufficiently advanced, it is possible that wastage of petrol may be caused (*a*) by flooding of the carburetter, (*b*) by the use of too big a jet, and (*c*) by leakage at one or more of the unions. There should be no trace of wetness below the jet chamber when the machine is stationary; if there is, it is (1) because the level of the petrol in the jet is set too high, or (2) because the needle valve is defective. With many types of modern carburetter it is impossible to discover the exact level of the petrol in the jet, which should be just not running over, and more frequently the cause of flooding lies in a particle of grit having lodged on the seating.

CARBURETTER ADJUSTMENT.

THE weight of the float is taken into consideration by the makers of the carburetter when they set the cut-off of the needle valve. Any extra weight which the float may afterwards acquire, therefore, will cause the float to sink below its pre-determined level, and so fail to cut off the petrol supply at the proper time. The float will obviously become heavier if it should spring a leak, which will permit even a minute quantity of petrol to enter it. If this has happened it is much easier to buy a new float than to attempt a repair.

PUNCTURED FLOAT.

THE novice who has been doing a round of Olympia may have heard a term which is greatly to the fore of late—that is, "turbulence," and it signifies the whirling of the charge of unexploded gas after it is drawn into the cylinder. Even the best of carburetters does not transform the liquid petrol into a perfect gas, but delivers a mixture of atomised petrol and air which is "streaky," in that the petrol does not permeate the air, but hangs about in patches. To cause turbulence, the interior of the cylinder head is so shaped that the piston, as it draws the gas into the cylinder, causes a swirl which gives the "mixture" a chance to mix, with a repetition of the process on the compression stroke. Before this effect was imparted by cylinder head design, various types of mixing fans used to be fitted in the induction pipe, in the hope that the passage of the gas would cause these fans to revolve, but their chief practical effect was to block the inlet pipe.

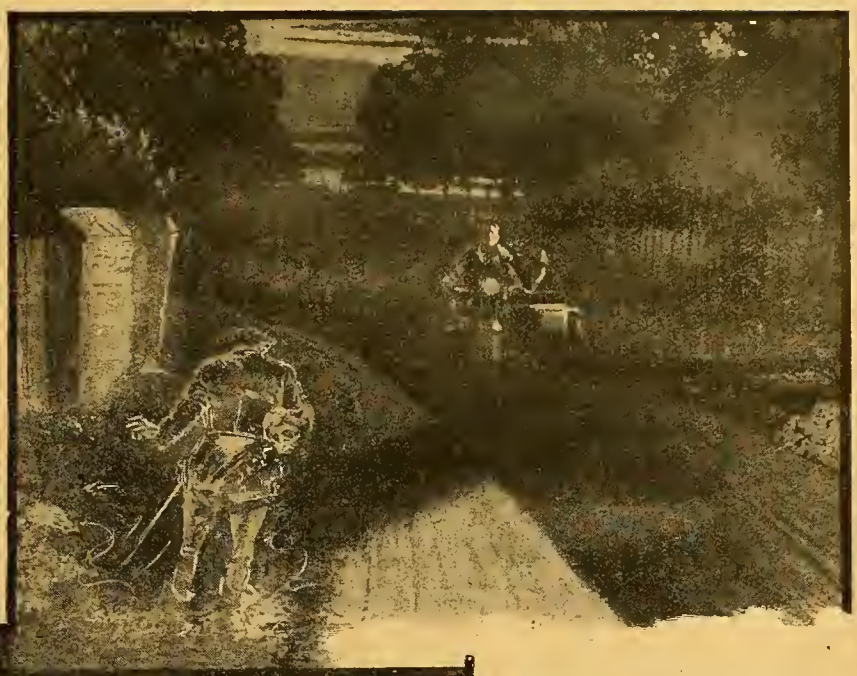
TURBULENCE.

"HINTS AND TIPS FOR MOTOR CYCLISTS"—gives hundreds of useful "wrinkles." Price 2s. 3d. post free from "The Motor Cycle" Offices, Dorset House, Tudor Street, London, E.C.4.

TALES THAT ARE TOLD.

Phantoms of the Road of which we hear over the Nuts and Wine at Christmas time.

OF A GHOST IN ST. LEONARDS FOREST AND A COUNTERPART IN WARWICKSHIRE. A tale is told of a certain Captain Powlett, whose spirit is said to wander about St. Leonards Forest with his head under his arm. Why, history does not tell us, for Captain (or Squire) Powlett was not beheaded and died naturally in 1746. In Warwickshire, somewhere near the old Roman Fosseway, there is a coppice and a barn between which another headless nomad of the spirit world is said to run on certain nights of the year.



IN ENGLAND AND WALES—AND PERHAPS IN SCOTLAND TOO—there are tales of a ghostly coach and four which silently passes along a highway where sped the flying coaches of 1785. The Great North Road has its phantom coach, as has the Old Colwyn Road in Wales. Perhaps during the festive season the hard-headed Scot, too, will admit to seeing one somewhere near auld Reekie. It is strange, however, that tales are told only of the —more or less—picturesque. One never hears of a ghostly gardener and his phantom wheelbarrow, nor of a shepherd and his sheep. There is, however, a tradition, emanating from somewhere in the Yorkshire Wolds, of a jangling tinker's cart dragging behind it all that is left of the driver

OF HIGHWAYMEN BOLD—AND OTHERWISE. Dick Turpin, so the story goes, still haunts the scenes of his misdeeds. Tradition says that his spirit is partial to a side lane on the Knutsford-Warrington road, yet we rarely hear of him on Putney Heath or near the Spaniards at Hampstead. Other highwaymen have left a ghost or two, and one of their victims, a sailor, is said to appear on Hindhead whenever the sky is cloud wracked and a watery moon is sailing.

* * *

A POPULAR FALLACY—that the camera cannot lie.

WHO'S WHO IN THE MOTOR CYCLE WORLD.

The Third of a Series of Biographies.

This feature is to satisfy the general reader as to who and what manner of men they are of whom he reads in "The Motor Cycle" week by week.

Hugh Gibson, Sales Manager, Liverpool.—Hugh Gibson, who was born at Southport, and is 43 years of age, set up long distance sidecar records in 1910 and 1911 which stand to this day. In the former year he drove a single-geared 489 c.c. Triumph sidecar over the "End-to-End" route in 40h. 47min., and followed it up in 1911 with a time of 38h. 47min. on a two-speed 554 c.c. Bradbury. He also created in the same year an Irish end-to-end sidecar record of 394 miles in 14h. 7mins., the Bradbury again being used. In 1914 he carried out a test of 2,000 miles in 200 hours under A.C.U. observation on a Clyno sidecar at a running cost of ½d. per mile. Won the N.W. Centre Motor Cycle Championship in 1921, and in 1922 a special prize and gold medal in the International Six Days Trials to Switzerland, riding a 348 c.c. Raleigh. Present mount: 348 c.c. Raleigh. Favourite type of machine: Single-cylinder sports lightweight. Hobbies: Music, tennis, shooting.

Thomas Silver, Works Manager, Birmingham.—Tom Silver is 59 years of age and a Londoner. He was a pioneer of the motor cycle, both in this country and abroad. In 22 years he has won 189 awards. Silver took part in the 1902 Motor Cycling Club's non-stop run, but was disqualified for exceeding the speed limit The following year he was the only man to get through in the Glasgow to London event. The speed limit was then 12 m.p.h., and the test consisted of two non-stop runs—Glasgow to Leeds and Leeds to London. In the 1903 Land's End to John O'Groats Trial he was 64 hours on the road, and won one of the only three gold medals. He represented England in the International Motor Race in France, and in 1903 took a machine across Africa—6,000 miles in all. An attempt to ride a motor cycle from Cape Town to Cairo failed. Present mount: 490 c.c. Quadrant. Hobby: Motoring.

Jack Emerson, Experimental Engineer, Walton-on-Thames. — J. L. Emerson, born at Walthamstow 31 years ago, is a successful speed man who has devoted particular attention to the attainment of power with endurance and has scored his best successes over long distances. In the Brooklands T.T. of 1912 he steered the 490 c.c. Norton to victory, and in 1914 with a 496 c.c. A.B.C. secured the kilometre record with a speed which worked out to 80 m.p.h. That occasion is notable as being the first application of the streamline tail to a motor cycle. Since the war he has brought off the "hat trick" in the Brooklands T.T. races by wins in 1920, 1921, and 1922. In the two former years he twice broke the hour record, and this year once. The machines used were: In 1920 398 c.c. A.B.C., and in the two latter years the 494 c.c. Douglas. Present mount: 494 c.c. Douglas. Hobby: Scientific research.

William Barr Gibb, Motor Cycle Agent, Gloucester.—Billy Gibb, a Scot and 44 years of age, was a successful racing cyclist before he took up motor cycling. He has done very little competition work recently, owing to business claims, but over a long period he was one of the most successful of riders in the West country. In 1913, for instance, he won seven cups and twenty gold medals, all on Douglas machines. Other awards gained have been Anglo-Dutch Motor Cycle Cup, Dutch Plaque and gold medal, Colmore Cup, Terry Cup, and Haslam Cup (English Six Days Trials), Birmingham Motor Cycle and Auto Cycle Trophy, Calthorpe 100 Guineas Trophy, and Ilkley Trophy. Present machines: 494 c.c. and 348 c.c. o.h.v. Douglas. Favourite type: Flat twin. Has no time for hobbies outside motor cycling.

Frank Warren Giles, Competitions Manager, Wolverhampton.—Frank Giles, who is 32 years of age, was born at Kidderminster. Has had a remarkable run of competition success with A.J.S. sidecars. Among his principal achievements are the following: Single-gear award in Colmore Cup, 1913; B.S.A. and Castle cups in the West Midland Open Trial, 1920; London to Land's End (Captain's Cup), 1921; Birmingham to Land's End (Sangster Cup), 1921; Ilkley Open Trial, 1921 (Ilkley Trophy); Wolverhampton M.C.C. Trials, 1920 and 1921 (Corke Cup); Kidderminster M.C.C. Trial, 1921 (Castle Cup); M.C. and A.C. Birmingham-Holyhead-Birmingham 24 Hours Trial, 1922 (M.C. and A.C. Trophy and Jordison Trophy); Reliability Premiership, 1922, Leicester and District M.C.C.; Paskell Cup Trial, 1921 (Paskell Cup and Reader Cup). He was the first sidecarist to climb the Screw Hill in Wales. Present mount: 799 c.c. A.J.S. sidecar. Favourite type of machine: Twin-cylinder heavy sidecar. Hobby: Motor cycling.

James Robert Alexander, Motor Agent, Edinburgh.—Jimmie Alexander was born at Edinburgh 47 years ago. In his young days he was an ardent cyclist and held the Scottish champion and many records at various distances from 1895 to 1900. In the early days of the present century he turned over to the motor cycle, and again was consistently successful in competitions. He has had several wins in the Scottish speed championships. Present mounts: 348 c.c. Douglas, 494 c.c. Douglas, and 249 c.c. New Imperial. Favourite type of machine: "No particular preference. Use all types and powers, both solo and sidecar." Hobbies: "Too many to enumerate."

The Rev. John Maxwell Philpott, Vicar of Stockingford, Nuneaton.—J. M. Philpott, who was born at Churchstoke, Montgomeryshire 35 years ago, claims to be the heaviest competition rider of a lightweight, as he rides at just over 15 stone. Is local consul of the A.C.U., chaplain of the Coventry and Warwickshire Motor Club, vice-president of the Nuneaton and District Motor Cycle Club, and is on the Board of the Midland Centre A.C.U. Professes "a greater dislike of sidecars than any other motorist in England"! Best performances in competitions were his gold medals in this year's Scottish and English Six Days Trials. Another outstanding achievement was his climb of Applecross and Tornapress on a 220 c.c. machine. Present mount: 249 c.c. Velocette. Favourite type of machine: 250 c.c. solo. Hobbies: Lawn tennis, chess, and "riding a motor cycle where no one else has done so."

THE LAST STRAW—

A Story Without Words of the Compleat Motor Cyclist.

ECCOTT

MOTOR CYCLES for NOTHING

The Will and the Way; or, How to Acquire Motor Cycles by Hook or Crook.

Illustrated by O. Cuningham.

By CLAUD D'AGINCOURT-JONES.

DEREK Mullins laid down the Show Report issue of the "Blue 'un" with a sigh.

"We'd better cancel this paper at the newsagents, you fellows!" he opined, with a sigh; "I'm sick and tired of reading about the finest sport in the world with no prospect of ever being able to afford it. Let's chuck it and resign ourselves to ping-pong."

The two men who shared his diggings put down their books and stared at him despondently.

"Mervyn's suggestion last week wasn't half bad," remarked Jim Elyard. "We all give up gaspers and little drinks, and save like blazes. In a year, with luck and prices going on dropping, we might raise enough of the ready to buy a fifth-hand outfit. One on the saddle. One on the carrier. One in the sidecar. Take turns at driving, of course. Better than nothing."

"Rot, Jim!" was Mullins' ungracious reply. "We all know old Mervyn's got a chin like a doorstep, and can live like a hermit when he wants to. You and I can't. Our average salary is round about £4 a week. These digs. run us in for two-thirds of all we earn. Then there's clothes and things. Can't be did. Besides, one of us is sure to shift his berth soon, and then we'd have to sell the 'bus anyhow. And what about our girls? How long should we keep them if we did bachelor stunts together every week-end. Think again, old chap."

An Idea.

Came a quiet voice from Mervyn in the corner.

"I've been thinking. . . ."

Derisive chorus from the other two.

Mervyn laid down "Sherlock Holmes' Last Bow," and expostulated.

"No, honest, you fellows. There's pounds and pounds about an inch from the tips of my fingers, and I really believe that if we put our heads together we can grab some of it."

The chums greeted Mervyn's brain-wave with derogatory suggestions. Backing winners by faked telegrams, they supposed? Marrying heiresses? Falsifying the cash books?

Mervyn let them exhaust their witticisms, and proceeded.

"I stepped into the Blank Motor Company's place on my way home—saw a 1923 twin Zenith that was worth looking at. Inside the office old Blank had about forty typed police slips pinned up, all warning him to look out for stolen motor cycles. I got home ahead of you chaps, and snatched the first read of our 'Blue 'Un.' I see that insurance societies think nothing of offering a tenner reward for tracking a stolen 'bus. Nobody seems to go after these pinched machines with any push and go. They just notify the police. The police notify the garages. The garage never bothers to verify a chap's frame and engine numbers when he stops for petrol. Seems to me that three lads who meant business might rake in a lot of these tenners, don't you think?"

Various Plans.

"Yes, and I've got the trick of it," almost shrieked Mullins. "We rig ourselves up as bobbies, and play the 'examine your licence' stunt somewhere every Saturday and Sunday. Jim squints at their papers while old Mervyn there cocks his eye over the machines and spots the crook stuff. I'm the Dempsey of the gang, and secure the criminal if he turns nasty. Then we collect from the insurance blokes."

Elyard, always matter-of-fact, torpedoed this notion. "And the sergeant arrives on his rounds before the first 'pinched' 'bus appears. So we all do time for impersonating police officers!"

"Well, that's not the only way," said Mullins, not a whit abashed. "How's this? We all three get jobs as petrol boys on one of the big roads out of town. Space ourselves out over 50 miles. Study those cop papers that Mervyn was yarning about. Cast our eagle eyes over every bike we have to serve. In say six months we ought to nab, say, fifty out of the hundreds that get pinched?"

"Stow it," growled Mervyn. "I've pretty well worked it out. Some of the little makes get stolen sometimes. Two of the papers at Blanks were about a 211 c.c. Creeper and a 249 c.c. Tripper. Now if

Motor Cycles for Nothing.—

I know anything about it, there aren't more than fifty of either ever been turned out. We approach the makers, get the frame and engine numbers of all the 'buses they have ever delivered, and advertise that we'll give a high price—say £5 under list—for a second-hand sample. The thief 'ull jump at the chance of such good money. We nab him—and we nab all the other machines which he has nefariously collected."

"Dud, old chap," answered the relentless Elyard. "Dudder than dud. It's the petty little once-in-your-life sneak thieves who pinch Creepers and Trippers. Your wholesale merchant won't look at anything that isn't both good and common. He'll specialise on something like Triumphs or Sunbeams of one model; change the numbers; camouflage them with new paint and different accessories; and pass as an honest trader. Your stunt is a wash-out."

Concentration.

"I believe you're right about wholesale thieving," mused Mervyn abstractedly; "but it don't follow that my stunt is a wash-out. Suppose we concentrate on a first-class 'bus that's been delivered by thousands like the 550 c.c. Triumph. With a few calls or letters we'd get to know how many have been stolen say in the last three months, what their numbers are, what genuine series numbers exist, and so forth. Then we bustle round and advertise extra good money for Triumphs. We ought to get into touch with a gang somewhere. I expect they pass these pinched 'buses through a lot of hands to cover their tracks, especially with the second-hand market as dead as it's been lately. They'll jump at a fair price."

This plan brought the three heads very close together. The 480 c.c. Peterson was substituted for the Triumph, as Mervyn had a pal in the Peterson works, and fancied he could rapidly obtain a lot of inside information. For the next day or two the three typed heavily on some specially printed memo. forms of rather "posh" character whenever their business superiors were out of range. Their bill for postage stamps was alarming; and when they left their respective firms' offices on official business, kindly but costly taxis enabled them to visit sundry insurance offices without arousing suspicion about the length of their absences.

A week later quite a pile of information had been correlated and memorised. The 480 c.c. Peterson, as everybody knows, is a high-class machine, of which probably some 18,000 have been made, and is always in steady demand even down to seventh or eight hand. Listed at £110 during 1922, its second-hand price in these slumpish days is certainly not over £75, unless the buyer be what salesmen call "easy fruit." So the following advertisement was calculated to stir the pulse of any anxious super-thief, who had two or three dozen Petersons leaking out from a back street workshop on to the market by devious routes at a net return of perhaps £45 apiece to the principal criminal.

The trap was baited as follows:—

> BRING your 1922 Peterson to us. We know you meant to keep it for 1923. In a year it won't be worth more than £50. We offer you £78/10 cash down in notes on inspection. We can do this because we need 100 immediately to fill an export contract. We will accept your order for any 1923 model. Easy payments if desired.—Salmons and Simpson, Commission Agents, 992, Wool St., E.C.

The Thursday on which this advertisement was published saw Derek Mullins commence his annual three weeks' holiday at an unwonted season of the year which considerably amazed his boss. It also saw him installed in a temporarily rented office at 992, Wool Street, complete with stenographer, typewriter and other accessories complete. The stenographer had nearly wrecked the entire business, for she was Elyard's best girl at the moment, and Elyard hardly fancied allowing his *inamorata* to spend possibly three whole weeks *tête-à-tête* with such a famous breaker of feminine hearts as Derek. But the funds did not run to paying wages; and Ella was a sport, and had some leave to draw from her office. So Elyard consented with rather a dubious heart.

"He was called many hard names."

Motor Cycles for Nothing.—

Derek had various lethal weapons in a drawer ready to hand. He and Ella were more than punctual at business for the first time for years; and it was with slightly quickened pulses that they faced a day which might mean death, riches, or nothing at all. For some hours it was nothing that happened. They postponed lunch till 3 p.m. on the chance of some motorcyclist in a subordinate position arriving during the dinner hour. It was not till Ella had sought the nearest Lyon's shop just after 3 p.m. that the first caller blew in. This young giant in a Trinity Hall scarf looked as if he was the spearhead of the Cambridge rugger scrum, and breezily remarked that having put his shirt on a loser he'd got to sell his bike to face settling day. He didn't know the number, but as Derek's well-drilled memory instantly informed him on inspection at the kerb outside, the machine was honest enough. It was hereabouts that Derek realised what he was up against. The three pals, by selling all their portable property and borrowing every half-crown to be smelt among their acquaintance, had raised enough to pay for *one* 480 c.c. Peterson. Of that solitary intended purchase more anon; in the meantime this cheerful Hercules had to be gently pushed off somewhere else; and when a man is expecting £78 10s. for what is barely worth £75, he takes some pushing off. However, Derek sized up the giant as not being too technical to be nice. He bent over the bicycle, feeling and rattling and sniffing. "H'm. Chains three thous. out of pitch. Lot of big end slack. Cylinder bit oval. H'm. H'm."

At last he straightened himself.

Temporary Relief.

"Very sorry, sir. Your machine isn't at all in the sort of condition my contracts demand. If you really want cash for it to-day, better try a firm who specialise in overhauling before resale. Say, ——, of Portland Street."

The giant departed rather sadly, with incoherent mutterings about his perhaps having forgotten to oil the dashed thing when he rode home blotteau after such and such a match. He left Derek foreseeing trouble.

By six o'clock Derek had interviewed a number of traders anxious to sell him 100 Petersons, even—if need be—at much less than he offered. He played them off against each other, and held out hopes of an immediate deal if the said machines could be arrayed for "his engineer" to inspect them. He got rid of various callers who had fancied that Rudges or Sunbeams or Triumphs would do as well as Petersons; of a clerk who regarded a Baby Levis and a 480 c.c. Peterson as interchangeable terms; and of a varied assortment of touts of one sort or another. In between-whiles he disposed of several honest private owners who had not been able to eat any lunch under the exciting prospect of getting £78 10s. for their roadworn Petersons, and who, having killed grandmothers or invested wives with inflamed appendices, had got leave off business to fetch their bikes up to town for Salmons and Simpson to purchase. He was called many hard names, invented some atrociously false diagnoses of perfectly sound machines, and, before evening, began to feel something of a brute.

A B te?

Next morning Derek and Ella were horrified to find a regular Mount Everest of letters heaped on the floor inside the letter-slit, and callers kept them more than busy. More lies. More insults. More stormy interviews with fierce private owners, who were not only disappointed financially, but also wounded in their tenderest spots by accusations of under-lubrication and the like. But at 2.30 p.m. a veritable mouse took the cheese. A young, decent-looking, well-dressed stranger appeared to offer his bike for sale, and on inspection its frame and engine bore numbers which had never been reached in the Peterson series. Derek counted out £78 10s. from the £81 in notes which represented the gross capital and credit of Salmons and Simpson, and allowed the capable, smooth-spoken young man to depart with the cash, whilst he, Derek, rode the obviously stolen machine round to a garage previously selected as the firm's official storage.

Strategy.

Had he gone mad? Not at all. Heroic as the stratagem was, the united brains of our aspiring trio had finally reasoned thusly: The thieves will certainly try us. They will send a test machine. It will cover up its tracks so well we could never trace them by it. The bringer will have a lovely alibi all cut and dried. If we seem green and ask no awkward questions, they will plant their whole stock on us within the next three days.

So Derek, not without a thumping heart, reduced his

"So it's you, Darkie, is it?" said the detective genially.

Motor Cycles for Nothing.—

firm to a state of complete insolvency, stored his solitary purchase, which represented a dead loss of perhaps £8 10s. on a forced resale, and returned to the office to see that his lethal weapons were handy and in working order. The rush of aggrieved clerklets, eager to secure top of the market price for machines they had tired of, had subsided by this time. The day's bulky correspondence had been disposed of, and the time was passed in a somewhat heated argument with Ella. There were two outstanding difficulties to be solved. Should they ring up Elyard and Mervyn, add them to the staff for to-morrow at the risk of dismissal from their present posts, and utilise them as amateur trackers of any suspicious bicycles brought to Messrs. Salmons and Simpson during the next day or two? This was Ella's brainwave.

Not According to Plan.

Derek for his part rather mistrusted amateur tracking, and having got the wind up, conceived ideas of ringing up Scotland Yard, and imploring the Big Four to place a cordon round his offices and rope in such trustful criminals as might rally to help themselves to his suppositious notes next morning. The argument waxed hot and strong when the door was suddenly opened without any premonitory knock. In walked three burly, alert-looking individuals, who without any more ado marched Derek and Ella off to the cells, leaving one of their number in possession.

The feelings which occupied the managing director and his charming stenographer during the evening can be better imagined than described. The proprietor of their garage was quite a punctilious person on the subject of stolen bicycles, and instead of being thief-catchers they now ranked as caught thieves. Meanwhile the junior partners were not wholly free from anxiety. The hours passed. Derek was missing. Ella was missing. £81 was missing. A visit to Wool Street produced nothing but locked doors. Nourished on Sherlock Holmes, Mervyn at least was well aware that only professional detectives jump to the obvious conclusion with confidence. But even he finally admitted that things looked uncommonly black.

Towards 9 p.m. a detective illumined the situation, but by no means relieved their anxiety. He wasn't one of the Big Four, as they both supposed, but he was quite a sensible fellow. When their nervous, bubbling explanations at last convinced him, he sat down and roared with laughter for full five minutes by the clock. And at last two very crestfallen junior partners walked round to the police station in company with a plain clothes man who stopped every few yards to hold his sides and let fly an extremely unprofessional cachinnation.

Explanations.

The staff of the firm then held an interview with the big noise at the station. It commenced by being extremely humiliating, but ended in quite promising fashion. Next morning saw the managing director re-installed at his desk. At a smaller desk to his left sat the pretty stenographer as before. Both of them wrestled—quite brightly, too—with the morning's correspondence. To all outward appearance the office was unchanged. It is true that the drawer near Derek's right hand no longer housed its former lethal armoury. Indeed, that armoury had suggested some rather awkward questions about gun licences. It is also true that the little room up the passage was no longer empty. Inspector Jenkins was seated there—in plain clothes, it is true, and armed with nothing but the *Winning Post*; but quite alive to anything that might happen. His presence was partially answerable for the increased *joie de vivre* of the staff, as compared with the previous morning. Only partially. For some of the inspector's best henchmen were variously disposed among the busy crowd in the street below; and one of them was taking an unconscionable time to swallow a cup of coffee near the front window of a first floor tea-shop opposite.

In the Net.

Derek not undeservedly spent several rather trying quarters of an hour with sundry honest, earnest, covetous and irritable motor cyclists, who greeted him warmly on arrival, but made unprintable remarks about Messrs. Salmons and Simpson before taking their reluctant departures. It was, however, written in the stars that 11.13 a.m. by Big Ben was to be Derek's lucky hour. For it was precisely at that moment that a youngster of some 28 summers, with whom to all appearance the Old Lady of Threadneedle Street might have trusted the National Debt, knocked smartly at the door and walked in. It was at 11.13.28 a.m. Greenwich mean time that Inspector Jenkins put down the *Winning Post* and followed hard on the heels of the aforesaid unimpeachable young man into Derek's office.

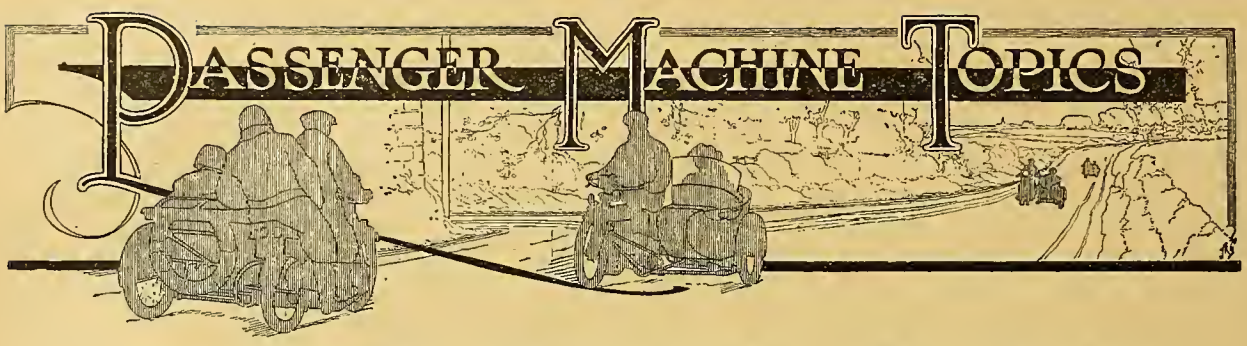
"So it's you, Darkie, is it?" he said genially. "We'd been wondering what you were up to. Now are you going to tell us where all the other machines are? Or would you rather be gagged and sit in the next room with me while my men downstairs shadow the rest of your crowd back to your private garages? Have you seen the *Winning Post* this week? I can tell you one or two of the best while you're waiting, if you like."

"Darkie" had quite a lot to say. His vocabulary was what you might call fruity in parts. But when his r.p.m. died down a little, he decided to tell. Meanwhile Derek cheerily disposed of several more quite honest Peterson owners.

Subsequent research on the part of Inspector Jenkins and his stalwart men proved that "Darkie" had specialised in several leading makes besides Petersons.

The Happy Ending.

The insurance companies behaved like gentlemen. Derek, Mervyn and Elyard have all taken deliveries of extremely attractive motor cycles. In fact, the profits ran to supplying Ella with an open-frame two-stroke. And what is in the bank suggests that the monthly garage bills can be met. That they will be met punctually is another matter—we all know what youthful motor cyclists are.



Jumping to Conclusions: Sidecar Outfits and Family Loads: Sidecar Racing.

By "FRIAR JOHN."

IN some natures the lure of the road is like the strangely persistent call of the sea, luring at all times and at all ages. And, whether the roads be old or new, they still exercise their spell in their own particular way. This passion for the road is not inherent in all natures, however, for I met a man recently who appeared not to care for the wide spaces and great highways, nor for the secluded by-ways for that matter. Yet he was an ardent motor cyclist, for he bought one of my sidecar outfits on a cold night when the rain was beating down on the galvanised roof of the garage. I apologised for the mud that was plastered about the wheels, and the oil that should not have disgraced the engine. But, to my amazement, he said he didn't mind that. In fact, he seemed rather to rejoice that the machine was dirty. "I like cleaning motor cycles," he said. "You see this machine on Sunday; you'll not know it; I'd jolly well rather be cleaning and tinkering the 'bus than riding it."

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I WAS too astonished to reply instantly, and wondered if his tongue was in his cheek. But he was quite serious. Strangely enough, I did see the machine, resplendent in its glittering nickel and polished enamel, on the following Sunday morning. It was a day, too, that one remembers—sandwiched between days of wind, cold drizzle, and fog, such a one that we fondly imagine to be the rule in the land of the mimosa. Motor cyclists on this morning left the town like bees from a hive on a a spring day, and the pulse throbbed at the exhilaration of speeding for miles over tolerable roads with a perfect blue sky above.

◈ ◈ ◈ ◈

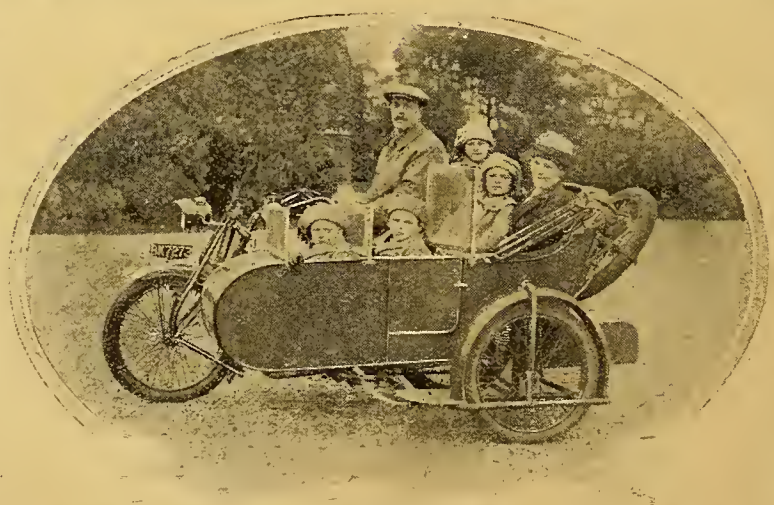
THE "Blue Cow" is a snuggery enticingly situated, enticingly comfortable and about four miles from the town, and it was on passing this place, passing it, mind you, I saw my former outfit with its sidecar wheel dropped four or five inches in a damaged drain cover. (Note the detailed observation.)

My friend and I rode on, and after making a circuit of about fifty miles stopped at the "Blue Cow" on our way to a late lunch. There we saw the outfit in exactly the same position, with the wheel in the drain cover. Although this did not prove the man's candid assertion that he liked tinkering, and cleaning as much as riding, it certainly appeared to show that he preferred to sit in the foul atmosphere of a bar in preference to filling his lungs with fresh air.

We almost hesitated to enter the inn, for there could be no pleasure in conversing with such a man. However, we did go in, very conscious, too, of our interest in, and condemnation of, the man.

◈ ◈ ◈ ◈

AT the bar we found a stranger, leather clad and quaffing beer. He had been quaffing beer "for *two hours or so*," he said, whilst a Johnny in the back yard put his 'bus right. Some "infernal, beastly thing" had gone wrong with the gear box, and this obliging Johnny had taken it down, had run over to the town and got a replacement, and was now busy reassembling 'midst the "ducks and cows, don't you know." We glanced through the window and saw, as we expected, that the "awfully obliging Johnny" was our friend who liked cleaning motor cycles, and whom we had condemned so ruthlessly for preferring to loaf in a bar instead of being on the road.

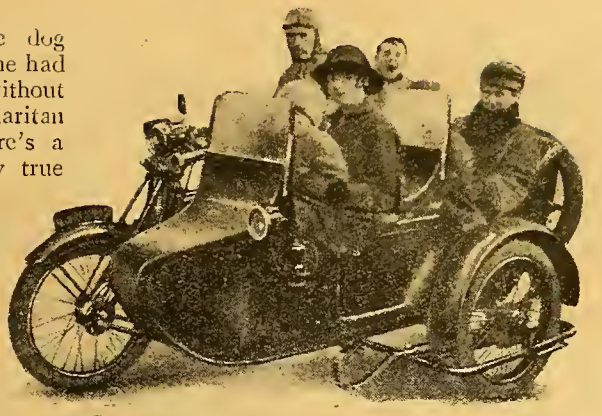


In order to accommodate four passengers Mr. W. Weaver, of Southsea, has lengthened his sidecar.

Very few men would have helped

Passenger Machine Topics.—

this rather self-satisfied lame dog over the stile as completely as he had been helped. We departed without congratulating the Good Samaritan on his superb altruism. There's a barbed moral in this perfectly true story.



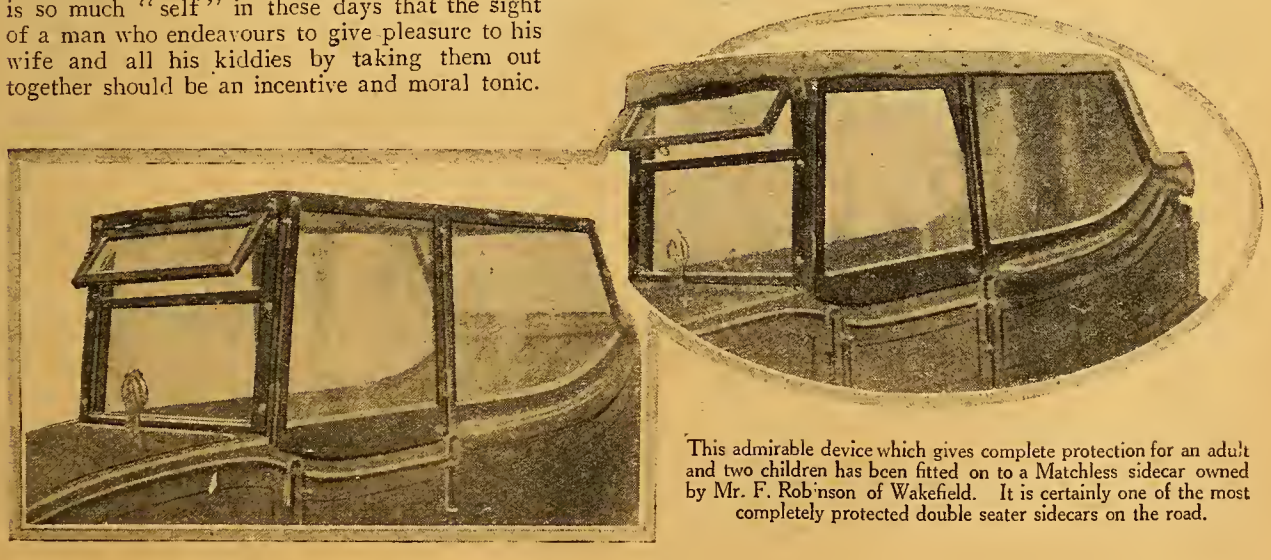
Mr. J. E. Sykes, of Scarboro', and his loaded A.J.S. outfit. In spite of the weight carried the machine does its work admirably.

ARE young club members the most enthusiastic of all motor cyclists? I know youngsters who would have slept with their first real fast machine—that is, for the first week—if they had been allowed. But these would-be T.T. winners soon simmer down to "average owners" who have to be gingered occasionally by an energetic secretary. No! commend me the family man who has to scratch a thinning thatch as, year by year, the problem of accommodation becomes more acute. He is the enthusiast, the man who maintains his interest, and one of the mainstays of the movement; curiously enough, in many instances that have come under my notice he could have afforded a small four-seater had he so been disposed.

WHO but the keenest of sidecarists would have gone to the trouble of lengthening a double-seater sidecar as Mr. Weaver did, in order to accommodate four children? (see illustration). Critics may bark as much as they like about overloading, and disagree with the taking out of the entire family together. But I staunchly uphold the practice when it can be done in safety, and that it can be done in safety is obvious. The speed "knut" may be contemptuous when he meets the loaded "chars-a-banc," as he calls them. But whenever I hear serious criticism of the man who pilots these big family loads I jump as hard as I can on the said critic. I know who is the more unselfish man of the two. And there is so much "self" in these days that the sight of a man who endeavours to give pleasure to his wife and all his kiddies by taking them out together should be an incentive and moral tonic.

THERE has been a good deal of discussion amongst the leading racing sidecar men as to whether a flexible chassis would be an aid to cornering on a course like the T.T., for on the dirt tracks of America it is universally used, since it enables the unbanked circular courses to be taken without lifting of the sidecar wheel, and some terrific speeds are attained. This type of chassis has not been exploited here, simply because there has been little more than an occasional need for a sidecar to take a bad bend at speed, either in trials or speed events. But a sidecar T.T. is a different matter. Stability of the outfit on corners will easily be the most important factor in the race; it is quite on the books that the flexible chassis will be seen on the island—if the regulation of the race permits.

ALL who say there will be no more danger in riding a sidecar in the T.T. than there is in riding a solo machine have their reasons, no doubt, but I am quite confident that the utmost discretion and finest judgment will be imperative when rounding a curve at speed if overturning is to be avoided, no matter what type of chassis is used. The acute hairpin bends and blind corners will, of necessity, reduce the speed automatically; the real undoing of many riders, I think, will be the deceptive curves which look as though they may be taken at a much greater speed than they can be with safety. However, the great majority of expert racing sidecarists are confident that there will be no particular danger in the race, and one only hopes that the contest will prove my misgivings to have been entirely groundless. The probable contestants are boisterously fearless.



This admirable device which gives complete protection for an adult and two children has been fitted on to a Matchless sidecar owned by Mr. F. Robinson of Wakefield. It is certainly one of the most completely protected double seater sidecars on the road.

LETTERS to the EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

T.T. SPEEDS ON THE ROAD.

Sir,—May I suggest to some of your correspondents that Brooklands is a very suitable place for record breaking.

It is rather a pity "Zenooth" could not keep quiet, as, I am sure, some of these persons are only trying to see if his speeds really are attainable.

Without wishing them any harm, may I also say that if they do manage to break anything, may it be nothing more serious than records. SLOW BUT SURE.

Worksop.

SUN-BLIND GOGGLES WANTED.

Sir,—Can any of your readers tell me where I can purchase a pair of goggles fitted with what I will call a "sun blind," this blind or shade to be hinged, so that when travelling east in the early morning, or west in the evening, it can be lowered to save the sun blinding one? Something after the style of an ordinary shop blind would be of great help to those who wear helmets.

A. C. HARRINGTON.

BENEFITS OF RESEARCH WORK.

Sir,—I was pleased to see the letter from Mr. H. S. Rowell, calling attention to the benefits of research work and to your remark that the brake mentioned was the first practical evidence of the activities of the Research Association.

Although, as you mention, this may be the first notification of any device to reach you, may I point out that the very nature of the work calls for a certain amount of secrecy, and is not such as would interest the motoring public generally, or directly. It has, however, benefited, and will continue to benefit, them through the members of the association, who are at liberty to, and do in confidence repeatedly, bring their problems and difficulties to be solved. Progress in research work throughout the world is carefully watched by the Research Staff, and reports of interest forwarded to members. The various problems connected with motor cycle design are continually undergoing investigation, and data with special reports, suggestions, etc., from time to time circulated, the results being seen in the more perfect machines members offer to the public. The work goes on quietly and unseen in the background, little being heard of it except by directly interested parties (the members of the Research Association of the British Cycle and Motor Cycle Manufacturers), but it is none the less valuable because it lacks the limelight of publicity. JAS. L. NORTON.

INCOMPETENT ATTENDANTS AT THE SHOW.

Sir,—May I use your columns to point out to manufacturers the great mistake of employing incompetent showmen at Olympia. You quote several instances in *The Motor Cycle*, and I have heard of several more cases and experienced it myself.

To one who is contemplating buying his first machine, an incompetent salesman is unconvincing, and breeds suspicion of the machine he represents, whilst to an old hand, or to one who rides the firm's machine, he is no less than an insult to the intelligence.

Two firms at least, and there must have been many more, had real experts in attendance, men who have forgotten more than most ordinary motor cyclists know, and they, of course, were equal to any demands put upon them.

It really is annoying to go to the stand of the makers of your machine to make an inquiry, and find that the representative not only knows less than you do about it, but also assumes that you know nothing and that any tale will do to keep you quiet.

May I suggest that firms should make a point of having a really competent *engineer* on the stand who will be able to give real information to those who seek it. If they cannot spare one of their own men, surely they could get some good exponent of their machines for the week, preferably one who performs on the track.

The contrast between stand and stand at the show was very marked in this respect, and there was a considerable amount of irritation produced by inefficiency on the part of some representatives, whilst other firms had put their best men at the services of the seekers after truth.

M. P. SARGENT,
Hon. Sec. Oxford University Motor Club.

[Several other correspondents write in the same strain.—ED.]

COOLING ON LONG DOWN GRADES.

Sir,—In his article in last week's issue, Mr. Mortimer Batten, in drawing attention to the uses of the valve lifter and throttle as cooling and oiling agencies respectively, seems to have overlooked the fact that modern clutches and gears should enable most motor cycles to emulate, if not to improve upon, the average car in this respect, by coasting either with the clutch held out or by getting into neutral, which, although it may involve going through second, is possible at almost any speed, keeping the engine ticking over, and getting back into top when this is found necessary.

Any modern machine which is unable to do this should be inspected for faulty adjustment, and if it is not found possible to correct this fault, its design—either with regard to clutch, gear box, transmission, or wheel bearings—must be regarded as not at the top of its class. "PIN."

S.W.2.

RECORDS BY PRIVATE OWNERS.

Sir,—I should like cordially to support "Private Owner B.M.C.R.C.'s" suggestion. Provided the trade did not object the A.C.U. might show its interest in the purely private owner by drawing up the necessary rules. It is to be hoped that a stricter adherence to rules be observed than was the case in the B.M.C.R.C. private owners' handicap races this year.

P. O. BEMSHE.

Bromley.

CASTOR OIL IN ENGINE LUBRICATION.

Sir,—Now that the Show is a thing of the past, and motor cyclists have time to think over things, may I refer to the letter of Mr. L. F. Wright, who put forth some able words on "Castor Oil in Engine Lubrication," in *The Motor Cycle* of November 30th?

After a very clear summary of the essential properties of a lubricant, Mr. Wright in his last paragraph stated that he has found fatty acid in carbon deposits, which he correctly concluded are due to the use of a vegetable oil in the engine. But he looks upon this fatty acid content in such oils as a fly in the ointment, instead of as a pearl in the oyster; for recent research has now proved beyond doubt that it is this acid content which gives animal and vegetable oil its superior "oiliness."

The fact that it may cause corrosion is due to there being more acid either present in the oil initially or generated in it subsequently, than is necessary to give it the required oiliness.

Mr. Wright apparently is unaware of the *via media* in this matter which, however, is the subject of letters patents in many countries, and consists in using a mineral oil to which is added a very small percentage of fatty acid giving the oil the lubricating properties of a vegetable oil with the additional advantage of the quantity of acid being controllable and hence kept under the limits which cause corrosion.

Mr. Wright can refer to *The Automobile Engineer*, December, 1921, page 450, for further information, or better still to the writer, who withholds the proprietary name lest this correspondence should savour of advertisement.

JUSTIN H. WELLS.

TWENTY YEARS AGO.

Sir,—The remarks of Mr. B. H. Davies are always worth reading, and may generally be depended upon, but we fear his memory must have failed him when writing "When we oldsters rode the '1¾ h.p.' Clement-Garrard or the '1½ h.p.' Minerva, twenty years ago, there were no Sunbeams or Nortons, or Douglases."

Now, as a matter of fact, Nortons were quite a healthy little family more than twenty years ago, and they have been steadily and uninterruptedly (except in the war period) growing in beauty and power ever since. Before the days of motor cycle journalism the Norton Company was designing and building for the trade, and also under its own transfer.

From the first machine we built our faith in the motor cycle movement has never waned, and in spite of the "slump years," when a number of large firms nibbled at the motor cycle business and then dropped it to re-enter after the heavy pioneer work was done, we have continued manufacturing right through, and we believe we are justified in our claim to be the oldest purely motor bicycle manufacturing concern in existence to-day.

JAS. A. NORTON.
(Norton Motors, Ltd.)

THAT TENTH COMMANDMENT.

Sir,—As I write I am surrounded by volumes and volumes of your incomparable paper. Year in and year out have I absorbed the valuable information contained therein and its matter has been as a law unto me. "If I see it in *The Motor Cycle* it is so." But how are the mighty fallen! My pet idol has feet of clay. How sad is this world! After reading "Ixion" in the current issue my faith in his word is shattered; every statement he writes will in future have to be taken *cum grano salis*. To quote him: "Moses . . . forbade the faithful to covet each other's houses and servants . . . but . . . motor cycles were not invented at that era so a pious man may visit Olympia without committing deadly sin." Sir, Moses forbade houses, servants, or *anything that is thy neighbour's*. If "Ixion" has the temerity to submit that Mr. Norton or Mr. Matchless are not his neighbours I'll make him read his own comments. To soften the blow, however, Mr. Editor, I beg to thank the delinquent from the bottom of my heart for many and many a pleasant evening spent in the perusal of his "Reminiscences." Am eagerly looking forward to "Further Reminiscences."

Bradford. FAUNTLEROY L. LITTLE.

ALMS HILL WET.

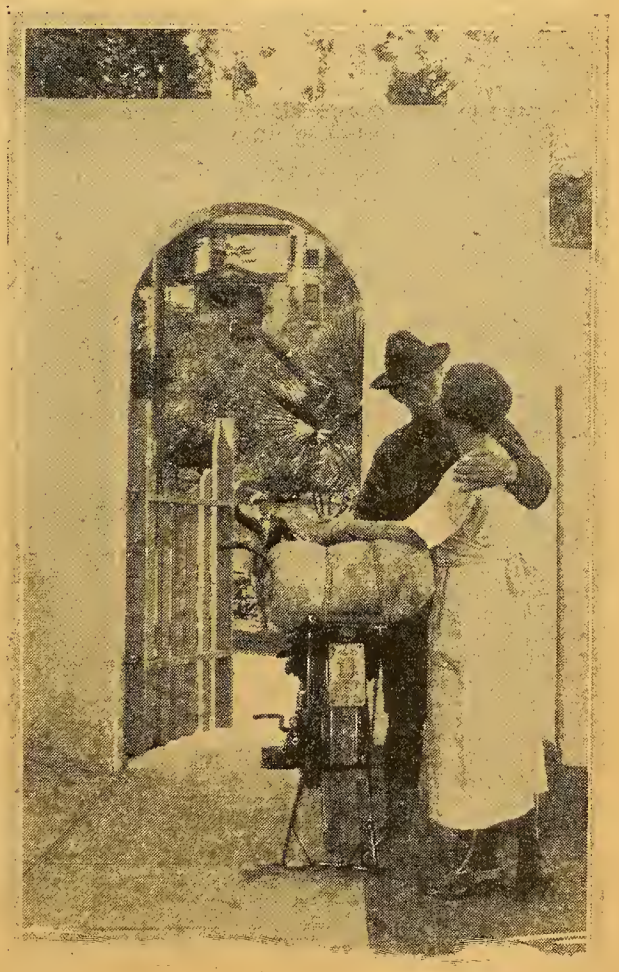
Sir,—May I inquire whether Alms Hill is considered climbable when wet, as I have made several attempts at it, in this condition, without success?

On a dry day I can get up quite comfortably on second, on my 550 c.c. Triumph, but on a wet day, if I open the throttle in bottom gear, the back wheel starts spinning and I skid into the ditch.

If I go sufficiently slowly to prevent wheel-spin the engine is turning round too slowly to take the "Cannons."

Hanon. EFFENNO.

[In a South Midland Centre trial this year several competitors made faultless ascents of Alms Hill at its worst. —ED.]



THE MOTOR CYCLE AND THE "MOVIES."

THE EXPLOITS OF 'ERB. (Episode 17.) 'Erb reassures Elaine that he will find the Flaming Disc in the Clutching Hand. It is interesting to note this, for most American clutches are foot-controlled.

32 H.P. FROM 350 C.C.

Sir,—I was most interested in Mr. B. H. Davies' article on the Show, but are we seriously asked to believe that one of the best firms in the country has "coaxed 32 b.h.p. out of a 350 c.c. engine"? Assuming an engine speed as high as 7,000 r.p.m., the above power output is equivalent to a brake mean effective pressure of 170 lb. per sq. in.! I think I am safe in saying that this figure has never been reached before by *any* other aeroplane, car, or motor cycle engine at *any* speed on *any* fuel. Looked at in another way the claim is equivalent to an output of over 91 b.h.p. per litre capacity. The best result obtained from the Vauxhall 3-litre T.T. car racing engine this year on special fuel was 43 b.h.p. per 1,000 c.c.—*i.e.*, something under half the above figure! Further, the wonderful 2-litre Fiats which won the Grand Prix were never claimed to give more than 47 b.h.p. per litre at the very outside.

Will the firm in question confirm the figure given by Mr. Davies, as such an achievement should not be allowed to hide its light under a bushel? FRANK B. HALFORD.

HARDIER NORTHERNERS?

Sir,—In view of the immense number of pros and cons on the above subject, perhaps it would be advisable to quote from personal experience only.

In our club we have but one Lancastrian member, and he very very seldom puts in an appearance at our competitions. Maybe, of course, he finds them too soft for his Northern taste; but, on the other hand, I have heard him protest that our "billiard table roads" (to quote Mr. G. R. Sylvester) "cut his tyres about too much," and "that it's only a mug's game to enter these trials." As a proud official of the club, I am ass enough to be pleased that mugs predominate.

As for Southern terrain, the M.C.C. appear to find plenty of stiff going in our areas for their purpose, and their trials are famous.

We ourselves are supporting an inter-club team trial to be run off at night this month. The well-known Kentish hills of Cudham, Crown Ash, Titsey, and Hogstrough will be included, in addition to the usual colonial sections.

Last winter we held a flexibility test on Saltbox Hill in the snow. *And* it was well attended. "BEAM."

Bromley.

[We learn from our Kent correspondent that the South-Eastern Centre inter-club night trial has been abandoned owing to insufficient entries.—ED.]

Sir,—"Park Rash" got very near the mark when he compared the men of the North to the denizens of the hills, and the men of the South to those of the plains. Let us leave the question of manners aside. They are the means by which a broadminded man shows his consideration for others, and can take an infinity of variety of form. On the Scott stand at Olympia I heard, "Sit on it, it'll cost ye nowt," in the homeliest of broad, good-natured voices. I might have heard a soapy voice drawl out, "Just try the riding position, sir; I can assure you that we don't make any charge for this privilege."

It isn't the manner or the voice, it is the man behind it that matters, and will "Park Rash" kindly note that there are also hills in the south, from where I come, and what they lack in sheer ruggedness they make up for in beauty of detail, and the fact that the sun shines on them quite a lot. 90 BORE.

Middlesex.

Sir,—"Ixion's" remarks on this subject appear to have upset the tranquillity of several southern motor cyclists, and caused a great deal of unnecessary heartburnings.

Motor cyclists, on the whole, whether they reside "up North" or "down South," are a body of sportsmen, and quite capable of adapting themselves to any conditions or environments which may occur whilst following their favourite pastime.

Those riders like "Benurow" (whose *nom de plume* camouflages the name of a well-known and successful T.T. and trials rider), who have had a long and varied experience of riding under all conditions throughout the country, are agreed that "up North" the severe nature of the country does breed a very keen and hardy type of rider; but nobody suggests that a Southerner coming to reside "up North" would sell his "'bus" after a few weeks of riding under our conditions, and take up some other less strenuous pastime.

W. H. TAYLOR.

THE AMATEUR ROAD RACE.

Sir,—I notice with great pleasure your announcement that an amateur road race will be held in the Isle of Man.

As one of the prospective competitors I hope it will be a real race, *i.e.*, the same distance and conditions as in the actual T.T. race.

Also, referring to the discussion between North and South riders now raging, why not make up a score sheet with some kind of trophy, to be won by the best division on points? By this I mean divide the entrants into classes, for instance: Scotland, Ireland, Wales, the North, the South, the Centre (the Midlands).

I am ready for my entrance form any time! Also, there are another six riders certain from Manchester.

CHARLES M. NEEDHAM.

POST-WAR UNIT CONSTRUCTION.

Sir,—In the article, "Through a Designer's Eyes," under the heading of "Unit Construction," it is stated that until recently the British firms which had tackled the problem seriously were almost negligible.

Perhaps the majority of your readers are unaware that a pioneer of unit construction design—the Wooler—was evolved several years ago.

Your contributor mentions several very desirable features obtained by the employment of unit construction, *e.g.*, elimination of the primary chain and part of the magneto drive, a constant flow of oil to all engine and gear parts, without employing a single external pipe, and a considerable increase in crank-case area, which would help to cool the engine.

Every one of these points is incorporated in the Wooler, where the oil circulates round the frame, and is thoroughly cooled and filtered before returning to the sump.

Having ridden both belt and chain driven models for more than a year, I cannot speak too highly of unit construction as exemplified by the Wooler. Usual disclaimer.

J. B. PERKINS.

HUB GEAR DIFFICULTIES.

Sir,—Being another impecunious owner of an old hub-geared 1914 Triumph (Sturmey-Archer) I should be glad if "An Old 'Un" or "B.C. 1499" would give me a few tips on gear changing. Ordinary gear box methods seem useless with my hub gear, as it positively refuses to change either up or down on the clutch, so that, if stopped in traffic "on top," I cannot change down until the engine is stopped.

The gear either remains in top with the rod hanging loose, or a blood-curdling shriek results. BREEZY.

Merton.

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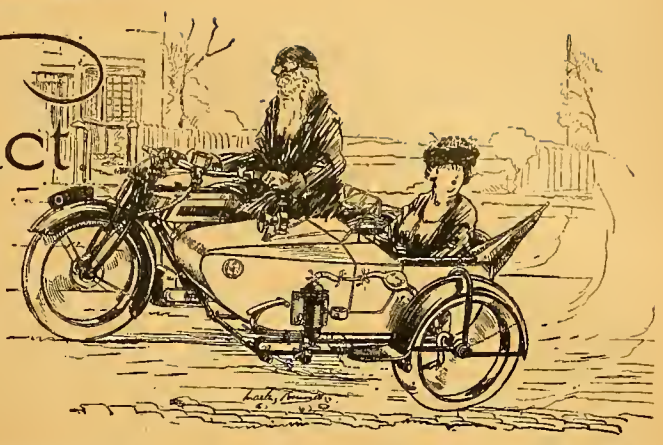
Accessories before the Fact



Revolutionary Inventions to make Motor Cycling More Interesting. First Fully Illustrated Descriptions of the Astounding Grabal Patents.

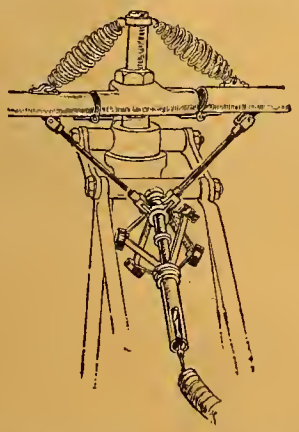
ALL motor cyclists will be interested to learn that the well-known firm of Messrs. Graphter and Balmie, Incorp., has decided to enter the motor cycle accessory market.

Hitherto, of course, this most successful business house has specialised in the sale, by post, of fibre-ball and elliptical-roller bearings, and correspondence courses on Couéism, relativity, book-making, the game of Beaver, etc., etc. Therefore the ingenuity, indeed genius, of the managing director of this go-ahead concern, Mr. Angus I. McCohen, is already common knowledge. But, to use his own words, Mr. McCohen does not think the motor cycle field has yet been as thoroughly exploited as it might be.

Catering for All.

The Grabal specialities, as the new products will be named, appeal alike to the speed man and the potterer, to the expert and the novice, to the family man and the man without a family.

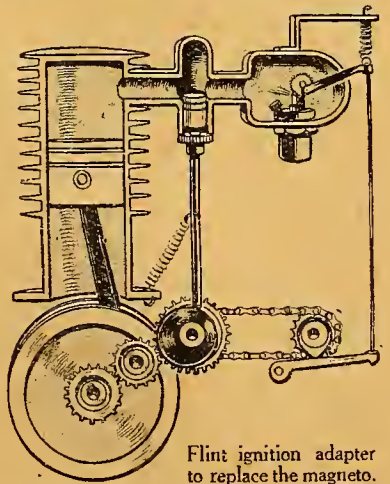
Not the least momentous invention is an automatic sidecar tyre pump. Every sidecarist knows that the weight carried in his sidecar is by no means a constant factor. The talented inventor of the Grabal pump, although not himself a sidecar driver, has recognised this. He attaches to any convenient chassis member the body of a cylindrical pump connected by tubing through a hollow sidecar axle to a pipe extending from the tyre valve and ending in a circular channel coincident with a ¼in. hole in the sidecar axle. The rest is simple. Attached to the sidecar body is the pump plunger member; and a release valve on the system is controlled by an ingenious arrangement of reversed pressure gauge and link mechanism bearing against the sidecar body so that the lower the latter falls the higher the pressure in the tyre, and *vice versa*. The drawing in the heading illustrates the device in action.



Centrifugal control of the automatically adjustable handle-bars, in the "20 m.p.h. and under" position.

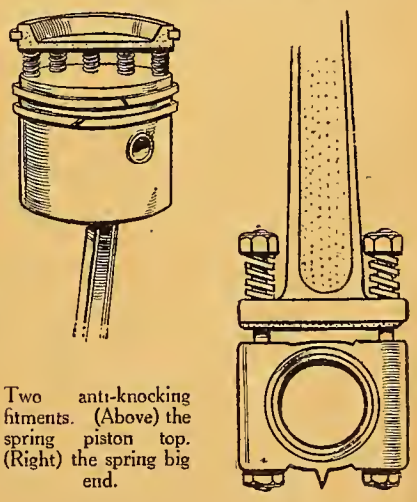
Centrifugally Controlled Handle-bars.

Next in importance, if not more so, come the Grabal automatically variable handle-bars, which change from the fully touring shape at 20 m.p.h. to the flat type at 50 m.p.h., and to the fully dropped pattern at 90 m.p.h. Each side of the bar is hinged at the steering head, being normally retained in the "up" position by two powerful coil springs. Two link members are directly connected to the collar member of a centrifugal governor, driven by a speedometer type flexible cable from a gear wheel on the front hub. As the speed of the machine increases the collar moves down, and with it the bars. By the addition of a suitable scale one of the bars becomes a speedometer needle. Like all great inventions, the idea is simplicity itself.



Flint ignition adapter to replace the magneto. The piston valve exposes the ignition chamber at the correct moment.

The puncture bogey has also received attention from Mr. McCohen. By one master stroke he eliminates this and the dust nuisance as well. Again his great brain has gone to the root of the problem and literally removes the cause before the trouble occurs. A powerful revolving brush and vacuum cleaner are mounted on the steering head, so that they sweep a clean path, 9.567 inches wide, in front of the wheel. There is some talk of introducing legislation to make this fitment compulsory on all motor vehicles. The saving to the country would be immense, especially if public-minded motorists could be persuaded to take kerb-side duty occasionally.



Two anti-knocking fitments. (Above) the spring piston top. (Right) the spring big end.

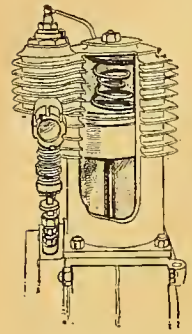
Magneto-less Ignition.

Quite in a different class, but none the less astounding, are some of the Grabal 365% efficiency increasing devices. One, for instance, dispenses with the magneto, admittedly a weighty, expensive, and unpatriotic instrument, and substitutes a flint spark mechanism, already familiar to, and respected by, the great general public in their cigarette lighters. The sketch in this case is self-explanatory. Suffice to say that a gross box of flints is sufficient for 1,876,921 sparks, and since

Accessories before the Fact.—
these cost only 4s. 11¾d., the infinitesimally low upkeep per spark is at once apparent. Incidentally, the company has purchased all the Boliguarian government's huge war stocks of flints.

No More Knocking.

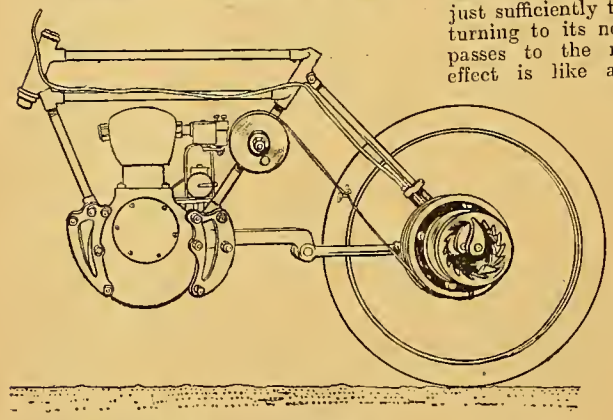
Even the most modern engines are prone to knock on occasion. No less than two Grabal fitments have been evolved



Cut-away cylinder, showing the Grabal recompressioner in position.

to banish the phenomena. One is a spring top piston; the other is a spring big end. Obviously by fitting both it is possible to do even more.

Owners who are hampered in selling their second-hand machines because their engines lack compression will welcome the Grabal recompressioner, which is a specially designed coil spring to be fitted in



By this device the energy of braking is stored and given out to assist the machine in its acceleration.

the combustion chamber. It restores lost compression miraculously, and, by its action in assisting the piston down on the suction stroke—a phase hitherto ignored by the designer—it is claimed to give a 17.625% increase of power. Further, it is very moderately priced, the 250 c.c. pattern costing only £19 19s. 11d.

Brainy Brake-work.

Two indispensable Grabal specialities affect the all-important question of braking. One, of the magnetic type, we regret we cannot yet describe in full, as one or two points remain to be perfected. It is extraordinarily ingenious, and automatically stops the machine dead within 20 feet of any obstacle directly ahead of the front wheel. Difficulty has, however, been experienced in narrow streets, where it has been found that the machine refuses to take a corner on account of the proximity of a brick wall across the way. Experiments, however, are being pursued, with every confidence, and the company is prepared to accept nominal deposits of £10 on the first batch of production models. Until these are available there is the combined brake and accelerator illustrated. A touch of the handle-bar button engages the pawl of a two-way free wheel in a pulley on the rear hub, and this winds up a cable from a frictionally retarded drum, which also contains a powerful spring. The machine is thus smoothly decelerated and ultimately stopped when the cable reaches a fixed stop. When the danger is passed the button is released, and the friction clutch on the drum is disengaged. The coiled spring releases its stored energy and greatly assists the engine is accelerating. For a sufficiently large fee only *one* licence to use this device in the T.T. will be issued.

Soundless Silencing.

Next to braking, silencing is perhaps among one of the not least important points requiring attention at the present moment. Here again the master mind has strayed from the beaten path of convention. The Grabal No. 1 silencer consists of a plain exhaust pipe made of a fully-patented elastic substance, not unlike rubber. Thus, immediately the gases leave the exhaust port the pipe expands just sufficiently to accommodate them, returning to its normal size as each burst passes to the rear. Externally, the effect is like an ostrich eating large apples; and the device, instead of magnifying the sound like an ordinary resonant metal expansion chamber, causes silence so complete that it is impossible to tell whether the engine is running or not without watching the pipe very carefully.

On the other hand, some fortunately situated motor cyclists, and most professional speed men, do not object to noise. They, too, have been catered for—by the Grabal No. 2 silencer (or extractor). An annular chamber on the exhaust pipe, and directly connected thereto, is exhausted by the swift rush of the gases. From this vacuum chamber is led a pipe to the exhaust port, thus assisting in securing perfect scavenging and greater efficiency (17.625% to be exact).

Then mention must be made of the Grabal automatic gear change. In effect it consists of a weighted extension to the gear lever, sufficiently heavy to move it down one notch on all gradients above 1 in 10 and two notches on 1 in 5 or steeper hills. On the level ground being reached again a reverse action takes place. It is easily fitted, instantly adjustable, heavily constructed, and guaranteed for three years after the war against breakage.

Further Patents Pending.

It would be impossible to describe the full Grabal range in one issue of *The Motor Cycle*, but it may be said that among other epoch-making and revolutionary fitments are such diverse and remarkable articles as collision-proof number plates, mudguards and footrests of rubber, a magnetised carrier for carrying tools and repair outfit accessibly instead of in the old-fashioned tool bag, and a

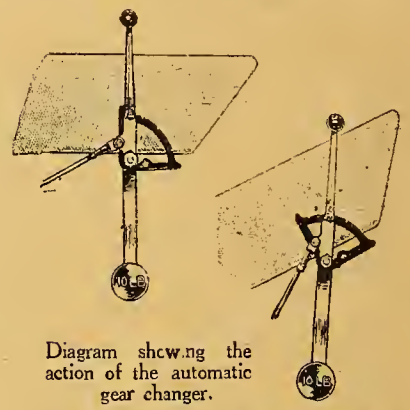
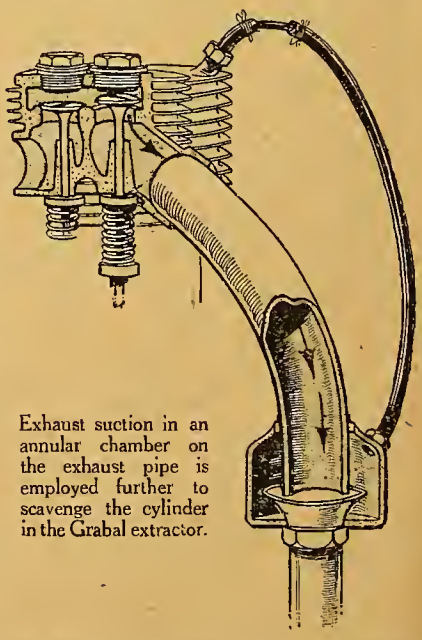


Diagram showing the action of the automatic gear changer.

(Left) Machine on level road, lever in top gear; (right) machine on a hill, lever in second gear. Neutral is avoided by redesigning the gear box.



Exhaust suction in an annular chamber on the exhaust pipe is employed further to scavenge the cylinder in the Grabal extractor.

lattice-work type extensible lamp bracket for driving in fog and obtaining a clear view round corners.

As we go to press we hear with regret that Mr. McCohen has been removed to a private nursing home, but letters addressed care of the Editor will be forwarded in due course.

The Christmas Trial

Details of the "New" Hill and a Complete Guide to the Trial. 199 Solo, Sidecar and Three-wheeler Drivers.

ON Boxing Night (Tuesday next) the customary band of heroes—308 in all this year—will foregather at Staines for the M.C.C. London-Exeter-London run. Of these 308 entries, 95 are solo riders, 90 will drive sidecars, and 14 three-wheelers.

Hill Climb in Darkness.

The ronte of the outward journey is exactly the same as last year, but Peak Hill, Sidmouth, which No. 1 of the long string of competitors climbs in the darkness of 5 a.m., is now a non-stop section. There were quite a number of failures here last year, but comparatively few lost marks as the majority had enough time in hand to scramble to the top somehow. The fact that failure now means a certain loss of marks should have an appreciable effect on the award list.

On the other hand, the inclusion of White Sheet Hill, near Beaminster, will probably prove a disappointment in this respect. Several members of the Sarum and District M.C.C. rode over on the week-end before last to try the new "find" and report that it is unlikely to cause any great trouble.

White Sheet is approached from Beaminster along a narrow road, usnally wet, the first half-mile being an easy rise. Then comes half a mile with an average gradient of 1 in 10, followed by about 600 yards of 1 in 6 with a comparatively gradnal left-hand bend where the gradient is 1 in 5. Trees overhang the road from the bend upwards, and the surface is somewhat soft, but, at the time of inspection, there was a moderately hard track on either side. The gradient eases some distance before the summit, but increases to 1 in 6 right in sight of the top.

If it rains on Boxing Night, as it almost assuredly will, careful driving may be necessary. Solo machines should keep to the left and sidecars to the right.

Incidentally during the visit of the Salisbury Club good ascents were made by Miss M. Horrell (269 Clyno), Miss M. C. P. Timpson (225 Royal Enfield), M. C. Thorne (247 Levis), and Capt. A. P. Thorne (Aero Morgan).

New Section.

From the top of the hill to the main Maiden Newton-Dorchester road (approximately one mile) is a narrow, muddy lane.

Salcombe Hill, which of course is reached before White Sheet, was climbed last year, when it caused several sidecars—but more cars—to fail owing to wheel-spin.

Those who intend to watch the competitors *en route* will find the time of the first man at any point from the accompanying schedule.

OUTWARD JOURNEY.

Standard Time.	Place.	Mileage.	Total Mileage.
p.m.			
8. 0	**STAINES**	0	0
8.30	Bagshot ..... (10 mile limit)	9½	9½
8.45	Blackwater	4½	14
9. 3	Hartley Row	6	20
9.30	**BASINGSTOKE** .. (10 mile limit)	9	29
9.55	Overton ..... (10 mile limit)	8	37
10. 6	Whitchurch	3½	40½
10.27	Andover	7	47½
10.47	Middle Wallop ...	6½	54
11.20	**SALISBURY**	11	65
a.m.			
12.30	**SALISBURY** ..... (depart)	0	65
12.42	Wilton	3½	68½
12.51	Barford St. Martin	2½	71
1. 4	Fovant	4	75
1.42	**SHAFTESBURY** ..	11½	86½
1.57	East Stour	4½	91
2.26	Milborne Port	8¾	99¾
2.36	Sherborne	3	102¾
2.55	**YEOVIL**	5¾	108½
3. 0	**YEOVIL** (depart)..	—	—
3.25	Crewkerne	8¾	117¼
3.49	Chard	8	125¼
4.30	**HONITON**	13¾	138¾
4.48	Sidbury	6	144¾
4.51	Sidford	1	145¾
4.57	Sidmouth ..... (Bottom of Peak)	2	147¾
5. 0	**PEAK HILL TOP.**	1	148¾
5.11	Otterton	2	150¾
5.26	Woodbury	5	155¾
5.35	Clyst St. Mary ...	3	158¾
5.45	**EXETER**	3¼	162

LIST OF COMPETITORS.

SOLO MOTOR CYCLES.

1. H. B. Browning (547 Powell).
2. A. S. Guthrie (976 Brough-Superior).
3. J. A. Stedman (547 Powell).
4. E. A. Wright (347 Sunbeam).
5. A. C. Rhodes (499 Triumph).
6. G. Brough (976 Brough-Superior).
7. B. S. Allen (976 Brough-Superior).
8. A. Fraser (976 Brough-Superior).
9. P. L. Mayo (976 Coventry Eagle).
10. M. Pearson (550 Triumph).
11. C. Wilson (490 Quadrant).
12. H. H. Harrington (596 Indian Scout).
13. S. M. Greening (346 J.A.P.).
14. H. C. Nias (498 Ariel).
15. H. G. Brinton (550 Triumph).
16. D. S. Redman (486 Scott-Squirrel).
17. P. L. B. Wills (989 Harley-Davidson).
18. E. W. T. Howard (492 Sunbeam).
19. B. E. Belfield (486 Scott-Squirrel).
20. V. Belfield (499 Triumph).
21. W. G. Churchill (346 Beardmore-Precision).
22. W. P. Brandon (499 Triumph).
23. C. C. Labin (678 Martinsyde).
24. C. H. Mocatta (349 James).
25. H. C. Jacobs (398 A.B.C.).
26. E. S. Burnett (486 Scott-Squirrel).
27. H. S. Perrey (349 B.S.A.).
28. F. V. Edwards (584 Harley-Davidson).
29. H. W. Clark (211 Levis).
30. L. Currie (492 Sunbeam).
31. W. Bell (498 New Hudson).
32. F. Hayes (346 New Hudson).
33. E. J. Hardwick (350 Matador-Bradshaw).
34. E. H. Fielden (293 Trump).
35. W. D. Pugh (989 Harley-Davidson).
36. R. V. Saltmarsh (989 Harley-Davidson).
37. C. Liutott (600 Humber)
38. A. H. S. Love (490 Norton).
39. P. Cunningham (555 P. and M. Panther).
40. A. Greenwood (976 Brough-Superior).
41. J. A. Watson-Bourne (976 Brough-Superior).
42. R. Chaplin (494 Douglas).
43. C. A. Chaplin (349 James).
44. R. V. Cranford (976 P.V.).
45. C. F. S. Nethercott (349 P.V.).
46. J. A. O'Sullivan (545 Hawker).
47. M. O'Reilly (545 Hawker).
48. G. S. Green (532 Scott).
49. F. W. Neill (348 Matchless).
50. Eli Clark, Jnr. 348 Douglas).
51. A. G. Wall (348 Connaught).
52. W. S. Bishop (486 Scott-Squirrel).
53. E. Foster (348 Raleigh).
54. B. F. G. Fowke (349 Beardmore-Precision).
55. A. Milward (349 Wooler).
56. H. H. Robinson (349 Wooler).
57. W. Brandish, Jur. (249 Rover).
58. R. G. Elliott (249 Rover).
59. S. T. Glanfield (350 Matador).
60. H. G. Macklin (550 Triumph).
61. D. H. Noble (350 Matador).
62. D. B. Ware (532 Scott).
63. A. G. Fenn (499 Gnome and Rhone).
64. R. F. Cotgrove (398 A.B.C.).
65. W. A. Newell (398 A.B.C.).
66. M. R. Gray (293 Coventry Eagle).
67. W. C. Treloggen (976 Brough-Superior).
68. Ivan F. Anderson (293 Connaught).
69. J. G. Biss (490 Norton).
70. J. J. Hall (293 Trump).
71. G. O. Ford (494 Zenith-Bradshaw).
72. W. Peters (490 Norton).
73. H. A. Reyre (498 Ariel).
74. C. Boulet (498 Ariel).
75. O. P. C. Collier (292 Edmund).
76. R. P. Purnell (247 J.E.S.).
77. L. Williamson (169 J.E.S.).
78. F. G. Morgan (348 Cotton).
79. J. W. Troughton (549 Coventry Eagle)
80. E. H. Littledale (498 Ariel).

The Christmas Trial.—

81. F. A. Longman (498 Ariel).
82. J. W. Wills (499 Burney).
83. P. R. Copland (348 Douglas).
84. D. J. Stone (346 Matador).
85. G. W. Segrott (198 Ray).
86. F. C. Horney (349 P. and P.).
87. E. F. Taylor (345 Alecto).
88. R. S. Pilcher (345 Alecto).
89. E. Eland (557 B.S.A.)
90. E. A. Cullum (348 Douglas).
91. A. J. Agg (349 Wooler).
92. T. G. Meeten (532 Scott).
93. J. Kingsley-Harman (283 Ner-a-Car).
94. W. N. Worthington (349 Wooler).
95. J. Wooler (349 Wooler).

SIDECARS.

96. E. A. Bridgman (1234 Indian Super-Chief).
97. H. R. Harveyson (989 Harley-Davidson).
98. T. J. Ross (994 Matchless).
99. R. G. Boxer (994 Matchless).
100. W. Bucknell (976 Matchless).
101. P. Pehrson (499 Dunelt).
102. C. W. Vallings (499 Dunelt).
103. O. S. Bridcutt (499 Dunelt).
104. W. A. Fell-Smith (976 Brough-Superior).
105. L. R. Oldmeadow (989 Harley-Davidson).
106. G. A. Pidgeon (654 Quadrant).
107. H. F. Garrett (654 Quadrant).
108. C. W. E. Gamder (654 Rover).
109. A. C. Ward (550 Triumph).
110. F. J. Ellis (994 Matchless).
111. G. D. Hardee (994 Matchless).
112. H. L. Miserez (994 Matchless).
113. F. W. Sibson (499 Dunelt).
114. J. Harrison (499 Dunelt).
115. C. H. Hanwell (499 Dunelt).
116. J. A. Masters (989 Harley-Davidson).
117. E. O. Spence (989 Harley-Davidson).
118. G. Baxter (989 Harley-Davidson).
119. H. Clennell (976 Brough-Superior).

RETURN JOURNEY.

Standard Time.	Place.	Mileage.	Total Mileage.
a.m.			
7.30	**EXETER**	0	162
8. 3	Newton Poppleford	11	173
8.15	Salcombe Hill Foot	4	177
8.18	**SALCOMBE HILL, TOP**	1	178
8.41	Colyford	7½	185½
9. 0	Lyme Regis	6¼	191¾
9.27	Bridport	9	200¾
9.45	Beaminster	6	206¾
9.49	**WHITE SHEET HILL, TOP**	1¼	208
10.13	Maiden Newton ..	8	216
10.37	**DORCHESTER** ...	8	224
10.42	**DORCHESTER** ... (depart)	—	—
11.30	Blandford	16	240
12.36	**SALISBURY**	22	262
p.m.			
1.40	**SALISBURY** ..... (depart)	0	262
2.13	Middle Wallop ...	11	273
2.33	Andover	6¼	279½
2.54	Whitchurch	7	286½
3. 5	Overton ..... (10 mile limit)	3½	290
3.30	**BASINGSTOKE** .. (10 mile limit)	8	298
3.57	Hartley Row	9	307
4.15	Blackwater	6	313
4.30	Bagshot ..... (10 mile limit)	4½	317½
5. 0	**STAINES**	9½	327

128. W. King (989 Harley-Davidson).
129. H. R. Hart (989 Harley-Davidson).
130. F. Broomfield (989 Harley-Davidson).
131. W. L. Danskin (998 Rudge).
132. F. T. Sibley (998 Rudge).
133. T. E. Ranger (976 Matchless).
134. A. Arnold (976 Matchless).
135. J. A. Peacock (994 Matchless).
136. E. J. Pittock (532 Scott).
137. F. C. Edwards (976 New Imperial).
138. F. B. Freeley (595 New Hudson).
139. E. S. Powell (799 A.J.S.).
140. J. R. G. Haill (976 Brough-Superior).
141. A. H. Nelson (550 Triumph).
142. A. F. Scrogg (492 Sunbeam).
143. A. W. Wood (749 James).
144. W. H. D. Steer (976 Zenith).
145. R. Charlesworth (976 Zenith).
146. H. W. Stephenson (976 (Chater-Lea).
147. J. D. Marvin (976 Brough-Superior).
148. A. A. Attwood (550 Hawker).
149. H. W. Furness (595 Douglas).
150. W. J. Davies (998 Rex-Acme).
151. A. M. Knill (770 B.S.A.).
152. E. J. L. Strong (989 Harley-Davidson).
153. J. P. Le Grand (600 Humber).
154. W. A. Jacobs (600 Humber).
155. T. W. Buckle (748 F.N.).
156. P. W. White (698 Raleigh).
157. J. J. Sykes (599 Sunbeam).
158. E. C. Lunniss (976 Matchless).
159. L. S. Day (976 Matchless).
160. G. R. Claridge (499 Triumph).
161. E. H. Williams (499 Triumph).
162. R. L. Richardson (345 Alecto).
163. G. Packman (349 P. and P.).
164. R. N. Martineau (976 Zenith).
165. W. W. E. Clarke (654 Quadrant).
166. B. N. Sims (532 Scott).
167. G. A. Gammon (490 Norton).
168. W. H. Julian (976 Matchless).
169. E. Vallis (976 Matchless).
170. E. C. Barton (976 Matchless).
171. W. C. Hemy (499 Dunelt).
172. R. Rayner (799 A.J.S.).
173. A. P. McGowran (550 Triumph).
174. G. E. Minnett (749 Bradbury).
175. F. H. Douglass (749 Bradbury).
176. F. W. Giles (799 A.J.S.).
177. H. H. Saddington (749 James).
178. R. H. Attwood (633 Norton).
179. H. Thickett (1,234 Indian).
180. P. C. Polhill (976 Zenith).
181. W. L. Gard (994 Matchless).
182. E. J. Moeran (976 Matchless).
183. W. H. Hardman (994 Matchless).
184. C. Guthrie (532 Scott-Squirrel).
185. L. Heller (595 Douglas).

THREE-WHEELERS.

186. H. E. K. Sawtell (1,098 Morgan).
187. S. A. McCarthy (976 Morgan).
188. J. R. S. Wickham (976 Morgan).
189. D. Rhodes (578 Scott-Sociable).
190. W. A. Ridley (1,098 New Hudson).
191. E. Munday (1,098 New Hudson).
192. C. C. Broome (1,098 Morgan).
193. R. D. Smith (976 Morgan).
194. G. W. Shepherd (976 L.S.D.).
195. F. S. Spouse (976 T.B.).
196. A. C. Maskell (976 T.B.).
197. H. Beart (1,098 Morgan).
198. F. W. Dame (1,098 Morgan).
199. H. W. Holmes (976 Morgan).

NEW LONDON-EXETER TEST. Two views of White Sheet, a "newly discovered" hill near Beaminster, to be climbed by London-Exeter competitors on their return journey on Wednesday. As may be gathered from the pictures, the surface is bad in the centre of the road, but there are firm tracks on either side. The gradient is not steeper than 1 in 5 at any point.

120. S. C. Tait (749 James).
121. C. J. Wheeler (598 Beardmore-Precision).
122. J. Graham (976 Matchless).
123. A. W. Graham (976 Matchless).
124. W. F. Guiver (994 Matchless).
125. J. Morris (550 X.L.).
126. B. Bourke (595 New Hudson).
127. V. F. Long (976 Excelsior).

CURRENT CHAT

Times to Light Lamps.

Dec. 21st	.. ..	4.21 p.m.
„ 23rd	.. ..	4.22 „
„ 25th	.. ..	4.23 „
„ 27th	.. ..	4.25 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

In Season.

The first 365 days of the year are the best for motor cycling.

Hints for Beginners.

How to make a cheap motor cycle stand—lean it against a wall.

Trying It Out.

A single-cylinder outside flywheel sports model with a new 500 c.c. engine will make its *début* in the Exeter.

Another Club Dinner Story.

Member, who has dined well but not wisely, making violent kicks at the spring-stand of his Norton : "Oh, —— this cold weather" !

The Italics Are Ours !

A motor noter : "Referring to his wonderful ride in 1911, *which I described last week* . . ." Congratulations on the scoop !

£10,000,000.

During the year ending March, 1922, a sum of well over ten million pounds was collected by motor taxation. The cost of collection was approximately 3%.

Road Costs.

Twelve and a half million pounds were credited to the Road Fund last year; eight millions were expended on main road work and four and a half millions on unemployment schemes.

Before and After.

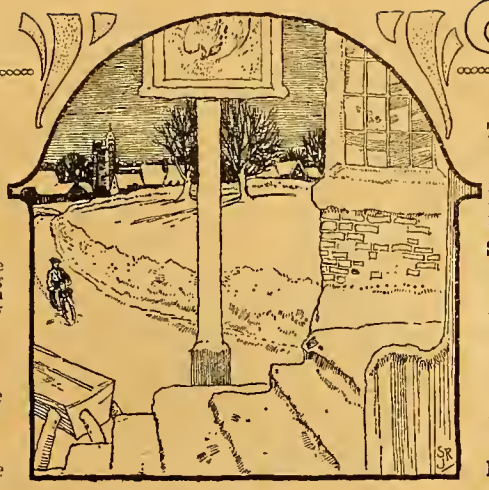
As it was : "Crack, crack, crack!" As it is : "Plonk, plonk, plonk!" A famous single-cylinder mount is now being equipped with large expansion chamber and tail pipe in lieu of the straight-through system previously fitted.

A.C.U. Annual General Meeting.

The annual general meeting of the Auto Cycle Union will be held at the Royal Automobile Club, Pall Mall, London, S.W.1, at 2.45 p.m. on Friday, January 19th, and will be followed by the annual meeting of individual members.

Familiarity Breeds Contempt.

Porlock Hill has lost its terror for the clubmen who live in the West. The Bristol Club has ignored it for two seasons past, for the reason that it does not find a winner; on the last occasion in which it figured in the programme it was climbed successfully twice in the day by every competitor except one, and some of the officials rode up and down half a dozen times in the day.



Imports and Exports.

During the last few months there has been a gradual but definite increase in the importation of machines. The figures for November show an advance on the previous month of £3,000.

	1920.	1921.	1922.
Value of machines ..	£13,725	£1,499	£2,137
Value of parts	£6,766	£4,727	£7,286
Total	£20,491	£6,226	£9,423

The increase of imports coincides with an increase in our exports, which is really more vital to the national well-being. The value of exports in motor cycles shows roughly £6,000 increase both over last month and the corresponding month last year. But to observe that there is an increasing overseas trade, even though this increase is only gradual, is reassuring after the depressing export returns for the summer months.

	1920.	1921.	1922.
Value of machines ..	£166,405	£26,794	£27,412
Value of parts ..	£82,284	£17,500	£23,167
Total	£249,689	£44,294	£50,579

The Newcomers.

Quite a number of recently marketed machines appear in the entry list of the London-Exeter run, several of which are miniatures of very small capacity.

Sensible Traffic Regulation.

Birmingham has introduced a very sensible new traffic rule. Drivers of vehicles stopped at a cross-road by a police officer are requested to divide themselves into two files, the inner or left-hand stream to consist of those who wish to turn to the left at the crossing, which they may do without waiting for the release signal.

Not a Fairy Tale.

Scene : A local agent's depot two weeks before Christmas.

Owner of a large car drives up and calls out the agent. "I want a good motor cycle for my nephew; what have you got?"

The agent promptly recommended his best line. The client wrote his cheque in the car without inspecting the mount. "See that it is delivered on Christmas Eve," was the parting instruction.

Something like an uncle !

For Overseas Motor Cyclists.

All who are resident abroad, as well as members of the Navy, Army, Air Force, Diplomatic Service, or Mercantile Marine who are abroad at least three months in a year, may become overseas members of the A.C.U., and as such are entitled to full privileges when at home. When abroad they are supplied with news in the shape of a quarterly budget, or certain numbers of *The Motor Cycle*, such as the Show, T.T., and Six Days Trials report issues, which are posted to them direct. The cost of overseas membership is 10s.

ANOTHER TOLL ABOLISHED. Vehicles in future will be permitted without payment to pass over this bridge which spans the river Hamble at Bursledon in Hampshire.

Not to be Taken Seriously.

We wish to make it quite clear that the names mentioned in the mechanical *jeu d'esprit*, on p. 959, are entirely fictitious.

The Weather at Christmas.

There is every likelihood of the weather at Christmas being mild and dry, for the official weather prophets forecast frost and snow.

Careless Competition Riders.

Last Saturday's London-Gloucester-London Trial was notable for the disgraceful inefficiency of quite 75% of the competitors' lamps. Even acetylene lighting properly looked after should be perfectly reliable.

A French Brooklands?

At Montmorency, about 9 miles from Paris, it is proposed to erect a track which will primarily be constructed for the testing of motor cars for trade purposes. It is thought, however, that it will eventually be available for public races.

Renewal of Licences.

It is estimated by the Ministry of Transport that over 800,000 motor licences will expire on December 31st, most of which will be renewed. In order that the work of renewing licences may proceed expeditiously it is essential that motor cyclists should see that their applications for renewal are in order and submitted promptly. Renewals may be had at the principal post-offices, except if there has been a change of ownership since the last licence was taken out, or if the old licence has expired more than fourteen days previously.

START OF A 1,400 MILE JOURNEY. Two enthusiasts who came from Prague to visit the Olympia Exhibition about to start on their long journey home after taking delivery of their 986 c.c. B.S.A. sidecar at the works in Birmingham.

Preparing for the Winter Runs.

If we are favoured with a few days of bright frosty weather at Christmas many owners who usually travel by train may utilise their machines. The suggestion that machines should be looked to before the day they are required ought really to be superficial advice; unfortunately it is advice that is not heeded by very many owners.

The "Die-Hards."

The majority of the old "never again" London-Exeter riders will turn up as usual on Tuesday night. They will, it is expected, register the same old vows on its conclusion.

Unexpected Praise.

"Who?" asked a competitor at the finish of a recent trial, "was responsible for the arrowing between —— and ——?" There was an instant chorus of "Some people are more satisfied . . ." "If you can do the job better yourself . . ." etc., from officials standing near, when the original speaker broke in quietly: "I only wished to congratulate him!"

The 1923 French Grand Priz.

Sunday, June 24th, has been selected by the U.M.F. as the date of the French Grand Prix (Circuit de Touraine). The car races—the Grand Prix de Tourisme and the Grand Prix de Vitesse—will be held on July 1st and 2nd respectively. It was announced at the F.I.C.M. meeting in London that the date of the Belgian Grand Prix would be 15 days later than that of the French.

Insurance-Press Propaganda?

Ten little English boys playing round a shrine,
A motor-bus ran over one, and then there were nine.
Nine little English boys setting out to skate,
A sidecar ran over one, and then there were eight.
Eight little English boys, eyes as blue as heaven,
A motor-cycle snaffled one, and then there were seven. . . .

Several readers have written expressing disgust at a lengthy effusion in a leading daily newspaper starting (and continuing) as above. It is entitled, more aptly, perhaps, than was intended, "A nursery rhyme for grown-ups"; so why worry?

CLUB NEWS.

Bristol M.C. and L.C.C.

Among the officers elected for the ensuing season at the annual general meeting were the following: Mr. C. T. Pearce, president; Mr. Rex Foweraker, hon. secretary; Mr. E. Kickham, captain; Mr. H. T. Seamp, hon. treasurer. The club's membership is over two hundred, while the secretary's and treasurer's reports showed a very strong position.

Newark and District M.C.C.

It is proposed to form a club as above, to be distinct from the existing motor and motor cycle club. An inaugural meeting will be held at the Palace Cafe, Newark, on the 3rd prox., at 7.45 p.m., which those interested are earnestly requested to attend. Meanwhile, any information may be obtained from Mr. W. G. Donald at Donald's Garage, London Road.

Wessex Centre A.C.U.

All the clubs of the Centre were represented at a board meeting held at Bath on the 7th inst. Mr. Eli Clark reported the allotment of the first open speed trials for 1923 to the Centre, and a sub-committee consisting of Messrs. Kickham, Simpson, Gibbs, and Moore was appointed to run the event. A scheme of inter-club team contests is being considered.

Birmingham M.C.C.

On Saturday, December 30th, a half-day sporting trial will be run with solo and passenger silver cups to be won outright. The marking is such that time-keeping and skilful driving will be of almost identical value. Particulars may be obtained from Mr. H. Riley, 94, Yardley Rd., Little Bromwich, Birmingham.

Bradford M.C. and L.C.C.

Thirty-six out of forty-one starters finished the course of the club's annual winter trial run off on the 10th inst., results of which are now to hand. The Richmond Trophy (won outright) was secured by D. Rhodes (578 c.c. Scott Sociable), while R. A. Bourne (Perry light car) tied with him, and was awarded a silver cup (won outright). Third place was taken by H. G. Mitchell (Jowett light car), for which he is awarded a silver medal.

Prescot and District M.C.

A very successful carnival was held at the Parish Room, Prescot, on the 11th inst. Early in January the club will hold its annual dinner and prize distribution.

Two of five members of the Richmond and District M.C.C. who advertised the club's exhibition of "The Motor Cycle" film by a novel method.

Worcester and District M.C.C. and Worcestershire M.C.

At a meeting held on the 11th inst. a satisfactory membership and treasurer's report was presented, and a substantial honorarium was presented to Mr. Howell in recognition of his services as hon. secretary.

Several witty speeches were made at the annual dinner and presentation of prizes held on the 7th inst. under the chairmanship of the club's patron, Lord Beauchamp. "I firmly believe that not long hence the time of a member's departure from one place will synchronise with his arrival at another," said one speaker, referring to members' successes in various speed events.

East Midland Centre A.C.U.

Being desirous of developing the movement in Lincolnshire the centre suggests that there is scope for a club in Bourne, Boston, Skegness, Louth, Scunthorpe, and Brigg. All interested and willing to assist should communicate with the hon. secretary, Mr. K. S. Topping, 64, Frederick Street, Loughborough.

South Shields and District M.C.C.

The above club held its annual dinner at the Regent Hotel on the 11th inst., the president, Mr. Wares, presiding. During the course of the evening Mrs. Wares presented trophies won during the season. The annual general meeting will be held early in January, when officials for the ensuing year will be elected.

North-West London M.C.

Considerable interest is being shown in the Club's "Schoolboys' Competition" to take place on the 13th prox., but it is realised that passenger machines are not popular, and the organisers have therefore decided to accept teams without the required passenger outfit. The closing date for the trial is January 1st, and full particulars are obtainable from the organiser, Mr. O. B. Smyth, 114, Denbigh St., London, S.W.1.

CLUB FESTIVITIES.

Well-attended Annual Dinners in the Midlands and the North.

Edinburgh and District M.C.

AS one might expect, there was an excellent representation of motorists from all parts of Scotland at the annual dinner of the Edinburgh and District Motor Club, during which one of the chief features of entertainment was the showing of *The Motor Cycle* Film, run off at intervals between song and speech. In the absence of Mr. Graham Davidson, Mr. Campbell McGregor, the energetic secretary, presided during the initial portion of the evening, but later Mr. Davidson arrived.

The chief speaker was Mr. Robert J. Smith, of the R.S.A.C., who proposed "The Club." Mr. Smith paid a sincere tribute to the memory of Sir H. A. Macdonald, to whom so much is owing in connection with the automobile movement in Scotland, and he proceeded very ably to discuss the political aspect of club life. He urged that very important matters, such as just taxation and the abolishment of the speed limit, were at present before those working in the interests of the motoring community, and if that community realised to the full how much its future interests are involved, there would certainly be no lack of support. The question of taxation has now almost reached unanimity, and even the owners of commercial vehicles are agreed that the tax on spirit presents the only reasonable course.

In addition to the film, which was very enthusiastically received, there were some excellent conjuring performances and musical items.

Coventry and Warwickshire M.C.

A VERY happy gathering took place at the Craven Arms Hotel, Coventry, on the occasion of the Coventry and Warwickshire Motor Club's annual dinner.

Mr. J. K. Starley, in the absence through indisposition of the president (Lieutenant-Colonel J. A. Cole), officiated as chairman, and the guests of the evening were Lieutenant-Colonel F. S. Brereton (chairman of the Auto-Cycle Union), Major L. A. Baddeley (chairman of the M.C.C.), Major R. Vernon C. Brook (chairman of the Midland Centre, A.C.U.), Mr. W. G. McMinnies, and Mr. R. W. Duke.

Mr. J. F. Spencer, in replying to Mr. Starley's toast of "The Club," remarked that the club was held in very high esteem by all other motor clubs in the country, and claimed the honour, together with one other club, of being the second oldest of its kind in the country. There were two directions in which the club was prominent—the first in speed events and the second in team trials. In connection with speed, the speaker referred to Mr. Walter Brandish, junr., one of their most respected members, who was second in the Tourist Trophy (Senior) race this year. In addition to this, Mr. Spencer said the previous year Mr. Brandish's times were remarkable, in so far as they did not vary more than two minutes in each lap, "and I am given to understand he will be first next year," added Mr. Spencer, amid laughter.

Mr. Geoffrey Smith warmly complimented Colonel Brereton on his interest in the motor cycle movement, and remarked that the work involved was a great deal more strenuous than was generally realised.

A very enjoyable musical entertainment was given during the intervals, and during the course of the evening the year's prize-winners received their trophies from Mr. Roberts.

Bradford M.C. and L.C.C.

OVER 170 members and guests, including ladies, attended the annual dinner of the Bradford M.C. and L.C.C. at the Royal Restaurant, Bradford, on Friday, December 15th.

The toast list was an extensive one, interspersed with songs by the club's "own" rag-timers, the Dewhirst Bros. A feature of the menu card was the inclusion of a *résumé* of the year's competitions, giving the nature of the events, the number of entries, starters, and finishers, and the award list. Prizes were distributed during the evening.

Sutton Coldfield and North Birmingham A.C.

THE tenth annual dinner of the Sutton Coldfield and North Birmingham Automobile Club took place in the Assembly Rooms of the Royal Hotel, Sutton Coldfield, Friday, December 15th. There were present many well-known members of the motor cycle trade and prominent persons in the locality, as well as a large number of competition riders who had distinguished themselves during the past year.

In proposing "The Club," Major R. Vernon C. Brook emphasised the necessity of every rider supporting his local club and thus, indirectly, the governing body. In response, Mr. Frank Whitworth pointed out the good work which had been done in the past by the club and its officials, stating that the club, which was founded in 1908, was not only one of the oldest but also one of the most go-ahead bodies in the Midlands.

In a witty speech, Councillor George Hooper proposed "The Ladies," remarking that he was delighted to find that there were seven lady members of the club, most of whom took an active part in competitions. The toast was responded to by a lady, Mrs. A. Henderson, whose speech, though very short, met the requirements of the case admirably.

The Editor and Staff of "The Motor Cycle" extend to all readers—young and old, at home and abroad—greetings for a happy Christmas and Prosperous New Year.

LONDON—GLOUCESTER—LONDON.

Dark Deeds on Kop Hill. Muddy Roads in N.W. London Classic Trial.

JUDGED by the route card, last Saturday's London-Gloucester-London Trial—the twelfth of the series—was not difficult. Actually, a minimum time allowance at the checks, greasy bye-lanes, and a non-stop section in the dark, including Kop Hill, combined to make the event arduous enough to be sporting, or sporting enough to be arduous (according to how one looks at these things).

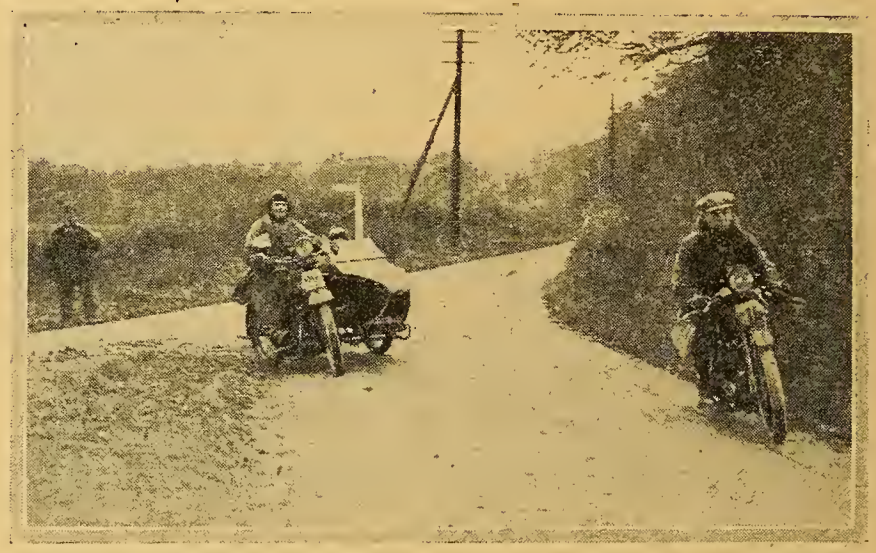
Consequently the North-West London M.C.C.—the organising club, and, incidentally, an amateur body—will not have to find an award for each of the seventy motor cycle starters after all; and if there had been more observers on Kop, a still greater saving might have been effected in this respect.

Embodied in the trial was an inter-team contest between the North-West London M.C.C., the Birmingham M.C.C., the Essex M.C., the Coventry and Warwickshire M.C., and the Surbiton and District M.C.C.

Main Roads at First.

The 8 a.m. start took place at the De Haviland Aerodrome, Edgware, but since the Edgware Road has been put in order conditions did not justify an observed section in the first twenty-five miles to Tring. The main roads were left behind and a merry scramble ensued, through the Chilterns to the Oxford Road.

Waterworks, Whyteleaf, and Kingston Blount were the chief test hills, but a succession of faultless ascents made the observer's task a monotonous one, enlivened only by the difficulties of deciphering the *blue and black* number cards.



One of the most acute bends in the event was the turn from the summit of Whyteleaf towards Kop. The riders are C. C. Labin (738 Martinsyde) and R. B. Clarke (925 Clyno sidecar).

On Kingston Blount, thought by some to be the least easy of the three, many of the competitors simply crawled up, obviously under the impression that a park of spectators' machines at the summit was the next check. For this reason it was doubly difficult to differentiate between the various climbs, and it will suffice to say that the new 349 c.c. B.S.A.'s made a very promising debut, as did a 348 c.c. Grigg Viper in the hands of E. M. Gwynn.

That a Morgan overtook D. W. Rhodes' Scott-Sociable may only mean that Rhodes was not in a hurry, and that W. Brooke's 348 c.c. Cotton was considerably faster than most of the larger solo machines may similarly have been because Brooke was.

Nobody failed, but M. K. H. Bilney (249 Holroyd), who had lost his contact-breaker cover and was very late, footed once.

Trouble in the Non-stop Section.

D. H. Noble (654 Quadrant sc.) punctured his sidecar tyre shortly after entering the non-stop section, but gamely carried on without loss of marks. D. F. C. Fitzgerald (490 Norton) bore signs of having had a tumble, not a surprising occurrence, for the roads were slippery enough to be treacherous without being uniformly bad enough to demand continued caution. R. J. Piper (998 Indian sc.) also appeared to be having a lot of trouble, but managed to keep going.

There was another check on the Oxford road, and thereafter it was plain sailing to Gloucester by the most direct route (down Birdlip; up coming back). There had been a considerable amount of rain during the night, and there was some mud; but there was no excuse for the serious roadside tinkering indulged in by many competitors.

It was necessary to light up before the early starters had gone twenty miles on the return journey, but until the first electrically-illuminated arrow pointed the way down Kingston Blount Hill, the going was good, and practically all had time in hand at the Lambert Arms check.

D. F. C. Fitzgerald (490 Norton) on a picturesque corner in the non-stop section, typical of the whole trial.

Gloucester—London—Gloucester.—

But a trials course that is easy in the daylight becomes remarkably difficult at night. Solo, one skids more. Lamps have not reached a high pitch of excellence. Engines *may* run better, but steering certainly is not made easier.

Long before Kop was reached several riders were unofficially noted to damage their non-stops, and usually their footrests and lamps at the same time.

The hill itself presented some curious spectacles. A soloist with flickering headlamp would come shooting out of the darkness down below in fine style, but right on the steepest part he would suddenly lose all control and run into the bank. If he was quick he might get away before one of the solitary three observers rushed up to find out his number. Rain fell before half-a-dozen competitors had passed, and the surface—not too good to start with—gradually became worse and worse.

The officials did not attempt to mark down the successful people; at least two wily failures recognised this and flatly refused to give their numbers when asked. Probably, too, all the cases of missing number cards had not been caused accidentally.

Any report of the performances on the hill must needs be qualified as accurate only as far as circumstances and visibility permitted.

H. W. Deacon (490 Norton) and W. H. Hardman (993 Matchless sc.) led the van in faultless style. Three unrecognisables followed, then a Morgan (thought to be H. E. K. Sawtell's) steaming badly but going strong.

C. W. Bairstow's Indian sidecar went up very well, leading a long string, including a soloist (? L. Crisp on a Humber) without any lamps at all, and picking a precarious path by the light of a sidecar passenger's electric torch in front. B. F. G. Fowkes (349 Beardmore B. and S.) was sure but slow, so slow that balancing must have been difficult. The Scott Sociable had a healthy hum but also was slow; apparently its occupants feared wheel-slip, for the passenger crouched over on top of the driver.

One of the new B.S.A.'s was excellent, as also was a Cotton and a Wooler, but another Wooler was seen to run up the bank higher up. The same fate, at the same spot, overtook C. W. Dickenson (498 Ariel).

After much clutch-slipping C. L. Sprosen (348 Connaught sc.) stopped temporarily right on the brow of the hill, and P. W. White's 700 c.c. Raleigh sidecar petered out just behind. R. Pugh's 499 c.c. Triumph sidecar made a particularly fine climb, but what looked like L. V. Freeman's big Sunbeam outfit nearly brought a fast ascent to an inglorious end owing to wheel-spin.

L. W. Goddard (993 Matchless sc.) failed absolutely, but eventually got away under power. The last of the motor cyclists positively observed to fail was E. Eland (225 Royal Enfield).

When darkness settled down once more and the last observer was about to move away, No. 13, E. A. Marks (349 A.J.S.), turned up and decided to retire, having experienced the lack of stability on grease usually accompanying such a number if mechanical troubles remain absent!

The most difficult check of the day came a few hundred yards after Kop, and although there were no more serious obstacles between here and the finish, spills were still common. F. V. Edward's flat twin Harley, for instance, refused to recognise that the trial was over after Watford, and executed a spectacular spill on the Edgware tramlines.

F. V. Edwards (548 Harley-Davidson) and F. M. Gwynn (348 Grigg) leading a file of solo riders up Whyteleaf.

"THE MOTOR CYCLE" FILM.

CONGRATULATORY letters continue to reach us from secretaries of clubs and institutions which have had *The Motor Cycle* film.

Considerable enthusiasm was displayed by the audience at the Cosy Cinema, Queen's Ferry, near Chester, where, the manager informs us, the film was received with loud applause by the audience, many of whom had ridden from Wrexham, a distance of 12½ miles, on purpose to see it.

The Widnes M.C. was more than delighted with the film, which was shown to a packed house, and a member of the audience was heard to remark that the film was all that could be desired but it was a pity there was no noise! The secretary has made application for next film for an early date in 1924.

The members of the Altrincham County High School Old Boys' Club followed the races for the Tourist Trophy with the keenest interest, while gyrations of sidecar drivers in a trial over very muddy roads caused plenty of amusement.

Not only is the 1922 film in circulation, but applications are occasionally received for last year's. This was the case with the Eton College Scientific Society, whose secretary writes:—"Everyone who saw the film thoroughly appreciated it, and a vote of thanks to you for loaning it was carried unanimously." Eton will have the 1922 film at a later date. The Barrow and Dist. M.C. and the Loughborough and Dist. M.C. have also been allotted both the 1921 and 1922 films.

Of the southern film, the secretary of the Blaina and District M.C.C. states that everybody was highly pleased and that *The Motor Cycle* film was the best picture on the programme.

Where to See the Film.

Southern Film.

THURSDAY, December 21st.—West Kent M.C., Grand Hall Cinema, High Street, Bromley.

FRIDAY, December 22nd.—Ashford M.C. and L.C.C., Palace Cinema, Tufton Street, Ashford.

THURSDAY, December 28th.—Norfolk M.C. and L.C.C., Theatre de Luxe, Norwich.

Northern Film.

THURSDAY, December 21st.—Saltcoats and District M.C.C., La Scala Picture House, Saltcoats.

FRIDAY, December 22nd.—Montrose and District M.C.C., The Municipal Cinema, Burgh Hall, Montrose.

TUESDAY, December 26th (Boxing Day).—Inverurie M.C., Town Hall.

By H. MORTIMER BATTEN, F.Z.S.

Illustrations by Le Ray.

Reminiscences of Christmas in Other Lands.

"Hi, you laddie with the red motor cycle! Your turn!"

A huge log fire, all alone in the great grey loneliness. It is Christmas. Ruddy faces brighten and glow like burnished copper in the ruddy light. Somewhere a coyote howls, and, as though in response to the wild, thin cry, the man with the mouth organ plays a few silver notes. They melt off into the infinite, vague and vast and all around——melt like the cry of a gull in the wake of a liner. Our own voices seem minute, so great is that great grey loneliness, and, peering round at the desert and the stars and the buttress of distant blue hills, we wonder how we dare to be here—such minute atoms of creation, such creeping, crawling things on the face of God's great work.

Round the Camp Fire.

"Kick it in, son!" says the man who had spoken previously. Seated on a log nearest the fire, he is chairman of the proceedings. "The tale of a woman. Good or bad, any woman you have known. There ain't likely to be more than one. It's your turn, you with the red motor cycle."

So there is nothing for it but to kick it in—the tale of a schoolgirl and her governess, and of the *café* girl who hadn't panned out just as a nice *café* girl should—the *café* girl who went limp after pushing a sidecar outfit only 7 miles. I coughed the story out, and the silence closed again. The man with the mouth organ ran his lips back and forth along it, finishing with a significant "pom-pom." Then he polished it carefully, and for the twentieth time that evening he restored the precious little weapon to his shirt pocket.

"That's all?" queried the president.

"That's all, Bill."

"Well, you haven't seen much. Your turn, Panhandle Jake. Remember, it's Christmas, and we don't want no murders."

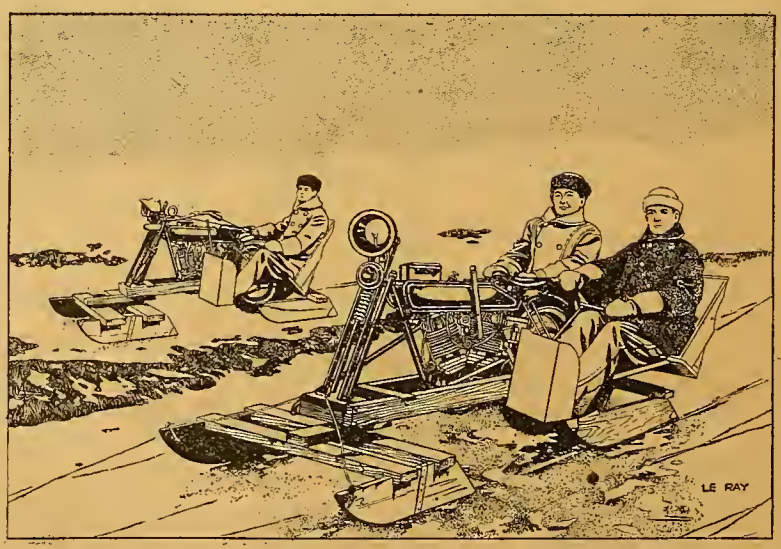
"I ain't never loved but one girl," says Panhandle. "She stuck to me faithfully ten years, and when she died, after eating a chunk of poison, she licked my hand and wagged her tail. That's better'n all your women!" . . .

There were other stories, of course, and my turn came again, but I was silent. The best I could have told them was something they had witnessed themselves.

* * * * * *

Snow, please! Mr. Comp., daub on plenty of snow. Nothing but snow from skyline to skyline, vaster even than the great deserts of the South, immeasurably vast, inconceivably vast, and unspeakably desolate. The spruces are snow-laden, and now and then one of them half a mile away snaps like a pistol shot. The party on the ice turn instantly, for the smallest of sounds becomes great in a silence so vast and tangible as this.

Our own voices do not break the silence. It is too



"This is a new institution in the North country, and one which is gaining in popularity—the motor cycle sled.

Northern Lights.—

profound, too impenetrable. They merely accentuate it, for this is Christmas under Northern skies.

Spring will come some day, rushing savagely across a glaring sky—spring, with its mud and its damp and its flies. The vast icefields will boom and crash asunder; millions of tons of ice, piled mountain high, will grind pack after pack out of the creeks and rivers and into the sea. The southern prairies have their glare and desolation, but in the vastness of this great white world there is an immeasurable something which crushes a man into the innermost recesses of his own soul, like no other land in existence, save possibly the South Pole.

A Real Sport.

But the party on the ice is by no means crushed. A dozen long, narrow sledges are arrayed in line. Each carries aboard a motor cycle, complete save for its front wheel. The rear wheel in one or two cases has been removed, for one can supply whatever method one likes for the purpose of propelling the vehicle over the snow and ice. This is a new institution in the North country and one which is gaining in popularity—the motor cycle sled race.

At sunrise we are off, each with his passenger. Two hours later we switch on our dynamos because it is night again. Accumulators have been discarded as unnecessary weight. Our single headlamp is equipped with a bulb which will stand any voltage that the dynamo in direct circuit is likely to generate.

The going at first is deadly. Over most of it we cannot make 5 m.p.h., and that only at the price of repeatedly pushing and hauling. We are outside as often as in. The exhaust pipe glows a dull red in spite of the intense cold—cold so intense that our controls are wrapped with wool, for to touch naked metal with the naked hand would flay the skin like a glowing coal.

Intense Cold.

So we sweat through our sweaters, and the sweat without cakes into solid ice. The very breath freezes as it leaves our lips, to rim the parki hood with sparkling jewels. It is brilliantly moonlight now, and the party which saw us off will be waiting bright and early when sunrise comes again, unless, of course, blizzard renders a finish impossible.

The procession is straggled out during the first 20 miles, and when at last we stop to refill with gasolene the aurora is rustling overhead, like silken banners. We listen for the sound of a neighbour's engine, but there comes to our ears only the distant howling of wolves ranging for game. A long, thin,

"It is Christmas. Ruddy faces brighten and glow like burnished copper in the ruddy light."

Northern Lights.—

wavering cry it is, indescribably melancholy, soft yet sinister, seeming to float through the whole heavens as though a part of the bitter cold, which in turn is a part of the silence.

Soon we are under way again, and the night air sings in our ears as we seek out mile after mile of wind-swept ice. Up to the Lake of the Little Trees, the complete circuit of which has to be made, following the trail of the dog sled sent ahead to mark out the route. Here and there is a square of black cardboard supported on a cleft stick standing upright in the snow. At one place we pass the complete backbone of a deer, cleanly picked by the wolves, stuck up as a sign-post by some traveller, the nose of the skull pointing in the direction he wished to indicate. In a trial of this kind there is no diverting from the route without being discovered by the observers in the rear, for the snow tells its story, each sled leaving the distinctive marks of its runners.

Winning Through.

So twenty hours go by, when suddenly we overtake the marker with his team of malamutes, the only living soul seen so far. He yells and cheers lustily, eagerly urging his dogs in our wake, anxious to finish not far behind the winners. In the end there are only two finishers. The rest have packed up on the way from one cause or another. They drift in days or may be weeks later, having spent the interval caribou hunting.

It is no small affair being a finisher in a sporting event under Northern skies, for Jupiter and Venus drink side by side from the flowing bowl along with bearded dog drivers from the Hudson Bay, forest rangers from the Rainy River, half-breeds from the Athabasca trails, men who count distance not by the mile, but by the hundred miles. Men who would think less of setting out a thousand miles on foot than you and I would of tramping fifty, men whose map is printed in the heavens and who pride themselves on the achievement of manly things in a country made for men.

Yes, here, too, is the same old romantic, wonderful world. Here, where the power to live and to keep alive is all that counts, where the blow-holes and the rotten ice and the wolf packs are one's hourly foes, where heritage is nothing and great possessions less.

Drama.

Here where fortunes change hands in a night, vast sums, tens of thousands, from one ragged adventurer to another under the glare of the flaming arcs. So the stranger watches wide-eyed, watches that grotesque drama of humanity, naked and unashamed, seething about the centres of its gambling hells and drinking halls. But strong fingers close upon one's forearm, and a voice, husky by long unfamiliarity with speech, growls out, "Don't believe it, boy. I've lived here thirty years, and I know. I'm one of the old sour-doughs who packed in from the White Horse Pass, so take the straight tip from me. The women are hell, and the liquor is worse. There ain't no romance about it, so quit before it gets you down!"

True, very true, bearded stranger, but above the clash of that jazz band, beyond the faro tables, there sound the Pipes of Pan.

* * * * * *

But what does it matter?—Peering thus down the Milky-way with its dancing satellites, jazzing to the world-old tune, which is sweet or sad or harsh or soft as we choose to make it—what does it matter when at 7 a.m. each morning one is wakened by a little Milky way of one's own, seated astride one's manly chest and bumping up and down; and when a soft voice in one's ear gently pleads, 'Daddy, dear, do play at Brough Superiors with me. I'se been waiting to make a motor cycle of you since 6 o'clock."

Change.

How things change, and how very far away stands the schoolgirl and the syren of the *café*. I suppose the old scene shifters will go on with their work, pulling down castles, building new ones, piling up mountains, crushing the ice of winter seawards, and so on for just so long. But though they do their worst, may the utterance of the *blasé* fool never break from the lips of those who try to use what little wisdom may be theirs—that there is no romance in life!

INTERNATIONAL MOTOR CONFERENCE.

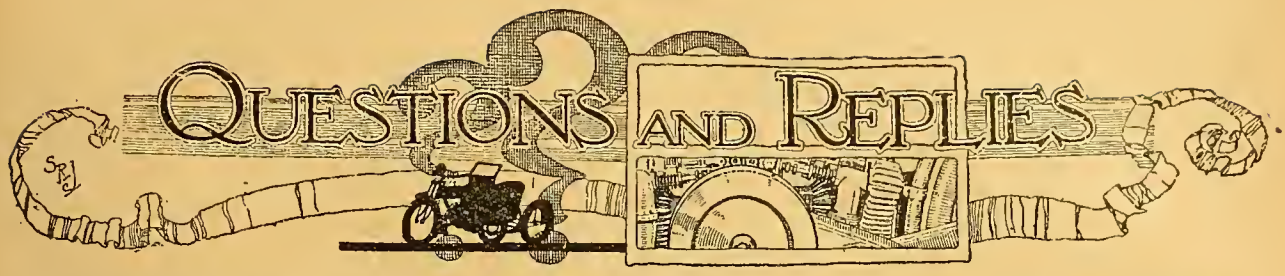
Proposal for Universal Danger Signal. Control of Cycle Cars Reserved to Recognised Car Organisations.

SOME items of interest to motor cyclists arose at the recent conference in London of the International Association of Recognised Automobile Clubs.

On the proposal of the Italian Club, Austria was admitted to the conference, and it is proposed to admit Germany at a later date. These two countries are at present excluded from the International Federation of Motor Cycle Clubs.

The Automobile Clubs of Denmark, Finland, Norway, and Sweden brought forward a proposition for a universal danger signal; it was adopted, although the conference realised that it would take a considerable time before people would abandon their present systems.

As announced in our last issue, the conference adopted the resolution put forward by the Royal Automobile Club that all pleasure motor vehicles of four wheels (including cycle cars) should come under the jurisdiction of the recognised automobile clubs. Three-wheeled cycle cars will, of course, be looked after by the motor cycling bodies. This ruling takes away all possibility of the A.C.U. controlling small four-wheelers in this country.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

LAP DISTANCE AT BROOKLANDS.

(1.) What is the distance of a Brooklands lap? (2.) Who are the owners of Herne Hill racing track, and also what is the address of the owner of Canning Town track?—S.J.

(1.) The distance of one lap at Brooklands Track is 2 miles 1,263 yards. (2.) Herne Hill track is owned by the London County Athletic Club, Burbage Road, Herne Hill, London, S.E., but Canning Town track is no longer in existence.

REMOVING ZENITH BACK WHEEL.

I have been overhauling my machine, a Zenith-Gradua, and cannot get the back wheel, nor the sliding plungers which carry it, out of the frame. What is the best way to get it out?—G.D.A.

You do not give the date of your machine, but if, as may be expected, it is of later manufacture than 1912, the plungers carry the fork ends, and the wheel may be removed by loosening the two axle nuts. If the machine is of 1911 date or earlier, however, the plungers themselves must be removed, as they are screwed on to the axle. Everything in the way of the wheel should be removed, such as mudguard stays, etc., and the caps at the rear ends of the forks taken off, and then the gear should be completely unscrewed beyond its lowest position until the plunger threads are free and the wheel can be withdrawn.

A FOUR-CYLINDER F.N.

(1.) Can I obtain jets for the *breveté* single lever carburetter which is fitted to my F.N. four-cylinder? How does one adjust it to run slowly? It will hardly fire below 10 m.p.h. (2.) Is there any special setting of the valves? The exhaust is set to close as the piston reaches the top of the stroke. What lift should the a.o.i.v. have? (3.) And, lastly, what is the maker's name, and what do the letters F.N. mean?—F.N.

(1.) The word *breveté* merely means patented. We presume the carburetter in question is an F.N. Successful adjustment of the automatic inlet valves and carburetter is the secret of slow running. All air leaks should be eliminated from the induction system. The inlet valve springs should not be too strong if very easy starting is required. (2.) Your idea of setting the exhaust valve is correct, and the inlet valves should have an opening of about $\frac{3}{32}$in. (3.) The machine was manufactured by the Fabrique Nationale d'Armes de Guerre (National Manufactory of Arms), of Liège, hence the initials F.N.

Important Dates.

Tues., Dec. 26th and Wed., Dec. 27th—M.C.C. London-Exeter Run.
Fri., Jan. 5th to Wed., Jan. 24th—Italian Motor Cycle Show
Sat., Jan. 13th to Wed., Jan. 24th—The Belgian Salon.
Fri., Jan. 26th to Sat., Feb. 3rd—Scottish Motor Show.
Sat., Feb. 24th—Colmore Cup Trial.
Wed., March 14th—A.C.U. Stock Machine Trial.
Sat., Mar. 17th—Victory Cup Trial.
Fri., Mar. 30th and Sat., Mar. 31st—M.C.C. London-Land's End Run.
Fri., May 18th—M.C.C. London-Edinburgh Run.
Mon., June 11th—Junior T.T. Race.
Wed., June 13th—Lightweight T.T Race and Sidecar T.T. Race.
Fri., June 15th—Senior T.T. Race.
Sat., July 21st—B.M.C.R.C. 500 Miles Race.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, "THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.

CONVERTING A LIGHTING-IGNITION UNIT.

Is a single cylinder Maglita machine (of the heavy type) suitable for three lights, electric horn and ignition? At present it is running at engine speed and giving two sparks, one at firing stroke the other at exhaust. Is it possible to convert this machine for use with a twin-cylinder engine? Presumably I shall have to replace the present cam-ring with one having two cams, but do not understand how I can tap the high tension winding to obtain two sparks in the four strokes.—J.S.

The Maglita can only be used for twin cylinder engines with cylinders set at 180 degrees. It still must run at engine speed and only one high tension lead is taken out from the winding, this is led to a distributor fixed on the contact breaker end of the armature spindle and the two wires to the plugs are led from the distributor cap. If it is for a flat twin that you wish to convert it the makers would supply all the necessary parts and you should not have any great difficulty in fitting them.

INVOLVED RESPONSIBILITIES.

While riding a sidecar outfit which was forwarded to me by a garage for inspection and trial under trade numbers I was stopped by the police, who noted that the trade plates had not the licence in the triangle provided for that purpose (the garage proprietor had the licence in his possession), that the front brake had one block missing, but was otherwise fairly effective, that my licence had expired two days, and that the machine had an old private licence expired December 31st, 1921 (which should have been returned) in the holder. What is my position?—A.D.

As the machine was presumably the property of the garage owners who supplied it to you for trial, the responsibility for the illegally used trade numbers and the defective brake should be theirs, although, of course, you would in part be responsible for taking it on the road in a condition which did not comply with the law. The fact that your licence had expired is your own responsibility, of course, and the police will be in order if they summon you on this ground. It was the duty of the last owner to return the expired licence.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"R.A.M." (Crawley).—349 c.c. sports A.J.S., 490 c.c. Norton, 490 c.c. o.h.v. Norton, and 496 c.c. B.S.A.

"T.S.L." (Treffgarne).—499 c.c. Triumph or 490 c.c. Norton: suitability for rough roads.

"F.F." (South Woodford).—211 c.c. Sirrah, 245 c.c. Calthorpe.

"A.P.L." (N. Kensington).—211 c.c. Levis ("Popular" model 1920 and 1921): weight with usual equipment.

"J.H." (Durham).—550 c.c. Triumph, 700 c.c. B.S.A., 678 c.c. Martinsyde, and 796 c.c. Ariel sidecars: occasional solo use; strength of frame and sidecar connections.

"G.W.R." (Leith).—550 c.c. Triumph: comfort and suitability for middle-aged rider.

"J.L." (Preston).—Binks three-jet carburetter on 976 c.c. Royal Enfield.

"E.R.W." (Headingley). — 292 c.c. Hawker: automatic lubrication.

"N.A.V." (Wrexham).—486 c.c. Scott Squirrel (1922 model): stability on tramlines and stone setts.

"T.T." (Warwick).—Old 499 c.c. B.S.A. engine: tuning for speed and fitting of Ricardo piston.

"P.H.S." (Bridport).—370 c.c. Connaught sidecar, 349 c.c. A.J.S. sidecar, 398 c.c. Raleigh sidecar, 348 c.c. Ivy sidecar, and 292 c.c. O.K. sidecar.

"W.H.B." (Manchester). — F.E.W. valve attachments on 550 c.c. Triumph.

"J.B.S." (Horbury).—650 c.c. Zenith (sports model): belt wear.

SPARKLETS

Admiralty Contract.

A contract for the well-known Kaye's serrated steel oil cans has been effected with the Admiralty.

Price Reduction.

The price of the 545 c.c. Hawker sidecar outfit has been reduced from £105 to £99 15s.

For Christmas.

Several clever little tricks can be effected with five playing cards which may be had from the Leicester Rubber Co., Ltd., Post Office Place, Leicester.

Guarding Against Punctures.

A machine on which Jackson's Impervo is to be standardised is the Morgan. The inner tube on the wheel will be filled with this puncture sealing compound.

Lost.

Near Kirriemuir, an acetylene lamp loaned to rider of a New Gerrard travelling to Montrose, and not returned. Ref. 118.

The Toronto Fair.

On previous occasions the major portion of the goods exhibited at the Toronto Fair have been of Canadian or American origin, and this is to be regretted, as the participation of English firms should be much greater on account of the opportunities for British business in Canada which exist. Information concerning the Toronto Fair can be obtained from the Federation of British Industries, 39, St. James' Street, London, S.W.1.

Christmas Holiday Motoring.

On Christmas Day there will be no A.A. road patrols on duty, but during the rest of the holiday season they will be at their posts in full strength.

Toolmaking Instruction.

Those preparing for the manufacturing side of the motor trade may be glad to know that the Polytechnic Education Department, 309, Regent Street, London, W.1, has a class for instruction in jig and tool design.

Another Proprietary Flat-twin.

Up to the present, proprietary engine makers have confined themselves in the smaller sizes to singles and V twins. A flat-twin Bradshaw engine of 494 c.c. is now marketed by James Walmsley and Co., Ltd., of Preston, which should be eminently suitable for sports models.

Diary for Motorists.

Included in the well-known series of Charles Letts' specialised diaries is a new one for the motorist, published jointly by Charles Letts and Co. and the A.A. (price 2s.). It contains much useful information, and, with tabular spaces for running costs, forms a very complete motorist's log-book.

More 1923 Prices.

To our classified list of motor cycles must be added the 538 c.c. Stanger two-stroke, the prices for which are as follows:—Spring frame (all-chain drive), £99 9s.; (chain-cum-belt drive), £88 4s.; rigid frame (all-chain drive), £90 6s.; (chain-cum-belt), £85 1s. Sidecar, £21 extra.

Catalogues Received.

Martinsyde Ltd., Maybury Hill, Woking, Surrey.—1923 Martinsyde catalogue.

Trump Motors, Ltd., Foxlake Works, Byfleet, Surrey.—List of Trump motor bicycles.

Douglas Motors, Ltd., Kingswood, Bristol.—Catalogue of the Douglas flat-twins, also three folders relating to Douglas record and racing performances.

Grindlay (Coventry), Ltd., Melbourne Works, Coventry.—Folder giving particulars and prices of Grindlay sidecars and sidecar screens, luggage carriers, and hoods.

HOW THEY ADVERTISE IN AMERICA.

A sign that gives a brief history of the district in addition to serving its purpose as an advertisement. The page on the left says that in 1853 Lieut. R. S. Williamson, on investigating the feasibility of railroad routes to the coast, entered the Colorado desert through San Gorgonio Pass, the first stop being at Palm Springs. In Great Britain there is strong prejudice against obtrusive advertisements in places of natural beauty.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle" by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box ooo, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. ooo, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

£46.—1920 T.T. A.B.C., very fast, recently overhauled Sopwiths, lamps, Klaxon, Watford, tools, spares, etc., perfect throughout; bargain.—Rae, 88, Fitzjohns Av., Hampstead. (D) [5701

The Sign of G Good Service

A Real Good Time
to You and Yours
This Christmas

May Yule logs blaze upon your hearth and in the glowing embers of your fire may you see many pleasant pictures of the coming 1923 Season.

Have you realised what a wonderful year 1923 will be for Motor Cyclists?

Prices reduced to zero and stabilised for the season, the certainty of better and wider roads, and the prospect of cheaper petrol and lighter taxation.

All these pleasant pictures stand out bright and clear this Christmas with just one flickering warning "Tempus Fugit." Time flies, so to avoid disappointment place your order now.

To all Fellow Motor Cyclists
A Merry Christmas
and a
Prosperous New Year

With our sincere thanks to all those good friends of ours both at home and overseas for their continued support.

It was their support and recommendations that first inspired that old slogan of ours:—

"Our sales increase our friends,
Our friends increase our sales,"

and which will continue to be the inspiration of Godfrey's service to all their customers during the coming year.

GODFREY'S Ltd.
208, GT. PORTLAND ST., LONDON, W.1.
'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1920, mileage 6,000, lamps, horn, speedometer, spares; £55.—Pinchbeck, "Stoneleigh," Eaton Rd., Sutton. [5193

A.B.C. Combination, 1920, fitted with coachbuilt sidecar, Easting windscreen, lamps, horn, etc.; bargain, £60 cash.—Cass's Motor Mart, Ltd., 6, Warren St., W.1. Museum 623. [5035

Spare Parts:

A.B.C.—All Spares from Stock.—Maudes', 100, Great Portland St., W.1. [5693

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0964

Abingdon.

ABINGDON 3½h.p. 2-speed Combination, equipped, perfect; £20.—17, Heaton Rd., Mitcham. [5372

Ace.

ROBERTSONS Motors, Ltd., the British Concessionnaires for this wonderful Ace machine, invite inspection of the latest models; £125 with full electric equipment.—157B, Great Portland St., W.1. [4883

A.J.S.

PREMIER Motor Co. for 1923 A.J.S.

IMMEDIATE delivery of latest A.J.S. models; received from makers' works this week; model B 2¾h.p. standard touring, £77; model B1 2¾h.p. Sports, £77; 7h.p. sidecar combination, electric lighting, horn, windscreen, £152/10; deferred payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5595

A.J.S. late 1922 2¾h.p. Sports, all on, tax paid; £55.—Harper, Craven Arms. [5006

A.J.S. Models.—Dispatch Riders' Motor Cycle Specialists, Leamington Spa. [5037

BRAND new 2¾h.p. A.J.S. touring model; £73.—Cross, Agent, Rotherham. [5405

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries.—Clifford Motories, Eastwood, Notts. [4098

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

A.J.S. Combination, late 1919, complete; £72.—40, Replingham Rd., S.W.18. Putney 1694. [5207

A.J.S. Late 1921 7h.p. Combination, complete, little used, guaranteed perfect.—Moss, Wem. [5529

A.J.S., 2¾h.p., 1923 models, for immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0974

4h.p. A.J.S. Twin Combination, good condition; £65, offers.—Waterloo House, North Cheam. [5230

F.O.C.H. invite inspection; A.J.S. and other makes; bargains 5, Heath St., Hampstead (near Tube). [1375

50 Guineas.—1922 2¾h.p. A.J.S. Touring, 3-speed, clutch, K.S., as new.—King, Egrove, Oxford. [5313

A.J.S. 1921 2¾h.p., 3 speeds, lamps, horn, speedometer, absolutely as new; £48.—Davies, St. Mary's St., Coventry. [5707

BRAND New 2¾h.p. A.J.S.; list price £77; our price, to clear, £70.—Jones Garage, A.J.S. Agents, Muswell Hill, London. [0803

SOUTHPORT.—Immediate delivery, 1923 models, A.J.S., o.h.v., shortly; exchanges.—Kents, 417, Lord St., Southport. [5427

A.J.S. Agents for Harrow and District; let us quote you for allowance and later delivery.—Bunting's Exchange, Wealdstone. [5424

A.J.S. 2¾h.p. 1922, model B.1, new, shop-soiled; £65.—Fredrics and Co., Ltd., 89, Great Portland St., London, W.1. Tel.: 1601 Langham. [5466

LATE 1921 A.J.S. Combination 7h.p., low mileage, warranted perfect, insured; 100 guineas.—The Haven, 120, Sutherland Rd., W. Croydon. [5490

A.J.S.—Immediate delivery; 2¾h.p. touring, £77; 2¾h.p. Sports, £77; 7h.p. Combination, £152/10.—Will Chapman's Garage, Belgrave Rd., Leicester. [2816

1922 2¾h.p. A.J.S. B.1, equipped, mileage under 500, indistinguishable from new; £65.—Homae's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5474

1915 4h.p. A.J.S. Combination, lamps, horn, spare wheel, licensed; a genuine bargain; £36, exchanges.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5545

A.J.S. 6h.p. Combination, 1920, speedometer, windscreen, luggage grid, etc.; £90; perfect order.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), Bond St., W.1. Mayfair 6559. [5033

MOTOR CYCLES FOR SALE.

A.J.S.

1923 A.J.S. 2¾h.p. Touring, disc, acetylene lighting, horn, legshields, ridden once 30 miles, cost £88 last week; sell £80.—Major Romer, Little Orchard, Denham, Bucks. [5178

1919 (late) 8h.p. A.J.S. Combination, speedometer, spare wheel, screen, luggage grid, beautiful lot; £75; exchanges.—Hillier (side bell), 127, St. Marks Rd., North Kensington. [5263

7h.p. A.J.S. Combination 1921, Lucas electric horn and lighting, Cowey speedometer, screen and side screen, spare wheel, legshields, splendid condition; £115. —Thomson, 5, Oaks Crescent, Wolverhampton. [5131

A.J.S. 1921 Combination, superb condition, supreme value, numerous accessories, dynamo, speedometer, variable jet, spare wheel, Triplex screen, etc; best offer near £125.—Wilder, Newbarn, Winkfield, Windsor. [5028

LATE 1920 A.J.S. Combination with special engine, Lucas Magdynamo lighting set, hood, screen, tyres unpunctured, perfect and in first-class condition; £100.—Letters for appointment to 30, Golders Gardens, N.W.11. [4414

A.J.S. 1922, 7h.p., Magdyno Combination, fitted with 2-seater sidecar, magnificently equipped with electric horn, speedometer, mirror, legshields, two screens, hood, luggage carrier, etc.; exceptionally fine condition; £145, or near offer.—The Layton Garages, 30, Holywell St., Oxford. [5588

A.J.S. new 1923 models in stock for immediate delivery. 7h.p. Combination, Magdyno lighting, etc., £152/10; 2¾h.p. 3-speed, all-chain drive, £77; deliveries of the 70 miles per hour 2¾h.p. O.H.V. model, price £87, commence shortly.—Avoid disappointment by placing your order with P. J. Evans, John Bright St., Birmingham. [5147

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alecto.

3½h.p. Alecto 2-stroke single, shop-soiled, replated, as new; bargain, £35.—Apply Tomlinson, 18, Taunton Rd., Lee Green, S.E.12. [5678

Alldays.

1921 Alldays Allon, 2-speed, K.S., very smart; 27 guineas.—67, Fernlea Rd., Balham. [5663

ALLON 1922, 2-speed, clutch, kick-start, practically new, accessories; £35.—120, Fairbridge Rd., Highgate, N.19. [5380

£24, Offer.—2¾h.p. Alldays Allon, new condition, perfect; take push cycle part.—97, Elsenham St., Southfields, S.W.18. [5365

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £33.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [3267

ALLON 2-stroke, 2-speed, clutch, kick-starter, lamps, overhauled, recent model, exceptional condition; £35.—Marlborough (Motor House), 20, Finchley Rd., N.W.8. [6561

1922 Allon 2¾h.p., 2-speed, clutch, kick-start, Villars electric lighting, Tan-Sad, delivered March, practically new, genuine bargain; £50, or near.—Potter, 7, Kensing Rd., East Greenwich, S.E. [4994

American X

ROBERTSONS Motors, Ltd.—1921 American X Combination, complete with all accessories; £72.—157B, Great Portland St., W.1. [4880

1920 7-9h.p. American X 2-seater Combination, lamps, horn, speedometer, 2 screens, hood, luggage grid, beautiful condition; £62, exchanges and easy payments.—Bambers, 2, Eastbank St. Southport. 'Phone: 607. [5549

Ariel.

SOUTHPORT.—1921 3½h.p. Ariel, lamps, horn, tax paid, excellent condition; 49 guineas; exchanges.—Kents, 417, Lord St., Southport. [5429

ARIEL.—All models cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

BRAND New 3½h.p. Sports Ariel, 3-speed, handlebar controlled clutch; list price £70; our price, to clear, £65.—Jones Garage, Ariel Agents, Muswell Hill, London. [0804

BRAND New 6-7h.p. Ariel Combination, chain drive, a luxurious outfit; list price £124/10; our price, to clear, £114/10.—Jones Garage, Ariel Agents, Muswell Hill, London. [0985

1920 6-7h.p. Ariel Combination, fully equipped, speedometer, Easting windscreen, excellent condition; 65 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [1856

BRAND New 6-7h.p. Ariel Combination, chain drive, a beautiful outfit, complete with Lucas Magdyno lighting; list price £141; our price, to clear, £130.—Jones Garage, Ariel Agents, Muswell Hill, London. [0986

Spare Parts:

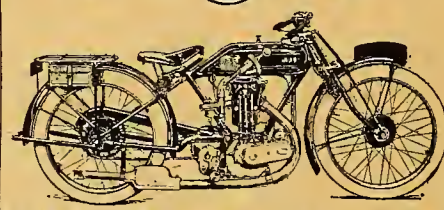
ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0999

GET IT AT

TAYLORS

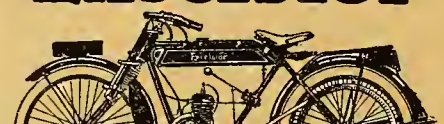
Largest Suppliers and Service Agents in the United Kingdom and Sole London and District Agents for the following machines:—

A·J·S



A.J.S. 2¾ h.p. T.T. Model, Overhead Valves £87
A.J.S. 2¾ h.p. Sports or Tourist.. .. .. .. £77
A.J.S. 7 h.p. De Luxe Comb., with Dynamo Lighting .. .. £152 10s.

"Excelsior"

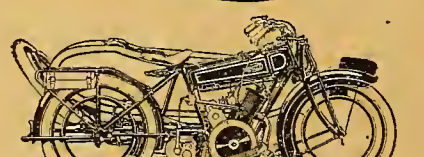


NEW 1¼ h.p. 2-Seater (Villiers) with countershaft 2-speed gear .. .. **£28 10s.**
Villiers lighting 30/-, Clutch and k/s. £3 10s. extra.

8 h.p. J.A.P. Popular Twin. Solo £103 Comb. £123
6 h.p. Ditto .. .. £98 .. £118
2¾ h.p. Blackburne, 3-Speed £67
2¾ h.p. Sporting J.A.P. £67
2½ h.p. Two-Stroke (Villiers) Sporting Model .. £48

DUNELT

TWO-STROKE



The 500 c.c. Dunelt has proved its wonderful reliability, and at its new price—£89 10s. for complete combination—it defies competition.

Any make of machine supplied for CASH, DEFERRED or EXCHANGE.

H. TAYLOR & CO., LTD.
21a, Store Street, Tottenham Court Road, W.C.1
52-53, Sussex Place, South Kensington, S.W.7.
Telephones: Kensington 7260; Museum 1240.
Telegrams: "Dynametro, Westcent, London."

MOTOR CYCLES FOR SALE.

Armis.

ARMIS-J.A.P. 1922 2¾h.p., absolutely new, with Burman 2-speed gear box, clutch, and kick-starter, Dunlop tyres, Saxon fork; £45, carriage paid.—Lynes, 77, Moor St., Coventry. [5124

Beardmore.

1921 Beardmore-Precision, kick-start, new condition; £32.—Wm. Colwell, 57, George St., Hove. [5082

BEARDMORE, brand new, spring frame; £45.—S. E. Porter and Co., Whitchurch, Salop. [5096

Spare Parts:

BEARDMORE-PRECISION Spares. Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

Blackburne.

BLACKBURNE Combination, late 1920, 4h.p., in excellent condition; 55 guineas.—Barker's Motors, 194, Balham High Rd., S.W.12. [5091

BLACKBURNE 1921 4½h.p. Combination, electric lighting, screen, tools, insured; £65 cash.—Apply, Housekeeper, 40, Great Tower St., E.C. [5176

BLACKBURNE 1920 4h.p. Combination, accessories, windscreen, beautiful condition; bargain, £50.—Allery and Bernard, 30, Thornsett Rd., Earlsfield, London, S.W. [4885

1921 Blackburne-Rex 8h.p., luxurious cantilever sprung sidecar, spare wheel, luggage platform, Cox-Atmos carburetter, speedometer, D.A. and electric lighting, spring saddle pillar, fur muffs, 1922 front band brake, new chains, spares, etc.—Write 14, Woodside, Wimbledon. [5509

Spare Parts:

BLACKBURNE Engine Spares. List on application.—Maudes', 100, Great Portland St., W.1. [5694

Bloomfield.

4h.p. Bloomfield Motor Cycle and sidecar, 3-speed, clutch model, Binks carburetter, as new; £35.—1, Parade Mews, Tulse Hill, S.E. [5635

Bradbury.

2¾h.p. 1922 Bradbury, all on; £35.—Wauchope's, 9, Shoe Lane, London. [5609

4h.p. Bradbury, running order, single speed; £12.—A. Lomas, Chamber, Peak Forest, via Stockport. [5077

4h.p. Bradbury, N.S.U. 2-speed, good tyres, fully equipped, all in sound condition and good running order; £16.—62A, New St., Woodbridge, Suffolk. [5243

BRADBURY 1921 6h.p. Combination, De Luxe sidecar, splendid condition, great bargain; £68.—Particulars, Hughes, 101, Christchurch Rd., Newport, Mon. [5071

1922 Bradbury 4h.p., 3-speed, clutch, kick-starter, licensed year, fully equipped, indistinguishable from new; £65; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [2285

Spare Parts:

BRADBURY Spare Parts; lists free.—Bright and Hayles, 78, Church St., Camberwell. [5222

Brough Superior.

BROUGH SUPERIOR, late 1922, Mary 11., 6/5h.p. M.A.G., fitted with Montgomery sporting sidecar, complete, like new, guaranteed.—Moss, Wem. [5528

SOUTHPORT.—Olympia actual Show models, Mark I. and Mark II., Brough Superior; instant delivery; £130 and £115 respectively; unique opportunity; exchanges.—Kents, 417, Lord St., Southport. [5430

ALLEN-BENNETT Motor Co., Ltd., Brough Superior Service, and sole London distributing agents, immediate delivery, full range of models in stock, excellent selection of carefully used machines; deferred payments and exchanges. Trade supplied, catalogues post free on request.—9, 10, 11, Royal Parade, West Croydon. 'Phone: 2450, 2451. 'Grams: "Track, Croydon." [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

B.S.A.

PROMPTEST Deliveries of 1923 Models.—The B.S.A. specialists.

COUNTY Cycle and Motor Co. Ltd., Broad St., Birmingham. [3162

B.S.A. 1920 Combination (Sept.), all-chain; offers.—Oakley, Stonnall, Walsall. [4328

1916 B.S.A., 3-speed, K.S. and clutch, new condition; £48.—Ross, 86, High Rd., Lee. [5273

B.S.A. 4½h.p. Combination, 3-speed, kick-starter, all accessories; £45.—Male, Hendford, Yeovil. [5503

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. model sports, £70.—Clifford Motories, Eastwood, Notts. [4099

4¼h.p. B.S.A. 1922 Combination, K2, shop-soiled; £90.—Wauchope's, 9, Shoe Lane, Fleet St., E.C.4. [5624

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Edmund.

1922 Spring Frame Edmund Combination, Blackburne engine, Burman 3-speed, clutch, kick-starter, lamps, speedometer, horn etc., brand new; £25 sidecar, wonderful condition; gift at £75; would separate if necessary.—The Motor House, Ltd., 20, Finchley Rd., N.W.8. [3401

Elswick.

ELSWICK Coachbuilt Combination, 3 speeds, hand, foot clutch, as new, guaranteed; £28, exchange, offers.—7, Cowdrey Rd., Wimbledon. [5502

Enfield.

PREMIER Motor Co. for 1923 Enfields.

IMMEDIATE delivery from stock of latest models received from makers' works this week; lightweight 2¼b.p., 2-speed, kick-start £50; standard 8h.p combination, £120; 8h.p. combination with electric lighting, horn, £135; deferred payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5596

ENFIELD 2¼h.p., perfect running order, appearance new, photo, sacrifice; £15.—Mackay, Haresden, Ansan. [5165

1920-21 Enfield Combination, 8h.p., magnificently equipped; 68 guineas.—67, Fernlea Rd., Balham. Exchanges. [5662

ENFIELD 2¼h.p. 1921, perfect condition; £33.—Evans, 4, Cintra Park Mansions, Church Rd., Upper Norwood. [4997

ENFIELD Combination, 1917, not W.D., perfect condition; £48.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3344

1920 2¼h.p. Royal Enfield, 100 miles per gallon; £32/10.—Wauchope's, 9, Shoe Lane, London Extended payments. [5614

ENFIELDS.—Delivery from stock of all 1923 models from the Enfield agents, The Layton Garages, 30, Holywell St., Oxford. [4778

AT Edwards.—1920 8h.p. Enfield Combination, lamps, horn, pillion seat and spedometer, tax paid, superb condition; 70 guineas.—Below.

1913 2¾h.p. Enfield Twin, 2-speed and clutch, good condition; 15 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [5591

PRACTICALLY New Enfield Combination, dynamo, every possible accessory; £95; exchanges.—24, Balliol Rd., North Kensington. [5357

NEW Enfield Combinations in stock, dynamo lighting; £135, exchanges or easy payments.—Bounds Garage, 223, High Rd., Kilburn. [0982

BRAND New Enfield Combination 8h.p.; list price £120; our price, to clear, £110.—Jones Garage, Enfield Agents, Muswell Hill, London. [0809

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175a, London Rd., Croydon. 'Phone: 1619. [5600

BRAND New Enfield 2-stroke, 2-speed, kick-start; list price, £50; our price to clear, £47/10.—Jones Garage, Enfield Agents, Muswell Hill, London. [0990

ENFIELD 2¼h.p. 1922, Sports, 2-stroke, T.T. bars, all on, new condition; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5620

ROYAL ENFIELD 3h.p., twin cyl., 2 speeds, all-chain drive, excellent condition; £22/10.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17 'Phone: Wimbledon 607. [5201

ENFIELD-VICKERS 8h.p. Combination, 1922, nnder 2,500 miles, unscratched condition; £85.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), Bond St., W.1. Mayfair 6559. [5032

1921 8h.p. Enfield Combination, electric lamps, speedometer, screen, horn, licensed, excellent condition, unequalled value; £85, exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5548

1920 8h.p. Enfield Combination, dynamo lighting, fully equipped, speedometer, horn, windscreen, hood, absolutely as new; £73.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 2041. [5481

1921 Enfield Combination 8h.p., Lucas dynamo lighting, hood, screen, speedometer, etc., absolutely unscratched, tax paid, perfect; £100; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5471

ENFIELD.—Immediate delivery of all 1923 models. 8h.p. Combination, £120; 2¼h.p. 2-speed, kick-start, all-chain drive, £50.—Write or call for catalogue and ensure satisfaction by placing your order with P. J. Evans, John Bright St., Birmingham. [5150

1917 3h.p. Enfield and Watsonian aluminium sidecar, with dash, Avro screen and board, 2-speed, all-chain, clutch, K.S., mechanical lubrication, 8-guinea Lucas electric lighting, expensively and fully equipped, horn, tools, really posh, condition perfect, photograph; £68; trial.—27, Droomfield Rd., Coventry. [5118

ENFIELD 8h.p. 1922 Tradesmen's Delivery Box Combination, beautifully equipped, as new, £100; 8h.p. 1922 combination, as new, £97/10; 8h.p. 1918 combination, J.A.P., all on, £70; 8h.p. 1916 combination, J.A.P., good order, £65.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5608

The HALIFAX MOTOR EXCHANGE

25, HORTON STREET, HALIFAX.

'Phone: 1400. 'Grams: Perfection.

1923 Models.

DOUGLAS, 2¾ h.p., 2-speed, all on	£50 0
DOUGLAS, 2¾ h.p., 3-speed, all on.....	£85 0
DOUGLAS, 3½ h.p., 3-speed, Sports	£95 0
DOUGLAS, 4 h.p. Comb., all on	£110 0
DOUGLAS, 6 h.p. Comb., all on	£140 0

Also **B.S.A., BRADBURY, EDMUND, ENFIELD, LEVIS, MARTINSYDE, NORTON, O.K., SCOTT, SUNBEAM, SIRRAH and TRIUMPH.**

MORGAN'S, 10 h.p. Popular.....	£128 0
MORGAN, Grand Prix	£155 0
MORGAN, de Luxe	£158 0
MORGAN, Famdy	£153 0

LIGHT CARS.

CALTHORPE, 10.5 h.p., 2-seater	285 gns.
COVENTRY PREMIER, 10 h.p.	230 gns.
LAGONDA, 11 h.p., 2-seater	£275 0
SINGER, 10 h.p., 2- or 4-seater.....	280 gns.
STONELEIGH, 3-seater	£185 0

SECONDHAND BARGAINS.

Overhauled and ready to drive away.

SOLOS.

BUCHET, 3½ h.p., C.A.V. mag.	£17 10
ENFIELD, 1922, 2¼ h.p., 2 sp., new ..	£47 10
HARLEY, 1918, 7-9 h.p., 3-sp., all chain..	£67 10
INDIAN, 7-9 h.p., 2-sp., all-chain.....	£35 0
MOTO REVE, Twin, wants attention....	£9 10
NORTON, 1922, 3¼ h.p., 6H. new	£75 0
NORTON, 1922, Big Four, new.....	£80 0
PREMIER, 3½ h.p., 2-sp., good order....	£29 10
RUDGE-MULTI, 1921, 3½ h.p.....	£47 10
RUDGE-MULTI, 1921, 3½ h.p., like new..	£52 10
REX ACME, 1922, 2¾ h.p., 2-sp., new....	£42 10
TRIUMPH, 1913, 3½ h.p., cl. model.....	£29 10
TRIUMPH, 1922, S.D., new.....	£84 0
TRIUMPH, 1922, 2¾ h.p., new	£40 0
VELOCE, 1920, 3½ h.p., 3-speed	£52 10
VILLIERS, 2½ h.p., 2-sp., c/shaft gear ..	£29 10

PASSENGER MACHINES.

ACE, 1921, 4-cyl. comb., tax paid.....	£97 10
CAMPION-JAP, 5-6 h.p., 3-sp. comb.....	£59 10
HARLEY, 1919, elec. comb., extra good.	£92 10
INDIAN, 7-9, 1921, elec. comb., 4,000 miles	£98 10
RUDGE-MULTI, 1920, 5-6 h.p. comb....	£69 10
SCOTT, 3¾ h.p., 2-sp. comb., tax paid....	£45 0
SCOTT, 1920 comb., screen, etc.....	£69 10
TRIUMPH, 3½ h.p., 2-speed comb.....	£39 10

RUNABOUTS.

H.F.G., 1920, 8-10 h.p., 2-seater, dyn...	£97 10
LAGONDA, 1922, brand new Coupé....	299 gns.
RICHARDSON, 1920, 2-seater, dickey st.	£75 0
RANGER, 8 h.p., 2-seater.....	£65 0
L.S.D., 1922, 3-wheeler.....	£105 0
MORGAN, 1921, G.P., 4-speed.....	£125 0

TRAVEL DE-LUXE.

£10 deposit and 25/- weekly buys

INDIAN, 7-9 h.p., 2-speed, tax paid.....	£35 0
MATCHLESS, 8 h.p. comb., belt drive..	£45 0
NEW HUDSON, 6 h.p., 3-speed comb...	£49 10
P. & M., 3½ h.p., and sidecar.....	£45 0
REX, 5-6 h.p., 2-speed and sidecar.....	£29 10
REX, 1913, 6 h.p., coach comb.....	£42 10
ROVER, 3½ h.p., 3-speed comb.....	£37 10
RUDGE-MULTI, 1920, 5-6 h.p. comb., small mileage	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb., electric lighting	£75 0
SCOTT, 3¾ h.p., 2-speed comb.....	£45 0
SCOTT, 1920 comb., screen.....	£69 10
TRIUMPH, 1920, and sidecar.....	£69 10

MOTOR CYCLES FOR SALE.

Enfield.

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

NEW 1923 Excelsior Lightweights, 2 speeds, wonderful power; £28/10, carriage paid.—Keen, Leominster. [3452

EXCELSIOR 1923 1½h.p., 2-speed; £28/10; in stock.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4876

3½h.p. 1913 Excelsior, good order, tax paid; £25; bicycle part.—Buckingham, 85, Church Rd., Willesden. [5237

G.L.

£55.—G.L.-J.A.P. late 1919, 5h.p. twin, Sturmey-Archer 3-speed, clutch, kick-starter, all-chain, luxurious skiff sidecar, spare wheel and tyre, dynamo lighting, Lucas switchboard with volt and ampere meters, apron, Easting windscreen, Stewart mechanical horn, Cowey speedometer, etc., tax paid.—Delancey Street Garage, Camden Town, N.W.1. [5296

Grigg.

1922 Grigg 2¼h.p., 2-speed, clutch, kick-start, lamps; £22.—17, Sussex Rd., New Malden. [5332

1922 Grigg 2½h.p. 2-speed, Sturmey, kick-start, clutch, brand new; 26 guineas.—51, Upper Richmond Rd., East Putney. [5657

Harley-Davidson.

HARLEY, 1918, Grindlay sidecar, electric lamps, posh condition, plated tank; offers.—"Roydene," The Drive, Sidcup. [5291

39 Guineas.—Harley-Davidson, 1916-17 model, 7-9h.p., clutch, 3 speeds, K.S.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5104

HARLEY-DAVIDSON 1921 4h.p., flat twin, perfect: 52 guineas; exchanges, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3925

HARLEY, £55.—4h.p. flat twin, new Feb., 1922, electric lighting, speedometer, 3-speed, clutch, kick-start, insured, beautiful condition.—11, Warnborough Rd., Oxford. [5441

HARLEY-DAVIDSON Combination 1918, 3 speeds, clutch, kick-starter, Montgomery sporting sidecar, fully equipped, licence; £58; instalments, exchanges.—63, Solon Rd., Brixton. [5282

1923 Harley-Davidson.—All models. Send your orders along and secure immediate or early delivery.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5410

1920 Harley Combination 4h.p., all lamps, horn, speedometer, etc., absolutely as new, guaranteed; £70; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5472

41 Guineas; exchange.—1915 Harley, 3 speeds, clutch, K.S., roomy coachbuilt sidecar, fully equipped, nice condition, any examination.—Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [4090

1923 Harley-Davidson.—Orders for these models will receive the promptest attention from T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744. Exchanges and deferred payments arranged. [5157

HARLEY-DAVIDSON Combination, supplied new by us six weeks ago, fully equipped, perfect condition and very little used; 105 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [5406

1918 Harley 7-9h.p. Combination, perfect, aluminium nose and tail, child seat in locker, hood, screen, disc wheels, oversize tyres, long exhaust, 2 lamp sets, speedometer; £75.—78, High St., Hampstead, N.W.3. [5342

1923 Harley-Davidsons!—Why not exchange your present machine? Good price allowed. Quotations and catalogues on application; immediately worth considering.—"Parwood," Harley Agents, 89, East Hill, Wandsworth. Battersea 443. [5197

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St. Ealing. [4804

HARLEY-DAVIDSON second-hand W.D. Spares, all genuine; competitive prices, practically any parts.—Maudes', 100, Great Portland St., W.1. [5695

WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

Henderson.

LATE 1919-20 Henderson, dynamo, solo, exceptionally fast, 65 m.p.g.; consider cheaper machine and cash.—Seward, Red Hill, Bassett, Southampton. [5327

MOTOR CYCLES FOR SALE.

Henderson.

4-CYL. Henderson, recently overhauled, believed 1918 model, new chain, rear tyre, lended from India, discs, flat bars; £30.—Lt. Bowden, R.A.S.C., Porlock, Somerset. [5079

ROBERTSONS Motors, Ltd.—1920 Henderson Combination, all accessories; £78. 1915 combination, luxurious sidecar, speedometer, accessories, £48.—157B, Great Portland St., W.1. [4878

1921 Henderson Combination, 10h.p., dynamo lighting, fully equipped, smart and powerful, all on; £76.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 2041. [5482

1922 Henderson Combination 11.5h.p., new July 1st, dynamo lighting, Bonniksen speedometer, large bulbous back sidecar with disappearing dickey seat, hood and windscreen, luggage grid, tyres as new, luxurious outfit, no reasonable trial refused; price £135. Apply 87, Heythorp St., Southfields, S.W.18. [5009

Spare Parts:

ROBERTSONS Motors, Ltd., the original Henderson Importers and 4-cyl. experts, specialise in Henderson repairs and the supply of spare parts.—157B, Great Portland St., W.1. [4879

Humber.

HUMBER 2-speed, lamps; £12/10, bargain.—Rhind and Co., Stone place, Rusholme. [4353

HUMBER 2-speed, completely overhauled throughout; complete for £19.—Keen, Leominster. [5209

HUMBER 3½h.p., powerful, modernised; £14; cycle part exchange.—Box 5147, c/o *The Motor Cycle*. [5325

1922 Sports Humber, 6 months old, 70 m.p.h. machine, as new; £67/10.—Bates, 19, Albany Rd., Coventry. [5506

1922 Humber 4½h.p., exceptional condition, fully equipped; £75, or near offer.—Allday, Thurlock Row, Twyford, Berks. [5143

3½h.p. Humber, 2-speed, free engine, perfect, and like new.—John Edwards, Co-operative Terrace, Trimdon Grange, Co. Durham. [5377

HUMBER 1921 4½h.p. Combination, lamps, horn, etc., in new condition; £67/10.—Davies' Motor Agency, St. Mary's St., Coventry. [5709

3½h.p. Humber 1911, direct belt drive, good running order, tax paid; £20; bicycle part.—Buckingham, 85, Church Rd., Willesden. [5238

HUMBER 4h.p. Combination, 3 speeds, clutch, kick-start, windscreen, accessories, splendid condition; £32.—Allery and Bernard, 30, Thornsett Rd., Earlsfield, London, S.W. [4884

HUMBER Flat Twin.—Place your order now for early delivery of the sports model; £89; and the 2¾h.p. model at £65.—The Layton Garages, 30, Holywell St., Oxford. [4785

HUMBER 1921 Combination 4½h.p., Brooks cantilever, Easting, fully equipped, tyres good; owner buying car; cost £200; accept £90, or near offer.—Mead, Woodford Green. 'Phone: 363 Woodford. [5022

Indian.

INDIAN Racer, 5-6h.p., 2-speed, superb condition; £22.—99, Tynemouth Rd., Mitcham. [5375

1916 Powerplus Indian Combination, dynamo lighting, nice order; £50.—Ross, 86, High Rd., Lee. [5276

INDIAN 7-9h.p. Spring Frame Combination, £32. Machine only, £25.—17, Heaton Rd., Mitcham. [5370

1914 spring frame, 2-speed Indian Combination, exchange lighter power; sell £32.—42, Coombe Rd., Malden, ur. Kingston. [5137

1923 Indians!—Exchanged for your machine, good allowance made.—"Parwood," Indian Agents, 89, East Hill, Wandsworth. [5196

1921 Dynamo Lighting Indian Combination, 50-guineas sidecar, all as new; £68, or exchange.—67, Fernlea Rd., Balham. [5668

INDIAN Scout Combination, special racing engine, a very smart and fast outfit; £55.—3, Stamford Brook Rd., Hammersmith. [5631

£22, Bargain.—T.T. 7-9h.p. Indian, clutch, electric lamps, Klaxon, discs, ic-enamelled, guaranteed.—89, East Hill, Wandsworth. [5194

£20.—1915 7-9h.p., clutch model Indian, Binks, good tyres, very fast, must sell.—True, 2, Alexandra St., Blaina, Mon. [5364

£38.—Indian 1915-16 5-6h.p., 3 speeds, clutch, kick-starter, fully equipped, licence, splendid condition.—78, Hindman's Rd., East Dulwich. [5283

£60.—Indian Combination 1919, full electrical equipment, windscreen.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [4877

INDIAN Combination, 1919, Powerplus, exceptionally nice condition and appearance; £48, or exchange.—3, Stamford Brook Rd., Hammersmith. [5636

BARGAIN.—Luxurious Powerplus Indian and sidecar, brand new, dynamo lighting, electric horn, spring frame guaranteed; £65.—89, East Hill, Wandsworth. [5195

1920 7-9h.p. Indian Combination, dynamo lighting, electric horn, speedometer, exceptional bargain; £50.—Bambers, 2, Eastbank St., Southport. 'Phone: 807. [5551

Now is the time

to purchase a real good

SECOND-HAND MOTOR CYCLE

at a bargain price, as we must clear out our stock of second-hands to make room for new 1923 models. We have also a few new 1922 machines, delivered recently by the makers, which we are offering at greatly reduced prices.

A FEW SECOND-HAND SOLOS.

ATLAS 1922 1¾ h.p., 2-stroke ..	£22
CEDOS 1920 2¼ h.p., 2-speed ..	£28
DOUGLAS 1916 2⅞ h.p., 2-speed	£30
TRIUMPH 1914 3½ h.p., 3-speed	£32
REX ACME 1922 2⅞ h.p., 2-speed	£40
RUDGE MULTI 1921 3½ h.p. ..	£40
NORTON 1921 3½ h.p., Philipson	£45

—COMBINATIONS.—

A.J.S. 1914 4 h.p., 3-speed ..	£40
B.S.A. 1917 4½ h.p., 3-speed ..	£45
SUNBEAM 1916 3½ h.p., 3-speed	£60
HARLEY DAVIDSON 1917 7/9 h.p.	£72
TRIUMPH 1922 4 h.p., 3-speed	£90

Write NOW for Lists

giving full details of OVER

50 SECOND-HAND and NEW 1922 Motor Cycles

AT CLEARANCE PRICES.

Machines despatched by road or rail—delivery free.

THE PREMIER MOTOR COMPANY

ASTON ROAD, BIRMINGHAM.

Telegrams: "Primus, Birmingham." Telephone: Central 7367 (2 lines).

MOTOR CYCLES FOR SALE.

Indian.

BRAND New 4h.p. Indian Scout, a very neat, low, and attractive mount; list price £96/10; our price to clear, £90.—Jones Garage, Indian Agents, Muswell Hill, London. [0786

INDIAN Combination, 7-9h.p., 1917, with 1919 sidecar, excellent order throughout, many spares and extras, privately owned, any trial; £65.—Pewsey Motor Co., Pewsey, Wilts. [5027

59 Guineas.—1920 (late) 7-9h.p. big valve model Indian Combination, dynamo lighting, speedometer, ammeter, electric horn, screen, mat, tools, etc. —Smith's, 86, Chalk Farm Rd., N.W.8. [6400

Spare Parts:

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list, stating year of manufacture. [0752

INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [3787

Invicta.

1921 Invicta 2¾h.p., 2-speed, fully equipped, licensed, excellent condition; 27 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3339

Ivy.

IVY 2-stroke, new bearings, piston, Dunlop Magnum, new Amac carburetter, horn, perfect running order; £15/10.—Orchardleigh, Leatherhead. [5173

1920-1921 Ivy 2-speed, clutch, K.S., legshields, equipped, perfect condition, mileage under 1,000; sacrifice £40.—Wheeler, Victoria Rd., Shifnal. [5128

IVY Three 1922, 2-speed, clutch, kick-starter, with Watsonian polished aluminium torpedo sidecar, dynamo lighting, mechanical horn, legshields, apron, Easting windscreen, mat, Watford speedometer and toolkit, tax paid, practically brand new and one of the prettiest outfits in England; £55.—Delancey Street Garage, Camden Town, N.W.1. [5297

Spare Parts:

IVY Engine Spares.—Maudes', 100, Great Portland St., W.1. [5696

James.

1920 3½h.p. Twin James, all-chain drive; £34.—24, Balliol Rd., North Kensington. [5355

JAMES 2¼h.p. 1922, 2-speed, kick-start, 2-stroke; 30 guineas.—Wauchope's, 9, Shoe Lane, London. [5618

AT Edwards.—1922 3½h.p. Sports James, equipped, tax paid, indistinguishable from new; 59 guineas. —Below.

1919 3½h.p. Twin James, 3-speed, all-chain drive, equipped lamps, horn, etc.; 36 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4005

1918-19 Twin James Combination, 3-speed, kick-start, fully equipped; £56.—Rhind and Co., Stone Place, Rusholme. [4354

1920 2¼h.p. James, 2-speed, fully equipped, legshields, almost new condition; £26.—62A, New St., Woodbridge, Suffolk. [5246

JAMES 1922 2¼h.p., 2-stroke, 2-speed, kick-starter and clutch, brand new, shop-soiled; £45.—72, Chase Side, Enfield. Tel.: 593. [5020

JAMES Combination 4½h.p., splendid condition, countershaft, 3-speed gear box, all-chain drive; £36.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [5202

Spare Parts:

JAMES Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9449

WHITBY'S.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone; Chiswick 1513. [9777

J.E.S.

9 Guineas, Bargain.—1914-15 J.E.S. Lightweight, splendid condition.—Seabridge, 35, Hansler Rd., East Dulwich, Sydenham 2452. [5581

Kerry.

£8.—3½h.p. Kerry, hand-controlled clutch, M-L magneto, running order.—King, Egrove, Oxford. [5315

Lea-Francis.

LEA-FRANCIS Cycle fitted Simplex connection; £15.—Rhind and Co., Stone Place, Rusholme. [4355

LEA-FRANCIS 1916 3½h.p. Combination, appearance as new, in perfect order; £48.—Davies, St. Mary's St., Coventry. [5711

£35.—3½h.p. Lea-Francis, 2-speed, hand and foot clutch, K.S., equipped lamps, horn, tools, knee grips, rear driven Bonniksen, quick detechable wheels, etc., fast, silent and perfect throughout.—Rae, 88, Fitzjohns Av., Hampstead. (D). [5708

Levis.

LEVIS 2¼h.p., 2-speed; bargain, £18.—Harper, Craven Arms. [5007

MOTOR CYCLES FOR SALE.

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PREMIER Motor Co., the Levis Specialists.

IMMEDIATE delivery of all 1923 Levis models; 2¼h.p. Popular, single gear, £38; Model T, 2¼h.p., 2-speed, clutch, kick-start, £49; the nearest agents to the Levis works; buy direct from the firm on the spot; deferred payments 4 per cent extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4692

1919 Levis 2¼h.p. Popular model, single gear, like new; £22.—Ross, 86, High Rd., Lee. [5277

LEVIS Models and Repair Service.—Dispatch Riders' Motor Cycle Specialists, Leamington Spa. [5038

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone: 852. [0966

1922 Levis model S, brand new, shop-soiled; 40 guineas.—Knights, 126, Upper Tooting Rd. S.W.17. [0980

LEVIS 2¾h.p., Bosch, Sensspray, taxed, ride away; £17/10.—Simpson, Orchard Rd., Sunbury-on-Thames. [5307

LEVIS, 1921, 2-speed, clutch, fully equipped, leg shields; £30.—145, Widmore Rd., Bromley 'Phone: 1727. [5343

LEVIS 1920 Sports model; £25, or exchange with cash for heavier machine.—Wilson, 65, Adelaide Rd., Southall. [5444

LEVIS, late 1921, 2-speeds, hand clutch, speedometer, lamps, etc., beautiful condition; £35.—30, Thornsett Rd., Earlsfield Londou. [5157

LEVIS 1920, equipped, new tyres, belt, engine overhauled and rebushed; £26; after two o'clock Saturday.—33, Waldegrave Rd., Ealing. [5172

LEVIS T.T., makers' guarantee of 50 m.p.h. Philipson and all accessories, perfect condition, as new; cost £85.—The Cottage, Pembroke Rd., Kensington. [4348

Spare Parts:

GODFREYS, Ltd., 208, Ot. Portland St., London W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

McKenzie.

MCKENZIE, as new, equipped; 18 guineas.—50, Thornhill Rd., Barnsbury, N.1. [5638

Martinsyde.

1921-22 6h.p. Martinsyde Combination, hood, screen, absolutely as new; 65 guineas.—67, Fernlea Rd., Balham. [5667

BRAND New Martinsyde 6h.p. Standard Combination; list price £130; our price, to clear, £120.—Jones Garage, Martinsyde Agents, Muswell Hill, London. [0786

ROBERTSONS Motors, Limited, are the London Martinsyde Service agents; trial runs arranged. 1923 models now available at the new prices, spares stocked.—157a, Gt. Portland St., W.1. [1122

1922 Martinsyde 6h.p. Combination, complete with Millford sidecar, cost £160, has only been used a few times; a gift at £150, cash or deferred.—Marborough (Motor House), 20, Finchley Rd., N.W.8. [6560

MARTINSYDE 8h.p. Combination, electric lighting, speedometer, screen, legshields, perfect order, any trial; £75, or would exchange with cash adjustment for new 3½h.p. Sports Douglas or other good make.—White 83 Mount Rd., Hinckley. [5397

MARTINSYDE 1921 6h.p. Combination, new March last, perfect externally and mechanically, hood, screen, speedometer, electric lighting, oversize tyres, Challenger tubes, special guaranteed tank, insured two drivers, any trial; £80.—136, Peartree St., Derby. [5133

MARTINSYDE 6h.p. 1920 Combination; £70 This machine is in perfect condition, and only wants seeing to be realised a bargain Fitted with Cowey speedometer, Lucas lighting, Klaxon horn, and the majority of present-day improvements; the sidecar is particularly roomy, with Easting screen.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W.1. [5582

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones Garage, The Broadway, Muswell Hill, London, N.10. [0155

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MATADORS are creating a sensation by reason of their wonderful value. Don't be left without one for the spring Orders are rolling in daily.

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1923 7	h.p. **A.J.S.** Combination	£152	10
1923 2¾	h.p. **DOUGLAS**, 2-speed	£50	0
1923 2¾	h.p. **DOUGLAS**, 3-sp. and K.S..	£65	0
1923 3½	h.p. **DOUGLAS**, Sports	£95	0
1923 4	h.p. **DOUGLAS** Combination ..	£110	0
1923 2½	h.p. **ENFIELD**, 2-sp. and K.S...	£50	0
1923 8	h.p. **ENFIELD** Combination ...	£120	0
1923 8	h.p. **ENFIELD** Combination ... (dynamo lighting.)	£135	0
1923 4	h.p. **TRIUMPH**, Model H	£84	10
1923 4	h.p. **TRIUMPH**, all chain	£93	10
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1920 8	h.p. **ENFIELD** Combination ...	£75	0
1920 2½	h.p. **CLYNO**, 2-speed	£25	0
1920 6	h.p. **A.J.S.** Combination	£100	0
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1921 Model H Matchless Combination, every possible accessory; £82/10.—24, Balliol Rd., North Kensington. [5359

MATCHLESS.—Actually in stock, 1923, 3h.p. sports; £70.—The Layton Garages, 30, Holywell St Oxford. [4783

MATCHLESS, all models, 1923 prices; best exchange allowances, deferred.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7 [1155

BRAND New 8h.p. Matchless Sports Touring Combination; list price £130 our price, to clear, £120.—Jones Garage, Matchless Agents, Muswell Hill, London. [0992

MATCHLESS 1920, Model H, 8h.p., Magdyno lighting, fully equipped, splendid condition, Easting, spare wheel; £90.—48, Clifton Rd., Kingston Hill [5216

MATCHLESS Model H Combination, M.A.G. engine, spare wheel, screen with side screens, perfect condition throughout; 72 guineas.—51, Upper Richmond Rd., East Putney. [5659

BRAND New Matchless 7-9h.p. spring frame Combination, 3 3-wheel Rolls; list price £140; our price, to clear, £130.—Jones Garage, Matchless Agents, Muswell Hill, London. [0991

1921 Matchless, M.A.G., dynamo lighting, hood, side screens, side curtains, speedometer, spare wheel, as new, 85 guineas; Xmas bargain.—51, Upper Richmond Rd., East Putney. [5654

1921 Model H Matchless Combination, with spare wheel, dynamo lighting, speedometer, windscreen, and tools, small mileage, and in perfect condition.—Stanbridge, Cranbrook. [5478

MATCHLESS Combination, twin cyl. J.A.P engine, 2-speed gear, clutch, good order; £34 cash.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17 'Phone: Wimbledon 607. [5200

MATCHLESS, model H2, M.A.G. engine, spring frame, Lucas lamps, screen, mud shields, just renamelled, perfect condition; cost £220, accept £85 before Christmas.—Cath, Awell, Tuesley Lane, Godalming. [5073

AT Edwards.—1919 8h.p. Victory Model Matchless Combination, Lucas lamps, Bowmiksen speedometer, spare wheel, new condition throughout; 70 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4006

MATCHLESS Model H, late 1920, M.A.G. Combination, dynamo lighting, detachable wheels, new tyres, speedometer, hood, screen, side curtains; £87.—Chinery, 1, Hammersmith Rd., Kensington. 'Phone: Western 4140. [4534

MATCHLESS Combinations.—We have 8 of these excellent outfits to offer at exceeding low prices, single and double seaters; exchanges.—Newnham Motor Co., 223 and 245 Hammersmith Rd., London, W.6. 'Phone: Hammersmith 1325 and 80. [5539

MATCHLESS Combination, 1920, dynamo lighting, clock, speedometer, very carefully used, in beautiful condition; £77/10, genuine bargain.—Vivian Yardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), Bond St., W.1 Mayfair 6559. [5031

1923 Matchless Combinations and Solos.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone: Lee Green 744) will be pleased to take your orders for prompt delivery of these models Exchanges and deferred payments arranged. Purchasers taught free. [5156

MATCHLESS 1923 models and prices are the most interesting proposition before the public. Why not exchange your present mount for one of these desirable combinations, we allow highest exchange values, liberal deferred payment terms, tuition free.—Edwards, 50, Harrington Rd., South Kensington. [4870

1923 Matchless.—All models from the leading agent, Sam E Clapham. Matchless reigns supreme. Send your order along to Greenwich and secure satisfaction. See Motor Cycles Miscellaneous Column for other makes.—Sam E Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [5409

MATCHLESS, new October, 1921 M.A.G., with 2-seater sidecar, Lucas horn, Lucas head lamp, electric side and tail lamps, mirror, legshields 2 windscreens with apron and side curtains, spare wheel and tyre, luggage grid, hood, feet warmer for sidecar passengers, tools, etc., a very smart outfit, indistinguishable from new; £130 secures.—Wilkins, Simpson, opposite Olympia, London. [5450

Spare Parts:

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MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0156

Metro.

1922 Metro-Tyler 2¾h.p., 2-speed, lamps; £35, offer.—Davidge, Windmill Rd., Brentford. [5116

Minerva.

£8.—Sporting 3½h.p. Minerva, dropped. Bosch, B. and B.—Fisher, Springwell Rd., Heston, Hounslow. [5213

MOTOR CYCLES FOR SALE.

Moto-Reve.

2h.p. Moto-Reve, 4-stroke single, good goer: £12; exchange bicycle and cash.—Thomson, 85, Church Rd., Willesden. [5240

Spare Parts:

MOTO-REVE Spares, all models, repairs, overhauls, gears, new engines.—Motor Supply Co., Sole Concessionnaires, 223a, High St., S.E.13. [4838

Ner-a-Car.

NER-A-CAR, Nov., 1921, good condition; £42/10. Waterloo House, North Cheam. [5229

NER-A-CAR, done 500 miles, practically new; £40.—Owen, 16, Morleys Hill, Burton-on-Trent. [5447

36 Guineas.—Ner-a-Car 1922, dynamo, electric and acetylene lighting, unscratched, done 300 miles only.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [5458

NER-A-CAR, bargain, standard specification, unused; exceptional price for quick sale, £45.—Further particulars, Box W7797, Haddon's Advertising Offices, Salisbury Square, E.C. [5095

1923 Ner-a-Cars, more popular than ever, the ideal Christmas present for lady or gent.; delivery from stock; £65; fully equipped, ready for road; deferred payments if desired; send for catalogue.—South Eastern Garage, 130, Norwood Rd., West Norwood, S.E.27. [5415

New Comet.

NEW COMET Combination, 1922 2½h.p., 2 speeds, K.S., clutch, C.B. sidecar, shop-soiled; £56/10; suit lady or gentleman.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5622

New Hudson.

1913 New Hudson 3½h.p., 3-speed; bargain, £24.—Ross, 86, High Rd., Lee. [5274

£16.—2½h.p. New Hudson, 3 speeds, clutch, equipped.—Fisher, Springwell Rd., Heston, Hounslow. [5214

£14.—2¼h.p. New Hudson, 2-stroke, 24in. wheels, fine running order.—King, Egrove, Oxford. [5316

NEW HUDSON, 2-stroke, fast, powerful; £22; take pedal cycle part.—57, Kenbury St., Camberwell, London. [5189

NEW HUDSON 6h.p., 3-speed, countershaft Combination, fully equipped, excellent condition; £55.—7, Exhibition Rd., S.W.7. [5579

1920 4h.p. New Hudson Combination, as new, speedometer, screen, and extras; £50.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4790

1920 New Hudson 4h.p. Combination, as new, 3-speed, kick-start, Easting, etc.; £62/10; exchange.—Rhind and Co., Stone Place, Rusholme. [4351

1919 2¼h.p. New Hudson motor cycle, 2-speed, 2-stroke, completely equipped, excellent order; £30.—E. W Roberts, Blencathra Garage, Keswick. [0973

3½h.p. New Hudson, 3 speeds, clutch, lamps, and Cowey horn, guaranteed perfect; a real bargain, all on, £28.—208, Cator St., Peckham, S.E.15. [5326

NEW HUDSON 1923 Models.—Full stock of cycles and combinations; immediate delivery; deferred payments; trade supplied.—New Hudson Depot, 45, Gray's Inn Rd. [0851

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NEW IMPERIAL, brand new, 3-speed; £45.—S. E. Porter and Co., Whitchurch, Salop. [5101

NEW IMPERIAL 2¾h.p. J.A.P., 2-speed, sound condition; £16/10.—3, Stamford Brook Rd., Hammersmith. [5633

NEW IMPERIAL J.A.P. 2½h.p., 2 speeds, 1918, splendid condition; £24.—30, Thornsett Rd., Earlsfield, London. [3159

NEW IMPERIAL, 1914, 2-speed, recently overhauled, good tyres, privately owned; £25.—K.J., Motors, Bromley. 'Phone: 1727. [5345

NEW IMPERIAL 1922 8h.p. Combination, new machine, slightly shop-soiled only; bargain, £105.—P. J. Evans, John Bright St., Birmingham. [5149

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1920 8h.p. New Imperial Combination, 3-speed, all-chain drive, Easting screen, condition unscratched; £65.—Millier (side bell), 127, St. Marks Rd., North Kensington. [5262

BRAND New Imperial 2¾h.p., 3-speed, a machine with a reputation; list price £65; our price to clear, £61.—Jones Garage, New Imperial Agents, Muswell Hill, London. [0790

1923 Model No. 3 New Imperial in stock; 2¾h.p., 3-speed, chain drive, internal expanding brakes; £65; deferred payments 4% extra; free delivery.—Premier Motor Co., Aston Rd., Birmingham. [5597

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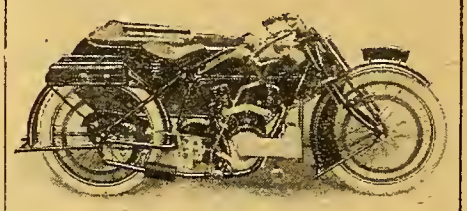

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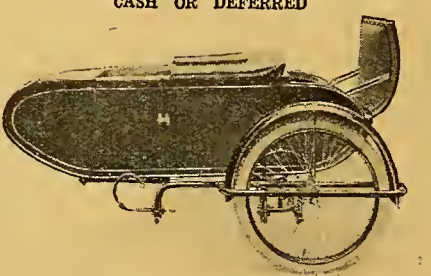

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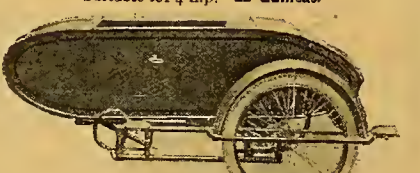

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NORTONS, all models.—Dispatch Riders' Motor Cycle Specialists, Leamington Spa. [5041

4h.p. Norton, brand new, unregistered, shop-soiled only; £70.—S. Bates, 19, Albany Rd., Coventry. [5504

NORTON.—Delivery from stock of all 1923 models.—The Layton Garages, 30, Holywell St., Oxford. [4780

NORTON 3½h.p., 16H, special, 80 m.p.h., as new; cash offers.—Wilkinson's, Engineers, Doncaster. [5704

SOUTHPORT.—Immediate delivery 1923 Nortons, o.h.v. shortly; exchanges.—Kents, 417, Lord St., Southport. [5433

NORTONS, 1923, all models, latest prices; immediate deliveries.—Clifford Motories, Eastwood, Nottingham. [4101

IN Stock, 1923 3½h.p. Norton model 16H; price £79.—D. & S. Autocar Co., 33, The Parade, Golders Green. [5532

£65 or near.—Norton 1922 18H, condition almost as new, picked engine, fully equipped, tools, spares.—Box 5133, c/o *The Motor Cycle.* [5085

NORTON Big Four Combination 1922, countershaft, kick-start, equipped, taxed; £93.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3270

BRAND New Norton Model H16, a real speed mount; list price £79; our price, to clear, £74.—Jones Garage, Norton Agents, Muswell Hill, London. [0918

NORTON 3½h.p., new, unscratched, not run 50 miles, lamps and horn, complete; £74.—R. J. Rayward, Mill Farm, Ringmer, nr. Lewes, Sussex. [4998

NORTON, late 1920, 3½h.p., belt drive, electric lighting, excellent condition throughout, very fast, complete; £35.—Preston, Lambton St., Monton, Eccles. [5074

NORTON 1922 16H, countershaft, Brooklands special racer, kick-start, taxed, as new; £98.—Walker, 769, Romford Rd., Manor Park, London, E.12. [3271

1922 Big Four Norton, Lucas lamps, Cowey horn, knee-grips, etc., splendid condition, exceptionally good engine, carefully looked after; £72.—156, Station Rd., Hendon. [5010

1921 16H Norton, over 70 miles per hour, Ricardo and cast iron pistons, spare sprockets, etc., perfect condition; £55.—James, 26, Home Park Rd., Wimbledon Park. [4531

NORTON 1922 16H, new in August, splendid condition, little used, tyres perfect, fully equipped, any examination; £68, or nearest.—Douglas, 75, Ladbroke Grove, London. [5448

1922 Norton Motor Cycle model 16H, complete with Lucas lamps and accessories, Klaxon, only run few hundred miles; accept £62/10 for quick sale.—1, Lethbridge Rd., Southport. [4299

1921½ Norton, 16H, 3-speed, kick-start, complete equipment, spare Ricardo piston, sprockets, etc., new condition, exceptionally smart; 65 guineas.—Persfield, Westbury Rd., New Malden. [5221

1921 Norton Big Four, Lucas lamps, speedometer, Klaxon, watch, knee-grips, etc., mileage 500, absolutely indistinguishable from new, guaranteed perfect; 66 guineas; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [5628

NORTON 1922 Super-Sports, close-ratio gears, competition machine, as new; 65 guineas. Watsonian aluminium sporting sidecar, Norton fitting, only done few miles; 10 guineas. Binks rat-trap carburetter, as new; 55/-.—H. Rock, Cradley, Staffs. Tel.: 145. [5258

GENUINE B.R.S. Norton, hand controlled, Philipson pulley, Lucas horn, lamps, knee-grips, silencer, tyres and enamel unscratched, specially tuned, 70 m.p.h. guaranteed, many spares, tools; £37/10; exchange considered.—Bloomfield, 99, Ashleigh Rd., Mortlake. [5126

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HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Norton spare part specialists. Complete illustrated lists post free. Trade supplied. [5570

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3½h.p. N.S.U., 2-speed, good condition; £12.—29, Grey St., Higher Openshaw, Manchester. [5305

MOTOR CYCLES FOR SALE.

N.U.T.

N.U.T. 5h.p., 3-speed, brand new; cash offers.—Wilkinson's, N.U.T. Agents, Doncaster. [5703

N.U.T. 1922 5h.p., special engine, Magdyno, as new. 72 guineas, exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd. East Sheen. [3923

N.U.T. 5h.p. Special, dynamo, electric horn, lamp, dimmer, special Amac, as new; £85, cost £150; part exchange A.B.C.—10, Queen St., Stockton-on-Tees. [5083

O.K.

1920 O.K. 2-stroke, very smart; 16 guineas.—67, Fernlea Rd., Balham. [5672

O.K., 1921, 2-speed, clutch, K.S., electric lights; £28.—145, Widmore Rd., Bromley. 'Phone: 1727. [5344

O.K. 1916, 2-speed, fitted 1922 2¾h.p. engine and magneto, guaranteed perfect order; £16.—S. E. Porter and Co., Whitchurch, Salop. [5097

12 Guineas.—1916 2½h.p. O.K. 4-stroke, 2-speed, countershaft, new lamps and tyres. Evenings —53, Patshull Rd., Kentish Town. [5646

1922 O.K.-Villiers single speed, electric light, enamel, plating as new; £35, or offer; trial by appointment.—Gilbey, 20, Wordsworth Walk, N.W.11. (D) [5488

1920 O.K., 2-stroke, 2 speeds, Smith speedometer, new spare cover, fine mechanical order, tax paid, has been gently handled; £23.—12, Stracey Rd., Harlesden. [5063

1920-21 O.K.-Union 2¾h.p., excellent condition, lamps, shields, etc., about 1,000 miles inspection sufficient; £25, or offer.—Dale, 13, Adelaide Rd., Brentford. [5005

SOUTHPORT.—Olympia actual Show model O.K., 250 c.c. o.h.v. Blackburne, prettiest machine of Show; £76; unique opportunity; exchanges.—Kents, 417, Lord St., Southport. [5434

Omega.

OMEGA 2¾h.p., 1922, shop-soiled, 2-stroke; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5625

1922 2¾h.p. Omega, 2-speed, clutch, shop-soiled only; list price £63; accept £50 to clear.—Stanbridge, Cranbrook. [5479

OMEGA-VILLIERS, 1921, 2-speed, clutch, K.S., aluminium footboards, accessories; £27.—69, Kingston Rd., New Malden. [5333

P. and M.

1918 P. and M. 3½h.p., fully equipped, new tyres; £28.—99, Tynemouth Rd., Mitcham. [5374

P. and M. 1918 Combination, taxed, perfect; any trial; £25.—10, Baronsmead Rd., Barnes. [5341

P. and M. Combination, slightly incomplete; £22/10. R.A.F. model.—2, Fortune Gate Rd., Harlesden, N.W.10. [5228

FOR Long Service, P. and M. completely renewed splendid; £38/10. Sidecar extra.—Write, Easton, 2, Mall, Ealing. [5689

P. and M., R.A.F., perfect order and complete lamps, horn, etc.; £30.—S. E. Porter and Co., Whitchurch, Salop. [5099

P. and M. 1918 R.A.F. machine, rebuilt and renovated, E.I.C. magneto and B.B. carburetter; £30 —Cooper, 63, Avenue Rd., Camberwell. [5681

P. and M. Combination 1918, fully equipped, screen, etc., many extras, in exceptional condition; 35 guineas.—51, Upper Richmond Rd., East Putney [5656

1923 P. and M. Solos or Combinations at 1923 reduced prices. Immediate delivery from the authorised agents; exchanges invited.—Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [5496

Spare Parts

P. and M.—A.I.V. model spares in stock.—4, Auckland Rd., Doncaster. [5393

P. and M. second-hand W.D. spares, all genuine; competitive prices, practically any part.—Maudes', 100, Great Portland St., W.1. [5698

ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool [0839

FOR complete and satisfactory P. and M. spares service consult the authorised agent specialists. —Kenneth Kemp and Co., 4, Berkeley Mews, Connaught St., Marble Arch, London. Padd. 1177. [5497

Premier.

£21.—3-speed clutch Premier, anywhere on top.—231, Block Lane, Oldham. [5017

3½h.p., 2-speed, clutch, Premier, splendid condition; £30 offer.—33 Goring Rd., New Southgate. [5056

£15.—3½h.p. Premier, 3 speeds, clutch, lamps, accessories, splendid condition.—63, Solon Rd., Brixton. [5284

18 Guineas.—Premier 3½h.p., 3 speeds, licensed, 1922, sidecar cancelet, 7 guineas; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5105

XMAS GIFTS

SENSIBLE SERVICEABLE SEASONABLE

BROOKS' (PATENT) SPRING LEGGINGS

(As illustrated.)
Held firmly in position by springs below knee and above ankle. Very quickly put on and off.

SHORT PATTERN
Best quality black, rubber-proofed cloth **29/-**
Finest quality fawn, waterproofed twill.. **26/-**

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Best quality black, rubber-proofed cloth **43/6**
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R.A.F Pattern Tan Chrome Leather Helmet. Coney fur-faced peak and neck. Adjustable ear rolls and chin strap **12/6** Post 6d.

Best Quality Tan Leather Helmets with peak. Lined warm fleece. Adjustable ear rolls and chin strap. **5/6** Post 4d.

Astounding Glove Offer.

Best Quality HORSEHIDE GLOVES.

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Especially made for the American Army from selected Skins of High Grade Quality.

Being of Mineral Tannage this leather under all conditions will remain soft and pliable. Ideal for driving.

Pairs.	Per Pair.
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3 ,,	2/11
6 ,,	2/10
12 ,,	2/9

POST PAID.

Single Pairs at counter.. 2/8

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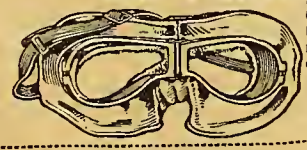
Trade Supplied.

GENUINE "TRIPLEX" AVIATION MASK GOGGLES



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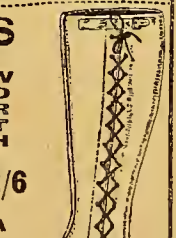

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ALL sizes for LADIES' wear.

GENT'S and YOUTHS', 12 in. to 14 in. Calf sizes. For use with Breeches. **12/6**

A PAIR

Single Pairs at Counter.

Post Rates 1 pair 9d. 3 pair, 1/-, 6 pair, 1/3. **2/6**

The Service Company Ltd. LONDON

273-274, HIGH HOLBORN, LONDON.

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Premier.

PREMIER Combination, 7-9h.p., condition excellent, all on; seen and tried evenings or Sundays; write for particulars; reasonable offer wanted.—33A, Midmoor Rd., Balham. [5346

Spare Parts

PREMIER Parts.—I have a large consignment of genuine parts purchased direct from the makers; write for quotations.—All. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5519

GENUINE Premier Spares.—We have purchased from the Coleshill Trading Company, the tremendous stock of genuine Premier parts (the largest and only complete stock in the world) purchased by them from the makers, and are offering the same at knock-out prices.—Forfield Motors, Forfield Place, Leamington Spa. [1864

PREMIER Genuine Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Forfield Motors, Forfield Place, Leamington Spa. 'Phone: 631. [8369

Priory.

PRIORY-J.A.P., Brand new, 2-speed; £45.—7, Exhibition Rd., S.W.7. [5578

Quadrant.

1920 Quadrant, 3-speed, chain drive; bargain, £55. —Ross, 86, High Rd., Lee. [5278

£55.—1921-22 Quadrant combination, accessories.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1838

£90, or reasonable offer.—Brand new 1922 Quadrant combination.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1837

IMMEDIATE Delivery of all 1923 Quadrant models direct from Olympia.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3409

1920-21 4½h.p. Quadrant Combination, all-chain, fully equipped, splendid condition; £42/10.—37, Arlington Rd., Surbiton. 'Phone: Kingston 1274. [5349

Spare Parts:

CLIFFORD WILSON Manufacturing Co., Quadrant official repairers and spare parts stockists, 177, Westminster Bridge Rd. (opposite Waterloo Station Approach), London, S.E.1. Tel.: Hop 210. [9989

Radco.

11 Guineas.—Radco 2½h.p., taxed, lamps, speedometer, ride away.—97, Latchmere Rd., Battersea. [5302

£20.—1921 2½h.p. Radco, single speed, fully equipped, mileage 900 and very light wicker Watsonian sidecar.—Asbo. Athlone, Ashford, Middlesex. [5117

SHOP-SOILED Bargains.—New 1922 No. 2 Radco 2½h.p., 2-speed, clutch, kick-start, £38; new 1921 No. 1 2¾h.p., 2-speed, aluminium footboards, £35; 5% discount for cash with order.—Premier Motor Co., Aston Rd., Birmingham. [5598

Raleigh.

PREMIER Motor Co., the Raleigh Specialists.

IMMEDIATE delivery of all Raleigh 1923 models; many improvements, huge price reductions; 2¾h.p., 2-speed, chain-cum-belt, £55; 3-speed, all-chain drive, £60; 3h.p., 3-speed, all-chain drive, £63; exchanges and deferred payments arranged; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4694

1922 Raleigh 2¾h.p., gears, kick-start, as new; 36 guineas.—67, Fernlea Rd., Balham. [5671

RALEIGHS, 1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [4100

RALEIGH, all models in stock.—Jackson, 49, Commercial Rd., Bulwell, Nottingham. 'Phone: 112. [5381

RALEIGH 1922 2¾h.p., 2-speed, brand new, shop-soiled; £50.—72, Chase Side, Enfield. Tel.: 593. [5020a

AT Edwards.—1922 6h.p. Raleigh, spring frame, lamps, horn, etc., indistinguishable from new; 65 guineas.—Be ow.

1922 6h.p. Raleigh Combination, spring frame Bonniksen speedometer, horn, tax paid, exceptional condition; 85 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4864

1923 Raleigh.—Your orders for these models will receive prompt attention from T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744. [5159

3h.p. 3-speed Sports Raleigh, August, 1922, lamps speedometer, Klaxon, tools, spares, perfect condition, insured; £50, or near offer.—Thorn, 53, Vernham Rd., S.E.18. [4999

THE best bargain, Raleigh 1923 models and prices, prompt delivery; exchanges or deferred payments arranged, tuition free.—Edwards, 50, Harrington Rd., South Kensington. [4871

MOTOR CYCLES FOR SALE.

Raleigh.

BRAND New 5-6h.p. Raleigh spring frame Combination, a real first-class outfit; list price £130; our price, to clear, £120.—Jones Garage, Rnleigh Agents, Muswell Hill, London. [0810

RALEIGH 1923 models in stock for immediate delivery, 2¾h.p., 2-speed, K.S.; £55; exchange and easy terms; spare part stockists.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0975

CLEARANCE Bargains.—Special offer of new 1922 Raleigh Combinations at huge reductions; 2¾h.p., 3-speed, Montgomery lightweight sidecar, £65; 5-6h.p., spring frame, detachable wheels, Montgomery Sporting sidecar, £110; 5-6h.p. De Luxe Combination, Triplex windscreen, £120; carry makers' full guarantee; cannot be repeated.—Premier Motor Co., Aston Rd., Birmingham. [5599

Reading-Standard.

FREDRICS and Co., Ltd.

A BIG Twin

BARGAIN.

READING-STANDARD 8-10h.p. Motor Cycles.

SIX Only at

£80 each.

FULLY equipped with dynamo lighting, lamps, horn, etc.

SPARE Parts! Spare parts! Spare parts!

FREDRICS and Co., Ltd., 89, Great Portland St., London, W.1. Tel.: 1601 Langham. [5464

1921 Reading-Standard Electric Combination, speedometer, aluminium pistons, hot air intake, Tan-Sad, fully equipped, appearance new, any hill or speed test given, owner going abroad; £70.—Advertiser, 11, Elm Rd., East Sheen. [5211

READING-STANDARD Combination, 1920, indistinguishable from new, 1922 roomy Canoelet sidecar, bulbous back, all new tyres and tubes, dynamo lighting, full tool equipment, licensed; £78 cash, or deferred.—Godfrey's Garage, Cranbrook Rd., Ilford. 'Phone: 83. [5144

Rex.

£12 or offer.—Rex 6h.p., 2-speed, less engine.—22, Park View, Down Lane, Tottenham. [5138

REX Combination, N.S.U. gears, in running order; £15.—Rhind and Co., Stone Place, Rusholme. [4352

REX Acme 2¾h.p., 1922, Blackburne engine, 2-speed gear, K.S., clutch, all on; £57/10.—Wauchope's 9, Shoe Lane, Fleet St., London, E.C.4. [5619

1923 Rex-Acme, Olympia Show model; immediate delivery from stock; 2¾h.p. Blackburne engine, 3-speed Sturmey-Archer, clutch and kick-starter, Dunlop tyres, all-chain drive; a marvellous production at £65.—The Agent for Rex-Acmes is Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5411

Spare Parts:

REX.—All 6h.p. spares in stock.—4, Auckland Rd. Doncaster. [5394

Rover.

ROVER 3½h.p., 1914, fitted with Philipson pulley, all on, in excellent order; £25.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5623

ROVER 3½h.p. Combination, 1920 about, kick-start, countershaft, all on, taxed; £63.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [3272

1916 Rover 4h.p. Combination, 3-speed, clutch, kick-start, fully equipped, any trial; £33.—Ward, South Western Garage, New Malden, Surrey. [5544

BRAND New 6h.p. Rover, chain-drive model, 3-speed, etc.; list price £95; our price to clear, £82/10.—Jones Garage, Rover Agents, Muswell Hill, London. [0997

34 Guineas.—Rover 1921-22, T.T., 3½h.p., Philipson, clutch, 60 m.p.h. 'bus, splendid sporting solo, unscratched.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [5457

ROVER 3½h.p., 3-speed, hand-clutch, kick-start, 29 guineas; with underslung Rover sidecar, 38 guineas; photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3928

ROVER Combination 1918, 5-6h.p. J.A.P., 3 speeds, clutch, kick-starter, hood, screen, lamps, licence, legshields, splendid condition; £52/10; instalments.—63, Solon Rd., Brixton. [5285

ROVER.—Godfrey's are authorised agents. Immediate delivery of all 1923 models; gradual payments, exchanges; free tuition.—208, Great Portland St., London, W. 'Phone: 1300 Langham. [0350

AT Edwards.—1920 3½h.p. Rover, all-chain drive, equipped with electric lighting, horn and speedometer, absolutely indistinguishable from new; 55 guineas; exchanges or deferred.—101, Great Portland St., W.1. [1149

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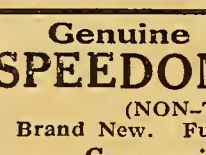
Genuine COWEY SPEEDOMETERS

(NON-TRIP.)

Brand New. Fully Guaranteed.

Carr. paid 55/-

Send make of machine and size of tyre.



METAL CASED TOOL BAGS

Leather front. 2 clips supplied with each bag. Best value obtainable.

Carr. paid 8/6 per pair.

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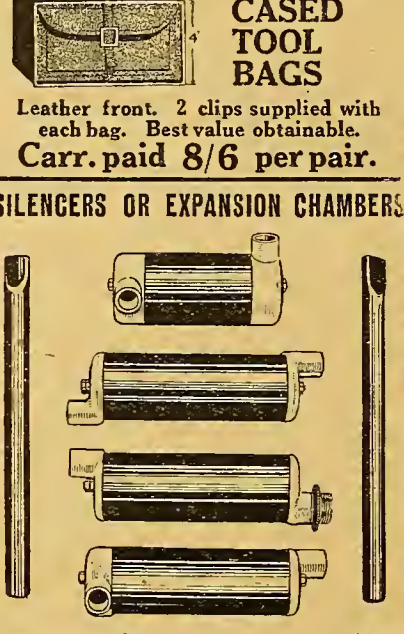

No. 1, length 7½", bore 1⅛ or 1¼ 10/6
" 2, " 10½" " " 10/6
" 3, " 10½" Screwed to fit Harley ... 11/6
" 4, " 11", bore 1⅛ or 1¼ 10/6
20" extension pipe included with each silencer.

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Sidecar fittings in endless variety.

180, 181, 182, Railway Approach

Est. 1901. **SHEPHERD'S BUSH, W. 12.** 'Phone: Hammersmith, 2436.

MOTOR CYCLES FOR SALE.

Rover.

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9445

Royal Ruby.

1918 Royal Ruby 8h.p., renovated like new; £50.—Ross, 86, High Rd., Lee. [5280

ROYAL RUBY 4h.p., enamel, plating, etc., in good condition; £15.—E. McKone, 118, Pelham Rd., Wood Green. [5682

1922 Royal Ruby 3h.p. Combination, excellent condition, spares; £70.—Apply after 7 p.m., or Saturday, 51, Kempshott Rd., Streatham, S.W.16. [5166

Rudge

RUDGE 3½h.p., hand clutch; bargain, 11 guineas.—67, Fernlea Rd., Balham. [5666

1919-20 Rudge-Multi, fast and sporty; 25 guineas.—67, Fernlea Rd., Balham. [5674

3½h.p. Rudge-Multi Combination, £24; cycle only, £18/10.—17, Heaton Rd., Mitcham. [5371

RUDGE 1916 5-6h.p. Combination, in perfect order; £34.—Davies, St. Mary's St., Coventry. [5708

1922 3½h.p. Multi, brand new, shop-soiled; £55.—Knights, 126, Upper Tooting Rd., S.W.17. [0979

AT Edwards.—1921 Rudge-Multi, fully equipped, speedometer, splendid condition; 40 guineas.—Below.

1920 3½h.p. Rudge-Multi, lamps and horn, tax paid, exceptional condition; 30 guineas; exchanges or deferred.—101, Great Portland St., W.1. [4003

RUDGE-MULTI (new), shop-soiled, 3½h.p., T.T. model; £58.—Garage, 13, Crooklog, Bexley Heath, S.E. [5268

RUDGE, 3 speeds, chain drive, 1922, shop-soiled, to clear; £70.—Wilkinson, Washington St., Workington, Cumberland. [5328

13 Guineas.—3½h.p. Rudge, clutch, Binks carburetter, C.A.V. magneto, discs, good order.—P. Willcocks, Datchet, Bucks. [5312

SOUTHPORT.—Two excellent 1921 I.O.M. Rudge-Multis, well equipped; 39 guineas each; exchanges.—Kents, 417, Lord St., Southport. [5435

3½h.p. I.O.M. Rudge-Multi Solo, latest 1922 model, new and unused, clearance bargain; £52/10.—Palmer's Garage, High St., Tooting. [5526

1921 3½h.p. Rudge-Multi Combination, fully equipped, perfect appearance and condition; quick sale £50.—Pember, 45, Pulteney Rd., E.18. [5018

34 Guineas.—Rudge-Multi I.O.M. 1921-22, unscratched, mileage under 1,000, equipped.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [5461

RUDGE-MULTIS converted to countershaft, with 2, 3 or 4-speed gear box, from £16; satisfaction guaranteed.—Henry V. Smith, Osmondthorpe, Leeds. [5386

3½h.p. All-chain Rudge Solo, 3 speeds kick-start, latest 1922 model new and unused, clearance bargain; £67/10.—Palmer's Garage, High St., Tooting. [5527

1922 Rudge-Multi, innumerable extras, perfect condition, any trial; £45, exchange considered.—4, Berkeley Mews, Conuaught St., Marble Arch, London. Padd. 1177. [5501

LATE 1921 I.O.M. Rudge-Multi, fully equipped, exceptionally fast, condition as new; £34.—164, Revelstoke Rd., Wimbledon Park, London. 'Phone: Wimbledon 1185. [5368

RUDGE.—3½h.p. Rudge Multi, 1922, as new, £50; 3½h.p. Rudge, 1920, all on, excellent order, £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5611

1922 3½h.p. Rudge, 3-speed, kick-start and clutch, all chain, fully equipped, only ran few hundred miles, a real snip; £65, exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5547

RUDGE-MULTI 1921, enamelling and plating as new, not done more than 3,000 miles, full equipment, licensed and insured; £42 cash, or deferred.—Godfrey's Garage, Cranbrook Rd., Ilford. 'Phone: 83. [5145

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Illustrated list free. Trade supplied.—Forfield Motors, Forfield Place, Leamington Spa. [3163

Scott.

KINSEY'S of Croydon for Scotts.—350, Lower Addiscombe Rd., Croydon. [5491

SCOTT, complete less radiator, 1912; £10, or offer.—12, Wollaston Rd., Dorchester. [5293

SCOTT Service Depot, Cathedral Motor Works, Liverpool.—Scott motor cycles, new and second-hand; 1922 Scott Sociables, £158; spares, new and second-hand. [5449

MOTOR CYCLES FOR SALE.

Scott.

SCOTT Squirrel, 1923.—Immediate delivery; £89. —The Layton Garages, 30, Holywell St., Oxford. [4781

SCOTT Squirrel, brand new; reasonable cash offer.—Wilkinson's, Scott Agents, Engineers, Doncaster. [5705

LATE 1920 Scott Combination, Easting windscreen, Cowey speedometer, condition as new; £45.—The Gables, Sylvan Hill, Upper Norwood. [5292

SCOTT Combination, late 1919, fully equipped, and in excellent condition, lamps, speedometer, windscreen, etc.; £60.—15, Beechwood Rd., Warley, Birmingham. [5187

SOUTHPORT.—Instant delivery 1923 Scott Squirrel, £89; 1922 Squirrel, Lucas accessories, splendid condition, 1923 pattern sight lubricators; 62 guineas; exchanges.—Kents, 417, Lord St., Southport. [5438

SPECIAL Racing Scott Squirrel, 70 m.p.h., T.T. bars, spare sprocket, carrier, straight through exhaust pipe, new last month, owner buying car; 90 guineas.—Houghton, Grove, Asfordby, Melton Mowbray. [5119

Spare Parts

KINSEY'S of Croydon.—All Scott spares from stock. Cheapest and promptest repair service. 'Phone: Croydon 1129. [5492

WARD Motors, Ltd., 32, Hustler St., Bradford.—Everything for a Scott, new or good second-hand unequalled for repairs. [0889

GODFREYS, Ltd., 208, Gt. Portland St., London W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [075

Sheffield-Henderson.

SOUTHPORT.—Olympia actual Show model Sheffield-Henderson, o.h.v. Bradshaw 350 c.c. engine actually here; £72; unique opportunity; exchanges. Kents, 417, Lord St., Southport. [5436

Singer.

£12.—2½h.p. Singer, waterproof Bosch, splendid running order.—King, Egrove, Oxford. [5317

Spare Parts:

GENUINE Singer parts; let me quote you.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5518

Sirrah.

1923 Sirrah 2-speed, clutch and K.S.; 33 guineas, carriage paid anywhere. All models Sirrah and Verus stocked. Write for lists.—H. Beardwood, 147, Burlington St., Liverpool. [4918

Sparkbrook.

GENUINE Bargain.—8h.p. Sparkbrook Coachbuilt Combination, J.A.P. engine, countershaft gears clutch, and kick-start good sound condition, all complete; £40.—Stranduff, Crowthorne Berks. [5391

Stanger.

BRAND New Stanger V Twin, 2-stroke, 3-speed Burney-Archer gear box, large tyres, a machine with a 4-cyl. effect and a perfect spring frame; list price £90; our price, to clear, £79/10.—Jones Garage Stanger Agents, Muswell Hill, London. [0993

Sun.

SUN-VILLIERS, in splendid condition and running order; £14/10.—30, Thornsett Rd., Earlsfield London [3153

1921 Sun-Albion, 2-speed, little used, enamelling perfect; £30, offers.—Shorter, Bath Yard, Broad St., King's Lynn. [5036

SUN-VILLIERS 2¾h.p., siogle-speed, splendid condition, only used by owner; £15.—391, King St., Hammersmith. [5495

BRAND New Sun-Jap, 2-speed, kick-start, H.B.C clutch; a real good mount, and cheap at the list price of £58; our price to clear, £55.—Jones Garage Sun-Jap Agents, Muswell Hill, London. [0998

Sunbeam.

SUNBEAM 1918 Combination, excellent condition; £48.—7, Exhibition Rd., S.W.7. [5580

1920 3½h.p. Sunbeam Combination, speedometer; £90.—2, Albert St., Whitstable. [5217

1920½ Sunbeam, leaf spring forks, mileage 3,000, perfect; £69/10.—23, Silverburn Avenue, Moreton, Birkenhead. [5508

SUNBEAM Combination, 8h.p., M.A.G. dynamo, lighting, spare wheel, perfect; £95.—Sykes, 38, Thurloe Place, London, S.W 7. [5062

£32.—Sunbeam Sports 1916, less gear box, new T.B. magneto, long copper exhaust; exchanges.—Derrington, Grafton Rd., New Malden. [5556

1920 3½h p. Sunbeam Combination, completely equipped, condition practically as new; £110 E. W Roberts, Beneatbra Garage, Keswick [0972

1920 3½h.p. Sunbeam Combination, lamps, horn, speedometer, windscreen, hood, spare wheel, insured; £95.—E. Byers, Kilmorey Park, Chester. [5361

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MOTOR CYCLES FOR SALE.

Sunbeam.

1921 3½h.p. Sports Sunbeam, spring frame, lamps horn, speedometer, few attachments, Binks, open exhaust licensed; £85.—Mitchell, Studley Rd., Luton. [5001

SUNBEAM 8h.p. 1921 De Luxe Combination, dynamo, electric horn, hood, screen, and many luxurious fittings; £120.—James, c/o Bradmores, 482, Harrow Rd., Paddington. [4739

1921 3½h.p. Semi-sports Sunbeam, lamps and horn, Tan-Sad, muffs, overalls, and helmet and insurance, overhauled by Sunbeam December 7th, 1922; £79.—2, Rugeley Rd., Hednesford, Staffs. [5256

SUNBEAM Combination, 1921 model, 8h.p., dynamo lighting, electric horn, speedometer, luggage grid, hood, screen, perfect order; £110.—Alexander, 263, Deansgate, Manchester. 'Phone: 2775 Central [4674

£77/10.—Late 1920 3½h.p. Sunbeam Combination, Lucas lamps, Cowey, Easting, mechanical lubrication, in very nice condition; bargain, exchanges.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [5463

SPORTS Sunbeam, 3½h.p., June, 1922, electric lighting, speedometer, Klaxon, just overhauled, mileage 1,000; cost £165; owner has no opportunity to use it; £115, or near offer.—Hume, 202, Kew Rd., Richmond, Surrey. [5182

SOUTHPORT.—Immediate delivery 1923 Sunbeams; 2¾h.p. models shortly; 1922 (late) 3½h.p. Sunbeam, Lucas best accessories, superb new condition, done 200 miles; 95 guineas; exchanges.—Kents, 417, Lord St., Southport. [5437

Torpedo.

8 Guineas.—2½h.p. Torpedo 4-stroke, good running order. Evenings.—53, Patshull Rd., Kentish Town [5644

TORPEDO-PRECISION 1915 2½h.p., perfect; 11 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd. East Sheen. [3929

1914-15 2½h.p. Torpedo-Precision, new tyres, etc., perfect; £15.—Shepherd, Enfield Highway. Tel.: Waltham X 31. [5530

Triumph

PREMIER Motor Co., the Triumph Specialists.

SOLE Distributing Agents for Greater Birmingham for Triumph motor cycles; earliest possible delivery of improved 1923 models; huge price reductions; carriage paid to any address; deferred payments arranged.—Premier Motor Co., Aston Rd., Birmingham [4687

BRAND new chain-drive Triumph; £84.—Cross, Agent, Rotherham. [5404

1917 Trimph, C.S. model, very nice condition; £45. —Ross, 86, High Rd., Lee. [5279

TRIUMPH 1913, overhauled by makers, like new; £40.—Harper Craven Arms. [5508

8 Guineas.—3½h.p. Triumph, incomplete.—Particulars 53, Patshull Rd., Kentish Town. [5645

TRIUMPH 1923 Models.—Dispatch Riders' Motor Cycle Specialists, Leamington Spa. [5039

COUNTERSHAFT Triumph, £26; sporting sidecar, £5.—44, Essex Rd., Leyton, E.10. [5219

1923 Triumph Models; exchanges or easy payments.—Bounds Garage, 223, High Rd., Kilburn. [0983

1920 Baby Triumph, fully equipped; £30.—W. O. Lovell, 4 Brackley Rd., Beckenham, Kent. [5084

3½h.p. Triumph, 2-speed, lamps, horn, taxed, good order; £23.—Box 5152, c/o *The Motor Cycle.* [5511

1921 Triumph H 4½h.p., licence paid; £60.—Williams, Brightview, Hadley Rd., New Barnet. [5181

TRIUMPH Combinations from £25 to £60, bargains.—Garage, 13, Crooklog, Bexley Heath, S.E. [5269

£33.—Trinmph Combination countershaft, lamps, accessories, etc., sound.—169, Harvist Rd., Kilburn. [5115

TRIUMPH 1918-19, countershaft, guaranteed perfect order; £42/10.—S. E. Porter and Co., Whitchurch, Salop. [5100

4h.p. Triumph and Millford sidecar, complete lamps, etc.; £83.—Cross, Effingham Square, Rotherham. [5403

BRAND new all-chain Triumphs, unpacked, makers' guarantee; 70 guineas.—51, Upper Richmond Rd., East Putney. [5653

TRIUMPH 1923 models, orders now accepted, don't delay your order.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0978

4h.p. Triumph, new June, 1921, fully equipped, little used, £70.—Hadley, Forest Gate Hotel, Godwin Rd., Forest Gate. [5060

TRIUMPHS.—Two brand new S.D. all-chain models makers' guarantee; £79 each to clear.—391, King St., Hammersmith. [4701

TRIUMPH 4h.p. 1919 model, lovely condition; any trial given; bargain, £49.—1,238, Coventry Rd., Yardley, Birmingham. [5169

MOTOR CYCLES FOR SALE.

Triumph.

ROBERTSONS Motors, Ltd., 1922 Triumph all-chain drive Combination, with accessories; £76.—157B, Great Portland St., W.1. [4881

LATE 1920 Baby Triumph, excellent condition, 2-speed, lamps, and tools; nearest £40.—Dodd, Old Rd., Ashton-in-Makerfield. [5004

29 Guineas.—Triumph 1920, single speed, T.T. model, very fast, equipped.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [5460

TRIUMPH, November, 1918, 4h.p., countershaft, licence, new condition; £48; instalments, exchanges.—63, Solon Rd., Brixton. [5286

1919 Triumph Combination, complete equipment, beautiful condition; £48; exchanges.—24, Balliol Rd., North Kensington. [5354

TRIUMPH, 1922, chain drive, No. 1 Gloria sidecar, Lucas electric lighting, legshields, almost new; £95.—19, Albany Rd., Coventry. [5505

TRIUMPH Agents for Harrow and District; let us quote you for allowance and later delivery.—Bunting's Exchange, Wealdstone. [5423

TRIUMPH.—Early delivery of all 1923 models. Place your order now to secure.—The Layton Garages, 30, Holywell St., Oxford. [4779

TRIUMPH, Model H, brand new and unused; our price £75; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [4533

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

1918 Countershaft Triumph, new tyres, beautiful condition, £35; ditto, 1922, used twice, £60.—24, Balliol Rd., North Kensington. [5353

BRAND New Triumph, 2-stroke, 2-speed; list price £40; our price, to clear, £38.—Jones Garage, Triumph Agents, Muswell Hill, London. [0811

BRAND New 4h.p. Triumph, chain drive; list price £84; our price, to clear, £79.—Jones Garage, Triumph Agents, Muswell Hill, London. [0994

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; 48 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3345

TRIUMPH-GLORIA, late 1920, perfect condition, fully equipped, Sandum, spares, etc., any trial; £70.—Cardon, Penshurst Station, Kent. [5260

BRAND New 3½h.p. Triumph-Ricardo; list price £87/10; our price to clear, £80.—Jones Garage, Triumph Agents, Muswell Hill, London. [0996

CROYDON Agents Trimph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

TRIUMPH Model H, with Millford sidecar, Easting screen, lamps, etc., new condition, little used; £65.—Bunting's Exchange, Wealdstone. [5422

BRAND New 4h.p. Triumph, chain-cum-belt; list price £75; our price to clear, £70.—Jones Garage, Triumph Agents, Muswell Hill, London. [0995

TRIUMPH, 1920 model H and Dunhill sidecar (cost £48), hood, screen, tools, lamps, horn, mileage 2,500, splendid condition; £69/10.—Below.

NEW 1922 Junior Triumph, best Lucas lamps and horn; sacrifice £38/10.

NEW S.W. Triumph, 1922, all-chain, makres' guarantee; £72/10.—Harry Nash, 391, King St., Hammersmith. 'Phone: Hammersmith 2837. [5494

1919 Triumph-Gloria Combination, splendid condition, carefully kept, all accessories; £75, or offers.—Write H.M., 24, Maryland St., Liverpool. [4628

1922 Triumph-Ricardo, brand new but shop-soiled; £87/10; exchanges or deferred.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5470

TRIUMPHS converted to countershaft, with 2, 3 or 4-speed gear box, from £15; satisfaction guaranteed.—Henry V. Smith, Osmondthorpe, Leeds. [5387

1918 Triumph 4h.p., countershaft, perfect condition, fully equipped; £35; new Dunlop tyres; any trial.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [5653

4h.p. Triumph motor cycle and Gloria sidecar, 10 months' old, good condition; what offers?—N. Standing, Draper and Outfitter, Benedict St., Glastonbury. [5068

42 Guineas.—Triumph Combination Countershaft, 3-speed, clutch, and K.S., Sunbeam sidecar, lamps, horn.—A.V. Garage, 2A, Eleanor Grove, Hoggers Corner, Barnes. [6459

1920 Triumph Combination, Easting, spares, insured £100, fully equipped, a carefully driven machine, in excellent condition; £56.—Mrs. Beamont, "Brooklyn," Private Rd., Enfield. [5127

1922 Model H Triumph, completely equipped with lamps and horn, appearance and condition perfectly good; bargain at £65.—The Layton Garages, 30, Holywell St., Oxford. [5589

1921 Triumph, November, all chain, complete with lamps, legshields, etc., perfect mechanical condition; £60, or with Millford Commercial sidecar, £70.—Haddon, North St., York. [5248

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24×2	Palmer, ribbed	16/6	29/6
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,,	Elite, 3-ribbed, ex. hvy.	24/6	—
26×2¼	Palmer, Cord	25/-	43/4
,,	Bates, spec.hvy.wired on	26/9	—
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26×2½ ×2¼	Clincher de Luxe, ex.hvy	23/3	34/9
26×2½	Clincher de Luxe, ex.hvy	25/-	33/6
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Triumph.

1920 4h.p. Triumph, 3-speed clutch and kick-starter, lamps, horn, etc., perfect order and condition; bargain, £45.—D. & S. Autocar Co., 33, The Parade, Golders Green. [6533

TRIUMPH 1921, all on, Tan-Sad, speedometer, electric light, insurance, etc., accessories worth £11, perfect condition; £60, or near offer.—Lindley, Humber Rd., Beeston, Notts. [5003

TRIUMPH Combination 1920, complete with horn, lighting set, etc., ready for the road, tax paid, a bargain; will sacrifice at 65 guineas.—Barker's Motors, 194, Balham High Rd., S.W.12. [5090

TRIUMPH-RICARDO 1922, only six months old, mileage under 1,000, perfect condition and guaranteed; 70 guineas.—Longman Bros., 17, Bond St., Ealing. 'Phone: Ealing 689. [5407

1918 Triumph Combination, 4h.p., countershaft, good condition, overhauled fully equipped, folding screen, mirror, spares; £60; any trial.—Cardon, Wellerstown, Chiddingstone, Kent. [5171

1919 Triumph and Gloria Sidecar, hood, screen, all lamps, etc., in excellent order, perfect condition, guaranteed; £55.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5473

TRIUMPH 4h.p., all-chain drive model, run under 100 miles, absolutely perfect and equal to new; £65 cash.—Waldron Motor Mart, 645, Garratt Lane, Earlsfield, S.W.17. 'Phone: Wimbledon 607. [5199

TRIUMPH Combination 1921, Lucas lighting set; horn, windscreen, splendid condition; £62/10; cash, exchange, deferred.—Elce, Ltd., 13, 15, 16, Bishopsgate Av. Camomile St., E.C. 'Phone: Avenue 5548. [0065

SOUTHPORT.—1922 All-chain Triumph-Gloria Magdyno Combination, legshields, Lucas electric horn, Easting, luggage carrier, Tan-Sad, superb condition; 99 guineas; exchanges.—Kents, 417, Lord St., Southport. [5439

THE following 1922 Shop-soiled Triumphs to be cleared: Model H., £75; Model S.D., £84; Ricardo Sports, £87; cash or extended payments.—The Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [5649

XXXXX.—Great offer of 4h.p. Triumph motor cycles, ex Irish forces. Having purchased a large number at a particularly advantageous rate, we can now supply for immediate delivery a limited number at the following prices:

1920 Models, £23 each.

1921 Models, £27 each.

1921 Models.—A few chain drive, £32.

ALSO a few damaged at £18.

ALL undamaged machines guaranteed in good running order throughout. Call and inspect, or write now for particulars. Trade and country enquiries invited, and easy payments will be considered. Sole distributors.—L. H. Williams and Co., 17, Maiden Lane, Strand, W.C. Gerrard 5004. Sea Miscellaneous. [5630

1923 Triumphs.—T. J. Ross (Triumph District Stockist), of 86, High Rd., Lee ('phone: Lee Green 744), has a large assortment of these fine models (new and second-hand) in stock. A visit will ensure personal attention and complete satisfaction. [5158

WE have a few Countershaft Triumphs at £45; fully overhauled and renovated, new Dunlop tyres and tubes; splendid opportunity; cash or extended payments; send for particulars.—Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. 'Phone: Brixton 3062. [5648

TRIUMPH.—4h.p., 1922, 3 speeds, K.S., clutch, special engine, £65; 4h.p., 1915, and sidecar, all on, £57/10; 4h.p., 1914, 3 speeds, and sidecar, £35; 4h.p., 1914, 3 speeds, solo, £25; 4h.p., 1914, 3 speeds, solo, £25.—Wauchope's, 9, Shoe Lane, Fleet St., E.C.4. 'Phone: Central 5168. [5615

SEPTEMBER, 1921, Triumph, all-chain drive, with Gloria sidecar, paint and enamel unscratched, Lucas lighting set, Easting windscreen, and several other fittings; cost £200, and is in every respect equal to new, mileage under 3,000; will accept £110; cash or deferred payments.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [4022

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4807

CYRIL WILLIAMS, Chapel Ash Depot, Wolverhampton.—Every Triumph part by return; lists free. [8140

TRIUMPH Spares per return. Full discount to traders.—Shuker and Son, Authorised Service Agents, Shrewsbury. [4281

TRIUMPH Spares, second-hand or new, for all models; prices right.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [6517

TRIUMPH Spare Parts for all Models; also Sturmey-Archer gear parts from stock, post free; gear overhauls by specialist.—Jones Garage, Triumph Agents, Broadway, Muswell Hill, N.10. [0157

MOTOR CYCLES FOR SALE.

Triumph.

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HERBERT ROBINSON, Ltd., Green St., Cambridge.—Triumph spare part service agents. Trade supplied. Complete illustrated list post free. [5571

TRIUMPH Parts, 1904-22, every part in stock, new or second-hand. Why not second-hand in place of new till prices drop? Half the price, satisfaction guaranteed. Hundreds of testimonials. Triumph repairs and renovations a speciality, under personal supervision of our proprietor, late with Triumph and Premier cycle companies. Cylinder regrinding on latest machinery.—Forfield Motors, Forfield Place, Leamington Spa. [7361

Velocette.

£16.—2¼h.p. Velocette 2-stroke, 2 speeds, all-chain drive.—King, Egrove Farm, Oxford. [5318

VELOCETTE.—Delivery from stock of all 1923 models.—The Layton Garages, 30, Helywell St., Oxford. [4782

VELOCETTE.—The actual Olympia Show model G3, 3-speeder, in stock, semi-T.T. bars; immediate delivery; £65.—Crew Bros., Guildford. 'Phone: 434. [5535

BRAND new 1922 Velocette models at enormous reductions to clear; our prices are £10 below makers' fixed prices for 1923 season; never again will you get a new Velocette at this exceptional figure; E.2, 2-speed, clutch, kick-start, £52; E.3, 3-speed, £55; deferred payments 4% extra; free delivery to any address.—Sole Birmingham Agents, Premier Motor Co., Aston Rd., Birmingham. [5600

Verus.

2¼h.p. Verus, late 1920, as new, all on, electric lighting, splendid condition, not done 1,000 miles, privately owned; £30, no offers.—25, Santos Rd., Wandsworth, S.W.18. [4751

Weatherell.

WEATHERELL 2¾h.p., o.h.v. 1922, 3-speed, kick-starter, clutch perfect; £48; appointment.—12, Temple Sheen Rd., East Sheen, S.W.14. [5175

Werner.

2¾h.p. Werner, less belt, in good running order; £7/10.—A. Baker, 40, West Croydon, Surrey. [5687

Williamson.

1915 8h.p., 2-speed, Williamson Combination; £50.—Ross, 86, High Rd., Lee. [5275

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ALLAN GRUZELIER for Zenith Bargains!

ALL-CHAIN Eight, only 8 weeks old, fitted Bonniksen speedometer, horn, lamps, mechanical lubrication, absolutely as new, Super Sports engine; £90.

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ALL 1923 models for immediate delivery from stock 2¾h.p. Touring, £69/15; Sports, £77; Show models; Super Eight, £125; Touring, £115; Bradshaw, £95.

THE demand for 1923 Zeniths is exceptionally good. Don't be left without one.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W.1. [4808

8h.p. Zenith Combination Sports model; £65.—Claremont, 38, High St., Shrewsbury. [5442

F.O.C.H. invite inspection; Zenith and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1374

ZENITH 4h.p. gradual gear, in splendid condition, very fast, £25.—Cooper, 63, Avenue Rd., Camberwell. [5680

1918 4½h.p. Zenith-Jap, Gradua gear, kick-start, clutch; £35.—W. Ray, Albion St., Crowland, Peterborough. [5070

6h.p. Twin Zenith, sporting model, equipped, exceptionally fine condition; £30.—99, Cannon Hill Lane, Merton, S.W. [5348

39 Guineas.—Zenith-Gradua 1915 5-6h.p. Combination, handle starter; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5106

ZENITHS converted to all-chain drive, with 3 or 4-speed gear box, from £25; satisfaction guaranteed.—Henry V. Smith, Osmondthorpe, Leeds. [5385

39 Guineas.—8h.p. Countershaft Zenith Combination, 1917, K.S., electric horn, speedometer, etc., perfect.—239, Goldhawk Rd., Shepherds Bush. [5636

AT Edwards.—1921-22 5h.p. Sports Zenith, electric lighting, horn, tax paid, superb condition; 62 guineas; exchanges or deferred.—101, Gt. Portland St., W.1. [6593

ZENITH Standard Combination, late 1920, 8h.p., clutch, Gradua, Lucas electric lighting, screen, speedometer, etc.; bargain, 65 guineas.—Pennell, 4, Foulis Terrace, South Kensington. Kensington 2542. [5054

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All machines carriage paid to any address.

DEFERRED PAYMENTS AND EXCHANGES A SPECIALITY.

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1922 SOLO (NEW).

NORTON, 3½ h.p., all-chain, 3-sp., K.S. ..	£69
NORTON Big Four	£74
SUNBEAM, 1½ h.p., Sporting T.T. model ..	£105
HUMBER, 4½ h.p., all-chain, 3-sp., K.S. ..	£78
N.U.T., 5 h.p., 3-speed, K.S.	£78
HAWKER, 4½ h.p., 3-sp., all-chain, K.S. ..	£73
BEARDMORE, Barr & Stroud, 3-sp., chain, K.S.	£69
INDIAN, 4 h.p. Scout, chain, K.S.	£87
IVY, 3 h.p., chain, 3-speed, K.S.	£59
ALLON, 2¾ h.p., 2-sp., elec. lamps, K.S. ..	£53
NEW HUDSON, 2¾ h.p., 2-stroke, 2-speed	£38
EDMUND, 2¾ h.p., spring frame, 3-sp., K.S.	£69
DIAMOND, Barr & Stroud, 3-sp., chain ..	£69
SUN, 2¾ h.p., J.A.P., 3-sp., K.S.	£55
REVERE, 2½ h.p., Villiers, 2-speed	£35

1922 COMBINATIONS (NEW).

NORTON Big Four, Sporting sidecar	£99
MARTINSYDE, 6 h.p. twin, chain, detachable wheels	£115
BEARDMORE, 4½ h.p., spring frame, chain	£110
COVENTRY EAGLE, 4 h.p., 3-sp., chain ..	£99

SECOND-HAND SOLO (GUARANTEED).

NORTON, 1921, 3-sp., chain, K.S.	£48
SCOTT, 1920, 3¾ h.p., lamps, horn	£45
N.U.T., 1921, 2¾ h.p., twin, actual I.O.M. machine	£65
HARLEY, 1922, 4 h.p., flat twin, 3-speed, chain	£73
A.B.C., 1921, 3 h.p., 4-speed, chain	£45
DIAMOND, 1922, 2¾ h.p., 3-sp., Blackburne	£40
INDIAN, 1915, 7-9 h.p., 3-sp., chain	£28
NORTON, 1921, B.R.S., very fast	£53
NEW HUDSON, 1914, 3-sp. hub, good order	£23

SECOND-HAND COMBINATIONS (GUARANTEED).

DENE, Millford sidecar, 8 h.p., J.A.P.....	£65
SCOTT, 3¾ h.p., 1916, lamps and horn	£45
HARLEY, 7-9 h.p., De Luxe sidecar, 1921	£79
JAMES, 4 h.p., lamps and horn, 1916	£61
CAMPION, 8 h.p., J.A.P., lamps and horn, 1919	£69
NORTON, Big Four, De Luxe sc., lamps, 1919	£65
HENDERSON, 10 h.p., 4-cyl., reverse electric, 1921	£98

LIGHT CARS.

Several 1922 shop-soiled models at greatly reduced prices. Particulars on request.

MOTOR CYCLES FOR SALE.

Zenith.

LATE 1921 8-10h.p. Zenith-Jap Sports, equal to new, for a good P. and M. combination and £20, or similar make; sell £65.—Felley, Parson Drove, Wisbech. [5376

ZENITH 1920 8h.p., countershaft, clutch, K.S., guaranteed perfect, open for any inspection, equipped; £45.—Harbermere, Crutchfield Lane, Walton-on-Thames. [5249

ZENITH-BRADSHAW, brand new, 3½h.p. 1922, oil-cooled, Gradua gear, £65; cash or extended payments.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. 'Phone: Central 5168. [5616

1921 (very late) 5h.p. Sports Zenith, condition actually as new, tax paid, fully equipped; £50.—Whitley, 9, Great Cumberland Mews, Seymour Place, Marble Arch, W.1. Paddington 5970. [5402

PRACTICALLY new late 1921 8h.p. Countershaft Zenith Combination, electrically equipped, speedometer, luggage grid, very small mileage; £65.—Hillier (side bell), 127, St. Marks Rd., North Kensington. [5261

80m.p.h. Zenith-Bradshaw 1922, specially tuned, Brooklands winner, total mileage 1,400, new pistons, new steering head races, special racing frame, Sturmey close-ratio 3-speed box with K.S., silencer, Amac, Hutchinsons, 3 sprockets, spare chain, and tools; capable in skilled hands of winning any club event; £75.—Mallet, 7, Collingham Rd., S.W.5. [4742

Spare Parts:

ZENITH Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9447

Ladies' Motor Cycles.

KENILWORTH 1¼h.p., 4-stroke, suitable for a lady driver; £25.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5606

Miscellaneous.

NAYLOR and Kirk's

CHRISTMAS Gifts.

1921 Sun-Vitesse, Sturmey 2-speed, clutch, kick-start, fully equipped; £22.—Below.

1918 P. and M. Combination, 2-speed, electric lighting, fully equipped, splendid condition, and powerful engine; £32.—Below.

4h.p. Triumph, 3-speed, kick-start; solo, £59; ditto combination, £46.—Below.

3½h.p. Sunbeam, 3-speed, kick-start; solo, £53; 1919 ditto combination, £60.—Below.

1920 Connaught, 2-speed, fully equipped, smart and reliable machine; £20.—Below.

1918 Douglas, 2-speed, thoroughly overhauled, enamelled and plated, fully equipped and 50% new parts, a snip; £24.—Below.

1919 Douglas, 2-speed, not W.D., in exceptional condition; £28.—Below.

SUN-VITESSE, Sturmey 3-speed, clutch, kick-start, fully equipped; £20.—Below.

1921 Henderson Combination, dynamo lighting, etc.; £76.—Below.

1920 Enfield Combination 8h.p., dynamo lighting; £73.—Below.

1915 or 1916 James 4½h.p. Combination, less sidecar body, all-chain drive, clutch, kick-start, fully equipped, powerful engine; £30.—Below.

EXCHANGES entertained on above.—Naylor and Kirk, 406, Garratt Lane, Earlsfield, S.W. 'Phone: Wimbledon 2041. [5484

J. HEBDEN and Sons, Nelson.

BRAND New 1922 Motor Cycles.

3½h.p. Norton, model 16H; list £79; our price £70.

4h.p. Triumph, type H; £70.

3½h.p. James Sports Model, list £75, our price £67; 7h.p. James combination, spare wheel, etc., list £133, our price £119.

8h.p. Matchless 2-seater Combination, Magdyne, spare wheel, etc.; list £173; our price £155.

8h.p. Enfield Combination, list £120, our price £109; also new 1921 Enfield combination, £99.

NEW 1922 G.N. Light Car; £179.

MUST be cleared to make room for 1923 models.

J. HEBDEN and Sons, 71, Scotland Rd., Nelson, Lancs. Tel.: 91. [4662

3½h.p. Motor Cycle with Burman 2-speed, kick-start, and clutch, good condition; £27.—Rex, Middle St., Taunton. [5389

F.O.C.H. for New and Second-hand Cycles, cars, etc.; bargains; cash, or easy payments; exchanges arranged.—5, Heath St., Hampstead (near Tube). [3864

MOTOR CYCLES FOR SALE.
Miscellaneous.

1922 brand new Gregg 2½h.p., 2-speed, Sturmey, kick-start, clutch; 26 guineas.—Below.

WARD and Co.—P. and M. Combination 1918, fully equipped, screen, etc., many extras, exceptional condition; 35 guineas.—Below.

TRIUMPHS.—Brand new, all-chain, unpacked, makers' guarantee; 70 guineas.—Below.

ALL Machines guaranteed; we will do our best to please you.—Below.

WARD and Co., 51, Upper Richmond Rd., East Putney (District Railway). 'Phone: Putney 2754. [5660

WANDSWORTH Motor Exchange.—Finest selection real good cheap motor cycles; exchanges, easy terms.

WANDSWORTH.—When you buy your motor cycle from us you are dealing with an old-established firm backed by 24 years' experience; satisfaction guaranteed.

WANDSWORTH.—Easy terms, easy terms, weekly instalments taken on any motor cycle.—Below.

WANDSWORTH.—B.S.A. auto-wheel with cycle, 3 speeds, licensed; 12 guineas; weekly instalments.

WANDSWORTH. — Dayton Lightweight 1½h.p. magneto, good tyres, runs well; offers; weekly instalments.

WANDSWORTH.—Motosacoche Lightweight 2½h.p., variable gear, lamp, nice little machine; 19 guineas; instalments.

WANDSWORTH.—Bradbury 4h.p., Grado-Multi gear, good tyres, nice machine; 22 guineas; instalments.

WANDSWORTH.—O.K. Lightweight 2½h.p., good tyres, lamps, drive away; 17 guineas; weekly instalments.

WANDSWORTH.—Riley 3½-4h.p., magneto, new tyres, new forks, newly enamelled; offers; instalments.

WANDSWORTH.—Zenith 3½h.p., J.A.P. engine, Gradua gear, good tyres; 29 guineas; weekly instalments.

WANDSWORTH.—P. and M. 3½h.p., 2 speeds, kick, new tyres, newly painted; 29 guineas; instalments.

WANDSWORTH.—Scott (rebuilt Sports Twin), water-cooled, runs splendidly; only 29 guineas; weekly instalments.

WANDSWORTH.—Matchless-Jap Lightweight Twin, 3 speeds; clutch, runs fine; 26 guineas; instalments.

WANDSWORTH.—Indian Coachbuilt Combination 5-6h.p. twin, 3 speeds, lamps; 39 guineas; weekly instalments.

WANDSWORTH.—A.J.S. Coachbuilt Combination 5h.p. Twin, 3 speeds, lamps, cheap; offers; instalments.

WANDSWORTH.—A.B.O., latest 1920 Twin, 4 speeds, lamps, special; 49 guineas; weekly instalments.

WANDSWORTH.—Bat fine powerful coachbuilt Combination 8h.p. Twin, 3 speeds, countershaft, kick, lamps; 39 guineas.

WANDSWORTH.—Rover 3½h.p. T.T., Philipson pulley, beautiful machine; only 29 guineas; weekly instalments.

WANDSWORTH.—Harley-Davidson fine coachbuilt Combination 7h.p. Twin, complete; 39 guineas; weekly instalments.

WANDSWORTH.—Harley-Davidson (late) beautiful coachbuilt Combination 7-9h.p. Twin, 3 speeds, lamps, speedometer, screen, hood; 65 guineas.

WANDSWORTH.—Brand new Triumph in crate, 4h.p., 3 speeds; 69 guineas; weekly instalments.

WANDSWORTH.—F.N. latest, nearly new, 65 guineas; F.N., nearly new, 42 guineas; F.N., 19 guineas; F.N., 16 guineas; weekly instalments.

WANDSWORTH Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [5550

WARD and Co., Putney, have the following Christmas bargains below. No reasonable offer refused; call and inspect; no obligation.—Below.

1921 Matchless, Model H, dynamo lighting, hood, side screens, side curtains, speedometer, spare wheel, as new; 85 guineas.—Below.

MATCHLESS 1920 as above, less dynamo, perfect condition, genuine; £72.—51, Upper Richmond Rd., E. Putney. [5661

HALIFAX.—1923 New Imperial, B.S.A., Enfield, Douglas, Triumph, Norton, and Levis models from stock. Cash, exchange, or deferred.—Halifax Motor Exchange, Horton St., Halifax. [5561

1923 Models.—A.J.S., Clyno, Harley, Rex-Acme, Rudge, Raleigh, Chater-Lea, Excelsior, etc.; see also Matchless column.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [5601

Let your XMAS GIFT be a DOUGLAS.

It is always seasonable, always useful, and a constant source of the greatest possible enjoyment. The 2¾ h.p. Douglas fully equipped at £50 is cheaper than pre-war price.

I am a Douglas Specialist and handle nothing but Douglas Motor Cycles. I can therefore give you the best possible service. Cash or terms to suit you. I can supply the special Douglas fitted with Zoom Zoom Exhaust system, Alloy Air Cooled Valve Caps, Aluminium Combined Footboards and Footrests, etc., fully equipped, and GUARANTEED TO DO 55 m.p.h. for £52.

I shall be pleased to send you a copy of the interesting 1923 Douglas Catalogue, and to give you any helpful information and advice you may require.

Here are some more seasonable gifts for motor cyclists.

THE TONY COMBINED ALUMINIUM FOOTBOARD AND FOOTRESTS. Beautifully finished—giving a natural riding position. A real job. Something that lasts for ever. Price 30/- per pair complete.

A beautifully made and reliable **HANDLEBAR WATCH,** fully guaranteed by makers, jewelled movement. This is an excellent lever watch and is supplied complete with waterproof and beautifully finished case to clip on the handlebar for 30/-.

PARALLEL JAW, SELF-ADJUSTING, 6" SPANNER. No milled adjusting nut to worry you. The adjustment is effected by a slight movement of the thumb. Price 2/6

LOW POSITION SADDLE. The front clip is secured to the top frame tube, and the back springs are anchored to the special seat bolt supplied. Gives a much lower riding position, and therefore greater security on greasy roads. Price complete, 25/-

ZOOM! ZOOM!! The popular Exhaust System. Beautifully made, finished in burnished nickel or copper. A pleasant Zooming note without back pressure. Adds pounds to the appearance of any Douglas. Price 30/- in copper finish, 33/6 nickel.

LEATHER TOOL ROLL. A real heavy affair that will stand rough usage. Fitted with leather pocket, two side flaps, leather centre tool holder and leather strap. 5/- each.

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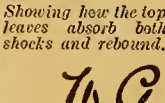
The Spring in its normal position.

The Spring heavily loaded. Movement 4 inches.



Showing how the top leaves absorb both shocks and rebound.

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Double the comfort. Actual photographs reproduced showing the wonderful 4 in. movement of the spring. You can practically turn this spring inside out, and it will return to its normal setting without fracture. its secret is in its self-shock-absorbing qualities, and it works both ways, thus taking the rebound, which is also absorbed by friction. Have one fitted to your chassis, and you'll be surprised at the added comfort. Price 17/6.

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Official Douglas Agent,
140 VICTORIA STREET, BRISTOL.
(Ten years with Douglas Motors, Ltd.) Tel. 3792.

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Miscellaneous.

BOOTH'S Motories, Blackpool.—1923 Morgans in stock; motor cycles taken in exchange.

BOOTH'S Motories, Blackpool.—1923 Levis, New Imperials, Quadrants, Rudges, Arlels, Martinsydes; exchanges.

BOOTH'S Motories, Blackpool.—Lightweights O.K. 2-speed, £16/10/6; Levis, 2-speed, £22/10/6 Centaur, 3-speed, £15/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, Douglas, 2-speed, £18/10/6; Connaught, 2-speed, £19/10/6; Calthorpe-Jap, 2-speed, £24/10/6; new 1922 Bradbury, £49/10/6.

BOOTH'S Motories, Blackpool.—Lightweights, 2h.p., £10/10/6; Edmund-Jap, spring frame, £26/10/6; 1921 Viper-Jap, £32/10/6.

BOOTH'S Motories, Blackpool.—3½h.p. New Scale, £29/10/6; 1921 3-speed New Imperial, £37/10/6; 1920 Edmund-Jap, £34/10/6; 3½h.p. Humber, £16/10/6; 3½h.p. Singer, 2-speed, £19/10/6.

BOOTH'S Motories, Blackpool.—Three 5h.p. Rudges, 2-speed, £25/10/6; 3-speed, £25/10/6; Multi, £22/10/6.

BOOTH'S Motories, Blackpool.—Four Phelon and Moores, £15/10/6, £25/10/6, £29/10/6, £33/10/6; 3½h.p. Premier, £19/10/6.

BOOTH'S Motories, Blackpool.—Combinations, 1922 Quadrant, £79/10/6; 1920 4h.p. Douglas, £55/10/6; 1920 Martinsyde, £75/10/6; 6h.p. Enfield, £35/10/6; 8h.p. Premier, £39/10/6; 1920 Matchless, £79/10/6; 1920 Harley-Davidson, £85/10/6; new 1922 Rudge and Royal Ruby, cheap.

BOOTH'S Motories, Blackpool.—8h.p. Carden Cyclecar, £26/10/6; 1920 A.V. Cyclecar, £39/10/6; 7h.p. Indian, £29/10/6; 5h.p. 2-speed Indian, £29/10/6.

BOOTH'S Motories, Blackpool.—1920 3-speed Douglas, £42/10/6; 4h.p. Douglas, £47/10/6; 1920 Zebre light car, cheap; several others cheap. Push cycles taken in exchange. Motor cycles purchased for cash.—Booth's Motories, 294, Waterloo Rd., Blackpool. Tel.: 1451. [3982

CROYDON.—Bargains in good second-hand machines. Scotts, Douglases, Rudges, and many other makes. All to be cleared at cheap prices. 1920 Hobart £15, sporting sidecar body £2.—Kinsey and Co., Ltd., 350, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [5493

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HIRE Latest Models cycles and combinations, any period.—Write terms, Fowler Brigden, 130, Euston Rd. [0795

OUR Terms are most favourable. Send for full particulars, solo or combination.—Maudes', 100, Gt. Portland St., London. [0960

ROBERTSON'S Motors, Ltd., for many years have specialised in this class of work. If machine is purchased, full amount of hire up to one week is allowed.—157b, Gt. Portland St., W.1. [5936

MOTOR CYCLES WANTED.

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EDWARDS and Co.,

101, Gt. Portland St., W., are cash buyers of solos, combinations, and Morgans. Highest prices given; distance no object. Call, write, or 'phone: Mayfair 4027. [0870

PALMER'S Garage, Tooting.—The pre-eminent place for disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted machine can be included in auction sale held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale a nominal auction fee is charged. For motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

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T.B.

WANT

500 COMBINATIONS and Solos, any make, guaranteed top prices given.—T. and B. Motor Co., Ltd., 372, Euston Rd. Museum 6581. [0948

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ALWAYS Buy

SOLOS, Combinations, cycle cars. If in town, write, phone, or call. If country, send to London terminus. We collect free and send best cash offer.—W. T. Dunn, Ltd., 326, Euston Rd., London. Museum 6391. [0332

£40-£45 cash for V Twin, solo or combination. 44, Bramdram Rd., Lee. [5029

WANTED, good combinations.—Rhind and Co., Stone Place, Rusholme. [4357

WANTED, cheap motor cycle, about £10.—Box 5146, c/o *The Motor Cycle*. [5322

ZENITH 8h.p. Sports, 1922, late 1921, reasonable.—Write, 36, Avenue Rd., N.6. [5641

4h.p. Douglas, solo or combination; cheap.—Lawson, 8, Athenlay Rd., Nunhead, S.E.15. [5232

WANTED, good combination, cheap for cash.—143, Ravensbury Rd., Earlsfield, S.W. [5538

£50-£70 for best 1920 22 Combination offered.—Box 5145, c/o *The Motor Cycle*. [5164

MOTOR Cycle, old type, must be cheap.—Write 61, St. Maur Rd., Parsons Green, S.W.6. [4296

LIGHTWEIGHT Motor Cycle wanted; cheap for cash.—Snow, Laurel St., Dalston, E.8. [5639

LATE P. and M. Combination, condition immaterial; cheap.—4, Leicester Grove, Leeds. [5684

WANTED, 2¾h.p. New Imperial or Omega; must be reasonable price.—King, Egrove, Oxford. [5319

COMBINATION wanted, 4½h.p. B.S.A., Sunbeam preferred, cheap, cash.—Gooch, Tunnel Rd., Retford. [5043

GOOD Solo or Combination wanted for cash.—Write, F. Lacey, 115, Engadine St., Southfields S.W.18. [3537

URGENTLY wanted, lightweight motor cycles, any condition, cash on sight.—Duval, 61, Grand Parade, Harringay, N.4. [4698

WANTED, 6h.p. Combination, Enfield, Rover, or Clyno preferred; cheap for cash.—Holderness, Sleaford Rd., Boston [5210

WANTED, N.U.T. 1921 5-6h.p. solo or combination, fullest particulars, lowest cash price.—Mills, 23, Tipping St., Stafford. [5055

3½-4h.p. Solo Machine wanted, gears, C. and K.S., condition immaterial; must be cheap.—Tonge, Holmesfield, Sheffield. [5235

£20 offered for Countershaft Triumph or similar machine, condition immaterial.—Atheldene, Offington Lane, Worthing. [5220

WANTED, 2¾h.p. Douglas, late model, callers only any time.—South Eastern Motor Works, Solomons Passage, Peckham Rye. [5059

COMBINATION, Triumph or similar, not earlier than 1919, perfect condition; cheap.—Phelan, 10, Graham Rd., Dalston, E.8. [5163

WANTED, late Solos or Combinations, cash on sight. Call, write, or 'phone Kensington 3709.—Edwards, 50, Harrington Rd., South Kensington. [0604

ANY Motor Cycles Wanted in exchange for new Martinsydes, 1923; the most marvellous value on the market.—Motor House, Ltd., 20, Finchley Rd., N.W.8. [3403

BUNTING'S Buy, sell, or exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [0032

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363 [037

CASH Buyers.—Triumphs, Enfields, Sunbeams, A.J.S.'s, Indians, Harley Davidsons, B.S.A.'s, Scotts, Clynos, Douglases, Rovers, Rudges, Quadrants, Zeniths.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [5559

SEND Your Motor Cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station, Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [5522

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A.B.C. Skootamota, new, unsoiled, latest model, list £55; accept £18; wonderful bargain.—Frank Whitworth, 139, New St., Birmingham. [5085

FOR MOTORING and EVERY-DAY WEAR.

WE have purchased 500,000 yards of Cloth in three shades and two qualities from manufacturers who require ready-money, and we are now offering this to the public in garments at 50% LESS THAN TO-DAY'S COST PRICE.

CHILDREN'S CAPES and HOODS in various shades of BLUE.

All sizes, 21in., 24in., 27in., 30in., 33in., and 36in.

ALL ONE PRICE 4/11 plus 9d. extra for postage.

Worth 12/6.

LADIES' HEAVY FAWN RUBBER SURFACE COATS AND HEAVY NAVY RUBBER-LINED COATS

(Just the thing for Motor use).

Sizes, 42in. 44in., 46in., 48in., 50in. length.

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GENTS' HEAVY FAWN RUBBER SURFACE COATS AND HEAVY FAWN or NAVY RUBBER LINED COATS.

Sizes, 34in., 36in., 38in., 40in., 42in. and 44in. Chest.

ALL ONE PRICE 15/- Postage 1/- extra. Worth 42/-

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All orders, together with remittance, to be addressed to:—

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BOWER Adjustable Windscreen, complete, coverall apron etc., few shop-soiled at 25/-; manufactured under patent Nos. 108334 of 1916 and 109601 of 1916.

EASTING and Sandham windscreens supplied.—Repairs of all kinds carried out. New panels fitted from 12/-. Aprons, 10/-. 'Phone: Brixton 1585.—Robini Manufacturing Co. (Established 1899), 1 and 3, Tulse Hill, Brixton, S.W.2. [5153

CELASTOID Strong Windscreens, 50×10 7/-, 25×20 7/-, 16×10 2/6; thinner quality, for poultry houses, 50×20 6/-, 10×10 1/-; post paid.—B. Smith and Son, Woodhouse Lane, Leeds. 'Phone: 22576. [3553

BRISTOL Windscreens, will fit any sidecar, adjustable any angle, neat and efficient, Popular, 35/-, complete with apron; De Luxe, £2/12/6. Why pay more? Send for illustrations.—Patentees and Manufacturers, Bristol Sidecar Co., Stokes Croft, Bristol. [4370

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HELEN Sidecars!!! Helen Sidecars!!!

CLEARANCE of end of season stock. Wonderful bargains.—Bodies complete, from £2/15; full bulbous back touring bodies, complete upholstered and couch painted, coverall apron, etc., £5/10. Write for catalogues. Chassis complete, new, from £6. 'Phone: Brixton 1585.—Robini Manufacturing Co. (Established 1899), 1 and 3, Tulse Hill, Brixton, S.W.2. [5151

COBB-SPEEDMAN Sidecar Bodies for 1923, finished ready for the road; bulbous touring, £4/15; bulbous sports, £3/15; racing, £3; others from £1/19/6.—Vernon Cobb, Sidecars, Nottingham Rd., Burton Joyce, Notts. [5125

BASTONE'S Great Clearance of Sidecar Bodies (stock soiled); semi-sporting lightweight, £2/15; touring models, 70/- each; ditto, not painted or upholstered, 30/ each.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [5583

SIDECAR Body Designs for the trade only. Working, coloured pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Designing Dept., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—Dorset House, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

HELEN Sidecars!!! Helen Sidecars!!!

CLEARANCE of end of seasons bargains.—A few lightweight outfits complete, brand new, tyre and tube, etc., all fittings, £9; shop-soiled outfits for Triumph, etc., bulbous back body, apron, chassis complete, all fittings, tyre and tube, £12/15; a few heavyweight Plus One chassis complete, shop-soiled, less tyre and tube, £9. 'Phone: Brixton 1585.—Robini Manufacturing Co. (Established 1899), 1 and 3, Tulse Hill, Brixton, S.W.2. [5152

COACHBUILT Touring Sidecar, 26in. wheel, good condition; £7.—63 Solon Rd., Brixton. [5287

INDIAN Sidecar; £9/10; several others cheap, room wanted.—57, Kenbury St., Camberwell, London. [5190

SIDECAR ATTACHMENTS.

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FOR

SANDHAM, the smartest sidecar specialists.

SANDUM (V-shaped) windscreen, a hood, screen and apron. The Popular £2/15, and the Standard £3/18. Write for list.

SANDUM (V-shaped) windscreen. Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

SANDUM Dual-purpose Sidecar (patented). The only sidecar of reasonable length capable of carrying two adults in comfort. Bodies supplied separately if required

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0019

SIDECAR, Swan R.34, off Triumph, as new; £12/10.—Below.

CANOELET, beautifully upholstered, painted dark blue, screen, off Triumph; 10 guineas.—Below.

ANOTHER Lightweight, sound, fit almost anything; £6.—Below.

WARD and Co., 51, Upper Richmond Rd., E. Putney. [5658

SIDECAR Bodies, coachbuilt, usual price £10/10 (20) only, to clear £5; send for photo.

SIDECAR Bodies, cane and wicker, cost from £3 to £10 new, slightly soiled; 20/- to 50/- each, absolute gifts; all carriage paid.

ALSO quantity sidecar chassis, wheels, castings, tyres, tubes, and various fitments, money-making opportunity for maker-up.—Melville Cara (Halifax), Ltd., opposite Fire Station, Halifax. 'Phone: 999 Hx. [0976

BOOTHS Motories, Blackpool.—New coach bodies, full size, with locker, £5/17/9; usually £9/10.

BOOTHS Motories, Blackpool.—New step pattern coach bodies, £5/17/6; sporting bodies, £4/17/6.

BOOTHS Motories, Blackpool.—Cancelet chassis, like new, £5/19/6; shop-soiled £25 sidecars to suit Triumph, B.S.A., £16/10/6; second-hand sidecars, cheap; springs, mudguards, hubs, lugs, fittings; state requirements.—Booth Motories, 294, Waterloo Rd., Blackpool. [3984

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NORTON Coachbuilt Sidecar, bulbous back, fine condition, all fittings; £10.—King, Egrove, Oxford. [5320

SIDECAR, Sports, Swan pattern, quite new; £6; worth £16.—Pleasant, 85, Carleton Rd., Tufnell Park, N.7. [5186

P. and M. Sidecar Chassis, for R.A.F. model, complete, £4; chassis only, 15/-.—Simpson, Orchard, Sunbury-on-Thames. [5308

SIDECARS.—Bulbous backs, underslung, also Sporting Cancelet, from 7 guineas.—12, Cornwall Mews, Gloucester Rd., S.W.7. [5107

SIDECAR, latest new underslung, bulbous back, suit Triumph, similar; £10.—Taylor, 637, Seven Sisters Rd., Tottenham. [5338

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G.N. 1921, fully equipped, ready for the road, excellent condition; £85.—Wauchope's, 9, Shoe Lane, London. [6607

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MORGAN 1921 De Luxe, water-cooled M.A.G. engine; £105.—Below.

MORGAN 1921-22 Grand Prix, M.A.G. engine, condition as new; £115; cash, exchange, deferred.—Elce, Ltd., 13, 15, 16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0066

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A.C. Sociable, with really good engine, enclosed Bosch magneto, etc., everything working, tyres fair, body not very good appearance; £12.—F. C. Lingley, Woodbridge, Suffolk. [5247

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MORGAN, 1920, M.A.G., electric light, new tyres, good condition; moderate price; exchange with cash considered. After 7 p.m.—Snow, 58, Malvern Rd., Dalston, E.8. [5640

72 Guineas, exchanges.—Baby Peugeot, De Luxe 2-seater, 7h.p., 4-cyl., 3 speeds, hood, screen, luggage grid, lamps, spare rim, smart and good, tax paid.—Seabridge. Below.

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£119/10.—Morgan 1921 Grand Prix, water-cooled M.A.G. engine, tyres practically unsoiled, Lucas dynamo lighting, hood, screen, discs, aluminium dashboard, aluminium number plates, Stewart mechanical horn, speedometer, swallow mascot, valuable Air Force 8-day watch, dashboard lamp, etc., tax paid.—Delancey Street Garage, Camden Town, N.W.1. [5298

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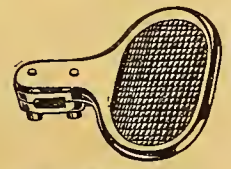

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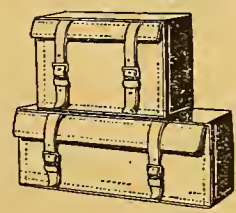

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LATE 1922 8h.p. Rover, run few miles, dynamo lighting, spare wheel, clock, speedometer, mirror, mat, coupe attachment; £135.—24, Balliol Rd., North Kensington. [5359

ROVER Cars at 1923 prices; Standard 2-seater, £180; 4-seater, £190, De Luxe 2-seater, £200; De Luxe 4-seater £210; deferred payments; your motor cycle or car taken in part exchange; prompt delivery.—Official Agents, Eagles and Co., 275, High St., Acton, London, W. [0761

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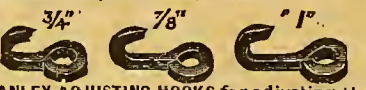

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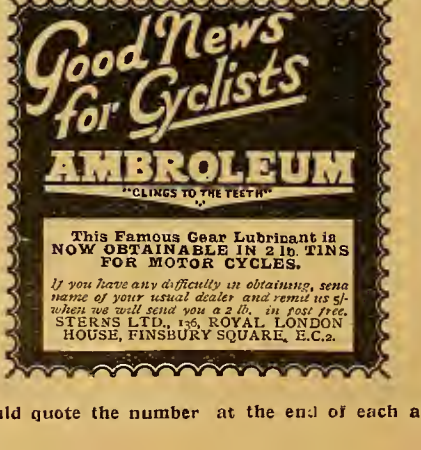
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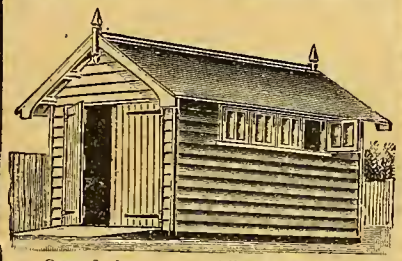

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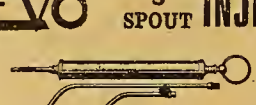

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BALATA and Chrome Belts for winter use; ¾in., 1/4; ⅞in., 1/6; 1in., 1/9; 1½in., 2/- per ft.; fasteners, 9d. each; postage 1/-.—Sole Manufacturers, W. Pollin and Son, Hollington, St. Leonards-on-Sea. [2987

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BELTS.—Clincher clearance, not W.D., ¾in., 6ft. 6in., 8/2; 7ft. 6in., 9/5; ⅞in. 7ft. 6in., 9/5; 8ft., 10/1; 8ft. 6in., 10/9; 1in., 7ft. 6in., 10/4; 8ft., 11/-; 8ft. 6in., 11/8; 1⅛in., 8ft., 16/-; Bates short lengths, ¾in., 5ft. 6in., 5/-; ⅞in., 5ft., 5/6; leather belts, ¾in., at 1/6 per ft.; Belt fasteners, 9d. and 1/-. Post 1/-.—The Bancroftian Co., 64 and 78, Bishopsgate, E.C. [0933

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CARBIDE, guaranteed highest grade, lowest price; immediate delivery nearest depot.—Write, Jackson and Co., High St., Chesham, Bucks. [5185

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J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [4808

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Holborn 672. [7917

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THE MOTOR CYCLE
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· TWENTIETH YEAR OF PUBLICATION ·

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The Popular Sidecar.

JUST prior to the car and motor cycle shows, it will be recalled that many expressions of opinion appeared in the daily press foretelling the early demise of the sidecar. *The Motor Cycle* energetically controverted these views for the benefit of the uninitiated, recalling that similar views had been put forward year after year by persons interested in or over-enthusiastic concerning the small car.

The curious part is that those who are loudest in their criticism of the sidecar are in the main people who never drive one and know nothing of its capabilities. As we have often urged, there would be little need for sidecars if cars were as cheap, both in first cost and running cost, as the more economical three-wheeler. But we must face facts as they are and not as one might like them to be. The first important trial since the Show took place this week, and what do we find? There were no less than 93 sidecar outfits and 14 three-wheeled runabouts in what is generally regarded as the most difficult trial (excepting freak events) of the year, namely the M.C.C.'s 24-hour run from London to Exeter and back. This number, of course, considerably exceeds the number of small cars in the trial, and in fact exceeds, by one, the total number of solo motor cycles engaged.

The would-be prophets seem to have been silenced of late, but it is not without interest to recall their ill-advised comments concerning sidecar machines. Notwithstanding the assertions of the critics, the sidecar remains one of the most popular types of vehicle on the road, thanks to its extraordinary carrying capacity, and its economy as compared with the small car, in the matter of taxes, tyre wear, garage charges, petrol consumption, and indeed all expenses that form the main items in the annual running cost account.

Next week we shall analyse the results of the strenuous trial mentioned and have no fear of the good showing which the reliable sidecar will put up, as compared with other forms of light transport.

Comfort for the Sidecar Passenger.

THE comfort of the sidecar passenger is to-day closely studied by sidecar manufacturers. An examination of the many admirable designs of hoods and screens reviewed of late in these columns proves the statement, and a superficial survey of completely equipped sidecars of modern production almost leads one to believe that perfection has been reached. But this is hardly so.

The hall mark of experience is clearly apparent in many types, since certain designers have really endeavoured by their own practical experience to eliminate weaknesses and faults. But there is room for improvement in detail refinements which add so much to the comfort of the lady passenger in particular. The matter of body width, the quality of the upholstery, the amount of leg room and the convenient, or otherwise, disposition and dimensions of the door are points that still demand attention.

One or two models are, of course, notable exceptions, capable of comparison in finish and comfort with the best light cars. The feeling, however, gains currency that too many manufacturers have concentrated on the sporting type sidecar to the partial neglect of the touring pattern. No doubt the fashionable streamline designs are effective in appearance, but it must be remembered that the bulk of sidecar passengers prefer comfort to elegance, and it is possible that the streamlining of bodies may be carried so far as to prove a detriment to the development of the touring or family sidecar, instead of a stimulant as it is intended.

An index to the advertisements in this issue will be found on page ii of supplement.

Secrets of Track Tune.

FROM time to time *The Motor Cycle* publishes articles on tuning up engines for speed. The authors' directions are generally sufficiently advanced to enable a reader to win some local club event, in which he does not run up against a factory expert on a "works 'bus"; but they are quite inadequate to furnish a short cut to a first at Brooklands or to endow the user with the power to press George Dance hard in an open event. When such articles appear I occasionally get a querulous letter from some disappointed speed man, who has ambitions to levack, and is annoyed because we don't offer him sufficient help. There are two main reasons for our failure. The first is that every make and type of engine requires individual treatment. The second is in the rare cases where we happen to know how the champion in a given class gets his extra m.p.h., and we are pledged not to tell.

A Speedman in a Talkative Mood.

I WILL, however, tardily betray one "secret of tune," which was responsible for some smashing victories a little while ago, and concerning which my lips are now tardily unsealed. A certain aspirant to record honours was a sound technician, and knew exactly what his engine had got to do in order to register the desired figures. He worked out on paper the necessary data, translated certain of them into a camshaft of the indicated type, went down to Brooklands, and completely failed to obtain the expected results. Puzzled, he returned to his drawing office, checked his data, plotted the camshaft afresh, compared the drawings with the steel, and arrived at no solution. Finally, in bewilderment, he returned to Brooklands with several soft camshafts, carburised them mildly, and did two or three laps on each. Then he examined the damaged cam surfaces, and discovered by the markings that they failed to produce on the track the valve openings which he required. Valve bouncing had nullified his elaborate preparations.

Perseverance Rewarded.

HE stuck at the job until at last he got the valves to behave in the engine as his original calculations had required. But by this time he had departed very far indeed from the original drawings, which had been vitiated by the fallacious supposition that tappets would always cling to the cams like gum to a stamp, that valve springs would function uniformly, and that a valve once restored to its seating would stop there till the tappet flew up once more. He duly got all the intended records, and then some, as the poets say; but he states that the work occupied no less than 200 hours on the track.

Another Instance.

TO quote another tale equally based on the sweat and blood of famous men, a little group of track specialists were confounded once upon a time. They had either mutually or individually put all they knew into a certain popular engine, and amassed many secrets of tuning it. They had obtained certain results, which they regarded as the outside edge of the absolute limit. Further they could not go. They were prepared to wager all they were worth that nobody could get any more out of that engine; and they themselves could not risk more than a lap or two without wrecking its filigreed intestines. Judge of their speechless rage when a nonchalant amateur appeared at the track one day with a sister engine, and calmly proceeded to *lap* at an appreciably higher speed than they could fly kilometres at. They had told him, as a representative of their stable, all they knew (well, perhaps *nearly* all). Needless to say, he had no peace at all till he confessed what else he had done. Blushingly he at last admitted that he had made himself a new and thicker cylinder, and within its fat walls the heat, radiating circumferentially, had ceased to pull the barrel out of round.

Once More.

ON yet another occasion a lad—he was in the trade, as it happened—annoyed the factory experts by getting some 3 m.p.h. more out of his sports model than any of the Coventry staff could squeeze. No suspected Hun was shadowed on the East coast in 1914 as tightly as that lad was followed. At last a member of the espionage department spotted the fact that the cylinder head was not standard. The lad, as it chanced, had hit by some side track upon a type of head not unlike those which Mr. Ricardo now turns out; he never knew why it was good, nor did the factory discover the reason when by various foul and nefarious methods they secured a cast of it; but as long as they used it they did well. Now if *The Motor Cycle* could obtain such knowledge when it is red-hot (which we cannot do), with leave to use it (which would never be given), and our readers could spend the necessary time and money (which they couldn't), the entire field at the next local club sprint would be miling in round about 40s. dead. Many would then fall off and be killed. So things are probably best as they are.

"Ixion's" "MOTOR CYCLE REMINISCENCES" are available in book form, price 2s. 9d. post free, from "The Motor Cycle" Offices, Dorset House, Tudor Street, E.C.4.

Occasional Comments.—

Those Sports Models.

SEVERAL buyers enquire how a sports model differs from a touring model so far as the owner's sensations are concerned. The riding position is less of the "sit up and beg" type. The speed and acceleration are superior. If a close ratio gear box is fitted, the climbing of freak hills may only be possible at a higher road speed, and the machine may not like sidecar work. Engine compression ratio is possibly higher, so that the machine takes more handling, pinking is more common, and carbon must be cleared out at shorter intervals. The ignition lever may have to be used more skilfully and frequently. The piston is possibly of an alloy demanding increased clearance, and will "slap" till it is hot. Certain vital engine parts probably show a reduced margin of strength, and rank bad driving may break something. Upkeep charges need be no higher than those of a touring edition. Touring models are usually preferable for the inexpert rider, and also for pillion or sidecar work.

Mechanical Oil Pumps.

THERE are several new mechanical oil pumps for 1923, some of which will be heard of again. I was surprised at Olympia to find that my personal favourite, the Best, appeared in a new guise. After a mileage which is rapidly approaching five figures, I really thought that the 1922 pattern was perfect. If I had been asked to criticise it, I could only have said that if a careless owner let his tank run dry, it was rather a nuisance to have to recharge the oil-pipe, so as to renew the "pulsating column" of oil on which the feed depends. However, the 1923 model is obviously better still. It may be described as a "sleeve valve" pump, the working parts consisting merely of a piston and port slots; and as it positively draws the oil from the tank and dispatches it to the engine, a sight feed is not absolutely necessary, so that a trustful rider can both simplify his piping and clean up his tank top. As an example of how clean a motor cycle tank can look, the new Dot fitted with the Bradshaw engine stands out. It has a handsome saddle tank with just one solitary excrescence—the nickel petrol filler cap. I foresee a day when, what with twist-grip control, hub brakes, enclosed power unit, saddle tank, and mechanical lubrication, our machines will become as smooth as a cowhide suitcase. And a good thing, too.

"Clean" Units.

IT is possible to get a smooth-sided block of mechanism at the waist of a motor bicycle by two different methods. One is by designing the exterior of your gear box, engine, etc., in as few planes as possible, plus the use of capped nuts or sunk screws. This system is adopted on the Ray lightweight, which is streets ahead of any similar lay-out in this respect, and incidentally achieved two other forms of greatness at one leap, by adapting the flywheel dynamo to four-stroke uses, and by a price which is truly phenomenal considering what it includes. The rival policy consists of letting the various parts assume their natural shapes and then encasing them boldly in sheet metal, just as Huntley and Palmer convert 7 lb. of cracknels into a perfect cube. The most successful exponents of this notion are the Ner-a-car and the P. & P.

A CALIFORNIAN PANORAMA. Although the roads are rough the fine mountain ranges and magnificent canyons in California fully compensate for any discomfort in riding. The peak in the distance is San Jacinto (10,805 feet).

A SIDECAR HOLIDAY

On the Killin-Crianlarich Road.

From London to the Scottish Lowlands and the English Lakes. 1,300 Miles on a Medium-powered Outfit.

By LESLIE EVELEIGH.

AFTER deciding that our annual holiday should be a tour, my wife and I sat down to study *The Motor Cycle* road maps, and eventually agreed that we would attempt to see as much as possible of the North of England and Lowlands of Scotland in the two weeks at our disposal.

The "'bus" (a 595 c.c. Douglas sidecar) was given a clean up and a new tyre fitted to the back wheel. I always ride with either "Puncture Proofed" or "Challenger" tubes, and one of the latter was on the back, while the former were on the front and sidecar wheels. By this means I cut out the possibility of punctures (having tested them for some thousands of miles and found them absolutely reliable).

A Samaritan Sought in Vain.

We started away one Saturday morning from London and took the North Road *viâ* Grantham to Tuxford, where we stayed the night. Next morning we started off again with the intention of reaching Marske, a village between Redcar and Saltburn on the North Yorkshire coast.

Six miles from Tuxford the back spring of the sidecar snapped, and we rode to York with the sidecar flat on the chassis. Some time ago, fortunately for my wife, I put four extra springs in the sidecar cushion, so she was able to endure the jolting.

In York we were told that only one man could supply our need. Having found his place, which was closed, it being Sunday, I knocked and explained what had happened. Replying that this was the Sabbath, he promptly closed the door.

After this my wife decided she would "stick it," so we set off once more. From York we went to Helmsley, thence over the beautiful Cleveland Hills to Great Ayton, Saltburn, and so to Marske. Next day was spent with some friends while the garage people in the village were making a new spring.

The Wild Borderland.

On Tuesday we set out once more across the moors to Barnard Castle, and then struck north to Middleton-in-Teesdale. A really beautiful run this, which continued over the Cumbrian Hills to Alston. The last ten or twelve miles to Alston would be hard to beat for sheer wildness, and it would be unpleasant to run out of petrol anywhere on this stretch. Lunching at Alston, we replenished the tank and made for Longtown and the Scottish Border. Crossing this to Gretna, we continued on through Dumfries to Moniave, where we rested for the night, having covered 138 miles that day of ever-changing scenery of rare beauty.

Rain fell heavily, but we started away next morning for Turnberry, on the Ayrshire coast. Taking the Dalmellington road, we branched off and visited Loch Doon (of R.A.F. fame). Getting back to the road, we passed through Dalmellington to Ayr and down the coast road to Turnberry. Anyone in this district should run down the coast from Girvan to Ballantrae. I should imagine it would be hard to find a more attractive stretch to a lover of sea and rocks.

Friends in the district were visited on the Thursday, and on Friday morning we set out for the Trossachs *viâ* Glasgow, Stirling, and Doune (what a road!) to Callander. The latter place became our headquarters for the remainder of Friday and Saturday, with the object of seeing the lakes, falls, etc., in the district.

A Sidecar Holiday.—

On our trip to Loch Katrine the machine had to be left at the pierhead (the road runs no further at present, but men were noticed hard at work cutting a way alongside the lake), and we took the steamer up the loch and back, which is a trip not to be missed.

After seeing Loch Katrine we took to the road again and ran over the Pass of Leny to Loch Lubnaig. Continuing, we reached Lochearnhead and made the circuit of Loch Earn, one of the most wonderful lakes I have ever seen, and on the way back to Callander we struck inland through the valley to see Rob Roy's grave, where his wife and two sons are also buried, thence returning to Callander, tired, but with a wealth of memories.

Turning Southwards Again.

This brought us to the end of half our holiday, and we turned our thoughts southwards again, but were so enamoured of our ride the previous day that we decided to visit Loch Lomond on our way. So we ran up to Lochearnhead and took the Killin road, branching to the left, two miles from Killin, in the direction of Crianlarich. From here we dropped down to the head of Loch Lomond and so down the whole length of the "bonnie banks." After the other lakes I considered Lomond much overrated, or at least the lower fourteen miles. Skirting Dumbarton, we ran into rain again a few miles from Glasgow, so decided to stay the night in the Scottish "London."

Having plenty of time in hand, we next morning took the coast road *viâ* Greenock to Ayr, and it was well worth it. From Ayr we continued south over the mountain road through Dalrymple and Crosshill. After leaving the latter place we saw no human being or sign of habitation for twenty miles. But the scenery was grand, especially the climb known as the Nick of the Balloch. That night we spent in Newton-stewart, a quaint little place with some extremely pretty walks.

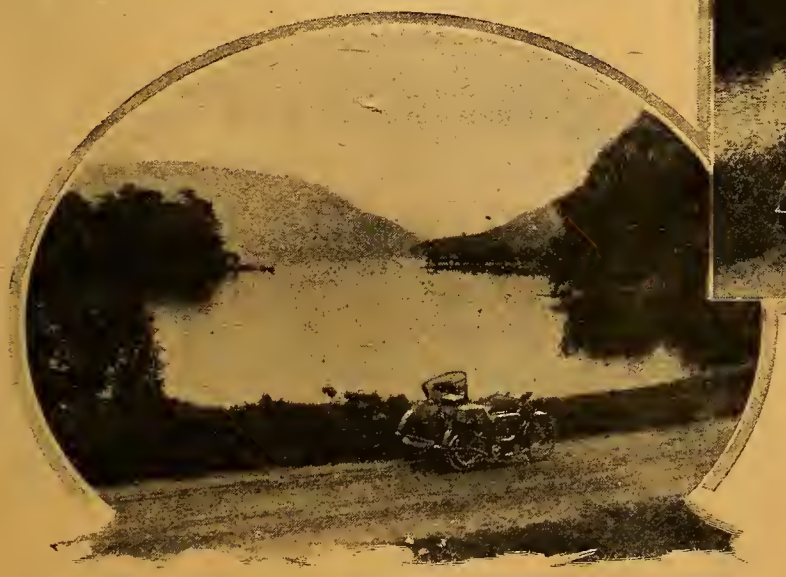
Next day we bade farewell to Scotland, travelling along the coast to Castle Douglas, thence *viâ* Dumfries and Carlisle to a village named Bothel, in Cumberland.

Only one day was devoted to the English Lakes, so in the morning we made our way round Bassenthwaite Lake, through Braithwaite, to Keswick. From there we took the Penrith switchback road (one of the most exhilarating rides), and turned to the right just before the town, for Ullswater. This lake is just wonderful.

On Kirkstone Pass.

From Patterdale there is no alternative but to try conclusions with the formidable Kirkstone Pass. We had never been in this district before, so did not know the hill. The first two miles were negotiated quite successfully, but my wife had to be tipped out of the sidecar on the 1 in 6 portion, and the last 200 yards were climbed with the sidecar empty. This was the only time on the tour that the machine failed, and the small amount of work the low gear ratio was called upon to do was really surprising. Continuing, we ran along the side of Lake Windermere and so to Lancaster, our stopping place for the night.

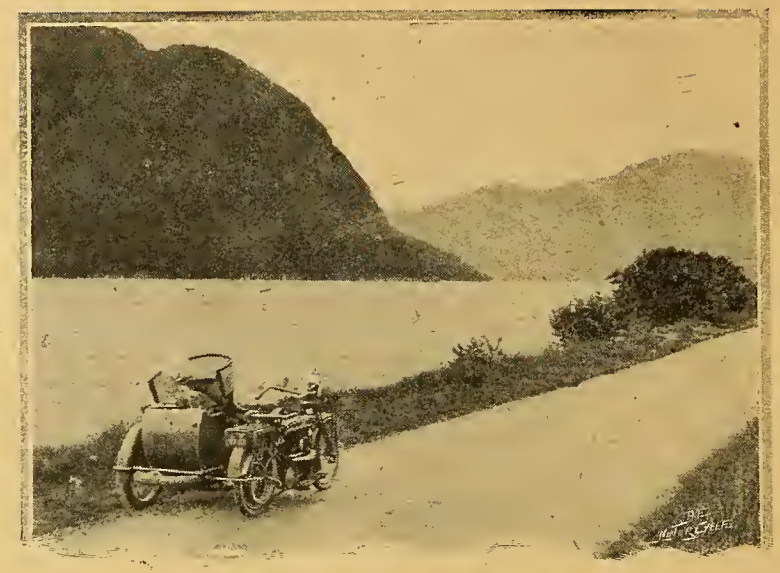
Wishing to visit the Peak District on the way home, our next stage proved the worst of the whole



(Left) On the placid shores of Loch Lomond. The road skirts the lake for a considerable distance.

(Right) Near Kirkstone Pass. The actual ascent commences to the right of the hill depicted.

A Sidecar Holiday.—



Loch Lubnaig between Callander and Lochearnhead.

series, embracing as it did Bolton, Manchester, and Stockport. Arriving in the neighbourhood of Buxton, we stayed at a little place called Taddington, and after tea took a short run to Tideswell, Chapel-en-le-Frith, and Buxton. There are some good climbs for the ordinary tourist on the main roads in the Peak District!

The next day, Friday, found us comparatively near home, so we took the road to Ashbourne after visiting Haddon Hall, thence to Matlock and Matlock Bath, and on to Belper.

A curious incident befell us on this road. The engine suddenly started to labour, and, despite a change of gear, conked out. In neutral it restarted easily, and seemed quite all right. Efforts to move, however, were quite ineffective, and a rattle came, apparently, from the gear box. While examining things an R.A.C. Scout and an A.A. Patrol came along, and both helped, and it took the three of us nearly an hour to discover that the "engine trouble" was due to ten spokes in the back wheel being broken, throwing the wheel out of truth and binding with the brake block in the belt rim. This, thanks to the condition of some of our 1922 roads.

Getting some new spokes fitted at Belper, we stayed the night at the Quorn, famous for its hunt, and next day arrived home, having covered 1,326 miles in fifteen days, on two of which the machine was not used.

Now a word for the machine; it was new in March, 1920, and had covered roughly 11,000 miles previous to this tour, on which it ran like a train. The only involuntary stop was the one which I have described. Just over 25 gallons of petrol were used; this works out at approximately 52 m.p.g., which is not bad, considering the hilly districts which were covered. I am always extravagant with oil, and used Castrol X.L. Thanks to the tubes, no tyre trouble was experienced, and the belt pulled out once, 72 miles from home, on the return journey. Altogether, our expedition proved a wonderful holiday, on which we can look back with infinite pleasure.

Expenses Sheet.

	£	s.	d.
Petrol (13 tins at 4s.)	2	12	0
Oil		12	0
Repairs (sidecar spring and spokes for back wheel)		16	7
Hotels, lunches, etc.	17	14	7
Sundries (post, etc.)	1	8	8½
Total	23	3	10½

Hotels and Inns.

Tuxford, Newcastle Arms.
Moniave, Craigdarroch Arms.
Callander, Waverley Temperance.
Glasgow, Duncan's Temperance (Renfield Street).
Newtonstewart, Galloway Arms.
Bothel, Queen's Head.
Lancaster, Bear and Staff.
Taddington, The George Inn.

Above is a full expenses sheet, covering everything, together with a list of hotels and inns visited, and will guide those planning similar expeditions in the coming summer. Of course, prices are getting lower.

All the above hotels can be recommended. We were quite fortunate in our choice of sleeping quarters.

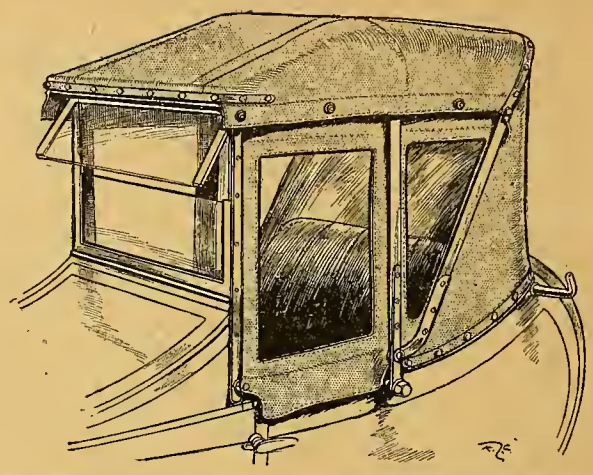
On the "Nick of Balloch," a wild, sparsely populated district between Dalrymple and Newton Stewart in the Western Lowlands.

THE "SUPER-SPORTS" JOY RIDE.

A Study in Speed Faces. By F. GORDON CROSBY.

Hoods and Screens on Modern Sidecars

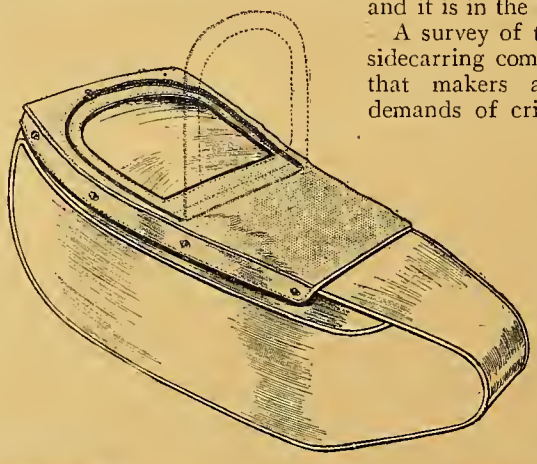
A Comprehensive Survey of Weather Protection Fitments for the Passenger.



An excellent all-weather New Imperial hood and screen Observe the accurately fitting side-curtains.

WHAT Spartans sidecar passengers were ten years ago! They faced all weathers in a little wicker sidecar on an equal footing with the driver on the saddle.

Of course it is not certain whether the saddle was not the better place in a downpour; the passenger had no screen or hood, and the draughts round the feet were even far worse than those in the "drawing room" of a modern villa with French windows—and that is saying a good deal. There were no grumbles about side draughts, hard cushions, bumpy roads or mechanical breakdowns.



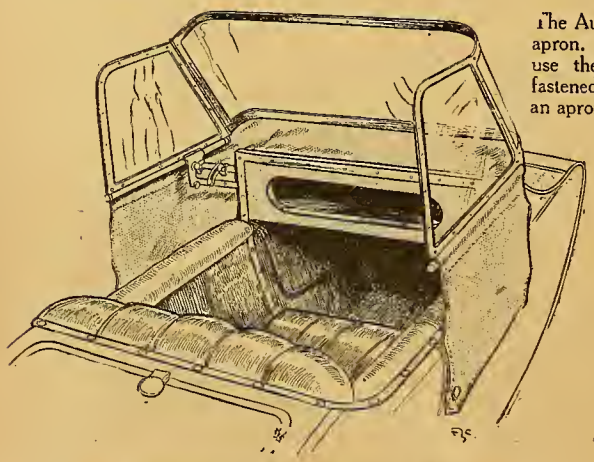
Passengers were, indeed, in those days as sporting as the driver himself; now, alas! they have screens, side-curtains, hoods, air cushions, hot-water bottles, spring wheels, instrument boards (equipped with mirror and watch), and small lockers religiously devoted to feminine fripperies—in short, they have been completely spoilt and made fastidious and critical.

We have the no-trouble machine: no trouble, that is, in the hands of an intelligent owner, and we have now to provide the perfect sidecar. Still, ever since the day we stuck a piece of oilcloth on two sticks to act as a screen have we endeavoured to pander and please, and it is in the nature of things so to continue.

A survey of the many devices that go to make sidecarring comfortable, if not luxurious, shows that makers are endeavouring to meet the demands of critical passengers.

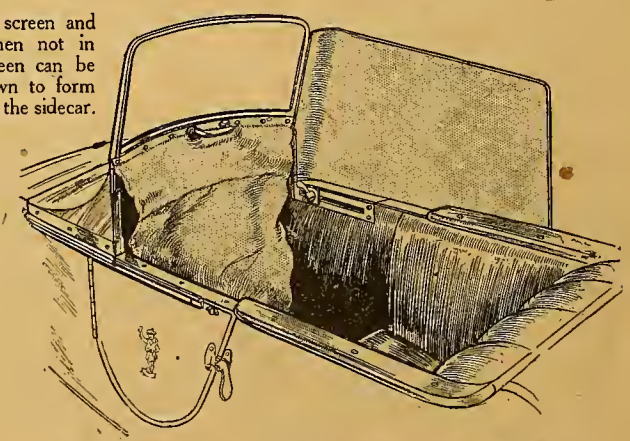
Ease of Manipulation.

Looking back on many improvements and innovations made during the past year, the most noticeable thing is the attention that has been given to combined hoods and screens, also rigid hoods which fold back instantly behind the body. Quick adjustability and simplicity is a worthy aim, for it is irritating indeed to have



A Bluemel screen adapted for use on P. & M. sidecars.

The Auster screen and apron. When not in use the screen can be fastened down to form an apron for the sidecar.



New Douglas screen on sliding scuttle. An effective side shield is also supplied.

Hoods and Screens on Modern Sidecars.—

to manipulate a badly fitting hood after the rain has started, and worse still to find the rain still beating in on the passenger at the side or through a gap between the top of the screen and the front of the hood.

Every hood should be so designed that it is instantly pulled over and locked into position by the passenger without the driver having to leave the saddle to tighten up a strap or fitting. A study of modern car hoods and the way some of the best designs lock on to the top of the screen without leaving a gap might be made with advantage. Side-screens, too, might be made to open with the door without having to fold back the hood.

Requirements in Sidescreens.

Up to quite recently even cars have been notoriously draughty when equipped with the ordinary cape hood and the old type sidescreens, and sidecars are just as bad. If the flat screen is to persist, the problem of sidescreening will have to be tackled afresh. Quick adjustability and freedom from cracks and crevices that permit irritating draught should be the designer's endeavour. Even when perfect-fitting sidescreens are provided, the job is unfinished if an accessible storage place is not found for them. It will not do to pack the sidescreen underneath the seat, behind the back cushion, or anywhere that necessitates the passenger moving. It may seem an insignificant item, but it is such small details that make or mar the pleasures of sidecarring.

Probably the solution of all the difficulties in connection with flat screens and folding hoods was attained when the adjustable Easting screen was introduced. Its designer solved the question in a simple manner and gave comfort to thousands of passengers who had hitherto imagined sidecarring to be a cold and draughty pastime.

In spite of the unquestioned utility of curved flexible screens, however, there are people who dislike the celluloid and the comparatively large loose area of apron, and it is these fastidious passengers with a preference for the transparency of glass screens who give the biggest problem to designers. Still there is much to be said in favour of the adjustable celluloid type, and the sidecar manufacturers have to thank its sponsors for the stimulation it gave to sidecarring in general.

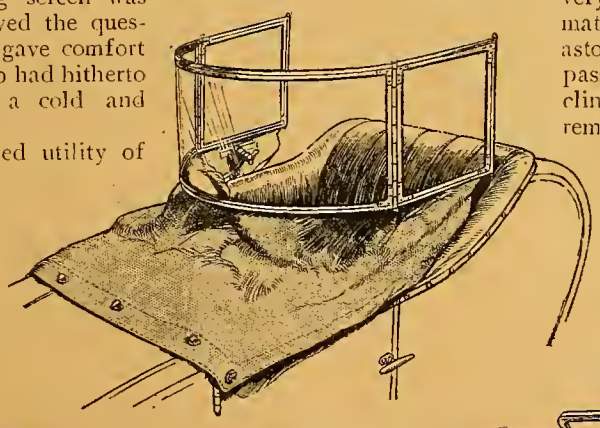
Flexible Screens.

The advantages of the flexible type, which includes not only the Easting but the Cameo and the Sandum, are its ease of attachment and quick adjustment. The Easting and Sandum can be raised and brought backward so that they form excellent substitutes for a hood in an ordinary shower.

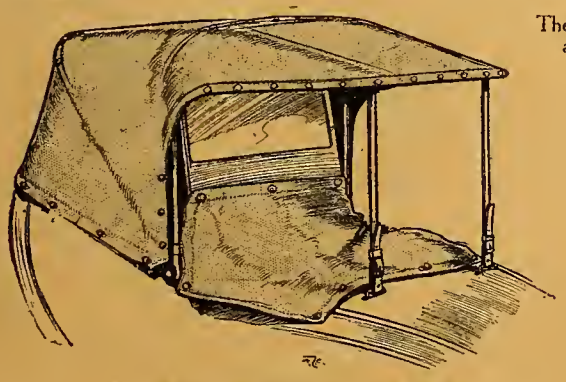
All the accompanying illustrations exemplify the interest makers have in the question of weather protection. Several of them are ingenious and show a practical knowledge of what the passenger really requires. The Holt celluloid screen, for instance, is simplicity itself, and if it stands the test of moderately rough usage it should become a popular type; the Sandum miniature folding screen, too, is a desirable little fitment, practical, light and sound in construction and well adapted for a child's seat.

It must be admitted that many screens sold with sidecars are quite useless. The hoods, too, leave much to be desired. If the Easting or Sandum type of screen is to be used all well and good, the user knows exactly the protection he will get: but if the tendency to use the flat screen is fostered, then more attention will have to be paid to the efficiency of the sidescreens and to the designing of these in conjunction with a well-fitting hood, and a door that opens without having innumerable fasteners to manipulate.

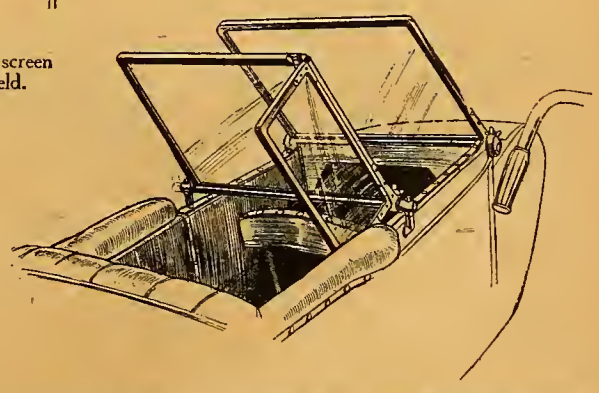
The little screens attached to sporting bodies cannot very well be altered, and as a matter of fact some of these are astonishingly effective when the passenger assumes the usual reclining position. The aforegoing remarks, however, apply chiefly to touring sidecar protection, and there really is no reason why grace of design should not be maintained, even though a glass screen be used with permanent transparent side-curtains, and a door which opens with the sidescreen in position.



The Hurricane screen and wind shield.



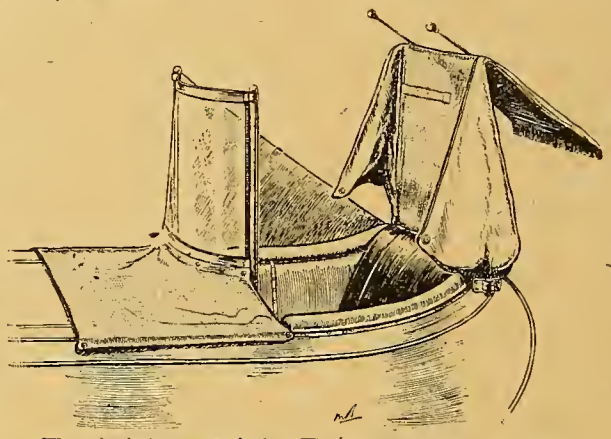
Compact Hazlewood hood and screen



Double screens on the Matchless two-seater sidecar, the rear design being the Orto pattern modified to suit.

Hoods and Screens on Modern Sidecars.—

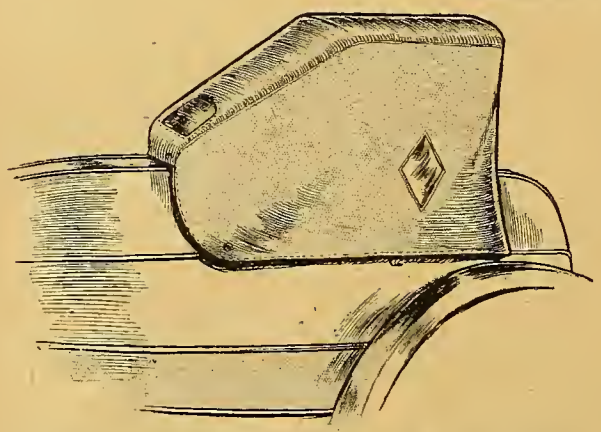
Probably one of the biggest drawbacks against the development of efficiently protected sidecars is that the screen-makers and body designer so seldom work in co-operation. The body-maker may be striving after points he considers essential but which do not harmonise with the modern proprietary screen and hood. Many firms, of course, adapt and modify excellent accessories to their own particular sidecars, and when this is done a harmonious whole generally results. In those cases, too, where the makers of an outfit have considered the question of the hood and screen in conjunction with their sidecar body, designing specially and not adapting existing designs, the result is usually a success. A good example of this is the New Imperial all-weather design shown at the heading of this article.



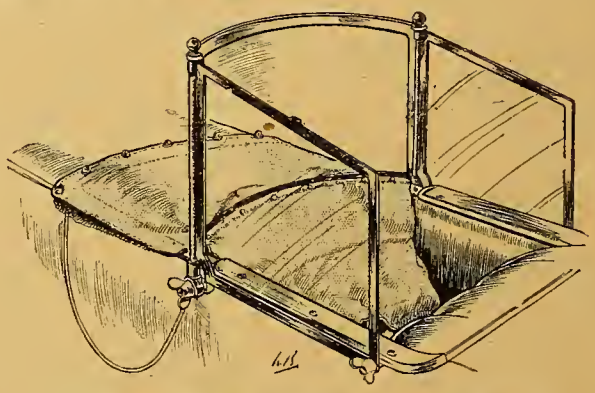
The chief features of the Thapex hood are its quick adjustability and neat construction.

Several makers have departed completely from the orthodox style of folding hood and instead have fitted a cover which forms hood, side curtains, and screen all in one. This slips easily on to a quickly erected framework. It is an excellent scheme where light weight is the all-important consideration, but it must be confessed that the passenger becomes rather isolated and can see very little of the scenery and practically nothing of the driver. But he (or she) is not likely to be interested in scenery in the midst of a rainstorm.

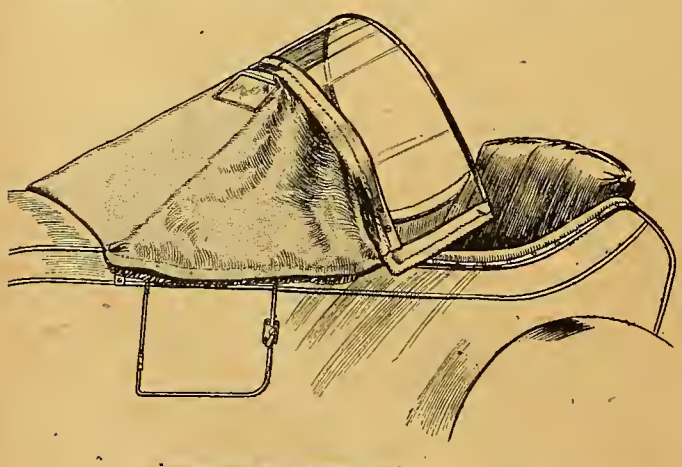
There is no doubt that the problem of effective sidecar protection is bigger than might be imagined, but, like car manufacturers, sidecar designers are alert to the insistent demand for the abolition of the discomforting side draughts, and there is not the slightest reason why this should not be eventually achieved.



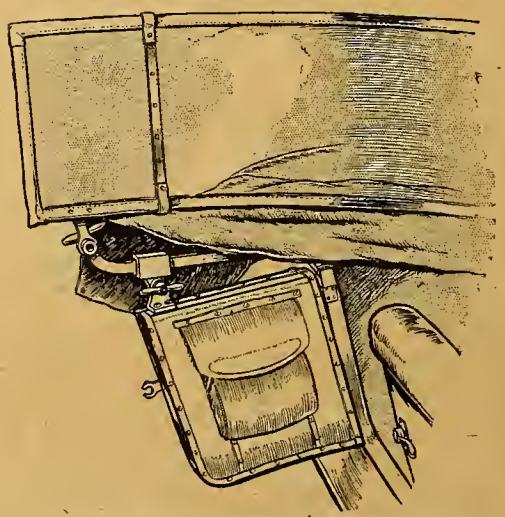
Combined screen and hood included in the Swallow sidecar equipment. A few seconds only are needed for its erection.



The familiar Cameo screen with effective side shields.

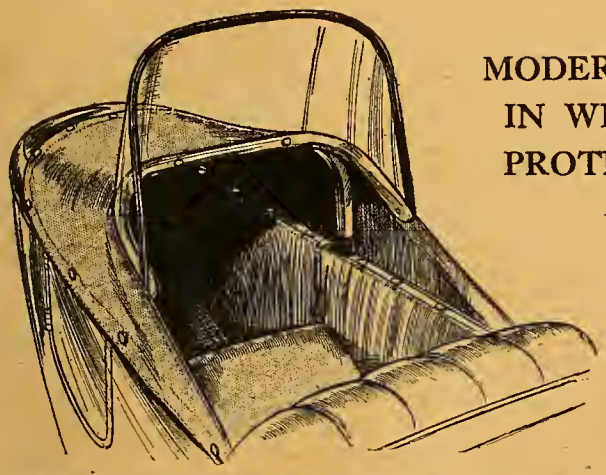


Years of satisfactory usage have proved the Easting to be everything the makers claim for it. It is the pioneer folding screen.

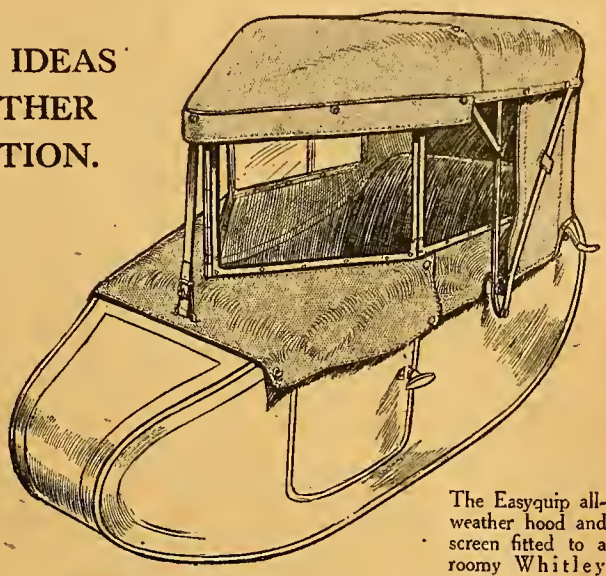


An admirable feature of the Sandum is that it folds back with the door, thus obviating the unfastening of attachments.

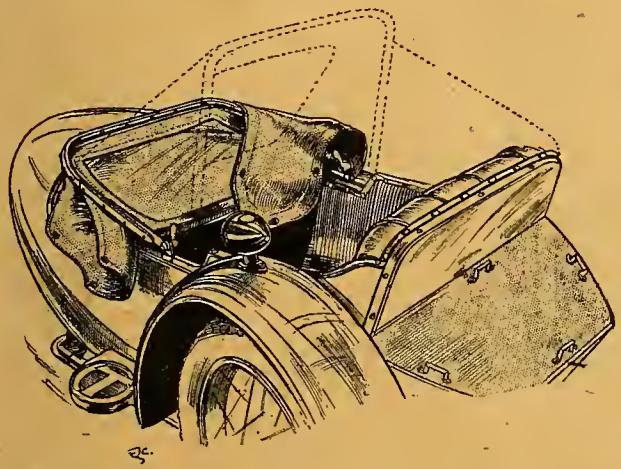
MODERN IDEAS IN WEATHER PROTECTION.



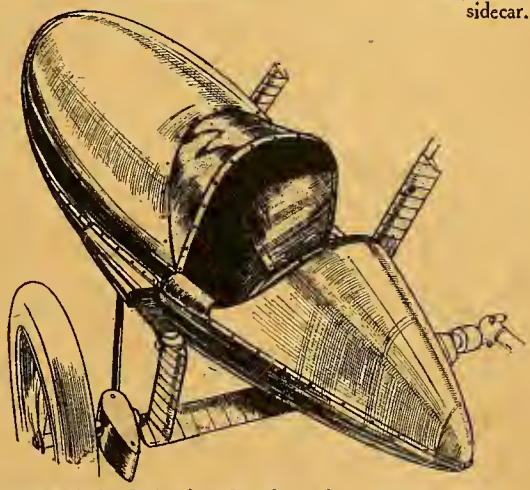
A neatly designed screen and apron fitted to Canoelet sidecars.



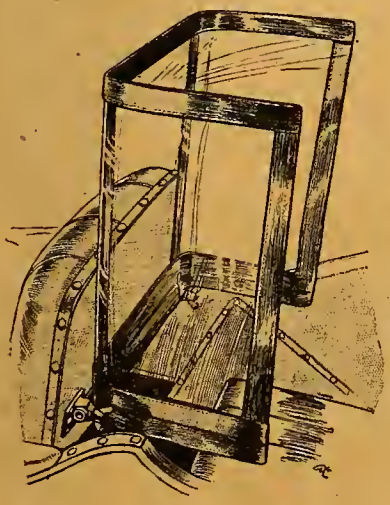
The Easyquip all-weather hood and screen fitted to a roomy Whitley sidecar.

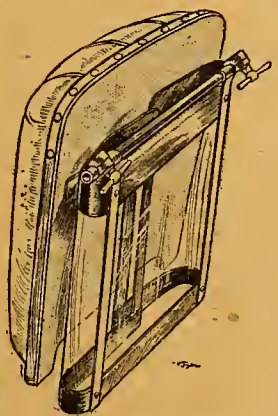


Triumph combined hood and screen which is adjustable by sliding backward or forward as desired.

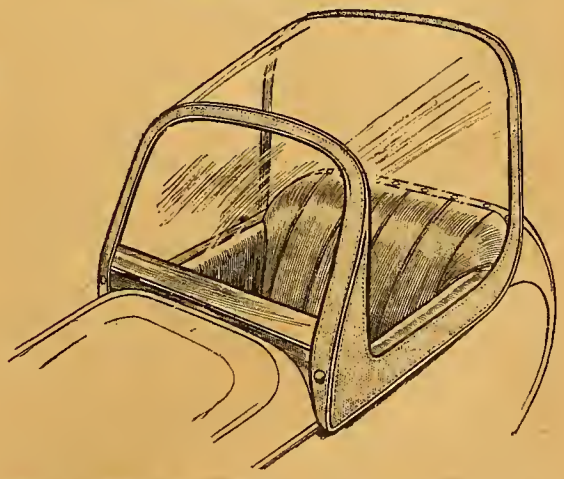


Small dash which takes the place of a screen on a new Zenith sports sidecar.





(Left) Sandum folding screen for rear seats in position. (Right) Method of folding when not in use.



The Holt celluloid screen and hood. The hood portion can be rolled up and carried in a canvas holder.

A quaint sign at Ormskirk denoting the town's attractions and its fame for ginger-breads.

Legends & Superstitions

by

Chas. G. Harper.

Varied Stories of Varied Places. Names and Scenes and their Associations.

A village sign at Lye, Worcestershire, commemorating the myth that vast Russian armies passed through the place.

EVERYONE loves a legend, and most people are superstitious. I have a superstitious objection to walking beneath a ladder, and I always touch wood when, in answer to enquiries, I confess to being, and doing, well. Generally, under those circumstances, I touch (if it be possible) the head of the person who makes the enquiry. This age-old action causes great fun. But the point is that you must carefully choose your man. Choose an equal, or an inferior, or someone who owes you something or other. Even then, it is desirable he should have a sense of humour.

Well, then, we have got away with the beginning of this serious subject. It is a subject of vast proportions, for legends are always in the making. There was, for example, that amazing and widespread legend, absolutely unfounded on fact, which, in the early part of the Great War, told us of vast armies of Russians who were travelling through England to help us on the Western Front. Some people actually said they had seen them, and a slot-machine on the platform at Crewe even was said to have been put out of gear by a Russian soldier placing one of his country's coins in it. As our automatic delivery machines are not constructed for kopecks, its digestion was said to have been ruined.

Swaffham's sign of a pedlar who was reputed to have benefited the town by his find of a treasure.

That "Russian Army" story has never been forgotten, and it bids fair to become a classic since the design for the village sign to represent Lye (formerly called "The Lye"), a place situated in the Cradley Heath district of Worcestershire, was adopted. The mordant wag who invented the design, illustrated here, gibbeted that legend and made some humorous capital out of the place-name, all in one stroke.

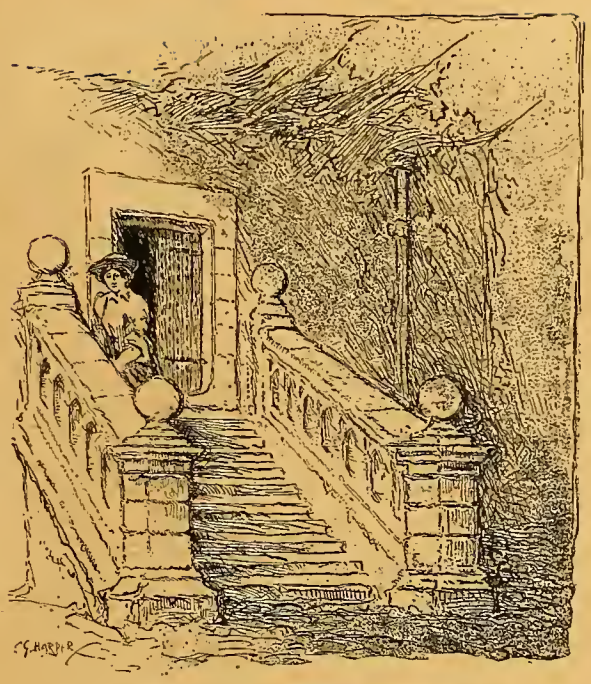
Entirely on the serious side was the legend, long held by some to be worth credence, that Lord Kitchener really was not lost in the *Hampshire*, but that he was made a prisoner and was held in Germany. This belief may have been due, in part, to the inclination, greatly to be observed at that time, to believe any story of marvels. Marvel-mongers found many eager listeners. But such ready belief in the improbable was nothing new. English history alone is full of it. It was long believed that Richard the Second was not really murdered in the castle of Pontefract, and that belief caused Henry the Fourth a good deal of trouble in dealing with pretenders. As he was responsible for the death of Richard, this seems to have been quite in order.

The legend that King Arthur lies sleeping somewhere, and will return to help England in her hour of need, is well over a thousand years old. There was opportunity enough for him during the great war of 1914-18, but he did not put in an appearance; although the "Angels of Mons" are reported to have been on the spot at a critical moment. Let us doubt those angels. The "missing heir," too, finds a ready acceptance, for romance inhabits every heart. So it was, a generation ago, that when the butcher, Arthur Orton, an enormously fat and a very uneducated man, coming from a place in Australia with the intolerable name of Wagga-Wagga, set up a claim to be Sir Roger Tichborne, and laid claim to the family estates at Tichborne in Hampshire, his contention was popularly accepted. And not only by the people, but by two or three of the family. His claim was defeated, and he suffered a long term of imprisonment, but there are many yet who believe in that claim. Certainly, on his release, after many years, having grown old and lost all that too much flesh, he did indeed look an aristocrat.

The rustic belief in legends is of the most robust kind. In a by-lane off the Great North Road north of Potter's Bar there is a singular and not beautiful brick gateway to Brookmans Park. It was built, probably, about the time of Henry the Seventh. The rustics have the oddest belief that "Folly Gate," as they call it, has a farthing placed between every one of its bricks. How this notion could have arisen no

Legends and Superstitions.— one can truly say, but the suggestion may be offered that there is some confusion in the rustic mind deriving from the old price of bricks, which was round about a farthing apiece.

Then there is the ancient legend of Swaffham, which tells how a pedlar dreamt of a treasure which would be his if he journeyed to London and met a stranger on London Bridge, who would tell him of the spot where that wealth would be discovered. He travelled to London, and (always according to the story) found the treasure at home in Swaffham. This fairy tale seems really to be based on the career of a man named Chapman, who, five or six centuries ago, provided the money for rebuilding portions of Swaffham church, in which there will be found little carved figures of a pedlar and his dog. A pedlar was, in those times, a "chapman"; and it would thus seem that the tale is merely a play on the personal name. Some versions make him a tinker; but they ignore the obvious play upon the name. That is the variant of the legend adopted for the village sign of Swaffham, set up last summer.



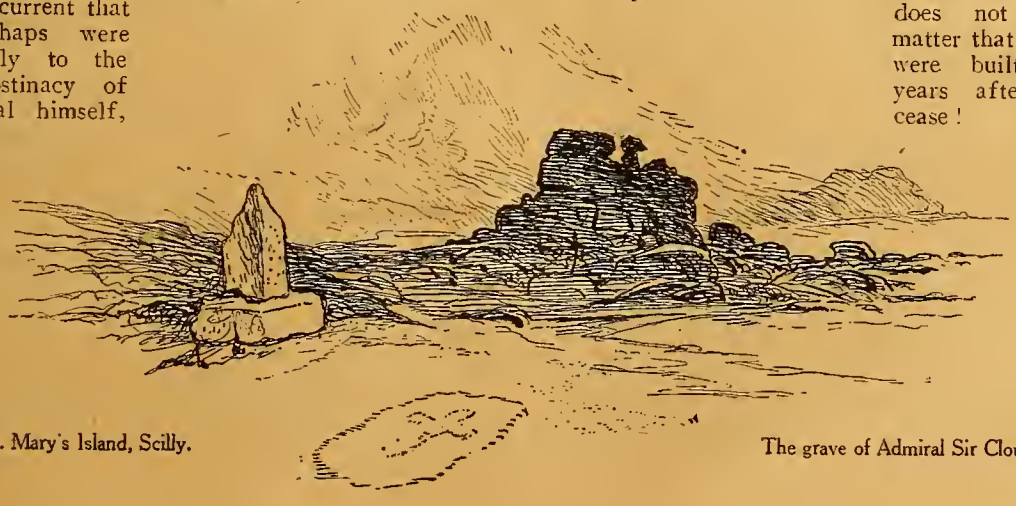
Dorothy Vernon's steps, Haddon Hall, Derbyshire.

On a Lonely Island.

On a solitary sandy seashore at Porthellick on St. Mary's Island, in the Scilly Isles, beneath a weird pile of rocks resembling a squatting loaded camel, is the spot where the body of Admiral Sir Cloudesley Shovel was cast ashore in October, 1707, after the fearful disaster in which four ships of his squadron were wrecked, owing to their course having been lost in foggy weather in those dangerous seas. Legends were long current that these mishaps were due entirely to the savage obstinacy of the admiral himself, who not only refused to listen to a sailor on board his flagship, who had warned him he was steering too far northward, but actually had the man hanged at the yard-arm for presuming to know better than his superiors. The story then proceeds to declare that the sailor, before he was hanged, asked to be permitted to read a portion out of the Bible. This was allowed; and read a part of one of the cursing Psalms—Psalm 109—in which occurs the passage: "Let his days be few; and let another take his office. Let his children be fatherless, and his wife a widow. . . . Let his posterity be destroyed, and in the next generation let his name be clean put out. Because his mind was not to do good, but persecuted the poor, helpless man, that he might slay him that was vexed at the heart."

One man only was saved from the admiral's ship: George Lawrence, quarter-master. He told no such story, but said only that they thought they were off Ushant; whereupon a sailor-lad declared a light they presently made was Scilly. The crew then swore at him. Nothing about any hanging. Where the admiral's body was found it was buried. Four days later it was exhumed, and lies now in Westminster Abbey. Local superstition declares that on the spot, roughly marked by a cross, grass will not grow. It will not; nor is that fact altogether remarkable, seeing that these sands are swept by salt spray.

Believe in legends, if they are old; the modern one of Dorothy Vernon, for example, does not deserve credence. But, owing to the great romantic heart of the sentimental public, it is impossible to destroy it. The steps down which she went are pointed out: it does not seem to matter that those steps were built sixty-five years after her decease!



Camel Rock, St. Mary's Island, Scilly.

The grave of Admiral Sir Cloudesley Shovel.

The Fifth of a Series of Instructive and Practical Notes for the Beginner.

Explaining in Non-technical Language Points which may have Mystified Him.

MANY motor cycle engines disgorge a proportion of their lubricant over the outside of their crank cases. This is quite unnecessary, and with a little careful attention the defect can be arrested. A dirty engine is one of the worst advertisements a motor cycle can have, because it means ruined clothes unless overalls be always worn, and no motor cyclist should be compelled to don overalls save for long journeys over bad roads. To stop "oil-slinging," first trace the principal point of leakage of the oil: wash the crank case clean with a brush and some paraffin or petrol, and then take the machine for a short run. On the return, examine the engine closely, and make a mental note of the place or places where the slightest trace of oil is apparent.

OILY ENGINES.

◈ ◈ ◈ ◈

IF oil has made its appearance around the timing cover joint, and from the tappets, detach the crank case air-release valve, which is generally fitted either on the timing cover (and may communicate with the front chain case) or on the dividing wall between the crank case and timing case. The former is usually a ball valve, the latter a disc valve. The duty of this valve is to allow oily mist to escape from the crank case on the downward strokes of the piston, and to prevent air and dust being sucked in on the upward strokes. Should the valve be jammed in its closed position it follows that the downward strokes of the piston will occasion a certain amount of compression in the crank case, and the oily mist within will tend to force its way through the various joints. and past the tappets. Even the best machines are liable to this derangement.

SOME POINTS OF LEAKAGE.

◈ ◈ ◈ ◈

SHOULD the crank case release valve be functioning correctly, however, and oil still leaks from the timing cover joint, it is probable that at some period the cover has been removed and has been replaced with a defective washer. In this case the only possible cure is to remove the cover, and to cut a brown paper, or, better still, a thin sheet fibre washer, to the exact shape. There is a number of proprietary jointing compounds on the market wherewith to smear the washer before replacing the cover, but seccotine or gold size is widely used for this purpose with most satisfactory results. Occasionally a trickle of oil will make its appearance from beneath the head of one or more of the screws which hold the timing case cover in position, and a strand of asbestos string coiled just below the head of the offending screws will result in a certain cure.

MAKING OIL-TIGHT JOINTS.

A LEAKAGE of oil from the joint between cylinder and crank case may be caused by (*a*) a defective washer, or (*b*) by the two halves of the crank case being bolted together in such a manner that they do not provide a perfectly even surface for the cylinder to pull down on to. It is sometimes possible for the latter to occur when the crank case has been taken apart and re-assembled by a not-too-expert workman. The only remedy in both cases is to renew the washer, either with brown paper or with sheet fibre.

CYLINDER JOINTS.

◈ ◈ ◈ ◈

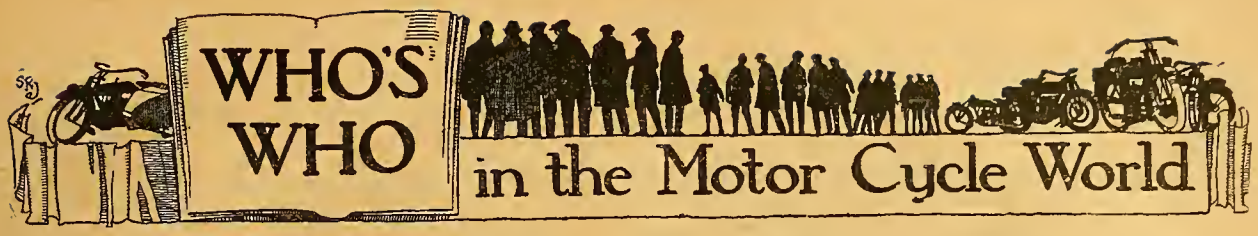
THE two halves of the crank case are generally spigoted together, which means that one has a projecting ridge formed around its circumference, while the other has a recess into which the ridge can fit snugly. No brown paper or other form of washer can, therefore, be fitted between the two halves, and the factory method adopted of making this important joint oil-tight is for the two halves to be ground together after machining and before assembly with the aid of a little abrasive paste, just as a valve is worked on to its seat. Despite this precaution, however, it sometimes happens that oil sweats out of the joint, frequently in the fore part of the crank case immediately below the cylinder, whence it can find its way over a good portion of the surface of the crank case. The only practicable cure for this, short of disassembling the crank case, is to adopt a method of "caulking." This consists of tapping the seam between the halves of the crank case, at the point where the oil exudes, with a very light instrument, such as the rounded edge of a small set spanner. The tapping surface must, of course, be perfectly smooth, otherwise the soft aluminium will be abraded. The effect is to spread the metal infinitesimally, but just sufficient to allow the minute orifice to be sealed.

OIL LEAKAGE ROUND CRANK CASE.

◈ ◈ ◈ ◈

NO motor cyclist likes to think that he is paying the petrol combines more money than he need. Aids to petrol economy are, therefore, a good selling line amongst those who believe all that the manufacturers of such accessories have to say. It is not always to the carburetter and induction system, however, that one must turn in order to obtain improved consumption. The fitting of a small jet does not necessarily mean that better petrol consumption will be the result. Nor is it possible to lay down "correct" jet sizes—every carburetter should be tuned to suit the particular engine. When in quest of improved consumption, before blaming the carburetter for an unquenchable thirst, satisfy yourself that the fault does not lie with the engine itself.

ECONOMY IN RUNNING.



Fourth of a Series of Short Biographies of Personalities Prominent in the Movement and frequently mentioned in the pages of "The Motor Cycle."

Frank Albert Applebee, Motor Engineer, London.—F. A. Applebee, who is 35 years of age, was born at Walthamstow. As the son of F. W. ("Pa") Applebee, he came into the motor cycle movement early, and over a long period before the war he was one of the most successful competitors in open events. He made his first appearance in an open competition in the A.C.C. Hill-Climb at Haslemere in 1907 recording the fastest time of the day on a twin Rex. He rode in all the T.T.'s from 1907 to 1914, attaining his greatest success in 1912, when he gained the Senior T.T. on a Scott. In 1913 he won the Spanish T.T. His present mounts are various, but favourite type is a sidecar. Hobbies: Motoring and Photography.

Thomas Rutherford, Woollen Manufacturer, Carlisle.—Mr. Rutherford was born at Bonchester, Hawick, and is 44 years of age. He has had many successes in competitions, and has rendered valuable service to motor cycling on the administrative side. He has served on the general, competitions, and touring committees of the A.C.U., and is the local consul for the Carlisle area. In 1922 Mr. Rutherford was Chief Marshal for the T.T. Outstanding performances on a motor are: 1919 A.C.U. Six Days Trials, gold medal; 1920 Scottish Six Days, silver medal; Paris to Nice, declared void, but claimed full marks; London to Edinburgh, gold medal; and numerous wins in Cumberland County trials. Present mount: Sports Sunbeam. Hobbies: Business, motoring, shooting, fishing, and golf.

Frank Smith, Engineer, Wolverhampton.—Frank Smith, who was born at Thrapston, Northamptonshire, 35 years ago, is the founder of the Clyno Co., and has done much to prove the sidecar a reliable and economical vehicle. A brief record of his major competition successes is appended: A.C.U. Quarterly Trial, 1911: Only sidecar driver awarded 1st Class Certificate M.C.C. London to Land's End, 1911: Sidecar cup (only driver of sidecar to finish); Scottish Six Days Trials, 1911: First sidecar driver to gain gold medal in this trial, no marks lost; Porlock and Lynton hills climbed for the first time by sidecar in October, 1911; M.C.C. London to Land's End, 1912: Sidecar cup; M.C.C. London to Edinburgh, 1912: Won the only two sidecar cups; Sutton Coldfield A.C. Open Trial, 1912: First sidecar to win the Colmore Cup; Liverpool One Day Trial: Only sidecar to make non-stop in entry of 104; first sidecar ascent of Honister Pass; Scottish Six Days Trial, 1912: Gold medal (only sidecar to climb Kenmore); A.C.U. One Day Trial, 1912: Best passenger performance. Present machines: 925 c.c. spring frame Clyno sidecar and 10 h.p. Clyno light car. Hobbies: Swimming, diving, and boat sailing.

George Grinton, Motor Agent, Edinburgh.—Was born at Edinburgh 30 years ago, and has been as successful in speed events as in reliability trials, in solo work as with sidecars. Is one of the best-known competition riders north of the Tweed. In the present year he was second in the Junior T.T., was Scottish speed champion (unlimited class) and winner of A.J.S. trophy in the Highland Trial, besides gaining numerous firsts in speed events and gold medals in reliability trials. Is a strong advocate of a sidecar T.T. for machines from 500 c.c. to 1,000 c.c., and suggests a championship meeting between the representatives of Scotland, England, Ireland, and Wales. Present mount: 584 c.c. Harley-Davidson, and 998 c.c. Harley-Davidson. Hobbies: Motor boating, shooting, and fishing.

Eric Williams, Motor Engineer, Worcester.—Eric Williams, one of the most popular of competition riders was born at Homer in Herefordshire 29 years ago. Has scored many notable successes, particularly on the A.J.S. machine, was first in the 1914 Junior T.T. Became a despatch rider in the Royal Engineers in 1914, and received the D.C.M. in 1915. Since the war, has accomplished many fine performances. Won the Herefordshire Auto Club Bowl, also the Colmore Cup in 1920 (on a 496 c.c. N.U.T.). In the same year gained the Reliance Cup and made fastest lap in the Junior T.T. He came first in the Junior T.T. in 1921, and in the same year and this last summer secured the first position in the 350 c.c. class of the International Six Days Trial. Present mount: A.J.S Favourite type of machine: 350 c.c. single. Hobbies: Fishing and tennis.

William Pratt, Motor Agent (Manager), London.—Billie Pratt is a Londoner, born 45 years ago, and has for many years been prominently associated with the motor cycling industry. Was a very successful competition rider. Enlisted as a despatch rider in 1914, and in 1916 transferred to the Tank Corps in a similar capacity. Was severely wounded in 1917, and had to give up motor cycle competition riding, although riding to business every day and averaging ten to fifteen thousand miles per annum. Pre-war successes include the following: 1909, 1910, 1911, and 1912 trade team (P. & M.) prize and gold medal in A.C.U. Six Days Trials; 1st prize for best performance, trade rider, Scottish Six Days Trials, and three gold medals 1910, 1911, and 1912; Land's End to John-o'-Groats A.C.U. Six Days Trial, 1910, gold medal and team prize; and several golds in M.C.C. London-Land's End, and Exeter and Edinburgh trials. Was captain of all the trade teams in the Anglo-Dutch Trials, and obtained the highest awards and the motor cycle medal. Present mount: Matchless spring frame sidecar. Favourite type of machine: Spring frame sidecar. Hobby: "Experimenting in wireless telephony."

WHAT I RODE IN 1922.

By "IXION."

Four-valve and Sleeve-valve Singles and Two-stroke Twins. Comfort and Controllability as Speed Assets. Improved Lubrication Demands.

PRIDE of place must go to the faithful 'bus on which the vast majority of my mileage was covered—an o.h.v. Triumph. For the moment I am not going to enlarge upon its power or speed, though it has plenty of both. Comfort is the supreme impression which this machine makes on its lucky owners.

The layout of the frame, the Druid forks, and the 3in. tyres combine to endow it with road-clinging and road-cushioning qualities such as exceedingly few motor cycles and very few cars possess.

Several machines are enshrined in my memory as able to make a really bad road tolerable, and an ordinarily bad road so unobtrusive that questions of comfort simply don't occur to the rider's mind. The 1914 A.B.C., the 1919 A.B.C., and the special 3in. tyred Scotts—no others ranged in the top class with me till 1922. But the o.h.v. Triumph is just about as good as any of them.

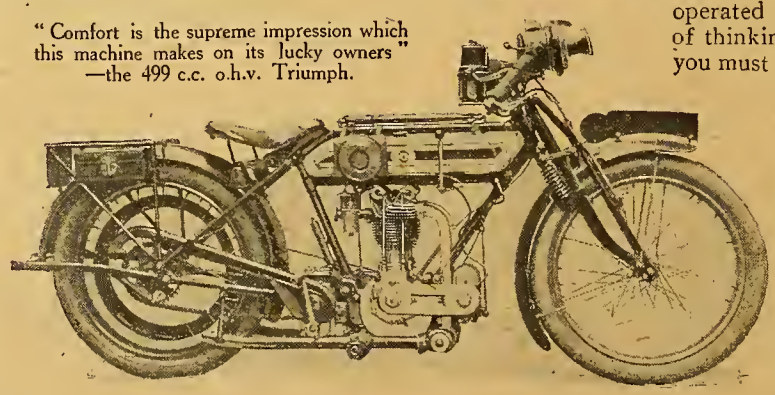
Scoring over a Car.

Almost daily I traverse one of those typical sections where a very expensive road carpet has been laid down over bad foundations, and then hammered into great ulcers by lorries and coaches. I cross it on every kind of vehicle imaginable from a Rolls-Royce to a baby two-stroke. I cross it fast only on my Triumph, and, despite the extra speed which the machine renders possible, it sits almost as well as the most costly cars. Moreover, the absence of shock and jar is accompanied by perfect steering. Whether there be potholes or not, I can guide it through the 35in. hole in the traffic which the 33in. bars demand.

Its reliability scutcheon is dimmed by one blot, for the ball bearings of a valve rocker shaft once held me up very badly indeed. The replacement set has done 3,000 miles without a hitch, and no other stoppage of any sort or kind has occurred. Nothing has come loose or fallen off or broken. There have been no punctures, though Challenger tubes have had their say in that, to judge by the nails I have pulled out. The speed is quite considerably over 60 m.p.h. on top, and the tune is held so well that no tinkering is needed between times; you can pull out that mile-a-minute roar whenever you want to. Decarbonisation is the only attention which must be given at intervals, and the makers advise it every 700 miles. I am afraid that the nefarious use of plenty of benzole in the fuel is my accomplice in waiting till 1,400 miles or so.

Ample Power.

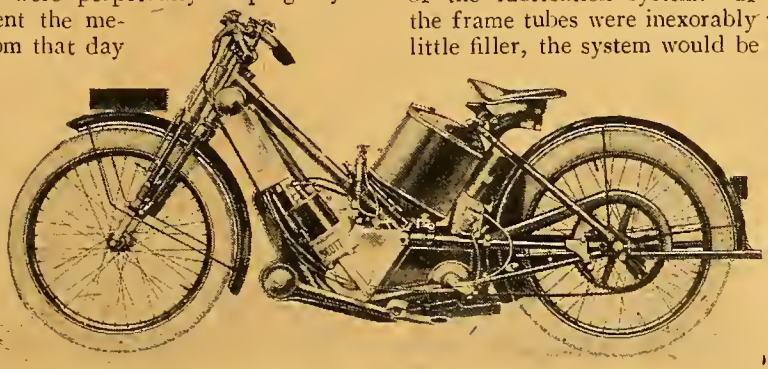
Power is such that, even on the highest set of ratios, bottom gear permits me to tick timidly up freak hills with the throttle shut. It is not a mighty top-gear stuntist, in which it corresponds to many other hot-stuff singles; the gear box is there to be used, and I use second gear more than I have ever done on a 500 c.c. solo mount. It is as necessary for a thunderclap acceleration as it is on a stiff hill. The air and spark levers also come into pretty constant use. But the gear change is as easy as slicing bacon on one of those fascinating machines which grocers use. Not for us the harassed expression of the car driver, and the subsequent sound as if one were pushing railway lines into a saw-mill. Sure, silent changes—even from top to bottom—at any speed you like to mention are the lot of the Triumph rider; furthermore, the gear lever is accessible without fouling the knee, and is operated without the necessity of thinking which side of a gate you must take. The rear brake is excellent; but I am not one of those who can make any excuses for a stirrup front brake in A.D. 1922, regarding it as an unpardonable and all but useless anachronism. Hot or cold, with or without the decompressor, the Triumph is always a



"Comfort is the supreme impression which this machine makes on its lucky owners" —the 499 c.c. o.h.v. Triumph.

What I Rode in 1922.—

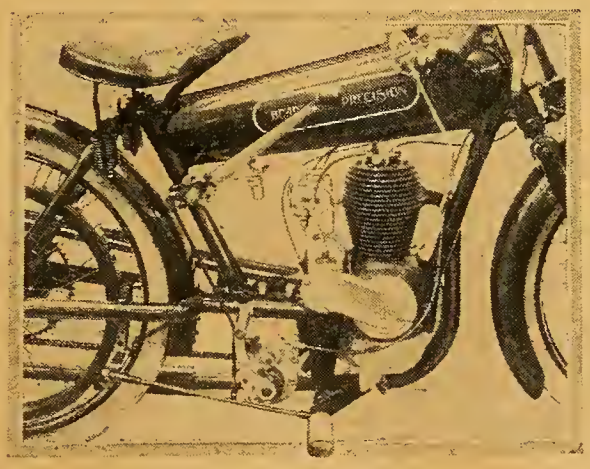
"first kick" starter. The sparking plug is, as all critics allege, somewhat inaccessible. But you can get it out—on one occasion I had to do so—with no weapons but a pocket screw-driver and a large stone. Early in the season I had to take it out pretty often, for a well-cooled plug detests oil, of which a hot-stuff engine requires full rations. Then I made the happiest discovery of my year, and put on a Best mechanical pump. Fitting it was by no means as simple a job as its vendors led me to expect, and when fitted it looks like an excrescence. Nevertheless, it has multiplied my riding pleasure by 100%. Prior to mounting it, I was eternally worrying about oil—aluminium pistons create special anxiety in that respect; memory, milestones, speedometer, engine beat, engine feel—all these factors were perpetually keeping my brain abubble. On went the mechanical pump, and from that day to this I never think of the word "oil" when once the garage door shuts behind me. It is the greatest godsend which progress has brought to motor cycles. If it will suffice for hard riding on a hot-stuff 'bus with an aluminium piston, it will suffice for anything; and it only remains for all makers to incorporate it in some safe and unostentatious cranny of the machine. Human beings do not carry their vital organs projecting from their elbows, and I resent wearing my oil pump as a sort of wart on the timing cover. An o.h.v. Triumph is quite emphatically the goods; *plus* a Best pump, it is twice itself.



"... 198 lb. all on, and 60 m.p.h. That is surely tabloided speed and power?"—the 486 c.c. Scott Squirrel.

Two-stroke Twins.

Three Scott Squirrels have enlivened my season—one of them for a substantial mileage. Any of them could quit my Triumph by a couple of hundred yards in a 2-mile friendly scrap along ordinary roads, for their natural cornering is better than a Triumph with Dance or Bennett "up." None of them could hold the Triumph on the dead straight. On the other hand, they weigh the best part of a hundredweight less, and the tax is according. They drink more petrol, and ask for a little sympathetic tinkering at times. But if you want something which is delightfully easy to handle, which holds the road, and which can mop up anything anywhere on British roads, buy a Scott Squirrel. Prof. Low says that in fifty years our food will consist exclusively of tabloids; when the tabloid era dawns, 3-cwt. solo 'buses will be obsolete, but the Squirrel will still be there—198 lb. all on, and 60 m.p.h. That is surely tabloided speed and power? If and when an unkind fate compels me to buy my last motor cycle, and to keep it until a bath chair or a hearse constitutes my sole locomotion, the final cheque will be signed to the credit of the Scott Co. The Squirrel would probably enjoy a far greater vogue if it were obtainable with a three-speed gear. It appeals to the sporting rider, who frequently ventures into the freak hill zones; but the two-speed gear is not fully suited to freak hills. Hence many riders who fancy the machine reluctantly order a three-speeded four-stroke. There is nothing to criticise about the Squirrel, except the tiresomeness of the lubrication system. If the storage of oil in the frame tubes were inexorably wedded to such a silly little filler, the system would be better scrapped; however, at the Show I saw that a more conveniently located filler was being introduced. When a single oil gauge, not requiring a glance more than once a day, suffices for eight-cylinder cars, two gauges are out of place on a twin.



"A novice can strip the engine down to its vitals in a very few minutes, and can make no error"—the 349 c.c. Beardmore-Barr and Stroud.

For two months or so I rode a Beardmore-Precision with the Barr & Stroud engine. As this frame design is applied to several different engines, the machine and power unit demand separate study. On ordinary roads the frame layout is simply perfect, but on colonial roads the fork is a shade too lively—for example, I should not pick it to lead me through a Scott trial. The principle which presumably inspired the frame at its origin seems to have been lost sight of in topping off the details. For example, it is delightful to have a tank which also forms part of the frame, and is innocent of the usual filthy chinks and crannies. "Cleanliness" seems to have been the designer's key motive. But he did not persevere. The stand is angle steel. The valve lifter and front brake—to name two instances—are quite exceptionally full of dust-traps. Nor do I quite like the way in which sundry items, vulnerable in the event of a toss, are threaded through parts of the main frame. If a toss bends a footrest, one can pick oneself up and laugh; but if it strains a frame . . .

What I Rode in 1922.—

The Barr & Stroud engine was brand new when it came into my hands, and, when it was surrendered, had not developed the running typical of its family. For example, it never did 60 m.p.h. or anything like that speed. In the absence of a speedometer I should judge that 45 m.p.h. was the fastest I touched upon it. Fuel economy, on the other hand, is even better than the maker's claim. I regularly accomplished 160 m.p.g., which is really phenomenal for 350 c.c. The engine is an easy starter, fundamentally reliable, and uniquely simple to dismantle; a novice can strip the engine down to its vitals in a very few minutes, and make no error (except a petty timing blunder) in building it up again. This is a most valuable feature. Not designed for road-burning, the machine is just a good, steady goer. It is less silent mechanically than the elimination of valve clack might lead one to expect; for when that familiar noise is gone, one hears the front chain more distinctly, and the driving gear of the sleeve valve is also audible. The engine is certainly a very welcome addition to the conventional types, and there is no snag to be recorded against it. In the way of criticism I can mention nothing except the noisiness of the release valve when opened, which naturally spits like a two-stroke; this does not concern a man who drives on clutch and throttle, as all good motor cyclists do. I had expected it to be rather a sticky starter from cold, but the first kick frees it on a cold morning, and it starts on the second kick.

None of the other machines which I rode for shorter distances justify any special mention; either they were undistinguished, or else the mileage was too brief for any opinion of value to be formed. Nor, apart from the oil pump already described, did I make the acquaintance of any accessories of really outstanding merit.

FRANCE AND THE MOTOR CYCLE.

Why the Movement has Not Developed as well as in Great Britain. Prospects for the Future

By OUR PARIS CORRESPONDENT.

SURPRISE is frequently expressed by British motor cyclists at the wide difference which exists between the development of the motor cycle movement in Great Britain and in France. While Great Britain has some 380,000 motor cycles in service and possesses a greater number of manufacturing concerns than any other country in the world, the number of motor cycles in use in France does not exceed 50,000.

In endeavouring to explain this difference critics have frequently accused the French motor cycle manufacturers of a lack of initiative, or have placed the blame on the younger generation of Frenchmen for not assisting in the development of this movement. If the trouble were taken to enquire into the matter it would be discovered that neither the maker nor the user is specifically to blame, but that there exists such a train of natural circumstances that the use of motor cycles can never attain the degree of importance in France it has reached in England.

So far as cars are concerned, the difference is very slight. The returns for 1921 showed that there were 353,500 motor cars, lorries and hackney carriages in Great Britain—approximately one for every 136 persons. For the same period there were in France 293,770 motor vehicles of the same types—also one car for 136 persons. France has nearly 5,000,000 bicycles in use. No similar returns exist for England, but it is doubtful if this figure is attained. In view of the fact that the nations are so closely matched in the two extremes as cars and bicycles, it is all the more surprising that they should show wide differences in motor cycles.

Compulsory Military Service.

The statement has been made that the young Frenchman is not as frugal as his neighbour on the other side of the Channel, and on this account rarely saves up sufficient money to purchase a motor cycle. The fact has been overlooked that the Frenchman has to put in two years' military service on coming of age, during which time he receives practically no pay. Compulsory military service alone is largely responsible for the restricted development of the motor cycle movement. Housing conditions are a further handicap. In all the big cities flats are the general rule, and in consequence it becomes necessary for the Frenchman to keep his motor cycle in a public garage, with, as a consequence, extra expense and some restriction in the use of the machine.

French roads are far from being as suitable for motor cycling as the highways of England. Around such centres as Paris, Marseilles, Lille, Lyons, and other important cities, where the greatest numbers of motor cyclists ought to be found, such rough *pavé* exists that the use of a motor cycle for utility purposes is almost impossible, and the fact that this rough zone has to be crossed in order to reach good macadam roads acts as a deterrent.

Monotonous Main Roads.

France is not lacking in beauty spots, and as a touring ground is second to no country in the world. Few people, however, even in England, become motor cyclists merely for the pleasure of an occasional tour. The monotonous nature of the main highways of France, and the big distances which separate towns and villages, contribute to rob the daily use of a motor cycle of much of its charm.

Real lightweights are being developed primarily for utility purposes, and with a wonderful potential field among the five million cyclists of France they ought to be a permanent success. During the next few years there will probably be a very considerable increase in the use of lightweights, a development of the sporting side of motor cycling which will be the corollary of the general sporting revival throughout the country, and also an extended use of the cycle car.

Compare B.S.A Prices and Specifications with others

SPECIFICATION		SOLO	WITH MODEL No. 4 SIDECAR	WITH MODEL No. 3 SIDECAR
2¾ h.p.	Model "L." 3-speed K.S., Mechanical Oil Pump, also emergency hand oil pump, hand operated clutch, all-chain drive.	55 gns.		
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8 h.p. "LIGHT."	Twin Cyl., 3-speed K.S., Mechanical Oil Pump, also emergency hand oil pump, Hand-operated clutch, all-chain drive.	£90	£110	£115
8 h.p. DE LUXE.	Model "F." Twin Cyl., 3-speed K.S., Mechanical Oil Pump, also emergency hand oil pump. Hand-operated clutch, all-chain drive.	£107	No. 1 or No. 3a SIDECAR. £140	No. 5 (2-Seater) SIDECAR. £144

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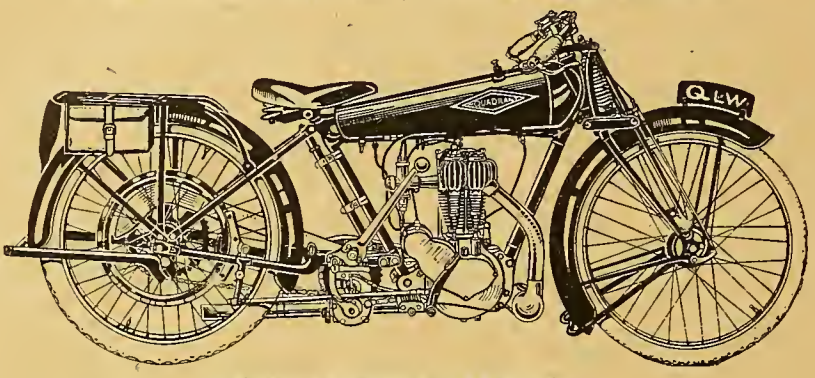

SPECIFICATION.

Engine 79 m'm., Bore 100 m'm. stroke; Binks Carburettor; Sturmey-Archer 3-speed Gear Box with Kick Starter; Hans Renolds Chains; Dunlop Tyres; Aluminium Chain Covers; Footboards or Foot Rests; Wide Mud Guards, (about 6-in. ground clearance); Oval design Saddle Tank; Handle Bar controls.

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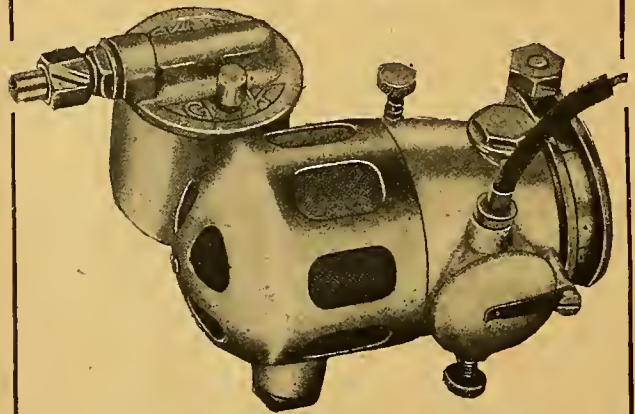

St. John's College,
Cambridge, 6th Dec. 1922.

Dear Sirs,

I am more than pleased with the "Ekon" carburetter which you supplied about a month ago for my 2¾ Rex-Blackburne. I have found all your claims for this instrument fully justified.

Yours truly, A.S.M.

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W. 27.

CURRENT CHAT

Times to Light Lamps.

Dec. 28th	.. ..	4.25 p.m.
„ 30th	.. ..	4.27 „
Jan. 1st	.. ..	4.30 „
„ 3rd	.. ..	4.31 „

One number plate must be illuminated as above *vide* Road Vehicles Registration and Licensing Order (1921). According to the Lights on Vehicles Regulations (1903) the lamps ordinarily required by law may be lit half an hour later.

Veterans.

How many machines of very ancient date, say, of 1906-8, are still in regular use?

Slack Club Men.

Why do some clubs "hibernate" during the winter months? The "villainous weather" excuse is apparently found very useful by apathetic members.

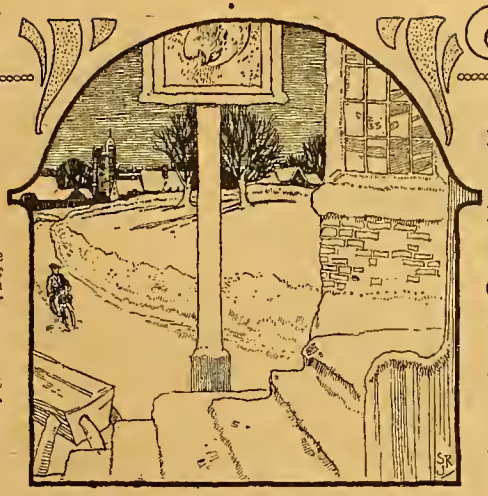
A Question of Averages.

Who makes the higher average on a long journey—the man who rides to a non-stop 28 m.p.h. or he who alternately covers a mile at full throttle and then pulls up to wipe his eyes or make a trivial adjustment?

News Item from Sweden.

Motor Cycle Club of Sweden recently arranged the great trial for the November Cup, 700 kilometres, day and night riding. All best riders taking part. Eric Westerberg, Harley-Davidson flat twin, won, taking home the cup for ever. Westerberg is a man to meet the best foreign riders when Sweden will arrange International six days trial in 1923.

We have to thank a Swedish correspondent for the above information, which, we think, the majority of our readers will appreciate more in its original form than had a sub-editor attacked it.



What to Wear.

Headgear is an unsatisfactory item in the motor cyclist's clothing—leather helmets render one deaf and caps have a habit of falling down over the face. All other forms being out of the question, the woollen "pudding basin" favoured by some competition riders seems to present the only solution.

Showing at Brussels.

At the Brussels Motor Show, which will be held from January 13th to the 24th, 1923, among the motor cycle firms exhibiting the following may be mentioned:—Gillet, Henderson, Sarolea, Ace, Omega, F.N., Roto-Sim (a Swiss edition of the Anto-Wheel), Peugeot, Harley-Davidson, S.L. cycle car, and Motosacoche.

More "Hints for Beginners."

How to make a tool roll—place it on the tank or saddle.

Ireland's Biggest Race.

Next year's Ulster Grand Prix will be held on September 15th.

Cycle Car Control.

Notwithstanding the decision arrived at by the meeting of the Association of Recognised Automobile Clubs, several Continental motor cycling organisations are continuing to cater for four-wheeled cycle cars.

All Sorts and Sizes.

The London-Exeter entry consisted of 95 solo machines, 90 sidecars, 14 three-wheelers, and 99 cars. In 1921 the numbers were: 72 solo, 110 sidecars, 18 three-wheelers, and 96 cars. 1920 saw 80 solos, 80 sidecars, 13 three-wheelers, and 64 cars, while in 1919 there were 40 solos, 67 sidecars, 1 scooter, 1 car.

New Record Rule.

One of the effects of the ruling passed at the last F.I.C.M. Congress in London that a machine in a smaller class might, owing to its superior speed, hold records in the class above it provided it conformed with the regulations regarding weight and size of tyres is that Colonel Stewart's records are thereby deleted in Class D and are held in that class, and Class C as well, by W. H. Sheraton (490 Norton). The same remarks apply to the records held by J. L. Emerson (496 Douglas).

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THE SPEEDY MESSENGER. This young rider believes in combining business with pleasure for he uses his motor cycle in preference to a pedal cycle for the delivery of post office messages at Keighley.

Cars with Motor Cycle Performances.

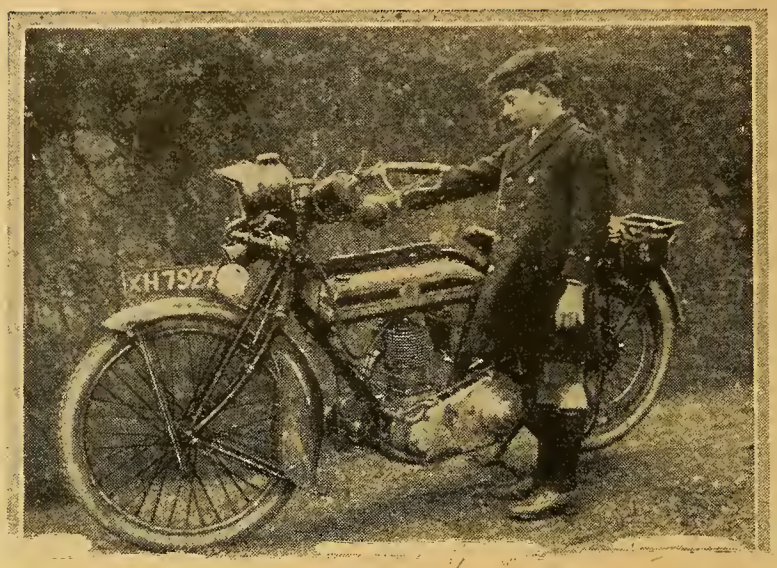
Even the keenest motor cyclist will confess an interest in cars, but usually he fails to be greatly aroused until the Bentley-Vauxhall class is reached.

Observations in the Dark.

In the interests of the long suffering press man we suggest that luminous numbers should be the order in trials including observed hills in the dark.

The Useful Lightweight.

Even in America the lightweight is not merely a runabout machine. It is now accepted as a serious touring mount, as will be appreciated from the photograph taken in the wilds of California on page 975 of this issue; the machines depicted are two-stroke Clevelands, a make not unknown in this country.



A YOUNG EXILE'S INTEREST. Prince Nicholas Galilzine, eldest son of Prince Vladimir Galilzine, regrets that the Triumph is of a size entirely useless for him at present.

Facts brought home.

One's enthusiasm for the economical motor cycle increases when it is found necessary to pay over two or three pounds sterling for the privilege of riding in a crowded railway train because the 1922 machine has been sold and the 1923 model has not been delivered.

Over 1,000 Pages.

There are over 1,000 editorial pages in the volume of *The Motor Cycle* (June to December) which this number completes.

Good Spirits.

Alcohol has always exercised a great power in making glad the heart of man. Motorists wonder when the time will come for it to be the chief source of power also in transporting them to and from their scenes of merry-making.—*The Autocar.*

The Repentant Policeman.

A motor cycling policeman has joined a flourishing club. Previously he had successfully "operated" against several members for various offences.

A Royal Motor Cyclist.

Prince Leopold of Belgium, an enthusiastic rider of an American X, will open the next Belgian Motor Cycle Exhibition

Luminous Gloves for Policemen.

So as to allow the signals of constables to be clearly seen, the police authorities at The Hague have supplied their men who regulate the traffic with luminous gloves. A small electric lamp is fixed in the centre of the palm. The light goes out as the constable lowers his hand.

Hobbies Require Careful Mixing.

An enthusiastic angler used his sidecar to carry home his haul of six pike. Later, in the evening he motored his fiancée to a dance. They left early, and with the money he had saved for a dynamo lighting set he is paying for a new dress and the cleaning of an expensive fur coat.

Comfort-loving Southerners?

With reference to the discussion about North and South country riders, it has been pointed out that, although there are comparatively few London motor cycle manufacturers, more spring frame machines have originated from the metropolitan area than from all the rest of the country.

Motor Cycle for Fire Fighting.

The latest addition to the fleet of motor vehicles in the Bloemfontein Fire Brigade is a Harley-Davidson sidecar outfit.

Beyond all Hope.

We do not know whether the following, overheard at a trial, were responsible for the disqualification of the two competitors concerned:

"Why did the watersplash?"
"Because it saw the hill climb."

When did the Valve Spring?

As soon as it saw the flywheel and felt the valve tappet.

Mud Splash Problem Not Yet Solved.

The R.A.C. judges are unable to recommend any awards as the results of the recent splashguard tests at Hendon.

Countisbury Hill.

An alternative road to Countisbury Hill is suggested by the Chairman of the Barnstaple Rural District Council.

Mr. A. I. Greenwood, of Leeds, who has ridden motor cycles since the days of the front driven Werners. The machine shown is a Singer of about 1898, with the engine in the rear wheel.

EARLY DEVOTEES OF THE PASTIME.

Mrs. Harry Reed and the Dot motor cycle which was specially made for her in 1908. Mrs. Reed was one of the first ladies to take up motor cycling as a pastime.

Contradicted.

Stranded rider (on Christmas Eve): Oh, —— this magneto, Oh ——— —— * * * ! ! !

Voices of carol-singers in distance: "No-el, No-el."

Police Activity at Matlock.

Indifferent roads and police persecution are given by various readers as reasons for avoiding Matlock.

Speed Tests in Selling Trial.

For the Worcester Spring Selling Trial the organising clubs have secured from their patron, the Earl Beauchamp, the use of the drive at Madresfield Court for high speed and low gear tests.

Applause from a Strange Quarter.

When the Ulster Grand Prix was being run (according to a correspondent to the *Children's Newspaper*) the noise of the machines in the distance was so like the croaking of frogs that a local frog joined in the chorus—quite out of season, too.

Record Entry.

Three hundred and eight was the record number of entries received for the M.C.C. Boxing Night run to Exeter from Staines and back again. In 1919 the total number was 109; in 1920, 237; and in 1921, 216. The best pre-war entry was in 1914, when the total was 231.

Popular Initials.

A French contemporary laughs at the British fashion of naming machines by initials. After quoting A.J.S., P.P., P.V., G.S.D., H.B., J.E.S., H.T., P.M., B.S.A., O.K., J.D., it goes on to say "Here is practically the whole alphabet!"

Prickly Freight.

For at least a fortnight before Christmas day nearly every week-end sidecar drivers might have been seen proceeding homeward with a heavy burden of freshly-gathered holly or mistletoe.

The Answer.

Novice wheels silent machine into garage.

Proprietor (diagnosing trouble): "Has this been to any other garage-man?"

Novice: "Yes."

Proprietor: "And what did the silly fool tell you to do?"

Novice: "To come to you."

(Collapse of proprietor.)

THE COMPETITION RIDER'S HOLIDAY! En route on the M.C.C. annual Christmas run to Exeter and back. As we go to press 185 solo riders and sidecarists are wending their way to Devonshire. The event will be reviewed in next week's issue of "The Motor Cycle."

MOTOR CYCLES FOR ALL PURSES.

In addition to the Extensive List of 680 1923 Prices which appeared in our issue of December 14th are the following Figures, which brings the total to upwards of 700.

SOLO MACHINES.

£30 9s., Coventry Eagle, 142 c.c., T.S., single spd.

£33 12s., Coventry Eagle, 142 c.c., T.S., 2 spd.

£35, J.D., 116 c.c., T.S., single spd., C.

£38 17s., Hack, 103 c.c., T.S., single spd., C.

£56, Coventry Eagle, 249 c.c., 2 spd., K.S. and C.

£56, Coventry Eagle, 293 c.c., 2 spd., K.S. and C. (J.A.P. model).

£65, H.T., 348 c.c., 2 spd., C.

£65, Coventry Eagle, 348 c.c., 3 spd., K.S. and C.

£65, Bradbury, 350 c.c., 3 spd., K.S. and C.

£67, Coventry Eagle, 346 c.c., 3 spd., K.S. and C.

£69 10s., Coventry Eagle, 346 c.c., 3 spd., K.S. and C. (sports model).

£75, P. and P., 349 c.c., 3 spd., K.S. and C.

£80, H.T., 349 c.c., 2 spd., hand starter and C.

£85, Rover, 249 c.c., 3 spd., K.S. and C.

£90, Brough, 692 c.c., 3 spd., K.S. and C.

£95, Rover, 499 c.c., 3 spd., K.S. and C. (sports model).

£95, Bradbury, 749 c.c., 3 spd., K.S. and C.

£100, Brough, 496 c.c., 3 spd., C.

£100, Rover, 499 c.c., 3 spd., K.S. and C.

£115, Rover, 654 c.c., 3 spd., K.S. and C.

£125, Coventry Eagle, 976 c.c., 3 spd., K.S. and C.

PASSENGER MACHINES.

£80, Melen, 297 c.c., T.S., 3 spd., K. S. and C., box carrier, three-wheeler.

£86, Coventry Eagle, 346 c.c., 3 spd., K.S. and C., with sidecar.

£97 10s., P. and P., 349 c.c., 3 spd., K.S. and C., with sidecar.

£115, Coventry Eagle, 549 c.c., 3 spd., K.S. and C., with sidecar.

£120, Brough, 692 c.c., 3 spd., K.S. and C., with sidecar.

£122 8s., Bradbury, 749 c.c., 3 spd., K.S. and C., with sidecar.

£125, Rover, 499 c.c., 3 spd., K.S. and C., with sidecar (sports model).

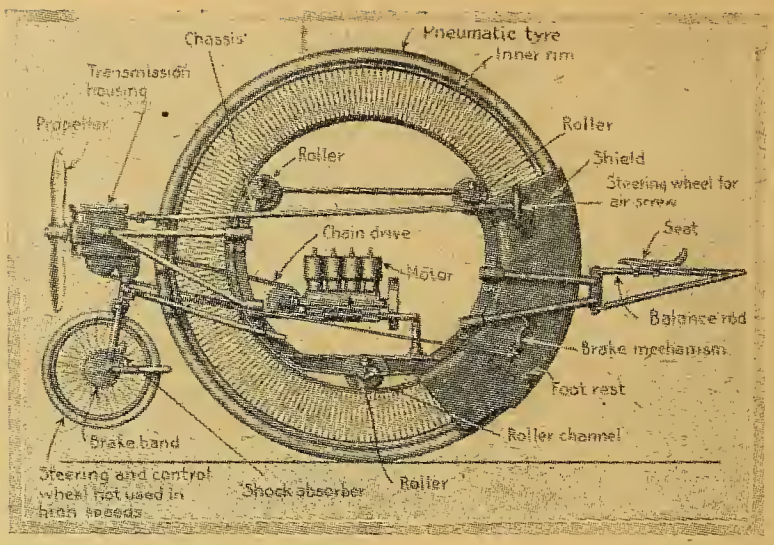
£130, Rover, 499 c.c., 3 spd., K.S. and C., with sidecar.

£145, Coventry Eagle, 976 c.c., 3 spd., K.S. and C., with sidecar.

£145, Rover, 654 c.c., 3 spd., K.S. and C., with sidecar.

UNICYCLES OF TO-DAY AND LONG AGO.

Italian Designer Revives Interest in the Single Wheel Motor Cycle. Is it Practicable?

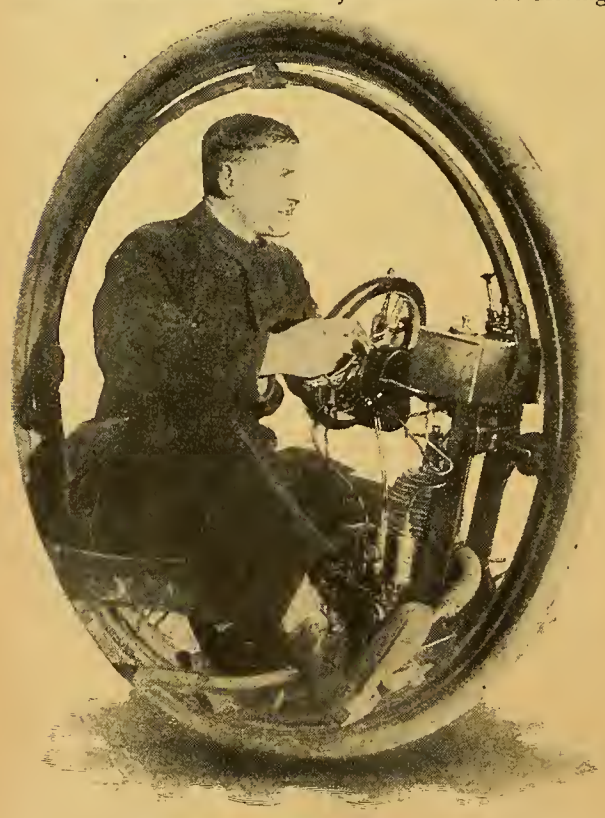


Great things were anticipated from this design.

"WHY should motor cycles have *two* wheels?" asks an Italian inventor; and, presumably without waiting for a reply, he designs the weird "unicycle" illustrated below.

As far as can be gathered, the rider and engine unit are suspended in an inner circle, as it were, making contact with the outer rim by rollers. One of these rollers is driven by the engine, the transmission being of the friction pattern.

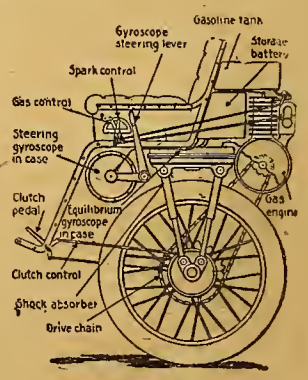
How steering is effected is not clear, but obviously the steering wheel is mere camouflage. Mudguarding will also present a difficult problem; and one does not care to visualise the effect of a jamb between the driving and driven transmission members when the vehicle is speeding hard down-hill!



The latest Italian one-wheel motor cycle.

The idea, however, is by no means new. A motor unicycle, hailing from America, was described in *The Motor Cycle* of April 4th, 1918. It consisted primarily of an enormous wheel, nine or ten feet in diameter, propelled by an air-screw, the motive power for which was supplied by a four-cylinder engine.

Another and more practicable invention of a similar nature was described in *The Motor Cycle* at the same time; here the rider was seated in a chair surmounting a wheel three or four feet in diameter. The whole was maintained in an upright position by an electrically-driven gyroscope, while a smaller gyroscope operated the steering through bell-crank levers. Imagine the driver's plight in the event of a sudden failure of the current!



Gyroscopically balanced American model.

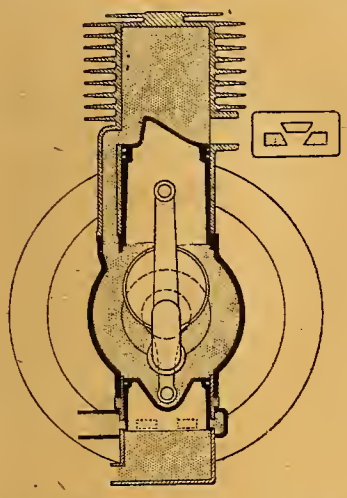
On July 4th, 1919, there was described in *The Motor Cycle* yet another example of the single-wheeled motor cycle, invented by a Mr. E. J. Christie, and patented in the United States. A working model was constructed, which bore out the inventor's claims and theories in a satisfactory manner. A large wheel, flanked on either side by a smaller one, contained an electrically-driven gyroscope. When stationary the machine rested on one of its side wheels, but righted itself when the gyroscope commenced to revolve. A speed of 540 m.p.h. was anticipated.

Just as we go to press details come to hand from a reader (Mr. G. S. Knox) of the absolute father of them all. His sketch, from an American paper of 50 years ago, shows a venerable gentleman sitting in a handle-propelled wheel constructed of wood.

SUPER-CHARGED TWO-STROKE.

EVEN the keenest two-stroke adherents have to admit that there is less possibility of change and less scope of experimental ideas in the type of engine which they favour than in the more complicated four-stroke.

Doubtless mechanical complication, or rather, increase in the number of working parts, will be inevitable if the two-stroke is to be much further developed, for



Increased crank case capacity is obtained in the Cross two-stroke design by a supplementary pump piston.

surely the simple three-port "valveless" type of engine must have reached almost to the limit of efficiency, especially in the smaller sizes.

Improving Scavenging.

A Lancashire designer (Mr. J. D. Cross) has approached the two-stroke problem with the object of super-charging and better scavenging of the exhaust, even at some increase in the number of reciprocating parts

He proposes to increase the volume of his crank case charge by a second and subsidiary piston working in opposition to the main piston. This piston is operated by eccentrics and short connecting rods, and may lie directly below the main cylinder, or, in the case of a horizontal engine, directly opposed to it.

It functions as an inlet valve, uncovering ports in its cylinder, and by carefully proportioning the subsidiary piston it is possible to obtain an increased charge of mixture for use in the working cylinder.

Advantages Claimed.

It might be thought at first that the extra piston would be better employed as a second working piston, but the designer points out that in this case one would obtain only two low-efficiency cylinders instead of one, which is more likely to function regularly even at low speeds and small throttle openings, whereas it is not necessary to construct so long an engine in the case of his design. Also, it is an extremely difficult matter to produce a satisfactory ignition for an opposed twin two-stroke, and in any case such an engine would produce two explosions at the same time and have no better torque than a single cylinder engine of the same capacity.

Large Crank case Charge.

The diagram shown is self-explanatory. The lower, or pumping, piston, when at the bottom of its stroke uncovers inlet ports, and, since it moves outwards at the same time as the working piston, a large charge is drawn into the crank case. This charge is transferred through to the combustion head when the main piston drops below the transfer port.

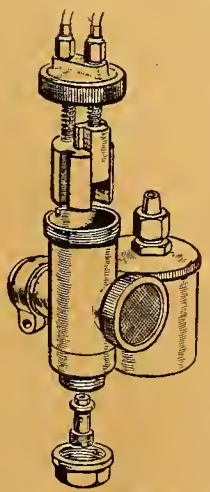
In addition to this, Mr. Cross has evolved an unusual system of exhaust ports, also shown on the diagram, in which he finds that it is necessary only to connect the upper port to the expansion chamber of the silencer, while the pipe from the lower ports enters the silencer tail pipe.

MINIATURE B. AND B. CARBURETTER.

DESIGNED to meet the demand for an efficient carburetter for use on ultra-lightweight machines, the "Baby" B. and B. is an interesting addition to a growing class.

It is a two-lever instrument of simple design, and, although of tiny proportions, is designed to allow the engine to develop full power under all conditions.

Another innovation by the same makers is a twist grip handle-bar control. It is composed of two sleeves, the inner sleeve, which is slid over and is rigid with the handle-bar, has a quick pitch worm formed on its periphery; this worm engages a similar one on the inner side of the outer sleeve. Into the inner sleeve is fitted a block which forms a cable stop and an anchorage for the wire; the end is closed by a screwed cap. This control was illustrated recently "Among the Accessories"; it is, of course, intended for single-lever carburetters.



New Miniature B. and B. Carburetter.

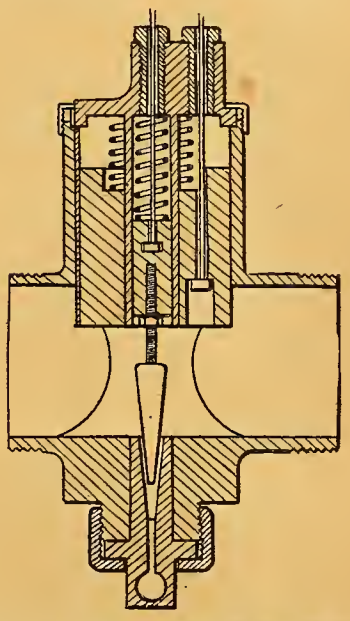
All the well-tried models of B. and B. carburetters are retained for 1923; these include pilot jet and single jet instruments, and a special model for two-strokes. Minor improvements only have been effected, all models being substantially the same as in 1922.

SIMPLE VARIABLE JET CARBURETTER.

AS a result of much experimental work a very simple carburetter has been constructed by Mr. J. T. Bradford, of Colne, Lancashire.

In broad principles it is very straightforward, since the main tube is closed or opened at will by a specially-shaped throttle barrel working vertically in a normal manner through Bowden controls.

This single slide controls both air and gas proportions, and it surrounds a central tube wherein works a plunger to which is attached a taper needle. This taper needle seats in a correspondingly tapered jet tube and can be raised or lowered at will through a second hand control. Thus it is possible to adjust the size of the jet orifice to any given conditions, and consequently no external alterations are required to suit changes in atmospheric pressure or temperature.



Section of Bradford carburetter showing the construction of the handle-bar controlled adjustable jet and the combined throttle and air barrel.

Special Controls.

It has been found that special control levers are necessary to obtain the best results with this carburetter, and, though these are equally as convenient as the ordinary type, they differ slightly in detail. We are informed by the designer that it is possible to obtain a consumption of 110 miles to the gallon regularly at normal touring speeds on a 550 c.c. Triumph, and mileages of 128 have been obtained on a gallon of spirit under favourable conditions.

A simple carburetter of this description with a handle-bar controlled jet should be suitable for most types of machines, but perhaps especially for two-strokes where a wide range of jet orifices is required for varying conditions of load.

"THE MOTOR CYCLE" FILM.

Enthusiastic Reception in Cornwall. Propaganda Value in the Midlands.

AN excellent reception was accorded the southern film at the Launceston Picture Theatre, where it was shown by the Dunheved (Launceston) and District M.C. A number of enthusiasts spent a very pleasant time watching the pictures.

Special interest was taken in that portion of the film depicting the climb of Beggar's Roost in the London-Land's End trial, especially as a local man was among the riders. The film proved that the views of the competitors, expressed when they reached Launceston, as to the surface of the hill were not exaggerated. At the conclusion of its report, the Dunheved Club states that it is hoped to make a bigger thing of the film next year.

Heavy Winter Bookings.

So far as the booking of dates is concerned, these have been very heavy for January, as for the past month, and February is a fairly busy month; but bookings have not been nearly so frequent in the case of the film which is circulating in the South as of that which is touring the North; for the latter there is hardly a vacant date right up to the middle of March. It will be on view for three days in the Isle of Man.

The Shirebrook M.C., in acknowledging the receipt of the film from Edinburgh, mentions that members turned up in force and were joined by some of the Mansfield M.C. and L.C.C. The exhibition was heartily enjoyed by all. The secretary states that there is no possible doubt but that the trials and T.T. portions of the film are particularly instructive to the non-motoring public. For instance, when Bennett's speed and the distance of the Senior T.T. were shown on a sub-title a spectator remarked that he thought it was wonderful for a motor cycle to stand the strain of 226 miles at 58 m.p.h., as he never thought it possible on ordinary roads.

Interest of Trade and Public

A grateful letter has been received from the Stafford and District M.C.C., the secretary of which writes:—"The film was pronounced a great success by all present, and all the Stafford enthusiasts agreed that it was of the greatest benefit both to clubmen and to the trade. The film must prove even to the greatest sceptic that the motor cycle is one of the most tested and tried productions on the British market." At the conclusion of the exhibition votes of thanks were accorded to the proprietors of *The Motor Cycle* and to Councillor Everton, president of the club.

Where the Southern Film is shown next week.

THURS.-SAT., DECEMBER 28th-30th.—Norfolk M.C. and L.C.C., Theatre de Luxe, St. Andrews, Norwich.

TUESDAY, JANUARY 2nd.—Loughborough and District M.C.C., Club Hqrs., Loughborough. (1921 film also.)

WEDNESDAY, JANUARY 3rd.—Bedford and District M.C.C., The Palace, High Street, Bedford.

THURSDAY, JANUARY 4th.—St. Albans and District M.C.C., The Empress Cinema, London Road, St. Albans.

The Northern Programme.

FRIDAY, DECEMBER 29th.—The West Bromwich and District M.C. and L.C.C., Imperial Picture House, Ltd., West Bromwich.

SATURDAY, DECEMBER 30th.—The Bolton Mission, King's Hall, Bolton.

SUNDAY, DECEMBER 31st.—The Barrow and District M.C., Salthouse Pavilion, Barrow-in-Furness. (1921 film also.)

MON.-WED., January 1st-3rd.—The Goldthorpe and Thurnscoe M.C.C., The Goldthorpe Empire.

IMPORTANT 1923 CONTINENTAL EVENTS.

AMONG the many races to be held during 1923 in France and on other parts of the Continent, the most important will be the Grand Prix organised by the *Union Motocycliste de France* on the Tours course, on June 24th. This race, which is combined with the French Grand Prix car races, and has the advantage of the elaborate preparation made for these events, is the blue riband of the Continent and is open to machines of 250, 350 and 500 c.c.

Road Races.

A speed championship has also been arranged, which comprises the race at Tours and four other events: the *Motocycle Club de France* Grand Prix on July 22nd and 23rd; the Lyons Grand Prix race on May 10th; the Bol d'Or 24-hour race to be held near Paris between May 17th and 23rd, and the Marseilles road race on June 17th. The rider making the best performance in these five events becomes the speed champion of the year.

In the same way there is a touring championship comprising six events, the first being the Paris-Nice reliability trial on February 16th to 19th. This run is followed by speed trials and a hill climb up La Turbie which do not figure, however, for the championship. Next comes the U.M.F. one-day trial, which doubtless will be a non-stop run in the Forest of Marly, near Paris, on March 25th. The *Tour de France* organised by the *Motocycle Club de France* from April 17th to May 6th will also count, the other three events being the Vosges circuit on May 21st, the Bordeaux to Royan trial on August 12th, and the Autumn circuit at Toulouse on September 23rd. The touring championship is open to motor cycles, sidecars, and to cycle cars, for this latter class of machine still comes under the control of the U.M.F.

The trial from Paris to the Pyrénées and back has been scheduled for June 17th to 24th, at which date it is practically certain the passes will be free of snow.

More important of course than the French trials, from an international standpoint, will be the International Six Days Trials, from August 6th to 12th, already referred to in *The Motor Cycle*.

At the Monza Track.

While the full Italian programme has not been announced, the most important event in that country appears to be the *Grand Prix des Nations*, for 500 and 1,000 c.c. machines, to be run on Monza track, near Milan, on September 8th. Other events on the Italian track will be a sidecar and cycle car race on April 29th, and a 24-hour race, with two riders per machine, on June 24th and 25th. There is a project for a reliability trial from Paris to Rome during the summer of 1923, but details of this have not been decided on.

Belgium will have its Grand Prix road race on July 15th, and on November 6th there will be a Spanish Grand Prix at Tarragona.

OVERSEAS TRADE.

IN order to obtain the latest information regarding the state of overseas markets, we took the opportunity of calling on Mr. Norman Hill, of the Coventry Chain Co., Ltd., who has just returned from a long business voyage.

After visiting Australia, New Zealand, Malay States, Dutch East Indies, the Argentine, Brazil, China and Japan, Mr. Hill gained the impression that, though there is an almost universal desire to buy British motor cycles, yet our products are entirely swamped by American goods. The reasons to which he attributes this fact are that our prices are too high, we have very inadequate spares service, and that, owing to American propaganda, only big twins are saleable in the majority of overseas markets.

Of the countries visited, only Australia and New Zealand show any considerable signs of trade revival, and we were asked to emphasise the fact that the two are separated by 1,200 miles, and therefore each requires a separate sales and service depot.

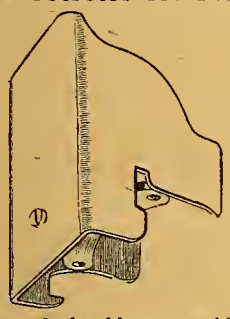
In confirmation of the opinion expressed by Mr. George Stevens, Mr. Norman Hill is emphatic as to the needs of travel for our responsible business men, who can only learn by first-hand experience the difficulties and requirements of overseas buyers.

AMONG THE ACCESSORIES

Anti-dazzle Goggles.

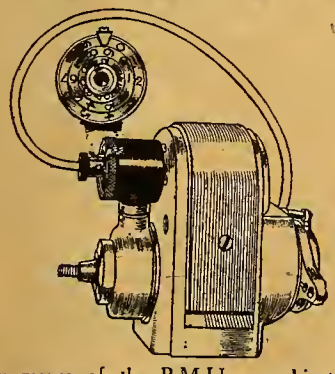
Dazzling head lamps lose their terror to those who wear the latest edition of the C.G.P. eye-screen (for attachment to helmet or peak of cap), which has an additional screen of a specially tinted material. 4s. 6d. and 5s. (P. G. Cambray, Engineer, Long Preston, S.O., Yorkshire.)

Valve Protector for Nortons.



Specially made for Norton machines, this neat aluminium valve guard is marketed by Herbert Robinson Ltd., 32-35, Green St., Cambridge.

For Locking the Ignition.



By means of the B.M.I.L. combination lock the magneto may be short circuited, and except by changing the magneto, the would-be thief is completely foiled. The inset shows the lettered face of the lock. (T. Armstrong Carter, 16 Green St., Leicester Sq., London, W.C. 2.)

Serviceable Bulb Horn.

Compactly built and finished in black, this bulb horn is representative of a wide F.R.S. range of these fitments. (F.R.S. Lamps, Beam Works, Vere Street, Birmingham).

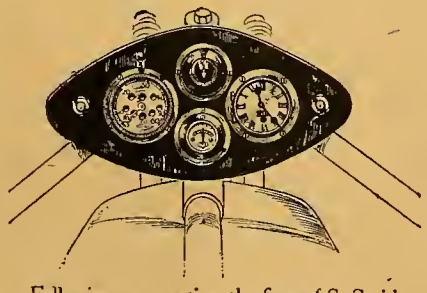
Non-slip Handle Grips.

Galirub handle-bar grips are made of rubber moulded to the imprint of a hand, so that a very comfortable grip is afforded. 3s. 6d. per pair for ⅞ in. or 1 in. handle-bars. (Gallite & Rubber Manufacturing Co., Ltd., Burlington Road, Fulham, London.)

Driving Mirror on Cap.

In appearance like a cheap tie clip with a tiny mirror hinged thereto, this patented device is a miniature driving mirror for attachment to the peak of the rider's cap. It acts quite well provided the cap does not jolt about too much. (J. Smith, 40, Upper Arcade, Bristol.)

Instrument Board for Motor Cycles.

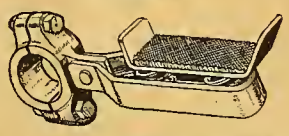


Following car practice, the firm of S. Smith & Sons, Ltd. (Cricklewood Works, London, N.W.) has introduced an instrument board for motor cycle handle-bars. It is priced at £2 10s.

Universal Box Spanners.

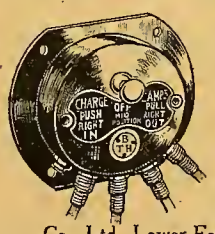
Six different sizes of nuts are fitted by the Hamilton nest of box spanners which are coupled together as shown and normally need no tommy bar. (Hamilton & Co. Ltd., Anniesland, Glasgow.)

Spring Footrests for Pillion Riders.



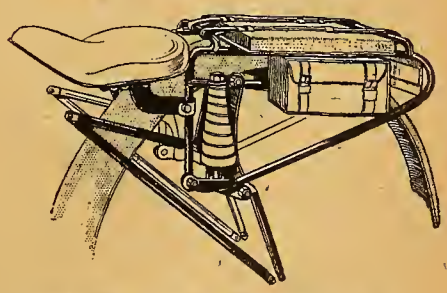
Spring footrests for pillion riders have been introduced, at 7s. 6d. per pair, by Herbert Terry & Sons, Ltd., Redditch.

Convenient Lighting Switch.



On the new B. T H. mag-generator a particularly neat switch is fitted, which may easily be manipulated by touch without the necessity of the rider peering down to see what position it is in. (B. T. H. Co., Ltd., Lower Ford Street, Coventry.)

Spring Saddle and Carrier.



Saddle and carrier are sprung together in one X-L-All design, eminently suitable for transporting fragile goods, or for use as a pillion seat. (John Leckie, Ltd., Walsall.)

THROUGH FEMININE GOGGLES.

Suitable Costumes for Wear both On and Off the Machine.

By A WOMAN MOTOR CYCLIST.

A summer-time riding costume. Miss Lempriere, of Jersey, daughter of Mr. R. B. Lempriere, the Seigneur of Rozel, is an enthusiastic owner of a New Hudson two-stroke.

THAT a woman should have to dress as a man to ride a motor cycle is an entirely mistaken idea. I often find that the sole reason for not taking up the healthy, inexpensive and exhilarating hobby of motor cycling is "because I should have to wear breeches." This is not early Victorian modesty, the point being that the possessor of a motor cycle would naturally use it for long rides, from London to the sea, or from a remote country village into a fashionable town. *En route* one would be all right, but what woman, even in these days, would face the parade of a smart watering place, or the shopping centre of a fashionable town, clad in breeches?

Riding Kit must Suit Walking.

It will be argued that a change could be carried in a suit case on the carrier; for a whole day this idea would be feasible, but a whole day at one place would not be a general rule. A couple of hours listening to the band; looking round a new place; shopping; or just lunch or tea at a cheerful *café*—these may be the objects of a ride, and to "change" would make far too great a business of the whole affair. On a tour, where several places are visited in one day, it would be ridiculous, to say nothing of the expense of hiring a room to change in.

With the right motor cycle, however, this dress drawback does not exist. I do not say that one could ride 50 miles and then compete with success in a fashion competition with a lady who had just walked 50 yards from her hotel; but I do say that, with care, one can mix with quite fashionable civilisation without feeling or looking out of place.

Low Built Machine Essential.

I have just completed 12,000 miles on a two-stroke lightweight machine. This is a man's model, but built low, which enables an everyday medium-length skirt to be worn with the same appearance as a longer one on an ordinary bicycle; the width round the bottom, however, should not be less than 70in.

My costume for short ordinary or long country non-stop rides, in the summer, is an old sports coat and skirt, too shabby for ordinary wear, but which look quite smart on a motor cycle; while for civilised jaunts, anything to suit the occasion, entirely covered up by an ample belted coat of leather or khaki cotton drill, according to the weather, with the collar turned up to keep out the dust.

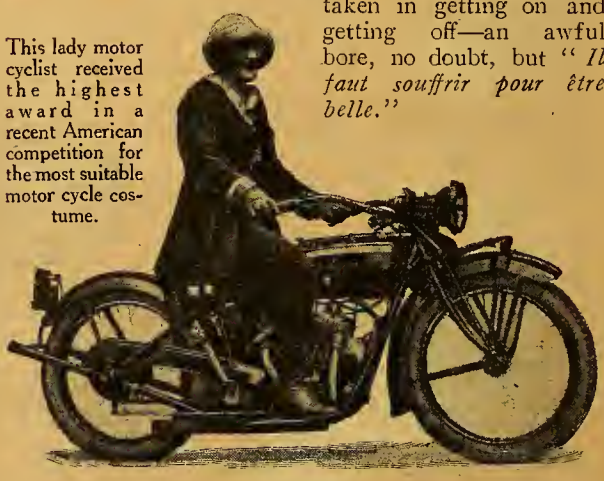
Foot-wear and Head-gear.

Dust and rain-proof leg-guards are a special feature of many modern machines; but a stray spot of oil might be damaging to smart stockings, so it is advisable to wear an extra pair, or gaiters, just for the journey. Any shoes can be worn, provided they have not too high heels, which cause difficulties in starting and brake manipulation.

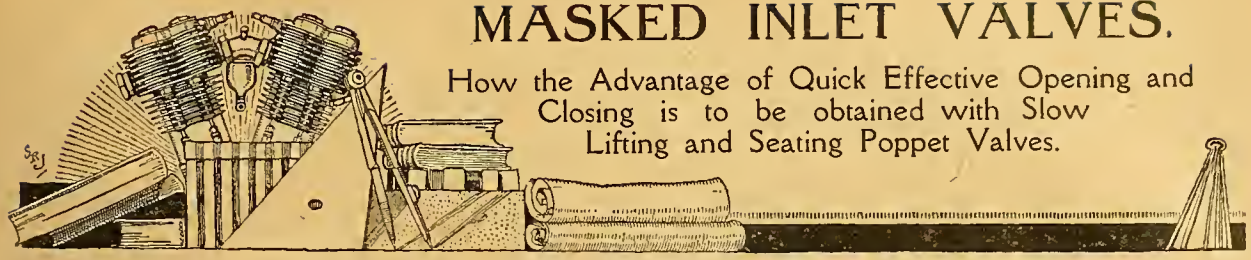
Preferably the hat should be of the pull-on tight-fitting variety, but if it is windy and there is any doubt as to its keeping firmly on, a leather strap or scarf must be wound tightly round it. This is important, as hatpins are dangerous, and having to grab at one's hat while going round a corner or at a critical moment in traffic may mean a nasty accident. For ordinary occasions nothing can beat a leather helmet strapped over the ears; it drowns the noise of the engine, so adding greatly to the enjoyment of riding, and, with a fur lining, is delightfully snug in the winter.

Leather gauntlet gloves should be worn, and a stout mackintosh and sou'wester must always be kept strapped on the back carrier in readiness for wet weather.

It must be remembered that when the rider is dressed "for show" the machine must be clean to start with, especially over the top tube and petrol tank, where the under part of the front of the skirt rests; also, the very greatest care should be taken in getting on and getting off—an awful bore, no doubt, but "*Il faut souffrir pour être belle.*"



This lady motor cyclist received the highest award in a recent American competition for the most suitable motor cycle costume.



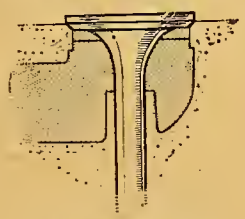
MASKED INLET VALVES.

How the Advantage of Quick Effective Opening and Closing is to be obtained with Slow Lifting and Seating Poppet Valves.

By "DUMB IRON."

THE term "valve masking" is unfamiliar to quite ninety per cent. of motor cyclists, although the idea it expresses was originated as long ago as 1905 by the German firm of Adler. It is not surprising that, in the days when mechanical inlet valves were by no means universal practice, the idea came to naught. Since then it has been, with very few exceptions, ignored by designers and journalists alike. It has been resuscitated at times, its most recent adherent being H. R. Ricardo, the designer of the four-valve Triumph engine.

The masked valve is, to some extent, a combination of poppet and sleeve valve. It differs from the standard poppet valve inasmuch as it has to rise some distance from its seat before gas can enter the cylinder. The "mask" cuts off the first part of the lift.

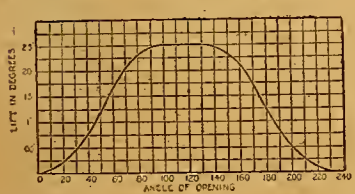


An ordinary poppet valve with seating on the surface of the valve pocket.

Before one can understand the advantages of this system, it will be necessary to recall to the reader's mind some facts concerning cam-contour and gas-lag, and the reason for "overlap."

A cam must lift the inlet valve in such a way as to allow the maximum amount of gas to enter the cylinder, with the minimum amount of jar and noise from the cam-gear. On a racing engine, where silence and longevity do not matter so much, "quick-lift" cams are employed; but on a touring or sporting engine the valve must leave its seat and return to it as slowly as possible, if noise and rapid wear are to be eliminated.

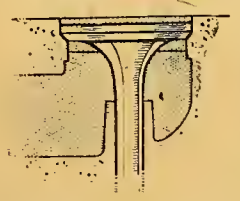
Examination of an average lift diagram will reveal that the valve lifts from, and returns to, its seat gradually. It is important to remember, though, that at 3,000 revolutions per minute the inlet stroke has to be completed in $\frac{1}{100}$th second, and during this very short time the valve must (1) leave its seat, (2) accelerate, (3) decelerate, (4) be brought to rest at maximum lift, (5) accelerate downwards, (6) decelerate, and (7) be brought to rest again on its seat.



Valve lift diagram of a standard engine, showing small amount of lift during earlier stages of crank revolution

Overlap and gas-lag must now be considered. On an average touring side-by-side valve engine the inlet valve opens at top dead centre, so that as soon as the piston begins its move down, it shall suck in gas. Just before the piston has reached the top it had begun to slow down, but the exhaust gas which it was pushing out continued its rush from the cylinder. In order to take full advantage of the momentum of the exhaust gas, and to prevent any part of it being trapped in the cylinder, *the exhaust valve is allowed to remain open for 20° after the inlet valve has opened.* By this means, both valves are open at once, and the exhaust is continuing to leave the cylinder under its own momentum, after the piston has commenced to move down and suck in new mixture.

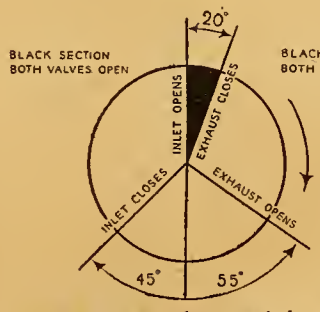
There is a similar "gas-lag" at the bottom of the inlet stroke, and it has to be allowed for once again.



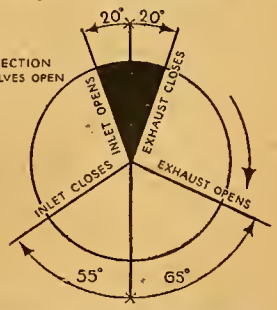
The seating of a masked valve is in a recess in which the head is a sliding fit, combines sleeve and poppet valve characteristics.

That is to say, the inlet valve allows mixture to continue to rush into the cylinder even after the piston has commenced the rise for the compression stroke. The inlet valve shuts just before the mixture's momentum has been arrested, thus preventing "blow-back" through the carburetter, but it must be remembered that gas momentum varies with engine speed; valve timing does not.

Now let us consider the state of the inlet gases at the overlap point, *i.e.*, at the beginning of the inlet stroke. Since the inlet valve must open slowly, several degrees of crankshaft rotation will have occurred before the opening is effective. If we try to make sure of an effective opening at top dead centre by opening the inlet valve early, we shall risk a "blow-back" at slow speed with its waste of valuable fuel. It will be seen, therefore, that blow-back can be caused by too early opening, as well as by too late closing.



Timing diagram of a typical touring engine.

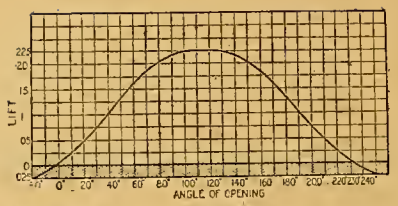


Excessive overlap and extended inlet period on a racing engine.

Masked Inlet Valves.—

In the case of a racing engine it will readily be seen that, where speeds are high, the momentum of the gases is such that considerable overlap can be allowed. Furthermore, even if slight blow-back does occur, it is of little consequence on a racing engine where economy of fuel is of little moment.

We are therefore forced to the conclusion that an engine which is designed and timed for high speeds is liable to be very wasteful at low speeds or when running free.



Lift diagram of a masked inlet valve (the shaded part of the diagram represents the mask). While the mask is only ·025 in. deep it is equal to 20° of crankshaft rotation. It will be seen that the lift is nearly double in the second 20° to that obtained in the first 20°.

Is it possible to design a cam gear which shall be suitable at all speeds? Variable timing is impossible in the restricted space available on a motor cycle engine. It is obvious that we can only fulfil all the conditions for high and low speeds if we can obtain a valve which shall occupy no space of time whatsoever in opening and closing. With such a valve it would not be necessary to open before top dead centre to ensure an effective opening at that point, because we are presuming that effective opening is instantaneous. Similarly, at the bottom of the inlet stroke we could close the valve at 20° to 30° after bottom dead centre instead of allowing 55° of crankshaft rotation to give the valve time to return to its seat.

Is there a system of valve design which will allow of a close approximation to the above ideal state of affairs? Can we have good power at 5,000 r.p.m. and economical running without blow-back at 250 r.p.m. with a timing diagram such as that of a typical sports engine?

It will be seen, by reference to the diagrams, that with an ordinary cam gear the amount of lift for the first 20° is about half the amount for the second 20°. If, therefore, we open the valve 20° too early, and "mask" off that slow first 20°, the valve will open with tremendous rapidity just at the desired point, and effective opening will occur as nearly instantaneously as possible. Similarly the valve can close with great rapidity at 30° after bottom dead centre, and the "mask" will allow it to return to its seat gently for 20° of the crankshaft rotation, after the inlet passage has been closed by the cylindrical portion of the head.

In brief, we can ensure silence and longevity by allowing the valve to accelerate and decelerate slowly, and by "masking" this ineffective part of its travel. To be effective, the mask and the valve must be made to extremely fine limits both as regards diameter and depth.

CLEANING A MOTOR CYCLE.

Thoughts and Suggestions on the Removal of Travel Stains.

EVEN in this age of abandonment it is neither necessary nor desirable to dispense altogether with the formality of cleaning motor cycles.

As a general rule the motor cycling community may be divided into two classes: (1) those who clean their machines once a week or more, and (2) those who perform the ceremony about once in every twelve months. And yet, did one but realise it, most of these are of the same opinion on one point.

"Life," they say, "is too short to permit of hours being spent in cleaning a machine. Tell us a rapid yet effective method of doing it, and then it will be done more often."

Mud left to cake on the machine indefinitely will eventually have a corroding effect on the enamel, and after that has occurred no amount of cleaning will restore the original condition.

The best preliminary advice to the novice is that he should procure an abundant supply of paraffin, which is invaluable in removing congealed oil, slight rust, and other things; a quantity of soft rags will also be needed.

If the machine is in a bad state it is advisable to sponge the whole outfit down with paraffin, soaking off the mud as far as possible without injuring the enamel. If rust has accumulated on any of the plated parts, clean them well with paraffin first, then dry them and cover with a film of vaseline or other suitable grease. The crank case and gear box should be brushed hard with paraffin.

When this has been done, perhaps the most efficient way of entering upon the next stage is with the assistance of a hose. A stream of water under pressure will work wonders in removing mud and dirt, especially in places not easily accessible with the rag or sponge, while its effect on paraffin-washed aluminium is wonderful.

The upper part of the machine, such as the lamps, handle-bars, tank, and saddle, should be subjected to special treatment at the discretion of the owner, but the remainder of the frame and the engine will benefit considerably by a free use of the hose.

After the water has dried off to a certain extent, the machine should be rubbed over with a cloth until properly dry, and finished off with a soft leather or cloth.

Some riders will say that they never bother about cleaning their motor cycles; they may always be detected by the condition of their machines. There is a subtle distinction between the dirt of several hundred miles and the filth of many thousand, and there is little doubt that an occasional "spring clean" forms an important factor in the length of service of the machine and its efficiency, quite apart from its actual appearance on the road.

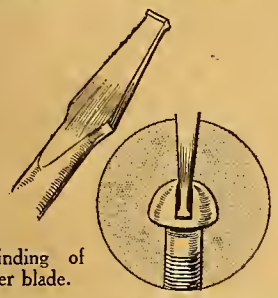
It must be strongly emphasised that it *does* pay to keep a machine reasonably clean, and this can be done without any great trouble, provided that plenty of rags, a brush or two, and a quantity of paraffin always form part of the garage equipment.

K. C. B.

IDEAS: USEFUL AND INGENIOUS.

A Selection of our Readers' Home-made "Gadgets," with Practical Hints on Work in the Garage and on the Road.

Non-Slip Screwdriver.



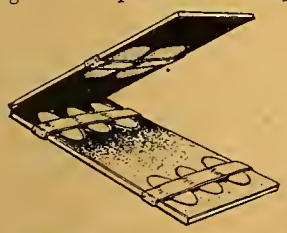
Non-slip grinding of screwdriver blade.

IF it is desired to prevent a screwdriver from slipping out of screw slots it should be ground, according to "G.W." (Sheffield), with the sides flat, and not bevelled like a cold chisel. For very tight screws, indeed, a concave form of the faces is advantageous.

Carrying Repair Patches.

UNLESS special precautions are taken inner tube patches are usually found in bad condition when the ultimate puncture occurs.

A Portsmouth motor cyclist, "G.P.," has evolved an admirable carrier for patches, made to fit the "floor" of the tool-bag. Two pieces of three-ply or



Simple carrier for repair patches.

other suitable wood are cut to shape, and each one is faced with fine emery cloth, glued on. When dry, the emery faces are brought together and the boards hinged at one end.

Three bands cut from an old cycle tube are fixed across the boards, two over one and one over the other. The patches are slipped under these bands, and the case then forms a solid base in the tool-bag, upon which its usual contents may be packed.

Repairing Bowden Cables.

IT frequently occurs that the strands at the end of a Bowden inner cable become frayed out, and with the wire in this condition it is a practical impossibility to pass the cable through the nipple which it is required to solder thereto.

This difficulty may be overcome by wrapping the wire tightly with thin copper wire at a point beyond which the fraying has taken place; the copper wire bandage should then be slipped to within $\frac{1}{16}$in. of the frayed end of the cable, and it will be found that the frayed ends will be forced together and it will then be possible to insert the projecting $\frac{1}{16}$in. of the cable into the nipple; the nipple should then be pushed back on to the cable, the wire bandage being pushed back by the nipple itself; when the nipple is in the position for soldering the copper wire may be removed.

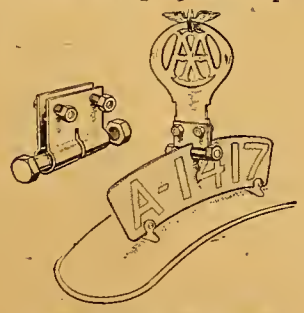
In cases where the nipple has been previously removed from the cable it is probable that the bore may be filled with solder; this will necessitate the heating of the nipple with an iron or blow-lamp to melt the solder, and the nipple should be pushed on while the solder is in a fluid state. It can then be soldered up in the usual way.

A point to remember is that, prior to the slipping forward of the copper wire bandage, the ends of the cable should be tinned, either by immersing in molten solder or by rubbing with a thoroughly tinned iron. It is of importance that any excess of solder thus applied should be shaken off whilst still molten.—C.C.R.

Badge or Licence-holder.

SIMPLICITY is the special feature of the badge or licence holder made by "A.H." (Swindon).

A piece of sheet metal is bent double round a bolt, being squeezed up in the

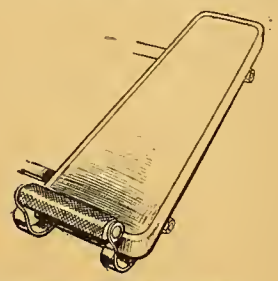


Sheet metal clip for a badge or licence plate.

vice or hammered. A transverse saw-cut and necessary holes for screws complete the fitting which is attached to the number-plate by the bolt round which it was bent.

Footboard-Footrests.

THERE are many of us who heartily detest footboards, especially on solo machines; the continual dither often experienced resulting in the foot sliding backwards, unless either the board or the boot sole be rubber covered. "C.H.H." (Derby), having a machine on which footboards are standard, has fitted to them



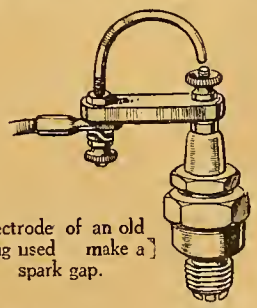
Spring mounted footrest attached to a footboard.

rearwardly extending brackets of $\frac{3}{4}$in. × 8 gauge spring-steel. Quarter bolts and nuts secure the brackets to the footboards, and between them are carried long spindles, also $\frac{1}{4}$in., over which are passed ordinary cycle pedal rubbers.

When the feet are on the boards the rubbers prevent them slipping off to the rear, or the rubbers can be used solely as footrests.

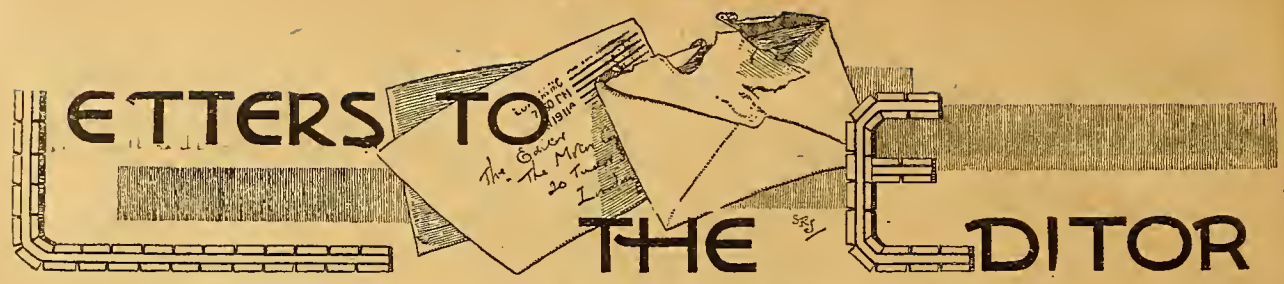
Simple Spark Gap.

THE boom in spark gaps appears to have subsided, but it is still possible to pay half-a-guinea for one if so inclined. A cheaper method is to copy the device of "J.H.," a Lancashire reader, who has turned a piece of fibre and the central electrode of a discarded



Electrode of an old plug used make a spark gap.

plug to good account. The fibre is $1\frac{7}{8}$in. long, $\frac{1}{2}$in. wide, and $\frac{5}{16}$in. thick, and the electrode is bent so that it just clears the top of the screw at the top of the plug terminal. What an opportunity, though, for spark gap publicity men, thus: "Use *our* spark gap and you will never have a discarded plug from which to make your own!"



The Editor does not hold himself responsible for the opinions of his correspondents.

Correspondence should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, E.C.4, and must be accompanied by the writer's name and address.

PRICES OF ELECTRICAL GOODS.

Sir,—I had occasion a little while back to purchase a magneto condenser from a noted accessory firm; the price charged was 12s. 6d., not inclusive of fitting. My estimate of cost of manufacture, based on prices of materials (locally, retail), is as follows: Mica, 1s.; tinfoil, 2d.; two brass stampings at 2d., 4d.; base plate with threaded nipple 6d.; shellac varnish, 2d.; time for assembling at 2s. 6d. per hour, 8d.; total, 2s. 10d.

It is up to us to shout, and shout loud and long, and with "Ixion" to lead us we shall in time get reasonably priced accessories. ANTITWIST.

Brighton.

TRIALS FOR GUARANTEED SPEED MACHINES.

Sir,—In view of the fact that a large number of manufacturers are marketing sporting machines, which are advertised as being capable of certain speeds, would it not be to the advantage of the manufacturers and the buying public to have a trial of these machines on the following lines:—

A high speed reliability trial of 100 miles on Brooklands, with set speeds in each class.

Class A.	50 m.p.h.	Class C.	60 m.p.h.
„ B.	55 m.p.h.	„ D.	65 m.p.h.
„ E.	72 m.p.h.	„ F.	50 m.p.h.
„ B/S.	40 m.p.h.	„ G.	58 m.p.h.

This trial to be organised preferably by the A.C.U. in the Spring and to be open. Awards to be given to all completing the distance at or over the set speed.

If I remember correctly just such a trial was held in 1910 by the B.M.C.R.C. and proved very successful, so I claim no originality in its conception, but feel sure it would be appreciated by prospective customers and present owners. R. N. STEWART.

NAIL SCAVENGING EXTRAORDINARY.

Sir,—Is it possible to keep our roads free from iron nails, which seem to be the chief source of punctures, and so reduce this great bugbear of motorists to a minimum? I believe it is a practical proposition. In certain factories they make use of crushed coal. When first they started to break the coal up their crushing mills were being continually broken by iron bolts and nuts entering with the coal. To obviate this the coal is passed over a revolving magnetised cylinder. The coal drops away and the iron sticks to the cylinder and is automatically removed.

Now for the application.

A car could travel from London to Bath, and if it had a magnetised cylinder trailing behind it just above the road it would pick up every iron nail in its path between London and Bath. It could return and do the same for the other side of the road, and no one would have to fear a puncture from an iron nail for some time between London and Bath.

The many possibilities of the suggestion are obvious.

If the A.A. kept our roads free of nails it would be doing motorists even a greater benefit than it does at present. DONEGIAN.

Bristol.

[This letter was *not* inspired by the humorous article last week on "Accessories Before the Fact," nor was the reverse the case.—ED.]

MOTOR CYCLISTS AT HEART.

Sir,—At this season I should like to wish you and all members of *The Motor Cycle* staff, including "Ixion," a right merry Christmas and successful New Year. I should also like to thank you all sincerely for the many pleasant hours spent during the past year devouring the excellent results of your labours. Thursday morning is always pleasantly anticipated by myself, and, I am sure, hundreds of others for the welcome appearance of a new "Blue 'Un." Unfortunately, we cannot all be actual motor cyclists—for financial reasons—no matter how strongly and for how many years we have been consumed with the "stink 'bus mania," but that does not damp the ardour of a real enthusiast who continues "waiting for something to turn up"—*ad infinitum!* But it does not follow that we are useless hangers-on; for instance, only to-day I persuaded another non-financially handicapped "potential" to go in for an A.J.S.—not the first indirect order that has come through another no doubt much-despised

FOLLOWER OF THE SPORT ON PAPER.

Birkenhead.

TOO MANY T.T. RACES?

Sir,—One would assume from the vigour of Mr. Hill's argument that he is a keen motor cyclist, but his apparent lack of knowledge regarding the evolution of motor cycles rather conflicts with this. As many of your correspondents have recently emphasised, the history of motor cycle development is inseparably bound up with the records of such events as the T.T. Races and the Six Days Trials.

To reply but briefly to Mr. Hill's contention that the cost of a yearly T.T. meeting—naturally passed on by the trade to its customers—is not justified by the improvements resulting, one may recall how some of the most vital features of the present-day motor cycle have been derived through these contests. There immediately comes to mind the countershaft gear box. This reliable device was a direct outcome of the T.T. Races of about 1911-12, wherein it was proved that the glorified pedal-bicycle hub-gear would not stand up to exacting conditions. The stirrup rim brake, another survival of push-cycle days, was also disproved by the T.T., and has now been largely succeeded by more efficient and reliable internal expanding band brakes, and other systems appropriate to the types of machines on which they are fitted. It was unquestionably the T.T. Races which brought about these improvements, and if Mr. Hill had been in the Isle of Man instead of, possibly, in India when the first competing machines appeared with band brakes, he would remember the great interest that their advent evoked. Frame design, springing, steering, and other details have been vastly improved through the T.T. Races, whilst tyres of reasonable size and many other safety and comfort-providing features now universal are traceable to these contests.

The outstanding value of the T.T. has, of course, been the way in which it has led to improvement in engine design. If Mr. Hill is inclined to argue that the day has now been reached when the usefulness of the T.T. in this respect is questionable, surely he cannot have read the reports of the Races held in the past three years. These, following upon many years of steady progress attributable to the T.T., have produced the spectacle of small machines in the 250 and 350 c.c. classes putting up much finer perform-

ances than did the large machines of a few years ago. The success of the small-engined machines in 1921 and 1922 was, indeed, a wonderful testimony to the manner in which the T.T. Races of the past have "found things out." As the first people to acknowledge this are the designers and makers of the victorious machines themselves, surely Mr. Hill must see that his argument over-reaches itself.

T. W. LOUGHBOROUGH (A.C.U.).

VISCOSITY'S PART IN LUBRICATION.

Sir,—In reply to "Tan-y-Bwlch's" letter, we should like to draw his attention to a lecture on lubrication by Prof. Stanton, D.Sc., F.R.S., of the N.P.L., to the Institute of Mechanical Engineers. An account of this lecture appeared in the *Engineer* published December 8th. Dr. Stanton proved that the viscosity of an oil plays a minor part in the elimination of friction.

H. S. BRISTOWE.
G. W. LANYON.
A. L. TRUMP.

Sir,—My experience tallies to a great extent with that of "Kemist," that is, that mineral oils are far superior to castor oils for ordinary every-day lubrication. There is less carbon deposit, less corrosion, together with less sticking of valves and piston rings.

It is well known that a special tariff is offered by many oil companies to trade, and other riders who use their oils, thereby detracting very considerably from the value of the performances. Most of these racing events are run on oils specially blended for the particular events, secure in the knowledge that once the run has been completed the engine will come down for a thorough cleaning. Moreover, many of these specially blended oils could not be marketed at anything like a competitive price, and, even if they were, they would be totally unsuited to the average owner-driver.

I am not interested in the sale of lubricants in any form.

Wembley. FALCON.

Sir,—The letter by "Tan-y-Bwlch" aroused my curiosity, and I worked out the following, with results which I hope will not bring the wrath of "Tan-y-Bwlch" and Mr. Wright on my head.

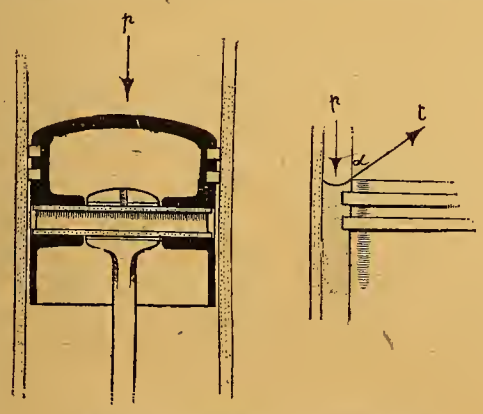


Diagram illustrating Mr. C. Jones' letter.

The left-hand sketch represents a piston and cylinder walls. On the right is an enlarged illustration of the space between the piston and the walls, the distance being exaggerated somewhat in order to make my argument more clear.

Let p=pressure/unit area of piston head exerted by exploded gases.

Let $2r$=bore of cylinder.

Let t=surface tension of lubricant used.

The lubricant being viscous it will assume the form shown, the open surface being concave.

t acts along tangent to this curve at the point where curve cuts piston.

Let α=angle which this line makes with edge of piston (called angle of contact).

Force exerted on piston head $=\pi r^2 p$.

The vertical component of t (*i.e.*, $t \cos \alpha$) acts along a circle of radius r.

$\therefore$ Force opposing motion $=2\pi r t \cos \alpha$.

Let piston move distance dx, where dx is very small. Work done by exploded gas $=\pi r^2 p dx$.

Some of this energy has been used in overcoming surface tension.

$\therefore$ Total amount of work which the piston is capable of doing $=\pi r(rp-2t \cos \alpha)dx$.

In a complete stroke this becomes :—

$$\int_0^l \pi r(rp-2t \cos \alpha)dx = \pi r l(rp-2t \cos \alpha)$$

where l=length of stroke.

Now if we increase t, α increases also, and so $\cos \alpha$ decreases, and so for a very viscous body $2t \cos \alpha$ will vanish, and the efficiency of the engine will thus increase. Hence, contrary to Mr. Wright, I maintain that viscosity does play an important part in maintenance. Again, in case of mineral oils, the viscosity decreases with increase of temperature very rapidly, but there is apparently no change in viscosity of vegetable oils, which makes the latter an ideal for speed work.

By the way, I should like to know the "iodine value" of Castrol R. and Castrol C.? Perhaps some chemist will kindly oblige. GWERFYL JONES.

BORROWED NOMENCLATURE.

Sir,—Mr. "Muggins," in your issue of December 14th, raises a vitally important question when he calls in question the terms "timing" and "tuning." The problem bristles with difficulties. Using Mr. "Muggins'" own argument, his suggested terms "setting" and "adjusting" are equally unsuitable, as a motor cycle is neither a mouse trap nor a pair of braces.

Will some philological Dr. Low help us out, or hadn't we better, perhaps, leave things as they are?

Sheffield. LITTLE EGBERT.

TAXATION BY PASSENGER CAPACITY.

Sir,—Passenger carrying should be a basis of the new tax. The lightweight machine can carry a pillion rider, and only pay £1 10s. tax, whereas the machine just over 200 lb., with a sidecar, pays £4; two persons are carried in each case. Again, the double sidecar pays the same tax—perhaps carrying three persons—as the sports sidecar, even if run empty by an elderly man for his safety.

We often see large sidecar outfits overloaded with perhaps five people and a pile of luggage, which must tell heavily on the roads compared with, say, a 350 c.c. machine with a sports sidecar. The same arguments apply to motor cars.

South Shields. "EQUITABLE TAXER."

THE FUTURE OF THE SHOW.

Sir,—I am glad that you are using your great influence in favour of continuing the Olympia Show. It would be disastrous to discontinue it and scarcely less disastrous to hold it biennially.

The objections which are urged are quite insufficient. It is said that people wait until November to purchase, and trade is held back during the autumn. Naturally; because people do not care to purchase when summer riding is over and it is too early to think of spring. The fault is not with the Show but with the seasons. On the contrary, the Show promotes trade at the end of the year which would otherwise be delayed until the New Year. December is a busy month in some works, and I doubt if this would be the case but for the 'push' of the Show.

It is said that the public waits for prices to be fixed at the Show. No doubt this is so, but if prices were not settled at a definite date, and were continually fluctuating, the public would be in a constant state of hesitation. It is regrettable that some light car firms continue to reduce prices after they have booked, or supposed to have booked, large orders at the Show. People are still wondering whether further reductions may not be made, and are actually recalling orders which they had placed. Happily this has not occurred in the motor cycle trade.

The cost of the Show is considerable, but after all the Show is a splendid advertisement (if one has anything worth

showing), and not by any means the most costly. I have reason to know that the cost can be handsomely and immediately repaid.

It is also said that motor cycles are becoming standardised and that alterations and improvements are not sufficiently striking to be attractive. The crowds at Olympia tell a different tale. Not every one is looking for novelties, and very little business is attracted by freaks. The splendid exhibition at Olympia is unique; there is nothing like it to be seen abroad. The show of French machines at the Salon was not in any way to be compared with it. It is a triumph of the British manufacturer, and it is not the fault of the Show if he fails to profit by it. H. G. MORGAN.

Sir,—I feel that the makers themselves are responsible for the fact that "a show curtails sales during the autumn months by reason of prospective buyers postponing their orders 'until after the Show.'"

This is my experience: During the last week in July I purchased a 1922 model lightweight direct from the makers, an old-established firm of motor cycle manufacturers. About six weeks later I was informed that a firm of dealers in London were offering the machine at £15 less than advertised price. The makers advertised a new model in October, and at the Show I was told they had abandoned my type of machine in favour of the new (o.h.v.) model, with shorter frame, lower saddle, modified fork with semi T.T. handlebars, in fact, a very different mount, at an advanced price of £5.

I do not suggest my 1922 machine is unsatisfactory or not worth the price charged, but had I known that it was to be abandoned entirely I should certainly have waited, and I shall want a new mount very badly before I buy one again within the three months before the Show. MUDLARK.

London, N.4.

Sir,—It may be worth while to note how the Show is regarded by our friendly critics abroad. The following is taken from *Cyclecars et Voiturettes*, a Paris organ which deals primarily with light cars and cycle cars, but is interested also in motor cycles:—

"The English show not only proves the importance of the British motor cycle industry, but is *une puissante manifestation économique*, marking the development of an industry which, having succeeded in satisfying every requirement, has reached its apogee and aims at world-wide conquest. The show gives evidence of the giant strides which have been taken towards satisfying the requirements of export trade. This statement is confirmed by the general effect of the Show, which presents the variety which is essential to the conquest of all markets. . . . It is a characteristic proof of the energy and organisation of an industry, to which it behoves us to pay attention."

If so much is gained, surely the postponement of the Show would be a serious loss. H. F. S. MORGAN,
(The Morgan Motor Co., Ltd.).

DETAIL IMPROVEMENTS AWAITED.

Sir,—Can any of your readers tell me why motor cycles improve so very slowly in certain directions?

I have in mind one particular four-stroke 499 c.c. single, put on the market last year by one of our leading manufacturers, which although an admirable production in many ways, lacks many detail improvements which would, to my mind, make it even more admirable were they included in the specification.

The improvements I suggest are:—

(*a*) An internal expanding front brake, to replace the antiquated and utterly useless horseshoe pattern at present fitted.

(*b*) Mechanical lubrication, governed by engine revolutions, instead of a hand-operated pump, which alternately flushes and starves the engine, and cannot obviously make the engine so efficient as it would be when fed by a continuous flow of oil according to load.

(*c*) A four-speed gear box which would give ratios of about 3½, 5¼, 9, and 15 to 1, instead of a three-speed box giving a top gear of not more than 4⅔ to 1. Results: Higher *average* speed, more m.p.g., and longer life to the engine, better acceleration, and greater ease of handling in traffic. T.A.869.

London, W.C.2.

STRAINS OF OVERHUNG CRANKS.

Sir,—Certain makers are introducing models with overhung crankshafts. I must say that I am rather a novice in these matters, but it seems to me that this will create an unbalanced strain on the single bearing, and that the usual two-bearing crank is a better job. NOVICE.

Manchester.

RECORD CLASSES FOR AMATEURS.

Sir,—There is little doubt that a private owner has no chance in heating, or even equalling, the speeds set up by riders with a works behind them. Should the track authorities make arrangements for a special class for real amateurs one could obtain some idea of the capabilities of a standard machine in the hands of a man of moderate means.

Lyme Regis. HUMBER SPORTS.

SCOTT-SQUIRREL GEARS.

Sir,—As another enthusiastic admirer of the Scott-Squirrel (alas! from a distance only), I should appreciate your permission to reply to Mr. Allan Hartley.

I interpret the policy which retains this machine as a two-speed close ratio one chiefly to the following:—

(1) The Squirrel is designed essentially as a sporting solo.

(2) The power-weight ratio is high.

(3) The even torque of the engine gives good pulling at low speeds.

Regarding (1), although the machine is absolutely suitable for ordinary touring, high average sustained speed is the underlying idea, and the occasions which would demand a low gear for emergency are so few and far between that the possession would be more than outweighed by the added weight and complication.

Regarding (2), it is interesting to compare this with the ordinary gear box machine. Taking 14 b.h.p. as the maximum output of a well-tuned standard Squirrel engine, and weight of machine as 210 lbs., the ratio is .067.

Assuming the same power output on a 500 c.c. three-speed gear box machine weighing 270 lbs. (a fair average weight), the ratio drops to .052, a difference very noticeable when quick acceleration is wanted.

Now the three-speed Scott would appear to be designed from an entirely different standpoint, namely, to satisfy the present tendency to cram on coachwork, passengers, and luggage. In short, designed as a sidecar machine. Admitted a sidecar can be attached to the Squirrel, but this seems like putting a racehorse between the shafts of a cab.

I for one am pleased to note that the Squirrel retains its well-tried lay-out.

To my regret, I do not write as a Scott owner, but, having swallowed much dust when being passed by many of these lucky men as I thump along on my 500 c.c. single, I sign myself. HOPETOBE.

Stockport.

Books & Maps for Motor Cyclists.

Issued in conjunction with *The Motor Cycle*.

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The standard handbook of the motor cycle.
Price net, 2/6. By post, 2/10.

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Second Edition. Just Published.
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Obtainable by post (remittance with order) from ILIFFE & SONS Ltd., Dorset House, Tudor Street, London, E.C.4, or of leading Booksellers and Railway Bookstalls.

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 1½d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 1½d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

PREMIER TWO-SPEED GEAR BOX.

[?] On the Premier two-speed countershaft machine, where does one find means to adjust the clutch when it slips as mine does now, very badly?—O.E.

The clutch is inside the gear box, which must be dismantled to effect the adjustment. Probably the plates are worn.

AN UNREGISTERED MACHINE.

[?] I purchased a second-hand Rudge-Multi outfit recently, and the seller informs me that the machine has been in his works for two years or more. It has not been registered by him, and he does not now know where the previous owner is or what steps he took about the number. What should I do—try to get the number transferred to me or register the machine as one might a new one? If the former, to whom should I apply?—A.L.P.

(1.) You should write to the Clerk of the County Council where the machine was registered, explaining the circumstances fully. If the number still applies to the machine, *i.e.*, if it has not been cancelled, it will no doubt be booked to you. Alternatively, there does not appear to be any reason why you should not apply for a licence and registration as though the machine was unregistered, but it is likely that you would have to prove your right of ownership.

NEW MACHINE WON'T START.

[?] A new machine was driven to me (about twenty miles) a few days ago, and it was then, apparently, going well. I cannot now start it, even after heating the cylinder and carburetter with a blow-lamp and injecting petrol into compression tap. Can you suggest a method of starting? (2.) On pressing down the starting pedal—with all closed—there is a slight hissing noise, indicating a leakage about the top of the cylinder head, which is apparently bolted on. Does it require a new washer, and if so, of what should the washer be made?—G.J.

In all probability the fibre bush on which works the rocking arm of the magneto contact breaker has swollen through damp. You should therefore remove the contact breaker cover, rotate the engine and watch if the rocking arm is moving. (2.) Admission of air at this point may account to some extent for the difficult starting. As the machine is a new one it is likely that the cylinder head nuts require tightening? Copper and asbestos washers are generally used for head joints, and it is unlikely that a new one is needed.

Important Dates.

Fri., Jan. 5th to Wed., Jan. 24th—Italian Motor Cycle Show.
Sat., Jan. 13th to Wed., Jan. 24th—The Belgian Salon.
Fri., Jan. 26th to Sat., Feb. 3rd—Scottish Motor Show.
Sat., Feb. 24th—Colmore Cup Trial.
Wed., March 14th—A.C.U. Stock Machine Trial.
Sat., Mar. 17th—Victory Cup Trial.
Fri., Mar. 30th and Sat., Mar. 31st—M.C.C. London-Land's End Run.
Easter Monday, Apl. 2nd.—Northern Centre Hill Climb.
Fri., May 18th—M.C.C. London-Edinburgh Run.
Mon., June 11th—Junior T.T. Race.
Wed., June 13th—Lightweight T.T. Race and Sidecar T.T. Race.
Fri., June 15th—Senior T.T. Race.
Sat., July 21st—B.M.C.R.C. 500 Miles Race.

SMALL CAR PROGRESSION

"THE AUTOCAR"—published from the offices of "THE MOTOR CYCLE" and conducted on the same enterprising lines—is the complete automobile journal embracing small, medium, and large cars. Every motor cyclist contemplating the purchase of a light car should read

The Autocar

Every Friday **4d.**

Founded in 1895, *"THE AUTOCAR" is the largest and most successful automobile paper and enjoys the greatest circulation. It is universally accepted as the representative British motoring journal.*

ENGINE CAPACITY.

[?] (1) What is the bore and stroke of the four-stroke engine with overhead inlet valve which was fitted to the 1915 O.K. lightweight? (2) My crank case release is *via* the hollow crankshaft. What would cause considerable smoke to issue after three minutes' fast running?—F.C.C.

(1) The bore and stroke are 70×70 mm. The capacity therefore is 269 c.c. (2) Probably the vaporisation of the oil in the crank case, due perhaps to a slight overcharge. If the smoke is excessive there may be leakage past the rings.

SIGNS OF LONG USE.

[?] In neither top nor low gear will my 1913 499 c.c. Precision engined sidecar machine climb at all well. Frequently it gives out before the top is reached. The gear is an N.S.U. Opening the throttle does not make any difference on a slight rise but on a flat road the response is good. The engine and crank case, although lubricated well, get very hot and power seems to lag after the cylinder becomes heated. More power seems to be derived from driving with the petrol tap about ½ to ¾ turned on; when full on the engine gradually gives out and will stop. The spark has to be kept at practically a retard position to avoid knocking, and although the engine and magneto have been overhauled (a week ago) a mechanic has been unable to improve matters. What is the cause of the trouble?—F.W.

A larger jet might improve matters slightly, but it is possible that the petrol supply is partially restricted (your reference to the petrol tap confirms this). Attention should be paid to all points such as induction pipe and cylinder union and the valve guides, where air leaks can take place. The valves themselves probably require grinding in and the engine decarbonising. Be sure that the oil you are using suits the engine. The timing of the magneto is obviously too far advanced. It should be set so that the spark occurs on top dead centre with the magneto control two-thirds retarded. You do not give the top gear ratio—this may be too high. Set it at about 5 to 1; even with this the low gear of the N.S.U. device is only about 7 to 1 so that exceptional hill climbing should never be expected.

CHANGING DIRECTION OF ROTATION.

Is it possible to convert a clockwise magneto into an anti-clockwise one without any other alteration than fitting a different contact breaker?—P.W.

Single cylinder and 180° twin magnetos in most cases can be altered in direction merely by the replacement of the contact breaker (necessitating in some cases a new cam ring also). V-twin magnetos may require a new armature, and in certain instances even new magnet pole shoes would be needed.

LIABILITY FOR DAMAGED HEN.

Should a hen in running across the road collide with a motor cycle and, in consequence, die, is the rider responsible at law for the damage? Can the owner obtain its value by legal action?—D.R.

Domestic animals have an equal right, with vehicles and persons, of being on the highway, providing that they are under control. It is the duty of all drivers to exercise reasonable care in passing them, whether they are under control or not. In the circumstance described, if no negligence is proved against the rider, he would not be liable for damages.

TAX ON UNUSED MACHINE.

In January last I paid a quarter's tax on a B.S.A. motor cycle, which was used till the end of March. I then bought a lightweight, and have used this only, discontinuing the use of the B.S.A. entirely, although it is still in my possession. Am I liable to tax on the *two* motor cycles? I am under the impression that, as the one motor cycle has not been used since the second was bought, I am not. The authorities are insisting on the payment of the tax for the remainder of the year on the first machine.—A.B.G.

If you can prove that the machine has not been used (and if the authorities cannot prove otherwise) there does not appear to be any reason why you should pay. When laying the machine up, however, you should have safeguarded yourself by advising them of your intention.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be addressed c/o The Editor, "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4, when they will be forwarded direct to the querists concerned. Requests for experiences should be accompanied by a stamp.

"R.H." (Liverpool).—349 c.c. Sports A.J.S. : performance with Binks three-jet carburetter.

"B.T." (Eccles).—Black Prince cycle car.

"D.H." (Houston).—Flywheel lighting set on Villiers two-stroke engine.

"B.P." (Otley).—143 c.c. Atlas and 165 c.c. Economic.

"W.J.R." (Bristol).—496 c.c. Lea-Francis (1920 model) : Binks carburetter and jet sizes, suitable oil (engine and clutch), spanners needed for dismantling cylinders.

"C.E.P." (Croydon).—Tuning 211 c.c. single-speed Levis for speed; suitable exhaust system.

"C.F.C." (Sheffield).—348 c.c. Raleigh and 348 c.c. Henley-Blackburne.

SPARKLETS.

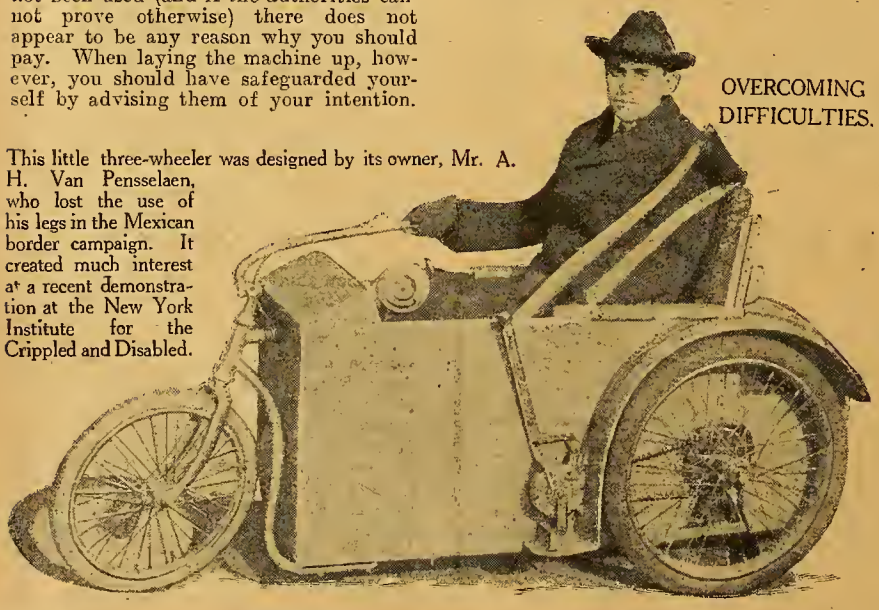
To Sleeve Valve Users.

Instruction books and lists of spare parts relating to the B. and S. sleeve valve engines are now available from Barr and Stroud, Ltd., 15, Victoria Street, London, S.W.1.

Overhead Rocker Lubrication.

Having proved its efficiency on the 350 c.c. single-cylinder models, the wick feed lubrication to the overhead valve mechanism is now to be applied to the 500 c.c. flat-twin Bradshaw units. J. Walmsley and Co. (Preston), Ltd., can supply similar gear for all 1921-22 flat-twin models.

OVERCOMING DIFFICULTIES.



This little three-wheeler was designed by its owner, Mr. A. H. Van Pensselaen, who lost the use of his legs in the Mexican border campaign. It created much interest at a recent demonstration at the New York Institute for the Crippled and Disabled.

Record Records.

In the list of records published in our last issue, it is noteworthy that the Douglas machines figure in no less than 68.

A Motor Cyclist's Calendar.

The A.C.U. has produced a motor cyclist's calendar, well illustrated, and unostentatiously setting forth the advantages of membership of the Union.

Steel Pistons.

The sale of Zephyr pistons has been taken up by Barimar, Ltd., 10, Poland Street, Oxford Street, London, W.1; sizes to suit all makes of engines can be supplied promptly.

£1,000 for Trade Fund.

Reports from the Manchester Centre of the Cycle and Motor Trades Benevolent Fund reveal that nearly £1,000 has been collected in aid of bereaved or otherwise distressed members of the cycle and motor trades.

Replacement Piston Rings.

No longer is it necessary to buy rusty piston rings which have deteriorated in some agent's stock. The British Piston Ring Co., Ltd., of Coventry, is now packing each individual ring of its vast range of sizes in a separate grease-proof bag of distinctive design.

Change of Depot Address.

In announcing the new Manchester address of Messrs. Parker's, automobile engineers, at 246-252, Deansgate, it should have been mentioned that this change of address of the Manchester depot in no way affects Messrs. Parker's parent depot at Bolton.

For Coachwork.

Free samples of Chemico car polish are available to all who forward a request to the County Chemical Co., Ltd., Chemico Works, Birmingham. The polish is admirable for sidecar and other body-work, and for polishing and preserving enamelled frames, tanks, etc.

Successful.

In sixteen speed events in the north during 1922 R. T. Cawthorne, of Meanwood, Leeds, secured 19 cups, 1 shield, 7 special awards, and 75 medals. In all but one event he made fastest time of the day. His machines are standard side-valve and o.h.v. Nortons, and it is claimed that the same C.A.V. magneto was used throughout on the side-valve model.

Carelessness.

Complaints are frequently received from advertisers in *The Motor Cycle* that letters and postcards from enquirers are received which have neither name nor address.

The writers are probably unaware of what they have omitted, and consequently think that the advertiser is to blame.

Catalogues Received.

The H. G. Hawker Engineering Co., Ltd., Canbury Park Road, Kingston-on-Thames.—Folder describing all models of the Hawker motor cycles.

Geo. Brough and Co., Haydn Road, Nottingham.—Catalogue of prices of the various Brough Superior models.

1922 A.C.U. SIX DAYS TRIALS.

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23 GOLD MEDALS.
2 SILVER MEDALS.
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Acknowledged to be the most accurate and reliable Speedometer on the market and a boon to Competition Riders.

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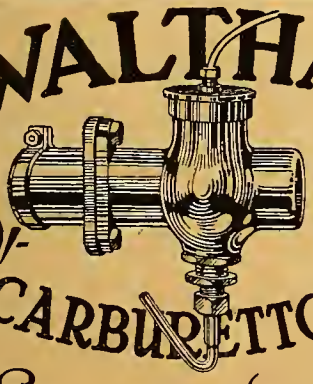

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PLEASURE OR DISCOMFORT

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The "Easting" Tourist Handlebar screen can be fitted to any motor-cycle, and raised or lowered to suit the individual riding position of any motor-cyclist on any machine. Clips are provided for attaching to "Sterling Leg Shields" if so desired.

An extract from the "Birmingham Evening Despatch":

"It was a unique experience to bat along at 35–40 m.p.h. without watery eyes, to be able to enjoy a cigarette or pipe without the rushing wind robbing its fragrance, and above all at the end of 160 miles' run, to feel uncommonly fresh and clean."

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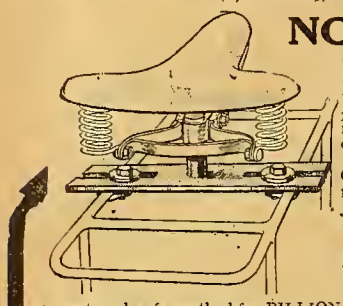

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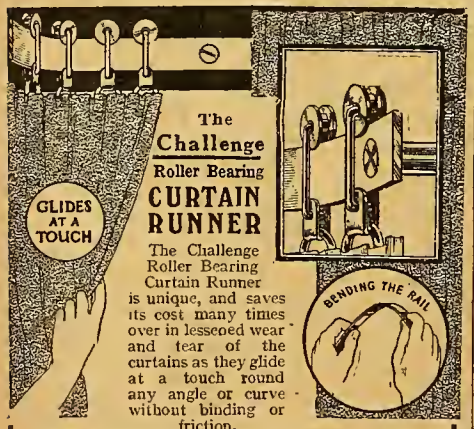

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THE BEST INVESTMENT FOR THE New Year is the DOUGLAS.

The 2¾ h.p. Douglas, complete with **FULL EQUIPMENT** of Lamps, Horn, Licence Holder, Tools, etc., at £50 is cheaper than pre-war.

You will never regret buying a Douglas because it is manufactured by a firm whose reputation and experience of the horizontal twin is unrivalled. It is not an experimental job, and has stood the test of years. Its merit is proved by the present rush of orders.

Don't wait until "waiting lists" prohibit prompt delivery. Make quite sure of securing a Douglas, and let me book your order NOW, either for immediate delivery or for delivery at your convenience. CASH or TERMS arranged to suit you, and arranged in the easiest possible manner.

Write me immediately for a copy of the interesting 1923 Douglas Catalogue. I will give you personal attention, and the best possible service backed by ten years experience at the Douglas Works. I will tune your new Douglas and will guarantee satisfaction.

The Special Douglas at £52, fitted with Zoom ! Zoom !! Exhaust System, my latest Alloy Air Cooled Valve Caps, Combined Aluminium Footboards and Footrests, Special Valve Springs, etc., and **GUARANTEED TO DO 55 m.p.h.**, is a wonderful attraction. Every purchaser is delighted.

HERE ARE SOME OF MY SPECIALITIES:—

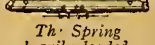
THE TONY COMBINED ALUMINIUM FOOTBOARD AND FOOTRESTS. Beautifully finished—giving a natural riding position. A real solid cast job. Something that lasts for ever. Price **30/-** per pair complete.

AIR COOLED VALVE CAPS. My latest are covered by patents. They never blow out nor seize in the threads. Absolutely gas-tight. Prevent knocking and keep the engine cool. Try them on your 2¾ h.p. or 4 h.p. Douglas, and if you are not absolutely satisfied have your money back. Price **4/-** each.

BARREL VALVE SPRINGS. These springs prevent bouncing, and lighten the work on the cam. They are unbreakable and flexible. For 2¾ h.p. Dougs. Racing **2/-** per pair; touring **1/6** per pair. Do not compare these with the cheap springs that are flooding the market.

THE LUCKY SCOT. Douglas mascot in Gilt and Coloured Enamels. Real Silk Douglas Tartan Scarf, **1/3.**

The Spring in its normal position.



The Spring heavily loaded. Movement 4 ins.

UNBREAKABLE SIDECAR SPRING. GUARANTEED FOR 12 MONTHS.

Double the comfort. Actual photographs reproduced showing the wonderful 4in. movement of the spring. You can practically turn this spring inside out, and it will return to its normal setting without fracture. Its secret is in its self-shock-absorbing qualities, and it works both ways, thus taking the rebound, which is also absorbed by friction. Have one fitted to your chassis, and you'll be surprised at the added comfort. Price **17/6.**

SPECIAL LODGE PLUGS, Mica with radiating fins. The best plug for hot stuff engines. Absolutely new. W.D. surplus. List, 8/6 to clear, **2/9.**

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W. G. Coram

(Official Douglas Agent).

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UNITED AUTO AGENCIES.

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CLEARANCE LINE OF LEATHER JERKINS.

These Jerkins are made in strong leather lined with warm woollen material. They make ideal garments for Motorists, Motor Cyclists and Drivers, etc., and will give years of hard service. In splendid condition —well cut—soft and pliable — wind and cold proof.

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By the Staff of "The Motor Cycle."

A complete treatise on the two-stroke motor cycle written from the point of view of the rider.

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From ILIFFE & SONS LTD., Dorset House, Tudor Street, London, E.C.4, and leading booksellers.

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THE BOOK gives an ingenious method of locating any fault that may arise with a motor cycle on the road, and also shows how the trouble may be remedied.

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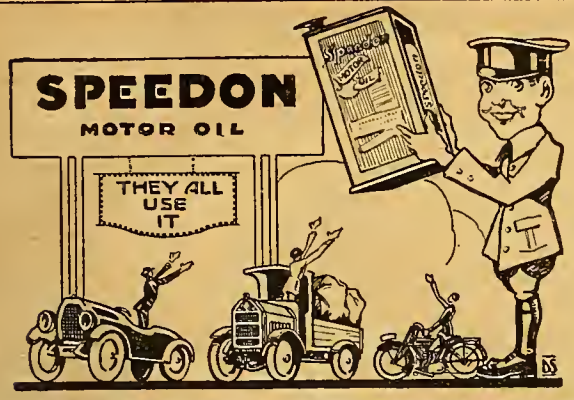

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—and a WATFORD Speedometer . . . . . .

A Watford Speedometer just gives the much-desired finishing touch that makes your outfit complete—but be sure it is a WATFORD.

Model 42—Black finish. Nickel-plated bezel. Indicates speeds to 60 miles per hour. Total mileage counter to 10,000 and repeats. Quickly reset trip-counter. Price £5 5 0

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Back wheel drive for Triumph, 5s., for Indian, 10s. extra.

Manufactured by

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The Sidecar Motor Cycle

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Full particulars on request from—

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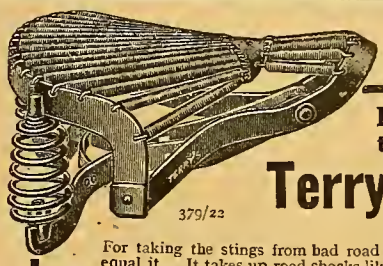

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For speeding or touring it's "A1."

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For taking the stings from bad road riding there is nothing to equal it. It takes up road shocks like a sponge takes up water. Ask your agent to order one for you. If it does not suit—your money back.

Heavy weight, 63/- Light weights, 57/6 each.

Give rider's weight and name and year of machine.

Herbert Terry & Sons, Ltd., Redditch, Eng.

Established 1855.

Modernise your machine by fitting an

ALBION LIGHTWEIGHT COUNTERSHAFT GEAR

Three-Speed with Clutch and Kick Starter ..	£12	0	0
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IMMEDIATE DELIVERY From Stock.

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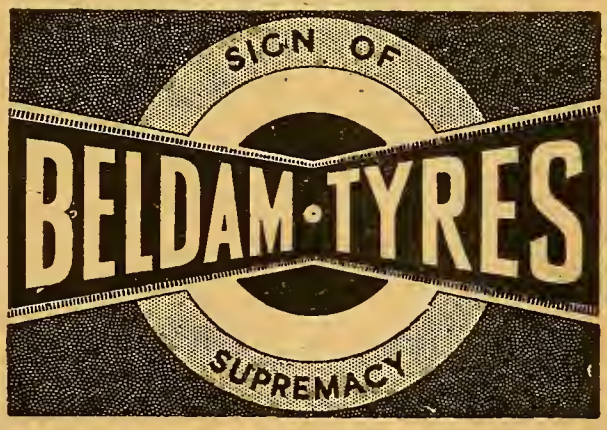

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"King Dick" Belt Punch.

Will pierce clean holes through the toughest belt without clogging. For ¾", ⅞", 1" and 1¼" belts. Price 3/6 each; post free 3/9.

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We have the finest selection of Second-hand Motor Cycles in the United Kingdom. All fully guaranteed. Deferred payments to suit your own convenience.

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ENFIELD, 1920, 8 h.p., dynamo lighting. As new £90 0
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Any make of new motor cycle or light car supplied. Exchanges and deferred payments.

'Phone: Croydon 2450, 2451.
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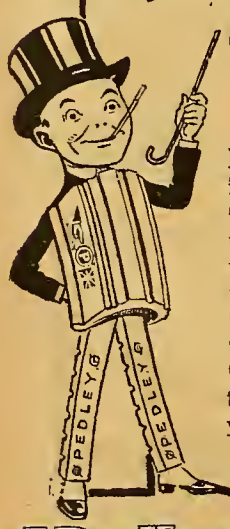
Bus 59a from Charing Cross passes the door.

Allen-Bennett Motor Company Limited

9-10-11, Royal Parade CROYDON.

PEDLEY PARS by Mr. "Just Perfect"



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Look out for your riding comfort in 1923. Fit Pedley Handle Grips and Pedley Knee Grips; then you can grip your machine tight with hands and knees with never a jar or an ache. Handle Grips **3/-** (Standard) and **4/9** (Sporting) per pair. Knee Grips **10/6** per pair. Fit them *at once,* and give yourself a happier New Year.

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ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle" by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box ooo, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. ooo, c/o "The Motor Cycle," Dorset House, Tudor Street, London, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, 1%. All deposit matters are dealt with at Dorset House, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

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Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1922 (Jnoe), dynamo lighting, Bonniksen, etc.: £69.—238, High St., Acton, W.3. [5757

The Sign of G Good Service

MAKE 1923

A GODFREY'S YEAR

A New Year's Resolution easy to make and one, once made, you will have no inclination to break.

NEW MODELS.

Godfrey's can supply any make of motor cycle or light car either for cash or Deferred Payments.

SECOND-HAND MACHINES.

Godfrey's second-hand machines can always be relied upon to give good service. Their overhaul is not perfunctory adjustments just to make "the wheels go round," but a serious and thorough examination (and renewals where necessary) of all working parts.

EXCHANGES.

Godfrey's will allow you the utmost value for your old mount in part exchange for either a new motor cycle or light car.

REPAIRS.

Godfrey's are Official Repairers for London for B.S.A., INDIAN, and LEVIS motor cycles, and undertake repairs and overhauls of all makes. Free estimates can be obtained from our Works, 14, Miller Street, Camden Town, N.W. ('Phone Museum 2434.)

SPARE PARTS.

Godfrey's specialise in spare parts service and carry full range stocks for B.S.A., LEVIS, INDIAN and SCOTT machines.

Orders by post attended to same day as received.

Call and inspect our splendid stock of 1923 Models or allow us to send you catalogues.

GODFREY'S Ltd.

208, GT. PORTLAND STREET, LONDON, W.1.

'Phone Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

Spare Parts:

A.B.C. Spares, repairs, special fittings. See advertisement index.—Jarvis and Sons, Ltd., Wimbledon. [0964

Abingdon.

1919-20 Abingdon King Dick Combination, 6h.p. twin, all chain, Easting, pillion, equal to new; £52/10; bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [5905

Ace.

ROBERTSONS Motors, Ltd., the British Concessionaires for this wonderful Ace machine, invite inspection of the latest models; £125 with full electric equipment.—157B, Great Portland St., W.1. [4883

A.J.S.

PREMIER Motor Co. for 1923 A.J.S.

IMMEDIATE delivery of latest A.J.S. models; received from makers' works this week; model B 2¾h.p. standard touring, £77; model B1 2¾h.p. Sports, £77; 7h.p. sidecar combination, electric lighting, horn, windscreen, £152/10; deferred payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5595

1922 2¾h.p. A.J.S., brand new; £75.—Carnforth Motor Co., Carnforth. [5744

A.J.S. 1923 Sports, latest, o.h.v.; quickest deliveries. —Clifford Motories, Eastwood, Notts. [4098

ORDER Early your 1923 model A.J.S. from Merrick's Stores, Listerhills Rd., Bradford. [8564

A.J.S. 2¾h.p., 1923 models, for immediate delivery.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0974

50 Guineas.—1922 2¾h.p. Touring A.J.S., 3-speed, K.S., small mileage.—King, Egrove, Oxford. [5828

F.O.C.H. invite inspection. A.J.S. and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1375

A.J.S. Combination, 1921, spare wheel, fully equipped, perfect condition; £110.—Bellevue, Causeyhill, Hexham. [5886

BRAND New 2¾h.p. A.J.S.; list price £77; our price, to clear, £70.—Jones Garage, A.J.S. Agents, Muswell Hill, London. [0803

SOUTHPORT.—Kents for A.J.S., immediate deliveries 1923 models; 1916 6h.p. combination, 49 guineas, exchanges.—417, Lord St., Southport. [5862

A.J.S.—Immediate delivery; 2¾h.p. touring, £77; 2¾h.p. Sports, £77; 7h.p. Combination, £152/10. —Will Chapman's Garage, Belgrave Rd., Leicester. [5791

1915 4h.p. A.J.S. Combination, lamps, horn, spare wheel, licensed; a genuine bargain; £36, exchanges.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5548

A.J.S. Combination 1915 5-6h.p., complete with lamps, hood, windscreen, spare wheel; £40.—Elee, Ltd., 13, 15, 16, Bishopsgate Avenue, Camomile St., E.C. 'Phone: Avenue 5548. [0065

A.J.S. new 1923 models in stock for immediate delivery; 7h.p. Combination, Magdyno lighting, etc., £152/10; 2¾h.p., 3-speed, all-chain drive, £77; deliveries of the 70-mile per hour 2¾h.p. o.h.v. model, price £87, commence shortly.—Avoid disappointment by placing your order with P. J. Evans, John Bright St., Birmingham. [5773

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4806

Alldays.

1921 Allon, 2-speed, K.S., sacrifice, 28 guineas; also Ivy, gears and K.S.—67, Farnlea Rd., Balham. [5961

ALLON 1921 2¾h.p., 2-speed, clutch, kick-start, equipped, taxed; £33.—Blackmore, 769, Romford Rd., Manor Park, London, E.12. [3267

1922 Allon, 2-stroke, 2¾h.p., 2 speeds, clutch, kick-start, oversize tyres, new Easter, owner buying combination; £40.—64, Huntingdon Rd., East Finchley. [5767

American X

ROBERTSONS Motors, Ltd.—1921 American X Combination, complete with all accessories; £72.—157B, Great Portland St., W.1. [4880

1920 7-9h.p. American X 2-seater Combination, lamps, horn, speedometer, 2 screens, hood, luggage grid, beautiful condition; £62, exchanges and easy payments.—Bambers, 2, Eastbank St. Southport. 'Phone: 607. [5548

Ariel.

£42.—1920 4h.p. Ariel, 3-speed, clutch, K.S., very fast.—King, Egrove, Oxford. [5827

BRAND New 3½h.p. Sports Ariel, 3-speed, handle-bar controlled clutch; list price £70; our price, to clear, £65.—Jones Garage, Ariel Agents, Muswell Hill, London. [0804

MOTOR CYCLES FOR SALE.

Ariel.

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

BRAND New 6-7h.p. Ariel Combination, chain drive, a luxurious outfit; list price £124/10; our price, to clear, £114/10.—Jones Garage, Ariel Agents, Muswell Hill, London. [0985

BRAND New 6-7h.p. Ariel Combination, chain drive, a beautiful outfit, complete with Lucas Magdyno lighting; list price £141; our price, to clear, £130.—Jones Garage, Ariel Agents, Muswell Hill, London. [0986

Spare Parts:

ARIEL Spares for all models, post free. Ariel Agents and Spares Service Depot.—Jones Garage, Broadway, Muswell Hill, N.10. [0999

Beardmore.

BEARDMORE, brand new, spring frame; £45.—S. E. Porter and Co., Whitchurch, Salop. [5096

Spare Parts:

BEARDMORE-PRECISION Spares.—Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2176

Blackburne.

BLACKBURNE Combination, late 1920, 4h.p., in excellent condition; 55 guineas.—Barker's Motors, 194, Balham High Rd., S.W.12. [5091

BLACKBURNE 1921 4½h.p. Combination, electric lighting, screen, tools, insured; £65 cash.—Apply, Housekeeper, 40, Great Tower St., E.C. [5176

BLACKBURNE 1920 4h.p. Combination, accessories, windscreen, beautiful condition; bargain, £50.—Allery and Bernard, 30, Thornsett Rd., Earlsfield, London, S.W. [4885

Bradbury.

2¾h.p. 1922 Bradbury, all on; £35.—Wauchope's, 9, Shoe Lane, London. [5609

SOUTHPORT.—1922 2¾h.p. Bradbury, countershaft, irreproachable, 35 guineas; 1921 4h.p. countershaft all-chain combination, 49 guineas.—Kents, 417, Lord St., Southport. [5867

Spare Parts:

BRADBURY Spare Parts; lists free.—Bright and Hayles, 78, Church St., Camberwell. [5222

Brough Superior.

SOUTHPORT.—Kents for Brough Superiors, Olympia models here.—417, Lord St., Southport. [5856

ALLEN-BENNETT Motor Co., Ltd., Brough Superior Service, and sole London distributing agents, immediate delivery, full range of models in stock, excellent selection of carefully used machines; deferred payments and exchanges. Trade supplied, catalogues post free on request.—9, 10, 11, Royal Parade, West Croydon. 'Phone: 2450, 2451. 'Grams: "Track, Croydon." [0733

Spare Parts:

SPARES.—All engine, gear box, and frame spares for Brough Superior in stock; write for lists.—G. and J. Dawson, The Ideal Garage, Cambridge. [0835

B.S.A.

PROMPTEST Deliveries of 1923 Models.—The B.S.A. specialists.

COUNTY Cycle and Motor Co., Ltd., Broad St., Birmingham. [3162

B.S.A. 1923 2¾h.p., £57/15; 3½h.p. model sports, £70.—Clifford Motories, Eastwood, Notts. [4099

1922 4½h.p. B.S.A. Sports Combination, brand new; £95.—Carnforth Motor Co., Carnforth. [5742

4½h.p. B.S.A. 1922 Combination, K2, shop-soiled; £90.—Wauchope's, 9, Shoe Lane, Fleet St., E.C.4. [5624

B.S.A. 1920 4½h.p. chain Combination, taxed, all accessories; £70.—Will, 769, Romford Rd., Manor Park, London, E.12. [3268

BRAND New B.S.A. 4½h.p., chain drive; list price £75; our price, to clear, £68.—Jones Garage, B.S.A. Agents, Muswell Hill, London. [0987

1920 4½h.p. B.S.A. All-chain Combination, spare wheel, lamps, rear and sidecar electric, head acetylene; £75.—Boyd, Minster, Ramsgate. [5751

1920 4½h.p. B.S.A. Combination, all-chain drive, beautiful condition, every accessory; £50, exchanges.—24, Balliol Rd., North Kensington. [5809

BRAND New B.S.A. 4½h.p., chain-cum-belt; list price £72; our price, to clear, £66.—Jones Garage, B.S.A. Agents, Muswell Hill, London. [0805

B.S.A. 4½h.p. 1922 Combination, 3 speeds, K.S., clutch, all-chain, all on, in excellent order, as new; £75.—Wauchope's, 9, Shoe Lane, London. [5621

B.S.A. 4½h.p., all-chain 3-speed, clutch, kick-start, coach sidecar; 35 guineas, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3927

1919-20 4½h.p., B.S.A., equipped, tax paid, and guaranteed perfect order; solo, £45; with sidecar, as new, £47/10.—S. E. Porter and Co., Whitchurch, Salop. [5098

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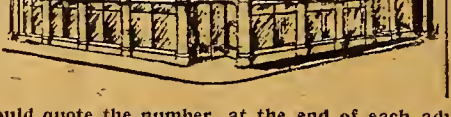

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1922 6h.p. B.S.A. Combination, No. 3 sidecar, slightly shop-soiled; bargain, £100, exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5546

BRAND New 6h.p. B.S.A., model E combinations, wonderful value; list price £110; our price, to clear, £100.—Jones Garage, B.S.A. Agents, Muswell Hill, London. [0988

B.S.A. Combination, 1917, 4½h.p., chain-cum-belt, with clutch, 3-speed, with Montgomery sidecar, in very good condition; £40.—Vaughan-Harbourne, Ltd., Welford Place, Leicester. [0981

1920 4½h.p. B.S.A. Combination, D.A. lighting set, horn, licensed, in new condition throughout; £58; exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5553

CHEAPEST Advertised; 35 guineas.—1915 B.S.A. all-chain drive Combination, 4½h.p., 3 speeds, clutch, kick-starter, lamps, Klaxon horn, pillion seat, tools, practically new Dunlop tyres, tax paid; trial.—Smith's, 86, Chalk Farm Rd., N.W.3. [4605

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B.S.A. Spares can be had by return, post free, from Jones Garage, B.S.A. Agents and Spares Service Depot, Broadway, Muswell Hill, N.10. [0153

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All B.S.A. parts in stock; no waiting. Complete illustrated price list 6d. each for any model. [5568

GODFREY'S, Ltd., 208, Great Portland St., London, W.1.—Complete stock of all B.S.A. spare parts always in stock. Write for free spare part list, stating year of manufacture. [0750

Calthorpe.

CALTHORPE 2½h.p. 1922, single speed, all on, as new; £26.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5617

CALTHORPE 1921 2¾h.p. J.A.P., 2-speed, Lucas lamp, new oversize tyres, good condition.—1, Abingdon Rd., Kensington. [5724

Carfield.

NORTH London for the wonderful Carfield-Villiers 2-speed Lightweight at £28/10.—North London Distributors: Jones' Garage, Broadway, Muswell Hill, N.10. [0808

Cedos.

CEDOS 1920 2½h.p., 2-stroke, 2-speed, good condition; £25.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3343

Clyno.

5-6h.p. Clyno, 2-speed, kick-start, in good condition; £20.—Staubridge, Cranbrook. [5480

CLYNO 1920 2½h.p., 2-speed, 2-stroke; 24 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3926

1923 Clyno, the spring frame combination De Luxe. After personal tests we can assure clients it is one of the finest combinations on the market. Immediate delivery from stock at £125.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5413

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4802

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1923 Cottons, all models, prompt delivery from the man on the spot.—Gibb, Northgate, Gloucester. [0968

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1922 Coulson Combination, special 4½h.p. Blackburne engine, Druid forks, Grindlay De Luxe spring wheel sidecar, Easting, all accessories, luxurious outfit, not done 500 miles; £87/10.

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Diamond.

SOUTHPORT.—Kents for Diamonds, Olympia B. and S. model here.—417, Lord St., Southport. [5858

1922 Diamond, 2¾h.p. Blackburne engine, 2-speed, not run 200 miles, sporting model; £62.—Fisher, Motor Agent, Ulverston. [5792

ROBERTSON'S Motors, Ltd., are the London and Home Counties Agents for the famous Diamond motor cycles, fitted with Barr and Stroud or J.A.P. engines.—157h, Great Portland St., W.1. [5931

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Douglas.

DOUGLAS Combination 1919, excellent order; £45.—77, Acre Lane, S.W.2. [5807

1922 3-speed Douglas, K.S., quite new; 42 guineas.—67, Fernlea Rd., Balham. [5954

4h.p. Douglas Combination, first-class condition, 1919; what offers?—Hammond, Cricklade. [4343

F.O.C.H. invite inspection; Douglas and other makes; bargains.—5, Heath St., Hampstead (near Tube). [1373

BARGAIN.—1922 Douglas, absolutely as new; unemployed; will take £37.—1, Othello St., Liverpool. [5803

DOUGLAS 1923, 2¾h.p., all on, £50; from stock; exchanges.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [5577

1923 Douglases, just arrived, 2-speed and 3-speed; why wait? — Gibb, Neithgate, Gloucester. 'Phone: 852. [0967

1922 2¾h.p. Douglas, 3-speed and kick starter, complete, brand new; £62.—Carnforth Motor Co., Carnforth. [5741

DOUGLAS 1916, excellent mechanical condition, very fast, all equipment; £25.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [5969

DOUGLAS 1922 3½h.p., o.h.v., as new; 72 guineas; exchanges, photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3924

ROBERTSONS Motors, Ltd.—1922 2¾h.p. Douglas, 2-speed, all accessories, in splendid order; £42.—157B, Great Portland St., W.1. [4882

1920 2¾h.p. Douglas, 3-speed, Binks, Cowey, spares, excellent condition, and insured; £45.—Hawks, 35, Cheltenham Cres., Harrogate. [5884

DOUGLAS 1920 Combination, countershaft, fully equipped, taxed; £63.—William, 769, Romford Rd., Manor Park, London, E.12. [3269

1920 4h.p. Douglas Combination, lamps, horn, licenced, practically as new; £55.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5550

BRAND New 2¾h.p. Douglas, 2-speed, fully equipped; the best value possible; list price £50; our price, to clear, £47/10.—Jones Garage, Douglas Agents, Muswell Hill, London. [0989

BRAND New 3½h.p. Sports Douglas, fully equipped, the record-breaking machine; list price £95; our price, to clear, £88.—Jones Garage, Douglas Agents, Muswell Hill, London. [0806

1918 4h.p. Douglas Combination, excellent condition, Easting, 3-speed clutch, kick-start; £50: bargain.—Joseph Rhind and Co., Stone Place, Rusholme, Manchester. [5908

DOUGLAS 1922, 4h.p., 3-speeds, kick-starter, clutch, speedometer, unscratched; £65, all on. 1922 2¾h.p., 2-speeds, all accessories, new; £45.—Wauchope's, 9, Shoe Lane, London, E.C. [5613

DOUGLAS Combination, 4h.p. 1920, Easting screen, speedometer, lamps, 1922 oiling system, splendid condition, small mileage; 65 guineas.—Dean, 27, Askew Mansions, Askew Rd., Shepherds Bush, W.12. [5846

DOUGLAS 1922 4h.p. Combination, completely equipped, new machine, slightly shop-soiled only; £100; write for complete list of our shop-soiled bargains.—P. J. Evans, John Bright St., Birmingham. [5772

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DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [4803

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FRANK WHITWORTH, Ltd., 139, New St., Birmingham.—Complete stock genuine guaranteed Douglas parts, immediate dispatch; lowest cash prices. [5084

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1921 Edmund, spring frame model, 2¾h.p. J.A.P., 2-speed, clutch and kick-starter, full equipment; bargain, £38.—Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5412

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IMMEDIATE delivery from stock of latest models received from makers' works this week; lightweight 2¼h.p., 2-speed, kick-start, £50; standard 8h.p. combination, £120; 8h.p. combination with electric lighting, horn, £135; deferred payments 4% extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [5596

1921 8h.p. Enfield Combination, absolutely as new; sacrifice, 75 guineas.—67, Fernlea Rd., Balham. [5953

PRACTICALLY new dynamo Enfield Combination, every accessory; £95, exchanges.—24, Balliol Rd., North Kensington [5812

ENFIELD Combination, 1917, not W.D., perfect condition; £48.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3344

1920 2¼h.p. Royal Enfield, 100 miles per gallon; £32/10.—Wauchope's, 9, Shoe Lane, London. Extended payments. [5614

NEW Enfield Combinations in stock, dynamo lighting; £135, exchanges or easy payments.—Bonnds Garage, 223, High Rd., Kilburn. [0982

BRAND New Enfield Combination 8h.p.; list price £120; our price, to clear, £110.—Jones Garage, Enfield Agents, Muswell Hill, London. [0809

CROYDON and District.—Sole official appointed agent for Royal Enfields.—A. F. Pulling, 175A, London Rd., Croydon. 'Phone: 1619. [5600

ENFIELD Combination, 1920, complete with screen, dynamo lighting, condition perfect; £85.—Houghton Bros., Woodcote Parade, Wallington. [5762

ENFIELD 2¼h.p. 1922, Sports, 2-stroke, T.T. bars, all on, new condition; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5620

BRAND New Enfield 2-stroke, 2-speed, kick-start; list price £50; our price to clear, £47/10.—Jones Garage, Enfield Agents, Muswell Hill, London. [0990

ROYAL ENFIELD 2¾h.p., 2-stroke, with kick-start, demonstration model, only used about town, good order; bargain, £35.—The Morris Garages, Oxford. [5769

22 Guineas.—1920 Enfield Lightweight, 2-speed, clutch, perfect condition, equipped.—A.V. Garage, 2A, Eleanor Grove, Hegger's Corner, Barnes. [5876

1921 8h.p. Enfield Combination, electric lamps, speedometer, screen, horn, licensed, excellent condition, unequalled value; £85, exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5548

YOUR Motor Cycle or Combination taken in part payment for an Enfield, any model; cash, deferred, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal., London. [4927

1921 Enfield Combination 8h.p., Lucas dynamo lighting, hood, screen, speedometer, etc., absolutely unscratched, tax paid, perfect; £100; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5471

ENFIELD.—Immediate delivery of all 1923 models; 8h.p. Combination, £120; 2¼h.p., 2-speed, kick-start, all-chain drive, £50.—Write or call for catalogue and ensure satisfaction by placing your order with P. J. Evans, John Bright St., Birmingham. [5774

ENFIELD 8h.p. 1922 Tradesmen's Delivery Box Combination, beautifully equipped, as new, £100; 8h.p. 1922 combination, as new, £97/10; 8h.p. 1918 combination, J.A.P., all on, £70; 8h.p. 1916 combination, J.A.P., good order, £65.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5608

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [4801

ENFIELD Spares and Repairs a Speciality.—Pulling's Garage, London Rd., Croydon. 'Phone: 1619. [5601

Excelsior.

£12.—3½h.p. Excelsior, clutch model, fine running order.—King, Egrove Farm, Oxford. [5829

EXCELSIOR 1923 1½h.p., 2-speed; £28/10; in stock.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [4876

NEW 1923 Excelsior Lightweights, 2 speeds, wonderful power; £28/10, carriage paid.—Keen, Leomister. [3452

F.N.

4-CYL. F.N. 1913, perfect; bargain, £10.—Box 5166, c/o *The Motor Cycle.* [5727

Harley-Davidson.

£75, bargain.—1920 Harley combination, dynamo, sprung wheel, discs, guaranteed perfect, trial.—89, East Hill, Wandsworth. [5899

HARLEY-DAVIDSON 1921 4h.p., flat twin, perfect; 52 guineas; exchanges, photograph.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3925

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Harley-Davidson.

1923 Harley-Davidson.—All models. Send your orders along and secure immediate or early delivery.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5410

1920 Harley Combination 4h.p., all lamps, horn, speedometer, etc., absolutely as new, guaranteed; £70; exchanges.—Homac's, 243, Lower Clapton Rd., N.E. 'Phone: Dalston 2408. [5472

41 Guineas; exchange.—1915 Harley, 3 speeds, clutch, K.S., roomy coachbuilt sidecar, fully equipped, nice condition, any examination.—Seabridge, 35, Hansler Rd., E. Dulwich. Sydenham 2452. [4000

1923 Harley-Davidson.—Orders for these models will receive the promptest attention from T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744. Exchanges and deferred payments arranged. [5157

YOUR Motor Cycle or Combination taken in part payment for a Harley-Davidson, any model; cash, deferred or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal., London. [4925

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WARNING.—A large number of spurious Harley-Davidson parts are now being sold. These are greatly inferior to our standard quality, and have given serious trouble and dissatisfaction. All genuine Harley-Davidson parts, e.g., valves, pistons, piston rings, hardened shafts, springs, etc., are supplied in sealed packages only, and riders should refuse all others. If unable to obtain locally, write us direct.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0944

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HENDERSON 1914 4-cyl. and sidecar, condition good, wants new crankshaft; what offers?—Webb, Agent, Harleston. [5844

ROBERTSONS Motors, Ltd..—1920 Henderson Combination, all accessories; £78. 1915 combination, luxurious sidecar, speedometer, accessories, £48.—157B, Great Portland St., W.1. [4878

59 Guineas.—Exchanges easy terms. Beautiful Henderson Coachbuilt Combination, 8-10h.p., 4-cyl., 3 speeds, kick-starter, Klaxon, electric lighting, newly enamelled blue, with primrose wheels.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [5914

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Spare Parts:

ROBERTSONS Motors, Ltd., the original Henderson Importers and 4-cyl. experts, specialise in Henderson repairs and the supply of spare parts.—157B, Great Portland St., W.1. [4879

Hobart.

1914 Hobart 2½h.p., 3-speed, lady's machine, in good condition; £16/10.—Williams, 17, Maiden Lane, Strand. See Triumph. [5949

Humber.

£14.—Smart 2¾h.p. Twin Humber, 3-speed, clutch, fine condition.—King, Egrove, Oxford. [5830

HUMBER 2-speed, completely overhauled throughout; complete for £19.—Keen, Leomlaster. [5209

HUMBER and box sidecar, 4h.p., 2 speeds, clutch, accessories, running order, suit tradesman; £16/10.—A., 30, Thornsett Rd., Earlsfield, London, S.W. [5945

Indian.

INDIAN 5-6h.p., 2-speed, very fast, perfect; £22.—99, Tynemouth Rd., Mitcham. [5893

1921 Indian Combination, dynamo lighting, as new; 63 guineas.—67, Fernlea Rd., Balham. [5960

INDIAN 7-9h.p., 2-speed, spring frame, kick-start; £28; sidecar, £6/10.—17, Heaton Rd., Mitcham. [5889

INDIAN Scout Combination, special racing engine, a very smart and fast outfit; £55.—3, Stamford Brook Rd., Hammersmith. [5631

£60.—Indian Combination 1919, full electrical equipment, windscreen.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [4877

INDIAN Motor Cycles from 29 guineas; exchanges, easy terms; lists free.—Wandsworth Motor Exchange, Ebner St., Wandsworth. 'Phone: Latchmere 4686. [5915

1920 Indian 7-9h.p. Powerplus Combination, Cox Atmos, real leather upholstery, as new, complete, windscreen and hood; £55.—11, Oakhill Rd., Sutton, Surrey. [5717

INDIAN.—One only 1922 7-9h.p., electrically equipped, solo model with T.T. bars; £100; new machine, slightly shop-soiled only.—P. J. Evans, John Bright St., Birmingham. [5771

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BRAND New 4h.p. Indian Scout, a very neat, low, and attractive mount; list price £96/10; our price to clear, £90.—Jones Garage, Indian Agents, Muswell Hill, London. [0786

£65, snip.—1920 Indian, dynamo, Princess sidecar (brand new), speedometer, 29x3½ Goodyears, beautiful condition, genuine bargain.—"Parwood," Official Indian Agents, 89, East Hill, Wandsworth. [5900

POWERPLUS Indian Combination 7-9h.p., electric equipment, new tyres and spares, bulbous sidecar, very fast, perfect order; 95 guineas.—Box 238, c/o A. H. Grantham and Co., Advertising Agents, Reading. [5796

Spare Parts:

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INDIAN Spares, 1909-1922, new, also second-hand, from stock; send list requirements for our prices.—Dennis Accessories Stores, 89, Brixton Rd., London. 'Phone: Brixton 3129. The firm with a reputation for promptness and satisfaction. [5928

Invicta.

1922 Invicta, 2¾h.p. J.A.P., 2-speed, kick-start, shop-soiled condition; £42/10.—Aylesbury Motor Co., Ltd., 48, Kingsbury Square, Aylesbury, Bucks. [6776

Ivy.

1922 Ivy I.O.M. model, tuned for high speeds, yet quite docile, capable of 66 m.p.h. This machine was built for the T.T. races. It is in excellent condition; price £55.—Allan Gruzelier, Ulster Chambers, 168, Regent St. [5853

James.

JAMES 2¼h.p. 1922, 2-speed, kick-start, 2-stroke; 30 guineas.—Wauchope's, 9, Shoe Lane, London. [5618

1920 3½h.p. 3-speed James, twin cylinder, all-chain drive; £32/10, exchanges.—24, Balliol Rd., North Kensington. [5810

Spare Parts:

JAMES Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9449

WHITBY'S.—James spares, expert service.—7, The Vale, Acton, W.3. 'Phone; Chiswick 1513. [9777

J.E.S.

9 Guineas, Bargain.—1914-15 J.E.S. Lightweight, splendid condition.—Seabridge, 35, Hansler Rd., East Dulwich. Sydenham 2452. [6581

Levis.

PREMIER Motor Co., the Levis Specialists.

IMMEDIATE delivery of all 1923 Levis models; 2¼h.p. Popular, single gear, £38; Model T, 2¼h.p., 2-speed, clutch, kick-start, £49; the nearest agents to the Levis works; buy direct from the firm on the spot; deferred payments 4 per cent. extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4692

£16.—2½h.p. Levis 2-stroke, just been overhauled.—King, Egrove Farm, Oxford. [5831

1923 Levis, 2-speed, kick-starter, clutch; £48, just delivered.—Gibb, Northgate, Gloucester. 'Phone: 852. [0968

1922 Levis model S, brand new, shop-soiled; 40 guineas.—Knights, 126, Upper Tooting Rd., S.W.17. [0880

LEVIS 1914, single speed, perfect condition; £18; available Saturday.—Dunn, 8, Westmount Rd., Eltham, S.E.9. [5720

LEVIS, late 1921, 2-speeds, hand clutch, speedometer, lamps, etc., beautiful condition; £35.—30, Thornsett Rd., Earlsfield London. [3157

LEVIS T.T., makers' guarantee of 50 m.p.h., Philipson and all accessories, perfect condition, as new; cost £85.—The Cottage, Pembroke Rd., Kensington. [4348

Spare Parts:

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list, stating year of manufacture. [0753

L.M.C.

£50.—1921 6h.p. L.M.C. Coachbuilt Combination, 3 speeds, clutch K.S., perfect order.—King, Egrove, Oxford. [5833

7h.p. L.M.C. 1922, Jardine 4-speed, hood, speedometer; £80; any trial.—A. Gerrish, 4, Wood Vale, London, S.E.23. [5818

Martinsyde.

MARTINSYDE Combination, 1922 (July), speedometer, full equipment; £100.—Bunting's Exchange, Wealdstone, Middlesex. [5922

BRAND New Martinsyde 6h.p. Standard Combination; list price £130; our price, to clear, £120.—Jones Garage, Martinsyde Agents, Muswell Hill, London. [0786

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Martinsyde.

ROBERTSONS Motors, Limited, are the London Martinsyde Service agents; trial runs arranged. 1923 models now available at the new prices, spares stocked.—157n, Gt. Portland St., W.1. [1122

MARTINSYDE 6h.p. Combination, electric lighting, speedometer, screen, legshields, perfect order, any trial; £75, or would exchange with cash adjustment for new 3½h.p. Sports Douglas or other good make.—White, 53, Mount Rd., Hinckley. [5397

Spare Parts:

MARTINSYDE Spare Parts are obtainable from stock at Jones Garage, The Broadway, Muswell Hill, London, N.10. [0155

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MATADOR.

WE have a job to keep stock of these machines. Everybody wants them.

DON'T be left without one. You will be sorry if you are, when you see them about.

WRITE for particulars to-day. It is fitted with 2¾h.p. o.h.v. Bradshaw engine, has an excellent finish, Burman gear box, 3-speed, clutch, and kick-starter, capable of over 60 m.p.h., and holds the road like a Rolls.

SEND your enquiry along to-day to Allan Gruzelier, Ulster Chambers, 168, Regent St., Sole Distributers. [5852

SOUTHPORT.—Kents for Matadors; immediate deliveries 1923 models.—417, Lord St., Southport. [5864

Matchless.

1921 Matchless-M.A.G. 2-seater Combination perfect; £85.—Thomson's Garage, Beehive Lane, Ilford. [5718

1921 Model H Matchless Combination, every possible accessory; £82, exchanges.—24, Balliol Rd., North Kensington. [5811

MATCHLESS, all models, 1923 prices; best exchange allowances; deferred.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [1155

26 Guineas.—Exchanges, easy terms. Matchless-Jap Twin, 3 speeds, low.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [5916

1921-22 Model H Matchless Combination, dynamo lighting, speedometer, legshields, spare wheel, all as new; 95 guineas.—67, Fernlea Rd., Balham. [5952

1923 Model J Matchless Combination, mileage 1,000, screen; cost £150, October; bargain, £120, offers.—Watney, Senlac, Imber Park Rd., Esher. [5758

BRAND New 8h.p. Matchless Sports Touring Combination; list price £130; our price, to clear, £120. —Jones Garage, Matchless Agents, Muswell Hill, London. [0992

MATCHLESS 8h.p. 1921 model H M.A.G. Combination, speedometer, Lucas Magdyno, first-class condition throughout; £95.—244, Old Christchurch Rd., Bournemouth. [5722

BRAND New Matchless 7-9h.p. spring frame Combination, a 3-wheel Rolls; list price £140; our price, to clear, £130.—Jones Garage, Matchless Agents, Muswell Hill, Loudon. [0991

1921 Model H Matchless Combination, with spare wheel, dynamo lighting, speedometer, windscreen, and tools, small milcage, and in perfect condition.—Stanbridge, Cranbrook. [5478

MATCHLESS 1922 Super Sports Combination, model J, Magdyno and full equipment, successful competition machine, in excellent condition; £130; to-day's cost £175.—Box 5187, c/o *The Motor Cycle.* [5778

1921 8h.p. Matchless Combination, magdynamo, speedometer, and many other extras, very little used; any trial and examination; £90.—Aylesbury Motor Co., Ltd., 48, Kingsbury Sq., Aylesbury, Bucks. [5775

£78; sacrifice.—Matchless late 1920 Combination, spring frame, M.A.G. engine, Magdyno, speedometer, hood, screen, fully equipped, insurance, new condition.—143, Ravensbury Rd., Earlsfield, S.W. [5919

YOUR Motor Cycle or Combination taken in part payment for a Matchless, any model; cash, deferred, or exchanges.—Barker's Motors, 194, Balham High Rd., S.W.12. 'Phone: 4441 Latchmere. 'Grams: Pushfully Bal., London. [4924

MATCHLESS Model H, late 1920, M.A.G. Combination, dynamo lighting, detachable wheels, new tyres, speedometer, hood, screen, side curtains; £87.—Chinery, 1, Hammersmith Rd., Kensington. 'Phone: Western 4140. [4534

MATCHLESS Combinations.—We have 8 of these excellent outfits to offer at exceeding low prices, single and double seaters; exchanges.—Newnham Motor Co., 223 and 245, Hammersmith Rd., London, W.6. 'Phone: Hammersmith 1325 and 80. [5539

1923 Matchless Combinations and Solos.—T. J. Ross, of 86, High Rd., Lee, S.E. ('phone: Lee Green 744) will be pleased to take your orders for prompt delivery of these models. Exchanges and deferred payments arranged. Purchasers taught free. [5156

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DOUGLAS, 2¾ h.p., 2-speed, all on	£50 0
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DOUGLAS, 4 h.p. Comb., all on	£110 0
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INDIAN, 7-9 h.p., 2-sp., all-chain.....	£35 0
MOTO REVE, Twin, wants attention....	£9 10
NORTON, 1922, 3½ h.p., 6H. new	£75 0
NORTON, 1922, Big Four, new.....	£80 0
PREMIER, 3½ h.p., 2-sp., good order....	£29 10
RUDGE-MULTI, 1921, 3½ h.p.....	£47 10
RUDGE-MULTI, 1921, 3½ h.p., like new..	£52 10
REX ACME, 1922, 2½ h.p., 2-sp., new....	£42 10
TRIUMPH, 1913, 3½ h.p., cl. model.....	£29 10
TRIUMPH, 1922, S.D., new.....	£84 0
TRIUMPH, 1922, 2¼ h.p., new	£40 0
VELOCE, 1920, 3½ h.p., 3-speed	£52 10
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REX, 5-6 h.p., 2-speed and sidecar.....	£29 10
REX, 1913, 6 h.p., coach comb.....	£42 10
ROVER, 3½ h.p., 3-speed comb.....	£37 10
RUDGE-MULTI, 1920, 5-6 h.p. comb., small mileage	£69 10
RUDGE-MULTI, 1920, 7-9 h.p. comb., electric lighting	£75 0
SCOTT, 3¾ h.p., 2-speed comb.....	£45 0
SCOTT, 1920 comb., screen.....	£69 10
TRIUMPH, 1920, and sidecar.....	£69 10

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1923 Matchless.—All models from the leading agent, Sam B. Clapham. Matchless reigns supreme. Send your order along to Greenwich and secure satisfaction. See Motor Cycles Miscellaneous Column for other makes.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. 'Phone: Greenwich 751. [5409

MATCHLESS, new October, 1921, M.A.G., with 2-seater sidecar, Lucas horn, Lucas head lamp, electric side and tail lamps, mirror, legshields, 2 windscreens with apron and side curtains, spare wheel and tyre, luggage grid, hood, feet warmer for sidecar passengers, tools, etc., a very smart outfit, indistinguishable from new; £120 secures.—Wilkins, Simpson, Opposite Olympia, London. [5947

Spare Parts:

MATCHLESS Spares.—Immediate delivery.—Kays, 8 and 10, Bond St., Ealing. [9446

MATCHLESS Spares for J.A.P. or M.A.G. by return, post free.—Jones Garage, Matchless Agent, Broadway, Muswell Hill, N.10. [0156

McKenzie.

McKENZIE, as new, equipped; 18 guineas.—50, Thorahill Rd., Barnsbury, N.1. [5638

McKENZIE, new July, perfect, mileage 900, overhauled makers last week; £19.—Mills, 51, Swaby Rd., Earlsfield. [5799

Moto-Reve.

£7.—2¾h.p. Moto-Reve, running order; Herefordshire.—Box 5196, c/o *The Motor Cycle.* [5926

Spare Parts:

MOTO-REVE Spares, all models, repairs, overhauls, gears, new engines.—Motor Supply Co., Sole Concessionnaires, 223a, High St., S.E.13. [4888

Ner-a-Car.

IMMEDIATE Delivery.—2¾h.p. Model B Ner-a-Cars, the ideal all-weather utility machine, 5-speed, dynamo lighting, fully equipped for the road; £65.—South-Eastern Garage, Herne Hill, S.E.24. [5964

New Comet.

NEW COMET Combination, 1922 2½h.p., 2 speeds, K.S., clutch, C.B. sidecar, shop-soiled; £56/10; suit lady or gentleman.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5622

New Hudson.

NEW HUDSON 6h.p., 3-speed, countershaft Combination, fully equipped, excellent condition; £55.—7, Exhibition Rd., S.W.7. [5579

1919 2¼h.p. New Hudson motor cycle, 2-speed, 2-stroke, completely equipped, excellent order; £30.—E. W. Roberts, Blencathra Garage, Keswick. [0973

NEW HUDSON 1923 Models.—Fnll stock of cycles and combinations; immediate delivery; deferred payments; trade supplied.—New Hudson Depot, 45, Gray's Inn Rd. [0851

1920 4h.p. New Hudson Combination, 3-speed, Easting, special child's seat attachment, equal to new; bargain, £60.—Rhind and Co., Stone Place, Rusholme, Manchester. [5906

New Imperial.

1922 New Imperial, 2-speed, K.S.; 35 guineas.—67, Fernlea Rd., Balham. [5958

1918 New Imperial, all accessories; any trial; £22.—89, Greenford Rd., Harrow. [5798

NEW IMPERIAL, brand new, 3-speed; £45.—S. E. Porter and Co., Whitchurch, Salop. [5101

1922 New Imperial 2¾h.p., 3-speed, all-chain, going order; what offers?—Dewey, Corscombe, Dorset. [5842

NEW IMPERIAL-J.A.P. 2½b.p., 2 speeds, 1918, splendid condition; £24.—30, Thornsett Rd., Earlsfield, London. [3159

24 Guineas.—1920-21 New Imperial-Jap, 2-speed, practically indistinguishable from brand new; a bargain.—A.V. Garage, 2A, Eleanor Grove, Hogger's Corner, Barnes. [5872

1920 New Imperial 8h.p. Combination, Easting screen, legshields, lamps, horn, etc., very fine outfit; £65.—Hillier (side bell), 127, St. Mark's Rd., North Kensington. [5896

BRAND New Imperial 2¾h.p., 3-speed, a machine with a reputation; list price £65; our price to clear, £61.—Jones Garage, New Imperial Agents, Muswell Hill, London. [0790

1923 Model No. 3 New Imperial in stock; 1¾h.p., 3-speed, chain drive, internal expanding brakes; £65; deferred payments 4% extra; free delivery.—Premier Motor Co., Aston Rd., Birmingham. [5597

Spare Parts:

NEW IMPERIAL Spares. Immediate delivery.—Kays, 8-10, Bond St., Ealing. [2180

NEW IMPERIAL Spare Parts.—London stockists, Rey, 173, Gt. Portland St. 'Phone: Langham 1257. Open till 6 p.m., 1 o'clock Saturdays. [0855

Norton.

£55.—4h.p. Norton Coachbuilt Combination, 3 speeds, clutch, K.S., all-chain.—King, Egrove, Oxford. [5833

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PREMIER Motor Co., the Norton Specialists.

WE are the nearest agents to the Norton works: buy from the firm on the spot; all 1923 models for immediate delivery; 16H 3½h.p. 3-speed Sports, £79; No. 2 3½h.p. standard, £80; Model No. 1 Big Four, £84; sidecars from £22; deferred payments 4 per cent. extra; free delivery to any address.—Premier Motor Co., Aston Rd., Birmingham. [4693

NORTONS, 1923, all models, latest prices; immediate deliveries.—Clifford Motories, Eastwood, Nottingham. [4101

IN Stock, 1923 3½h.p. Norton model 16H; price £79.—D. & S. Autocar Co., 55, The Parade, Golders Green. [5532

NORTON Big Four Combination 1922, countershaft, kick-start, equipped, taxed; £93.—Sidney, 769, Romford Rd., Manor Park, London, E.12. [3270

BRAND New Norton Model H16, a real speed mount; list price £79; our price, to clear, £74.—Jones Garage, Norton Agents, Muswell Hill, London. [0918

NORTON 1922 16H, countershaft, Brooklands special racer, kick-start, taxed, as new; £98.—Walker, 769, Romford Rd., Manor Park, London, E.12. [3271

1923 Norton 16H model, delivery 30th inst., Stewart mechanical horn, licence holder, Tan-Sad included: best offer over £74 secures.—Box 5188, c/o *The Motor Cycle*. [5779

1922 Norton Motor Cycle model 16H, complete with Lucas lamps and accessories, Klaxon, only run few hundred miles; accept £62/10 for quick sale.—1, Lethbridge Rd., Southport. [4299

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Norton spare part specialists. Complete illustrated lists post free. Trade supplied. [5570

N.U.T.

N.U.T. 1922 5h.p., special engine, Magdyno, as new; 72 guineas; exchanges.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3923

O.K.

1920 O.K. 2-stroke, as new; 17 guineas.—67, Fernlea Rd., Balham. [5956

SOUTHPORT.—Kents for O.K., Olympia o.h.v. model here.—417, Lord St., Southport. [5859

O.K. 1916, 2-speed, fitted 1922 2¾h.p. engine and magneto, guaranteed perfect order; £16.—S. E. Porter and Co., Whitchurch, Salop. [5097

1919 O.K.,' 2-speed, smartest machine on road, equipped, must realise 20 guineas.—Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [5957

Omega.

OMEGA 2¾h.p., 1922, shop-soiled, 2-stroke; £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5625

1922 - 2¾h.p. Omega, 2-speed, clutch, shop-soiled only; list price £63; accept £50 to clear.—Stanbridge, Cranbrook. [5479

P. and M.

P. and M., R.A.F., perfect order and complete lamps, horn, etc.; £30.—S. E. Porter and Co., Whitchurch, Salop. [5099

1923 P. and M. Solos or Combinations at 1923 reduced prices; immediate delivery; exchanges entertained.—Below.

1918 P. and M. Combination, splendid condition; £37.—Kenneth Kemp and Co., the Authorised Agent Specialists, 4, Berkeley Mews, Connaught St., Marble Arch, London. 'Phone: Padd. 1177. [5941

1921 3½h.p. P. and M. Combination, complete with lamps, horn, windscreen, and speedometer, nearly new; 75.—Carnforth Motor Co. Carnforth. [5743

RECONDITIONED P. and M.'s, fully equipped, guaranteed three months; £40. Incomplete machines, £17/10.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [5802

Spare Parts:

P. and M. Spares Specialist. Stamp brings bargain list, every part stocked.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [5800

ALL Spares in Stock; please write for quotations for all parts; all guaranteed by return.—P. and M. Specialist, H. Beardwood, 147, Burlington St., Liverpool. [0839

Paragon.

1922½ 3h.p. New Paragon, 2-stroke, all on, as new, guaranteed, reason for selling want higher power; £29.—21, Manor St., Braintree. [5759

Peugeot.

PEUGEOT QUAD for Sale, 7.5h.p., 1921, new January, 1922, excellent condition; price £115, or offer.—116, Foreley Lane, Purley. [5790

A.J.S. Douglas Royal Enfield

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1923 2¾	h.p. **A.J.S.**, Touring	£77	0
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1923 7	h.p. **A.J.S.** Combination	£152	10
1923 2¾	h.p. **DOUGLAS**, 2-speed	£50	0
1923 2¾	h.p. **DOUGLAS**, 3-sp. and K.S.	£65	0
1923 3½	h.p. **DOUGLAS**, Sports	£95	0
1923 4	h.p. **DOUGLAS** Combination	£110	0
1923 2¼	h.p. **ENFIELD**, 2-sp. and K.S.	£50	0
1923 8	h.p. **ENFIELD** Combination	£120	0
1923 8	h.p. **ENFIELD** Combination (dynamo lighting.)	£135	0
1923 4	h.p. **TRIUMPH**, Model H	£84	10
1923 4	h.p. **TRIUMPH**, all chain	£93	10
1923 3½	h.p. **TRIUMPH**, O.H.V.	£96	10
1923 3½	h.p. **NORTON**, 16H.	£79	0
1923 3½	h.p. **NORTON**, O.H.V.	£98	0

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1920 2½	h.p. **CLYNO**, 2-speed	£25	0
1920 6	h.p. **A.J.S.** Combination	£100	0
1920 4½	h.p. **B.S.A.** Combination	£60	0
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30 more to choose from.

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Spare Parts:

PREMIER Parts.—I have a large consignment of genuine parts purchased direct from the makers. Write for quotations.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5850

GENUINE Premier Spares.—We have purchased from the Coleshill Trading Company, the tremendous stock of genuine Premier parts (the largest and only complete stock in the world) purchased by them from the makers, and are offering the same at knock-out prices.—Forfield Motors, Forfield Place, Leamington Spa. [1884

PREMIER Genuine Spares and Repairs.—We claim to be the most competent firm to supply spares and execute repairs to Premier motor cycles. We served in the Premier works, and know this machine from A to Z. We hold the most varied stock of parts for it in the world. We are the only traders who can claim to supply every part for a Premier machine. Our prices are rock bottom, and our service unsurpassable. Write us full requirements; you will receive our reply per return.—Forfield Motors, Forfield Place, Leamington Spa. 'Phone: 631. [8369

Priory.

PRIORY-J.A.P., Brand new, 2-speed; £45.—7 Exhibition Rd., S.W.7. [557

Quadrant.

£55.—1921-22 Quadrant combination, accessories.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1838

£90, or reasonable offer.—Brand new 1922 Quadrant combination.—Clifford Wilson Co., 177, Westminster Bridge Rd., S.E.1. [1837

IMMEDIATE Delivery of all 1923 Quadrant models direct from Olympia.—Clifford Wilson Company, 177, Westminster Bridge Rd., S.E.1. [3409

Spare Parts:

CLIFFORD WILSON Manufacturing Co., Quadrant official repairers and spare parts stockists, 177, Westminster Bridge Rd. (opposite Waterloo Station Approach), London, S.E.1. Tel.: Hop 210. —[9989

Radco.

SHOP-SOILED Bargains.—New 1922 No. 2 Radco 2¼h.p., 2-speed, clutch, kick-start, £38; new 1921 No. 1 2¼h.p., 2-speed, aluminium footboards, £35; 5% discount for cash with order.—Premier Motor Co., Aston Rd., Birmingham. [5598

Raleigh.

PREMIER Motor Co., the Raleigh Specialists.

IMMEDIATE delivery of all Raleigh 1923 models; many improvements, huge price reductions; 2¾h.p., 2-speed, chain-cum-belt, £55; 3-speed, all-chain drive, £60; 3h.p., 3-speed, all-chain drive, £63; exchanges and deferred payments arranged; carriage paid to any address.—Premier Motor Co., Aston Rd., Birmingham. [4894

1922 Raleigh 2¾h.p., clutch, K.S.; bargain, 35 guineas.—19, Valnay St., Tooting. [5955

RALEIGHS, 1923, all-chain drive; quickest deliveries.—Clifford Motories, Eastwood, Notts. [4100

RALEIGH 1922 2¾h.p., 2-speed, brand new, shop-soiled; £50.—72, Chase-Side, Enfield. Tel.: 593. [5020a

1923 Raleigh.—Your orders for these models will receive prompt attention from T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744. [5159

BRAND New 5-6h.p. Raleigh spring frame Combination, a real first-class outfit; list price £130; our price, to clear, £120.—Jones Garage, Raleigh Agents, Muswell Hill, London. [0810

RALEIGH 1923 models in stock for immediate delivery, 2¾h.p., 2-speed, K.S.; £55; exchange and easy terms; spare part stockists.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0975

CLEARANCE Bargains.—Special offer of new 1922 Raleigh Combinations at huge reductions; 2¾h.p., 3-speed, Montgomery lightweight sidecar, £65; 5-6h.p., spring frame, detachable wheels, Montgomery Sporting sidecar, £110; 5-6h.p. De Luxe Combination, Triplex windscreen, £120; carry makers' full guarantee; cannot be repeated.—Premier Motor Co., Aston Rd., Birmingham. [5599

Rex.

SOUTHPORT.—Kents for Rex-Acmes, 1923, o.h.v. model here.—417, Lord St., Southport. [5863

REX 2¼h.p. magneto, original finish, running order; 6 guineas.—10, Baronsmead Rd., Barnes. [5825

3½h.p. Rex, N.S.U. gear, wicker sidecar, good running order; £15.—Rhine and Co., Stone Place, Rusholme, Manchester. [5907

£15.—Rex Twin 5-6h.p. Combination, minus body, 2-speed, wants slight repair.—123, Newington Green Rd., Islington, N.1. [5822

REX Acme 2¾h.p., 1922, Blackburne engine, 2-speed gear, K.S., clutch, all on; £57/10.—Wauchope's 9, Shoe Lane, Fleet St., London, E.C.4. [5619

REX-ACME 2¾h.p. chain-cum-belt drive, 2-speed Sturmey-Archer gear box, drip feed, as new, ridden only twice, owner died suddenly; £57.—E. Bryant, High St., Tutbury, Staffs. [5963

MOTOR CYCLES FOR SALE.

Rex.

1923 Rex-Acme, Olympia Show model; immediate delivery from stock; 2¾h.p. Blackburne engine, 3-speed Sturmey-Archer, clutch and kick-starter, Dunlop tyres, all-chain drive; a marvellous production at £65.—The Agent for Rex-Acmes is Sam. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [5411

Rover.

ROVER 3½h.p., 3-speed, perfect, any trial, equipped; £25.—17, Heaton Rd., Mitcham. [5888

15 Guineas.—Rover T.T., drop frame, clutch, fast, sporting.—A.V. Garage, 2a, Eleanor Grove, Hoggers Corner, Barnes. [5881

1916 Rover Combination, very little used; bargain, £65.—Aylesbury Motor Co., Ltd., 48, Kingsbury Square, Aylesbury, Bucks. [5777

33 Guineas.—1921-22 T.T. Rover, Philipson, very fast, sporting solo.—A.V. Garage, 2a, Eleanor Grove, Hoggers Corner, Barnes. [5883

ROVER 3½h.p. Combination, 1920 about, kick-start, countershaft, all on, taxed; £63.—Motorist, 769, Romford Rd., Manor Park, London, E.12. [3272

ROVER 3½h.p., 1914, fitted with Philipson pulley, all on, in excellent order; £25.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. [5623

BRAND New 6h.p. Rover, chain-drive model, 3-speed, etc.; list price £95; our price to clear, £82/10.—Jones Garage, Rover Agents, Muswell Hill, London. [0997

ROVER 3½h.p., 3-speed, hand-clutch, kick-start, 29 guineas; with underslung Rover sidecar, 38 guineas; photo.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3928

ROVER.—Godfrey's are authorised agents. Immediate delivery of all 1923 models; gradual payments, exchanges; free tuition.—208, Great Portland St., London, W. 'Phone: 1300 Langham. [0350

Spare Parts:

ROVER Spares.—Immediate delivery.—Kays, 8, and 10, Bond St., Ealing. [9445

Royal Ruby.

£23.—Royal Ruby 1915-16, 2-stroke, 2-speed, first-class throughout.—127, Samuel St., Woolwich. [5793

Rudge.

£14.—Smart 3½h.p. Rudge, hand clutch, good running order.—King, Egrove, Oxford. [5834

RUDGE 3½h.p. Multi, excellent, £18; sidecar, perfect, £6.—99, Tynemouth Rd., Mitcham. [5892

1922 3½h.p. Multi, brand new, shop-soiled; £55.—Knights, 126, Upper Tooting Rd., S.W.17. [0979

3½h.p. I.O.M. Rudge-Multi Solo, latest 1922 model, new and unused; clearance bargain, £52/10.—Palmer's Garage, High St., Tooting. [5782

SOUTHPORT.—1921 and 1920 I.O.M. Rudge-Multis, equipped; 37 guineas and 33 guineas respectively, exchanges.—Kents, 417, Lord St., Southport. [5861

3½h.p. All-chain Rudge Solo, 3 speeds, kick-start, latest 1922 model, new and unused; clearance bargain, £67/10.—Palmer's Garage, High St., Tooting. [5783

RUDGE-MULTIS converted to countershaft, with 2, 3 or 4-speed gear box, from £16; satisfaction guaranteed.—Henry V. Smith, Osmondthorpe, Leeds. [5386

RUDGE.—3½h.p. Rudge Multi, 1922, as new, £50; 3½h.p. Rudge, 1920, all on, excellent order, £40.—Wauchope's, 9, Shoe Lane, Fleet St., London, E.C.4. Central 5168. [5611

1922 3½h.p. Rudge, 3-speed, kick-start and clutch, all chain, fully equipped, only run few hundred miles, a real snip; £65, exchanges and easy payments.—Bambers, 2, Eastbank St., Southport. 'Phone: 607. [5547

Spare Parts:

RUDGE Spares.—Immediate delivery.—Shepherd, Enfield Highway, N. [0901

THE Promptest Firm for Rudge Spares.—Illustrated list free. Trade supplied.—Forfield Motors, Forfield Place, Leamington Spa. [3163

Scott.

1922 3½h.p. Scott Squirrel, brand new; £85.—Carnforth Motor Co., Carnforth. [5745

SCOTT Squirrel, late 1922, quite new; £70.—J. Lord, Jnr., 39, Baytree Rd., Brixton, S.W.2. [5804

1922 Scott Combination, entirely spotless; first week January, Myrtlegrove, Keswick.—Vicarage, Redcar. [5734

SCOTT and Sidecar, under 7,000 miles, very good order, lamps, speedometer, spare chains; £55.—The Holt, Gerrards Cross. [5285

SOUTHPORT.—Kents for Scotts, 1923 Squirrel here; 1922 Squirrel, Lucas accessories, 62 guineas; exchanges.—417, Lord St., Southport. [5866

1921 Scott Combination, 3in. Palmer light car tyres, lamps, horn, etc.; £75; perfect condition, cost £185.—Hadfield, Webheath, Redditch. [5940

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Spare Parts:

WARD Motors, Ltd., 32, Hustler St., Bradford.—Everything for a Scott, new or good second-hand, unequalled for repairs. [0889

GODFREYS, Ltd., 208, Gt. Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list, stating year of manufacture. [0751

Sheffield-Henderson.

SOUTHPORT. — Kents for Sheffield-Hendersons, Olympia model here.—417, Lord St., Southport. [5857

Singer.

9 Guineas.—Singer 2¼h.p., drip feed lubrication, ride away.—A.V. Garage, 2a, Eleanor Grove, Hogger's Corner, Barnes. [5878

Spare Parts:

GENUINE Singer Parts.—Let me quote you.—Alf. Holland, Hearsall Lane Corner, Coventry. 'Phone: 1945. [5848

Sirrah.

1923 Sirrah 2-speed, clutch and K.S.; 33 guineas; carriage paid anywhere. All models Sirrah and Verus stocked. Write for lists.—H. Beardwood, 147, Burlington St., Liverpool. [4918

Stanger.

BRAND New Stanger V Twin, 2-stroke, 3-speed, Sturmey-Archer gear box, large tyres, a machine with a 4-cyl. effect and a perfect spring frame; list price £90; our price, to clear, £79/10.—Jones Garage, Stanger Agents, Muswell Hill, London. [0993

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SUN-VILLIERS, in splendid condition and running order; £14/10.—30, Thorasett Rd., Earlsfield, London. [3158

£25; bargain.—Sun-Vitesse 1921 2¾h.p. 2-stroke, 2 speeds, clutch, K.S., equipped, sound condition.—143, Ravensbury Rd., Earlsfield, S.W. [5920

BRAND New Sun-Jap, 2-speed, kick-start, H.B.C. clutch; a real good mount, and cheap at the list price of £58; our price to clear, £55.—Jones Garage, Sun-Jap Agents, Muswell Hill, London. [0998

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SUNBEAM 1918 Combination, excellent condition; £48.—7, Exhibition Rd., S.W.7. [5580

1916 8h.p. Sunbeam Combination, fine condition and appearance; £60, or offer.—105, Central Park Rd., East Ham, E. [5730

£55.—3½h.p. Sunbeam Coachbuilt Combination, 3 speeds, clutch, K.S., enclosed chain drive, perfect.—King, Egrove, Oxford. [5835

£32.—Sunbeam Sports 1916, less gear box, new T.B. magneto, long copper exhaust; exchanges.—Derrington, Grafton Rd., New Malden. [5556

1920 3½h.p. Sunbeam Combination, completely equipped, condition practically as new; £110.—E. W. Roberts, Bencathra Garage, Keswick. [0972

SOUTHPORT.—Kents for Sunbeams; immediate delivery 1923 models; 1922 (late) 3½h.p., best Lucas accessories, done 200 miles, 95 guineas; exchanges.—417, Lord St., Southport. [5865

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TORPEDO-PRECISION 1915 2½h.p., perfect; 11 guineas.—Peter Gordon, Ltd., 110, Upper Richmond Rd., East Sheen. [3929

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PREMIER Motor Co., the Triumph Specialists.

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£55.—All-chain late 1921 4h.p. Triumph, 3-speed, fine condition.—King, Egrove, Oxford. [5836

TRIUMPH 1922, brand new, all-chain; £80.—26 Tulse Hill, Brixton. 'Phone: Brixton 1292. [5967

1923 Triumph Models; exchanges or easy payments.—Bounds Garage, 223, High Rd., Kilburn. [0982

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3½h.p. Triumph, kick start, Gradó, perfect; £23, or near.—Glebe Farm, Streat, Plumpton, Sussex. [5729

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1922 Countershaft Triumph, £55; ditto 1921, all-chain, £52; ditto 1918, £35.—24, Balliol Rd., North Kensington. [5814

ROBERTSONS Motors, Ltd., 1922 Triumph all-chain drive Combination, with accessories; £76.—157B, Great Portland St., W.1. [4881

3½h.p. Triumph T.T., in good going order, oil lamps, horn, spares, good tyres, a snip, enclosed Bosch.—14, Estcourt St., Devizes. [5719

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TRIUMPH.—Only a few 1922 shop-soiled models left; 4h.p. type H, £75; type S.D., £80.—P. J. Evans, John Bright St., Birmingham. [5770

1919 Countershaft Triumph Combination, every accessory, beautiful condition; £48, exchanges.—24, Balliol Rd., North Kensington. [5813

TRIUMPH Combination, 1921, original tyres, equipped, mileage 500; £62/10.—M. Hillier, 216, Portobello Rd., North Kensington. [5731

TRIUMPH 4h.p. Combination, very small mileage, and absolutely as new; splendid bargain, £75.—F. G. Smith, High Rd., Goodmayes. [0959

BRAND New Triumph, 2-stroke, 2-speed; list price £40; our price, to clear, £38.—Jones Garage, Triumph Agents, Muswell Hill, London. [0811

TRIUMPH 3½h.p., in new condition, dropped frame, N.S.U. 2-speed, guaranteed; £22/10.—26, Tulse Hill, Brixton. 'Phone: Brixton 1292. [5968

BRAND New 4h.p. Triumph, chain drive; list price £84; our price, to clear, £79.—Jones Garage, Triumph Agents, Muswell Hill, London. [0994

TRIUMPH 1918 coachbuilt Combination, well equipped, excellent condition; 48 guineas.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [3345

TRIUMPH-GLORIA, late 1920, perfect condition, fully equipped, Sandum, spares, etc., any trial; £70.—Cardon, Penshurst Station, Kent. [5260

BRAND New 3½h.p. Triumph-Ricardo; list price £87/10; our price to clear, £80.—Jones Garage, Triumph Agents, Muswell Hill, London. [0996

CROYDON Agents Triumph, all new models and large range of second-hand in stock.—Moore's Presto Motor Works, North End, Croydon. [0864

BRAND New 4h.p. Triumph, chain-cum-belt; list price £75; our price to clear, £70.—Jones Garage, Triumph Agents, Muswell Hill, London. [0995

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1922 3½h.p. Zenith Bradshaw, brand new, complete with lamps, etc.; £75.—Carnforth Motor Co., Carnforth. [5740

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HAWKER, 4¼ h.p., 3-sp., all-chain, K.S. ..	£73
BEARDMORE, Barr & Stroud, 3-sp., chain, K.S.	£65
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A.B.C., 1921, 3 h.p., 4-speed, chain	£45
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HALIFAX.—1923 Stoneleigh 3-seater; £185.—Halifax Motor Exchange, Horton St., Halifax.

HALIFAX.—1923 Morgans from £128.—Halifax Motor Exchange, Horton St., Halifax. [5936

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PALMER'S Garage, Tooting.—Auction Sale every Thursday, starting at 2 o'clock. Apply for catalogue.

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PALMER'S Garage, Tooting.—10h.p. Lagonda Coupe, dynamo lighting, extra smart; £95.

PALMER'S Garage, Tooting.—12-14h.p. Fiat Light Landaulet, 4-cyl., runs well; £50.

PALMER'S Garage, Tooting.—14-16h.p. Darracq Light Landaulet, 4-cyl. monobloc, runs well; £40.

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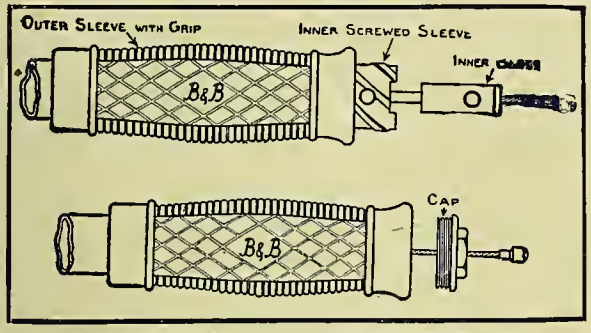

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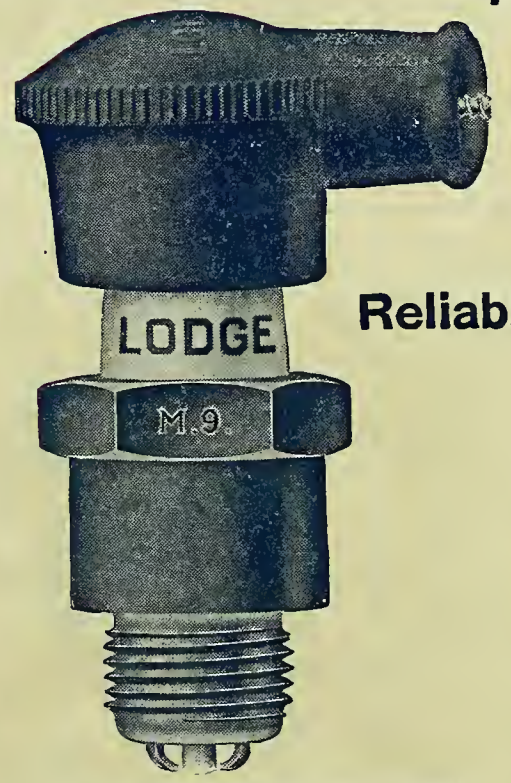

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